Agua Fria and Bradshaw-Harquahala Draft Resource Management Plan and Environmental Impact Statement

BLM

Phoenix Field Office

Agua Fria and Bradshaw-Harquahala Draft Resource Management Plan and Environmental Impact Statement 2006

Errata for Published Documents

The following errors have been discovered in the hardcopy and CD version of the document:

- In Section 2.2.1.13 on page 42, paragraph 8, the reference to Map 2-1 should be to Map 2-11.
- In Section 2.4.2.2.3.9 on page 112, paragraph 4, the reference to Map 2-32 should be to Map 2-49.
- In Section 2.6.2.2.4.6 on page 203, paragraph 2 and in Section 2.6.2.2.4.9 on page 204, paragraphs 1, 2, 4, and 5, the reference to Map 2-86 indicates routes, however, routes were omitted from this map.
- In Section 2.7.2.7 on page 240, paragraph 2, the reference to http://www.gpoacess.gov/cfr/index.htm is misspelled, it should be http://www.gpoaccess.gov/cfr/index.htm.
- In Section 3.12 on page 412, paragraphs 7 and 10, the reference to Map 3-17 should be to Map 3-14.
- In Section 3.12 on page 413, paragraph 5, the reference to Map 3-20 should be to Map 3-16.
- In Section 3.3.4 on page 392, paragraph 2, the reference to Figure 2.2 should be to Map 2-3.
- In Section 3.13 on page 414, paragraph 5, the reference to Figure 2.1 should be to Map 3-17.
- In Section 4.17 on page 574, paragraph 6 and page 575, paragraph 5, the reference to Map 3-17 should be to Map 3-14.
- In Section 4.17 on page 576, last paragraph, the reference to Map 3-20 should be to Map 3-16.
- In Appendix L, on page 753, last paragraph, the sentence containing the reference to Appendix B should be deleted.
- In Appendix L, on page 754, paragraph 3, replace the statement "Refer to Appendix C for a map depicting the two land use allocations for fire." with "Refer to Map 3-17 for a depiction of the two land use allocations for fire."
- In Appendix L, on page 756, the first paragraph containing references to Appendices D, E, and F should be deleted.
- In Appendix P, on page 792, first paragraph, the link http://fire.r9.fws.gov/ifcc/ESR/handbook/4PolicyGuidance.htm has moved to http://fire.r9.fws.gov/ifcc/ESR/handbook/.
- Map 2-69 is titled "Peeple Valley Management Unit" but should say "Peeples Valley Management Unit."

These maps are missing the following data in both the hardcopy and CD versions of the document. The corrected maps are located on the BLM website at http://www.blm.gov/az/LUP/aquafria/afria_plan.htm under the "Maps" link.

- Map 2-10: missing data on areas closed to mineral material sales.
- Map 2-58: both symbols on the legend are labeled Front Country, one should state Back Country.
- Map 2-84: missing ACEC area boundaries.
- Map 2-85: missing ACEC area boundaries.
- Map 2-98: Missing Tortoise Habitat data.

The following error was found in the online ePlanning document:

- In Section 2.4.2.2.1.7, first paragraph, the reference to Table 2-8 should be Table 2-2.

The following errors were found in the hardcopy and CD version of the document, as well as in the online ePlanning document:

- In Section 2.3.2.2.2.5 on page 68, first paragraph, the reference to Section 2.3.2.2.2.7 should be Section 2.3.2.2.2.6.
- In Section 2.4.2.2.2.1 on page 101, paragraph 5, the reference to Section 2.4.2.2.2.6 should be Section 2.4.2.2.2.7.
- In Section 2.4.2.2.2.5 on page 102, last paragraph, the reference to Section 2.4.2.2.2.6 should be Section 2.4.2.2.2.7.
- In Section 2.4.2.2.2.6 on page 103, paragraph 6, the reference to Section 2.3.2.2.2.7 should be Section 2.4.2.2.2.7.
- In Section 2.4.2.2.4.9 on page 117, paragraph 11, the reference to Section 2.5.2.2.4.4 should be Section 2.4.2.2.4.4.
- In Section 2.5.2.2.6.8 on page 154, paragraph 5, the reference to Section 2.6.2.2.6.5 should be Section 2.5.2.2.6.5.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Arizona State Office
222 North Central Avenue
Phoenix, AZ 85004
www.az.blm.gov

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In Reply Refer To:
1610 (931)

Dear Reader:

Enclosed is the Agua Fria National Monument and Bradshaw-Harquahala Planning Areas Draft Resource Management Plan and Draft Environmental Impact Statement (DRMP/DEIS) for your review and comment. As you review the DRMP/DEIS, you will find it integrates all resource management activities conducted within the northern portion of the Bureau of Land Management (BLM) Phoenix Field Office into one comprehensive publication. It is our intent to replace existing land use plans and their amendments with an approved Resource Management Plan and Record of Decision for each planning area addressed in this document.

The draft before you represents the integration of considerable public collaboration into the BLM management of public lands. Now you, as a member of the public, have another opportunity to ensure that your concerns are addressed. We welcome and encourage your continued participation in this planning effort.

Comments will be considered in the development of the Proposed Resource Management Plan and Final Environmental Impact Statement (PRMP/FEIS). Comments are most useful when they address one or more of the following:

- Errors in the analysis;
- New scientific information that would have a bearing on the analysis;
- Misinformation that could affect the outcome of the analysis;
- Requests for clarification; and,
- A substantive new alternative whose mix of allocations differs from those under any of the existing alternatives.

When commenting about a particular statement in the document, please refer to the section number and title where the text you are referring to resides. When commenting about a particular map, please refer to the map number and title that contains the information you are commenting on.

To ensure you have opportunities to share your comments about the DRMP/DEIS, public meetings will be held in Prescott Valley, Black Canyon City, Phoenix, Wickenburg, and Buckeye during the comment period. Additional meeting locations will be considered, if deemed necessary.

Public comments, including names and street addresses of respondents, will be available for public review at Bureau of Land Management Phoenix Field Office, 21605 North 7th Avenue, Phoenix, Arizona 85027, during regular business hours (7:30 a.m. to 4:15 p.m.), Monday through Friday, except holidays. Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety.

The 90-day public comment period for the DRMP/DEIS will begin the day the Environmental Protection Agency (EPA) publishes its Notice of Availability (NOA) for this DRMP/DEIS in the *Federal Register*. For your convenience, the Agua Fria National Monument and Bradshaw-Harquahala DRMP/DEIS is available on a CD, as well as in a printed version. Also, we are pleased to announce this document is now published on the Internet as an interactive document. The web publication offers numerous ways to maneuver through the document, and provides links that are user-friendly, making it easy to navigate through sections of interest. The web publication also offers access to high quality maps, and gives the option of zooming in or out to view the maps at different scales. Additionally, while viewing the maps, layers may be turned on or off (each layer has color and feature associations) which allows you to choose what information to view according to your interests. The best part of this interactive web site is that you may submit comments to us with a click of your mouse. Once submitted, the system allows us to easily track and analyze your comment(s) throughout the entire review process. If you do not have access to the Internet, you are welcome to visit the nearest BLM office for access to the interactive web site, or submit your comments by letter.

The interactive document of the DRMP/DEIS may be accessed on the Internet at: www.blm.gov

Please send written comments to the following address:

Bureau of Land Management
Attention: Chris Horyza, RMP Project Manager
21605 North 7th Avenue
Phoenix, Arizona 85027

We appreciate your interest and encourage your continued involvement in the planning process. For additional information or to request a printed copy or CD version of the DRMP/DEIS, please contact Chris Horyza at (623) 580-5500 or by email at AZ_AFNM_Bradshaw@blm.gov.

Sincerely,

Elaine Y. Zielinski

Elaine Y. Zielinski
State Director

Enclosure

ABSTRACT

The Agua Fria National Monument and Bradshaw-Harquahala Draft Resource Management Plan and Draft Environmental Impact Statement (DRMP/DEIS) describes and analyses five alternatives for managing approximately 967,000 acres of Public Land in Central Arizona, north and west of Phoenix, AZ. Information provided by the public, other agencies and organizations, and BLM personnel have been used to develop and analyze the Alternatives in this DRMP/DEIS. *Alternative A* is the No Action alternative and represents continuation of current management. *Alternative B* emphasizes recreation and resource development. *Alternative C* makes land available for recreation and resource development with greater opportunities to experience natural settings than in *Alternative B*. *Alternative D* emphasizes preservation of undeveloped primitive landscapes and opportunities for non-motorized recreation. *Alternative E*, the agency Preferred Alternative, provides for a balance between authorized resource use and the protection and long-term sustainability of sensitive resources.

Major issues addressed in the DRMP/DEIS include identification of lands that would be made available for disposal, management of recreation and public access, designation and management of Special Area Designations, management of areas having wilderness characteristics, and management of visual resources.

Agua Fria National Monument
and
Bradshaw-Harquahala Planning Area

Draft Resource Management Plan
and
Draft Environmental Impact Statement

Prepared by

U.S. Department of the Interior
Bureau of Land Management
Phoenix Field Office
Arizona

October 2005

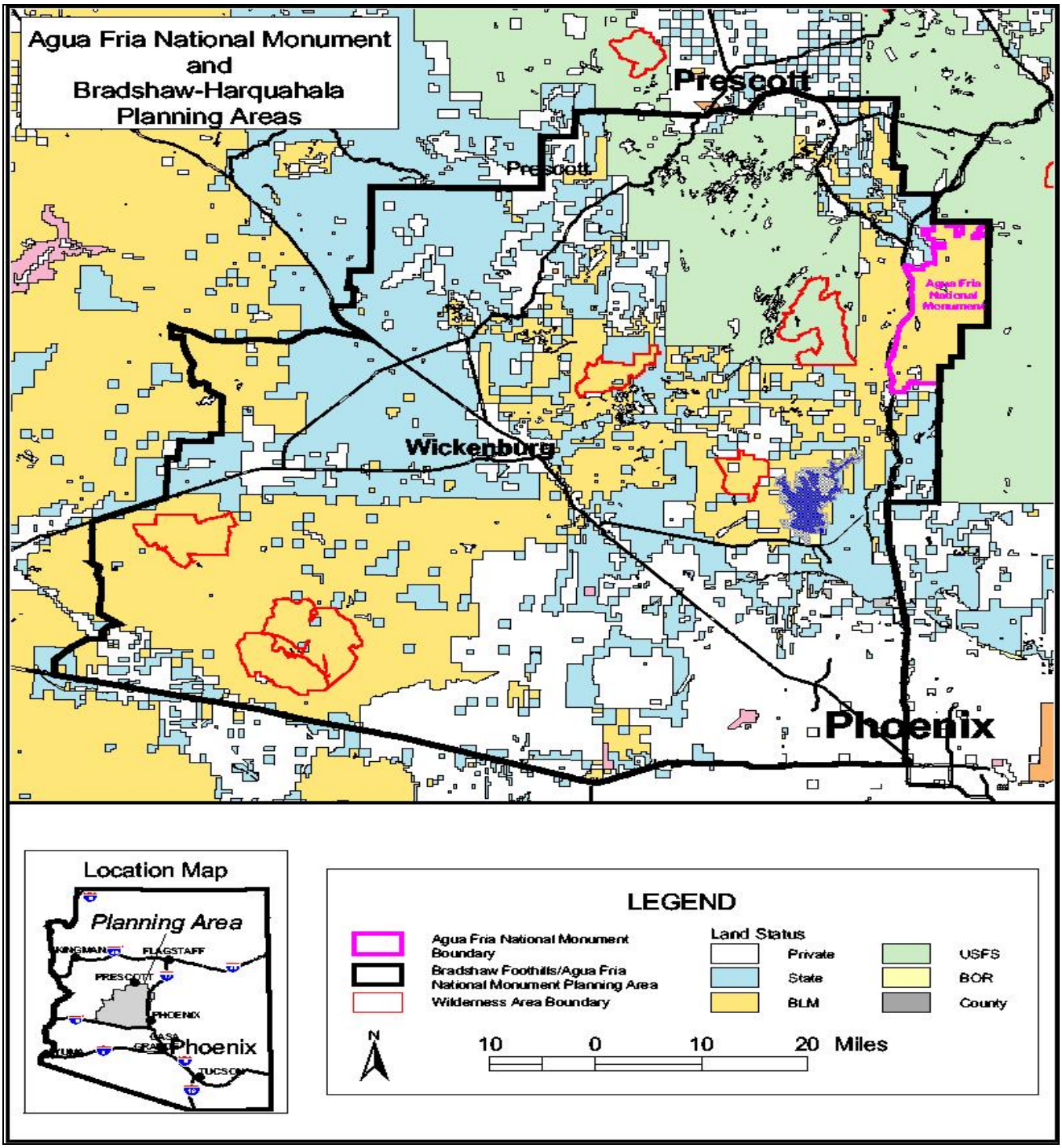
Elaine Y. Zielinski
State Director, Arizona

EXECUTIVE SUMMARY

Introduction

The *Agua Fria National Monument and Bradshaw-Harquahala Resource Management Plan and Environmental Impact Statement* (RMP/EIS) is being prepared to provide guidance on current and future management decisions for the BLM's Phoenix Field Office (PFO). These plans will represent the culmination of many months of concerted planning efforts on the part of BLM PFO staff, BLM Arizona State Office staff, representatives of communities located within the planning areas, cooperating and collaborating government agencies, special interest and user groups, and many hundreds of concerned citizens. Any of the proposed action alternatives outlined in the tables that follow, as a distillation of the combined thought, effort, and research from all those involved, will enable BLM to manage both the newly designated Agua Fria National Monument (AFNM) as well as consolidate management of several existing areas adjacent to the Phoenix metropolitan area into a comprehensive plan that will guide BLM management actions for years to come.

Combined, the Agua Fria National Monument and Bradshaw-Harquahala Planning Areas encompass more than 3,000,000 acres in a complex mosaic of land ownerships and jurisdictions. BLM manages the resources on approximately 967,000 surface acres within these planning boundaries, including the entire 70,900 acres of the Agua Fria National Monument, and retains subsurface (mineral) rights to an additional 725,100 acres. The Agua Fria National Monument and Bradshaw-Harquahala RMP/EIS are vital to creating a framework for future planning and decision-making efforts within the context of such complex ownership. These lands are unique. Located within these planning boundaries are archaeological sites and artifacts found nowhere else on earth, providing researchers with critical insights into the lifestyles of the peoples who first settled this region of the Southwest. The lands are home to pronghorn antelope, mule deer, white-tailed deer, bighorn sheep, mountain lion, black bear, javelina, countless native songbirds, migratory waterfowl, and endangered and special-status species such as bald eagle, southwestern willow flycatcher, Sonoran desert tortoise, and native fish species such as Gila chub and desert pupfish. Vegetation throughout the area ranges from creosotebush in the desert flats to ponderosa pine at higher elevations. The varied panorama of mountains, mesas, grasslands, high and low desert vistas provides many thousands of residents and visitors each year with unparalleled recreational opportunities, and many thousands more rely on these lands for their livelihood through mining, grazing, and tourism. As the population of the Phoenix metropolitan area continues to grow, the BLM-administered lands located within the Agua Fria National Monument and Bradshaw-Harquahala Planning Areas will undoubtedly receive increasing pressure. The management decisions set forth in these plans, after considerable deliberation on the part of BLM and its partners are believed to provide the broadest possible consensus to wisely guide management of these very valuable resources.


Agua Fria National Monument
and
Bradshaw-Harquahala
Planning Areas
Prescott
Prescott
Wickenburg
Phoenix
Agua Fria National Monument
Location Map
Planning Area
KINGMAN
FLAGSTAFF
PRESCOTT
PHOENIX
Phoenix
TUCSON
LEGEND
Agua Fria National Monument Boundary
Bradshaw Foothills/Agua Fria National Monument Planning Area
Wilderness Area Boundary
Land Status
Private
State
BLM
USFS
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Purpose and Need

The purpose of preparing the Agua Fria National Monument and Bradshaw-Harquahala RMP is to provide plans that will guide future land management actions within the planning areas. These documents must provide not only adequate guidance for management actions but also show that actions taken were supported by the appropriate National Environmental Policy Act (NEPA) and Federal Land Policy and Management Act (FLPMA) processes.

The need for the preparation of the RMP has been established by three principal factors: the Presidential Proclamation creating the monument as a discrete management unit, the degree of urban expansion and population growth in the planning areas and vicinity, and the time that has elapsed (approximately 15 years) since the last major planning efforts that encompassed the Agua Fria National Monument and Bradshaw-Harquahala Planning Area occurred.

Planning Issues and Management Concerns Identified during Scoping

The most important step in developing an RMP is to identify relevant issues and concerns. An issue is defined as an opportunity, conflict, or problem regarding the use or management of public lands. All comments received for this scoping effort were assigned, based on content, to one of 12 designated issue categories. Comments were further divided into various sub-issues within each category. All comments were read, evaluated, and manually entered into an analytic database. Figures 1 and 2 depict the most frequently mentioned issues for each planning area.

Agua Fria National Monument

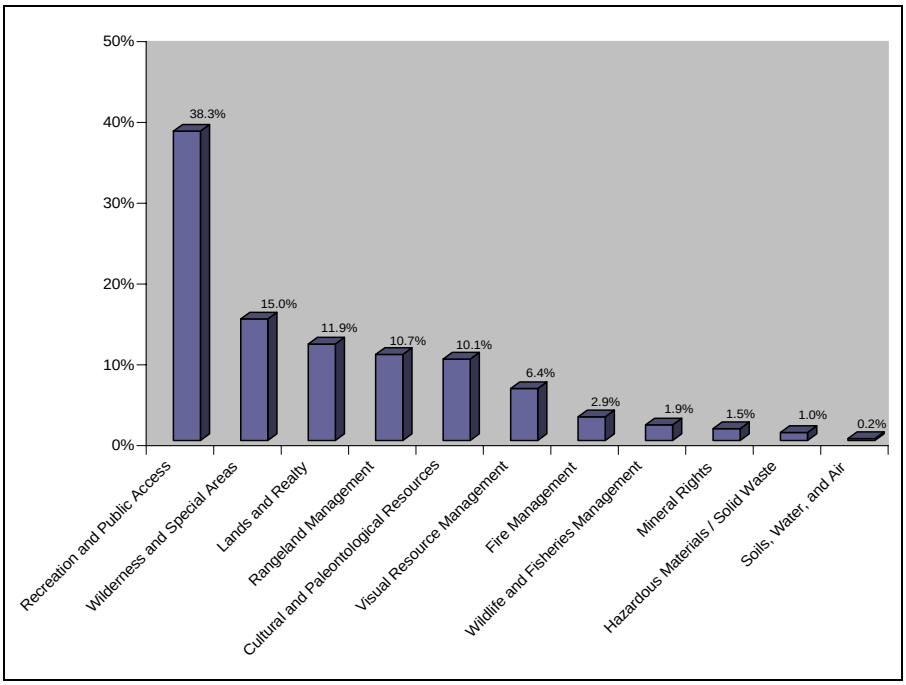

Figure 1. Public Response by Issue – Agua Fria National Monument Planning Area

Recreation and Public Access

Management of, and continued access for recreation use of the monument, while protecting the resources it was created to protect, is a major issue in the plan. The EIS explores options to allow and manage recreation uses.

Special Area Designations

The EIS discusses the possibility of Areas of Critical Environmental Concern (ACEC) and the segments of the Agua Fria River found to be eligible for Wild and Scenic River consideration.

Wilderness Characteristics

A citizen based wilderness study area proposal was submitted. Much of the monument was not previously inventoried for resource values associated with wilderness characteristics because it was not within BLM jurisdiction when the last round of inventories was done. BLM conducted an inventory as directed by section 201 of FLPMA and found some areas to have wilderness character. The EIS explores alternative ways to manage these areas.

Lands and Realty

Lands within the monument must be retained, but private lands within the boundary could be acquired. In addition, alternative options for management of a utility corridor along the western boundary of the monument are discussed in the EIS.

Rangeland Management

Grazing within sensitive riparian habitat is a concern within the monument. In addition, fences used to manage livestock are a potential barrier to pronghorn movement.

Use of native species and diligence in preventing infestations of invasive species was an issue among some citizen groups.

Cultural and Paleontological Resources

The Agua Fria National Monument was created to preserve the outstanding cultural resources within its boundaries, both historic and prehistoric. The recreational and scientific use of the resources, along with the preservation of the sites is of major interest. Alternatives in the EIS explore varying scenarios for achieving this balance.

Visual Resource Management

Preservation of the natural appearance of the landscape is of concern within the monument. In addition, maintaining the historic views in some areas is also of interest.

Fire Management

Most of the monument is within a fire dependent ecosystem. Prescribed fire is currently used to maintain the high desert grasslands. There is an interest in re-establishing natural fire cycles, but the monument is also adjacent to a couple of small communities that could be vulnerable to wildfires.

Wildlife and Fisheries Management

The monument contains several listed or candidate species, including the Gila Topminnow. In addition, several sensitive wildlife species are on the monument, including a small isolated population of pronghorn that are dependent on the monument for their survival.

Minerals

Though the monument is withdrawn from the mining laws, two active mining claims continue to operate. These claims are held by prospecting clubs who hold club events on the claims several times a year.

Hazardous Materials and Solid Waste

Though there is one abandoned mine within the monument known to have hazardous material problems, it is on a patented mining claim and currently poses no hazard to BLM lands or users. The greater issue is with trash dumping on and around the monument. Besides the unsightliness of the dumping, the potential exists for household or other hazardous waste.

Water

The proclamation awarded BLM a Federal reserved water right within the Agua Fria National Monument. Water, and the riparian vegetation it supports, contributes considerably to the values described in the proclamation. The question of how we will quantify and protect the water right is of concern.

Bradshaw-Harquahala Planning Area

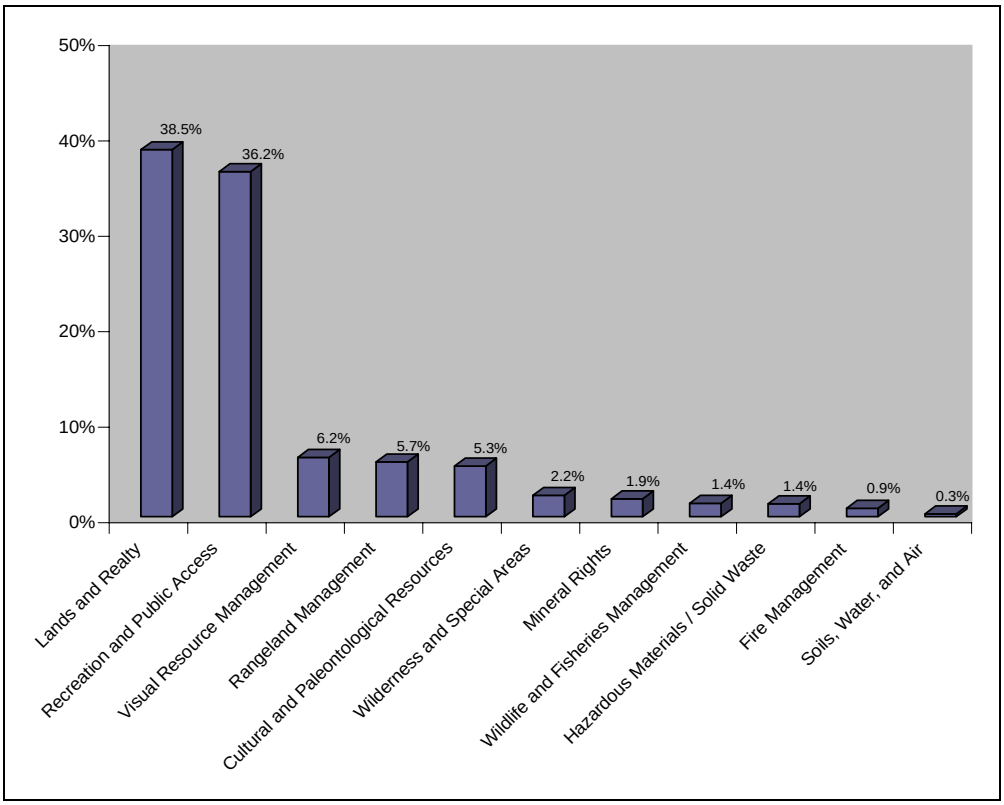

Figure 2. Public Response by Issue – Bradshaw-Harquahala Planning Area

Lands and Realty

The most common comment received regarding the Lands and Realty category was pertaining to land tenure. In general, the public wants the public lands to remain public. Transfer of land title to private land owners was generally considered undesirable.

Recreation and Public Access

In general, public sentiment expressed was in favor of maintaining public access to public lands, and to manage for diverse recreation experiences. Off Highway Vehicle (OHV) use is increasing, and owners of these vehicles want continued access to BLM land and some assurance they will have a place to enjoy their recreation pursuits in the future.

Visual Resources

Rapid urban growth in central Arizona has increased the publics' awareness of open space and scenic quality. Citizens have expressed an intense interest in keeping the landscapes on BLM land as natural appearing as possible.

Rangeland Management

Public sentiment generally supports continuation of grazing. Concern was expressed concerning the health of riparian areas and the opportunities for invasive species infestations.

Cultural and Paleontological Resources

Comments concerning this issue generally centered on increasing protection for sites and halting site vandalism. The potential for livestock damage to sites was also an item of comment.

Special Area Designations

Comments were received concerning sensitive resources and habitats. Several alternative methods for protecting these resources are explored in the EIS.

Wilderness

A number of comments were received concerning protecting lands that have wilderness values and characteristics.

Minerals

Mineral extraction within the planning areas is generally a minor activity. However, there is intense interest in the recreational pursuit of gold as evidenced in the large participation in clubs such as the Gold Prospectors Association of America and the Roadrunners Gold Prospectors Club. The two active mining claims still within the Agua Fria National Monument are held by prospecting clubs.

In addition, the rapid growth in the urban area is increasing demand for sand, gravel, and decorative rock. These saleable materials can often be found on non-Federal lands, but interest in extraction from Federal lands is increasing.

Wildlife and Fisheries Management

The preservation of land for both game and non-game wildlife is increasing. As the urban area expands, habitat is lost for many wildlife species. Development is also fragmenting habitat, reducing the viability of what remains. Many species in the Sonoran Desert require large land areas. Long term preservation of species, especially Sensitive, Threatened, and Endangered species, will require preservation of large areas of unfragmented habitat and focused management of sensitive and uncommon habitats such as riparian.

Hazardous Materials and Solid Waste

Illegal dumping of household waste is an increasing problem within both planning areas. Besides being unsightly, there is a potential for hazardous materials to be dumped as well. In addition, there are many abandoned mines within the Bradshaw-Harquahala Planning Area that pose the potential for containing hazardous materials.

Fire Management

Allowing natural fire cycles to reestablish on lands where it is appropriate is a concern. At the same time, the wildland-urban interface (WUI) is expanding as quickly as the population increase in central Arizona. Identifying and conducting the appropriate fire management for the specific location is a concern.

Water and Air

Protecting surface water from degradation of both quality and quantity is an issue. Also, since a large part of central Arizona is within a PM_{10} nonattainment area, managing BLM lands to not contribute to increased air pollution is also of interest.

Wild Burros

Management of a wild burro herd in the Harquahala and Bighorn Mountains area was of concern to the Arizona Game and Fish Department (AGFD).

Alternatives

The basic goal of developing Alternatives is to prepare different combinations of management to address issues and to resolve conflicts among uses. Alternatives must meet the purpose and need; must be reasonable; must provide a mix of resource protection, use, and development; must be responsive to the issues; and must meet the established planning criteria. Each Alternative is a complete land use plan that provides a framework for multiple use management of the full spectrum of resources, resource uses, and programs present in the planning area. Under all Alternatives the BLM will manage the public lands in accordance with all applicable laws, regulations, and BLM policy and guidance.

Alternative A is the current management situation for both the monument and the Bradshaw-Harquahala Planning Area. *Alternative A* serves as a baseline for most resource and land-use allocations. Description of current management in a manner equivalent to the future management *Alternatives B, C, and D* permits the baseline to be compared with possible futures.

Alternative B plans for increased public use and includes more recreation-related development, consistent with protection of monument resources. It also allows visitation and development within the Bradshaw-Harquahala Planning Area while ensuring resource protection is not compromised.

Alternative C provides visitors with opportunities to experience the natural landscapes and cultural resource setting of the monument and is generally managed with more restrictive decisions than *Alternative B*. In the Bradshaw-Harquahala Planning Area, there is greater emphasis under *Alternative C* on identifying and protecting undeveloped landscapes than in *Alternative B*.

Alternative D emphasizes the preservation of undeveloped, primitive landscapes on the monument, resulting in limited public use and the withdrawal of authorized grazing. The Bradshaw-Harquahala Planning Area emphasizes natural landscapes and non-motorized recreation, with more management dedicated to maintaining primitive recreation opportunities than under the other Alternatives.

Alternative E is an amalgam of elements selected from the other Alternatives that have subsequently been studied and further refined. *Alternative E* is BLM's preferred RMP Alternative. This Alternative is designed to respond in the most comprehensive manner possible to each of the issues and management concerns identified throughout the planning process. BLM has determined that the management actions presented in *Alternative E* will provide the optimal balance between authorized resource use and the protection and long-term sustainability of sensitive resources within each of the planning areas.

Table E-1 Comparison of Key Alternative Components

	Alternative A Acres	Alternative B Acres	Alternative C Acres	Alternative D Acres	Alternative E Acres
Land Tenure	15,274 acres for Sale, 39,100 acres for Exchange, 54,370 acres total.	58,400 acres for Sale or Exchange	49,100 acres for Sale or Exchange	None	29,230 acres for Sale, 9,525 for Exchange, 38,755 acres total
Areas of Critical Environmental Concern (ACEC)	Two for 9,660 acres	One for 640 acres	Ten areas for 56,520 acres	Nine areas for 205,870 acres	Four areas for 89,970 acres
Congressionally Designated Wilderness	Five Areas for 96,820 acres	Five Areas for 96,820 acres	Five Areas for 96,820 acres	Five Areas for 96,820 acres	Five Areas for 96,820 acres
Lands allocated to maintain or enhance wilderness characteristics	None	One area for 56,040 acres	Five areas for 107,510 acres	Six areas for 91,480 acres	Seven areas for 96,420 acres
Special Recreation Management Areas and Recreation Management Zones (SRMA and RMZ)	None	Nine areas for 149,760 acres	Nine areas for 182,800 acres	Seven areas for 56,240 acres	Fifteen areas for 678,835 acres
Mineral Withdrawal or Closure	Closed to: Location – 171,680 acres Lease – 171,680 acres Sale – 172,510 acres	Closed to: Location – 171,680 acres Lease – 171,680 acres Sale – 268,260 acres	Closed to: Location – 188,450 acres Lease – 188,190 Sale – 325,970 acres	Closed to: Location – 446,440 acres Lease – 453,550 acres Sale – 469,680 acres	Closed to: Location – 171,940 acres Lease – 171,680 acres Sale – 172,780 acres

Public Involvement

The Bureau of Land Management (BLM) decision-making process is conducted in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969, U.S. Council on Environmental Quality (CEQ) regulations, and Department of the Interior (DOI) and BLM policies and procedures implementing NEPA. NEPA and the associated regulatory and policy framework requires that all Federal agencies involve interested groups of the public in their decision-making, consider reasonable alternatives to proposed actions, and prepare environmental documents that disclose the potential impacts of proposed actions and alternatives.

BLM holds as a priority, collaborative management. This includes what Interior Secretary Gale Norton refers to as “The Four Cs:” consultation, cooperation, and communication -- all in the service of conservation. The Four Cs are the basis for this Administration's new environmentalism, one that looks to those closest to the land -- rather than Washington, D.C. for answers to public land issues." Public involvement, consultation, and coordination have been at the heart of the planning process leading to this Proposed Resource Management Plan (RMP) and Draft Environmental Impact Statement (EIS). This was accomplished through public meetings, informal meetings, individual contacts, news releases, planning bulletins, a planning Web site, and *Federal Register* notices.

BLM PFO contracted with James Kent Associates (JKA) to work with residents and community groups in the planning areas regarding their issues and concerns. JKA’s staff visited the communities of Wickenburg, Yarnell, Buckeye, Tonopah, Castle Hot Springs, New River, Black Canyon City, Cordes Junction, Mayer, Dewey, Humboldt, and Prescott Valley. They have also been in Phoenix, Flagstaff and Prescott, talking with environmental and recreation groups. Citizens have discussed their concerns with BLM land use management in their areas, as well as suggested ideas for improving current land management practices. Residents in some areas have even conducted community surveys in order to provide input and guidance to BLM in the planning process.

Ten scoping meetings were held in Arizona communities. The meetings were structured to have both an open house period, followed by a meeting/presentation where speakers could voice their concerns. BLM specialists were available to provide information and responses to questions. During the scoping meetings, 564 people registered their attendance with 169 offering to speak. Comments from the public were collected during the scoping meetings and throughout the scoping period through a variety of methods including mail, fax, and email.

BLM continued collaboration efforts by including communities in the formulation of Alternatives. Workshops were held throughout the planning area to give citizens the opportunity to refine issues, discuss visions for BLM’s lands, and begin exploring alternative ways to manage BLM’s lands and resources. Input received from citizens—both groups and individuals—were considered in developing the Alternatives. Citizens were also able to submit formulated alternatives, as well as vision statements, for specific community areas or resources. These were also considered in the range of alternatives and analyzed in the EIS, as required by NEPA.

When the Preliminary Draft Alternatives had been developed, BLM distributed the Alternatives to the public and held four additional public meetings. The public responded with nearly 2,000 comments concerning the measures developed in those alternatives.

Affected Environment

Special Area Designations

Within the planning area there are five designated wilderness areas totaling 96,820 acres, one Back Country Byway, two Areas of Critical Environmental Concern (totaling 9,060 acres), and three segments of the Agua Fria River determined to be eligible for Wild (2,970 acres) or Scenic (3,060 acres) designation.

Lands and Realty

Eight utility corridors criss-cross the planning area, providing available locations for current and future energy delivery to the urbanizing Phoenix Metropolitan area. Meetings with the public and energy utilities indicated the existing corridor system was sufficient to meet future demands.

Though Central Arizona is one of the fastest growing population centers in the United States, there is no need for BLM's lands to support continued urban expansion. Adequate land for community growth exists in both Arizona State Trust and private ownership

Soil Resources

Soils in the planning areas tend to be shallow and of various textures. Surface disturbances are slow to recover in the desert environments, leaving exposed soil to accelerated wind and water erosion.

Air Quality

EPA has designated three nonattainment areas in Central Arizona, one for particulate matter up to 10 microns (PM_{10}), one for ozone, and one for carbon-monoxide (CO). The primary contribution to air quality problems from BLM's lands are tailpipe emissions of motorized vehicles, which contributes to ozone and CO pollution; and dust, which contributes to PM_{10} problems. Though any surface disturbance can increase production of dust from BLM lands, motorized vehicles on unpaved roads are the primary source. The nonattainment areas generally encompass the urbanized zone with only a few thousand acres of BLM land within them. Maricopa County has developed standards for implementing the Arizona State Implementation Plan (SIP) for achieving attainment and BLM must comply with county standards on lands within the nonattainment areas.

Water Resources

The planning areas lie within the drainages of two major river systems, the Hassayampa River in the west and the Agua Fria River in the east. In the Sonoran Desert, surface water, and especially reliable perennial surface water is a rare and particularly valuable resource. Most of the historical locations of reliable surface water have been lost to urbanization and the remaining locations serve as the most important wildlife habitats in the region. Groundwater pumping in the region may be affecting surface water availability by lowering water tables that support spring production and aquifers that occasionally

emerge in river bottoms. Surface water quality, where it remains, has been determined by the Arizona Department of Environmental Quality (ADEQ) in most cases to be "limited", containing pollutants above Environmental Protection Agency (EPA) standards. The most common pollutants contributing to these "limited" streams are fecal coliforms, arsenic, and turbidity.

Biological Resources

The planning areas contain primarily Sonoran Desert, Desert Grassland, and Interior Chaparral vegetation communities and animals associated with them. Of all habitats within the planning areas, the 140 miles of riparian corridors are most important, supporting a variety of rare plants, vertebrates, invertebrates, and native fishes; including listed and candidate threatened and endangered species. The list of known species includes the bald eagle (*Haliaeetus leucocephalus*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), southwestern willow flycatcher (*Empidonax traillii extimus*), desert pupfish (*Cyprinodon macularius*), Gila topminnow (*Poeciliopsis occidentalis*), and Gila chub (*Gila intermedia*).

Upland areas contain some of the finest examples of Sonoran Desert vegetation communities, including paloverde-saguaro cactus, easily accessible to residents of Central Arizona. The most sensitive wildlife species dependent on these uplands is desert tortoise. The planning areas contain 93,600 acres of desert tortoise habitat classified as Category I, 429,400 acres classified as Category II and 136,980 acres classified as Category III.

Cultural Resources

The Agua Fria National Monument was created primarily to preserve the outstanding cultural resources within its boundary. Over 400 sites, including prehistoric pueblo ruins and spectacular rock art, are known within the monument. Thousands of undiscovered sites may also be there. Outside the monument, there is an abundance of both prehistoric and historic cultural resources including archaic hunter-gatherer sites 6,000 years old, and mining and ranching sites from the late 1800's. Sites both on and off the monument are recognized on the National Register of Historic Places (NRHR), including the Perry Mesa Archaeological District and the Harquahala Peak Smithsonian Observatory.

Paleontological Resources

The planning areas contain no known fossil locations.

Recreation

The planning areas are on the northern and western fringes of the rapidly urbanizing Phoenix Metropolitan area. Population growth from 1990 to 2000 exceeded 40 percent in the region. As the population grows, recreation demand grows as well. Studies indicate the rate of growth in recreation demand exceeds the rate of population growth. As the planning effort began, demand for motorized recreation in the forms of four-wheel-drive vehicles (like jeeps and Humvees), ATVs, and motorcycles had been increasing rapidly. These recreation uses are expected to continue to increase disproportionate to population growth. As urban development gets closer and closer to public lands, unmanaged indiscriminate recreation use creates conflict with natural resources and traditional public land users.

Visual Resources

Visual Resource Management (VRM) provides a basic tool for BLM to manage a major component of Open Space. VRM inventory has discovered that, as natural landscapes are converted to rural and urban development, the public sensitivity to visual change on public lands increases. The public desires open natural appearing landscapes on BLM's managed lands and equates poorly designed activities that create large visual intrusions with BLM's mismanagement.

Rangeland Management

Throughout the planning areas, there are 101 grazing allotments where leases or permits allow the annual grazing of 83,060 animal unit months (AUMs), or approximately 11,690 animals (cattle, horses and sheep). During seasons with extraordinary production of forage from annual grasses and forbs, additional AUMs are authorized for ephemeral use.

Mineral and Energy Resources

Mineral development, except mineral material sales, has been almost nonexistent for the last 15 to 20 years. Some areas of moderate mineral potential exist, but development beyond casual use has not occurred. The primary locatable mineral development has been by small miners conducting mainly prospecting activities. No leases for oil or gas drilling have been issued in over 15 years. As population growth and development continues, demand for building material also grows. Demand for mineral materials has grown, especially for decorative rock that is found more often on BLM's lands.

Fire and Fuel Resources

The Sonoran Desert biome presents few opportunities for fire use. The ecosystem is sensitive to fire and suppression of fires is generally considered desirable. Vegetation communities at higher elevations, interior chaparral and desert grasslands, do have some fire use potential and prescribed burning is currently conducted in some of these areas. Population growth and urban expansion is increasing the extent of Wildland Urban Interface, (WUI) which presents increased challenge in the protection of private property and public safety. Prior to this Draft Resource Management Plan/Draft Environmental Impact Statement, a statewide plan amendment and environmental assessment (Arizona Statewide Land Use Plan Amendment for Fire, Fuels and Air Quality Management) was conducted to address fire management issues.

Wild Horses and Burros

The Lake Pleasant burro herd is managed in accordance with provisions in the Lake Pleasant Herd Management Plan. That plan established an appropriate management level (AML) of 208 burros within the Lake Pleasant Herd Management Area. Burros are gathered as needed to maintain the AML or to remove nuisance animals. The Harquahala Herd Area, though large in extent, has few burros as determined by aerial count. These animals spend much of their time on private agricultural lands near BLM lands. Previous management plans have prescribed complete removal of these animals. A

manageability analysis of the herd determined the small number and frequent use of non-BLM land renders this herd not manageable as a sustained herd over the long term.

Transportation and Public Access

Route inventory has been undertaken in both planning areas. Inventory is complete in the national monument and 140 miles of motorized route have been detected. In the Bradshaw-Harquahala Planning Area, inventory is still underway with completion expected in early 2006. Based on the current inventory and other route sources, estimated motorized route mileage for the Bradshaw-Harquahala planning area is 2,240 miles.

Wilderness Characteristics

Inventories of BLM land to determine areas containing wilderness characteristics were conducted by BLM in 1981 and 2002. The Arizona Wilderness Act of 1992 set aside 96,820 acres within the Bradshaw-Harquahala Planning Area in five wilderness areas. For this planning effort, the inventories of 1981 for areas not added to the Wilderness Preservation System were reexamined to determine their current relevance. In addition, BLM received inventory conducted by private citizens and a proposal for protection of areas containing wilderness characteristics.

Social and Economic Conditions

Social and economic data suggest the region has seen a shift from rural communities with a cultural orientation to public lands and a dependency on public lands for economic stimulus, to urban communities with more industrial based economics. In the urban areas, public lands are more a source of recreation than a cultural orientation such as ranching or mining engenders. Many rural communities within the planning area cling desperately to their rural identities and continue to be dependent on public lands for economic stimulus. Many of these are shifting from mining and ranching towns to service providers for the recreation seeking urban dwellers. On a regional basis, the economic contribution from rural communities is only a small proportion of money generated. However, the economic contribution of public land use may be a large proportion of dollars flowing in many rural communities.

Environmental Justice

The planning area has several communities with minority populations exceeding county averages. In addition, several communities have above average numbers of households below the poverty level.

Environmental Consequences

Impacts on Special Area Designations

Proposed management will generally have little impact to existing Special Area Designations. Limiting motorized use to designated routes and allocations focused on managing rapidly increasing recreation demand will generally benefit resources within Special Area Designations.

Impacts on Lands and Realty

Sufficient utility and transportation corridors are proposed in all Alternatives to meet increasing energy demands for urban expansion in Central Arizona. Though several Alternatives for land disposal acres are analyzed, ample lands for development are available from sources other than disposal of BLM's land.

Impacts on Soil Resources

Management proposed in all Alternatives provides measures to reduce soil erosion and maintain or enhance soil productivity.

Impacts on Air Quality

Management practices generally improve air quality throughout the planning areas. Though BLM's contribution to air pollution in the region is negligible, proposals to limit motorized vehicles to designated routes and allocations or special area designations that limit expansion of route networks will result in production of target pollutants at or reduced from current levels.

Impacts on Water Resources

Management practices proposed in all Alternatives are designed to promote or improve water production and water quality. Most water related issues in Arizona are a result of rapid population growth on non-BLM's lands. Though BLM's management actions can have only limited affects, proposals to manage motorized vehicles, management actions designed to improve vegetation cover, and actions to protect or enhance riparian vegetation communities are expected to improve or maintain water production and quality.

Impacts on Biological Resources

Management of riparian areas is a priority in all Alternatives. Various management alternatives are explored to balance the demands on riparian habitats with maintaining or enhancing their productivity. In all alternatives, limitations to motorized vehicles, implementation of Arizona Land Health Standards (ALHS), and management of recreation resources are designed to reduce disturbance to riparian areas and improve their functioning condition.

Management of desert tortoise habitat is a priority and most management actions are common to all alternatives. Actions designed to maintain or improve conditions for desert tortoise should help their populations and avoid their listing as threatened or endangered.

Impacts on Cultural Resources

Management of both planning areas places a priority on preservation of cultural resources. Several alternatives are explored to allocate various sites or areas to public use for interpretation and development. In all alternatives, management actions provide sufficient protection for cultural resources and varying levels of impacts to sites developed for public use.

Impacts on Paleontological Resources

Management actions are designed in all alternatives to protect fossil sites if they are discovered in the course of normal management activities.

Impacts on Recreation

Conflicts between recreation uses and other public land resources, sometimes even between different types of recreation uses, constitutes the most pressing issue on public lands in central Arizona. Each alternative attempts to address recreation management in ways that allow a variety of recreation activities throughout the planning areas. However, each alternative places a different emphasis on the type of recreation activities, motorized versus primitive non-motorized, that are managed for. Continuing to manage as we are now (*Alternative A*) would lead to continuing degradation of natural resources. *Alternative B* would increase management emphasis on well designed motorized recreation areas, while retaining non-motorized opportunities in some areas. *Alternative D* creates large areas managed primarily for primitive recreation uses, while retaining some areas available for more intensive motorized use. *Alternatives C* and *E* explore various mixes that attempt to meet the long term variety of recreation demand while reducing conflict with other natural resources and traditional public land users.

Impacts on Visual Resources

All alternatives explore allocations that minimize visual impacts while meeting demand for public land resources.

Impacts on Rangeland Management

Changes in livestock grazing will primarily result from implementation of the Arizona Standards for Rangeland Health and the Guidelines for Grazing Management. These changes would result from individual allotment evaluations to determine if the standards are being met and adjustments designed to meet the standards. At the RMP level, some reduction in AUMs might be required to achieve riparian management goals in some alternatives. *Alternative D* explores complete cessation of grazing in the area, which would potentially put as many as 100 livestock operators out of business.

Impacts on Mineral and Energy Resources

Development of mineral and energy resources within the planning area has been minimal. The alternatives explore progressively larger closures to mineral development. Impacts are generally expressed as a progressive reduction in the potential for development should mineral prices increase and mineable minerals be discovered. Sales of mineral materials as sand and gravel, boulders, and decorative rock, could be severely limited by management for desert tortoise and varying allocations for primitive recreation use, but it is expected that regional demand could be met from non-BLM lands.

Impacts on Fire and Fuel Resources

Though the alternatives explore varying allocations for large undeveloped areas, few impacts to management of fire suppression or fire use are anticipated.

Impacts on Wild Horses and Burros

Management within the two areas containing wild burros is not expected to change from current management. Burros in the Lake Pleasant Herd Management Area would continue at current numbers with occasional removal of animals to maintain herd numbers and remove nuisance animals. Burros in the Harquahala Herd Area would eventually be removed from public lands.

Impacts on Transportation and Public Access

The alternatives explore progressively increasing restrictions to motorized recreation and access which would result in a progressively reduced motorized route network and reduced motorized access. Within the national monument, each alternative explored specific route networks that reduce miles of motorized routes from the current 140 miles to as few as 47 miles (a 66.4 % reduction). Within the Bradshaw-Harquahala Planning Area, route modeling developed to simulate route decisions by alternative estimated variability of routes by alternative ranging from the currently available 2,240 miles of motorized route to as few as 1,644 miles of available route (a reduction of 29.5%).

Impacts on Wilderness Characteristics

Current management is expected to allow progressive degradation of areas with wilderness characteristics not already protected by Congressional Wilderness designation. Designated Wilderness will continue to be protected. The alternatives explore shifting emphasis from current management to large areas allocated to maintain or enhance wilderness characteristics. All alternatives explore differing mixes of allocations devoted to both motorized and non-motorized recreation, with *Alternative B* emphasizing motorized use and *Alternative D* emphasizing allocations to maintain or enhance wilderness characteristics.

Impacts on Social and Economic Conditions

Impacts to social and economic conditions from BLM management actions on a regional basis are small. Impacts could be severe on a local basis and the potential for loss of nearly 100 ranch businesses from grazing cessation in *Alternative D* could be catastrophic to individual families. Changes in mineral closures would not result in loss of current jobs or reduction in current economic development, but may result in opportunity costs for future mining possibilities.

Environmental Justice

Implementation of any alternative would not result in a disproportionate impact to any minority or low income group.

Cumulative Impacts

Cumulative impacts of each alternative are discussed for Population Growth and Development, Recreation/Visitation, Air Quality, Soils, Water Resources, and Wild Horse and Burro Management. Generally, the cumulative affect of BLM management activities in addition to the rapid population growth and urban expansion of central Arizona indicates the contribution of public land management to change in the region is very small. It was determined that BLM management activities are not expected to result in a cumulatively significant impact to the environment.

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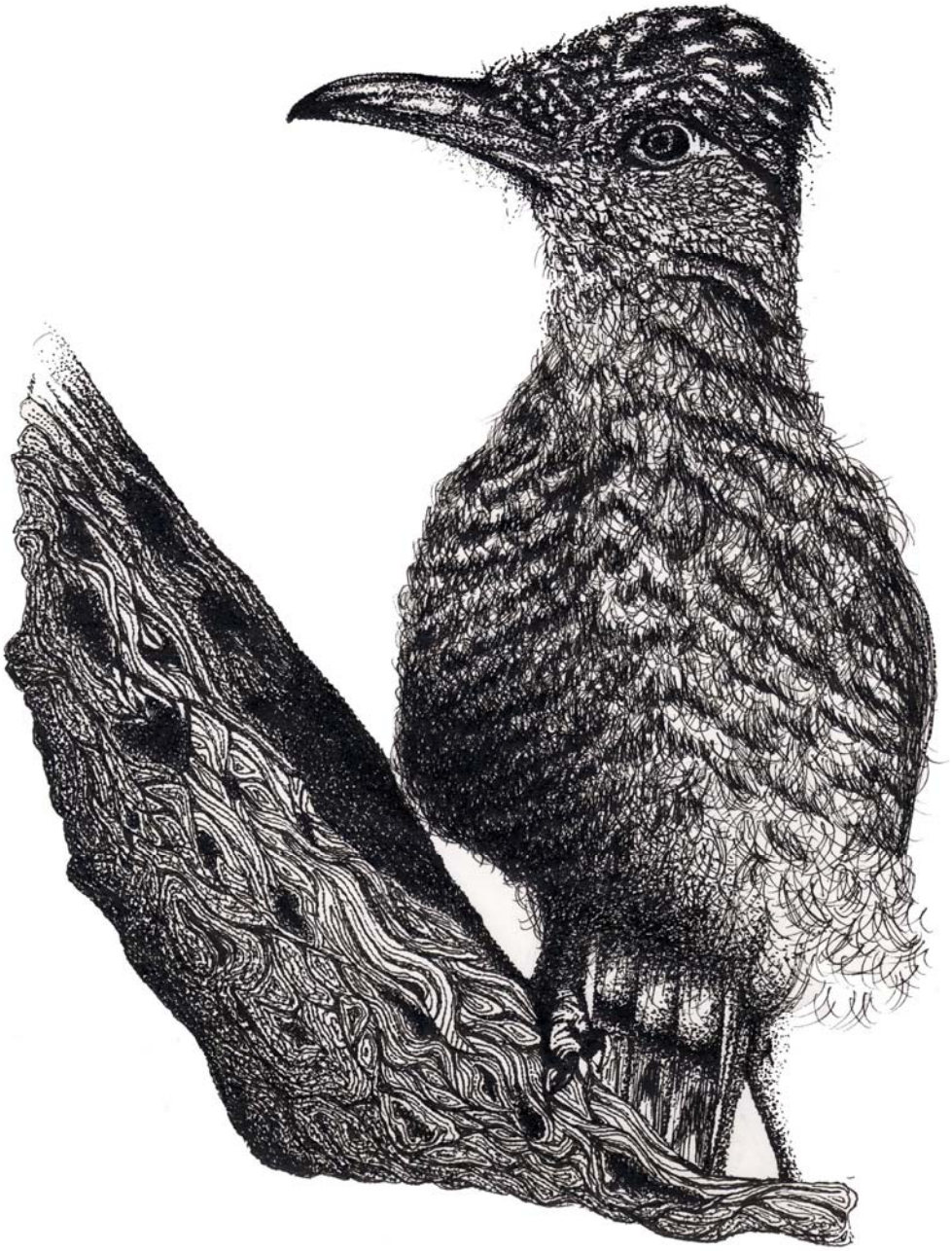
Chapter One



Chapter One - Introduction

1.1 Introduction

The Agua Fria National Monument Resource Management Plan (RMP), the Bradshaw-Harquahala RMP, and their joint Environmental Impact Statement (EIS) have been prepared to provide guidance on current and future management decisions for the Bureau of Land Management's (BLM) Phoenix Field Office (PFO). These plans represent the culmination of many months of planning on the part of BLM's PFO staff, BLM Arizona State Office staff, representatives of communities within the planning areas, cooperating and collaborating Government agencies, special interest and user groups, and several hundreds of concerned citizens. The decisions outlined in the pages that follow, as a distillation of the combined thought, effort, and research from all those involved, will enable BLM to manage the newly designated Agua Fria National Monument as well as other BLM's lands north and west of the Phoenix metropolitan area. These plans will also consolidate management decisions, now contained in several existing plans, in one comprehensive plan to guide BLM's management actions for years to come.

Combined, the planning areas encompass more than 3 million acres in a complex mosaic of land ownerships and jurisdictions. BLM manages the resources on 967,000 surface acres within these planning boundaries, including the entire 70,900 acres of Agua Fria National Monument. In addition, BLM retains subsurface (mineral) rights to 346,300 more acres within the planning area boundaries. Another 181,200 acres of subsurface mineral rights north and east of the planning areas are also addressed in this plan. The Agua Fria National Monument and Bradshaw-Harquahala RMPs/EIS are vital to creating a framework for future planning and decision-making within the context of such complex ownership.

The planning areas are rich in resources. Their unique public lands contain archaeological sites and artifacts unlike those anywhere else on earth; providing researchers with critical insights into the lifestyles of the people who first settled this region of the Southwest. The lands are home to pronghorn antelope, mule deer, white-tailed deer, bighorn sheep, mountain lion, black bear, javelina, countless native songbirds, migratory waterfowl; and endangered and special-status species, such as the bald eagle, southwestern willow flycatcher, and Sonoran desert tortoise, and native fish species including the Gila chub and desert pupfish. Vegetation throughout the area ranges from creosotebush in the desert flats to ponderosa pine at higher elevations. The varied panorama of mountains, mesas, canyons, grasslands, and high and low desert vistas provide thousands of residents and visitors each year with unparalleled recreation opportunities. Thousands of local residents rely on these lands for their livelihood through mining, grazing, and tourism. The Agua Fria National Monument is also a part of the BLM's National Landscape Conservation System, comprised of designated areas that preserve natural landscapes for public use and enjoyment.

As the population of the Phoenix metropolitan area continues to grow, BLM-administered lands within the planning areas will receive increasing pressure, especially for recreation uses. The management decisions set forth in these plans, after much deliberation on the part of BLM and its partners, provide the broadest possible consensus to wisely guide management of these valuable resources.

1.2 Purpose and Need

The purpose of the Agua Fria National Monument and Bradshaw-Harquahala RMPs is to guide future land management actions within the planning areas. These documents must not only give adequate guidance for management actions but also assure that actions comply with the National Environmental Policy Act (NEPA)

and Federal Land Policy and Management Act (FLPMA).

The need to prepare the RMPs has been established by three main factors:

- The Presidential Proclamation creating the national monument as a discrete management unit.
- The degree of urban expansion and population growth in and around the planning areas.
- The time that has elapsed since the last major planning that encompassed the planning areas.

The planning areas are now being managed under three land use plans (LUPs). While these plans include both planning areas, they also cover a much larger section of western and southwest Arizona. These plans are the *Phoenix RMP and EIS* (BLM 1988a); the *Lower Gila North Management Framework Plan* (BLM 1983); and the *Kingman Resource Area RMP and Final EIS* (BLM 1993a).

On January 11, 2000, President William J. Clinton signed Proclamation 7263 establishing Agua Fria National Monument (Appendix A). The signing of the proclamation represented "new or revised policy and changes in circumstances affecting the entire plan or major portions of the plan" (43 Code of Federal Regulations [CFR] 1610.5-6). The proclamation restates the need to develop plans for managing the monument. Later that year, the requirement to develop a stand-alone plan for managing all national monuments was affirmed and issued to all BLM's State offices in Instruction Memorandum 2001-022, Planning Guidance for National Monuments and National Conservation Areas (BLM 2000).

Additionally, Sections 201 (43 United States Code [USC] 1712) and 202 (43 USC 1713) of the Federal Land Policy and Management Act and Section 1610.5-6, Revised (43 CFR 1610.5-6) of BLM's regulations establish the requirement for plans to reflect existing conditions through maintenance or revision. A need for consolidating and revising the existing plans is revealed in the following:

- changes in BLM's planning process,
- growth and development in the planning areas, and
- changes in the environment of the Bradshaw-Harquahala Planning Area since completion of the last planning efforts.

An internal study completed in September 2000, which evaluated the Phoenix Field Office's land use plans, concluded that the plans had not adequately kept pace with changing conditions and needed to be revised to reflect the current land use and expected future conditions.

1.3 Planning Area and Map Setting

Agua Fria National Monument, 40 miles north of metropolitan Phoenix, encompasses 70,900 acres of BLM land and 1,444 acres of scattered private parcels. It is entirely within Yavapai County, Arizona, to the east of Interstate Highway 17 (I-17), northeast of Black Canyon City, and southeast of Cordes Junction (Map 1-1). The monument is being managed in accordance with the following:

- Proclamation 7263 (Appendix A), establishing Agua Fria National Monument.
- The *Phoenix RMP and Final EIS (BLM 1988a).*
- Department of the Interior Instruction Memorandum No. 2002-008, Interim Management Policy for Bureau of Land Management National Monuments and National Conservation Areas (BLM 2001a).
- Agua Fria National Monument Current Management Guidance (BLM 2002).

The Bradshaw-Harquahala Planning Area, encompassing 895,910 acres, is located within Maricopa, Yavapai, and La Paz Counties (Map

1-1). Adjoining the Phoenix metropolitan area, this planning area has recently experienced significant population growth. The population of Maricopa County increased by 35 percent in the last decade; during this same period the City of Peoria has annexed more than 59,000 acres, including more than 16,000 acres of BLM's land. The size of the City of Phoenix has increased by more than 19,000 acres, including nearly 700 acres of BLM's land. These are only two of the growing cities and towns expanding their borders toward and into the Bradshaw-Harquahala Planning Area. The increased pressure on public lands for recreation, rights-of-way, mineral rights, and other uses; resulting from urban expansion, requires BLM to readdress its land use plan decisions.

Scattered, isolated BLM-administered parcels are located outside the planning areas but within the BLM Phoenix Field Office's administrative district (Map 1-2). Combined, these parcels consist of 5,200 surface acres. In addition, BLM retains subsurface (mineral) rights on 181,200 acres of lands to the north and east of the planning areas (Map 1-2). Surface rights on these lands are held by the following entities:

- The Bureau of Reclamation.
- The State of Arizona.
- Counties (through Recreation and Public Purposes Act (R&PP) agreements).
- Private parties.

A summary of surface management acres within the planning areas is described in Table 3-2. Besides surface management acres, within the entire planning area there are 594,600 acres of BLM managed mineral estate with non-Federal surface ownership. Both the scattered parcels and subsurface lands are included in this plan because BLM remains responsible for managing them.

1.4 Process

1.4.1 Collaboration and Cooperation

Collaboration and cooperation are areas of emphasis in BLM's approach to the planning process. The main parties involved in these processes are the general public and interest groups, cooperating agencies, tribal governments, and collaborating agencies and groups. These participants, their roles, and impacts on the planning process are described below.

1.4.2 Community Collaboration and Community Vision

To establish valuable communication relationships before beginning specific planning, James Kent Associates (JKA), under contract to BLM, met with residents and community groups in or next to the planning areas. In addition to building communication networks for the formal planning process, JKA received citizens' inputs on issues and concerns related to BLM's land management practices and helped citizens gain a better understanding of the land use planning process. JKA's staff informally visited with residents in the following settings:

- in community settings,
- in civic and social group meetings, and
- in the communities of Wickenburg, Yarnell, Buckeye, Tonopah, Castle Hot Springs, New River, Black Canyon City, Cordes Junction, Mayer, Dewey, Humboldt, Prescott Valley, and Phoenix.

Contacts were also made in Flagstaff and Prescott, Arizona.

Once established, communication networks served as an integral link between BLM, citizens, and communities by fostering interest and participation in the planning process. When BLM's managers and staff communicate and collaborate with communities on RMPs and planning issues, the plans are considerably more successful than those prescribing a process or those that do not consider the issues, needs, insights, assets, or resources of local communities.

To begin preparing the Agua Fria National Monument and Bradshaw-Harquahala RMPs and EIS, a series of workshops for both scoping and development of the Alternatives described in Chapter 2 and in the Introduction, were held in central community locations. The series of informal meetings provided the citizens and the BLM's managers with time to reflect on the local issues between discussions. At the same time, citizens' interests were viewed side by side with BLM's management concerns, allowing planners to integrate management concerns with community interests in ways that fostered collaboration and; more importantly, shared land stewardship.

These workshops let citizens do the following:

- refine issues,
- discuss visions for BLM's lands, and
- begin exploring alternative ways to manage BLM's lands and resources.

BLM considered citizen's input, from both groups and individuals, as they developed the Alternatives. Additionally, citizens could submit formulated Alternatives as well as vision statements for specific community areas or resources. These ideas were also considered in the range of Alternatives, and analyzed in the EIS.

The BLM's planning process has fostered the climate for effective community visioning of the future in relationship to public lands. In many cases those visions have been integrated into local, regional, and other planning efforts. Those visions have thus expanded the value of the collaborative environment supported by the BLM's planning process.

Overall, the collaborative environment has resulted in open communication. Additionally, this environment has created an increased sense of public ownership of the following:

- the planning process,
- the decisions that result from it, and
- the importance of collaborative stewardship as a strategy for implementation.

1.4.3 Community Vision Statements

As part of an extensive community collaboration throughout the planning process, several communities prepared community vision statements. These statements played an integral role in the developing of the overall vision for these plans. The following are the vision statements developed by each community. These statements are presented not as an endorsement by BLM, but rather to show the interrelationship between BLM's lands and the people who live, who work, and who recreate around these lands. These statements do not reflect the visions of all members of the community. They are the collective thoughts of citizens who chose to participate in the planning process. Furthermore, certain vision statements propose actions that are beyond the scope of BLM's legal authority.

1.4.3.1 Black Canyon City

The ultimate desire of the citizens of Black Canyon City is the preservation of the rural nature of our community and the natural beauty of our surroundings. Coincidental to that desire is the retention of open space to be used for designated public recreational activities. The community would like a sufficient amount of BLM lands surrounding the town dedicated to future development of public trails, nature preserves, and riparian areas. A sufficient amount of land would be a minimum depth of

five miles from the private property lines around the community. The State Trust Lands within that area would be purchased by BLM for inclusion in the designated open space.

The community would like the viewshed protected from the town to the mountaintops in all directions. Limiting further commercial or residential development will also help protect the limited water supply in our area. In support of these considerations, many residents have expressed an interest in working with BLM and other communities to assure continued protection, cleanliness, access, and enjoyment of the public lands in our area.

1.4.3.2 Castle Hot Springs

Our community has a vision to maintain our remote yet reachable lifestyle, yet we also recognize that recreational use will increase and needs to be accommodated. This is not only an enforcement issue for the BLM, Yavapai and Maricopa counties, and the City of Peoria, but also an increasing social issue for our community. With this in mind, our community embraces the following as a means to maintain our way of life, as well as deal with increased outside pressure:

- *Existing, historically described roads on BLM land must be mapped, legally described, and dedicated so as to ensure that residents and property owners can continue to access and use their lands into perpetuity.*
- *We need to seriously consider a recreational-user fee, earmarked for the local community, imposed on non-residents to help fund the substantially increasing costs associated with recreational uses.*
- *Existing roads (whether public, private, or easement) located in areas subject to occasional inundation will be exempt from permitting requirements for continued maintenance in this area.*
- *In considering changes in the use of private property in this area, the county or city will not be permitted to consider federal goals and objectives for the surrounding property.*
- *All federal lands in the Lake Pleasant area are to be treated the same as private property with regard to obtaining new or perfecting existing legal and physical access.*
- *Mineral rights retained by BLM in this area under private property will be transferred gratis to the surface owners.*
- *We want a community-based stewardship group to proactively plan and later provide expertise, labor, and cultural wisdom with BLM on all recreational uses, including but not limited to non-motorized and motorized trails.*
- *Many of the existing water wells are in the "younger alluvium" as currently defined by recent case law.*
- *Encourage the re-establishment of a northern loop road around Lake Pleasant linking to Table Mesa Road at I-17 for health/safety/welfare purposes.*
- *Target shooting needs to be encouraged in appropriate and safe areas. Our community is willing, as a stewardship group, to counsel BLM on appropriate areas for target shooting.*
- *Encourage appropriate discreet cell-site development to provide for better law enforcement telecommunications.*

1.4.3.3 Dewey Humboldt - Friends of the Agua Fria River Basin

Our vision is based on the overwhelming grassroots support for retaining public lands for open space made during BLM's scoping comment process. Imagine living here a half a century from now. What would we like our public lands and our communities to look like? The following vision is written as if today is in the year 2050. It describes what can be seen and what took place back in 2003 to make that a reality. Please share in this dream for the future. In the year 2050, we envision the following:

The BLM Bradshaw-Harquahala Planning Area (including the local communities of Dewey, Humboldt, Mayer, Spring Valley, and Cordes Lakes) represents preserved and protected tracks of open space that have sustained their natural health, diversity, and productivity throughout the first half of the 21st century. These tracts of land are crowded by an uncontrolled urban sprawl. This development explosion stretches from Phoenix to Black Canyon City and continues toward the west and north along the highway corridors to Prescott and Flagstaff. The Agua Fria National Monument and the expanded BLM lands in the Cordes Junction, Mayer, Dewey, and Humboldt areas (referred to as the Upper Agua Fria Basin) are the only open space areas along major roadways. Not surprisingly, these open spaces have been a significant factor in maintaining the rural character within a large section of central Arizona.

BLM continues to work with the Yavapai County Board of Supervisors to support a staunch conservation of the natural and human ecological relationships within the county. The Bradshaw-Harquahala Planning Area has become a showcase of ecological and rural community sustainability. It provides numerous recreational opportunities for the large and growing urban areas within the state of Arizona, as well as examples of sound traditional agricultural enterprises. These multiple uses of the land include protection of human antiquities, continued environmentally sustainable ranching, hunting, fishing, hiking, equestrian use, bird watching, planned off-road vehicle access, wild river designations, and ecologically responsible mining.

BLM has continued to successfully manage these lands to preserve water flow and water recharge. They have done this by ensuring that all riparian tributaries and supporting uplands feeding the Agua Fria River and monument have remained in their natural state. Wildlife habitat (and corridors) has been identified and protected predominately through the expansion of lands under BLM supervision. This expansion of BLM lands took place almost half a century ago (around 2003-04). At that time, all lands originally identified for disposal under the old management plan were reclassified and retained as open space under federal ownership.

BLM then furthered their commitment to protecting open space for multiple uses by either forming partnerships with state and other federal agencies, or directly acquiring wide strips of land on either side of the existing BLM lands within Yavapai County. This allowed BLM to successfully buffer their original parcels from development and encroachment. It is interesting to note that in the early part of the 21st century BLM honored the wishes of the people they served (to keep public land public and to protect open space). This visionary and courageous action resulted in preserving a large section of central Arizona for the native flora and fauna, as well as the use and enjoyment of many generations of Arizonans.

1.4.3.4 New River

The Bradshaw-Harquahala Planning Area maintains the wild and scenic character of today, while continuing to provide an array of public opportunities in the future for visual resources, water, education, recreation, and exploration within the framework of a healthy, properly functioning landscape. This does include grazing and/or other commercial endeavors, if they are consistent with and support the overall vision. Emphasis is on maintaining the scenic views and recreational opportunities while protecting the watershed function.

1.4.3.5 Wickenburg

The Wickenburg Outdoor Recreation Committee seeks to establish a system of world-class equestrian trails surrounding Wickenburg that will buffer the area from Phoenix valley urban sprawl, and preserve the open space value of the local landscape. The area of this trail system will afford a multitude of opportunities for all recreational enthusiasts, and serve to enhance the lifestyles of all community members.

1.4.4 Collaborating Agencies and Other Stakeholder Groups

A variety of entities played a vital role in the planning process. These collaborating groups did the following:

- attended meetings,
- made databases and information available,
- provided peer reviews, and
- helped develop Alternatives.

These included people from the following organizations:

- Arizona Game and Fish Department (AGFD),
- Arizona Department of Transportation (ADOT),
- Maricopa County,
- Yavapai County,
- City of Phoenix,
- City of Peoria,
- Tonto National Forest,
- Prescott National Forest, and
- Luke Air Force Base.

Representatives from the following organizations also met to discuss issues directly related to future communication right-of-way needs:

- American Tower Corporation,
- Campbell A&Z, LLC,
- Phoenix Planning Department;
- Crown Castle,
- Delta Group International,
- Ironwood Real Estate for Verizon Wireless,
- QWEST Wireless LLC,
- Tierra Right-of-Way,
- T-Mobile, and
- West & Company.

Representatives from the following organizations met to discuss future utility rights-of-way (ROW) needs:

- Arizona Public Service (APS),
- Bureau of Reclamation, Arizona Projects Office,
- Phoenix Planning Department,
- El Paso Natural Gas Company,
- Kinder Morgan,
- Salt River Project (SRP); and
- Southwest Gas.

Representatives from the following organizations met to discuss future transportation right-of-way needs:

- ADOT,
- City of Peoria, Phoenix Planning Department,
- Phoenix Street Transportation Department,
- Copland Associates,
- Federal Highway Administration,
- Maricopa Association of Governments,
- Town of Buckeye, and
- Yavapai County.

1.4.5 Tribal Coordination and Consultation

During the scoping period, BLM began consulting with Indian tribes who have oral traditions or cultural concerns relating to the planning areas, or who are documented as having occupied or used portions of these areas during historic times. These tribes include the following:

- Fort McDowell Yavapai Nation,
- Yavapai-Prescott Tribe,
- Yavapai-Apache Indian Community at Camp Verde,
- Hopi Tribe,
- Gila River Indian Community,
- Salt River Pima-Maricopa Indian Community,
- Ak-Chin Indian Community,

- Tohono O'odham Nation,
- Colorado River Indian Tribes, and
- Fort Mojave Indian Tribe.

The planning areas include tribal lands near Prescott, administered by the Yavapai-Prescott Tribe.

Tribal leaders were first contacted by certified mail. Copies of that contact letter were also sent to tribal cultural heritage program leaders and specialists. Follow-up contacts included meetings, field tours, and presentations to representatives of tribal heritage programs. Tribal consultation is ongoing and will continue throughout the planning process.

1.4.6 Cooperating Agencies

U.S. Council on Environmental Quality (CEQ) regulations, which are contained in 40 CFR 1501.6 and 1508.5, implement the NEPA mandate that Federal agencies responsible for preparing NEPA analysis and documentation do so "in cooperation with State and local governments," and other agencies with jurisdiction by law or special expertise (42 USC 4331(a), 4332(2)). In support of this mandate, BLM invited a broad range of local, State, tribal, and Federal agencies to attend a series of meetings with the aim of developing Memoranda of Understanding (MOU) that would establish cooperating agency status with BLM. Cooperating agency status allows interested agencies to assume responsibilities beyond attending public meetings, and to both review and comment on plan documents.

MOUs describe the responsibilities of BLM and the cooperating agency during the planning process. For example, city and county planners are particularly well acquainted with methods for predicting growth patterns within their communities. A city or a county government may be willing to share that expertise and would do so through the support of a cooperating agency MOU. To date, the ADOT, AGFD, Yavapai County, Tonto National Forest, Prescott National Forest, City of Peoria, and Luke Air Force Base each have MOUs in some stage of completion from draft to signed, agreeing to become cooperators for the Agua Fria National Monument and Bradshaw-Harquahala RMP and EIS.

1.5 Mission and Goals

BLM's mission is to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

In keeping with its mandate for developing multi-use management plans, BLM developed overall goals for both the Agua Fria National Monument and the Bradshaw-Harquahala Planning Areas. These goals support a rich variety of public experiences, while simultaneously providing for long-term protection of the natural resources within each planning area. The goals for each planning area have been carefully developed in consideration of BLM's overall mission and with careful regard to the communities and groups that will be affected by future BLM management's decisions for the planning area.

1.5.1 Agua Fria National Monument

The Agua Fria National Monument was created to protect an array of cultural, historical, biological, geological, and hydrological objects. These objects, both individually and collectively, in the context of the natural environment that supports and protects them; are referred to as “monument objects,” “monument resources,” or “monument values” throughout this document.

Purpose, significance, mission, and goal statements clarify the intent of the monument’s proclamation and are used to shape the development of this Draft Plan and EIS. The purpose statement clarifies why the monument was set aside as a unit for special management. The significance statement addresses what makes the area unique. Lastly, the mission and the goal statements reflect ideal conditions which managers should strive to attain. The

BLM developed goal statements for the Bradshaw-Harquahala Planning Area based on management principals identified by FLPMA of 1976, as amended.

1.5.1.1 Purpose

Agua Fria National Monument was established to preserve and protect, for present and future generations, its exceptional scientific and historic resources. These qualities, defined as objects in the monument's proclamation (Appendix A), include the following outstanding characteristics:

- Archaeological remnants of prehistoric villages, rock art, agricultural systems, and other sites that composed one of the few remaining systems of prehistoric pueblo communities in central Arizona during the period A.D. 1250 to 1450.
- A cultural landscape that encompasses several hundred archaeological sites of diverse types within an undeveloped setting. These resources provide outstanding opportunities for scientists to study the interrelationships among prehistoric communities in their social and environmental contexts.
- Historic sites that reveal the progression of ranching and mining in a rugged area that posed environmental challenges to early settlers.
- A diverse set of topographic features that support an expansive mosaic of semi-desert grassland, transected by ribbons of rare and valuable riparian forest.
- A diversity of vegetation communities and water sources that provide habitat for a wide array of wildlife species, including pronghorn and other sensitive species such as the lowland leopard frog, the Mexican garter snake, the desert tortoise, and four species of native fish.

1.5.1.2 Significance

Agua Fria National Monument includes a large portion of the Perry Mesa Archaeological District, which is listed on the National Register of Historic Places. The district was established to recognize and protect a particularly well-preserved system of prehistoric communities that were inhabited between A.D. 1250 and 1450.

The spatial interrelationships among hundreds of irreplaceable archaeological sites are preserved on the monument's landscape. These resources offer unprecedented opportunities for scientific research, public education, and the preservation of ancestral sites and heritage values that are important to Indian tribes.

The monument contains a large component of the Agua Fria watershed, with free-flowing reaches of perennial streams and associated riparian zones that have become rare environmental features in Arizona.

The Agua Fria River, which crosses the monument through rolling hills and the Agua Fria River Canyon, has been determined to be suitable for designation to the National Wild and Scenic Rivers System (WSR) by virtue of its outstandingly remarkable scenic, cultural, and wildlife values.

The mesas support one of the largest undeveloped expanses of desert grassland in Arizona. Herds of pronghorn, which are at risk in much of Arizona, inhabit these grasslands. The monument offers valuable opportunities for sustaining these important resources and for the scientific study of grassland ecosystems, environmental changes related to the effects of wildfires, and the use of prescribed fires to achieve resource management objectives.

The mesas, canyons, and streams support an uncommon diversity of vegetation communities that provide habitat for sensitive wildlife species including desert tortoise, lowland leopard frog, Mexican garter snake, common black hawk, Gila chub, longfin dace, speckled dace, and Gila Mountain sucker.

Despite its closeness to urban areas, the monument contains remote, primitive areas that offer excellent opportunities for solitude and the appreciation of outstanding scenic values.

Several remote canyons are oases that feature springs and unusually lush growth of riparian plants and rare species.

1.5.1.3 Mission

BLM will protect and sustain the extraordinary combination of cultural, natural, and scientific resources within Agua Fria National Monument and, to the extent consistent with resource protection, will provide opportunities for scientific research, public education, recreation, and other activities compatible with resource protection.

1.5.1.4 Goals

Natural and cultural resources and associated values are protected, restored, and maintained in good condition and managed within the broader context of ecosystems and cultural landscapes. The protection of cultural, biological, and physical resources, which the monument was created for, receives the highest priority in project planning and the management of resources and land uses.

Cultural resources are protected and managed for scientific, heritage, and educational values. Selected archaeological sites are developed for public visitation and interpreted to explain how humans have used and modified the desert grasslands over the past 2,000 years.

Diverse habitats, vegetation communities, and corridors of connectivity are conserved, and restored to sustain a wide range of native species. Special status and sensitive species are protected and recovered to support viable populations.

The Agua Fria River and its tributaries are managed to sustain and enhance their free-flowing character, water quality, and associated riparian values.

As a focus of scientific studies, the monument supports the following:

- relevant research priorities in the natural and social sciences,
- interdisciplinary studies, and
- the development of effective resource management strategies.

Decisions about resource and visitor management are based on scientific information.

Visitors have opportunities to view scenic vistas, wildlife, and archaeological sites through a variety of appropriate and sustainable activities. The preservation of natural quiet and primitive settings is emphasized in zones possessing these values. The public receives the information needed to ensure safe and enjoyable experiences.

Facilities, such as parking areas and trails, are developed so they ensure visual enjoyment and public safety, while protecting monument values.

The public understands and appreciates the purpose and significance of Agua Fria National Monument and the benefits of protecting its resources for present and future generations.

BLM respects valid existing rights and manages authorized uses and facilities to protect monument resources.

BLM enters into active partnerships with local and regional communities, Government agencies, Indian tribes, academic institutions, and organizations. These partnerships foster management practices that protect resources, support communities, and promote public education. Volunteers significantly contribute to resource protection, scientific studies, and public outreach.

1.5.2 Bradshaw-Harquahala Planning Area

Within the Bradshaw-Harquahala Planning Area is an opportunity to support the development of sustainable ecosystems with long-term productivity. This opportunity allows local communities to identify with and have a

relationship with the surrounding landscape. This sense of community also extends to the public wishing to escape the urban environment and enjoy the rural qualities and sense of solitude within this planning area. In addition to this sense of solitude, this planning area offers abundant multi-use opportunities. These opportunities include an array of increasingly popular recreation activities, along with more traditional or historical uses, which need to be managed to avoid degrading the land and its resources. Establishing and encouraging a sense of stewardship among each of its many users will ensure availability of all resources for future generations.

1.5.2.1 Goals

In cooperation with community partners and collaborating agencies, BLM has developed the following list of overall management goals for the Bradshaw-Harquahala Planning Area:

- Engage communities and encourage partnerships with those who have a stake in the management and protection related to resource management in the planning area, and provide opportunities for public education, volunteerism, visitation, and enjoyment of resources in a manner consistent with resource protection.
- Form partnerships in cooperative managing adjacent and intermingled lands.
- Provide for cooperative management of contiguous public lands for recreation, as well as maintaining and restoring wildlife habitats.
- Support public understanding, enjoyment, and appreciation of these resources, and promote visitor safety.
- Work with communities and other interests to meet the need for resources, and infrastructure for growing communities in the planning area.
- Manage lands to contribute to the social, economic, and environment health and sustainability of communities.
- Develop opportunities and encourage thoughtful use, social responsibility, and stewardship of BLM-administered lands.
- Restore and maintain the natural environments that characterize a healthy, unfragmented landscape.
- Support a diverse, flourishing community of plants and wildlife.
- Restore and maintain the area's capacity to capture, store, and safely release water.
- Retain the scenic quality of the area as a legacy for current and future generations of residents and visitors.
- Sustain a diversity of recreation benefits and opportunities, while minimizing harm to natural and cultural resources.

1.6 Planning Issues

1.6.1 Introduction to the Scoping Process

For this planning effort BLM emphasized compliance with the public involvement requirements in the following:

- CEQ regulations in 40 CFR 1501.7
- FLPMA Section (a) of 43 USC 1713
- BLM regulations in 43 CFR 1610.2

The process also followed the provisions of Executive Order 12898 ("Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations") and later BLM's guidelines in Instruction Memorandum 2002-164 on environmental justice.

Several procedures encouraged public participation in the scoping process. Public outreach began before the planning actions were initiated, by publishing the Notice of Intent (NOI) in the *Federal Register* on April 24, 2002 (67 FR 20148). This outreach established lines of communications with a spectrum of community and user groups in and around the planning areas. These lines of communication facilitated public participation when the RMP planning requirements were defined. This activity is explained in detail in the Community Collaboration and Community Vision section of

this chapter. Planning bulletins, including sections specific to soliciting public input, were periodically distributed throughout the planning process.

The formal scoping process began with the publication of the NOI, and ended on November 15, 2002. The NOI briefly described the project and announced BLM's intent to develop RMPs for both Agua Fria National Monument and the Bradshaw-Harquahala Planning Area. Although there is a formal end date to the public comment period in this initial scoping phase, BLM's policy is to accept public comments and other input throughout the planning process. Results of the formal scoping phase are included as Appendix B.

1.6.2 Issues and Management Concerns

Issues were identified for both planning areas through a combination of the following:

- public input,
- BLM's knowledge of the land and management requirements, and
- coordination with local Native American tribes and with Federal, State, and local agencies.

These issues were summarized in the *Scoping Report for the Agua Fria National Monument/Bradshaw-Harquahala Planning Areas* (Jones & Stokes 2003), which was released to the public through a variety of means. Also included in the scoping report were the outcomes of coordination with local Native American tribes and Federal, State, and local agencies. Table 1-1 lists issues that reflect the scope of planning decisions addressed in the formulation of the Alternatives in Chapter 2. Table 1-2 also lists management issues that reflect the scope of planning decisions addressed in Chapter 2.

1.7 Laws, Regulations, Policies, Planning Criteria, and Existing Land Use Plans

The BLM's planning process is governed by Federal Land Policy and Management Act (FLPMA) (43 USC 1711) and 43 CFR 1600, which governs the administrative review process for most BLM's decisions. Land use plans ensure that BLM-administered public lands are managed in accordance with the intent of Congress as stated in FLPMA and under the principles of multiple use and sustained yield. As required by FLPMA, public lands must be managed in a manner that protects the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values; that, where appropriate, preserves and protects certain public lands in their natural condition and provides food and habitat for fish and wildlife and domestic animals; and provides for outdoor recreation and human occupancy and use by encouraging collaboration and public participation throughout the planning process. In addition, public lands must be managed to help meet our Nation's needs for domestic sources of minerals, food, timber, and fiber from public lands.

Land use plans are the main mechanism for guiding BLM's activities to achieve the mission and goals outlined in the BLM's Strategic Plan (BLM 1997). The Agua Fria National Monument and Bradshaw-Harquahala Planning Area RMPs were produced in accordance with Federal statutes and regulations (Appendix C). The selected planning approach is consistent with the requirements in FLPMA and BLM regulations, as most currently defined in the revised BLM's *Land Use Planning Handbook* (H-1601-1). The process also complies with the set of instruction memoranda, information bulletins, and other BLM's manuals, handbooks,

and strategic plans that embody the most current BLM's business practices on conduct of the process and the content of any resulting documents.

As part of the BLM's planning process, resource specific Strategic Plans are developed at the national level that establish the overall direction for programs within the BLM. These plans are guided by the requirements of the Government Performance and Results Act of 1993, cover a 5 year period, and are updated every 3 years. They are consistent with FLPMA and other laws affecting the public lands.

Several management plans, programmatic documents, and standards and guidelines were considered in the preparing the RMPs. These documents include the following:

- *Phoenix Resource Management Plan* (BLM 1988a);
- *Lower Gila North Management Framework Plan* (BLM 1983);
- *Kingman Resource Management Plan* (BLM 1993);
- *Arizona Standards for Rangeland Health and Guidelines for Grazing Administration* (BLM 1997);
- *Arizona Statewide Wild and Scenic Rivers Legislative Environmental Impact Statement* (BLM 1994b); *and*
- *Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air quality Management* (BLM 2004).

BLM has examined these documents not only to ensure proper integration and compliance, but also to determine which information is still suitable for including in the RMPs and which decisions are still valid and can be carried forward into the RMPs being prepared. BLM has also considered activity plans that have been tiered off these land use plans. These activity plans may need to be revised to conform to the new RMPs.

1.8 Relationship to Other Plans

Title II, Section 202 of FLPMA guides BLM's land use planning coordination with Native American tribes, other Federal departments, State agencies, and local governments. BLM is instructed to do the following:

- stay informed of State, local, and tribal plans;
- ensure that it considers these plans in its own planning; and
- help resolve inconsistencies between such plans and BLM's planning.

The provisions of this section of FLPMA are repeated in Section 1610.3 of BLM Resource Management Planning regulations.

In keeping with the provision of this section, BLM informed State, local, and tribal officials of the planning process through the previously described mailings and meetings. The following is a list of plans reviewed during the Agua Fria National Monument and Bradshaw-Harquahala planning efforts.

- *Prescott National Forest Proposed Action: Forest Plan Amendment*, November 2001.
- *Wildlife 2006: The Arizona Game and Fish Department's (AGFD) Wildlife Management Program Strategic Plan for the Years 2001-2006,* Finalized January 22, 2001.
- *Maricopa Association of Governments: Desert Spaces Environmentally Sensitive Development Areas (ESDA) Policies and Design Guidelines*, June 2000.
- *Maricopa County 2020, Eye to the Future Comprehensive Plan*, Adopted October 20, 1997, Revised August 7, 2002.
- *Maricopa County Mobile Planning Area Land Use Plan*, Adopted August 12, 1991.
- *Yavapai County General Plan*, Adopted April 7, 2003.
- *City of Peoria General Plan*, December 2002.

- *City of Phoenix General Plan*, Adopted December 5, 2001.
- *Town of Wickenburg General Plan*, Adopted 1988.
- *Town of Buckeye General Development Plan*, Adopted September 18, 2001.
- *Town of Prescott Valley General Plan*, Adopted January 17, 2002.
- *Management Plan for the Sonoran Desert Population of the Desert Tortoise in Arizona, Arizona Interagency Desert Tortoise Team*, December 1996.
- *Desert Pupfish Recovery Plan*, 1993.
- *Final Recovery Plan, Southwestern Willow Flycatcher*, August 2002.
- *Southwestern Bald Eagle Recovery Plan,* 1982.
- *Draft Gila Topminnow Revised Recovery Plan,* 1998 (original approval: March 15, 1984).
- *Spikedace Recovery Plan,* 1991.

Chapter Two

Chapter 2 - Alternatives

2.1 Introduction

The purpose of this chapter is to present the combinations of public land uses and resource management practices that address issues identified during the scoping process. This chapter describes in detail the No-Action (current management) Alternative and four Action Alternatives for the Agua Fria National Monument and the Bradshaw-Harquahala Planning Areas (Map 1-1). Each Alternative varies in both perspective and intensity of management. In addition, each Alternative consists of a set of land use allocations and management actions needed to implement the Alternative. The components of each Alternative are later reviewed for potential environmental impacts. The results of this review are presented in *Chapter 4*.

In addition to the Agua Fria National Monument and Bradshaw-Harquahala Planning Areas, this document addresses several scattered, isolated parcels of BLM-managed Federal lands, even though they are not within either planning area. These scattered parcels, shown in (Map 1-2), are discussed in detail in the Management Common to All Action Alternatives section of this chapter.

This document analyzes management goals and objectives that BLM is proposing for Federal lands under our authority. However, lands under the jurisdiction of BLM are not always under complete Federal ownership. These lands, referred to as "split estate" lands, can be managed by BLM in accordance with the goals and objectives stated here only to the extent that the public has direct ownership of the land.

Split estate lands limit BLM's ability to manage for minerals, visual resources, wildlife habitat and surface occupancy. When reviewing this document or using any final land use plan prepared by BLM, the reader is advised to research land status to determine the extent of BLM's control and to ascertain the extent to which a land use plan may be applicable to a particular parcel of land. There is a total of 594,600 split estate acres with Federal mineral ownership and non-Federal surface ownership. Out of this total, 181,200 acres are outside the planning areas to the north and east (Map 2-1).

Each Alternative represents a general theme; in that, the actions to implement its land use allocations have been selected to promote a unifying theme. However, all allocations and associated actions must meet BLM's overarching principles of multiple use and sustained yield. The complete management guidance for each Alternative includes management from the Management Common to All Action Alternatives section that follows the detailed discussions of *Alternatives B, C, D, and E*. Please pay particular attention to the definitions of allocations, Desired Future Conditions (DFC), and management actions that apply to all Alternatives. The complete management of any Alternative must include the actions in the Management Common to All Action Alternatives section of this chapter.

Alternative A Current Management:
Alternative A is the current management situation for both the Agua Fria National Monument and the Bradshaw-Harquahala Planning Area. *Alternative A* will serve as a baseline for most resource and land use allocations. The current management Alternative contains the decisions guiding BLM's management today. This Alternative is often called the No-Action Alternative because it represents the way BLM would manage within the planning areas if the Resource Management Plan/Environmental Impact Statement (RMP/EIS) effort were not conducted. These decisions have been organized to make them as consistent as possible with the way the "action" *Alternatives B, C, D, and E,* have been organized. This organization will provide the reader with an approach to compare current management with that suggested in each Alternative.

Alternative B Management for Increased Recreational Use: *Alternative B* plans for increased public use and includes more recreation-related development, consistent with protecting monument resources. *Alternative B* also allows visitation and development within the Bradshaw-Harquahala Planning Area while ensuring that resource protection is not compromised.

Alternative C Management for Use and Landscape Protection: *Alternative C* would give visitors opportunities to experience the natural landscapes and cultural resource setting of the monument. Generally, *Alternative C* would impose more restrictive decisions than would *Alternative B*. In the Bradshaw-Harquahala Planning Area *Alternative C* would put more emphasis on identifying and protecting undeveloped landscapes than *Alternative B.*

Alternative D Management for Primitive Landscape Protection: *Alternative D* emphasizes protecting undeveloped, primitive landscapes in the monument, resulting in limited public use and the withdrawal of authorized grazing. In the Bradshaw-Harquahala Planning Area *Alternative D* emphasizes natural landscapes and non-motorized recreation, with more management dedicated to maintaining primitive recreation opportunities than under the other Alternatives.

Alternative E Management for Use and Resource Sustainability: *Alternative E* is a combination of elements selected from the other Alternatives that were later studied and further refined. *Alternative E* is BLM's Preferred RMP Alternative. This Alternative is designed to respond most comprehensively to each of the issues and management concerns identified in the planning process. BLM has determined that the management actions in *Alternative E* would provide the optimal balance between authorized resource use and the protection and long-term sustainability of sensitive resources within the planning areas.

The Alternatives presented in this chapter address the Agua Fria National Monument Planning Area first, followed by the Bradshaw-Harquahala Planning Area. To facilitate development and presentation of management scenarios, the planning areas have been divided into distinct geographical units called Management Units (MUs). In size and planning scale, Agua Fria National Monument is itself a Management Unit. The MUs within the Bradshaw-Harquahala Planning Area provide a geographic orientation and a community focus for management. These units roughly correspond to the Community Resource Units (CRUs) that were mapped as part of the collaborative planning process, with boundaries adjusted to include areas of resource management challenges in those units.

Special Area Designations Used in this Document

Several designations within the national monument and specific MUs distinguish the land use under various Alternatives.

Special Area Designations - The following are special area designations for protecting one or more sensitive resources:

- Areas of Critical Environmental Concern (ACEC), which include:
    - Outstanding Natural Areas (ONAs): ACECs that contain unusual natural characteristics and are managed mainly for educational and recreation purposes.
    - Research Natural Areas (RNAs): ACECs that contain natural resources of scientific interest and are managed mainly for research and educational purposes.
    - Biological or Cultural ACECs: ACECs that contain cultural or biological resources that are of at least regional significance and are mainly managed to preserve these values.

- An ACEC could contain combinations of the

aforementioned values and be managed to simultaneously preserve or enhance all resources within it.

- Wilderness Areas - Areas designated by Congress as wilderness and added to the National Wilderness Preservation System.
- Wild and Scenic Rivers (WSRs) - River systems that meet eligibility requirements may be designated by Congress to protect their scenic beauty and quality of habitat.
- Back Country Byways - Routes designated because of the scenic quality of the landscape or interpretive opportunities for various levels of vehicular travel.
- National Recreation Trails - The National Trail System Act of 1968 (Public Law 90-543) authorized creation of a national trail system comprised of National Recreation Trails, National Scenic Trails, and National Historic Trails. National Recreation Trails may be designated by the Secretary of Interior to recognize exemplary trails of local and regional significance.

Land Use Allocations Used in This Document

In addition to the special area designations described above, several allocations were used to focus management in certain areas to address particular resource needs. The following is a list of the allocations used:

- Wildlife Habitat Areas (WHAs) – General areas that are managed to enhance the habitat of one or more wildlife species.
- Special Cultural Resource Management Area (SCRMA) - An area containing cultural resources that are of special importance for public use, scientific use, and traditional use or other uses as defined in BLM's Manual 8110.4.
- Special Recreation Management Areas (SRMAs) - Areas of intensive recreation use that will be managed to retain the recreation opportunities while protecting other resources and reducing user conflicts.
    - Recreation Management Zones (RMZs) - Areas within SRMAs with particular recreation management focus or resource challenges.
        - Front Country RMZ - Recreation management zone where management will focus on maintaining multiple types of access for recreation and interpretive opportunities.
        - Back Country RMZ - Recreation management zone where managemen t will focus on maintaining the natural landscape and primitive recreation opportunities.
        - Passage RMZ - Recreation management zone that provides for motorized access and vehicle-based activities such as dispersed camping through the Back Country RMZ.
- Extensive Recreation Management Areas (ERMAs) - Areas that are not allocated to SRMAs are allocated to ERMAs. These are areas where recreation management is limited to custodial actions.
- Lands Allocated to Maintain or Enhance Wilderness Characteristics - Areas that contain resource values of naturalness, outstanding opportunities for solitude and primitive, unconfined recreation where maintaining these values represents a major management focus.
- Visual Resource Management Classes (VRM) - These allocations are

to establish standards for managing visual change to the landscape when management or development activities are proposed. The VRM Classes and standards are described in section 2.7.1.8 discussion of the Management Common to All Action Alternatives.

- Off Highway Vehicle allocations of Open, Closed, and Limited (OHV) - All BLM's lands will be allocated to one of these levels of OHV use as described in the BLM's Land Use Planning Handbook H-1601-1, Appendix C II D.

These land use allocations are described in detail for all the Alternatives. Areas within the MUs that are not afforded special management by the designations and allocations described above will be administered according to the management actions in the Management Common to the Bradshaw-Harquahala Planning Area and in the Management Units sections of this chapter.

2.2 Alternative A (Current Management)

Current management or the No-Action Alternative for each planning area describes the management decisions within existing management plans that would continue if no new decisions were made to alter them.

2.2.1 Agua Fria National Monument

BLM prepared an interim management policy for newly designated BLM national monuments (Instruction Memorandum No. 2002-008) following the signing of Proclamation 7263 (Appendix A) on January 11, 2000. In general, actions that are not precluded by the proclamation and do not conflict with the purposes of the monument may continue. Allowed activities can be restricted only under the following conditions:

1. BLM, through processes required by law, recognizes places where such uses should be restricted or prohibited to protect the Federal lands and resources, including the objects protected by the monument designation; or
2. BLM finds a clear threat from such a use to the Federal lands and resources, including the objects protected by the monument designation, and the circumstances call for swift protective action.

In May 2002, BLM released the Agua Fria National Monument Current Management Guidance (BLM 2002). This document is a compilation of management decisions from previously approved management documents, analysis of those decisions in the context of the proclamation, and the Interim Management Policy for BLM's National Monuments and National Conservation Areas (NCAs) (Instruction Memorandum 2002-008) (BLM 2001a). The guidance describes the following by resource:

- Management decisions that conform to relevant plans and may be implemented.
- Decisions that do not conform and may not be implemented.
- Decisions that require further consideration and are analyzed within this RMP/EIS.

This guidance gives BLM the direction necessary to inform the public about ongoing uses and activities acceptable within the monument. The Current Management Guidance is a temporary document that will be replaced by the RMP developed through this planning process. The guidance includes the valid decisions and management actions brought forward from planning documents in use at the time of the proclamation. These documents include the following:

- *Phoenix Resource Management Plan (BLM 1988a).*
- *Arizona Standards for Rangeland Health and Guidelines for Grazing Administration (BLM 1997).*
- *Arizona Statewide Wild and Scenic Rivers Legislative Environmental Impact Statement* (BLM 1994b).
- *Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air quality Management (*BLM 2004).
- *Statewide Plan Amendment of Land-Use Plans in Arizona for Implementation of Arizona Standards for Rangeland Health and Guidelines for Grazing Administration* (BLM 1997b).

Several activity plans have been developed for the area that is now within the Agua Fria National Monument. They formulate more detailed decisions than the plans listed above and, where they are not in conflict with decisions made in this new plan, will continue to be valid. Any decisions from the following plans listed in this document are implementation level decisions.

- *Black Canyon Habitat Management Plan* (revised) (BLM 1993b).
- *Black Canyon Tobosa Grassland Prescribed Burn Environmental Analysis* (BLM 1993c).
- *Coordinated RMP for the Horseshoe Ranch Grazing Allotment* (BLM 1998).

Following are the management decisions from existing plans and guidance documents that are relevant to Agua Fria National Monument.

2.2.1.1 Special Area Designations

Under *Alternative A*, two ACECs and suitable wild and scenic river segments would remain under current management. These areas are listed below and shown in Map 2-2. In addition to the special area designations, the map shows the location of the Perry Mesa National Register District, which extends onto the Tonto National Forest and is listed on the National Register of Historic Places.

Areas of Critical Environmental Concern

Larry Canyon ACEC (80 acres)

Management Actions

Close to motorized vehicles.

Prohibit livestock grazing.

Prohibit Land Use Authorizations.

Withdraw 80 acres from Mineral Entry.

Prohibit surface occupancy for oil and gas development.

Perry Mesa ACEC (9,580 acres)

Would limit motorized vehicles to designated roads and trails.

Acquire 8,484 acres of State and private lands.

Wild and Scenic Rivers

The Agua Fria River segments, which have been determined to be suitable for WSR status and described in the Arizona Statewide Wild and Scenic Rivers Legislative EIS, would be managed in a way that does not degrade the values defining their suitability.

2.2.1.2 Lands and Realty

Land Tenure Adjustments

All lands and interests in lands within Agua Fria National Monument would be retained in Federal public ownership. The RMP evaluates the opportunities for acquiring non-Federal lands within or next to the monument that could protect or enhance management of monument resources. Any acquired lands and interests within the monument's boundary would be added to the monument.

Federal lands and interests in lands within the monument are withdrawn from all new forms of entry, location, selection, sale, leasing, or other disposition under the public land laws, including the mineral leasing and mining laws.

Utility and Transportation Corridors and Communication Sites

Existing right-of-way corridors from previous plans would be modified, removed, or remain the same (Map 2-3). No new or widened transportation corridors would be designated within the monument.

Existing utility rights-of-way in the monument would be modified, removed, or maintained in accordance with BLM's agreements with utility providers for as long as the demand exists for the utility. New rights-of-way might be permitted within existing rights-of-way, and where site-specific National Environmental Policy Act (NEPA) analysis determines that impacts would be negligible on the values for which the monument was designated. Maintaining existing facilities would be permitted, subject to compliance with current policies and practices, provided that monument resources are protected.

Applications for rights-of-way or ancillary public facilities will be evaluated and processed under existing policies and practices, and as needed, for access to private inholdings, public facilities, or administrative sites.

BLM might consider applications for new facilities if they determine that such facilities will protect or enhance monument resources.

Land Use Authorizations

Any land use authorizations, if applicable, would be managed in accordance with valid existing rights granted before the monument was designated. Land use authorizations will be evaluated to ensure compatibility with protecting monument resources. Some activities will be allowed to continue if they are not precluded by the proclamation and do not conflict with monument resource management objectives.

Applications, proposals, and future use requests that were pending when the monument was created, are subject to the terms of the proclamation, including its recognition of valid existing rights and other management directives and decisions for the monument. Maintaining existing facilities would be permitted, subject to compliance with current policies and practices, provided that monument resources are protected.

2.2.1.3 Soil, Air, and Water Resources

Soil cover and productivity would be maintained or improved through erosion prevention and land treatments.

Activity plans for maintaining or promoting appropriate ground cover would be implemented. These plans would provide for infiltration, permeability, soil moisture storage, and soil stability suitable for ecological sites.

Watershed improvement projects would be implemented to increase ground cover and reduce erosion.

BLM would ensure that mitigation is considered during project planning to prevent or reduce impacts to air quality.

Water rights, subject to valid existing rights, would be reserved in an amount sufficient to fulfill the purpose for which the monument was established. BLM's management actions to protect water resources would include the following:

- Implementing activity plans to maintain and enhance stream flows.
- Developing activity plans to ensure that all water meets or exceeds Federal and State water quality standards.
- Reducing impacts to water quality by implementing mitigation measures during project construction.

2.2.1.4 Biological Resources

The following decisions relative to management of biological resources were extracted from current planning documents:

- Designate Larry Canyon ACEC (Map 2-2).
- Improve the Agua Fria River riparian corridor.
- Implement grazing management practices that protect wildlife species and their habitats, in accordance with 1997 *Arizona Standards for Rangeland Health and Guidelines for Grazing Administration* (Land Health Standards)
- Continue to transplant native fish species into suitable sites.
- Modify fences to allow wildlife movement.
- Develop new water sources.
- Conduct prescribed burns to restore native grasses and improve pronghorn habitat.
- Use native species when restoring or rehabilitating disturbed or degraded rangelands. Non-native plants may be used under limited circumstances in accordance with the Land Health Standards and Guidelines.
- Modify existing agreements with the Animal and Plant Health Inspection Service (APHIS) animal damage control, specifically targeting individual predators rather than predator populations.
- Coordinate with AGFD on hunting and fishing policies to ensure public safety, especially if there are areas of increased visitor use.
- Continue existing noxious weed control. Exotic species would not be introduced unless doing so is essential for controlling noxious weeds or other undesirable species.
- Plant cottonwood and willow along the Agua Fria River and its tributaries.
- Prohibit firewood collection where it might affect wildlife habitat.
- Acknowledge that scientific investigations are important to increasing our understanding of monument resources. However, investigations should avoid surface disturbance.
- Prohibit vegetation chaining and other vegetation manipulation methods that cause substantial surface disturbance.

The following Biological Opinions and Conference Opinions address endangered species management within the planning areas:

- [2-21-88-F-167] The Phoenix Resource Management Plan/EIS.
- [2-21-96-F-421] The Lower Gila North Management Framework Plan (1983), and Lower Gila North Grazing EIS.
- [2-21-96-F-422] The Eastern Arizona Grazing EIS, Phoenix District Portion.
- [2-21-99-F-031] Reintroduction of Gila Topminnow and Desert Pupfish into Three Tributaries of the Agua Fria River.
- [2-21-03-C-409] Existing Phoenix Resource Management Plan for the Agua Fria National Monument.

2.2.1.5 Cultural Resources

BLM would continue to coordinate with Tonto National Forest in managing cultural resources in the Perry Mesa National Register District, which encompasses the areas of Perry Mesa (including the significant archaeological sites in Perry Mesa ACEC), Black Mesa, and the Agua Fria River Canyon. The boundaries of the Perry Mesa National Register District and Perry Mesa ACEC are shown in Map 2-2.

BLM would coordinate with State Government, tribes, and other governmental entities (under existing agreements and any new arrangements deemed necessary) to disseminate and exchange information and cooperate in management actions consistent with legal authorities and other directives that guide BLM.

Current interim management guidance acknowledges that, although scientific, archaeological, and historical investigations are important to increasing our understanding of monument resources, surface disturbance should be avoided.

BLM would implement protective actions, including placing signs and barriers at sites and repairing vandalism-caused damage at sites.

Professional and avocational archaeologists would continue to conduct resource inventories and site recordings with BLM's approval.

2.2.1.6 Paleontological Resources

No significant paleontological resources are known to exist within the monument. Any newly found resources would be managed under existing BLM's policies and guidance.

2.2.1.7 Recreation Resources

Suitable signs would be placed at the monument's boundaries and other relevant information would be posted as needed. BLM would initiate actions to interpret the monument's resources and provide environmental education to visitors on important topics (e.g. visitor safety and resource protection). Management discretion would be exercised, when needed, through emergency closures or other actions to protect the monument's resources.

Current recreation uses would continue, including hiking, target shooting, viewing prehistoric sites, and dispersed recreational camping (with a 14-day limit). Collecting any objects, including fossils, rock specimens, and archaeological artifacts would be allowed by permit only for legitimate scientific uses documented by BLM.

2.2.1.8 Visual Resources

No Visual Resource Management allocations were made in previous planning documents. In the absence of VRM standards established through planning, VRM Class III standards have been applied throughout the planning area.

2.2.1.9 Rangeland Management

Land Use Allocation

Where applicable, livestock grazing would be permitted within the national monument, pursuant to the terms of existing permits and leases. There are currently 11 grazing leases on 10 range allotments.

Livestock grazing would be prohibited in the Larry Canyon ACEC (Map 2-2).

Desired Future Condition

In the monument (as in all properly managed grazing pastures), proper grazing management practices are followed to protect diverse and productive plant communities and the proper functioning condition of riparian areas.

Watersheds are in properly functioning conditions, including their upland, riparian, and aquatic components. Soil and plant conditions support infiltration, storage, and release of water that are in balance with climate and landform.

Ecological processes are maintained to support healthy biotic populations and communities.

Management Actions

New water sources might be developed if monitoring or other data reveal a need.

Fence construction and maintenance will follow guidance provided in BLM's Handbook for Fencing H-1741.

All previous versions of the grazing administration regulations have been succeeded by the Department of the Interior's *Final Rule for Grazing Administration*, issued in 1995, which requires implementing standards and

guidelines to achieve the fundamentals of rangeland health. The *Arizona Standards for Rangeland Health and Guidelines for Grazing Administration* (BLM 1997a) (discussed in sections 2.7.1.1 Land Health Standards and 2.7.1.9 Rangeland Management of Management Common to All Action Alternatives of this chapter) were completed in 1997.

2.2.1.10 Mineral Resource Management

All Federal minerals would remain withdrawn from all forms of location, sale, or leasing, including withdrawal from the following:

- Location, entry, and patent under the mining laws.
- Disposition under all laws relating to mineral and geothermal leasing.
- Disposal under the Mineral Materials Act.

Mineral interests may be exchanged if the exchange furthers the protective purposes of the monument. Any mineral interests acquired by the United States within the monument would be reserved as part of the monument and would be subject to the withdrawals listed here.

For lands encumbered by mining claims, no activity beyond casual use, as defined in 43 CFR 3809, would be allowed without a determination of valid existing rights.

2.2.1.11 Fire Management

Prescribed burning would continue to be conducted on the national monument to achieve the following:

- Eliminate invasive species.
- Reduce the abundance of woody species.
- Restore and increase production of native grasses.
- Increase the production and vigor of perennial grasses, annual grasses, and forbs.
- Improve pronghorn antelope habitat.

Full suppression of wildfires would continue in the monument.

2.2.1.12 Resource Conservation Areas and Multiple Resource Management Areas

One RCA and two MRMAs would remain under current management under *Alternative A*. These areas are listed below, with applicable management decisions, and shown on Map 2-4.

- Black Canyon RCA (115,650 acres).
- Cordes Junction MRMA (10,810 acres) - An activity plan would be developed; surface occupancy of oil and gas leases would be prohibited in riparian zones; land use authorizations would be prohibited in riparian areas; motorized vehicles would be limited to existing roads and trails; and non-BLM land would be acquired.
- Sycamore Creek MRMA (3,820 acres) - An activity plan would be developed; surface occupancy of oil and gas leases would be prohibited in riparian zones; land use authorizations would be prohibited in riparian areas; motorized vehicles would be limited to existing roads and trails; and non-BLM land would be acquired.

2.2.1.13 Transportation and Public Access

Consistent with Proclamation 7263 (Appendix A) and the Purpose and Significance of Agua Fria National Monument, no areas in the monument would be authorized for cross-country, off-road vehicular use, except for authorized administrative and emergency purposes. Motorized and mechanical vehicular uses would occur only on existing routes (Map 2-1).

Larry Canyon ACEC (80 acres) would be closed to motorized vehicles.

Perry Mesa ACEC (9,580 acres) would limit motorized vehicles to designated roads and trails.

2.2.2 Bradshaw-Harquahala Planning Area

The Bradshaw-Harquahala Planning Area is managed in accordance with the Phoenix RMP (BLM 1988a) and the Lower Gila North Management Framework Plan (MFP) (BLM 1983). Additionally, management decisions in the Kingman RMP (BLM 1993a) and the Phoenix RMP cover the scattered parcels that are addressed in this planning effort but are located outside the planning area.

The Phoenix RMP divided the planning area into smaller management units, each with a particular management focus. Cooperative Recreation Management Areas (CRMAs) had significant recreation values and were recognized by county and State Governments as important areas for intensive recreation uses. Resource Conservation Areas (RCAs) were developed to consolidate public lands by acquiring State and private parcels with resources that would benefit from public owners. Multiple Resource Management Areas (MRMAs) were managed with an emphasis on balancing the use of several resources, including grazing, recreation, and biological and cultural resources.

The following are the management decisions from the three plans that are relevant to the Bradshaw-Harquahala Planning Area:

2.2.2.1 Special Area Designations

Under *Alternative A*, five wilderness areas and one back country byway would remain under current management. These areas and byway are listed below.

- Big Horn Mountains Wilderness - 21,000 acres.
- Harquahala Mountains Wilderness - 22,880 acres.
- Hassayampa River Canyon Wilderness - 11,840 acres.
- Hells Canyon Wilderness - 9,900 acres.
- Hummingbird Springs Wilderness - 31,200 acres.
- Harquahala Mountain Summit Back Country Byway.

The wilderness areas are shown on Map 1-1 and the back country byway is shown on Map 2-5.

2.2.2.2 Lands and Realty

Land Tenure Adjustments

All public land that has been found to be potentially suitable for disposal (Map 2-6) by sale meets the criteria in Section 203 (a)(1) of the Federal Land Policy and Management Act of 1976 (FLPMA). The section states, "...such tract because of its location or other characteristic is difficult and uneconomical to manage as part of the public lands and is not suitable for management by another Federal department or agency." These lands would be disposed of at fair market value, excluding lands that would be disposed to local governments under the Recreation and Public Purpose Act (R&PPA). Lands which are potentially suitable for disposal will be subject to valid existing rights. A total of 54,370 acres have been found to be potentially suitable for disposal.

Other land tenure adjustments include the following:

- Retain public lands (surface and subsurface estate) in the Black Canyon and the Lake Pleasant RCAs.
- Consolidate public ownership and intensively manage lands in these two RCAs.
- Pursue acquisition of all State land in the two RCAs on a case-by-case basis.
- Acquire through exchange any non-Federal mineral estate underlying Federal surface holdings in the two RCAs.

- Acquire up to 29,360 acres of State land and 2,140 acres of private land in the Lake Pleasant Cultural Resource Management Area.
- Acquire up to 5,846 acres of State and private lands in the Cordes Junction MRMA.
- Acquire up to 39,433 acres of State and private lands in the Bumble Bee MRMA.
- Acquire up to 23,346 acres of State and private lands in the Williams Mesa MRMA.
- Acquire State land along 4 miles of the Hassayampa River in the Hassayampa River Riparian Management Area (RMA).
- Acquire up to 23,388 acres of State and private lands in the Lake Pleasant Burro Herd Management Area (HMA).
- Acknowledge that the State indemnity selection process has been completed. Lands identified in the RMP are no longer eligible for exchange in that process but may still be open to exchange through other actions with the State or with private entities.
- Identify for disposal all subsurface mineral estate underlying Federal surface designated for disposal outside the two RCAs and the Cultural Resource Management Areas.
- Recommend lands for disposal.
- Change from retention to disposal the parcel in the northern half of T11N, R3E, Section 17.

Utility and Transportation Corridors and Communication Sites

All major utilities would be routed through designated corridors (Map 2-7). Additionally, right-of-way permits would be issued to promote the greatest use of existing right-of-way routes, including joint use whenever possible.

Within the Black Canyon RCA, the Black Canyon utility corridor, designated by the Phoenix RMP (BLM 1988a), would be retained (Map 2-7). It is a multi-use utility and transportation corridor that includes the Interstate 17 right-of-way and other utility lines. The western portion of the corridor is located within the Bradshaw-Harquahala Planning Area.

The multiple-use corridors along existing rights-of-way designated in the Lower Gila North MFP (BLM 1983) (eight of which are within the Bradshaw-Harquahala Planning Area) would be retained, as shown in Table 2-1.

Table 2-1. Use Corridors within Lower Gila North Planning Area

Corridor Name	Width
a. Central Arizona Project (Granite Reef Aqueduct)	One mile
b. Wenden–Wickenburg	One mile
c. Parker–Liberty	Two miles
d. Mead–Phoenix	Two miles
e. Wickenburg-Yarnell	One mile
f. Palo Verde–Devers	Two miles (restricted between Burnt Mountain and Big Horn Mountains)
g. Palo Verde–Westwing	Two miles
h. El Paso Natural Gas Company	Two miles (One mile at Bill Williams River crossing)

The withdrawal application that involves the Central Arizona Project with the Water and Power Resources Service (now the Bureau of Reclamation) would be reviewed. The withdrawal application should be changed to include only areas absolutely necessary for the project. Otherwise the withdrawal application should be lifted, and a right-of-way should be issued for the project.

Small utility distribution systems would continue to be developed on an as-needed basis throughout the planning area. These small distribution systems would include all uses such as electrical lines, gas and water pipelines, and access roads. These distribution systems would

be authorized when consistent with environmental and land use considerations.

Whenever possible, communication sites would be placed on lands identified for disposal. Development of communication facilities on land to be retained in public ownership would be limited to designated communication sites. The current designated communication sites are listed below and would be retained:

- The 50-acre White Tanks Communication Site at T3N, R3W, Sections 27 and 28 that is located outside the RCAs.
- The repeater and microwave site on Harquahala Mountain in T6N, R10W Sections 31 and 32, or T6N, R11W Section 36, but restrict the development to one or two multi-user buildings.

Land Use Authorizations

Continue to issue land use authorizations (rights-of-way, leases, permits, and easements) on a case-by-case basis and in accordance with decisions established in the Phoenix RMP (BLM 1988a).

Continue to allow small utility distribution systems to be developed on an as-needed basis throughout the planning area. These small distribution systems would include all uses such as electrical lines, gas and water pipelines, and associated access roads. These small distribution systems would be authorized when consistent with environmental and land use considerations.

Prohibit land use authorizations in riparian areas in the Hassayampa River RMA and the Bumble Bee and Williams Mesa MRMAs.

2.2.2.3 Soil, Air, and Water Resources

BLM would take the following measures:

- Incorporate salinity control measures into erosion prevention strategies and rehabilitation treatments.
- Ensure the legal availability of water and maintain adequate flows in springs on BLM-administered lands within the Arrastre Creek, Antelope Creek, Weaver Creek, and Harquahala Mountains areas (now wilderness with Federal water rights).
- Initiate strategies for assuring spring flows.
- Maintain and enhance stream flows through activity plans in special management areas.

2.2.2.4 Biological Resources

Design the development of springs and seeps, or other projects affecting water and associated resources, to protect ecological functions and processes.

Cooperate with the AGFD to acquire water rights to maintain or enhance spring and riparian habitats in the planning unit. Specific sites would be determined in a Habitat Management Plan (HMP) to achieve the goals stated in this plan.

Map 2-8 shows the distribution of desert night lizards, Arizona night lizards, and Sonoran Mountain king snakes. Use 43 CFR 3809 (Surface Mining Regulations) to minimize habitat disturbance of these species during new road building associated with mining. New mining plans of operations would provide for closing new roads, when and where needed, to prevent recreation disturbance to night lizard and king snake habitats. Wood collecting would be limited in the Weaver Mountains, particularly along Antelope, Weaver, Arrastre, Cottonwood, and Yarnell Creeks.

Reduce the competition for cover, water, and space among big game, livestock, and burros by decreasing livestock aggregations and removing all burros at waters in the Big Horn, and Harquahala Mountains.

Bighorn sheep lambing areas and a 2-mile buffer zone (20,000 acres) in the Harquahala Mountains would be protected from habitat and behavioral disturbances resulting from (a) land disposal, (b) excess fencing, (c) structure building, (d) land clearing and wood cutting; (e) mining between December 15 and April 15 (within the framework of 43 CFR 3809), (f) road building, (g) intense recreation use and development; (h) rights-of-way construction and maintenance, and (i) more than 40 percent utilization of key browse.

Starting in FY 1983, the significant botanical areas in Arrastre Creek (650 acres), Antelope Creek (600 acres), Weaver Creek (150 acres), and the Harquahala Mountains (7,000 acres) would be protected from habitat disturbances resulting from (a) building of structures, (b) land clearing, (c) mining, (d) road building, and (e) building and maintaining rights-of-way. A grazing system that would prevent intensive livestock use of riparian habitat would be implemented.

Significant cliffs, shown as Raptor Areas in Map 2-5, and a 2-mile zone of influence in the Big Horn Mountains and the Vulture Mountains area would be protected from (a) land disposal, (b) excess fencing, (c) building of structures, (d) land clearing or removal of downed wood or wood cutting, (e) reducing or modifying mining activities to the extent possible under the 43 CFR 3802 and 43 CFR 3809 mining regulations, (f) road building, (g) intense recreation use or development, (h) burro overuse, and (i) rights-of-way construction and maintenance. Special protection in these areas would be provided for disturbances resulting from human activities between February 1 and May 1 of each year.

Protection zones for golden eagle nests would not exceed ¼-mile radius unless a special need for a larger protection zone is determined. These zones would be created on a case-by-case basis.

2.2.2.5 Cultural Resources

Reduce or eliminate indirect impacts from land uses on cultural resources as identified through study plots.

Select cultural resources for allocation through inventory for scientific uses.

Conserve for future use a representative sample of site types in the planning area.

2.2.2.6 Recreation Resources

CRMAs would be jointly developed in master plans between BLM and cooperating agencies. Within the current planning area, CRMAs would include Lake Pleasant and the Black Canyon Trail.

BLM would continue to protect and interpret the Harquahala Peak observatory site.

An interpretive corridor would be established with signing along the Stanton-Octave-Yarnell Road. The signing would begin at the Stanton-Octave turnoff from Highway 89, east to Stanton and then north to Yarnell (T10N, R5W, Sec. 30). Signing would include the identification of creeks, geologic features, and botanic values. Directional signing would be incorporated into the recommended interpretive corridor.

2.2.2.7 Visual Resources

No VRM standards were applied in either the Phoenix RMP (BLM 1988a) or the Lower Gila North MFP. In the absence of management standards established through planning, VRM Class I standards would be applied to designated wilderness and VRM Class III standards would be applied throughout the remaining planning area. Acres of VRM Classes are shown in Table 2-2 and are portrayed on Map 2-9.

Table 2-2. Visual Resource Management Classes by Alternative (BLM acres)

Class	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred)
I	96,820	96,820	109,570	298,310	98,820
II	0	486,800	502,610	340,880	488,250
III	870,180	284,720	260,020	220,790	278,540
IV	0	98,660	94,800	107,020	103,390

For descriptions of the VRM standards, please refer to the Visual Resources discussion of the Management Common to Both Planning Areas section of this chapter.

Public lands in T10N, R4W, Section 26 of the Gila and Salt River Baseline and Meridian would be managed for scenic values (Placerita Mining Camp area).

The public lands in T8N, R5W, Section 12 would be managed for scenic values (Box Canyon).

2.2.2.8 Rangeland Management

Land Use Allocation

Where applicable, livestock grazing would be permitted, under the terms of existing permits and leases. The planning area has 93 grazing authorizations and the existing grazing seasons of use would continue.

Desired Future Condition

Watersheds are in properly functioning condition, including their upland, riparian, and aquatic components. Soil and plant conditions support infiltration, storage, and release of water that are in balance with climate and landform.

Ecological processes would be maintained to support healthy biotic populations and communities.

Management Actions

All previous versions of the grazing administration regulations have been succeeded by the Department of the Interior's Final Rule for Grazing Administration, issued in 1995. This rule requires the implementing of standards and guidelines to achieve the fundamentals of rangeland health. The *Arizona Standards for Rangeland Health and Guidelines for Grazing Administration* (discussed in the Land Health Standards and Rangeland Management/Grazing sections of Management Common to All Action Alternatives of this chapter) were completed in 1997. The existing allotment boundaries are shown on Map 2-5.

Management would emphasize the use and perpetuation of native species. However, when restoring or rehabilitating disturbed or degraded rangelands; nonintrusive, non-native plant species would be suitable for use where native species:

- are not available,
- are not economically feasible,
- cannot achieve ecological objectives as well as non-native species, and/or
- cannot compete with already established non-native species.

2.2.2.9 Mineral Resource Management

The mineral resources managed by the BLM's Phoenix Field Office (PFO) include more than minerals underlying BLM-managed surface areas. Mineral resource management includes thousands of acres of subsurface mineral estate beneath lands with surface rights held by others. The Bradshaw-Harquahala Planning Area includes surface acres managed by the PFO and presenting the most serious management challenges at the time. However, for this RMP, the minerals planning area is much larger. It is defined as the federally administered minerals beneath PFO-managed lands that are not planned for within the Sonoran Desert National Monument RMP or Phoenix South RMP revisions, and where the surface rights are held by BLM, the State of Arizona, or private parties. Therefore, the minerals planning area, as shown on Map 1-2, extends far to the north and east beyond Agua Fria National Monument and the Bradshaw-Harquahala Planning Area boundaries. Map 2-10, shows areas of current minerals management within the Agua Fria National Monument and the Bradshaw-Harquahala Planning Area.

Management Actions

Leasable Minerals

Restrict any actions or withdrawal in the planning area that would segregate leasable minerals unless there is strong evidence that the area is not conducive to mineralization.

All land in the planning area would remain open to mineral leasing. Should exploration or development of leasable minerals be pursued, special stipulations would be incorporated into the lease agreement after the results of site-specific environmental assessments for each action are known.

Mineral withdrawals within ACECs are subject to valid existing rights. The ACEC would be closed to mineral leasing effective on the date they were created. Unless stated otherwise, non-Federal lands acquired within an ACEC will be closed to the operation of the mining laws, and expired leases may not be renewed.

Surface occupancy for oil and gas development would be prohibited in riparian areas of the Bumble Bee and Williams Mesa MRMAs, and the Hassayampa RMA.

Federally administered minerals beneath lands addressed in this plan, where the surface rights are held by BLM, the State of Arizona, or private parties (Map 2-10), would be open to exploration and leasing.

Saleable Minerals

Sales of mineral materials to the public would continue to be administered on a case-by-case basis under 43 CFR 3600. Generally, saleable minerals are sold at market prices. Free-use permits would continue to be issued to the State and local communities as the need arises.

Mineral withdrawals within ACECs are subject to valid existing rights. The ACEC would be closed to mineral sales effective on the date they were created. Unless stated otherwise, non-Federal lands acquired within an ACEC will be closed to the operation of the mining laws.

Demand for saleable minerals will be met by sales or free use permits on a case-by-case basis.

Allow development of sites for saleable minerals where they do not conflict with Wilderness Study Areas (WSAs) or proposed ACEC designations.

Federally administered minerals beneath lands addressed in this planning effort, where the surface rights are held by BLM, the State of Arizona, or private parties (Map 2-10) would be open to mineral material disposal on a case-by-case basis, with determinations based on consistency with BLM's management policies and objectives.

Locatable Minerals

Exploration for and development of locatable minerals are provided for under the 43 CFR 3802 and 43 CFR 3809. These regulations provide for mineral development in conjunction with resource protection and are designed to prevent unnecessary and undue degradation of the environment from mining. Mining within the planning area would continue to be administered on a case-by-case basis. The planning area would generally be left open to mineral location and development.

Mineral withdrawals within ACECs are subject to valid existing rights. The ACEC would be closed to mining claim location upon approval of the plan creating the ACEC. Unless otherwise stated, non-Federal lands acquired within an ACEC would be closed to the operation of the mining laws. Mining claims within an ACEC may be examined for validity and contested if appropriate, as determined by the BLM State Director. The Lower Gila MFP (BLM 1983) recommended withdrawal of proposed ACECs from mineral entry. This recommendation was not implemented.

Minimize detrimental impacts of mineral exploration and development to habitat in the 2000-acre basin east and south of Harquahala Peak. Use surface protection measures as outlined in 43 CFR 3802 and 43 CFR 3809. Require a Mining Plan of Operation for all mining operations proposing to disturb 5 acres or more. Require performance bonds from all owner/operators to prevent unnecessary and undue degradation. Review leaching operations for environmental and human safety by the State Mine Inspector before commencement or upon suspension of the operator's license in accordance with Arizona Revised Statute (ARS) 27-303.

Federally administered minerals beneath lands addressed in this planning, where the surface rights are held by BLM, the State of Arizona, or private parties (Map 2-10) would be open to exploration and leasing.

2.2.2.10 Fire Management

Wildfire responses would be full suppression in all areas. Full suppression means taking sustained and appropriate action to promptly suppress wildfires.

2.2.2.11 Wild Horses and Burros

In 1971, following the passage of the Wild Free-Roaming Horse and Burro Act (WHBA), BLM was required to designate areas where wild horses and burros existed before 1971. No wild horses are known to have been within either the monument or the Bradshaw-Harquahala Planning Area in 1971.

BLM manages burros on public land at the minimum level needed to ensure the herd's free-roaming character, health, and self-sustaining ability. Burro Herd Areas (HAs) and Herd Management Areas (HMAs) are shown on Map 2-5.

BLM classified the Lake Pleasant Area as a HMA and the Harquahala Mountains as a HA with a "zero burro population." The latter decision was based on conflicts in the area with private landowners, agricultural interests, wildlife such as bighorn sheep, and other resources. A zero burro population required removing all burros from the mountain range. Funding, however, was not provided and the burros have not yet been removed. Nuisance burros would be removed on a case-by-case basis.

Managing the 80,800-acre Lake Pleasant Burro HMA would continue in the manner described in the current herd management plan. In the 156,255 acre Harquahala HA, nuisance burros would continue to be removed on a case-by-case basis. If funding is received, burros would be removed from the HA.

2.2.2.12 Resource Conservation Areas and Multiple Resource Management Areas

Two RCAs, one RMA, and three MRMAs would remain under current management under *Alternative A*. These areas are listed below with management decisions and shown on Map 2-4.

- Black Canyon RCA (115,650 acres).
- Lake Pleasant RCA (297,080 acres).
- Bumble Bee MRMA (52,270 acres) - Develop an activity plan; prohibit surface occupancy of oil and gas leases in riparian zones; prohibit land use authorizations in riparian areas; limit motorized vehicles to existing roads and trails; acquire land.
- Cordes Junction MRMA (10,810 acres) - Develop an activity plan; prohibit surface occupancy of oil and gas leases in riparian zones; prohibit land use authorizations in riparian areas; limit motorized vehicles to existing roads and trails; acquire land.
- Williams Mesa MRMA (59,740 acres) - Develop an activity plan; prohibit surface occupancy of oil and gas leases in riparian zones; prohibit land use authorizations in riparian areas; close 3.5 miles of Tule Creek to motorized vehicles, elsewhere limited to existing roads and trails; and acquire land.
- Hassayampa River RMA - 12 miles.

Vulture Mine Road from Highway 60 south to the Vulture Mine would be designated as a scenic drive, including a scenic 1/2 mile corridor on either side of the road.

BLM would interpret, through signing; the existing scenic, geologic, and botanic values in T6N, R5W, Section 6.

Motorized vehicles would be limited to existing roads and trails in the Cordes Junction MRMA. A total of 3.5 miles of Tule Creek would be closed to motorized vehicles. However, in the Williams Mesa MRMA, motorized vehicles would be limited to existing roads and trails.

Motorized vehicles would be limited to existing roads and trails in the Hassayampa River RMA.

2.2.2.13 Transportation and Public Access

Land Use Allocation

OHV Designations (Map 2-11)

Within the area covered by the Phoenix RMP (BLM 1988a), vehicular travel would be limited to existing roads and motorized routes in use in 1988, except for areas closed or limited to designated roads and routes. The areas covered by the Lower Gila North MFP (BLM 1983) would be generally open to vehicular travel, except for areas specifically closed to such access. The five designated wilderness areas would remain closed to all forms of motorized vehicles and mechanized uses.

Motorized vehicles would be limited to existing roads and motorized routes in the Cordes Junction and Williams Mesa MRMAs. Motorized vehicles would be limited to designated roads and trails in the Bumble Bee MRMA. A 3.5-mile portion of Tule Creek would be closed to motorized vehicles.

Off-road vehicle use would be limited to existing roads, motorized vehicle trails, and washes in the Hassayampa River. The portion of the river within Hassayampa River Canyon Wilderness would remain closed to all forms of motorized vehicles and mechanized uses.

Management Action

A hiking and a horseback riding trail system would be established near Wickenburg. The width and exact routing of the trail would be determined through close consultation with the concerned public. The trail would be marked by

standard trail markers, and hazard warnings would be installed where needed.

BLM would work with the Desert Caballeros of Wickenburg to establish a trail system between Wickenburg and Wagoner to ensure continuous management on public lands.

2.3 Alternative B

The following discussion, with the Desired Future Conditions, land use allocations, and management actions described in the Management Common to All Action Alternatives section of this chapter, constitute proposed *Alternative B*.

2.3.1 Agua Fria National Monument

The overall theme of *Alternative B* is to plan for increased public use and include more recreation-related development, access, and education interpretation, consistent with protecting monument resources. Developed recreation is addressed by establishing a Front Country RMZ, while a Back Country RMZ would be established to retain primitive landscape values in the Agua Fria River Canyon and its tributary canyons. Selected archaeological sites would be made available for increased public visitation by allocating areas for relatively intensive and Moderate public use. Access would be allowed for visitors' opportunities, including use of existing vehicle routes. Grazing would remain similar to current management, but grazing within riparian areas would be limited to winter (November 1 to March 1).

2.3.1.1 Special Area Designations

Areas of Critical Environmental Concern

No more ACECs are proposed by *Alternative B*, and the existing Perry Mesa and Larry Canyon ACECs (Map 2-2) would be removed from designation because the national monument proclamation (Appendix A - Agua Fria National Monument Proclamation) establishes a higher level of protection and management across a more extensive landscape.

Wild and Scenic Rivers

Reaches of the Agua Fria River that have been determined to be suitable for WSR status would be managed in a way that does not degrade the values defining their suitability.

Back Country Byways

A back country byway would be evaluated for Bloody Basin Road and nominated if standards and requirements are met (Map 2-12).

Desired Future Condition

The back country byway would provide a vehicle-based, back country experience with amenities to heighten visitors' experiences, and to educate/inform them about interesting natural/cultural features along the route. Visitors could expect the road to be occasionally difficult and settings to be remote. The road might not be accessible to all classes of vehicle. High clearance might be needed to traverse the whole route. The area 1/2 mile to either side of the road's centerline would be maintained in a semi-primitive motorized recreation setting, except at the La Plata Cultural site where the desired setting will be more like roaded natural, should it be further developed for public use.

Management Actions

Maintenance would conform to BLM's Level 2 standards (BLM 9100 Manual) and be passable by high-clearance vehicles.

VRM Allocations to achieve the Desired Future Conditions are described in section 2.3.1.6 Visual Resources.

BLM would acquire easements and rights-of-way where needed to ensure long-term public access.

Monument features along the route would be interpreted, including prehistoric cultural features, historic homesteads, settlements, and ranching history.

Directional, safety, and interpretive signing would be installed to enhance public use, enjoyment, and stewardship of the route.

Administrative Actions

Develop a cooperative and a collaborative site plan with landowners and other agencies that would be affected by the byway designation.

2.3.1.2 Lands and Realty

Land Use Allocations

Utility and Transportation Corridors

Management Actions

The existing utility corridor (designated by the Phoenix RMP [BLM 1988a] in the Black Canyon RCA) would be narrowed so that the eastern boundary of the utility corridor would follow the easternmost boundaries of any existing right-of-way that is or are currently within the corridor identified in the Phoenix RMP (Map 2-13).

2.3.1.3 Biological Resources

Under *Alternative B,* wildlife habitat management would continue under current management, except the existing Larry Canyon ACEC would be eliminated because the national monument proclamation (Appendix A) provides for a higher level of protection and management across a more extensive landscape.

2.3.1.4 Cultural Resources

Alternative B would include development of access, interpretive facilities, and interpretive media for selected archaeological sites in the monument (Map 2-14, Multiple Resource Allocation). These archaeological sites would be allocated to SCRMAs focused on varying levels of public use, as described in the Cultural Resources section of Management Common to Agua Fria National Monument and shown in Table 2-3 SCRMAs.

Table 2-3. Alternative B: Cultural Resource Public-Use Areas

Level of Public Use	Locations/Sites
High	Pueblo la Plata and Fort Silver (Pueblo la Plata Complex) Badger Springs Pueblo, the Arrastra site, Badger Springs rock art, and the Rollie site.
Moderate	Baby Canyon Pueblo and Pueblo Pato Richinbar Ruin The historic Teskey homestead near the Agua Fria River.
Low	Public use of archaeological sites would be limited in all other areas not described above.

High use represents the most intensive degree of interpretive development associated with a SCRMA, and Moderate use involves less intensive development of access and interpretive facilities. All areas of the monument not shown as High or Moderate use SCRMAs on Map 2-14 would be considered areas of Low public use that are not available for on-the-ground interpretive development or commercial tours.

2.3.1.5 Recreation Resources

In *Alternative B*, the entire monument would be allocated to a Special Recreation Management Area with three Recreation Management Zones

within it. These zones would include a Back Country RMZ (12,700 acres) to manage and maintain the natural landscape character in the Agua Fria River Canyon and tributary washes (Map 2-14). A Passage RMZ (300 acres) would be created along vehicle routes designated as open to allow motorized access to and through the Back Country. The remainder of the monument would be designated a Front Country RMZ of 57,900 acres, where more focus could be placed on recreation and interpretive opportunities. Desired future conditions (DFC) for these zones can be found in the Recreation and Public Access discussion of the Management Common to Agua Fria National Monument section of this chapter.

Land Use Allocation

Front Country Recreation Management Zone (57,900 acres)

Desired Future Condition

See Desired Future Condition description in section 2.7.2.7 of the Management Common to Agua Fria National Monument section of this chapter.

Management Actions

VRM Allocations to achieve the Desired Future Conditions of this Recreation Management Zone are described in section 2.3.1.6.

Special Recreation Permits (SRPs) and Concessions:

- Up to 12 SRPs would be authorized within the monument each year. These SRPs might include any combination of the following:
    - Commercial (e.g. jeep tours, outfitters),
    - Commercial special events, and
    - Concommercial special events.
- If consistent with monument values and objectives, recreation concession leases and vendor permits would be issued to enhance visitor use. Concessions and vending permits would be considered on a case-by-case basis, with determinations based on consistency with management objectives and clearly demonstrated needs.

Dispersed Camping:

- Camping permits could be required if resource damage occurs that inhibits achieving resource DFCs, threatens resources protected by proclamation, or if health and safety issues emerge. If damage continues, more limitations might be required, including temporary or permanent area closures; limiting camping to designated sites, seasonal limitations, or closures.
- Camping would be prohibited within 1/4 mile of a developed campground.
- Camping would be prohibited at archaeological sites, including petroglyphs (rock art) sites.
- Camping would be allowed if at least 1/4 mile from intense or moderate public-use archaeological sites.
- Camping would be prohibited within 1/4 mile from water sources "...containing water in such a place that wildlife or domestic stock will be denied access to the only reasonably available water (Arizona Revised Statute 17-308, Unlawful Camping).
- Dispersed camping could be limited to certain designated areas if resource damage occurs.

Developed Campgrounds:

- Two campgrounds would be developed--one at Badger Springs and one along Bloody Basin Road.
- The campgrounds would each be limited to 20 campsites, each with a picnic table, fire ring, and ramada.
- Potable water would be developed if practical.
- Restroom facilities would be provided to address health and sanitation issues.

Campfires:

- Campfires would be prohibited within ¼ mile of intensive and moderate public-use archaeological sites.
- Campfires would be prohibited at archaeological sites, including petroglyphs (rock art) sites.
- Campfires would be prohibited within ¼ mile of a developed campground. In campgrounds, campfires would be allowed only in campfire rings.
- Campfires would be prohibited within 200 feet of a public area, such as a trail or other facilities.
- Campfires would be allowed at dispersed campsites.
- Firewood could be collected only for campfire use. Visitors could collect dead, down, and detached material only for campfires. Vegetation use and disturbance would be monitored, and this use might be temporarily or permanently suspended to prevent resource damage.

Recreational Target Shooting:

- Targets need to be of a type and material that will not produce litter and must be cleaned up after use.
- Spent shell casings have to be cleaned up after use.
- Shooting would be managed to reduce resource degradation, to reduce social conflicts, and to provide for public safety.
- Shooting would be prohibited within ½ mile of identified areas where people congregate, including trailheads, campgrounds, interpretive sites, kiosks, and other high-use sites.

Trail Construction for Non-motorized Recreation Use

Discussion of recreation trail development can be found in section 2.3.1.8.

Land Use Allocation

Back Country Recreation Management Zone of 12,700 acres

Desired Future Condition

See Desired Future Condition description in section 2.7.2.7 of the Management Common to Agua Fria National Monument section of this chapter

Management Actions

VRM Allocations to achieve the Desired Future Conditions of this Recreation Management Zone are described in section 2.3.1.6.

SRPs and Concessions:

- Up to 12 SRPs would be authorized within the monument each year. The SRPs might include any combination of the following:
    - Commercial (e.g. hunting outfitter/guides),
    - Commercial special events, and
    - Noncommercial special events.
- If consistent with monument values and objectives, recreation concession leases and vendor permits would be issued to enhance visitor use, visitor services, visitor safety, and visitor enjoyment. Concessions and vending permits would be considered on a case-by-case basis, with determinations based on consistency with management objectives and clearly demonstrated needs.

Dispersed Camping:

- Camping permits could be required if resource damage occurs that inhibits achieving resource DFCs or threatens resources protected by proclamation, or if health and safety issues emerge. If damage continues, more limitations might be required, including temporary or permanent area

closures, limiting camping to designated sites, or seasonal limitations or closures.
- Dispersed camping would be prohibited within ¼ mile of a developed campground.
- Dispersed camping would be prohibited at archaeological sites, including petroglyphs (rock art) sites.
- Dispersed camping would be allowed if at least ¼ mile from intense or moderate public-use archaeological sites.
- Camping would be prohibited within ¼ mile from water sources "...containing water in such a place that wildlife or domestic stock will be denied access to the only reasonably available water (Arizona Revised Statute 17-308, Unlawful Camping).

Developed Campgrounds:

- None.

Campfires:

- Campfires would be prohibited within ¼ mile of intensive and moderate public-use archaeological sites.
- Campfires would be prohibited on archaeological sites, including petroglyphs (rock art) sites.
- Campfires would be prohibited within ¼ mile of a developed campground.
- Campfires would be prohibited within 200 feet of a trail or other public use facility.
- Campfires would be allowed at dispersed campsites.
- Firewood collection would be limited to campfire use only. Collecting dead, down, and detached material would be allowed for campfire firewood. Vegetation use and disturbance would be monitored, and firewood collecting might be temporarily or permanently suspended to prevent resource damage.

Recreational Target Shooting:

- Targets need to be of a type and material that will not produce litter and must be cleaned up after use.
- Spent shells have to be cleaned up after use.
- Shooting would be managed to reduce resource degradation, to reduce social conflicts, and to provide for public safety.
- Shooting would be prohibited within ½ mile of identified areas where people congregate, including trailheads, campgrounds, interpretive sites, kiosks, and other high-use sites.

Trail Construction for Non-motorized Recreation Use

Discussion of recreation trail development can be found in section 2.3.1.8.

Land Use Allocation

The Passage Recreation Management Zone would consist of 300 acres.

Desired Future Condition

See Desired Future Condition description in section 2.7.2.7 of the Management Common to Agua Fria National Monument section of this chapter.

Management Actions

VRM Allocations to achieve the Desired Future Conditions of this Recreation Management Zone are described in section 2.3.1.6.

River crossings at Kelton Ranch, EZ Ranch, Horseshoe Ranch, and Cross Y Ranch would be maintained.

SRPs and Concessions:

- Up to 12 SRPs would be authorized within the monument each year. These SRPs might include any combination of the following:

  - Commercial (e.g. jeep tours, outfitters).
  - Commercial special events, and
  - Noncommercial special events.
- If consistent with monument values and objectives, recreation concession leases and vendor permits would be issued to enhance visitor use, visitor services, visitor safety, and visitor enjoyment. Concessions and vending permits would be considered on a case-by-case basis, with determinations based on consistency with management objectives and clear, demonstrated need.

Dispersed Camping:

- Camping permits could be required if resource damage occurs that inhibits achieving resource DFCs or threatens resources protected by proclamation, or if health and safety issues emerge. If damage continues, more limitations might be required, including temporary or permanent area closures, limiting camping to designated sites, or seasonal limitations or closures.
- Dispersed camping would be prohibited within ¼ mile of a developed campground.
- Dispersed camping would be prohibited at archaeological sites, including petroglyphs (rock art) sites.
- Dispersed camping would be allowed if at least ¼ mile from intense or moderate public-use archaeological sites.
- Camping would be prohibited within ¼ mile from water sources "...containing water in such a place that wildlife or domestic stock will be denied access to the only reasonably available water (Arizona Revised Statute 17-308, Unlawful Camping).
- Dispersed camping could be limited to designated areas if resource damage occurs.

Developed Campgrounds:

- None.

Campfires:

- Campfires would be prohibited within ¼ mile of intensive and moderate public-use archaeological sites.
- Campfires would be prohibited on archaeological sites, including petroglyphs (rock art) sites.
- Campfires would be prohibited within ¼ mile of a developed campground.
- Campfires would be allowed at dispersed campsites.
- Firewood collection would be limited to campfire use only. Collecting dead, down, and detached material would be allowed for campfire firewood. Vegetation use and disturbance would be monitored, and this use might be temporarily or permanently suspended to prevent resource damage.

Recreational Target Shooting:

- Targets need to be of a type and material that will not produce litter and must be cleaned up after use.
- Spent shell casings would need to be cleaned up after use.
- Shooting would be managed to reduce resource degradation, to reduce social conflicts, and to provide for public safety.
- Shooting would be prohibited within 1/2 mile of identified areas where people congregate, including trailheads, campgrounds, interpretive sites, kiosks, and other high-use sites.

Trail Construction for Non-motorized Recreational Use

Discussion of recreation trail development can be found in section 2.3.1.8.

Administrative Actions

Site-specific baseline data for assessing the effects of dispersed camping would be collected, and a monitoring process developed so change

can be detected and resource damage determinations can be made.

Baseline data would also be collected to determine environmental and social impacts of recreational target shooting. The data would be used to determine the effects that are now occurring and to establish standards for future management. A monitoring plan would be developed to detect change. Unacceptable impacts to monument resources and public safety concerns could result in further management actions ranging from increased restrictions to closure.

2.3.1.6 Visual Resources

Land Use Allocations

VRM classes for *Alternative B* throughout the planning area would be allocated as described in 2-2 and as portrayed on Map 2-15.

Within the Agua Fria National Monument, allocate:

- Front Country and Passage RMZs to VRM Class III.
- Back Country RMZ to VRM Class II.
- 1/2 mile either side of Bloody Basin Road Back Country Byway to VRM Class II.
- Utility corridors would be allocated to VRM Class III.

2.3.1.7 Rangeland Management

Land Use Allocation

Eleven grazing authorizations would continue to be administered within Agua Fria National Monument.

Desired Future Condition

Watersheds are in properly functioning conditions, including their upland, riparian, and aquatic components. Soil and plant conditions support infiltration, storage, and release of water that are in balance with climate and landform.

Ecological processes are maintained to support healthy biotic populations and communities.

Standard 2 of the *Arizona Standards for Rangeland Health* (Land Health Standards) would be achieved within 5 years in all riparian areas where livestock grazing precluded achieving that standard

Management Actions

Livestock grazing in riparian areas would be limited to the winter (November 1 to March 1).

Inventory and/or Monitoring studies will be used to determine if adjustments to permitted use levels, terms and conditions and management practices are necessary in order to meet and/or make significant progress towards meeting the Arizona Standards for Rangeland Health and other Land Use Plan Objectives.

Fence construction and maintenance will follow guidance provided in BLM's Handbook for Fencing H-1741.

2.3.1.8 Transportation and Public Access

Land Use Allocation

The entire monument is allocated as Limited to Designated Routes (Map 2-16).

Management Actions

Cross-country motorized travel is prohibited except in the case of an emergency or for approved administrative purposes.

Within Front Country

Trail Construction for Non-motorized Recreation Use:

- Trails would be developed as needed to enhance resources, recreation experiences, and to protect monument values.
- All construction would be compatible with Desired Future Conditions for the construction area.
- Trails would be designed to blend into the environment.
- Loop, connector, and linear trails would be built to meet recreation, access, and resource objectives.
- Trails to maintain connectivity to recreation opportunities such as hunting, hiking, equestrian use, and viewing cultural sites could be considered.
- Trails to provide linkage with other connector trails beyond the border of the monument would also be considered.
- Opportunities to link networks of non-motorized trails within the monument to those outside the monument on other BLM's lands, or with other adjacent jurisdictions, including Tonto and Prescott National Forests, Yavapai County, and local communities, would be explored where they are consistent with monument values and do not impair protection of monument resources.

Route Construction for Motorized Use:

- New vehicular routes would be considered on a case-by-case basis, with determinations based on protection and enhancement of monument values.
- If monument values are not compromised, routes would also be considered for connectivity and to provide for greater access to recreation opportunities.
- Bloody Basin and Badger Springs Roads would be maintained minimally to at least a BLM Level 3 standard (BLM 9100 Manual) to provide safety for public use.
- Loop routes for interpretive opportunities for all-terrain vehicle (ATV) travel would be evaluated.

Off-Highway Vehicles:

- All vehicles would be limited to designated routes consistent with the discussion in the Management Common to Agua Fria National Monument, in section 2.7.2.10.
- OHV access would be managed to provide for a variety of use experiences, including access for public visitation of the monument's cultural and biological resources.

Within Back Country

Trail Construction for Non-motorized Recreation Use

- Trails would be developed as needed to enhance resources and recreation experiences, and protect monument values.
- All construction would be compatible with Desired Future Conditions for the construction area.
- Trails would be designed to blend into the environment.
- Loop, connector, and linear trails would be built to meet recreation, access, and resource objectives.
- Trails to maintain connectivity to recreation opportunities such as hunting, hiking, equestrian use, and viewing cultural sites would be considered.
- Trails to provide linkage with other connector trails beyond the border of the monument would also be considered.
- Opportunities to link networks of non-motorized trails within the monument to those outside the monument on other BLM's lands, or with other adjacent jurisdictions, including Tonto and Prescott National Forests, Yavapai County, and local communities, would be explored where they are consistent with monument values and do not impair protection of monument resources.

- Non-motorized trails might be built to provide access to core use areas. They may consist of minimal trail tread development or routes marked only by low impact posts such as fiberglass with minimal ground disturbance.

Route Construction for Motorized Use:

- No new routes would be built within the Back Country RMZ except to mitigate resource conflicts.
- If analysis determines new route construction is needed to mitigate resource conflicts but to maintain necessary access, the Passage RMZ would be adjusted to incorporate the redesigned route network.

Off-Highway Vehicles:

- The Back Country RMZ would be managed as a non-motorized area.

Within Passage

Trail Construction for Non-motorized Recreation Use:

- Trails would be developed as needed to enhance resources and recreation experiences, and protect monument values.
- All construction would be compatible with Desired Future Conditions for the construction area.
- Trails would be designed to blend into the environment.
- Loop, connector, and linear trails would be built to meet recreation, access, and resource objectives.
- Trails to maintain connectivity to recreation opportunities, such as hunting, hiking, equestrian use, and viewing cultural sites could be considered.
- Trails to provide linkage with other connector trails beyond the border of the monument could also be considered.
- Opportunities to link networks of non-motorized trails within the monument to those outside the monument on other BLM's lands, or with other adjacent jurisdictions, including Tonto and Prescott National Forests, Yavapai County, and local communities, would be explored where they are consistent with monument values and do not impair protection of monument resources.

Route Construction for Motorized Use:

- No new routes would be built within the Passage RMZ except to mitigate resource conflicts.
- If analysis determines new route construction is needed to mitigate resource conflicts but maintain necessary access, the Passage RMZ would be adjusted to incorporate the redesigned route network.

Off-Highway Vehicles:

- All vehicles would be limited to designated routes consistent with the discussion in the Management Common to Agua Fria National Monument in section 2.7.2.10.
- OHV access would be managed to provide for a variety of use experiences, especially to provide access for public visitation of cultural and biological resources of the monument.

Implementation Actions

Public Access

An evaluation tree review process, as described in Appendix D, was used to establish a designated public access and route system to support resource objectives consistent with *Alternative B* and to protect monument resources. The results of the evaluation are shown in Map 2-17, and a summary of route status and quantity is shown below:

Routes Open 140 miles

Routes Closed 38 miles

New Routes 5 miles

2.3.2 Bradshaw-Harquahala Planning Area

The overall theme for *Alternative B* for the Bradshaw-Harquahala Planning Area emphasizes resource use and development, while ensuring that resource protection is not compromised. This Alternative includes both developed and primitive recreation by establishing SRMAs and lands allocated to maintain or enhance wilderness characteristics, as well as developed public use of cultural resources. Wildlife habitats and grazing would remain similar to current management, with a change of riparian pasture use to winter season. Areas would remain open to mining. The number of utility corridors would increase, and corridors would be widened. VRM objectives would be set based on management activities and land uses being provided for in a specific area so that they may be achieved within the VRM Class objective being set. Access within the planning area would be increased more than under the other Alternatives. The MUs for *Alternative B* are shown in Map 2-18.

2.3.2.1 Management Applicable to the Entire Bradshaw-Harquahala under this Alternative

2.3.2.1.1 Lands and Realty

Land Tenure Adjustments

Lands potentially suitable for disposal by sale or exchange would consist of parcels outside the MUs that are not within a land use allocation (Map 2-19). Other criteria limiting which lands might be selected for disposal are described in Management Common to Both Planning Areas section of this chapter in the discussion under section 2.7.1.2, 58,400 acres would potentially be suitable for disposal. Of these 58,400 acres, 5,200 acres are scattered parcels outside the planning area boundaries but have been included in the current planning effort.

Lands that would be considered for potential acquisition would include State and private lands (willing seller) within the planning area. When acquired, these lands would be managed consistently with the resource management prescriptions outlined in this land use plan that apply to other nearby BLM's lands. These lands would meet the criteria described under the Management Common to Both Planning Areas in the discussion under Lands and Realty as well as program objectives reflected in Alternative B.

Utility and Transportation Corridors

New utility corridors within the Bradshaw-Harquahala Planning Area (Map 2-20) would be designated for future expected demands. These designations would respond to the demand for the intensification of the power grid and would be consistent with the utility regulations of the Arizona Corporation Commission.

2.3.2.1.2 Rangeland Management

Land Use Allocation

A total of 93 grazing authorizations would continue to be administered within the planning area.

Desired Future Condition

Watersheds are in properly functioning conditions, including their upland, riparian, and aquatic components. Soil and plant conditions support infiltration, storage, and release of water that are in balance with climate and landform.

Ecological processes are maintained to support healthy biotic populations and communities.

Standard 2 of the Arizona Standards for Rangeland Health *(*Land Health Standards) would be achieved within five years in all riparian areas where livestock grazing precluded achievement of that standard.

Management Actions

Livestock grazing in riparian areas would be limited to winter (November 1 to March 1). This restriction would be implemented where BLM can effect a change and where grazing is precluding achievement of the Desired Plant Community (DPC). Grazing allotment boundaries are shown in *Alternative B* on Map 2-21.

On unfenced allotments, livestock control fences and alternate water sources would be built where needed to meet natural resource objectives.

Fence construction and maintenance will follow guidance provided in BLM's Handbook for Fencing H-1741.

2.3.2.1.3 Mineral Resource Management

Maps 2-22, 2-23, and Map 2-24, show the minerals management areas proposed under *Alternative B* that are within the Agua Fria National Monument and the Bradshaw-Harquahala Planning Areas. The following descriptions of mineral types include information on any mining closures.

Management Actions

Leasable Minerals

Lands reconveyed to the Federal Government, which are now closed to leasing, would be opened under the Mineral Leasing Act. In addition, all other lands would be open for mineral leasing and exploration except (1) lands with existing segregations or withdrawals, and (2) the Tule Creek ACEC, which would be closed to mineral leasing.

Leases would be issued with special stipulations to protect resources. Stipulations to protect important surface values would be based on interdisciplinary review of individual proposals and environmental analyses.

Saleable Minerals (Mineral Materials)

Lands reconveyed to the Federal Government and now closed to mineral material disposal would be opened under applicable laws. In addition, except for legislatively withdrawn areas, other withdrawn areas, and segregated areas; all public lands within the planning area would be open to mineral material disposal on a case-by-case basis.

The Tule Creek ACEC and lands allocated to maintain or enhance wilderness characteristics would be closed to mineral material disposal.

Locatable Minerals

Lands reconveyed to the Federal Government that are now closed to mineral entry would be opened to location under the mining laws. All small tract lands would be opened to location under the mining laws. In addition, all other lands would be opened for location except: (1) lands with existing segregations or withdrawals and (2) the Tule Creek ACEC, which is recommended for closure to location under the mining laws.

2.3.2.1.4 Transportation and Public Access

Land Use Allocation

All public lands in the Bradshaw-Harquahala Planning Area would be allocated as limited use areas, with motorized and mechanized vehicle use limited to designated routes. The Hassayampa River Canyon, Hells Canyon, Harquahala Mountains, Big Horn Mountains, and Hummingbird Spring Wildernesses would

remain closed to motorized and mechanized use as shown in Map 2-16.

Desired Future Conditions

Define, designate, implement, and monitor a comprehensive travel management network affording a range of high-quality and diverse motorized and non-motorized recreation opportunities. The network would consist of a system of areas, roads, routes, and/or trails. The travel management network and associated recreation opportunities would be consistent with other resource management objectives and recreation settings for the area.

Management Actions

Limit all vehicles to designated routes. Cross-country motorized travel will not be permitted except in cases of emergency or for approved administrative purposes.

Implementation Actions

An evaluation process, similar to one described in Appendix D, will be used to establish a designated public access and route system to support resource objectives consistent with *Alternative B.*

Develop comprehensive Travel and Transportation Management Plans for the Management Units and other public lands within the planning area. These plans would implement route designations on the public lands.

2.3.2.2 Management Units

Under *Alternative B,* five MUs are identified as geographical units for presenting the land use allocations. These units are summarized with their land use allocations and management actions in the following section.

The document sections discussing the five Management Units and the maps on which they appear are as follows:

- 2.3.2.2.1 Black Canyon Management Unit, Map 2-25.
- 2.3.2.2.2 Castle Hot Springs Management Unit, Map 2-26.
- 2.3.2.2.3 Hassayampa Management Unit, Map 2-27.
- 2.3.2.2.4 Harquahala Management Unit, Map 2-28.
- 2.3.2.2.5 Harcuvar Management Unit, Map 2-29.

Allocations outside MUs are discussed in section 2.3.2.2.6 and shown on Map 2-30. As noted, areas within the MUs that do not receive specific land use allocations would be administered according to the DFC and management actions presented under Management Units and in the Management Common to All Action Alternatives section of this chapter.

2.3.2.2.1 Black Canyon Management Unit

The Black Canyon MU stretches from the southern end of Table Mesa in the south to Cordes Junction in the north. It is bounded by Agua Fria National Monument and Tonto National Forest on the east and the Prescott National Forest on the west as shown on Map 2-25. The MU contains the following land:

- 68,730 acres of BLM-administered lands.
- 12,600 acres of Arizona State land.
- 6,780 acres of private land.
- 1,100 acres of county park lands in both Maricopa and Yavapai Counties.

2.3.2.2.1.1 Special Area Designations

Special area designations would not be made within the Black Canyon MU.

2.3.2.2.1.2 Lands and Realty

Land Tenure Adjustments

No lands have been identified as available for disposal.

Communication Sites

This MU has only one designated communication site, the Black Canyon City communication site, which would be retained and subject to valid existing rights.

Utility and Transportation Corridors

The portion of the Black Canyon corridor to the west of Interstate 17 would be widened for viable future utility development. The western boundary of the corridor would be adjusted to be 1 mile west of the true center of I-17 (as defined by the center of the median), shown in Map 2-20.

2.3.2.2.1.3 Biological Resources

No additional areas would be allocated for biological resources within this MU.

2.3.2.2.1.4 Cultural Resources

Land Use Allocations

Black Mesa/Bumble Bee SCRMA and Black Canyon SCRMA

Desired Future Condition

The Black Canyon MU has a variety of prehistoric and historic sites that could be used for interpretation, educational purposes, and public visitation. For further information on public use of cultural resources, see Appendix E.

Management Actions

A combination of some or all of following actions could be implemented at selected sites:

- building visitors' facilities such as parking areas, platforms, restrooms, picnic tables, benches, or trash receptacles,
- installing signs along routes and trails to direct visitors to interpreted sites,
- building hardened walking trails,
- installing interpretive signs and register boxes, and
- preparing brochures and related educational materials or programs.

Actions would be implemented to stabilize, repair, and maintain sites in good condition.

Commercial and noncommercial group tours could be authorized as long as they were conducted with protective stipulations in accordance with BLM's regulations and, where required, special recreation permits.

Administrative Actions

Specific sites for public use would be selected by considering the following factors:

- the presence of aboveground features of interest to the public and suitable for interpretive development,
- accessibility to communities, travel routes, and recreation trails,
- the condition of the site and the feasibility of stabilizing selected areas or features to withstand visitation,
- visitor safety considerations,
- compatibility with other land uses and site values, such as traditional use by Native Americans,
- feasibility of regular inspections by BLM’s staff and volunteers, and
- partnership opportunities for interpretive and educational projects.

The BLM's recreation program would participate in developing sites for public use.

BLM would cooperate with agencies, tribes, and local communities in supporting heritage tourism programs that benefit local economies. Historic properties for heritage

tourism would be developed to contribute to their long-term preservation and productive use.

BLM would continue to work with the Site Steward Program to regularly monitor the condition of sites.

2.3.2.2.1.5 Recreation Resources

Land Use Allocations

Table Mesa SRMA

Desired Future Condition

Manage for intensive camping, OHV use, equestrian activities, and casual use mining. The SRMA would offer a diverse network of motorized single and two-track routes for general motorized recreation use, commercial use, and organized OHV events.

Emphasize acceptable dust control and compatibility with neighboring communities and landowners.

Emphasize semi-primitive motorized and roaded-natural recreation settings. Users would be concentrated in some areas.

Develop facilities with a variety of amenities consistent with the desired recreation setting. Visitors could expect contact with BLM's representatives daily or more often. Nonintrusive signing would be present in most of the SRMA.

Management Actions

Using a structured evaluation process, designate vehicle routes within this SRMA for general motorized recreation use, commercial use, and organized OHV events that are consistent with, and help achieve, all Desired Future Conditions for the area.

Locate and develop a staging and camping area for the following purposes:

- meeting the high recreation demand,
- parking and unloading OHVs,
- overnight camping,
- event operations,
- informational signing,
- dust abatement, and
- human health and safety.

Limit to 20 acres the area of exposed barren soil.

Limit the number of motorized competitive races to 2 per year.

Prohibit recreational target shooting within the SRMA.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.3.2.2.1.6.

Land Use Allocations

All remaining land within the Management Unit would be allocated to an Extensive Recreation Management Area.

Administrative Actions

Determine specific areas where comprehensive site assessments would be initiated to do the following:

- determine existing physical and social impacts of recreation activities,
- define desired conditions and standards, and
- establish monitoring plans to manage camping and other recreation uses.

2.3.2.2.1.6 Visual Resources

Land Use Allocations

VRM classes for *Alternative B* throughout the planning area would be allocated as described in 2-2 and as portrayed on Map 2-15.

Within the Black Canyon Management Unit:

- the Table Mesa SRMA and an area west and north of Cordes Lakes would be allocated to VRM Class III,
- an area surrounding Black Canyon City would be allocated to VRM Class IV,
- utility corridors would be allocated to VRM Class III or IV, and
- the rest of the Management Unit would be allocated to VRM Class III.

2.3.2.2.1.7 Mineral Resource Management

Alternative B proposes no mineral withdrawals or closures for the Black Canyon MU.

2.3.2.2.1.8 Transportation and Public Access

Land Use Allocation

The Black Canyon Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

The Table Mesa SRMA is discussed in section 2.3.2.2.1.5 and would include a diverse network of motorized single and two-track routes for general motorized recreation use, commercial use, and organized OHV events consistent with SRMA objectives.

SCRMAs with sites allocated to public use are discussed in the Cultural Resources section 2.3.2.2.1.4.

Management Actions

Limit all vehicles to designated routes. No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Consider building hardened walking trails at selected prehistoric and historic sites within the Black Mesa/Bumble Bee SCRMA and Black Canyon SCRMA.

2.3.2.2.2 Castle Hot Springs Management Unit

The Castle Hot Springs MU is bounded by State Route 74 (the Carefree Highway) to the south, Prescott National Forest to the north, the Black Canyon MU to the east, and the Hassayampa MU to the west (Map 2-26). The MU contains the following lands:

- 112,430 acres of BLM-administered lands.
- 53,730 acres of Arizona State land.
- 32,560 acres of private land.
- 22,870 acres of county park lands in both Maricopa and Yavapai Counties (Lake Pleasant Regional Park).
- 1,100 acres of Bureau of Reclamation lands not in Lake Pleasant Regional Park.

2.3.2.2.2.1 Special Area Designations

Current Special Area Designations within the Management Unit would be managed consistent with Management actions described in section 2.7.3.2 in the Management Common to the Bradshaw-Harquahala Planning Area section of this chapter.

Special Area Designation

Tule Creek ACEC (640 acres)

Relevance

The Tule Creek area contains significant historic and cultural values, including the Fort Tule site, a prehistoric hilltop ruin occupied from A.D. 1100 to 1300, and a home site occupied by miners in the 1920s and 1930s. Tule Creek is a rare Sonoran Desert riparian system dominated

by emergent vegetation and occupied by endangered Gila topminnow.

Importance

The Fort Tule cultural site was probably used as a significant connection in a regional communication system based on signaling among hilltop sites. Its role in the communication system can offer important information on prehistoric social systems during the era it was used.

Tule Creek and its sensitive biological resources are extremely vulnerable to disturbance and degradation from vehicle use, mining, and livestock grazing. Continued protection of Tule Creek is important to the recovery of the endangered fish.

Desired Future Condition

The integrity of the riparian area, endangered species habitat quality, and cultural resources are maintained and protected from degradation.

Management Actions

The fenced area would be closed to livestock grazing and motor vehicles.

The ACEC would be withdrawn from mineral entry, closed to mineral and geothermal leasing, and closed to mineral material disposal.

An interpretive site for biological and cultural resources would be developed. Where needed, measures to protect sites, such as site stabilization or closure to public access, would be implemented.

Administrative Actions

Continue to patrol archaeological sites with help from Site Steward Volunteers.

2.3.2.2.2.2 Lands and Realty

Land Tenure Adjustments

No lands have been identified as available for disposal.

Communication Sites

There are no designated communication sites within this MU.

2.3.2.2.2.3 Biological Resources

There would be no other allocations for biological resources within this MU.

2.3.2.2.2.4 Cultural Resources

Land Use Allocations

Lake Pleasant/Agua Fria SCRMA

Desired Future Condition

A variety of prehistoric and historic sites would be selected for interpretation, education, and public visitation. For further information on public use of cultural resources, see Appendix E.

Management Actions

A combination of the some or all of the following and other actions could be implemented at selected sites:

- building visitor facilities such as parking areas, platforms, restrooms, picnic tables, benches, or trash receptacles,
- installing signs along routes and trails to direct visitors to interpreted sites,
- building hardened walking trails,
- installing interpretive signs and register boxes, and
- preparing brochures and related educational materials or programs.

Actions to stabilize, repair, and maintain sites in good condition could be undertaken.

Commercial and noncommercial group tours could be authorized as long as they were conducted with protective stipulations in

accordance with BLM's regulations and, where required, special recreation permits.

Administrative Actions

Specific sites for public use would be selected by considering the following factors:

- presence of aboveground features of interest to the public and amenable to interpretive development,
- accessibility to communities, travel routes, and recreation trails,
- condition of the site and the feasibility of stabilizing selected areas or features to withstand visitation,
- visitor safety,
- compatibility with other land uses and site values, such as traditional use by Native Americans,
- feasibility of regular inspections by BLM's staff and volunteers, and
- partnership opportunities for interpretive and educational projects.

The BLM's recreation program would participate in developing sites for public use.

BLM would cooperate with agencies, tribes, and local communities in supporting heritage tourism programs that benefit local economies. Historic properties for heritage tourism would be developed to contribute to their long-term preservation and productive use.

BLM would continue to work with the Site Steward Program to regularly monitor the condition of sites.

2.3.2.2.2.5 Recreation Resources

Land Use Allocation

Hieroglyphic Mountains SRMA

Desired Future Condition

Manage mainly for intensive motorized single and two-track routes for general motorized recreation use, commercial use, organized OHV events, and competitive races.

Emphasize acceptable dust control and compatibility with neighboring communities and landowners.

Emphasize semi-primitive motorized and roaded-natural recreation settings. Uses and users would be concentrated in some areas.

Develop facilities with a variety of amenities consistent with the desired recreation setting. Visitors could expect contact with BLM's representatives daily or more often. Nonintrusive signing would be present in most of the SRMA.

Management Actions

Locate at least 20 miles of single and two-track motorized vehicle routes for competitive races to provide a unique array of challenges for ATV and motorcycle competitive racing.

Limit the number of motorized competitive races to 4 per year.

Locate and develop as many as two staging/camping areas for

- meeting the high recreation demand,
- parking and unloading of OHVs,
- overnight camping,
- event operations,
- informational signing,
- dust abatement, and
- human health and safety.

Limit to 30 acres the area of exposed barren soil.

Prohibit recreational target shooting within the SRMA.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.3.2.2.2.7.

Land Use Allocation

All remaining land within the Management Unit would be allocated to an Extensive Recreation Management Area.

2.3.2.2.2.6 Visual Resources

Land Use Allocations

VRM classes for *Alternative B* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-15.

Within the Castle Hot Springs Management Unit:

- the Hieroglyphic Mountains SRMA would be allocated to VRM Class III objectives,
- the Hells Canyon Wilderness would be allocated to VRM Class I objectives, and
- the rest of the Management Unit would be allocated to VRM Class II.

2.3.2.2.2.7 Mineral Resource Management

Management Actions

Lands managed to maintain or enhance wilderness characteristics would be closed to mineral material disposal.

Tule Creek ACEC would be withdrawn from mineral entry, closed to mineral and geothermal leasing, and closed to mineral material disposal.

2.3.2.2.2.8 Transportation and Public Access

Land Use Allocation

The Castle Hot Springs Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

The Hieroglyphic Mountains SRMA is discussed in the Recreation Resource section 2.3.2.2.2.5. The SRMA would offer at least 20 miles of single and two-track motorized vehicle routes available for competitive races to provide a unique array of challenges for ATV and motorcycle competitive racing. Allow general motorized recreation use, commercial use, organized OHV events, and competitive races on all designated motorized vehicle routes within the SRMA.

Tule Creek ACEC is discussed in section 2.3.2.2.2.1.

Allocations to maintain or enhance wilderness characteristics are discussed in section 2.3.2.2.2.6.

SCRMA and sites allocated for public use are discussed in the Cultural Resources section 2.3.2.2.2.4.

Management Actions

All vehicles would be limited to designated routes. No-cross country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Close the fenced part of the Tule Creek ACEC to vehicle use.

Close reclaiming and eroded routes, hillside climbs, and washes to motorized travel within

the 9,080 acres managed to maintain wilderness characteristics.

Develop up to three non-motorized trails and trailheads within the 9,080 acres allocated to maintain or enhance wilderness characteristics (Map 2-31).

Build hardened walking trails to public use cultural sites within the Lake Pleasant/Agua Fria SCRMA.

Implementation Actions

Develop a comprehensive Travel and Transportation Management Plan to manage for single-use, multi-use hiking, equestrian, and OHV routes within the Castle Hot Springs Management Unit. This plan will implement the designated route system.

2.3.2.2.3 Hassayampa Management Unit

The Hassayampa MU has the Town of Wickenburg at its center. It is bounded on the east by Prescott National Forest and the Castle Hot Springs MU, and on the west by the Harquahala Mountain MU. The MU's southern edge is south of the Vulture Mountains, and its boundaries extend north past Yarnell (Map 2-27). The MU contains the following lands:

- 181,910 acres of BLM-administered lands,
- 130,580 acres of Arizona State land,
- 50,610 acres of private land, and
- 460 acres of county-administered lands in both Maricopa and Yavapai Counties.

2.3.2.2.3.1 Special Area Designations

Current Special Area Designations within the Management Unit would be managed consistent with management actions described in section 2.7.3.2 in the Management Common to the Bradshaw-Harquahala Planning Area section of this chapter.

Back Country Byways

Constellation Mine Road

Desired Future Condition

The back country byway would provide a vehicle-based, back-country experience with amenities to heighten visitors' experiences, to educate, and to inform visitors about interesting natural and cultural features along the route. Visitors could expect the road to be occasionally difficult and settings to be remote. The road might not be accessible to all classes of vehicles. High clearance might be needed to traverse the whole route. Establish and maintain a semi-primitive motorized recreation setting ½ mile to either side of the road's centerline.

Management Actions

Evaluate and nominate the Constellation Mine Road for potential designation as a national back country byway. The public portions of this road would be maintained at a BLM Level 2 standard (BLM 9100 Manual) and be passable by high-clearance vehicles.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.3.2.2.3.6.

Secure easements and rights-of-way where needed to ensure long-term public access along Constellation Mine Road.

Interpret the route's historical features, including original road construction structures; mining properties; mining districts; and historic homesteads, settlements, and ranching history.

Install directional, safety, and interpretive signing to enhance public use, enjoyment, and stewardship of the route.

Administrative Actions

Establish a friends group to maintain, monitor, and help interpret and present the route as well as the area's natural and human history.

2.3.2.2.3.2 Lands and Realty

Lands would not be disposed of within the Hassayampa MU.

2.3.2.2.3.3 Biological Resources

No other allocations for biological resources would be made within the Hassayampa MU.

2.3.2.2.3.4 Cultural Resources

Land Use Allocations

Wickenburg/Vulture SCRMA and
Weaver/Octave SCRMA

Desired Future Condition

A variety of prehistoric and historic sites would be managed for interpretation, education, and public visitation. For further information on public use of cultural resources, see Appendix E.

Management Actions

A combination of some or all of following and other actions could be implemented at selected sites:

- building visitor facilities such as parking areas, platforms, restrooms, picnic tables, benches, or trash receptacles,
- installing signs along routes and trails to direct visitors to interpreted sites,
- building hardened walking trails,
- installing interpretive signs and register boxes, and/or
- preparing brochures and related educational materials or programs.

Actions could be taken to stabilize, repair, and maintain sites in good condition.

Commercial and noncommercial group tours could be authorized with protective stipulations in accordance with BLM's regulations and, where required, special recreation permits.

Administrative Actions

Sites for public use would be selected by considering the following factors:

- presence of aboveground features of interest to the public and amenable to interpretive development,
- accessibility to communities, travel routes, and recreation trails,
- site condition and the feasibility of stabilizing selected areas or features to withstand visitation ,
- visitor safety,
- compatibility with other land uses and site values, such as traditional use by Native Americans,
- feasibility of regular inspections by BLM's staff and volunteers, and
- partnership opportunities for interpretive and educational projects.

The BLM's recreation program would participate in developing sites for public use.

BLM would cooperate with agencies, tribes, and local communities in supporting heritage tourism programs that benefit local economies. Historic properties for heritage tourism would be developed to contribute to their long-term preservation and productive use.

BLM would continue to work with the Site Steward Program to regularly monitor the condition of sites.

2.3.2.2.3.5 Recreation Resources

Land Use Allocation

Stanton SRMA

Desired Future Condition

Provide diverse recreation experiences while improving unacceptable environmental impacts from the following recreation:

- excessive and unregulated camping,
- activities of prospecting clubs, and
- motorized and other recreation uses.

Maintain a variety of recreation settings and opportunities with emphasis on semi-primitive motorized and roaded-natural settings.

Management Actions

Locate and develop trailheads, staging/camping areas, and other facilities.

Designate a diverse network of motorized vehicle routes open to a range of OHV experiences and challenges.

Limit the number of motorized competitive races to 2 per year.

Install informational, educational, and interpretive kiosks and trail signs where needed.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.3.2.2.3.6.

Administrative Actions

Determine specific areas where assessments would be initiated to do the following:

- define detailed desired conditions,
- define standards, and
- establish monitoring plans to manage camping and other recreation uses.

Land Use Allocation

Yarnell SRMA

Desired Future Condition

This site is one of the most valued in Arizona for launching successful long-distance, non-powered flights. Maintain long-term public access to the Yarnell hang gliding launching area (Map 2-32). In addition, maintain the landing areas and keep approaches to landing areas as free of flight hazards as possible.

Management Actions

Retain in public ownership Sections 22, 23, and 27 and all landing zones below Yarnell Hill.

Acquire legal public access to the Yarnell Hang Gliding launching area through easements, rights-of-way, or land acquisition.

Acquire the Arizona State Trust Land parcel southwest of Yarnell containing Fool's Gulch (Section 22) through purchase, legislation, or exchange.

Prohibit new overhead power lines, phone lines, or communication facilities within 1 mile of launching and identified landing zones.

Land Use Allocation

Wickenburg SRMA

Desired Future Condition

Establish a system of high-quality equestrian trails surrounding Wickenburg. The system will buffer the area from urban sprawl and preserve the open space value of the local landscape. This trail system would offer multiple opportunities for all recreation enthusiasts and enhance the lifestyle, cultural experience, and understanding of the local culture.

Offer properly managed and marketed quality recreation and tourism promoting conservation and a strong land ethic and protecting the natural resources and cultural heritage of the Wickenburg SRMA.

Manage the area of the proposed SRMA for a DFC that emphasizes values of open space, scenic and visual quality, and cultural and biological assets. Manage the lands within the SRMA for multiple uses, including livestock grazing and OHV uses.

Emphasize and maintain a variety of recreation settings and opportunities, including rural, roaded-natural, semi-primitive motorized, semi-primitive non-motorized, and associated experiences for residents, tourists, and winter visitors.

Management Actions

Locate and develop a non-motorized trailhead for the Red Top Trail System for the following purposes:

- meeting the high demand for non-motorized recreation,
- vehicle parking,
- unloading animals,
- overnight camping,
- event operations,
- informational signing,
- dust abatement, and
- human health and safety.

Limit to 20 acres the area of exposed barren soil.

Locate and develop an ATV and a motorcycle route network in the Red Top Trail area to give the local community motorized recreation opportunities to shift motorized use from the designated non-motorized trails. Use existing designated motorized vehicle routes and create new routes less than 50 inches wide, if necessary, to meet the objective.

Prohibit motorized competitive races in the SRMA.

Locate and develop at least one parking area of 3 acres or less for OHV parking and unloading. Limit to 5 acres the area of exposed barren soil.

Maintain and upgrade the non-motorized Vulture Peak Trail by rerouting segments of the trail and installing a restroom at the lower trailhead.

Acquire the 19,396 acres of Arizona State land within the SRMA. Prioritize and pursue acquisition using the criteria in the Lands and Realty discussion of the Management Common to Both Planning Areas section of Chapter 2. Lands will be acquired according to the following priorities:

- maintaining access and securing trail alignments,
- enhancing recreation opportunities,
- preserving scenery and open space, and
- conserving riparian values.

Develop special facilities for horse camping in the area south of Vulture Peak and south of Congress. These facilities could provide water for horses, electrical hookups for trailers, and more primitive horse camping facilities.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.3.2.2.3.6.

Administrative Actions

Collaborate with a diverse group of Wickenburg citizens to conserve the ecological, cultural, open space and recreation values of the Wickenburg area.

Write a comprehensive Travel Management Plan to develop management for single-use, multi-use hiking, equestrian, and OHV routes for the SRMA.

Land Use Allocation

San Domingo SRMA

Desired Future Condition

Provide a Sonoran Desert wash and upland environment suitable for an array of motorized and non-motorized uses. Manage for semi-primitive motorized and some roaded-natural settings.

Provide opportunities for the following while protecting the natural and cultural resources in the area:

- intensive camping,
- OHV activities,
- equestrian use,
- recreation activities of prospecting clubs,
- event operations, and
- motorized single and two-track routes for general motorized recreation use and competitive races.

Management Actions

Locate and develop trailheads, staging and camping areas, and other facilities as needed for recreation activities. Limit to 10 acres the total area of exposed barren soil.

Limit the number of motorized competitive races to 2 per year.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.3.2.2.3.6.

Administrative Actions

Determine specific areas where comprehensive site assessments would be initiated to do the following:

- determine existing physical and social impacts of recreation activities
- define desired conditions and standards
- establish monitoring plans to manage camping and other recreation uses

Land Use Allocation

Vulture Mine SRMA

Desired Future Condition

Provide a Sonoran Desert landscape suitable for intensive motorized single and two-track routes for general motorized recreation use, commercial use, organized OHV events, and competitive races.

Emphasize and maintain the current array of roaded natural and semi-primitive, motorized settings.

Preserve the mining and settlement history of the Vulture City Cemetery.

Management Actions

Locate at least 20 miles of motorized single and two-track routes for competitive races to provide a unique array of challenges for truck, buggy, ATV, and motorcycle competitive racing.

Limit the number of motorized competitive races to 4 per year.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.3.2.2.3.6.

Interpret and develop the Vulture City Cemetery for public use.

Administrative Actions

Determine specific areas where comprehensive site assessments would be initiated to do the following:

- determine existing physical and social impacts of recreation activities,
- define desired conditions and standards, and
- establish monitoring plans to manage camping and other recreation uses.

Land Use Allocation

All remaining land within the Management Unit would be allocated to an Extensive Recreation Management Area.

2.3.2.2.3.6 Visual Resources

Land Use Allocations

VRM classes for *Alternative B* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-15.

Within the Hassayampa Management Unit:

- the Wickenburg SRMA would be allocated to VRM Class III in areas where rural and roaded-natural settings would be desired, and Class II where semi-primitive motorized and semi-primitive non-motorized settings would be desired,
- the San Domingo, Stanton, and the Vulture Mine SRMAs would be allocated to VRM Class III objectives,
- the Hassayampa River Canyon Wilderness would continue to be allocated as VRM Class I,
- utility corridors would be allocated to VRM Class III or IV, and
- in areas not listed above, VRM classes would be as portrayed on Map 2-15.

2.3.2.2.3.7 Mineral Resource Management

The Hassayampa MU would have no mineral withdrawals or closures.

2.3.2.2.3.8 Transportation and Public Access

Land Use Allocation

The Hassayampa Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

SRMAs are discussed in detail in the Recreation Resource section 2.3.2.2.3.5.

The Stanton SRMA would include a diverse network of motorized vehicle routes open to a range of OHV experiences and challenges.

The Wickenburg SRMA would include a system of high-quality equestrian trails surrounding Wickenburg. Management actions for this SRMA would include:

- Locate and develop a non-motorized trails and a trailhead for the Red Top Trail System within the SRMA.
- Locate and develop an ATV and a motorcycle route network in the Red Top Trail area to provide motorized recreation opportunities.

The San Domingo SRMA would provide a managed Sonoran Desert wash and upland environment suitable for an array of motorized and non-motorized uses.

The Vulture Mine SRMA would provide intensive motorized single and two-track routes for general motorized recreation opportunities, commercial use, organized OHV events and competitive races. Locate at least 20 miles of motorized single and two-track routes for competitive races to provide a unique array of challenges for truck, buggy, ATV, and motorcycle competitive racing.

Discussion of SCRMAs with sites allocated to Public Use can be found in the Cultural Resources section 2.3.2.2.3.4.

Discussion of the Constellation Mine Road Back Country Byway can be found in the Special Area Designations section 2.3.2.2.3.1.

Management Actions

All vehicles would be limited to designated routes. No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Maintain and upgrade the non-motorized Vulture Peak Trail by rerouting segments of the trail.

Consider building hardened walking trails to historic and prehistoric sites within the Wickenburg/Vulture SCRMA and Weaver/Octave SCRMA, for interpretation education and visitation.

The Constellation Mine Road Back Country Byway would be maintained to a BLM Level 2 standard (BLM 9100 Manual), passable by high-clearance vehicles. Easements and rights-of-way would be secured where needed to ensure long-term public access along Constellation Mine Road.

Implementation Actions

Develop a comprehensive Travel and Transportation Management Plan to manage for single-use, multi-use hiking, equestrian, and OHV routes within the Hassayampa Management Unit and associated SRMAs. This plan will implement the designated route system.

2.3.2.2.4 Harquahala Management Unit

The Harquahala MU under *Alternative B* would be bounded on the east by the Hassayampa MU and would extend west to the Phoenix Field Office boundary near the town of Wenden. The MU's southern boundary would follow the BLM property line north and west of Tonopah. The northern boundary would also follow the BLM property line south of State Route 60, which runs west of Wickenburg, through Aguila and Wenden (Map 2-28). The MU would contain the following lands:

- 401,680 acres of BLM-administered lands,
- 31,970 acres of Arizona State land, and
- 7,710 acres of private land.

2.3.2.2.4.1 Special Area Designations

Current Special Area Designations within the Management Unit would be managed consistent with management actions described in section 2.7.3.2 in the Management Common to the Bradshaw-Harquahala Planning Area section of this chapter.

No new special area designations would be proposed within the Harquahala MU in *Alternative B.*

2.3.2.2.4.2 Lands and Realty

Land Tenure Adjustments

Alternative B proposes no lands for disposal within this MU.

Communication Sites

The Harquahala Peak communication site is the only designated communication site within this MU. New communication facilities would be limited to existing designated communication sites.

2.3.2.2.4.3 Biological Resources

Land Use Allocation

Harquahala Mountains WHA

Desired Future Condition

The current geographic distribution, plant diversity, and richness of the Chaparral and Sonoran Desert scrub vegetation communities in this desert mountain landscape would be maintained or enhanced. Unfragmented wildlife habitat would provide adequate forage, cover, and access to water for healthy wildlife populations.

Management Actions

New grazing improvements in Browns Canyon and the Inner Basin would be prohibited or designed to avoid increasing livestock use or concentrated livestock use.

BLM would acquire available State and private lands upon agreement with land owners.

Vehicle routes that conflict with maintenance of wildlife habitat could be closed, limited, or mitigated to ensure achieving of the DFC.

Maintenance of wildlife habitat would be given management priority in resolving resource conflicts.

2.3.2.2.4.4 Cultural Resources

Land Use Allocation

Harquahala Mountains SCRMA

Desired Future Condition

Provide a variety of prehistoric and historic sites for interpretation, education, and public visitation. For further information on public use of cultural resources, see Appendix E.

Management Actions

A combination of some or all of the following and other actions could be implemented at selected sites:

- building visitor facilities such as parking areas, platforms, restrooms, picnic tables, benches, or trash receptacles,
- installing signs along routes and trails to direct visitors to interpreted sites,
- building hardened walking trails,
- installing interpretive signs and register boxes, and/or
- preparing brochures and related educational materials or programs.

Actions to stabilize, repair, and maintain sites in good condition would be taken as needed. Commercial and noncommercial group tours could be authorized and conducted under protective stipulations that are in accordance with BLM regulations and, where required, special recreation permits.

Administrative Actions

Specific sites for public use would be selected by considering the following factors:

- presence of aboveground features of interest to the public and amenable to interpretive development.
- accessibility to communities, travel routes, and recreation trails,
- condition of the site and the feasibility of stabilizing selected areas or features to withstand visitation,
- visitor safety,
- compatibility with other land uses and site values, such as traditional use by Native Americans,
- feasibility of regular inspections by BLM staff and volunteers, and
- partnership opportunities for interpretive and educational projects.

The BLM recreation program would participate in developing sites for public use.

BLM would cooperate with agencies, tribes, and local communities in supporting heritage tourism programs that benefit local economies. Historic properties for heritage tourism would be developed to contribute to their long-term preservation and productive use.

BLM would continue to work with the Site Steward Program to regularly monitor the condition of sites.

2.3.2.2.4.5 Recreation Resources

Land Use Allocation

The entire Management Unit would be allocated as an Extensive Recreation Management Area.

Management Actions

A Trans-Harquahala Trail would be designated and developed.

Implementation Actions

Select, plan, and develop at least one staging and camping area to meet motorized and non-motorized recreation demand. Have this area provide accommodation for the following:

- parking,
- unloading OHVs and horses,
- overnight camping, and
- large organized event operations.

Development may include the following:

- informational signs,
- kiosks,
- picnic tables,
- hitching posts,
- troughs for water hauled to the site,
- loading ramp, and
- soil stabilization for dust abatement.

Exposed, barren soil would not exceed 15 acres. Site-specific analysis, site design, and allowable site uses would address the potential effects on the objectives of the wildlife movement corridor.

2.3.2.2.4.6 Wilderness Characteristics

Land Use Allocation

In *Alternative B* for the Harquahala Management Unit, 87,070 acres as portrayed on Map 2-31 would be allocated to maintain or enhance wilderness characteristics.

Desired Future Condition

In addition to the DFC and management actions described in the Wilderness Characteristics discussion of the Management Common to Both Planning Areas section of this chapter, the following apply to this allocation.

The area would be managed mainly for an emphasis on non-motorized recreation experiences, open space, and natural landscapes to complement the region's diverse recreation opportunities. Recreation settings of semi-primitive non-motorized would be maintained throughout the area. Natural landscape values and remoteness would be maintained.

The current mix of motorized and non-motorized recreation settings, associated landscapes, and experiences would be maintained.

Management Actions

Recreation management would be for settings of semi-primitive non-motorized with semi-primitive motorized along boundaries and designated routes.

Revegetating routes (also called "reclaiming" routes), washes, and single-track vehicle routes would be closed. Unnecessary tertiary routes would also be closed to enhance scenic values, wildlife habitat, solitude, and remoteness values; and to expand primitive recreational settings and opportunities. Routes that access wildlife waters, livestock facilities, and other authorized facilities requiring periodic access would remain open.

Motorized competitive races would not be permitted.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.3.2.2.4.7.

Disposal of mineral materials or vegetation sales would be prohibited.

Recreation related actions suggested for the allocated areas can be found in section 2.3.2.2.4.5.

Administrative Actions

Site-specific standards would be established to maintain proper levels of recreation-related disturbance allowed within each desired recreation setting.

2.3.2.2.4.7 Visual Resources

Land Use Allocations

VRM classes for *Alternative B* throughout the planning area would be allocated as described in Table 2-2 as portrayed on Map 2-15.

Within the Harquahala Management Unit:

- the existing Harquahala Mountains, Hummingbird Springs, and Big Horn Mountains Wilderness Areas would continue to be allocated to VRM Class I objectives,
- lands allocated to maintain or enhance wilderness characteristics would be allocated to VRM class II objectives,
- utility corridors would be allocated to VRM Class III or IV, and
- areas not listed above would be allocated to VRM classes as portrayed on Map 2-15.

2.3.2.2.4.8 Mineral Resource Management

Management Actions

Lands allocated to maintain or enhance wilderness characteristics would be closed to mineral material disposal.

2.3.2.2.4.9 Transportation and Public Access

Land Use Allocation

The Harquahala Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

Allocations to maintain or enhance wilderness characteristics are discussed in section 2.3.2.2.4.6.

SCRMAs with sites allocated to public use are discussed in the Cultural Resources section 2.3.2.2.4.4.

Management Actions

Limit all vehicles to designated routes. No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Close all revegetating routes (also called "reclaiming" routes), washes, and single-track vehicle routes within 87,070 acres (Map 2-31) allocated to maintain or enhance wilderness characteristics. Unnecessary tertiary routes would also be closed. Routes to wildlife waters, livestock facilities, and other authorized facilities requiring periodic access would remain open.

Designate a Trans-Harquahala Trail.

Consider providing a variety of hardened walking trails to prehistoric and historic sites within the Harquahala Mountains SCRMA for interpretation, education, and public visitation.

2.3.2.2.5 Harcuvar Management Unit

The Harcuvar MU encompasses the easternmost end of the Harcuvar Mountains within the PFO's administrative area. Most of the Harcuvar Mountains are administered by BLM's Lake Havasu Field Office. The Harcuvar MU is bounded on the west and north by the boundary between the Phoenix and Lake Havasu Field Offices, and on the east and south by the boundary between BLM and non-BLM administered lands (Map 2-29). The MU contains the following lands:

- 53,200 acres of BLM-administered lands,
- 6,280 acres of Arizona State land, and
- 3,360 acres of private land.

2.3.2.2.5.1 Special Area Designations

No new special area designations would be proposed within this MU in *Alternative B.*

2.3.2.2.5.2 Lands and Realty

Land Tenure Adjustments

No lands have been identified for disposal.**Communication Sites**

No designated communication sites lie within this MU.

2.3.2.2.5.3 Biological Resources

No other biological resource allocations would be proposed within this MU.

2.3.2.2.5.4 Cultural Resources

Land Use Allocation

Harcuvar Mountains SCRMA

Desired Future Condition

A variety of prehistoric and historic sites would be developed for interpretation, education, and public visitation. For further information on public use of cultural resources, see Appendix E.

Management Actions

A combination of the some or all of following and other actions could be implemented at selected sites:

- building visitor facilities such as parking areas, platforms, restrooms, picnic tables, benches, or trash receptacles,
- installing signs along routes and trails to direct visitors to interpreted sites,
- building hardened walking trails,
- installing interpretive signs and register boxes, and/or
- preparing brochures and related educational materials or programs.

Actions to stabilize, repair, and maintain sites in good condition would be initiated as needed.

Commercial and noncommercial group tours would be authorized and conducted under protective stipulations that are in accordance with BLM’s regulations and, where required, special recreation permits.

Administrative Actions

Sites for public use would be selected by considering the following factors:

- presence of aboveground features that are of interest to the public and are amenable to interpretive development,
- accessibility to communities, travel routes, and recreation trails,

- condition of the site and the feasibility of stabilizing selected areas or features to withstand visitation,
- visitor safety,
- compatibility with other land uses and site values, such as traditional use by Native Americans,
- feasibility of regular inspections by BLM's staff and volunteers, and
- partnership opportunities for interpretive and educational projects.

The BLM's recreation program would participate in developing sites for public use.

BLM would cooperate with agencies, tribes, and local communities in supporting heritage tourism programs that benefit local economies. Historic properties for heritage tourism would be developed to contribute to their long-term preservation and productive use.

BLM would continue to work with the Site Steward Program to regularly monitor the condition of sites.

2.3.2.2.5.5 Recreation Resources

Land Use Allocations

The entire Management Unit would be allocated as an Extensive Recreation Management Area.

2.3.2.2.5.6 Visual Resources

Land Use Allocations

VRM classes for *Alternative B* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-15.

Within the Harcuvar Management Unit:

- the area along the Harcuvar Mountains would be allocated to VRM Class III
- the rest of the Management Unit would be allocated to VRM Class IV

2.3.2.2.5.7 Transportation and Public Access

Land Use Allocation

The Harcuvar Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

SCRMAs with sites allocated to public use are discussed in section 2.3.2.2.5.4 Cultural Resources.

Management Actions

All vehicles would be limited to designated routes. No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Consider developing hardened walking trails to prehistoric and historic sites within the Harcuvar Mountains SCRMA for interpretation, education, and public visitation.

2.3.2.2.6 Resource Allocations Not Within a Management Unit

2.3.2.2.6.1 Cultural Resources

Land Use Allocation

Galena Gulch SCRMA: (Map 2-30)

Desired Future Condition

A variety of prehistoric and historic sites would be selected for interpretation, education, and public visitation. For further information on public use of cultural resources, see Appendix E.

Management Actions

A combination of the some or all of following and other actions could be implemented at selected sites:

- building visitor facilities such as parking areas, platforms, restrooms, picnic tables, benches, or trash receptacles,
- installing signs along routes and trails to direct visitors to interpreted sites,
- building hardened walking trails,
- installing interpretive signs and register boxes, and/or
- creating brochures and related educational materials or programs.

Actions to stabilize, repair, and maintain sites in good condition would be implemented as needed.

Commercial and noncommercial group tours would be authorized and conducted under protective stipulations that are in accordance with BLM's regulations and, where required, special recreation permits.

Administrative Actions

Sites for public use would be selected by considering the following:

- presence of aboveground features that are of interest to the public and are amenable to interpretive development,
- accessibility to communities, travel routes, and recreation trails,
- site condition and feasibility of stabilizing selected areas or features to withstand visitation,
- visitor safety,
- compatibility with other land uses and site values, such as traditional use by Native Americans,
- feasibility of regular inspections by BLM's staff and volunteers, and
- partnership opportunities for interpretive and educational projects.

The BLM's recreation program would help develop sites for public use.

BLM would cooperate with agencies, tribes, and local communities in supporting heritage tourism programs that benefit local economies. Historic properties for heritage tourism would be developed to contribute to their long-term preservation and productive use.

BLM would continue to work with the Site Steward Program to regularly monitor the condition of sites.

2.3.2.2.6.2 Recreation Resources

Land Use Allocation

Skull Valley SRMA: (Map 2-30)

Desired Future Condition

The landscape character would be maintained, and motorized access to routes in Prescott National Forest would also be maintained.

Management Actions

Motorized and mechanized uses would be on designated motorized routes.

Management of the Skull Valley SRMA would be transferred to the adjacent Prescott National Forest upon agreement by BLM and the U.S. Forest Service.

Land Use Allocation

North Black Canyon Trail SRMA: (Map 2-30)

Desired Future Condition

The Black Canyon Trail from Highway 69 north and east would be completed to connect with trails in Prescott National Forest. A non-motorized experience along or near the historic sheep driveway would be provided. The trail and any ancillary facilities would generally be

along the corridor established by secretarial order in 1969.

Management Actions

Rights-of-way would be acquired for the trail and facilities to preserve their access and long-term character.

Easements or rights-of-way would be acquired on lands where the trail or facilities must cross or be built on non-Federal lands.

Any future land tenure action will recognize the trail and facilities and will retain a ¼ mile corridor (1/8 mile on each side) along the trail and any ancillary facility, as well as public access to the trails and facilities by easement, right-of-way, deed restriction, or other suitable means.

Administrative Actions

Establish a citizen focus group to help with trail and facility sites, designs, and management. With citizen's input, write a long-term SRMA management plan. Exact locations of the trail or any ancillary facilities would be determined in conjunction with the Yavapai County Trails Committee and the Trail and Facilities Citizen Group.

Land Use Allocation

All other BLM lands outside of Management Units in this Alternative would be allocated to an Extensive Recreation Management Area.

2.3.2.2.6.3 Visual Resources

Land Use Allocations

VRM classes for *Alternative B* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-15.

2.3.2.2.6.4 Transportation and Public Access

Land Use Allocation

All areas not within management units would be allocated as limited use areas, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

SRMAs are discussed in Recreation and Public Access section 2.3.2.2.6.2.

SCRMAs with sites allocated to public use are discussed in the Cultural Resources section 2.3.2.2.6.1.

Management Actions

All vehicles would be limited to designated routes. No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

In the Skull Valley SRMA: (Map 2-30) motorized vehicle travel would be restricted to lower speeds near private lands with travel only on designated motorized routes.

In the North Black Canyon Trail SRMA: (Map 2-30) the Black Canyon Trail would connect to trails in Prescott National Forest.

Consider developing hardened walking trails within the Galena Gulch SCRMA to prehistoric and historic sites for interpretation, education, and public visitation.

2.4 Alternative C

The following discussion and the DFCs, land use allocations, and management actions described in the Management Common to All Action Alternatives section of Chapter 2, comprise the total proposed *Alternative C.*

2.4.1 Agua Fria National Monument

The overall theme of *Alternative C* is to allow visitors to experience the natural landscape and cultural resource setting of Agua Fria National Monument. Management decisions will focus on protecting the monument's resources while accommodating visitor experiences. Such management would result in limited access and establishing a larger Back Country RMZ than under *Alternative B* to preserve the natural landscape and enhance primitive recreation opportunities. *Alternative C* would also emphasize managing cultural resources for more limited public use. Upland grazing areas would remain similar to those under current management, but riparian areas would be closed to grazing. Managing natural and cultural resources would generally be more restrictive than under *Alternative B.*

2.4.1.1 Special Area Designations

Alternative C for Agua Fria National Monument would designate four ACECs, shown on Map 2-33, for managing the Gila chub. *Alternative C* would also remove the designation of the existing Perry Mesa and Larry Canyon ACECs because the national monument's proclamation (Appendix A) provides for more protection and management across a more extensive landscape than the ACEC designation.

Alternative C also proposes studying eligibility of more waterways for WSR designations and evaluating a back country byway.

Areas of Critical Environmental Concern

Silver Creek ACEC (350 acres)

Relevance

Silver Creek ACEC would protect a rare riparian deciduous forest.

Importance

The habitat supports a federally proposed native fish (Gila chub) and provides special features of value for studies of desert riparian systems. The area is proposed as a critical habitat for the Gila chub.

Desired Future Condition

The integrity of the riparian area and endangered species habitat quality are maintained and protected from degradation.

Management Actions

Motorized vehicle routes would be closed or mitigated to avoid degrading riparian values or habitat for Gila chub.

Livestock grazing would be prohibited.

Indian Creek ACEC (330 acres)

Relevance

Indian Creek ACEC would protect a rare riparian deciduous forest.

Importance

Habitat supports a federally proposed native fish (Gila chub) and provides special features of value for studies of desert riparian systems. The area is proposed as a critical habitat for the Gila chub.

Desired Future Condition

The integrity of the riparian area and endangered species habitat quality are maintained and protected from degradation.

Management Actions

Lands along Indian Creek would be acquired from willing non-Federal land holders. Motorized vehicle routes would be closed or

mitigated to avoid degrading riparian values or habitat for Gila chub.

Livestock grazing would be prohibited.

Larry Canyon ACEC (50 acres)

Relevance

Rare riparian deciduous forest

Importance

Habitat supports a federally proposed native fish (Gila chub) and provides special features of value for studies of desert riparian systems. The area is proposed as a critical habitat for the Gila chub.

Desired Future Condition

The integrity of the riparian area and endangered species habitat quality are maintained and protected from degradation.

Management Actions

Motorized vehicle routes would be closed or mitigated to avoid degrading riparian values or Gila chub habitat.

Livestock grazing would be prohibited.

Lousy Canyon ACEC (80 acres)

Relevance

Rare riparian deciduous forest

Importance

Habitat supports the federally listed Gila topminnow and desert pupfish and federally proposed Gila chub and provides special features of value for studies of desert riparian systems. The area is proposed as a critical habitat for the Gila chub.

Desired Future Condition

The integrity of the riparian area and endangered species habitat quality are maintained and protected from degradation.

Management Actions

Motorized vehicle routes would be closed or mitigated to avoid degrading riparian values or habitat for Gila chub.

Livestock grazing would be prohibited.

Wild and Scenic Rivers

Tributaries to the Agua Fria River would be studied to determine eligibility for wild and scenic river designation in accordance with the WSR Act (Map 2-33).

Back Country Byways

Evaluate and nominate a back country byway on Bloody Basin Road if standards and requirements are met (Map 2-33).

Desired Future Condition

The back country byway would provide a vehicle-based recreation experience with amenities to heighten visitors' experiences and to educate, and inform visitors about interesting natural and cultural features along the route. Visitors could expect the road to occasionally be difficult and settings to be remote. The road might not be accessible to all classes of vehicle. High-clearance vehicles might be needed to travel the whole route. A recreation setting of semi-primitive motorized would be maintained for ½ mile to either side of the road's centerline.

Management Actions

Road maintenance standards would conform to a BLM Level 2 standard, (BLM 9100 Manual) passable by high-clearance vehicles.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.4.1.6.

Easements and rights-of-way would be secured where needed to ensure long-term public access.

Monument features along the route would be interpreted, including prehistoric cultural features, historic homesteads, settlements, and ranching history.

Directional, safety, and interpretive signs would be installed to enhance public use, enjoyment, and stewardship of the area.

Administrative Actions

A cooperative and a collaborative site plan would be developed with landowners and other agencies affected by the byway designation.

2.4.1.2 Lands and Realty

2.4.1.2.1 Utility and Transportation Corridors

The Black Canyon utility corridor would be eliminated from the monument. All existing rights-of-way and prior existing rights would continue to be honored.

2.4.1.3 Biological Resources

Alternative C for the Agua Fria National Monument would designate two WHAs for enhancing pronghorn habitat and four ACECs for managing biological resources, especially Gila chub. The current Larry Canyon ACEC would be dropped because the monument proclamation (Appendix A) provides more protection and management across a more extensive landscape.

The ACECs are described in the Special Area Designations section of *Alternative B.* The management actions for the WHAs, which are shown in Map 2-34, are outlined below.

Land Use Allocation

Pronghorn Fawning Habitat WHA.

Pronghorn Movement Corridor WHA.

Desired Future Condition

Unfragmented wildlife habitat that provides adequate forage, cover, and access to water for healthy wildlife populations, especially pronghorn.

Management Actions

Vehicle routes that cross known pronghorn movement corridors and have a type and a volume of use that modifies pronghorn behavior in ways that fragment their habitat, will be closed or mitigated to minimize the fragmentation.

Prescribed fire would continue to be used to improve pronghorn habitat.

New recreation sites would not be developed in pronghorn movement corridors.

Maintenance of wildlife habitat would be given management priority in resolving resource conflicts.

2.4.1.4 Cultural Resources

Alternative C would develop a moderate number of interpretive improvements to enhance visitor experiences by increasing access to a few archaeological sites and developing interpretive information about the national monument's cultural resources.

Areas of the monument would be allocated to SCRMAs focused on varying levels of public use as shown in Table 2-4 SCRMAs and on Map 2-35.
For descriptions of associated actions, see the Cultural Resources section of Management Common to Agua Fria National Monument. High use represents the most

intensive degree of interpretive development, and moderate use involves less intensive development of access and interpretive facilities. All areas of the monument not shown as high or moderate use SCRMAs on Map 2-35 would be considered areas of low public use that are not available for on-the-ground interpretive development or commercial tours.

Table 2-4. Alternative C: Cultural Resource Public Use Areas

Level of Public Use	Locations/Sites
High	Pueblo la Plata and Fort Silver (Pueblo la Plata Complex)
Moderate	Baby Canyon Pueblo and Pueblo Pato; Badger Springs rock art, Richinbar Ruin, the Rollie site, the Arrastra site, and Badger Pueblo The historic Teskey homestead near the Agua Fria River.
Low	Public use of archaeological sites would be limited in all other areas not described above.

2.4.1.5 Recreation Resources

In *Alternative C,* the entire monument would be allocated to a Special Recreation Management Area with three Recreation Management Zones within it. These zones would include a Back Country RMZ of 28,420 acres to manage and maintain the natural landscape character in the Agua Fria River Canyon and tributaries, and Perry Mesa south of Bloody Basin Road (Map 2-35). A Passage RMZ of 70 acres would be allocated 100 feet on each side of the centerline of designated routes that pass through or enter into the Back Country RMZ, to manage (1) vehicle-based visitation and (2) commercial-based operations such as grazing permits. The rest of the monument would be allocated as a Front Country RMZ of 42,410 acres, where more focus could be placed on recreation and interpretive opportunities. General descriptions of the Front Country, Back Country, and Passage RMZs, including desired future conditions common to all Alternatives, are in the Management Common to Agua Fria National Monument section of this document under the discussion in section 2.7.2.7.

Land Use Allocation

Front Country Recreation Management Zone of 42,410 acres

Desired Future Condition

See Desired Future Condition description in the Recreational Resources section 2.7.2.7 of the Management Common to Agua Fria National Monument section of this chapter.

Management Actions

VRM Allocations to achieve the Desired Future Conditions of this Recreation Management Zone are described in section 2.4.1.6.

SRPs and Concessions:

- Up to six SRPs would be authorized within the monument each year. These SRPs might include any combination of the following:
    - Commercial (e.g. jeep tours, outfitters),
    - Commercial special events, and
    - Noncommercial special events.
- Issue permits and concessions to enhance visitor use, services, and visitor safety and enjoyment, providing these conform to monument values and objectives. BLM will consider concessions and permits on a case-by-case basis, basing its determinations on consistency with management objectives and a clearly demonstrated need.

Dispersed Camping:

- Camping permits could be required if resource damage occurs that inhibits achieving resource DFCs or threatens resources protected by proclamation, or if health and safety issues emerge. If damage continues, more

- limitations might be required, including temporary or permanent area closures, limiting camping to designated sites, or seasonal limitations or closures.
- Allow camping at designated sites only.

Developed Campgrounds:

- Develop one campground at either Badger Springs or near the Bloody Basin Road outside the WHAs.
- Limit campsites to 20, with a picnic table, fire ring, and ramada provided at each site.
- Develop potable water if available.
- Provide restrooms to address health and sanitation issues.

Campfires:

- Prohibit campfires within ¼ mile of High and Moderate public-use archaeological sites.
- Prohibit campfires at archaeological sites, including petroglyph (rock art) sites.
- Prohibit campfires within ¼ mile of a developed campground.
- Within campgrounds, allow campfires only in manufactured campfire rings.
- Allow campfires at designated sites.
- Limit firewood collection to campfire use only. Firewood may consist of dead, down, and detached material.
- To prevent resource damage, monitor vegetation for use and disturbance and temporarily or permanently suspend this use to prevent resource damage.

Recreational Target Shooting:

- Recreational target shooting would be prohibited within the Front Country RMZ.

Trail Construction for Non-motorized Recreation Use

Discussion of recreation trail development can be found in section 2.4.1.8.

Land Use Allocation

Back Country Recreation Management Zone of 28,420 acres

Desired Future Condition

Maintain or enhance the natural landscape character of the Agua Fria River Canyon and tributaries (Map 2-35). See Desired Future Condition description in section 2.7.2.7 of the Management Common to Agua Fria National Monument section of this chapter.

Management Actions

VRM Allocations to achieve the Desired Future Conditions of this Recreation Management Zone are described in section 2.4.1.6.

Maintain river crossings at Kelton Ranch, EZ Ranch, Horseshoe Ranch, and Cross Y Ranch.

SRPs and Concessions:

- Up to six SRPs would be authorized within the monument each year. These SRPs might include any combination of the following:
    - Commercial (e.g. jeep tours, outfitters),
    - Commercial special events, and
    - Noncommercial special events.
- Issue permits and concessions to enhance visitor use, services, safety, and enjoyment, providing they conform to monument values and objectives. Evaluate concessions and permits on a case-by-case basis. Determinations would be made on consistency with management objectives and clearly demonstrated needs.

Dispersed Camping:

- Allow camping but limit it to certain designated areas if resource damage occurs. Camping permits could be required if resource damage occurs that inhibits achieving resource DFCs or threatens resources protected by proclamation, or if health and safety issues emerge. If damage continues, more limitations might be required, including temporary or permanent area closures, limiting camping to designated sites, or seasonal limitations or closures.
- Prohibit camping at archaeological sites, including at petroglyph (rock art) sites.
- Allow camping if at least ¼ mile from High or Moderate use archaeological sites.
- Camping would be prohibited within ¼ mile from water sources "...containing water in such a place that wildlife or domestic stock will be denied access to the only reasonably available water (Arizona Revised Statute 17-308, Unlawful Camping).

Campfires:

- Allow campfires at dispersed sites.
- Prohibit campfires within ¼ mile of High and Moderate public-use archaeological sites.
- Prohibit campfires within 200 feet of archaeological sites, including petroglyph (rock art) sites.
- Prohibit campfires within ¼ mile of a developed campground.
- Allow campfires only in existing disturbed areas.
- Allow campfires in existing campfire rings only.
- Limit firewood collection to campfire use only. Firewood may consist of dead, down, and detached material. To prevent resource damage, monitor vegetation for use and disturbance. Temporarily or permanently suspend firewood collection to prevent resource damage.

Recreational Target Shooting:

- Targets need to be of a type and material that will not produce litter and must be cleaned up after use.
- Spent shell casings have to be cleaned up after use.
- Unacceptable impacts to monument resources or public safety would result in further management actions, ranging from further restrictions to closure.
- Prohibit shooting within ½ mile of areas where people congregate, including trailheads, campgrounds, interpretive sites, kiosks, and other high-use sites.

Trail Construction for Non-motorized Recreation Use

Discussion of recreation trail development can be found in section 2.4.1.8.

Land Use Allocation

The Passage Recreation Management Zone would consist of 70 acres.

Desired Future Condition

See Desired Future Condition description in section 2.7.2.7 of the Management Common to Agua Fria National Monument section of this chapter.

Management Actions

VRM Allocations to achieve the Desired Future Conditions of this Recreation Management Zone are described in section 2.4.1.6.

SRPs and Concessions:

- Up to six SRPs would be authorized within the monument each year. These SRPs might include any combination of the following:
    - Commercial (e.g. jeep tours, outfitters),
    - Commercial special events, and
    - Noncommercial special events.

- Issue permits and concessions to enhance visitor use, services, and visitor safety and enjoyment, providing these conform to monument values and objectives. Consider concessions and permits on a case-by-case basis, with determinations based on consistency with management objectives and a clearly demonstrated need.

Dispersed Camping:

- Allow camping at designated sites only.
- Camping permits could be required if resource damage occurs that inhibits achieving resource DFCs or threatens resources protected by proclamation, or if health and safety issues emerge. If damage continues, more limitations might be required, including temporary or permanent area closures, limiting camping to designated sites, or seasonal limitations or closures.
- Prohibit camping on archaeological sites, including petroglyph (rock art) sites.
- Allow camping if at least ¼ mile from High or Moderate public use archaeological sites.
- Camping would be prohibited within ¼ mile from water sources "...containing water in such a place that wildlife or domestic stock will be denied access to the only reasonably available water (Arizona Revised Statute 17-308, Unlawful Camping).

Campfires:

- Prohibit campfires within ¼ mile of High and Moderate public-use archaeological sites.
- Prohibit campfires at archaeological sites, including petroglyph (rock art) sites.
- Prohibit campfires within ¼ mile of a developed campground.
- Limit firewood collecting to campfire use only. Firewood may consist of dead, down, and detached material. To prevent resource damage, monitor vegetation for use and disturbance. Temporarily or permanently suspend firewood collecting to prevent resource damage.

Recreational Target Shooting:

- Targets need to be of a type and material that will not produce litter and must be cleaned up after use.
- Spent shell casings have to be cleaned up after use.
- Unacceptable impacts to monument resources and public safety would result in further management actions, ranging from further restrictions to closure.

Trail Construction for Non-motorized Recreation Use

Discussion of recreation trail development can be found in section 2.4.1.8.

Administrative Actions

Collect baseline data concerning recreational target shooting, to determine social and resource impact, to establish monitoring needs and frequencies, and to detect change.

2.4.1.6 Visual Resources

Land Use Allocations

VRM classes for *Alternative C* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-36. Within the Agua Fria National Monument, the Front Country and Passage RMZs would be allocated to VRM Class III. The Back Country RMZ and 1/2 mile on each side of the proposed Bloody Basin Road Back Country Byway would be allocated to Class II objectives.

2.4.1.7 Rangeland Management

Land Use Allocation

Eleven grazing authorizations would continue to be administered within Agua Fria National Monument. Grazing would be prohibited in the monument's riparian areas (Map 2-37). On grazing allotments where riparian areas are unfenced, the entire pasture would be closed to grazing.

Desired Future Condition (DFC)

Watersheds are in properly functioning condition, including their upland, riparian, and aquatic components. Soil and plant conditions support infiltration, storage, and release of water that are in balance with climate and landform.

Ecological processes are maintained to support healthy biotic populations and communities.

Within 3 years, riparian areas that did not meet Standard 2 of the Arizona Standards for Rangeland Health (Land Health Standards) because of livestock grazing would meet that standard.

Management Actions

For allotments where the public lands are unfenced from other lands, fencing and surveys would be required to establish the boundaries of the riparian areas and protect them from livestock grazing.

The loss of allotment acres because of the riparian restriction would result in current authorized livestock numbers being correspondingly reduced.

Fence construction and maintenance will follow guidance provided in BLM's handbook on Fencing No. 1741-1.

2.4.1.8 Transportation and Public Access

Land Use Allocation

The entire monument is allocated as limited to designated routes.

Management Actions

Cross-country motorized travel is prohibited except in the case of an emergency or for approved administrative purposes.

Within Front Country

Trail Construction for Non-motorized Recreation Use:

- Develop trails as needed to enhance resources and recreation experiences and to protect monument values. Any construction would be compatible with Desired Future Conditions for the construction area.
- Design trails to blend into the environment.
- Build loop, connector, and linear trails, depending on recreation, access, and resource objectives.
- Where appropriate, build trails to maintain connectivity to recreation opportunities such as hunting, equestrian activities, hiking, and viewing cultural sites.
- Where appropriate, build trails to link with other connector trails beyond the monument's border.
- Explore opportunities to link networks of non-motorized trails within the monument to trails outside the monument on other BLM lands, or in other adjacent jurisdictions, including Tonto and Prescott National Forests, Yavapai County, and local communities, where linkages are consistent with monument values and do not impair protection of monument resources.
- Place priority for developing non-motorized trails on archaeological sites developed for interpretive use and visitation.

- Evaluate other non-motorized trails to enhance visitor access and enjoyment of monument resources. Such trails may include (1) self-guided nature and cultural resource trails, (2) trails to interpreted sites not accessible by vehicle, or (3) longer trails linking multiple sites for day or multiple-day trips.

Route Construction for Motorized Use:

- All construction would be compatible with Desired Future Conditions for the construction area.
- Evaluate new motorized vehicle routes on a case-by-case basis, with determinations based on protecting and enhancing monument values.
- Enhance existing routes north of Bloody Basin Road to provide greater motorized recreation opportunities.

Off-Highway Vehicles:

- All vehicles would be limited to designated routes consistent with the discussion in section 2.7.2.10.
- Manage OHV access to provide for a variety of use experiences, including allowing public access to the monument's cultural and biological resources.

Within Back Country

Trail Construction for Non-motorized Recreation Use:

- Develop trails as needed to enhance resources and recreational experiences and protect monument values. All construction would be compatible with Desired Future Conditions for the construction area.
- Design trails to blend into the environment.
- Build loop, connector, and linear trails, depending on recreation, access, and resource objectives.
- Where appropriate, build trails to maintain connectivity to recreational opportunities, such as hunting, hiking, equestrian activities, and viewing cultural sites.
- Where appropriate, build trails to link with other connector trails beyond the monument's border.
- Explore opportunities to link networks of non-motorized trails within the monument to trails outside the monument on other BLM lands, or on other adjacent jurisdictions, including Tonto and Prescott National Forests, Yavapai County, and local communities, where trail linkages conform to monument values and do not impair protection of monument resources.

Route Construction for Motorized Use:

- Build no new routes within the Back Country RMZ.

Off-Highway Vehicles:

- Manage the Back Country RMZ as a non-motorized area.

Within Passage

Trail Construction for Non-motorized Recreational Use

- Develop trails as needed to enhance resources and recreational experiences, and protect monument values. All construction would be compatible with Desired Future Conditions for the construction area.
- Design trails to blend into the environment.
- Build loop, connector, and linear trails, depending on the established recreation, access, and resource objectives.
- Build trails to maintain connectivity to recreation opportunities, such as hunting, riding, and viewing cultural sites.

- Build trails to link with other connector trails beyond the monument's border.
- Explore opportunities to link networks of non-motorized trails within the monument to trails outside the monument on other BLM lands, or within other adjacent jurisdictions, including Tonto and Prescott National Forests, Yavapai County, and local communities, where trail linkages conform to monument values and do not impair protection of monument resources.
- Place the priority for developing non-motorized trails on archaeological sites developed for interpretive use and visitation.
- Evaluate other non-motorized trails to enhance visitor access and enjoyment of monument resources. These trails may include (1) self-guided nature and cultural resource trails, (2) trails to interpreted sites not accessible by vehicle, or (3) longer trails linking multiple sites for day or multiple-day trips.
- Build non-motorized trails to provide access to core use areas. Such trails could consist only of routes marked by low-impact fiberglass posts with minimal ground disturbance.

Route Construction for Motorized Use:

- All construction would be compatible with desired recreation settings.
- Motorized route construction would be considered only as mitigation for resource conflicts.

Off-Highway Vehicles:

- All vehicles would be limited to designated routes consistent with the discussion in section 2.7.2.10.
- Manage OHV access to provide for a variety of use experiences, especially to provide access for public visitation of the monument's cultural and biological resources.

Implementation Actions

Public Access

An evaluation tree review process was used to establish a designated public access and route system to support resource objectives consistent with *Alternative C* and to protect monument resources. The results of the evaluation are shown on Map 2-38. A summary of the route status and quantity that would be designated is shown below.

Routes Open 129 miles

Routes Closed 50 miles

New Routes 6 miles

2.4.2 Bradshaw-Harquahala Planning Area

Although *Alternative C* still places some emphasis on resource use and development, it places greater emphasis on more undeveloped opportunities. Some areas would undergo more protective management than that proposed under *Alternative B*. The result is limiting access, closing some areas to vehicles, and establishing an increased number and acreage of areas of critical environmental concerns (ACECs). In addition, there would be fewer cultural resources devoted to public use and a greater number of acres allocated to maintain or enhance wilderness characteristics. Grazing of uplands would remain similar to current management, but riparian areas would be closed to grazing. Mining would be open in most areas, with restrictions in areas that are allocated to maintain or enhance wilderness characteristics and ACECs. Visual resource management (VRM) would be consistent with increased emphasis on resource protection. The management units (MUs) for *Alternative C* are shown on Map 2-39.

2.4.2.1 Management Applicable to the Entire Bradshaw-Harquahala under this Alternative

2.4.2.1.1 Lands and Realty

Land Tenure Adjustments

Under *Alternative C* two methods have been developed for determining which lands are potentially suitable for disposal through sale or exchange. Management of all other resources would remain as discussed for the Alternative. The two methods are described below. The lands suitable for disposal, determined by both sets of criteria, are shown in Map 2-40.

The first method selects lands with the following traits:

- parcels of 160 acres or less and
- five miles or more from blocks (5,000 or more contiguous acres) of BLM-managed lands.

This method has found approximately 600 acres potentially suitable for disposal. Of these 600 acres, 344 acres are scattered lands outside the planning area boundaries but included in this planning effort. None of the areas determined by this method were in a management unit selected for *Alternative C.*

The second method selects lands with the following traits:

- either physically or functionally fragmented,
- in blocks of 5,000 acres or less, and
- generally not adjoining in-holdings of other Federal agencies.

This method found 49,100 acres to be potentially suitable for disposal. Of these 49,100 acres, 5,200 acres are within the scattered lands outside the planning area boundaries but included in this planning effort.

Other criteria limiting which lands might be selected as suitable for disposal are described in the Management Common to Both Planning Areas section of this chapter in the discussion under Lands and Realty section 2.7.1.2.

Lands considered for potential acquisition include State and private lands (willing seller) within the planning area. Acquired parcels would be managed in accordance with the resource management prescriptions outlined in this land use plan. These lands would meet the criteria described under the Lands and Realty discussion of the Management Common to Both Planning Areas, as well as program objectives for *Alternative C.*

Utility and Transportation Corridors

New utility corridors within the Bradshaw-Harquahala Planning Area (Map 2-41) would be allocated for future expected demands. These allocations would respond to the demand to intensify the power grid and would conform to the utility regulations of the Arizona Corporation Commission.

2.4.2.1.2 Rangeland Management

Land Use Allocation

BLM would continue to administer 93 grazing authorizations within the planning area.

Desired Future Condition

Watersheds are in proper functioning condition, including their upland, riparian, and aquatic components. Soil and plant conditions support infiltration, storage, and release of water that are in balance with climate and landform.

Ecological processes are maintained to support healthy biotic populations and communities.

In riparian areas where livestock grazing precluded achieving Standard 2 of the Arizona Standards for Rangeland Health (Land Health

Standards), the standard could be achieved within 3 years.

Management Actions

Grazing in riparian areas would be prohibited (Map 2-42). On grazing allotments where the riparian areas are unfenced and BLM owns or controls a sufficient amount of acreage within a pasture, the entire pasture would be closed to grazing.

For allotments where the public lands are unfenced from other lands, surveys, and fencing would be required to establish the boundaries of the riparian areas and protect them from livestock grazing where reasonable and prudent.

The loss of acres in an allotment because of the riparian restriction would result in a corresponding reduction in current authorized livestock numbers.

2.4.2.1.3 Mineral Resource Management

The following maps show minerals management proposed under *Alternative C* in the immediate environs of the planning areas:

- *Alternative C* Closed to Locatable Minerals (Map 2-43).
- *Alternative C* Closed to Leasable Minerals (Map 2-44).
- *Alternative C* Closed to Saleable Minerals (Map 2-45).

The following descriptions of mineral types include information on mining closures:

Leasable Minerals

All lands would be open to leasing except for the Tule Creek ACEC, Sheep Mountain RNA ACEC, Black Mesa ACEC, and Baldy Mountain ONA ACEC (Map 2-46), all of which would be closed to mineral and geothermal leasing.

Reconveyed lands with potential for leasable minerals would be opened for mineral and geothermal leasing.

Saleable Minerals (Mineral Materials)

All BLM lands in the planning area would be open for mineral material disposal, except for the following, which would be closed:

- Baldy Mountain ONA ACEC (Map 2-46).
- Black Butte ACEC (Map 2-46).
- Sheep Mountain RNA ACEC (Map 2-46).
- Tule Creek ACEC (Map 2-46).
- Vulture Mountains ACEC (Map 2-46).
- Black Mesa ACEC (Map 2-46).
- Lands allocated to maintain or enhance wilderness characteristics (Map 2-54).

Reconveyed lands with potential for saleable minerals would be opened for disposal of mineral materials.

Locatable Minerals

All lands would be open to mineral entry except for Baldy Mountain ONA ACEC, Sheep Mountain RNA ACEC, Black Mesa ACEC, and Tule Creek ACEC, all of which would be withdrawn from mineral entry (Map 2-46).

Small tracts and reconveyed lands with high potential for locatable minerals, except for lands in riparian corridors, would be opened to mineral entry.

No riparian areas now withdrawn from mineral entry would be opened to mineral entry under the mining laws.

2.4.2.1.4 Transportation and Public Access

Land Use Allocation

All public lands within the Bradshaw-Harquahala Planning Area would be allocated

as limited use areas, with motorized and mechanized vehicle uses limited to designated routes. The Hassayampa River Canyon, Hells Canyon, Harquahala Mountains, Big Horn Mountains and Hummingbird Spring Wildernesses would remain closed to motorized and mechanized uses (Map 2-16).

Desired Future Conditions

Define, designate, implement, and monitor a comprehensive travel management network affording a range of high-quality and diverse motorized and non-motorized recreation opportunities. The network would consist of a system of areas, roads, routes and/or trails. The travel management network and associated recreation opportunities would be consistent with other resource management objectives and recreation settings for the area.

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Administrative Actions

An evaluation process, similar to one described in Appendix D, will be used to establish a designated public access and route system within the Black Canyon Management Unit to support resource objectives consistent with *Alternative B.*

Develop comprehensive Travel and Transportation Management Plans for the management units and other public lands within the planning area. These plans would implement route designations on the public lands.

2.4.2.2 Management Units

Under *Alternative C*, six MUs are geographic units for presenting land use allocations. These MUs are summarized with their land use allocations and management actions in the following sections. As noted, areas within the MUs that do not receive specific land use allocations would be administered according to the DFC and management actions presented under Management Common to the Bradshaw-Harquahala Planning Area in the Management Units section of Chapter 2.

The document sections discussing the six MUs and the maps on which they appear are as follows:

- Black Canyon Management Unit, section 2.4.2.2.1, Map 2-47.
- Castle Hot Springs Management Unit, section 2.4.2.2.2, Map 2-48.
- Hassayampa Management Unit, section 2.4.2.2.3, Map 2-49.
- Harquahala Management Unit, section 2.4.2.2.4, Map 2-50.
- Harcuvar Management Unit, section 2.4.2.2.5, Map 2-51.
- Upper Agua Fria River Basin Management, section 2.4.2.2.6, Map 2-52.

Allocations outside MUs are discussed in section 2.4.2.2.7 and shown on Map 2-53. As noted, areas within the MUs that do not receive specific land use allocations would be administered according to the DFC and management actions presented under Management Units and in the Management Common to All Action Alternatives section of this chapter.

2.4.2.2.1 Black Canyon Management Unit

The Black Canyon MU stretches from the southern end of Table Mesa in the south to Cordes Junction in the north. It is bounded by Agua Fria National Monument and Tonto National Forest on the east and the Prescott National Forest on the west (Map 2-47).
The MU contains the following lands:

- 68,730 acres of BLM-administered lands,

- 12,600 acres of Arizona State land,
- 6,780 acres of private land, and
- 1,100 acres of county park lands in both Maricopa and Yavapai Counties.

2.4.2.2.1.1 Special Area Designations

Area of Critical Environmental Concern

Black Mesa ACEC (5,540 acres)

Relevance

Diverse types of significant archaeological sites occupied over the past 2,000 years, including sites that may have been ancestral to the Perry Mesa Tradition that was dominant in Agua Fria National Monument.

Importance

The Running Deer site and other prehistoric and historic sites with important scientific values and relationships to sites in the adjacent national monument.

Management Actions

Install fences or barriers to exclude livestock from the Running Deer site.

Withdraw the ACEC from mineral entry, close it to mineral and geothermal leasing, and close to mineral material disposal.

Implement measures to protect cultural sites.

Limit commercial tours and special recreation permits. Limit tours to those conducted for educational purposes in conjunction with site recording or protection projects.

Close all routes that lead directly to significant sites.

Administrative Actions

Complete Class III (intensive) cultural inventories of previously unsurveyed areas and permit BLM-approved scientific studies.

Continue to patrol sites with volunteer help and add this area to the territory regularly monitored by the Civil Air Patrol.

2.4.2.2.1.2 Lands and Realty

Land Tenure Adjustments

Within the Black Canyon MU, the two methods used to determine lands suitable for disposal; generated no parcels by the first method and 5,020 acres by the second. For a description of the methods used, see the Lands and Realty discussion at the beginning of the description of *Alternative C* for the Bradshaw-Harquahala Planning Area. See the lands that are suitable for disposal on Map 2-40.

Communication Sites

One designated communication site is located within this MU. The Black Canyon City communication site would be retained and subject to valid existing rights.

Utility and Transportation Corridors

The portion of the Black Canyon corridor to the west of Interstate 17 would be widened for future utility development. The western boundary of the corridor would be adjusted to be 2 miles west of the true center of I-17.

2.4.2.2.1.3 Biological Resources

No other biological resource allocations are located within this MU.

2.4.2.2.1.4 Cultural Resources

Land Use Allocation

Black Canyon Corridor SCRMA

Desired Future Condition

A variety of prehistoric and historic sites for interpretation, educational use, and public visitation would be available. For further information on public use of cultural resources, see Appendix E.

Management Actions

A combination of the some or all of following and other actions could be implemented at selected sites:

- parking areas,
- platforms,
- restrooms,
- picnic tables,
- benches,
- trash receptacles,
- signs along routes and trails to direct visitors to interpreted sites,
- hard-surfaced walking trails,
- interpretive signs and register boxes, and
- brochures and related educational materials or programs.

Stabilize, repair, and maintain sites in good condition.

Authorize commercial and noncommercial group tours, conducted with protective stipulations in accordance with BLM's regulations and, where required, SRPs.

Administrative Actions

Select specific sites for public use by considering the following factors:

- presence of aboveground features of interest to the public and amenable to interpretive development,
- accessibility to communities, travel routes, and recreation trails,
- site condition and the feasibility of stabilizing selected areas or features to withstand visitation,
- visitor safety,
- compatibility with other land uses and site values, such as traditional use by Native Americans,
- feasibility of regular inspections by BLM staff and volunteers, and
- partnership opportunities for interpretive and educational projects.

The BLM's recreation program would help develop sites for public use.

Cooperate with agencies, tribes, and local communities to develop heritage tourism programs that benefit local economies. Develop historic properties for heritage tourism in a way that contributes to their long-term preservation and productive use.

BLM would continue to work with the Site Steward Program to regularly monitor the condition of sites.

2.4.2.2.1.5 Recreation Resources

Land Use Allocation

Table Mesa SRMA

Desired Future Condition

Manage for intensive camping, OHV use, equestrian activities, and casual use mining. The SRMA would offer a diverse network of motorized single and two-track routes for general motorized recreation use, commercial use, and organized events.

Emphasize acceptable dust control and compatibility with neighboring communities and landowners.

Emphasize motorized recreation settings. Users may be concentrated in some areas, but use is mainly dispersed.

Develop some facilities; however, stress preserving the natural environment in recreation management. Develop only the facilities needed to meet resource management objectives.

Management Actions

Locate and develop a staging/camping area to meet the high recreation demand. Provide for the following:

- parking and unloading of OHVs,
- overnight camping,
- event operations,
- informational signing,
- dust abatement, and
- human health and safety.

Limit to 10 acres the areas of exposed barren soil.

Prohibit motorized competitive races in the SRMA.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.4.2.2.1.7.

Administrative Actions

Determine specific areas where comprehensive site assessments would be initiated to do the following:

- determine existing physical and social impacts of recreation activities,
- define desired conditions and standards, and
- establish monitoring plans to manage camping and other recreation uses.

Land Use Allocation

The remaining lands within the Management Unit would be allocated as an Extensive Recreation Management Area.

2.4.2.2.1.6 Wilderness Characteristics

Land Use Allocation

Within the Black Canyon Management unit, 14,880 acres would be allocated to maintain or enhance wilderness characteristics as shown on Map 2-54.

Desired Future Condition

In addition to the DFC and management actions described in the Wilderness Characteristics discussion of the Management Common to Both Planning Areas section of Chapter 2, the following apply to this allocation.

Manage with an emphasis on non-motorized and primitive recreation experiences, tied to open space and natural landscapes. Desired recreation settings would be semi-primitive non-motorized with semi-primitive motorized along boundaries.

Sections of the Black Canyon Trail's current alignment traversing this area would be managed as a primitive multi-use trail, open to use by four-wheel-drive vehicles, ATVs, motorcycles, mountain bikes, hikers, and horses. A non-motorized Black Canyon Trail alignment is currently being surveyed and constructed through this area.

Management Actions

Close all secondary, tertiary, reclaiming, and single-track vehicle routes and washes not part of the Black Canyon Trail sections mentioned above.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.4.2.2.1.7.

The current alignment of the Black Canyon Trail would be maintained and managed as a multi-use route.

Develop non-motorized trails to link with community trail systems.

Close the areas to mineral material disposal and vegetation sales.

Administrative Actions

Undertake detailed inventory and analysis to develop standards to maintain proper levels of recreation disturbance within each recreation setting.

2.4.2.2.1.7 Visual Resources

Land Use Allocations

VRM classes for *Alternative C* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-36.

Within the Black Canyon Management Unit:

- the Table Mesa SRMA would be allocated to VRM Class III,
- lands allocated to maintain or enhance wilderness characteristics would be allocated to VRM Class II objectives,
- utility corridors would be allocated to VRM Class III or IV, and
- the rest of the Management Unit would be allocated to VRM classes as portrayed on Map 2-36.

2.4.2.2.1.8 Mineral Resource Management

Black Mesa ACEC would be withdrawn from mineral entry, closed to mineral and geothermal leasing, and closed to mineral material disposal.

Lands allocated to maintain or enhance wilderness characteristics would be closed to mineral material disposal.

2.4.2.2.1.9 Transportation and Public Access

Land Use Allocation

The Black Canyon Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

The Table Mesa SRMA and other recreation allocations are discussed in section 2.4.2.2.1.5. The Table Mesa SRMA would offer a variety of experiences as part of a diverse network of motorized single and two-track routes for general motorized recreation use, commercial use, organized events, and equestrian activities.

Allocations to maintain or enhance wilderness characteristics are discussed in section 2.4.2.2.1.6.

SCRMAs and cultural sites allocated to Public Use are discussed in the Cultural Resources section 2.4.2.2.1.4.

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Close all secondary, tertiary, reclaiming, and single-track vehicle routes and washes not part of the Black Canyon Trail sections, in order to secure wilderness character on lands managed to maintain or enhance wilderness character.

Sections of the Black Canyon Trail's current alignment traversing this area would be managed and maintained as a primitive multi-use trail, open to use by four-wheel-drive vehicles, ATVs, motorcycles, mountain bikes, foot travel, and horses. A non-motorized Black Canyon Trail alignment is currently being surveyed and constructed through this area.

Close all routes that lead directly to significant cultural sites within the Black Mesa ACEC.

Develop non-motorized trails to link with community trail systems.

2.4.2.2.2 Castle Hot Springs Management Unit

Castle Hot Springs MU is bounded by State Route 74 (the Carefree Highway) to the south, Prescott National Forest to the north, Black Canyon MU to the east, and Hassayampa MU to the west (Map 2-48). The MU contains the following lands:

- 112,430 acres of BLM-administered land,
- 53,730 acres of Arizona State land,
- 32,560 acres of private land,
- 22,870 acres of county park lands in both Maricopa and Yavapai Counties (Lake Pleasant Regional Park), and
- 1,100 acres of Bureau of Reclamation lands not within Lake Pleasant Regional Park.

2.4.2.2.2.1 Special Area Designations

Current Special Area Designations within the Management Unit would be managed consistent with management actions described in section 2.7.3.2 in the Management Common to the Bradshaw-Harquahala Planning Area section of this chapter.

Tule Creek ACEC (640 acres)

Relevance

Tule Creek ACEC contains significant historic and cultural values, including the Fort Tule site, a prehistoric hilltop ruin occupied from about A.D. 1100 to 1300, and a homesite occupied by miners in the 1920s and 1930s. Tule Creek is an example of rare Sonoran Desert riparian system dominated by emergent vegetation and occupied by the endangered Gila topminnow.

Importance

The Fort Tule cultural site was probably used as a significant connection in a regional communication system based on signaling among hilltop sites. Its role in the communication system can offer important information on prehistoric social systems during the era in which it was used.

Tule Creek and its sensitive biological resources are extremely vulnerable to disturbance and degradation from vehicles, mining, and livestock use. Continued protecting of Tule Creek is important to the recovery of the endangered Gila topminnow.

Desired Future Condition

The integrity of the riparian area, endangered species habitat, and cultural resources are protected from degradation.

Management Actions

Close the fenced area to livestock grazing and motorized vehicles.

Withdraw the ACEC from mineral entry, close it to mineral and geothermal leasing, and close to mineral material disposal.

Administrative Decision

Continue to patrol archaeological sites and, where needed, implement measures to protect sites.

Sheep Mountain RNA ACEC (4,270 acres)

Relevance

Biological resources, including desert tortoise habitat and potential desert bighorn sheep habitat; recreation opportunities; open space.

Importance

Highly scenic area with high-quality wildlife habitat undisturbed by vehicle routes and human activity.

Desired Future Condition

Semi-primitive non-motorized recreation setting throughout the entire area.

A diversity of non-motorized trail-based opportunities in a natural setting.

Broad expanses of natural appearing Sonoran Desert landscapes that continue to contribute to the open space, primitive recreation, and solitude opportunities near the urban centers of the Greater Phoenix metropolitan area.

Management Actions

Close all reclaimed vehicle routes except those needed to facilitate public access to the area.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.4.2.2.2.6.

Withdraw the ACEC from mineral entry and close it to mineral and geothermal leasing and to mineral material disposal.

Prohibit vegetation sales.

2.4.2.2.2.2 Lands and Realty

Land Tenure Adjustments

Within the Castle Hot Springs MU, the two methods that were used to derive lands available for disposal; generated no parcels by the first method, and 2,270 acres by the second method. For a description of the methods used, see the Lands and Realty discussion at the beginning of the description of *Alternative C* for the Bradshaw-Harquahala Planning Area. See lands that are suitable for disposal in Map 2-40.

Communication Sites

No designated communication sites lie within this MU.

2.4.2.2.2.3 Biological Resources

There would be no other allocations for biological resources within this MU.

2.4.2.2.2.4 Cultural Resources

Land Use Allocation

Lake Pleasant/Agua Fria SCRMA

Desired Future Condition

A variety of prehistoric and historic sites for interpretation, educational uses, and public visitation would be available. For further information on public use of cultural resources, see Appendix E.

Management Actions

A combination of some or all of following and other actions could be implemented at selected sites:

- parking areas,
- platforms,
- restrooms,
- picnic tables,
- benches,
- trash receptacles,
- signs along routes and trails to direct visitors to interpreted sites,
- hard-surfaced walking trails,
- interpretive signs and register boxes, and
- brochures and related educational materials or programs.

Implement actions to stabilize, repair, and maintain sites in good condition.

Authorize commercial and noncommercial group tours, conducted with protective stipulations in accordance with BLM's regulations and, where required, SRPs.

Administrative Actions

Specific sites for public use would be selected by considering the following factors:

- aboveground features of interest to the public and amenable to interpretation,
- accessibility to communities, travel routes, and recreation trails,
- site condition and the feasibility of stabilizing selected areas or features to withstand visitation,
- visitor safety,
- compatibility with other land uses and site values, such as traditional use by Native Americans,
- feasibility of regular inspections by BLM's staff and volunteers, and
- partnership opportunities for interpretive and educational projects.

The BLM's recreation program would help develop sites for public use.

BLM would cooperate with agencies, tribes, and local communities in supporting heritage tourism programs that benefit local economies. Develop historic properties for heritage tourism to contribute to their long-term preservation and productive use.

BLM would continue to work with the Site Steward Program to regularly monitor the condition of sites.

2.4.2.2.2.5 Recreation Resources

Land Use Allocation

Hieroglyphic Mountains SRMA

Desired Future Condition

Manage mainly for intensive motorized single and two-track routes for general motorized recreation use and competitive races.

Emphasize acceptable dust control and compatibility with neighboring communities and landowners.

Maintain semi-primitive motorized and roaded-natural settings, with an emphasis on semi-primitive motorized opportunities.

Develop facilities with a variety of amenities consistent with the desired recreation setting. Visitors could expect contact with BLM's representatives daily or more often. Nonintrusive signing would be present in most of the SRMA but might be absent in some areas.

Users would be concentrated in staging and camping areas, but most use would be dispersed.

Management Actions

Designate all motorized vehicle routes within this SRMA for general motorized recreation use, commercial use, organized OHV events, and competitive races.

Locate at least 20 miles of single and two-track routes for motorized competitive races to provide a unique array of challenges for motorcycle and ATV competitive racing.

Limit the number of motorized competitive races to 2 per year.

Locate and develop a staging/camping area for the following purposes:

- meeting the high recreation demand,
- parking and unloading OHVs,
- overnight camping,
- event operations,
- informational signing,
- dust abatement, and
- human health and safety.

Limit to 20 acres the area of exposed barren soil.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.4.2.2.2.6.

Land Use Allocation

The lands remaining in the Management Unit would be allocated to an Extensive Recreation Management Area.

2.4.2.2.2.6 Wilderness Characteristics

Land Use Allocation

In the Castle Hot Springs Management Unit, 9,080 acres would be allocated to maintain or enhance wilderness characteristics (Map 2-31).

In addition to the DFC and management actions described in the Wilderness Characteristics discussion of the Management Common to Both Planning Areas section of this chapter, the following apply to this allocation.

Desired Future Condition

The area would be managed mainly for emphasis on non-motorized recreation experiences, open space, and natural landscapes to complement Lake Pleasant Regional Park. Recreation settings of semi-primitive non-motorized would be maintained throughout the area. Natural landscape values and remoteness would be maintained.

The current mix of motorized and non-motorized recreation settings, associated landscapes, and experiences would be maintained.

Management Actions

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.3.2.2.2.7.

As many as three non-motorized trails and trailheads would be developed to link with other trails, allow loop hikes, and provide a variety of trail experiences.

Mineral material disposals, vegetation sales, and new roads, and rights-of-way would be prohibited.

Vehicles would be confined to designated routes. Reclaiming and eroded routes, hillside climbs, and washes would be closed to motorized travel.

2.4.2.2.2.7 Visual Resources

Land Use Allocations

VRM classes for *Alternative C* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-36.

Within the Castle Hot springs Management Unit:

- the Baldy Mountain ONA ACEC and the Sheep Mountain RNA ACEC would be allocated to VRM Class I objectives,
- the Hieroglyphic Mountains SRMA would be allocated to VRM Class III objectives,
- the Hells Canyon Wilderness would continue to be allocated to VRM Class I objectives, and
- in areas not listed above, VRM classes would be as portrayed on Map 2-36.

2.4.2.2.2.8 Mineral Resource Management

Management Actions

Tule Creek ACEC, Baldy Mountain ONA ACEC, and Sheep Mountain RNA ACEC would be withdrawn from mineral entry, closed to mineral and geothermal leasing, and closed to mineral material disposal.

2.4.2.2.2.9 Transportation and Public Access

Land Use Allocation

The Castle Hot Springs Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

ACECs are discussed in Special Areas Designations section 2.4.2.2.2.1. RMAs and other recreation allocations are discussed in section 2.4.2.2.2.5.

SCRMAs and cultural resources sites allocated to Public Use are discussed in section 2.4.2.2.2.4.

Management Actions

Limit all vehicles to designated routes. No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Close all secondary, tertiary, single-track, washes, and reclaiming vehicle routes within the Baldy Mountain ONA/ACEC. Build non-motorized trails with up to three trailheads within the ONA/ACEC, offering loop hikes, and connection to other trails.

Close the fenced area within the Tule Creek ACEC to motorized vehicles.

Within the Hieroglyphic Mountains SRMA, manage mainly for intensive motorized single and two-track routes for general motorized recreation use and competitive races. Designate all motorized vehicle routes within the SRMA for general motorized recreation use, commercial use, organized OHV events and competitive races. Locate at least 20 miles of single and two-track routes for motorized competitive races to provide a unique array of challenges for motorcycle and ATV competitive racing.

Close all reclaimed vehicle routes within the Sheep Mountain ONA/ACEC except those needed to facilitate public access to the area.

Consider developing hard-surfaced walking trails within the Lake Pleasant/Agua Fria SCRMA for interpretation, educational uses, and public visitation.

2.4.2.2.3 Hassayampa Management Unit

The Hassayampa MU contains the Town of Wickenburg at its center. It is bounded on the east by Prescott National Forest and the Castle Hot Springs MU, and on the west by the Harquahala MU. The southern edge is south of the Vulture Mountains, and the MU extends north past Yarnell (Map 2-49).

The MU contains the following land:

- 181,910 acres of BLM administered lands,
- 130,580 acres of Arizona State land,
- 50,610 acres of private land, and
- 460 acres of county-administered lands in both Maricopa and Yavapai Counties.

2.4.2.2.3.1 Special Area Designations

Current Special Area Designations within the Management Unit would be managed consistent with Management Actions described in section 2.7.3.2 in the Management Common to the Bradshaw-Harquahala Planning Area section of this chapter.

Area of Critical Environmental Concern

Vulture Mountains ACEC (2,790 acres)

Relevance

The cliffs along the crest of Vulture and Caballeros Peaks are significant habitat features used by many species of raptors, as well as

being a pristine, scenic landmark. These cliffs are essential to the maintenance of the current biological diversity of the surrounding area. Large concentrations of nesting hawks and falcons use these spectacular cliff faces.

Importance

The value of the cliffs for nesting raptors is significant for a large area. These cliffs are virtually the only suitable nesting cliffs for many miles. Nesting raptors are sensitive to construction-related activities. If the cliffs and surrounding area are not protected from these activities, cliff-nesting raptors would disappear from much of the area.

Desired Future Condition

Maintain the raptor nesting habitat on the cliffs and the surrounding foraging habitat.

Management Actions

Prohibit mineral material disposal.

The ACEC boundary would be a 1/2 buffer of significant cliffs.

Prohibit building new recreation sites.

Close, limit, or mitigate vehicle routes that conflict with maintaining wildlife habitat and cultural resources to ensure achieving the DFC.

Prohibit building of new vehicle routes.

Prohibit rock climbing in the ACEC.

Acquire non-Federal lands within the ACEC as available.

Back Country Byway

Constellation Mine Road

Desired Future Condition

This back country byway would provide a vehicle-based, backcountry experience with amenities to heighten visitor experiences and to educate and inform visitors about interesting natural and cultural features along the route. Visitors could expect the road to occasionally be difficult and settings to be remote. The road might not be accessible to all classes of vehicles. High clearance might be needed to travel the whole route. The road does not fragment wildlife habitat or limit wildlife movement. Establish and maintain a semi-primitive motorized recreation setting ½ mile to either side of the road's centerline.

Management Actions

Evaluate and nominate for potential designation as a national back country byway.

Maintain the public portions of this road at a BLM Level 2 standard (BLM 9100 Manual) and passable by high-clearance vehicles.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.4.2.2.3.7.

Secure easements and rights-of-way where needed to ensure long-term public access along Constellation Mine Road.

Interpret the route’s historical features, including original road-building structures; mining properties and districts; and historic homesteads, settlements, and ranching history.

Install directional, safety, and interpretive signs to enhance public use, enjoyment, and stewardship of the route.

Administrative Actions

Establish a friends group to maintain, monitor, and help interpret the route, and present the route and area’s natural and human history.

2.4.2.2.3.2 Lands and Realty

Land Tenure Adjustments

Within the Hassayampa MU the two methods that were used to derive lands available for disposal, generated no parcels by the first method; and 10,340 acres by the second method. For a description of the methods used, see the Lands and Realty discussion at the beginning of the description of *Alternative C* for the Bradshaw-Harquahala Planning Area. See lands that are suitable for disposal on Map 2-40.

In support of the Yarnell Special Recreation Management Area:

- Retain in public ownership Sections 22, 23, and 27 (Map 2-32) and all landing zones below Yarnell Hill.
- Acquire legal public access to the Yarnell hang gliding launching area through easements, rights-of-way, or land acquisition.
- Acquire the Arizona State Trust parcel southwest of Yarnell containing Fool's Gulch (Section 22) through purchase, legislation, or exchange.
- Prohibit new overhead powerlines, phone lines, or communication facilities within 1 mile of launching and identified landing zones.

In support of the Wickenburg Special Recreation Management Area:

- Acquire the 19,396 acres of State land within the SRMA. Prioritize and pursue acquisition using the criteria in the Lands and Realty discussion of the Management Common to Both Planning Areas section of Chapter 2. Lands would be acquired according to the following priorities:
    - maintaining access and securing trail alignments,
    - enhancing recreation opportunities,
    - preserving scenery and open space, and
    - conserving riparian values.

Communication Sites

No designated communication sites are within this MU.

2.4.2.2.3.3 Biological Resources

There would be no other biological resource allocations within this MU.

2.4.2.2.3.4 Cultural Resources

Land Use Allocation

Wickenburg/Vulture SCRMA

Desired Future Condition

Manage a variety of prehistoric and historic sites for interpretation, education, and public visitation. For further information on public use of cultural resources, see Appendix E.

Management Actions

A combination of some or all of following and other actions could be implemented at selected sites:

- platforms,
- restrooms,
- picnic tables,
- benches,
- trash receptacles,
- signs along routes and trails to direct visitors to interpreted sites,
- hard-surfaced walking trails,
- interpretive signs and register boxes, and
- brochures and related educational materials or programs

Stabilize, repair, and maintain sites in good condition.

Authorize commercial and noncommercial group tours with protective stipulations in

accordance with BLM regulations and, where required, SRPs.

Administrative Actions

Select sites for public use considering the following factors:

- presence of aboveground features of interest to the public and amenable to interpretive development,
- accessibility to communities, travel routes, and recreation trails,
- condition of the site and the feasibility of stabilizing selected areas or features to withstand visitation,
- visitor safety,
- compatibility with other land uses and site values, such as traditional use by Native Americans,
- feasibility of regular inspections by BLM's staff and volunteers, and
- partnership opportunities for interpretive and educational projects.

The BLM's recreation program would participate in developing sites for public use.

Cooperate with agencies, tribes, and local communities to support heritage tourism programs that benefit local economies. Develop historic properties for heritage tourism to contribute to their long-term preservation and productive use.

BLM would continue to work with the Site Steward Program to regularly monitor the condition of sites.

2.4.2.2.3.5 Recreation Resources

Land Use Allocation

Stanton SRMA

Desired Future Condition

Provide an area to accommodate intensive recreation public uses and desired settings. This area would continue to allow other diverse recreation experiences while improving unacceptable environmental impacts from the following:

- excessive and unregulated camping,
- recreation activities of prospecting clubs, and
- motorized and other recreation uses.

Maintain a variety of recreation settings and opportunities with an emphasis on semi-primitive motorized and roaded-natural settings and associated recreation experiences.

Management Actions

Locate and develop trailheads, staging and camping areas, and other facilities.

Designate a diverse network of motorized vehicle routes open to a range of OHV experiences and challenges.

Limit the number of motorized competitive races to 1 per year.

Install informational, educational, and interpretive kiosks and trail signs where suitable.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.4.2.2.3.7.

Administrative Actions

Determine specific areas where assessments would be initiated to do the following:

- define detailed desired conditions,
- define standards, and
- establish monitoring plans to manage camping and other recreation uses.

Land Use Allocation

Yarnell SRMA

Desired Future Condition

This site is one of the most valued in Arizona for launching successful long-distance, non-powered flights. Maintain long-term public access to the Yarnell hang gliding launching area. In addition, maintain the landing areas and approaches to landing areas as free of flight hazards as possible.

Management Actions

Lands actions to support this SRMA are described in the Lands and Realty section. 2.4.2.2.3.2.

Land Use Allocation

Wickenburg SRMA

Desired Future Condition

Establish a system of high-quality equestrian trails surrounding Wickenburg to buffer the area from urban sprawl and preserve the open space value of the local landscape. This trail system would afford many opportunities for recreation enthusiasts and enhance the lifestyle, culture, and cultural history of community residents.

Offer properly managed and marketed quality recreation and tourism, promoting conservation, a strong land ethic, and protect the natural resources and cultural heritage of the Wickenburg SRMA.

Manage the area of the proposed SRMA for a DFC that emphasizes the value of open space, scenic and visual quality, and cultural and biological assets. Manage the lands within the SRMA for multiple-use, including livestock grazing and OHV use.

Emphasize and maintain, in suitable areas, an array of rural, roaded-natural, semi-primitive motorized, and semi-primitive non-motorized settings and associated experiences and opportunities for residents, tourists, and winter visitors.

Management Actions

Locate and develop a non-motorized trailhead for the Red Top Trail System to meet the high demand for non-motorized recreation and provide for the following:

- vehicle parking,
- unloading of animals,
- overnight camping,
- event operations,
- informational signing,
- dust abatement, and
- human health and safety.

Limit to 20 acres the area of exposed barren soil.

Locate and develop an ATV and a motorcycle trail network in the Red Top Trail area to give the local community motorized recreation opportunities and to shift motorized use from designated non-motorized trails. Use existing designated motorized vehicle routes, and, if necessary, create new routes less than 52 inches wide to meet the objective.

Prohibit motorized competitive races in the SRMA.

Locate and develop at least one small parking area for OHV parking and unloading. Limit to 5 acres the area of exposed barren soil.

Maintain and upgrade the Vulture Peak Trail by rerouting some trail segments.

Lands actions to support this SRMA are described in the Lands and Realty section. 2.4.2.2.3.2.

Develop special facilities for horse camping in the area south of Vulture Peak and south of Congress. These facilities could provide water

for horses, electrical hook-ups for trailers, and more primitive horse camping facilities.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.4.2.2.3.7.

Withdraw from mineral entry, close to mineral and geothermal leasing, and close to mineral material disposal, an area around Box Canyon on the Hassayampa River to permanently protect its scenic quality and recreation values. The withdrawal would include the following sections: Township 8 North, Range 5 West, sections 12, 13, and 24; and Township 8 North, Range 4 West, sections 7, 18, 19, 20, 29, and 30. (Map 2-55).

Administrative Actions

Collaborate with a diverse group of Wickenburg citizens to conserve the ecological, cultural, open space, and recreation values of the Wickenburg area so that it remains a place where people want to live, work, and play.

Write a comprehensive strategy and trails plan to select and develop new single-use and multi-use hiking, equestrian, and OHV trails for all lands in the SRMA.

Land Use Allocation

San Domingo SRMA

Desired Future Condition

Provide a Sonoran Desert wash and upland environment suitable for an array of motorized and non-motorized activities. Manage for roaded-natural, semi-primitive motorized, and semi-primitive non-motorized recreation settings.

Provide opportunities for the following while protecting the natural and cultural resources in the area:

- intensive camping,
- OHV activities,
- equestrian use,
- recreation activities of prospecting clubs,
- event operations, and
- motorized single and two-track routes for general motorized recreation use and competitive races.

Management Actions

Locate and develop trailheads, staging and camping areas, and other facilities as needed for recreation activities. Limit to 10 acres the areas of exposed barren soil.

Limit the number of motorized competitive races to 1 per year.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.4.2.2.3.7.

Administrative Actions

Determine specific areas where comprehensive site assessments would be initiated to do the following:

- determine existing physical and social impacts of recreation activities,
- define desired conditions and standards, and
- establish monitoring plans to manage camping and other recreation uses.

Land Use Allocation

Vulture Mine SRMA

Desired Future Condition

Provide a Sonoran Desert landscape suitable for intensive motorized single and two-track routes for general motorized recreation use, commercial use, organized OHV events and competitive races.

Emphasize and maintain the current roaded-natural and semi-primitive motorized recreation settings and associated opportunities.

Preserve the mining and settlement history of the Vulture City Cemetery.

Management Actions

Designate a minimum of 20 miles of motorized single and two-track routes for competitive races to provide a unique array of challenges for truck, buggy, ATV, and motorcycle competitive racing.

Limit the number of motorized competitive races to 2 per year.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.4.2.2.3.7.

Administrative Actions

Determine specific areas where comprehensive site assessments would be initiated to do the following:

- determine existing physical and social impacts of recreation activities,
- define desired conditions and standards, and
- establish monitoring plans to manage camping and other recreation uses.

Write a site management and interpretation plan for the Vulture City Cemetery.

Land Use Allocation

The remaining lands within the Management Unit would be allocated as an Extensive Recreation Management Area.

2.4.2.2.3.6 Wilderness Characteristics

Land Use Allocation

Within the Hassayampa Management Unit, 13,200 acres would be allocated to maintain or enhance wilderness characteristics as shown on Map 2-54.

Desired Future Condition

In addition to the DFC and management actions described in the Wilderness Characteristics discussion of the Management Common to Both Planning Areas section of Chapter 2, the following apply to this allocation:

Manage for open space and generally natural landscapes. Emphasize a recreation setting of semi-primitive non-motorized.

Maintain availability of non-motorized recreation opportunities.

Management Actions

Close tertiary, primitive, reclaiming, single-track vehicle routes and washes to motorized use.

Retain access to the Fools Canyon OHV route between the Hassayampa River Canyon Wilderness and lands allocated to maintain or enhance wilderness characteristics.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.4.2.2.3.7.

Prohibit mineral material disposal and vegetation sales.

2.4.2.2.3.7 Visual Resources

Land Use Allocations

VRM classes for *Alternative C* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-36.

Within the Hassayampa Management Unit, allocate:

- Constellation Mine Road Back Country Byway to VRM Class II objectives ½ mile to either side of the road's centerline.
- Lands allocated to maintain or enhance wilderness characteristics to VRM Class I objectives.
- Wickenburg SRMA to VRM Class II objectives except areas with desired recreation settings of rural or roaded-natural and areas open to mineral development to VRM Class III objectives.
- San Domingo, Stanton, and Vulture Mine SRMAs to VRM Class III.
- Hassayampa River Canyon Wilderness to VRM Class I objectives.
- Utility corridors would be allocated to VRM Class III or IV.
- Areas not listed above would be allocated to VRM classes as portrayed on Map 2-36.

2.4.2.2.3.8 Mineral Resource Management

Management Actions

Close Vulture Mountains ACEC to mineral material disposal.

Close lands allocated to maintain or enhance wilderness characteristics to mineral material disposal.

Close and withdraw from mineral entry, mineral and geothermal leasing, and mineral material disposal an area within Wickenburg SRMA and around Box Canyon, to include the following sections:

- Township 8 North, Range 5 West, sections 12, 13, and 24.
- Township 8 North, Range 4 West, sections 7, 18, 19, 20, 29, and 30.

2.4.2.2.3.9 Transportation and Public Access

Land Use Allocation

The Hassayampa Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

ACECs are discussed in the Special Area Designation section 2.4.2.2.3.1.

SCRMAs and cultural resource sites allocated to Public Use are discussed in section 2.4.2.2.3.4.

SRMAs and other recreation allocations are discussed in section 2.4.2.2.3.5.

Allocations to maintain or enhance wilderness characteristics are discussed in section 2.4.2.2.3.6.

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

The Stanton SRMA would include a diverse network of motorized vehicle routes open to a range of OHV experiences and challenges.

The Wickenburg SRMA would feature a system of high-quality equestrian trails surrounding Wickenburg. Transportation related prescriptions include:

- Locate and develop a non-motorized trailhead for the Red Top Trail System to meet the high demand for non-motorized recreation.
- Locate and develop an ATV and a motorcycle trail network in the Red Top Trail area. Use existing designated motorized vehicle routes, and, if necessary, create new routes less than 52 inches wide to meet the objective.

- Maintain and upgrade the Vulture Peak Trail by rerouting some trail segments.

The San Domingo SRMA would offer a Sonoran Desert wash and upland environment suitable for an array of motorized and non-motorized activities.

The Vulture Mine SRMA would provide a Sonoran Desert landscape suitable for intensive motorized single and two-track routes for general motorized recreation use, commercial use, organized OHV events and competitive races. Locate a minimum of 20 miles of motorized single and two-track routes for competitive races to provide a unique array of challenges for truck, buggy, ATV, and motorcycle competitive racing.

Close the Vulture Peak ACEC to road building.

Close tertiary, primitive, reclaiming, single-track vehicle routes and washes to motorized use on 13,200 acres allocated to maintain or enhance wilderness characteristics as shown on Map 2-32. Retain access to the Fools Canyon OHV route between the Hassayampa River Canyon Wilderness and lands allocated to maintain or enhance wilderness characteristics.

Consider construction of hard-surfaced walking trails at selected sites within the Wickenburg/Vulture SCRMA for interpretation, education, and visitation.

Implementation Actions

Write a comprehensive strategy and trails plan to select and to develop new single-use and multi-use hiking, equestrian, and OHV trails for all lands in the Wickenburg SRMA.

2.4.2.2.4 Harquahala Management Unit

Alternatives C, D, and *E* would slightly expand the Harquahala MU. The MU is still bounded on the east by the Hassayampa MU and extends west to the Field Office boundary, near the town of Wenden. However, the MU's southern boundary now includes the private and State land south to Interstate 10. The northern boundary still follows BLM's property line south of US Route 60, which goes west of Wickenburg, through Aguila, and through Wenden (Map 2-50).

The Harquahala MU contains the following land:

- 420,730 acres of BLM-administered lands,
- 48,410 acres of Arizona State land, and
- 29,616 acres of private land.

2.4.2.2.4.1 Special Area Designations

Current Special Area Designations within the Management Unit would be managed consistent with management actions described in section 2.7.3.2 in the Management Common to the Bradshaw-Harquahala Planning Area section of this chapter.

Areas of Critical Environmental Concern

Harquahala Mountains ONA ACEC (41,670 acres)

Relevance

The area constitutes a rare, intact, mountaintop vegetation community surrounded by low desert. The mountains contain a biologically diverse system, in stark contrast to the surrounding landscape, and support a diverse sky island ecosystem, with many species not found in the surrounding Sonoran Desert. The mountains are a natural and mainly roadless area with few noticeable human intrusions in a primitive landscape setting.

Importance

The ONA does the following:

- encloses and preserves a unique assemblage of biological resources,
- conserves significant cultural and historic sites, and
- protects a distinctive vegetation community.

The biological richness of the Harquahala Mountains is unique within southwest Arizona. The Harquahala Mountains and surrounding bajadas provide important wildlife habitat to a diverse array of wildlife species. The area is an ecoregional conservation site with important biodiversity values.

The ONA contains the Harquahala Mountain Observatory National Register of Historic Places district. Besides the observatory itself; the historic Harquahala Peak Pack Trail, Ellison's Camp, and other sites are also components of the historic district. The area also includes many well-preserved prehistoric sites and historic ranching and mining sites. Some archaeological sites may be related to the use of the mountain range by a regional group of the Western Yavapai Tribe.

The ONA will safeguard important and unfragmented wildlife habitat.

Desired Future Condition

The integrity of the vegetation communities, historical features, and prehistoric sites are protected from degradation. Unfragmented wildlife habitat provides adequate forage, cover, and access to water for healthy wildlife populations.

Management Actions

Prohibit building new vehicle routes.

Withdraw the ACEC from mineral entry, close to mineral and geothermal leasing, and close to mineral material disposal.

Protect spring sources by not allowing surface-disturbing activities.

Acquire all available State and private lands from willing sellers.

Close, limit, or suitably mitigate vehicle routes that conflict with maintaining wildlife habitat and cultural resources to ensure achieving DFC.

Prohibit building new recreation sites.

Prohibit livestock grazing during bighorn sheep lambing season (January 1 to April 1).

Undertake actions to protect important cultural resources. Maintain the Harquahala Observatory historical site and its interpretive facilities in their current condition.

Prohibit developing grazing improvements that would increase livestock use in Browns Canyon and the Inner Basin.

Administrative Actions

Undertake an inventory of cultural resources to identify and to evaluate sites, determine proper site uses, and develop and implement protection measures for cultural resources within the ACEC.

Black Butte ACEC (800 acres)

Relevance

Biological resources.

Significant source of material for prehistoric tool production.

Importance

Important raptor nesting habitat in central area.

The "Vulture" source of obsidian was a major source of obsidian for prehistoric groups.

Desired Future Condition

The raptor nesting habitat values of the cliffs and the surrounding foraging habitat are maintained.

The integrity of the archeological sites is protected from disturbance or degradation.

Management Actions

Prohibit mineral material disposal.

The ACEC boundary would be a ½ mile buffer of significant cliffs.

Prohibit building of new recreation sites.

Close all routes within the ACEC. Close, limit, or suitably mitigate other vehicle routes that conflict with maintaining wildlife habitat and cultural resources to achieve the DFC.

Prohibit building new roads and motorized routes.

The "Vulture" obsidian source is a highly valued site within the ACEC. Prohibit actions that would threaten its integrity. Permit scientific study that advances local and regional archaeological knowledge if the integrity of the site is maintained.

Prohibit rock climbing in the ACEC.

2.4.2.2.4.2 Lands and Realty

Land Tenure Adjustments

Within the Harquahala MU, the two methods used to derive lands available for disposal generated no parcels by the first method and 8,210 acres by the second method. For a description of the methods used, see the Lands and Realty discussion at the beginning of the description of *Alternative C* for the Bradshaw-Harquahala Planning Area. See lands that are suitable for disposal on Map 2-40.

Communication Sites

The Harquahala Peak communication site would be the only designated communication site within this MU. New communication sites will be authorized only at existing designated communication sites.

2.4.2.2.4.3 Biological Resources

Land Use Allocation

Belmont/Big Horn Mountains WHA Area

Desired Future Condition

Maintain the wildlife and plant diversity and species richness of the Sonoran Desert scrub vegetation community. Maintain unfragmented wildlife habitat that provides adequate forage, cover, and access to water for healthy wildlife populations.

Management Actions

Prohibit building new fences.

Close, limit, or suitably mitigate motorized vehicle routes that conflict with maintaining wildlife habitat values to ensure achieving DFC.

Arizona State and private lands would be acquired from willing sellers when available.

Maintenance of wildlife habitat would be given management priority in resolving resource conflicts.

Land Use Allocation

Harquahala/Belmont/Big Horn Wildlife Corridor

Desired Future Condition

Maintain the plant diversity and richness of the chaparral and Sonoran Desert scrub vegetation communities. Maintain unfragmented wildlife habitat that provides adequate forage, cover, and access to water for healthy wildlife populations.

Management Actions

Arizona State and private lands would be acquired from willing sellers when available.

Close, limit, or suitably mitigate motorized vehicle routes that conflict with maintaining wildlife habitat values to ensure achieving DFC.

Design all future improvements to motorized vehicle routes to ensure wildlife habitat is not fragmented and wildlife movement is unimpeded, especially for desert bighorn sheep and desert tortoise.

Maintenance of wildlife habitat would be given management priority in resolving resource conflicts.

2.4.2.2.4.4 Cultural Resources

Land Use Allocation

Harquahala Mountains SCRMA

Desired Future Condition

A variety of prehistoric and historic sites would be managed for interpretation, education, and public visitation. For further information on public use of cultural resources, see Appendix E.

Management Actions

A combination of some or all of the following and other actions could be implemented at selected sites:

- platforms,
- restrooms,
- picnic tables,
- benches,
- trash receptacles,
- signs along routes and trails to direct visitors to interpreted sites,
- hard-surfaced walking trails,
- interpretive signs and register boxes,
- brochures and related educational materials or programs.

Stabilize, repair, and maintain sites in good condition.

Authorize, with protective stipulations, commercial and noncommercial group tours in accordance with BLM's regulations and, where required, SRPs.

Administrative Actions

Select sites for public use by considering the following factors:

- presence of aboveground features of interest to the public and amenable to interpretive development,
- accessibility to communities, travel routes, and recreation trails,
- site condition and the feasibility of stabilizing selected areas or features to withstand visitation,
- visitor safety,
- compatibility with other land uses and site values, such as traditional use by Native Americans,
- feasibility of regular inspections by BLM's staff and volunteers, and
- partnership opportunities for interpretive and educational projects.

The BLM's recreation program would help develop sites for public use.

BLM would cooperate with agencies, tribes, and local communities in supporting heritage tourism programs that benefit local economies. BLM would develop historic properties for heritage tourism to contribute to their long-term preservation and productive use.

BLM would continue to work with the Site Steward Program to regularly monitor the condition of sites.

2.4.2.2.4.5 Recreation Resources

Land Use Allocation

The entire Harquahala MU would be allocated as an Extensive Recreation Management Area.

Implementation Actions

Select, plan, and develop at least one staging and one camping area to meet motorized and non-motorized recreation demand. Have this area provide accommodation for the following:

- parking,
- unloading OHVs and horses,
- overnight camping, and
- large organized event operations.

Development may include the following:

- informational signs,
- kiosks,
- picnic tables,
- hitching posts,
- troughs for water hauled to the site,
- loading ramp, and
- soil stabilization for dust abatement.

Limit to 15 acres the area of exposed barren soil. Mark or delineate the perimeter with barriers to prevent expansion.

In the area near Black Mountain, may designate and build as many as three loop or one-way trails for ATVs and motorcycles, with total mileage not to exceed 20 miles. These trails would be adjacent to areas managed to maintain or enhance wilderness characteristics.

2.4.2.2.4.6 Wilderness Characteristics

Land Use Allocation

Within the Harquahala Management Unit, 106,840 acres would be allocated to maintain or enhance wilderness characteristics as shown on Map 2-54.

In addition to the DFC and management actions described in the Wilderness Characteristics discussion of the Management Common to Both Planning Areas section of Chapter 2, the following apply to this allocation.

Desired Future Condition

Maintain current natural conditions and open space values. Expand the availability of non-motorized trails for hikers, equestrians, and mountain bikers. Emphasize non-motorized recreation. Increase availability of non-motorized recreation opportunities where practical.

Manage for recreation settings of semi-primitive non-motorized and semi-primitive motorized, with an emphasis on the following:

- maintaining land areas for primitive recreation,
- practicing backcountry skills,
- attaining isolation from other users, and
- maintaining remoteness.

Management Actions

Close tertiary, primitive, reclaiming, and single-track vehicle routes, and washes except routes providing access to active and maintained facilities, waters, or other authorized uses. Retain the main transportation and travel network for continued use.

Motorized competitive races would not be permitted.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.4.2.2.4.7.

Prohibit mineral material disposals and vegetation sales.

Locate and develop as many as three hiking, equestrian, and bicycle trails, with total mileage not to exceed 10 miles.

Close the raptor protection area and Vulture obsidian area to vehicular travel.

Administrative Actions

Conduct a detailed inventory of current disturbances to provide a baseline for establishing detailed standards and setting trigger-points for management actions so that each recreation setting will not exceed proper levels of recreation disturbance.

2.4.2.2.4.7 Visual Resources

Land Use Allocations

VRM classes for *Alternative C* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-36.

Within the Harquahala Management Unit, allocate:

- Harquahala Mountains ACEC and lands allocated to maintain or enhance wilderness characteristics to VRM Class II objectives.
- Utility corridors would be allocated to VRM Class III or IV.
- The rest of the Management Unit would be allocated as portrayed on Map 2-36.

2.4.2.2.4.8 Mineral Resource Management

Management Actions

Withdraw the Harquahala Mountains ACEC from mineral entry, close to mineral and geothermal leasing, and close to mineral material disposal.

Close Black Butte ACEC and lands allocated to maintain or enhance wilderness characteristics to mineral material disposal.

2.4.2.2.4.9 Transportation and Public Access

Land Use Allocation

The Harquahala Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

ACECs are discussed in the Special Area Designation section 2.4.2.2.4.1.

WHAs are discussed in the Biological Resources section 2.4.2.2.4.3.

SCRMAs and cultural resource sites allocated to Public Use are discussed in section 2.5.2.2.4.4.

SRMAs and other recreation allocations are discussed in section 2.4.2.2.4.5.

Allocations to maintain or enhance wilderness characteristics are discussed in section 2.4.2.2.4.6.

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Close tertiary, primitive, reclaiming, and single-track vehicle routes, and washes except routes providing access to active and maintained facilities, waters, or other authorized uses on 106,840 acres allocated to maintain or enhance wilderness characteristics as shown on Map 2-50. Locate and develop as many as three hiking, equestrian, and bicycle trails, with total mileage not to exceed 10 miles. Close to

motorized vehicle travel the raptor protection and Vulture obsidian areas within lands allocated to maintain or enhance wilderness characteristics.

Close, limit, or suitably mitigate vehicle routes within the Harquahala Mountains ONA ACEC (41,670 acres) that conflict with maintaining wildlife habitat and cultural resources.

Close all routes within the Black Butte ACEC. Close, limit, or suitably mitigate other vehicle routes that conflict with maintaining wildlife habitat and cultural resources to achieve the DFC. Prohibit building new roads and motorized routes.

Close, limit, or suitably mitigate motorized vehicle routes within the Belmont/Big Horn Mountains WHA that conflict with maintaining wildlife habitat values to ensure achieving DFC.

Consider construction of hard-surfaced walking trails at selected sites within the Harquahala Mountains SCRMA for interpretation, education, and visitation.

2.4.2.2.5 Harcuvar Management Unit

The Harcuvar MU encompasses the easternmost end of the Harcuvar Mountains within the PFO's administrative area. Most of the Harcuvar Mountain range is administered by the Lake Havasu's Field Office. The Harcuvar MU is bounded on the west and north by the PFO boundary with the Lake Havasu Field Office, and on the east and south by the boundary between BLM- and non-BLM-administered lands (Map 2-51).

The Harcuvar MU contains the following lands:

- 53,200 acres of BLM-administered lands,
- 6,280 acres of Arizona State land, and
- 3,360 acres of private land.

2.4.2.2.5.1 Special Area Designations

Alternative C would propose no new special area designations within the Harcuvar MU.

2.4.2.2.5.2 Lands and Realty

Land Tenure Adjustments

No lands have been identified for disposal within this MU.

Communication Sites

No designated communication sites are within this MU.

2.4.2.2.5.3 Biological Resources

No other biological resource allocations would be proposed for this MU.

2.4.2.2.5.4 Cultural Resources

No cultural resources would be allocated to public use within this MU.

2.4.2.2.5.5 Recreation Resources

Land Use Allocation

The entire MU would be allocated as an Extensive Recreation Management Area.

2.4.2.2.5.6 Visual Resources

Land Use Allocations

VRM classes for *Alternative C* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-36.

Within the Harcuvar Management Unit:

- the area along the Harcuvar Mountains would be allocated to VRM Class III and
- the rest of the Management Unit would be allocated to VRM Class IV.

2.4.2.2.5.7 Mineral Resource Management

This MU would have no mineral withdrawals or closures.

2.4.2.2.5.8 Transportation and Public Access

Land Use Allocation

The Harcuvar Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

2.4.2.2.6 Upper Agua Fria River Basin Management Unit

The Upper Agua Fria River Basin MU is sandwiched between the Bradshaw Mountains Ranger District and the Verde Ranger District of the Prescott National Forest. It stretches from Cordes Lakes in the south to the Town of Prescott Valley in the north (Map 2-52).

The Upper Agua Fria River Basin MU contains the following lands:

- 21,520 acres of BLM-administered lands,
- 36,990 acres of Arizona State land, and
- 39,290 acres of private land.

2.4.2.2.6.1 Special Area Designations

Alternative C proposes no special area designations for the Upper Agua Fria River Basin MU.

2.4.2.2.6.2 Lands and Realty

Land Tenure Adjustments

Within this MU, the two methods used to determine lands available for disposal generated no parcels by the first method and 1,430 acres by the second method. For a description of the methods used, see the Lands and Realty discussion at the beginning of the description of *Alternative C,* for the Bradshaw-Harquahala Planning Area. See the lands that are suitable for disposal on Map 2-40.

Communication Sites

There would be no designated communication sites within this MU.

2.4.2.2.6.3 Biological Resources

Land Use Allocation

Upper Agua Fria River Basin Habitat Corridor WHA

Desired Future Condition

Maintain and enhance existing wildlife habitat and ensure unimpeded wildlife movement between BLM-managed Federal lands and adjacent National Forest lands.

Management Actions

Prohibit construction of new vehicle routes and fences on the remaining lands.

Close, limit, or suitably mitigate motorized vehicle routes that conflict with maintaining

wildlife habitat values to ensure achieving the DFC.

Maintenance of wildlife habitat would be given management priority in resolving resource conflicts.

2.4.2.2.6.4 Cultural Resources

No cultural resources would be allocated to public use within this MU.

2.4.2.2.6.5 Recreation Resources

Land Use Allocation

Upper Agua Fria River Basin SRMA

Desired Future Condition

Maintain the SRMA's natural landscape and open space. Offer visitors recreation opportunities, scenic community backdrops, and access to the Black Canyon Trail.

Maintaining or increasing the amount of land allocated to open space is one of the most effective ways to preserve existing natural values and recreation opportunities; and to extend new or increased levels of recreation activity in the future.

Emphasize semi-primitive motorized settings with roaded-natural along primary routes.

Management Actions

Establish new trails, parking, and staging areas, where suitable, for hikers, equestrians, mountain bikers, ATVs, and four-wheel-drive enthusiasts.

Complete the non-motorized Black Canyon Trail and develop up to three trailheads or access points for trail users.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.4.2.2.6.6.

Administrative Actions

Work with citizen volunteer groups to complete a comprehensive strategy and a trails plan to select and to develop new single-use and multi-use hiking, equestrian, and OHV trails for all lands in the SRMA. Collaborate with the AGFD, Prescott National Forest, Yavapai County, and land managers of other trails to link trails to trails on BLM's land.

Land Use Allocation

The remaining BLM's lands outside any Management Unit would be allocated as an Extensive Recreation Management Area.

2.4.2.2.6.6 Visual Resources

Land Use Allocations

VRM classes for Alternative C throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-36. The whole Upper Agua Fria River Basin Management Unit would be allocated to VRM Class III objectives.

2.4.2.2.6.7 Mineral Resource Management

Alternative C proposes no mineral withdrawals or closures for the Upper Agua Fria River Basin MU.

2.4.2.2.6.8 Transportation and Public Access

Land Use Allocation

The Upper Agua Fria River Basin Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

***Other Resource Allocations with Transportation and Public Access Prescript**ions*

WHAs are discussed in the Biological Resources section 2.4.2.2.6.3.

SRMAs and other recreation allocations are discussed in section 2.4.2.2.6.5.

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Establish new trails, where suitable, for hikers, equestrians, mountain bikers, ATVs, and four-wheel-drive enthusiasts.

Complete the non-motorized Black Canyon Trail and develop up to three trailheads or access points for trail users.

Prohibit construction of new vehicle routes. Close, limit, or suitably mitigate motorized vehicle routes that conflict with maintaining wildlife habitat values to ensure achieving the DFC.

2.4.2.2.7 Resource Allocations Not Within a Management Unit

2.4.2.2.7.1 Biological Resources

Land Use Allocation

Date Creek Mountains WHA (Map 2-53)

Desired Future Condition

Maintain the wildlife/plant diversity and richness of the Sonoran Desert scrub vegetation community. Maintain unfragmented wildlife habitat that provides adequate forage, cover, and access to water for healthy wildlife populations.

Management Actions

High-quality desert tortoise habitat would become a priority for land acquisition.

Prohibit building new vehicle routes and fences.

Close, limit, or suitably mitigate vehicle routes that conflict with maintenance of wildlife habitat values to ensure achieving the DFC.

Maintenance of wildlife habitat would be given priority in resolving resource conflicts.

2.4.2.2.7.2 Recreation Resources

Land Use Allocation

Skull Valley SRMA (Map 2-53)

Desired Future Condition

Retain landscape character while maintaining motorized access to routes in Prescott National Forest.

Management Actions

Transfer management of the SRMA to the adjacent Prescott National Forest.

2.4.2.2.7.3 Transportation and Public Access

Land Use Allocation

These lands would be allocated as limited use areas, with motorized and mechanized vehicle uses limited to designated routes.

Other Resource Allocations with Transportation and Public Access Prescriptions

WHAs are discussed in the Biological Resources section 2.4.2.2.7.1.

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Prohibit construction of new vehicle routes. Close, limit, or suitably mitigate motorized vehicle routes that conflict with maintaining wildlife habitat values to ensure achieving the DFC.

2.5 Alternative D

The following discussion, along with the desired future conditions, land use allocations, and management actions described in the Management Common to All Action Alternatives section of Chapter 2, comprise the total proposed *Alternative D.*

2.5.1 Agua Fria National Monument

Alternative D would place the strongest emphasis on protecting natural landscapes and cultural resources by limiting land uses in Agua Fria National Monument. The result would consist of limiting motorized use in the monument and closing more areas to vehicles than under the other Alternatives. To preserve natural landscapes, access would be limited, and the Back Country RMZ would encompass most of the monument. *Alternative D* would allocate most cultural resources for limited public use and would develop no areas for intensive public use. Grazing would not be authorized on public lands within the monument, and larger areas would be managed for more primitive recreation experiences.

2.5.1.1 Special Area Designations

Alternative D would designate one ACEC, the Agua Fria River Riparian Corridor (Map 2-56), to preserve the monument's riparian resources, and would study potential additions to the existing proposed wild and scenic river designation. This Alternative would maximize primitive and semi-primitive recreation opportunities, and emphasizing non-motorized activities in backcountry settings. The management actions provide for protecting monument resources and incorporating the citizen proposal for wilderness characteristics within the monument.

Areas of Critical Environmental Concern

Removes designation of the existing Perry Mesa and Larry Canyon ACECs because the monument's proclamation (Appendix A) provides for a higher level of protection than the ACECs and management across a more extensive landscape.

Designate the following ACEC:

Agua Fria River Riparian Corridor ACEC (13,070 acres)

Relevance

Nearly intact riparian network within a desert/semi-desert grassland transition zone.

Importance

Habitat supports many special status wildlife species, including endangered fish. Special features of value for studies of a desert riparian system.

Desired Future Condition

Riparian areas are in proper functioning condition and provide high-quality habitat for a diversity of wildlife species, including fish.

The integrity of the riparian areas and wildlife habitat are maintained and protected from degradation.

Management Actions

Close, limit, or suitably mitigate vehicle routes that conflict with maintaining riparian and wildlife values to ensure achieving the DFC.

Designate the lands along Indian Creek as a priority for acquisition.

Wild and Scenic Rivers

Study the tributaries to the Agua Fria River to determine suitability for WSR designation (Map 2-56).

Back Country Byways

Alternative D proposes no back country byways.

2.5.1.2 Lands and Realty

Utility and Transportation Corridors

Eliminate the Black Canyon utility corridor from the monument. Continue to honor all existing rights-of-way and prior rights.

2.5.1.3 Biological Resources

Alternative D would designate two WHAs and one ACEC for managing biological resources within Agua Fria National Monument. *Alternative D* would drop Larry Canyon ACEC because the monument's proclamation (Appendix A) provides for a higher level of protection than an ACEC and management across a more extensive landscape.

The actions for the ACECs are described in the Special Area Designations section and shown on Map 2-56. The management actions for the WHAs, also shown on Map 2-57, are outlined below.

Land Use Allocation

Pronghorn Movement Corridor WHA

Pronghorn Fawning Habitat WHA

Desired Future Condition

Unfragmented pronghorn habitat that provides adequate forage, cover, and access to water for healthy pronghorn populations.

Management Actions

To assure achieving the DFC, close or suitably mitigate vehicle routes that:

- cross known pronghorn movement corridors and
- have a type and a volume of use that modify pronghorn behavior in ways that fragment their habitat.

Continue to use prescribed fire to improve pronghorn habitat.

Develop no new recreation sites in pronghorn movement corridors.

Maintenance of wildlife habitat would be given management priority in resolving resource conflicts.

Since *Alternative D* proposes ending livestock grazing, remove all fences, and authorizes no new ones.

2.5.1.4 Cultural Resources

Alternative D would minimally increase public access to cultural sites. Interpretive development and educational activities would be focused on the Pueblo la Plata area (Map 2-58). This area would be allocated to a public use SCRMA as shown in Table 2-5**.**

Table 2-5. Alternative D: Cultural Resource Public-Use Areas

Level of Public Use	Locations/Site
High	No areas of the monument
Moderate	Pueblo la Plata and Fort Silver (Pueblo la Plata Complex) on Perry Mesa
Low	Public use of archaeological sites would be limited in all other areas not described above

Descriptions of potential improvements and activities within special cultural resource management areas are described in the Cultural Resources description of the Management Common to Agua Fria National Monument section of Chapter 2. High use represents the most intensive degree of interpretive development, and Moderate use involves less intensive development of access and interpretive facilities. All areas of the monument not shown as a Moderate use SCRMA on Map 2-58 are considered as areas of low public use that would not be available for on-the-ground interpretive development or commercial tours.

2.5.1.5 Recreation Resources

In *Alternative D*, the entire monument would be allocated to a Special Recreation Management Area with three Recreation Management Zones within it. These zones would include a Back Country RMZ of 68,380 acres to manage and maintain the natural landscape character in the Agua Fria River Canyon, tributaries, washes, and adjacent mesas (Map 2-58). *Alternative D* calls for allocating a Passage RMZ of 990 acres along designated vehicle routes that pass through or provide access into the Back Country RMZ. The rest of the monument would be designated a Front Country RMZ (1,530 acres), where more focus would be placed on recreation and interpretive opportunities.

Descriptions of these zones and desired future conditions and management actions that apply to all Alternatives can be found in the Recreation and Public Access discussion of the Management Common to Agua Fria National Monument section of Chapter 2.

Land Use Allocation

Front Country Recreation Management Zone of 1,530 acres

Desired Future Condition

See Desired Future Condition description in section 2.7.2.7 of the Management Common to Agua Fria National Monument section of this chapter.

Management Actions

VRM Allocations to achieve the Desired Future Conditions of this Recreation Management Zone are described in section 2.5.1.6.

Throughout the monument, provide no recreation concession leases. issue no vendor permits, and authorize no Special Recreation Permits.

Dispersed Camping:

- Allow camping at designated sites only.
- Camping permits could be required if resource damage occurs that inhibits achieving resource DFCs or threatens resources protected by proclamation, or if health and safety issues emerge. If damage continues, more limitations might be required, including temporary or permanent area closures, limiting camping to designated sites, or seasonal limitations or closures.

Developed Campgrounds:

- None.

Campfires

- Prohibit campfires within ¼ mile of intensive and moderate public-use archaeological sites.
- Prohibit campfires at archaeological sites, including petroglyph (rock art) sites.
- Allow campfires at designated campsites.
- Prohibit collection of woody material for campfires. Require campfire wood to be brought in from outside the monument.

Recreational Target Shooting:

- Prohibit.

Trail Construction for Non-motorized Recreation Use

Discussion of recreation trail development can be found in the Transportation and Public Access section 2.5.1.8.

Land Use Allocation

Back Country Recreation Management Zone of 68,380 acres

Desired Future Condition

The natural landscape of the Agua Fria River Canyon, tributaries, and washes (Map 2-58) is maintained. See Desired Future Condition description in section 2.7.2.7 of the Management Common to Agua Fria National Monument section of this chapter.

Management Actions

VRM Allocations to achieve the Desired Future Conditions of this Recreation Management Zone are described in section 2.5.1.6.

Retain the motorized river crossings at Kelton Ranch, EZ Ranch, Horseshoe Ranch, and Cross Y Ranch.

Throughout the monument, provide no recreation concession leases, issue no vendor permits, and authorize no Special Recreation Permits.

Dispersed Camping:

- require a permit and
- limit camping to designated sites only.

Developed Campgrounds:

- None.

Campfires:

- Prohibit.

Recreational Target Shooting:

- Prohibit.

Trail Construction for Non-motorized Recreation Use

Discussion of recreation trail development can be found in the Transportation and Public Access section 2.5.1.8.

Land Use Allocation

Passage Recreation Management Zone of 990 acres.

Desired Future Condition

See Desired Future Condition description in section 2.7.2.7 of the Management Common to Agua Fria National Monument section of this chapter.

Management Actions

VRM Allocations to achieve the Desired Future Conditions of this Recreation Management Zone are described in section 2.5.1.6.

Throughout the monument, provide no recreation concession leases, issue no vendor permits, and authorize no Special Recreation Permits.

Dispersed Camping:

- Allow camping at designated sites only.
- Camping permits could be required if resource damage occurs that inhibits achieving resource DFCs or threatens resources protected by proclamation, or if health and safety issues emerge. If damage continues, more limitations might be required, including temporary or permanent area closures, limiting camping to designated sites, or seasonal limitations or closures.
- Prohibit camping at archaeological sites, including petroglyph (rock art) sites.
- Allow camping if at least ¼ mile from intense or moderate public-use archaeological sites.
- Camping would be prohibited within ¼ mile from water sources "...containing water in such a place that wildlife or domestic stock will be denied access to the only reasonably available water (Arizona Revised Statute 17-308, Unlawful Camping).
- Prohibit vehicles from pulling off routes in posted special areas containing sensitive resources**.**

Developed Campgrounds:

- None.

Campfires:

- Prohibit campfires within ¼ mile of intensive and moderate public-use archaeological sites.
- Prohibit campfires at archaeological sites, including petroglyph (rock art) sites.
- Allow campfires at designated campsites.
- Allow no collection of woody material for campfires. Require that any wood for campfires be brought in from outside the National Monument.

Recreational Target Shooting:

- Prohibit.

Trail Construction for Non-motorized Recreation Use

Discussion of recreation trail development can be found in the Transportation and Public Access section 2.5.1.8.

Administrative Actions

Collect site-specific baseline data to (1) determine social and resource impacts of recreation uses, (2) to establish monitoring needs and frequencies, and (3) to detect change. Where monument resources are unacceptably affected, implement more management actions, ranging from further restrictions to closure.

2.5.1.6 Visual Resources

Land Use Allocations

VRM classes for *Alternative D* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-59. Within the monument, the Front Country RMZ, totaling 1,530 acres, would be allocated to VRM Class III objectives and the Back Country and Passage RMZs would be allocated to VRM Class II.

2.5.1.7 Rangeland Management

Land Use Allocation

Close grazing allotments and cancel all current livestock authorizations for the duration of the plan.

Desired Future Condition

Watersheds are in properly functioning conditions, including their upland, riparian, and aquatic components. Soil and plant conditions support infiltration, storage, and release of water that are in balance with climate and landform.

Maintain ecological processes to support healthy biotic populations and communities.

No grazing authorizations would be administered within Agua Fria National Monument. The removal of all livestock would result in the rapid achievement of the Arizona Standards for Rangeland Health (Land Health Standards).

Management Actions

Build fencing around grazed lands to control livestock incursions.

Remove range-related improvements on public lands that serve no purpose for other resources. This removal would reduce the visual impact of former grazing operations.

2.5.1.8 Transportation and Public Access

Land Use Allocation

The entire monument is allocated as Limited to Designated routes.

Management Actions

Cross-country motorized travel is prohibited except in the case of an emergency or for approved administrative purposes.

Within Front Country

Trail Construction for Non-motorized Use:

- Develop trails as needed to enhance resources and recreation experiences and to protect monument values.
- All construction would be compatible with Desired Future Conditions for the construction area.
- Make trail development a priority at archaeological sites developed for interpretive use and visitation.
- Consider other trails to enhance visitor access and enjoyment of monument resources. Such trails might include self-guided nature and cultural resource trails, trails to interpreted sites, or longer trails linking multiple sites for day or multiple day trips.
- Use packed soil, crushed stone, and other natural or synthetic materials.
- Design trails to fit the environment.
- Build loop, connector, and linear trails, depending on the established trail and resource objectives.
- Build trails to maintain connectivity to recreation opportunities, such as hunting, equestrian activities, hiking, and viewing cultural sites.
- Build trails to link with other connector trails beyond the monument's border.
- Where trail linkages conform to monument values and do not impair protection of monument resources, explore opportunities to link the monument's network of non-motorized trails to trails on other BLM lands, or with other adjoining jurisdictions, including Tonto and Prescott National Forests, Yavapai County, and local communities.

Route Construction for Motorized Use:

- All construction would be compatible with Desired Future Conditions for the construction area.
- Evaluate new motorized vehicle routes on a case-by-case basis, with determinations based on protecting and enhancing monument values.
- Enhance existing routes north of Bloody Basin Road to provide greater motorized recreation opportunities.
-

Off-Highway Vehicles:

- All vehicles would be limited to designated routes consistent with the discussion in the Transportation and Public Access section 2.7.2.10.
- Manage OHV access to provide for a variety of use experiences, including allowing public access to the monument's cultural and biological resources.
- All construction would be compatible with Desired Future Conditions for the construction area.

Within Back Country

Trail Construction for Non-motorized Use:

- No new trails would be built in the Back Country RMZ except to mitigate resource conflicts or concerns. Trail construction would use the least intrusive method to mitigate the conflict. A trail might simply be marked with fiberglass posts.

Route Construction for Motorized Use:

- Build no new routes within the Back Country RMZ.

Off-Highway Vehicles:

- Manage the Back Country RMZ as a non-motorized area.

Within Passage

Trail Construction for Non-motorized Use:

- Develop trails as needed to enhance resources and recreation experiences and to protect monument values.
- All construction would be compatible with Desired Future Conditions for the construction area.

Route Construction for Motorized Use:

- All construction would be compatible with Desired Future Conditions for the construction area.
- Motorized route construction would be considered only as mitigation for resource conflicts.

Off-Highway Vehicles:

- All vehicles would be limited to designated routes consistent with the discussion in the Transportation and Public Access section 2.7.2.10.
- Manage OHV access to provide for a variety of use experiences, especially to provide access for public visitation of the monument's cultural and biological resources.

Implementation Actions

Public Access

An evaluation process was used to establish a designated public access and route system to support resource objectives consistent with *Alternative D* and to protect monument resources. The results of the evaluation are shown in Map 2-60. A summary of route status and length under *Alternative D* is shown below.

Routes Open	47 miles
Routes Closed	122 miles
New Routes	0 miles

2.5.2 Bradshaw-Harquahala Planning Area

Alternative D emphasizes natural landscapes and non-motorized recreation, allowing visitors to experience more areas in their natural setting. *Alternative D* would provide more areas for non-motorized use than the other Alternatives and close more areas to vehicles, mining, and grazing. More management is dedicated to maintaining primitive recreation

opportunities. The MUs for *Alternative D,* are shown in Map 2-61.

2.5.2.1 Management Applicable to the Entire Bradshaw-Harquahala under this Alternative

2.5.2.1.1 Lands and Realty

Land Tenure Adjustments

Land tenure decisions determine which lands will be retained and which will be proposed for disposal or acquisition. Land tenure decisions must achieve the goals, standards, and objectives outlined in the land use plan.

No lands have been found to be potentially suitable for disposal under *Alternative D*. If *Alternative D* were chosen, any proposed land disposal, including the disposal of scattered lands outside the planning area, would require a plan amendment.

Lands considered for potential acquisition would include State and private lands (willing seller) within the planning area that are in accordance with the resource management prescriptions in this RMP. Lands considered for acquisition must meet (1) the criteria described in the Lands and Realty discussion of the Management Common to Both Planning Areas section of Chapter 2 and (2) the resource program objectives of *Alternative D.*

Utility and Transportation Corridors

Currently designated corridors (Map 2-62) would meet the demand for intensifying the power grid, provided consistently with the utility regulation of the Arizona Corporation Commission. As stated earlier, the Black Canyon's multi-use corridor would be eliminated from Agua Fria National Monument. (See the Utility and Transportation Corridor discussion in the Lands and Realty section of *Alternative D,* Agua Fria National Monument).

2.5.2.1.2 Rangeland Management

Land Use Allocation

Close grazing allotments to grazing and cancel all current livestock authorizations for the duration of the plan.

Desired Future Condition

Watersheds are in properly functioning conditions, including their upland, riparian, and aquatic components. Soil and plant conditions support infiltration, storage, and release of water that are in balance with climate and landform.

Maintain ecological processes to support healthy biotic populations and communities.

Removal of livestock would result in rapid achievement of the Arizona Standards for Rangeland Health (Land Health Standards).

Management Actions

Build fencing around grazed lands to control livestock incursion.

Remove public land range-related improvements that serve no purpose for other resources. Removal would reduce the visual impact of former grazing operations.

Require cadastral surveys to establish the location of the public lands and delineate property boundaries to properly locate boundary fencing and to enforce the closure.

2.5.2.1.3 Mineral Resources Management

The following descriptions of mineral types include information on mining closures.

Management Actions

Leasable Minerals

The following limitations to leasable minerals are shown on Map 2-63.

Close any reconveyed lands to mineral and geothermal leasing by public land order.

Close the following areas to mineral and geothermal leasing:

- Black Mesa ACEC,
- Tule Creek ACEC,
- Baldy Mountain ONA ACEC,
- Sheep Mountain RNA ACEC,
- Vulture Mountains ACEC,
- Belmont-Big Horn Mountains ACEC,
- Harquahala Mountains ONA ACEC ,
- Black Butte ONA ACEC, and
- Lands allocated to maintain or enhance wilderness characteristics.

All other lands would be open to mineral and geothermal leasing.

Saleable Minerals (Mineral Materials)

The following limitations to saleable minerals are shown on Map 2-64.

Close any reconveyed lands to mineral material disposal by public land order.

Close the following areas to mineral material disposal:

- Black Mesa ACEC,
- Tule Creek ACEC,
- Baldy Mountain ONA ACEC,
- Sheep Mountain RNA ACEC,
- Vulture Mountains ACEC,
- Belmont-Big Horn Mountains ACEC,
- Harquahala Mountains ONA ACEC,
- Black Butte ONA ACEC, and
- Lands allocated to maintain or enhance wilderness characteristics.

All other lands would be open to mineral material disposal.

Locatable Minerals

The following limitations to locatable minerals are shown on Map 2-65.

Withdraw any reconveyed lands from the mining laws by public land order.

Withdraw the following areas from the mining laws:

- Black Mesa ACEC,
- Tule Creek ACEC,
- Baldy Mountain ONA ACEC,
- Sheep Mountain RNA ACEC,
- Vulture Mountains ACEC,
- Harquahala Mountains ONA ACEC,
- Black Butte ONA ACEC, and
- Lands allocated to maintain or enhance wilderness characteristics.

Small tract lands would remain withdrawn from the mining laws.

Withdraw from the mining laws all public lands (including subsurface) within incorporated municipal boundaries.

Unless currently segregated or withdrawn, all remaining lands would remain open under the mining laws.

2.5.2.1.4 Transportation and Public Access

Land Use Allocation

All public lands within the Bradshaw-Harquahala Planning Area would be allocated as limited use areas, with motorized and mechanized vehicle uses limited to designated routes. The Hassayampa River Canyon, Hells Canyon, Harquahala Mountains, Big Horn Mountains and Hummingbird Spring Wildernesses would remain closed to motorized and mechanized uses.

Desired Future Conditions

Define, designate, implement, and monitor a comprehensive travel management network affording a range of high-quality and diverse motorized and non-motorized recreation opportunities. The network would consist of a system of areas, roads, routes and/or trails. The travel management network and associated recreation opportunities would be consistent with other resource management objectives and recreation settings for the area.

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Administrative Actions

A route evaluation and designation process, similar to one described in Appendix D, will be used to establish a designated public access and route system within the Black Canyon Management Unit to support resource objectives consistent with *Alternative B*.

Develop comprehensive Travel and Transportation Management Plans for the management units and other public lands within the planning area. These plans would implement route designations on the public lands.

2.5.2.2 Management Units

Alternative D would use seven MUs for presenting land use allocations and management actions. These MUs are summarized in the following text. As noted, areas within the MUs that do not receive specific land use allocations would be administered according to the DFC and management actions presented under Management Units and in the Management Common to the Bradshaw-Harquahala Planning Area section of Chapter 2.

The document sections discussing the seven Management Units and maps on which they appear are as follows:

- Black Canyon MU, section 2.5.2.2.1, Map 2-47.
- Castle Hot Springs MU, section 2.5.2.2.2, Map 2-66.
- Hassayampa MU, section 2.5.2.2.3, Map 2-67.
- Harquahala MU, section 2.5.2.2.4, Map 2-68.
- Harcuvar MU, section 2.5.2.2.5, Map 2-51.
- Peeples Valley MU, section 2.5.2.2.6, Map 2-69.
- Upper Agua Fria Basin MU, section 2.5.2.2.7, Map 2-70.

2.5.2.2.1 Black Canyon Management Unit

The Black Canyon MU stretches from the southern end of Table Mesa in the south to Cordes Junction in the north. It is bounded by Agua Fria National Monument and Tonto National Forest to the east, and Prescott National Forest to the west (Map 2-47). The Black Canyon MU contains the following land:

- 68,730 acres of BLM-administered lands,
- 12,600 acres of Arizona State land,
- 6,780 acres of private land, and
- 1,100 acres of county parklands in both Maricopa and Yavapai Counties.

2.5.2.2.1.1 Special Area Designations

Area of Critical Environmental Concern

Black Mesa ACEC (5,540 acres)

Relevance

Diverse types of significant archaeological sites occupied over the past 2,000 years, including

sites that may have been ancestral to the Perry Mesa Tradition that was dominant in Agua Fria National Monument.

Importance

The Running Deer site and other prehistoric and historic sites with important scientific values and relationships to sites in the adjacent national monument.

Management Actions

Install fences or barriers to keep livestock out of the Running Deer site.

Withdraw the ACEC from mineral entry, close to mineral and geothermal leasing, and close to mineral material disposal.

Implement measures to protect cultural sites.

Limit commercial tours and special recreation permits to those conducted for educational purposes in conjunction with site recording or protection projects.

Close all routes that lead directly to significant sites.

Administrative Actions

Complete Class III (intensive) cultural inventories of previously unsurveyed areas and permit BLM-approved scientific studies.

Continue to patrol sites with volunteer help and add this area to the territory regularly monitored by the Civil Air Patrol.

Nomination to National Recreation Trail System

Black Canyon Trail

Desired Future Condition

Evaluate the trail for inclusion into the National Recreation Trail System in order to provide for the ever-increasing outdoor recreation needs of an expanding urban population and in order to promote the preservation of, public access to, travel within, and enjoyment and appreciation of the open-air, outdoor areas and historic resources of the Black Canyon corridor. A National Recreation Trail should be established primarily; near urban areas, secondarily, within scenic areas and along historic travel routes of the area.

Management Actions

Evaluate the Black Canyon Trail for inclusion into the National Recreation Trail System, as described in the National Trails System Act of 2002 (P.L.90-543).

Issue a right-of-way agreement for the trail and facilities to preserve their access and long-term character.

Acquire easements, rights-of-way, or both on non-Federal lands where the trail or facilities must cross or be built.

Any future land tenure action will recognize the trail and facilities and will retain a ¼-mile corridor (1/8 mile on each side) along the trail and any ancillary facility, as well as public access to them by easement, right-of-way, deed restriction, or other suitable means.

2.5.2.2.1.2 Lands and Realty

Land Tenure Adjustments

Alternative D proposes no land tenure adjustments within the Black Canyon MU because no lands have been proposed for disposal or acquisition.

Communication Sites

Only one designated communication site is located within this MU. Retain the Black Canyon City communication site, subject to valid existing rights.

Utility and Transportation Corridors

Extend the Black Canyon multi-use corridor so that the corridor is continuous north and south across BLM's lands within this MU.

2.5.2.2.1.3 Biological Resources

No other biological resource allocations would be made within this MU.

2.5.2.2.1.4 Cultural Resources

Land Use Allocation

Black Canyon Corridor SCRMA

Desired Future Condition

Make available a variety of prehistoric and historic sites for interpretation, educational uses, and public visitation. For further information on public use of cultural resources, see Appendix E.

Management Actions

Implement a combination of some or all of following or other actions at selected sites:

- platforms,
- restrooms,
- picnic tables,
- benches,
- trash receptacles,
- signs along routes and trails to direct visitors to interpreted sites,
- hard-surfaced walking trails,
- interpretive signs and register boxes, and
- brochures and related educational materials or programs.

Stabilize, repair, and maintain sites in good condition.

Authorize commercial and noncommercial group tours, conducted with protective stipulations in accordance with BLM's regulations and, where required, special recreation permits.

Administrative Actions

Select sites for public use by considering the following factors:

- presence of aboveground features of interest to the public and amenable to interpretive development,
- accessibility to communities, travel routes, and recreation trails,
- site condition and feasibility of stabilizing selected areas or features to withstand visitation,
- visitor safety,
- compatibility with other land uses and site values, such as traditional use by Native Americans,
- feasibility of regular inspections by BLM's staff and volunteers, and
- partnership opportunities for interpretive and educational projects.

The BLM's recreation program would help develop sites for public use.

Cooperate with agencies, tribes, and local communities in supporting heritage tourism programs that benefit local economies. Develop historic properties for heritage tourism to contribute to their long-term preservation and productive use.

BLM would continue to work with the Site Steward Program to regularly monitor the condition of sites.

2.5.2.2.1.5 Recreation Resources

Land Use Allocation

Table Mesa SRMA

Desired Future Condition

Manage for intensive camping, OHV use, equestrian activities, and casual use mining. The SRMA would offer a diverse network of motorized single and two-track routes for general motorized recreation use, commercial use, and organized OHV events.

Emphasize acceptable dust control and compatibility with neighboring communities and landowners.

Emphasize semi-primitive motorized recreation settings. Concentrate users in some areas but emphasize dispersed use.

Develop some facilities but stress preserving the natural environment in recreation planning. Develop the fewest sites needed to accomplish resource management objectives.

Management Actions

Designate vehicle routes within this SRMA for general motorized recreation use, commercial use, and organized OHV events.

Locate and develop a staging/camping area for the following purposes:

- meeting the high recreation demand,
- parking and unloading of OHVs,
- overnight camping,
- event operations,
- informational signing,
- dust abatement, and
- human health and safety.

Limit to 10 acres the area of exposed barren soil.

Prohibit motorized competitive races.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.5.2.2.1.7.

Administrative Actions

Conduct an objective, systematic, and comprehensive site inventory of the SRMA to determine existing site-specific environmental and social impacts of prospecting clubs, OHVs, equestrian activities, and other recreation uses. Assessments would determine site-specific desired conditions and define standards so monitoring plans could be developed to manage camping and other recreation uses.

Land Use Allocation

The remaining lands within the Management Unit would be allocated as an Extensive Recreation Management Area.

2.5.2.2.1.6 Wilderness Characteristics

Land Use Allocation

Within the Black Canyon Management Unit, 14,880 acres would be allocated to maintain or enhance wilderness characteristics as shown on Map 2-71.

Desired Future Condition

Manage with an emphasis for non-motorized and primitive recreation experiences, tied to open space and natural landscapes. Retain undeveloped landscapes and the area’s remote character. Preserve the area's outstanding solitude and primitive recreation experiences.

In addition to the DFC and management actions described in the Wilderness Characteristics discussion in the Management Common to Both Planning Areas section of this chapter, the following will also apply.

Management Actions

Close all secondary, tertiary, reclaiming, and single-track vehicle routes and washes to maintain recreation settings and associated landscapes of semi-primitive non-motorized.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.5.2.2.1.7.

Manage the Black Canyon Trail alignment as a non-motorized trail.

Locate and develop non-motorized trails to link with community trail systems.

Withdraw from mineral location.

Prohibit mineral material disposals and vegetation sales.

Administrative Actions

Conduct a detailed baseline inventory of disturbances. Determine detailed and site-specific standards using this baseline to maintain suitable levels of recreation disturbance to achieve the desired future settings.

2.5.2.2.1.7 Visual Resources

Land Use Allocations

VRM classes for *Alternative D* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-59.

Within the Black Canyon Management Unit, allocate:

- Table Mesa SRMA to VRM Class III objectives.
- Lands allocated to maintain or enhance wilderness characteristics to VRM Class I objectives.
- Utility corridors would be allocated to VRM Class III or IV.
- Throughout the rest of the Management Unit, VRM classes would be allocated as portrayed on Map 2-59.

2.5.2.2.1.8 Mineral Resource Management

Management Actions

Withdraw Black Mesa ACEC from mineral entry, close to mineral and geothermal leasing, and close to mineral material disposal.

Withdraw lands allocated to maintain or enhance wilderness characteristics from mineral entry and close to mineral material disposal.

2.5.2.2.1.9 Transportation and Public Access

Land Use Allocation

The Black Canyon Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

ACECs are discussed in section 2.5.2.2.1.1.

SCRMAs and cultural resource sites allocated to Public Use are discussed in section 2.5.2.2.1.4.

SRMAs and other recreation allocations are discussed in section 2.5.2.2.1.5.

Allocations to maintain or enhance wilderness characteristics are discussed in section 2.5.2.2.1.6.

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Close all secondary, tertiary, reclaiming, and single-track vehicle routes and washes on 14,880 acres allocated to maintain or enhance wilderness characteristics as shown on Map 2-47.

Manage the Black Canyon Trail alignment as a non-motorized trail. Locate and develop non-motorized trails to link with community trail systems.

Establish the Table Mesa SRMA and manage for a diverse network of motorized single and two-track routes for general motorized recreation use, commercial use, and organized OHV events. Designate vehicle routes within this SRMA for general motorized recreation use, commercial use, and organized OHV events.

Close all routes that lead directly to significant sites within the Black Mesa ACEC.

Consider construction of hard-surfaced walking trails at selected cultural sites within the Black Canyon Corridor SCRMA for interpretation, education, and visitation of prehistoric and historic sites.

2.5.2.2.2 Castle Hot Springs Management Unit

The Castle Hot Springs MU is bounded by State Route 74 (the Carefree Highway) to the south, Prescott National Forest to the north, Black Canyon MU to the east, and Hassayampa MU to the west (Map 2-66).

The Castle Hot Springs MU contains the following lands:

- 112,430 acres of BLM-administered lands,
- 53,730 acres of Arizona State land,
- 32,560 acres of private land,
- 22,870 acres of county parklands in both Maricopa and Yavapai Counties (Lake Pleasant Regional Park), and
- 1,100 acres of Bureau of Reclamation lands not in Lake Pleasant Regional Park.

2.5.2.2.2.1 Special Area Designations

Current Special Area Designations within the Management Unit would be managed consistent with management actions described in section 2.7.3.2 in the Management Common to the Bradshaw-Harquahala Planning Area section of this chapter.

Tule Creek ACEC (640 acres)

Relevance

Tule Creek ACEC contains significant historic and cultural values, including the Fort Tule site, a prehistoric hilltop ruin occupied from A.D. 1100 to 1300, and a home-site occupied by miners in the 1920s and 1930s. Tule Creek is a rare Sonoran Desert riparian system dominated by emergent vegetation and occupied by the endangered Gila topminnow.

Importance

The Fort Tule cultural site was probably used as a significant connection in a regional communication system based on signaling among hilltop sites. Its role in the communication system can offer important information on prehistoric social systems during the era it was used.

Tule Creek and its sensitive biological resources are extremely vulnerable to disturbance and degradation from vehicle use, mining, and livestock grazing. Continued protection of Tule Creek is important to the recovery of the endangered Gila topminnow.

Desired Future Condition

Cultural resources, endangered species habitat, and the integrity of the riparian area are protected from degradation.

Management Actions

Close the entire ACEC to motor vehicles.

Withdraw the ACEC from mineral entry, close to mineral and geothermal leasing, and to close mineral material disposal.

Administrative Decision

Continue to patrol archaeological sites and, where needed, implement measures to protect sites.

Baldy Mountain ONA ACEC (9,080 acres)

Relevance

Highly scenic natural Sonoran Desert landscapes, primitive recreation and solitude opportunities, desert washes without motorized use.

Occupied desert tortoise habitat.

Burro HMA.

Importance

A quiet and natural landscape with little evidence of human disturbance. Scarce but accessible backcountry primitive recreation experiences for Phoenix and Peoria residents.

A portion of the area is within the city limits of the City of Peoria, a rapidly growing urban area.

Maintains wildlife and burro habitat and open space in a rapidly expanding, urban environment.

Desired Future Condition

Semi-primitive non-motorized recreation setting throughout the entire area.

A diversity of non-motorized trail-based opportunities in a natural setting.

Broad expanses of natural appearing Sonoran Desert landscapes that continue to contribute to the open space, primitive recreation, and solitude opportunities near the urban centers of the Greater Phoenix metropolitan area.

Management Actions

Close all secondary, tertiary, primitive, single-track, washes, and reclaiming vehicle routes.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.5.2.2.2.6.

Designate and build non-motorized trails to link with other non-motorized trails in the area.

Build non-motorized trails with up to three trailheads, offering loop hikes, connection to other trails.

Withdraw the ACEC from mineral entry, close to mineral and geothermal leasing, and close to mineral material disposal.

Prohibit establishing new rights-of-way.

Prohibit vegetation sales.

Sheep Mountain RNA ACEC (4,270 acres)

Relevance

Open space and biological resources, including desert tortoise habitat and potential desert bighorn sheep habitat.

Importance

Highly scenic area with high-quality wildlife habitat, undisturbed by vehicle routes and human activities.

Desired Future Condition

Maintain semi-primitive non-motorized recreation setting.

Maintain the scenic natural landscape in current form.

Maintain the high quality and unfragmented wildlife habitat.

Management Actions

Close all reclaimed vehicle routes except those needed to facilitate public access. Designate routes needed for access through a structured evaluation process, such as shown in Appendix D.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.5.2.2.2.6.

Withdraw the whole ACEC from mineral entry, close to mineral and geothermal leasing, and close to mineral material disposal.

Prohibit vegetation sales.

Prohibit building of new fences and vehicle routes.

Build no new recreation sites.

Since *Alternative D* proposes cessation of grazing, remove all fences except those needed to keep livestock from wandering in from adjoining grazed lands.

2.5.2.2.2.2 Lands and Realty

Land Tenure Adjustments

Alternative D proposes no land tenure adjustment decisions for the Castle Hot Springs MU since no lands have been proposed for disposal or acquisition.

Communication Sites

No designated communication sites would be located within this MU.

2.5.2.2.2.3 Biological Resources

No other biological resource allocations would be made within the Castle Hot Springs MU.

2.5.2.2.2.4 Cultural Resources

No cultural resources would be allocated to public use within this MU.

2.5.2.2.2.5 Recreation Resources

Land Use Allocation

Castle Hot Springs Regional Special Recreation Management Area

Desired Future Condition

Manage Castle Hot Springs MU outside of the Hieroglyphic Mountains SRMA (described below) as a regional special recreation management area, supported by local and regional communities and managed by BLM in partnership with communities and local governments. These communities and governments have a vested interest in open space, outdoor-based recreation opportunities, and local and regional air quality.

Management emphasis stresses meeting a wide range of regional recreation needs while doing the following:

- maintaining the quality of life for local communities,
- preserving open space and natural landscapes, and
- ensuring resource conservation.

The area would have an array of recreation settings (rural, roaded-natural, semi-primitive motorized, and semi-primitive non-motorized) and the following opportunities:

- intense motorized activity,
- permitted recreation events,
- developed facilities,
- highly dispersed motorized recreation,
- remote semi-primitive and wilderness, and
- non-motorized recreation.

Over a span of 15 to 20 years, as the adjacent City of Peoria, the Maughn properties, the

Quintero property, and the Lake Pleasant area are commercially and residentially developed and built out, phase out, mitigate, or eliminate conflicting motorized use in these areas.

Areas subject to phased-out motorized vehicle use would be located within a triangle defined by Castle Hot Springs/Lake Pleasant Road, Morristown Road, and State Route Highway 74. (This area essentially consists of the Hieroglyphic Mountain SRMA and the Baldy Mountain ONA). The Baldy Mountain area would become non-motorized immediately. Motorized use in the public land areas south and east of Quintero would be reduced or phased out in 1 to 15 years. The area west of the Hells Canyon Wilderness and east of the Maughn properties (essentially the Hieroglyphic Mountains SRMA proposal) would become mainly a non-motorized use area in 10 to 20 years. Open other parts of the area to dispersed motorized and non-motorized activities, but intensively manage such uses with a significant BLM ground presence in signing, facilities, law enforcement, and staffing.

Management Actions

Locate and develop facilities, staging areas, trails, signage, trailheads, and other sites, where needed, for resource protection or for maintaining recreation opportunities. Develop up to three designated staging and camping areas to meet high recreation demand, and provide for the following:

- parking,
- OHV unloading,
- overnight camping,
- event operations,
- informational signing,
- dust abatement, and
- human health and safety.

Limit to 100 acres the area of exposed barren soil.

Designate vehicle routes through a structured evaluation process such as in Appendix D within 5 years of the signing of this plan. Use a structured evaluation process to redesignate routes, as suitable, as conditions change because of:

- increased use,
- expanding wildland-urban interface (WUI),
- dust standard compliance, and
- other factors that affect vehicle routes.

Most motorized use in the Baldy Mountain ONA ACEC, the Hieroglyphic Mountains SRMA, and the BLM's lands west, east, and south of Quintero would likely be phased out, mitigated, or eliminated within 1 to 20 years. Focus mitigation to reduce vehicular sources of noise and dust from BLM's lands affecting adjoining developing private lands.

Emphasize a semi-primitive non-motorized management setting for Baldly Mountain ONA ACEC immediately upon plan approval.

Implement a phase-in of OHV closures in response to citizens' requests, conflicts with residents and communities, and the need to meet air quality and dust compliance standards.

Close areas to motorized use when needed to comply with county and City of Peoria land management and recreation use laws and ordinances for these areas.

Designated vehicle routes within the regional recreation management area would be available for up to four permitted commercial and competitive OHV events monthly. Such uses would eventually be phased out in areas adjoining the Quintero and Maughn properties, and other commercial or residential areas as they are developed.

Work closely with law enforcement authorities with the Arizona Game and Fish Department, Yavapai County, Maricopa County, City of Peoria, and other agencies with jurisdiction to enhance visitor safety; improve resource protection; or ensure BLM's compliance with county, State, or Federal environmental laws.

Designate and build up to 100 miles of non-motorized trail.

Designate 100 to 200 miles of motorized use routes (single-track, ATV, and four-wheel drive) with one-way trips, destination trips, loops, and tours within the MU.

Manage recreational target shooting consistent with Recreational Target Shooting in the Recreation discussion of the Management Common to the Bradshaw-Harquahala Planning Area section of this Chapter.

Site, plan, and develop multi-use trails and foot, bike, and horse trails linking Wickenburg and Lake Pleasant Regional Park, with other links to Peoria and Phoenix trail systems and the Black Canyon Trail.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.5.2.2.2.6.

Administrative Actions

Designate Castle Hot Springs MU as a regional recreation management area. If found suitable, recommend this area for inclusion into a BLM-administered system of national recreation areas or as a national conservation area.

Charter a citizen, Government, and organization-based working group to guide the area's management, including community groups, the City of Peoria, Maricopa and Yavapai Counties, and other interested parties.

Land Use Allocation

Hieroglyphic Mountains SRMA

Desired Future Condition

Manage the Hieroglyphic Mountains SRMA mainly for recreation settings of roaded-natural and semi-primitive motorized, shifting towards progressively more semi-primitive motorized and semi-primitive non-motorized over a 10-20 year period.

Management Actions

Substantially phase out, mitigate, or eliminate motorized use in the Hieroglyphic Mountains SRMA (the area west of the Hells Canyon Wilderness and east of the Maughn properties) over a period of 10 to 20 years. The focus of mitigation is to reduce vehicular sources of noise and dust from BLM's lands affecting adjoining developing private lands.

Phase in the OHV closures in response to citizens' requests, conflicts with residents and communities, and the need to meet air quality standards.

Close areas to motorized use when needed to comply with county and City of Peoria land management, and recreation use laws and ordinances for these areas.

Work closely with law enforcement authorities, with the Arizona Game and Fish Department, Yavapai County, Maricopa County, City of Peoria, and other agencies with jurisdiction to:

- enhance visitor safety,
- improve resource protection, and
- ensure BLM’s compliance with county, State, or Federal environmental laws.

Prohibit motorized competitive races.

Designate and develop a staging/camping area to meet the high recreation demand, providing for the following:

- parking and unloading OHVs,
- overnight camping,
- event operations,
- informational signing,
- dust abatement, and
- human health and safety.

Limit to 10 acres the areas of exposed barren soil.

As motorized use is phased out, redesign the staging area for non-motorized users. The area

could be redesigned as a trailhead for hikers and equestrian users, with a place to park vehicles and unload horses.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.5.2.2.2.6.

2.5.2.2.2.6 Visual Resources

Land Use Allocations

VRM classes for *Alternative D* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-59.

Within the Castle Hot springs Management Unit, allocate:

- Baldy Mountain ONA ACEC and Sheep Mountain RNA ACEC to VRM Class I objectives.
- Hieroglyphics SRMA to VRM Class III objectives.
- Throughout the rest of the Management Unit, VRM classes would be allocated as shown on Map 2-59.

2.5.2.2.2.7 Mineral Resource Management

Management Actions

Withdraw Tule Creek ACEC from mineral entry, close to mineral and geothermal leasing, and close to mineral material disposal.

Withdraw Baldy Mountain ONA ACEC and Sheep Mountain RNA ACEC from mineral entry, close to mineral and geothermal leasing, and close to mineral material disposal.

2.5.2.2.2.8 Transportation and Public Access

Land Use Allocation

The Castle Hot Springs Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

ACECs are discussed in section 2.5.2.2.2.1.

SRMAs and other recreation allocations are discussed in section 2.5.2.2.2.5.

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Close the entire Tule Creek ACEC to motor vehicles.

Close all secondary, tertiary, primitive, single-track, washes, and reclaiming vehicle routes within the Baldy Mountain ONA/ACEC (9,080 acres), undisturbed by vehicle routes and human activities.

Prohibit building of new vehicle routes within the Sheep Mountain RNA ACEC. Close all reclaimed vehicle routes except those needed to facilitate administrative or compatible public access within the RNA.

The Castle Hot Springs Regional Special Recreation Management Area would include up to 100 miles of non-motorized trail.
Designate 100 to 200 miles of motorized use routes (single-track, ATV, and four-wheel drive) with one-way trips, destination trips, loops, and tours within the MU.

Substantially phase out, mitigate, or eliminate motorized use in the Hieroglyphic Mountains SRMA (the area west of the Hells Canyon Wilderness and east of the Maughn properties) over a period of 10 to 20 years. Phase in the OHV closures in response to citizen requests, conflicts with residents and

communities, and the need to meet air quality standards. Close areas to motorized use when needed to comply with county and City of Peoria land management and dust ordinances for these areas.

2.5.2.2.3 Hassayampa Management Unit

The Hassayampa MU is located with the City of Wickenburg at its center. It is bounded on the east by Prescott National Forest and the Castle Hot Springs MU and on the west by the Harquahala MU. Its southern edge is south of the Vulture Mountains, and it extends north past Yarnell (Map 2-67).

The Hassayampa MU contains the following lands:

- 181,910 acres of BLM-administered lands,
- 130,580 acres of Arizona State land,
- 50,610 acres of private land, and
- 460 acres of county-administered lands in both Maricopa and Yavapai Counties.

2.5.2.2.3.1 Special Area Designations

Current Special Area Designations within the Management Unit would be managed consistent with management actions described in section 2.7.3.2 in the Management Common to the Bradshaw-Harquahala Planning Area section of this chapter.

Area of Critical Environmental Concern

Vulture Mountains ACEC (6,120 acres)

Relevance

The cliffs along the crest of Vulture and Caballeros Peaks are significant habitat features used by many species of raptors. They are also a pristine, scenic landmark. They are essential to maintaining the current biological diversity of the surrounding area. Large concentrations of nesting hawks and falcons use these spectacular cliff faces.

Importance

The value of the cliffs for nesting raptors is significant for a large area. These cliffs are virtually the only suitable nesting cliffs for many miles. Nesting raptors are sensitive to construction-related human activities. If the cliffs and surrounding area are not protected from these activities, cliff-nesting raptors would disappear from much of the area.

Desired Future Condition

Maintain the raptor nesting habitat of the cliffs and surrounding foraging habitat.

Management Actions

The ACEC boundary would consist of a 1-mile buffer of significant cliffs.

Prohibit the building of new vehicle routes.

Withdraw the ACEC from mineral entry, close it to mineral and geothermal leasing, and close to mineral material disposal.

Prohibit the building of new recreation sites.

Prohibit rock climbing in the ACEC.

Close, limit, or suitably mitigate vehicle routes that conflict with wildlife values, in particular those that affect successful raptor nesting, to meet the DFCs.

Acquire non-Federal lands within the ACEC as available.

2.5.2.2.3.2 Lands and Realty

Land Tenure Adjustments

No lands are identified for disposal within the Hassayampa MU.

Communication Sites

No designated communication sites are proposed for this MU.

2.5.2.2.3.3 Biological Resources

No other biological resource allocations would be made within this MU.

2.5.2.2.3.4 Cultural Resources

No cultural resources would be allocated to public use within this MU.

2.5.2.2.3.5 Recreation Resources

Land Use allocation

Stanton SRMA

Desired Future Condition

Provide diverse recreation experiences while improving unacceptable environmental impacts from the following recreation:

- excessive and unregulated camping,
- activities of prospecting clubs, and
- motorized and other recreation uses.

Maintain roaded-natural and semi-primitive motorized recreation opportunities and settings.

Management Actions

Locate and develop trailheads, staging and camping areas, and other facilities.

Designate a diverse network of motorized vehicle routes and allow a range of OHV experiences and challenges.

Install informational, educational, and interpretive kiosks and trail signs, where suitable, for optimum user information and education.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.5.2.2.3.7.

Administrative Actions

Determine specific areas where comprehensive site assessments would be initiated to do the following:

- determine existing physical and social impacts of recreation activities,
- define desired conditions and standards, and
- establish monitoring plans to manage camping and other recreation uses.

Land Use Allocation

Yarnell SRMA

Desired Future Condition

This site is one of the most valued in Arizona for successful launching of long-distance, non-powered flights. Maintain long-term public access to the Yarnell hang gliding launching area. In addition, maintain the landing areas and approaches to landing areas as free of flight hazards as possible (Map 2-32).

Management Actions

Retain in public ownership sections 22, 23, and 27 and all landing zones below Yarnell Hill.

Acquire legal public access to the Yarnell hang gliding launching area through easements, rights-of-way, or land acquisition.

Acquire the Arizona State Trust Land parcel southwest of Yarnell containing Fool's Gulch (Section 22) through purchase, legislation, or exchange.

Prohibit new overhead powerlines, phone lines, or communication facilities within one mile of identified launching and landing zones.

Land Use Allocation

San Domingo SRMA

Desired Future Condition

Manage a Sonoran Desert wash and upland environment suitable for an array of motorized and non-motorized uses. Emphasize semi-primitive motorized and some roaded-natural settings in recreation management.

Provide opportunities for the following while protecting the natural and cultural resources in the area:

- intensive camping,
- OHV activities,
- equestrian use,
- recreation activities of prospecting clubs,
- event operations, and
- motorized single and two-track routes for general motorized recreation use.

Management Actions

Locate and develop trailheads, staging and camping areas, and other facilities as needed for recreation activities. Limit to 10 acres the areas of exposed barren soil.

Prohibit motorized competitive races in the SRMA.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.5.2.2.3.7.

Administrative Actions

Determine specific areas where comprehensive site assessments would be initiated to do the following:

- determine existing physical and social impacts of recreation activities,
- define desired conditions and standards,
- establish monitoring plans to manage camping and other recreation uses.

Land Use Allocation

The remaining lands within the Management Unit would be allocated as an Extensive Recreation Management Area.

2.5.2.2.3.6 Wilderness Characteristics

Land Use Allocation

Within the Hassayampa Management Unit, 13,200 acres would be allocated to maintain or enhance wilderness characteristics as shown on Map 2-71.

Desired Future Condition

Manage for open space and generally natural landscapes with primitive and semi-primitive non-motorized recreation settings.

Increase availability of non-motorized recreation opportunities.

Manage to complement the region's recreation opportunities.

In addition to the DFC described above, DFC and management actions described in the Wilderness Characteristics discussion under the Management Common to All Action Alternatives section of Chapter 2 also apply.

Management Actions

Close tertiary, primitive, reclaiming, single-track vehicle routes, and washes to motorized vehicles.

Withdraw from mineral entry, close to mineral and geothermal leasing, and close to mineral material disposal.

Allow vehicle-based camping in designated areas.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.5.2.2.3.7.

Prohibit vegetation sales.

2.5.2.2.3.7 Visual Resources

Land Use Allocations

VRM classes for *Alternative D* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-59.

Within the Hassayampa Management Unit, allocate:

- Lands allocated to maintain or enhance wilderness characteristics to VRM Class I objectives.
- Stanton and San Domingo SRMAs to VRM Class III objectives.
- Utility corridors would be allocated to VRM Class III or IV.
- The rest of the Management Unit would be allocated to VRM classes as shown on Map 2-59.

2.5.2.2.3.8 Mineral Resource Management

Management Actions

Withdraw the Vulture Mountains ACEC and lands allocated to maintain or enhance wilderness characteristics from mineral entry, close to mineral and geothermal leasing, and close to mineral material disposal.

2.5.2.2.3.9 Transportation and Public Access

Land Use Allocation

The Hassayampa Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

ACECs are discussed in section 2.5.2.2.3.1.

SRMAs and other recreation allocations are discussed in section 2.5.2.2.3.5.

Allocations to maintain or enhance wilderness characteristics are discussed in section 2.5.2.2.3.6.

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Establish the Stanton SRMA and designate a diverse network of motorized vehicle routes and allow a range of OHV experiences and challenges.

Establish the San Domingo SRMA and maintain a Sonoran Desert wash and upland environment suitable for an array of motorized and non-motorized uses.

Prohibit the building of new vehicle routes and close limit, or suitably mitigate vehicle routes within the Vulture Mountains ACEC (6,120 acres) that conflict with wildlife values, in particular those affecting successful raptor nesting, to meet the DFCs.

Close tertiary, primitive, reclaiming, single-track vehicle routes, and washes to motorized vehicles on 13,200 acres allocated to maintain or enhance wilderness characteristics as shown on Map 2-67.

2.5.2.2.4 Harquahala Management Unit

Alternatives C, D, and *E*, would slightly expand the Harquahala MU. The MU would still be bounded on the east by the Hassayampa MU and extend west to the Phoenix Field Office

boundary, near the town of Wenden. The MU's southern boundary would include the private and State land south to Interstate 10. The northern boundary would still follow the BLM's property line south of State Route 60, which goes west of Wickenburg, through Aguila and Wenden (Map 2-68).

The Harquahala MU would include the following land:

- 420,730 acres of BLM-administered lands,
- 48,410 acres of Arizona State land, and
- 29,616 acres of private land.

2.5.2.2.4.1 Special Area Designations

Current Special Area Designations within the Management Unit would be managed consistent with Management Actions described in section 2.7.3.2 in the Management Common to the Bradshaw-Harquahala Planning Area section of this chapter.

Areas of Critical Environmental Concern

Belmont-Big Horn Mountains ACEC (77,730 acres)

Relevance

Biological resources

Importance

Important habitat for desert tortoise and desert bighorn sheep.

Desired Future Condition

The unfragmented wildlife habitat provides adequate forage, cover, and access to water for healthy wildlife populations.

Management Actions

Prohibit mineral leasing and mineral material sales.

Prohibit the building of new vehicle routes and fences.

Acquire all available State and private lands from willing sellers.

Close, limit, or suitably mitigate vehicle routes that conflict with maintaining wildlife habitat values to ensure achieving DFC.

Prohibit the building of new recreation sites.

Since *Alternative D* proposes cessation of livestock grazing, remove all livestock control fences except those needed to keep livestock from wandering onto public lands from adjoining grazed properties.

Harquahala Mountains ONA ACEC (74,940 acres)

Relevance

The area constitutes a rare, intact, mountaintop vegetation community surrounded by low desert. The mountains contain a biologically diverse system, in stark contrast to the surrounding landscape, and support a diverse sky island ecosystem, with many species not found in the surrounding Sonoran Desert. The mountains are a natural area with few noticeable human intrusions in a primitive landscape setting.

Importance

The ONA encloses and preserves a unique assemblage of biological resources, conserves significant cultural and historic sites, and protects a distinctive vegetation community. The biological richness of the Harquahala Mountains is unique within southwest Arizona. The Harquahala Mountains and surrounding bajadas provide important wildlife habitat to a diverse array of wildlife species. The area is an ecoregional conservation site with important biodiversity values.

The ONA contains the Harquahala Mountain Observatory National Register of Historic Places District. Besides the observatory itself, the historic Harquahala Peak Pack Trail, Ellison's Camp, and other sites are also components of the historic district. The area also includes many well-preserved prehistoric sites along with historic ranching and mining sites. Some archaeological sites may be related to the use of the mountain range by a regional group of the Western Yavapai tribe.

The ONA will safeguard important and unfragmented wildlife habitat.

Desired Future Condition

Manage the area to emphasize protecting the sensitive resources presented in the statements of relevance and importance.

Achieve long-term conservation of scenic and cultural values. Preserve outstanding opportunities for primitive recreation and solitude, including high-quality hiking, backpacking, hunting, wildlife observation, and cultural study prospects.

Manage the ONA to preserve outstanding wilderness values. Permit vehicle access on designated routes only. Manage these routes to achieve semi-primitive motorized recreation settings. Prohibit vehicles from going cross-country off designated routes, and manage the area beyond 1/2 mile from vehicle routes to achieve semi-primitive non-motorized and primitive recreation settings.

Emphasize the following:

- increasing primitive recreation opportunities,
- practicing backcountry skills,
- attaining isolation from other users, and
- maintaining remoteness.

Manage the ONA to restore and maintain the plant diversity and richness of the chaparral, riparian/wetland, and Sonoran Desert scrub vegetation communities. Conserving the vegetation communities and managing for healthy wildlife populations, are a priority in managing the ONA. Manage the area to achieve and maintain unfragmented wildlife habitat, which provides adequate forage, cover, and access to water for healthy wildlife populations.

Manage selected prehistoric and historic sites in the ONA for interpretive development, educational uses, and public visitation. For further information on public use of cultural resources, see Appendix E.

Management Actions

Conduct a route designation process, using a structured evaluation such as the one in Appendix D.

Close, limit, or suitably mitigate vehicle routes that conflict with maintaining wildlife habitat or cultural values to ensure achieving the DFC.

Close any routes that degrade natural, scenic, wildlife, primitive recreation opportunities, or cultural sites.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.5.2.2.4.7.

Withdraw the entire ACEC from mineral entry, close to mineral and geothermal leasing, and close to mineral material disposal.

Allow primitive camping in designated areas only and establish standards to reduce evidence of human activity.

Prohibit building of new vehicle routes and fences.

Protect spring sources by prohibiting surface disturbance at them.

Acquire all available State and private lands from willing sellers.

Prohibit building of new recreation sites that conflict with bighorn sheep management, habitat, or movement.

Since *Alternative D* proposes cessation of grazing, remove all livestock control fences except those needed to keep livestock from wandering onto public lands from adjoining grazed properties.

Administrative Actions

Implement actions to find, monitor, and protect important cultural resources. Maintain the condition of the Harquahala Observatory historical site and its interpretive facilities. Undertake an inventory of cultural resources for the following purposes:

- to find and evaluate sites,
- to determine proper site uses, and
- to develop and implement protective measures for cultural resources within the ACEC.

Black Butte ONA ACEC (14,480 acres)

Relevance

The area contains the Vulture obsidian source used to make stone tools during prehistoric times.

The cliffs at the crest of Black Butte are significant habitat features used by many raptor species. The cliffs are also a pristine, scenic landmark. They are essential to maintaining the current biological diversity of the surrounding area.

Importance

Archaeologists consider the Vulture obsidian source to be one of the major sources of a valuable trade commodity in prehistoric Arizona. Obsidian (volcanic glass) was used widely for producing stone tools. Nodules of Vulture obsidian have a distinctive chemical composition that allows archaeologists to map changes in its distribution, use, and trade by prehistoric peoples. Vulture obsidian has been traced to prehistoric sites within at least a 100-mile radius of Black Butte.

The value of the cliffs for nesting birds of prey is significant for a large area. Nesting raptors are sensitive to construction-related human activities. If these cliffs are not protected from these activities, cliff-nesting raptors would disappear from much of the surrounding area.

Desired Future Condition

Manage the ACEC to emphasize protecting the sensitive resources presented in the statements of relevance and importance.

Maintain current natural conditions and open space. Shift the management emphasis to management for wilderness character. Manage the area surrounding Black Butte and Jackrabbit Wash for primitive values. Preserve good non-motorized recreation opportunities and settings. Conserve scenic volcanic landscapes. Provide outstanding solitude opportunities.

Retain Black Butte's cultural significance as an important source and location of material for prehistoric tool production. Sustain important raptor nesting habitat in the central Black Butte cliffs area. Restore, enhance, and maintain wildlife and plant diversity and species richness of this Sonoran Desert vegetation community. Conserving the vegetation communities and managing for healthy wildlife populations are priorities in managing the ONA.

Management Actions

Management preserves and enhances the semi-primitive non-motorized setting.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.5.2.2.4.7.

Prohibit vegetation sales.

Withdraw the entire ACEC from mineral entry, close to mineral and geothermal leasing and close to mineral material disposal.

Prohibit the building of new recreation sites.

Prohibit rock climbing in the ACEC.

Close, limit, or suitably mitigate vehicle routes that conflict with maintaining wildlife habitat or cultural values to ensure achieving DFC.

Preserve the Vulture obsidian source, permit scientific study, and restrict activities that threaten the integrity of the source.

2.5.2.2.4.2 Lands and Realty

Land Tenure Adjustments

Alternative D proposes no lands for disposal within the Harquahala MU.

Communication Sites

The Harquahala Peak communication site would be the only designated communication site within the Harquahala MU.

2.5.2.2.4.3 Biological Resources

No other biological resource allocations would be made within this MU.

2.5.2.2.4.4 Cultural Resources

Land Use Allocation

Harquahala Mountains SCRMA

Desired Future Condition

A variety of prehistoric and historic sites for interpretation, educational uses, and public visitation are available. For further information on public use of cultural resources, see Appendix E.

Management Actions

A combination of some or all of following actions and others could be implemented at selected sites:

- platforms,
- restrooms,
- picnic tables,
- benches,
- trash receptacles,
- signs along routes and trails to direct visitors to interpreted sites,
- hard-surfaced walking trails,
- interpretive signs and register boxes,
- brochures and related educational materials or programs, and
- actions to stabilize, repair, and maintain sites in good condition.

Authorize commercial and noncommercial group tours, conducted with protective stipulations in accordance with BLM's regulations and, where required, SRPs.

Administrative Actions

Select specific sites for public use by considering the following factors:

- presence of aboveground features of interest to the public and amenable to interpretive development,
- accessibility to communities, travel routes, and recreation trails,
- condition of the site and feasibility of stabilizing selected areas or features to withstand visitation,
- visitor safety,
- compatibility with other land uses and site values, such as traditional use by Native Americans,
- feasibility of regular inspections by BLM's staff and volunteers, and
- partnership opportunities for interpretive and educational projects.

The BLM's recreation program would participate in developing sites for public use.

BLM would cooperate with agencies, tribes, and local communities in supporting heritage tourism programs that benefit local economies. Historic properties for heritage tourism would be developed to contribute to their long-term preservation and productive use.

BLM would continue to work with the Site Steward Program to regularly monitor the condition of sites.

2.5.2.2.4.5 Recreation Resources

Land Use Allocation

The entire MU would be allocated as an Extensive Recreation Management Area.

2.5.2.2.4.6 Wilderness Characteristics

Land Use Allocation

Within the Harquahala Management Unit, 63,400 acres would be allocated to maintain or enhance wilderness characteristics as shown on Map 2-71.

Desired Future Condition

In addition to the DFC described in the Wilderness Characteristics discussion of Management Common to Both Planning Areas section, the following conditions would also be managed for:

- to retain natural landscapes,
- to ensure high-quality primitive recreation experiences,
- to maintain the area's remote character,
- to preserve an array of scenic or special features,
- to attain a semi-primitive non-motorized setting,
- to maintain or enhance unfragmented desert tortoise, bighorn sheep, and other wildlife habitat, and
- to maintain wildlife habitat corridors for genetic migration.

Management Actions

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.4.2.2.4.7.

Withdraw from mineral entry, close to mineral and geothermal leasing, and close to mineral material disposal.

Prohibit vegetation sales.

Permit motorized and mechanized vehicular travel only on designated routes. Use a structured process such as the one in Appendix D to evaluate routes for designation to achieve the DFC and other management objectives.

2.5.2.2.4.7 Visual Resources

Land Use Allocations

VRM classes for *Alternative D* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-59.

Within the Harquahala Management Unit, allocate:

- Harquahala Mountains ONA ACEC, Black Butte ONA ACEC, and lands allocated to maintain or enhance wilderness characteristics to VRM Class I objectives.
- Utility corridors would be allocated to VRM Class III or IV.
- The rest of the Management Unit would be allocated to VRM classes as shown on Map 2-59.

2.5.2.2.4.8 Mineral Resource Management

Management Actions

Close Belmont-Big Horn Mountains ACEC to mineral and geothermal leasing, and to mineral material sales.

Withdraw from mineral entry, close to mineral and geothermal leasing, and close to mineral material disposal the following areas:

- Harquahala Mountains ONA ACEC.
- Black Butte ONA ACEC, and lands allocated to maintain or enhance wilderness characteristics.

2.5.2.2.4.9 Transportation and Public Access

Land Use Allocation

The Harquahala Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

ACECs are discussed in section 2.5.2.2.4.1.

SCRMAs and cultural resource sites allocated to Public Use are discussed in section 2.5.2.2.4.4.

Allocations to maintain or enhance wilderness characteristics are discussed in section 2.5.2.2.4.6.

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Prohibit the building of new vehicle routes, and close, limit, or suitably mitigate vehicle routes that conflict with maintaining wildlife habitat values to ensure achieving DFC within the Belmont-Big Horn Mountains ACEC (77,730 acres).

Close any routes that degrade natural, scenic, wildlife, non-motorized primitive recreation opportunities, or cultural sites, and close, limit, or suitably mitigate vehicle routes that conflict with maintaining wildlife habitat or cultural values to ensure achieving the DFC within the Harquahala Mountains ONA ACEC (74,940 acres). Also prohibit building of new vehicle routes and fences within the ONA ACEC.

Close, limit, or suitably mitigate vehicle routes within the Black Butte ONA ACEC (14,480 acres) conflicting with maintaining wildlife habitat or cultural values to ensure achieving DFC.

Permit motorized and mechanized vehicular travel only on designated routes on 63,400 acres allocated to maintain or enhance wilderness characteristics as shown on Map 2-68.

Consider development of hard-surfaced walking trails at selected cultural sites within the Harquahala Mountains SCRMA for interpretation, education, and visitation to prehistoric and historic sites.

2.5.2.2.5 Harcuvar Management Unit

The Harcuvar MU encompasses the eastern most end of the Harcuvar Mountains within the PFO's administrative area. Most of the Harcuvar Mountain range is administered by BLM's Lake Havasu Field Office. The Harcuvar MU is bounded on the west and north by the PFO boundary with the Lake Havasu Field Office, and on the east and south by the boundary between BLM- and non-BLM-administered lands (Map 2-51).

The Harcuvar MU contains the following lands:

- 53,200 acres of BLM-administered lands,
- 6,280 acres of Arizona State land, and
- 3,360 acres of private land.

2.5.2.2.5.1 Special Area Designations

Alternative D proposes no special area designations within the Harcuvar MU.

2.5.2.2.5.2 Lands and Realty

Land Tenure Adjustments

Alternative D identifies no lands for disposal or acquisition within this MU.

Communication Sites

There would be no designated communication sites within this MU.

2.5.2.2.5.3 Biological Resources

No other biological resource allocations would be made within this MU.

2.5.2.2.5.4 Cultural Resource

No cultural resources would be allocated to public use within this MU.

2.5.2.2.5.5 Recreation Resources

Land Use Allocation

The entire MU would be allocated as an Extensive Recreation Management Area.

2.5.2.2.5.6 Visual Resources

Land Use Allocations

VRM classes for *Alternative D* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-59.

Within the Harcuvar Management Unit:

- The area along the Harcuvar Mountains would be allocated to VRM Class III.
- The rest of the Management Unit would be allocated to VRM Class IV.

2.5.2.2.5.7 Mineral Resource Management

Alternative D proposes no mineral withdrawals or closures for the Harcuvar MU.

2.5.2.2.5.8 Transportation and Public Access

Land Use Allocation

The Harcuvar Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

2.5.2.2.6 Peeples Valley Management Unit

Peeples Valley MU is located west of the Yarnell area in the Date Creek Mountains (Map 2-69). The MU has only a small proportion of BLM's land but offers some resource management opportunities.

The Peeples Valley MU contains the following land:

- 15,500 acres of BLM-administered lands,

- 207,040 acres of Arizona State land,
- 98,215 acres of private land.

2.5.2.2.6.1 Special Area Designations

Alternative D proposes no special area designations within Peeples Valley MU.

2.5.2.2.6.2 Lands and Realty

Land Tenure Adjustments

No lands are proposed for disposal within this MU.

Communication Sites

No designated communication sites are proposed for this MU.

2.5.2.2.6.3 Biological Resources

Land Use Allocation

Date Creek Mountains WHA Area

Desired Future Condition

Maintain the wildlife/plant diversity and richness of the Sonoran Desert scrub vegetation community. Unfragmented wildlife habitat provides adequate forage, cover, and access to water for healthy wildlife populations.

Management Actions

Acquire high-quality desert tortoise habitat from willing sellers.

Prohibit the building of new vehicle routes and fences.

Remove all livestock control fences because *Alternative D* proposes cessation of grazing.

Close, limit, or suitably mitigate vehicle routes that conflict with maintaining riparian and wildlife values to ensure achieving DFC.

Prohibit mineral material disposal and vegetation sales.

Maintenance of wildlife habitat would be given management priority in resolving resource conflicts.

2.5.2.2.6.4 Cultural Resources

No cultural resources would be allocated to public use within this MU.

2.5.2.2.6.5 Recreation Resources

Land Use Allocation

Skull Valley Special Recreation Management Area (SRMA)

Desired Future Condition (DFC)

Retain landscape character while maintaining motorized access to routes in Prescott National Forest.

Management Actions

Transfer management of the SRMA to the adjacent Prescott National Forest.

Land Use Allocation

The remaining lands within the Management Unit would be allocated as an Extensive Recreation Management Area.

2.5.2.2.6.6 Visual Resources

Land Use Allocations

VRM classes for *Alternative D* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-59.

Within the Peeples Valley Management Unit, VRM classes would be allocated the same as shown on the referenced map.

2.5.2.2.6.7 Mineral Resource Management

Management Action

Close Date Creek Mountains WHA area to mineral material disposal.

2.5.2.2.6.8 Transportation and Public Access

Land Use Allocation

The Peeples Valley Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

The Date Creek Mountains WHA is discussed in the Biological Resources section 2.5.2.2.6.3.

SRMAs and other recreation allocations are discussed in section 2.6.2.2.6.5.

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Prohibit the building of new vehicle routes and close, limit, or suitably mitigate vehicle routes that conflict with maintaining riparian and wildlife values within the Date Creek Mountains WHA Area, in order to ensure achieving DFC.

Within the Skull Valley SRMA, retain landscape character while maintaining motorized access to routes in Prescott National Forest.

2.5.2.2.7 Upper Agua Fria River Basin Management Unit

The Upper Agua Fria River Basin MU is sandwiched between the Bradshaw Mountains and Verde Ranger Districts of Prescott National Forest. It stretches from Cordes Lakes in the south to the Town of Prescott Valley in the north (Map 2-70).

The Upper Agua Fria River Basin MU contains the following land:

- 21,520 acres of BLM-administered lands,
- 36,990 acres of Arizona State land, and
- 39,290 acres of private land.

2.5.2.2.7.1 Special Area Designations

Nomination to National Recreation Trail System

Black Canyon Trail

Desired Future Condition

Evaluate the trail for inclusion into the National Recreation Trail System in order to provide for the ever-increasing outdoor recreation needs of an expanding urban population and in order to promote the preservation of, public access to, travel within, and enjoyment and appreciation of the open-air, outdoor areas and historic resources of the Black Canyon corridor. A National Recreation Trail should be established primarily, near urban areas, secondarily, within scenic areas and along historic travel routes of the area.

Management Actions

Evaluate the Black Canyon Trail for inclusion into the National Recreation Trail System, as described in the National Trails System Act of 2002 (P.L.90-543).

Issue a right-of-way agreement for the trail and facilities to preserve their access and long-term character.

Acquire easements, rights-of-way, or both on non-Federal lands where the trail or facilities must cross or be built.

Any future land tenure action will recognize the trail and facilities and will retain a ¼-mile corridor (1/8 mile on each side) along the trail and any ancillary facility, as well as public access to them by easement, right-of-way, deed restriction, or other suitable means.

2.5.2.2.7.2 Lands and Realty

Land Tenure Adjustments

There would be no lands proposed for disposal.

Communication Sites

No designated communication sites have been proposed for this MU.

2.5.2.2.7.3 Biological Resources

Land Use Allocation

Upper Agua Fria River Basin Habitat Corridor WHA

Desired Future Condition

Maintain and enhance existing wildlife habitat and ensure unimpeded wildlife movement between BLM-managed Federal lands and adjacent national forest.

Management Actions

Prohibit building of new vehicle routes and fences on the remaining public lands.

Alternative D proposes cessation of grazing, remove all livestock control fences except those needed to keep livestock from wandering onto public lands from adjoining grazed properties.

Close, limit, or suitably mitigate vehicle routes that conflict with maintenance of riparian and wildlife values to ensure achieving DFC.

Maintenance of wildlife habitat would be given management priority in resolving resource conflicts.

2.5.2.2.7.4 Cultural Resources

No cultural resources would be allocated to public use within this MU.

2.5.2.2.7.5 Recreation Resources

Land Use Allocation

North Black Canyon Trail SRMA

Desired Future Condition

Complete the Black Canyon Trail from Highway 69 north and east to connect with trails in Prescott National Forest. Design the trail to provide a non-motorized experience along or near the historic sheep driveway. The trail and any ancillary facilities will generally lie along the corridor established by secretarial order in 1969. Determine exact locations of the trail or any ancillary facilities in conjunction with the Yavapai County Trails Committee and other interested citizens.

Evaluate the trail for inclusion into the National Recreation Trail System in order to provide for the ever-increasing outdoor recreation needs of an expanding urban population and in order to promote the preservation of, public access to, travel within, and enjoyment and appreciation of the open-air, outdoor areas and historic resources of the Black Canyon corridor. A National Recreation Trail should be established primarily, near urban areas, secondarily, within scenic areas and along historic travel routes of the area.

Management Actions

Issue a right-of-way agreement for the trail and facilities to preserve their access and long-term character.

Acquire easements, rights-of-way, or both on non-Federal lands where the trail or facilities must cross or be built.

Any future land tenure action will recognize the trail and facilities and will retain a ¼-mile corridor (1/8 mile on each side) along the trail and any ancillary facility, as well as public access to them by easement, right-of-way, deed restriction, or other suitable means.

Evaluate the Black Canyon Trail for inclusion into the National Recreation Trail System, as described in the National Trails System Act of 2002 (P.L.90-543).

Administrative Actions

Establish a citizen focus group to help with trail and facility sites, designs, and management.

With citizens' inputs, write a long-term SRMA management plan.

Land Use Allocation

The remaining lands within the Management Unit would be allocated as an Extensive Recreation Management Area

2.5.2.2.7.6 Visual Resources

Land Use Allocations

VRM classes for *Alternative D* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-59. The entire Upper Agua Fria River Basin Management Unit would be allocated as VRM Class III.

2.5.2.2.7.7 Mineral Resource Management

Alternative D proposes no mineral withdrawals or closures within this MU.

2.5.2.2.7.8 Transportation and Public Access

Land Use Allocation

The Upper Agua Fria River Basin Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

WHAs are discussed in the Biological Resources section 2.5.2.2.7.3.

SRMAs and other recreation allocations are discussed in section 2.5.2.2.7.5.

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Establish the North Black Canyon Trail SRMA. Determine exact locations of the trail or any ancillary facilities in conjunction with the Yavapai County Trails Committee and other interested citizens. Transportation and Public Access related decisions within the SRMA include:

- Issue a right-of-way agreement for the trail and facilities to preserve their access and long-term character.
- Acquire easements, rights-of-way, or both on non-Federal lands where the trail or facilities must cross or be built.
- Evaluate the Black Canyon Trail for inclusion into the National Recreation

Trail System, as described in the National Trails System Act of 2002 (P.L.90-543).

Prohibit building of new vehicle routes on public lands, and close, limit, or suitably mitigate vehicle routes that conflict with maintenance of riparian and wildlife values within the Upper Agua Fria River Basin Habitat Corridor WHA area, in order to achieve DFC.

2.6 Alternative E (Preferred Alternative)

Alternative E is BLM's preferred RMP Alternative. It is designed to respond to each of the issues and management concerns recognized during the planning process in the most comprehensive manner possible. BLM has determined that the management actions presented under *Alternative E* would provide an optimal balance between authorized resource use and the protection and long-term sustainability of sensitive resources within both of the planning areas. The following discussion, along with the Desired Future Conditions (DFCs), land use allocations, and management actions described in the Management Common to All Action Alternatives section of this chapter, comprise the total proposed *Alternative E.*

2.6.1 Agua Fria National Monument

Introduction

Alternative E for the Agua Fria National Monument RMP is BLM's preferred Alternative because it would protect the resources described in the proclamation (Appendix A), while providing opportunities for public access, education, and appreciation of these values. The following section describes the preferred Alternative for each resource, including DFC and relevant management actions where suitable.

2.6.1.1 Special Area Designations

Back Country Byways

Bloody Basin Road Back Country Byway (Map 2-72)

Desired Future Condition

Provide a vehicle route accessible by high-clearance vehicles where views of the monument and interpretation of monument resources create a better understanding of the resources being protected. Along the central monument travel route create a comprehensive visitor experience that is both sensitive to monument resources and provides a high-quality visitor experience.

Wildlife habitat is unfragmented, and pronghorn movement remains unimpeded by visitation that may result from designation.

Management Actions

Evaluate Bloody Basin Road for designation as a back country byway. If the road qualifies and designation would promote the national monument's objectives, the following prescriptions would be implemented.

Maintain at BLM Level 2 standard, (BLM 9100 Manual) passable by high-clearance vehicles.

Maintain the existing roaded-natural and rural settings ½ mile to either side of the road's centerline.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.6.1.7.

Secure easements and rights-of-way where needed to ensure long-term public access.

Interpret monument features along the route, including the following:

- prehistoric cultural features and
- historic homesteads, settlements, and ranching history, and other natural and cultural features.

Install directional, safety, and interpretive signs to enhance public use, enjoyment, and stewardship of the route.

Mitigate impacts to wildlife movement to ensure achievement of the DFC.

Administrative Actions

Develop a cooperative and collaborative site plan with landowners and other agencies that would be affected by the byway designation.

2.6.1.2 Lands and Realty

Land Use Allocation

Utility and Transportation Corridors

Desired Future Condition

To continue to maintain utility and transportation connectivity along an important north-south route from the greater Phoenix area to suppliers to the north, while protecting the resources described in the National Monument Proclamation (Appendix A).

Management Actions

Narrow the existing utility corridor (designated by the Phoenix RMP [BLM 1988a] in the Black Canyon RCA), so that the the utility corridor's eastern boundary follows the easternmost boundaries of any existing rights-of-way that are within the corridor identified in the Phoenix RMP. This corridor is also modified on the west side, and is further described in the Lands and Realty discussion under the Black Canyon Management Unit section of *Alternative E*.

2.6.1.3 Biological Resources

Land Use Allocations

Pronghorn Fawning Habitat WHA (16,810 acres) Map 2-73.

Pronghorn Movement Corridor WHA (22,520 acres) Map 2-73.

Desired Future Condition

Manage habitat to avoid fragmentation and provide conditions that promote natural movement and fawning behavior.

Restore and maintain habitat of suitable quality and quantity to promote long-term sustainability of a viable pronghorn population in the national monument.

Management Actions

To ensure achievement of DFC, limit or suitably mitigate vehicle routes that:

- cross known pronghorn movement corridors and
- have a type and volume of use that modifies pronghorn behavior in ways that fragment their habitat or adversely affect fawning.

Implement seasonal restrictions or closures when vehicle use degrades habitat values.

Apply prescribed fire and fuels management projects to improve habitat for pronghorn fawning and movement

Fence construction and maintenance will follow guidance provided in BLM's Handbook for Fencing H-1741.

Limit or suitably mitigate new recreation site developments in pronghorn movement corridors to avoid disturbing pronghorn movement.

Close pronghorn fawning areas to Special Recreation Permit activities between April 1 and June 1 annually.

Maintenance of wildlife habitat will be given management priority in resolving resource conflicts.

Additional management guidance is described in the Biological Resources discussion of the Management Common to Both Planning Areas and the Biological Resources discussion of Management Common to Agua Fria National Monument sections of Chapter 2.

Administrative Actions

Conduct site-specific studies to determine pronghorn fawning habitat quality and potential. Base implementation actions on the data acquired.

Following guidance in BLM's Handbook H-1741, construction and modification of fences to meet fence standards will include coordination with livestock operators, interested conservation organizations, and other Federal, State, or local governments as appropriate.

2.6.1.4 Cultural Resources

Land Use Allocations

SCRMAs are shown on Map 2-73.

Desired Future Condition

Cultural resources are being used to enhance scientific and public knowledge and understanding of the monument region during prehistoric and historic periods, while at the same time they are being preserved for future generations as well.

Management Actions

Sites described below, allocated to High and Moderate public use, would be developed consistent with discussion in section 2.7.1.5 Cultural Resources of the Management Common to Agua Fria National Monument. Interpretive development would be focused on the sites listed below, leaving the majority of the SCRMAs undeveloped.

High Use SCRMA (1,570 acres)

- Pueblo la Plata and Fort Silver (Pueblo la Plata complex) north of Bloody Basin Road on Perry Mesa.
- Rollie Site (AZ N:16:231(ASM)) near Sunset Point on Black Mesa.
- Historic Teskey homestead near the Agua Fria River.

Moderate Use SCRMA (8,750 acres)

- Baby Canyon Pueblo and Pueblo Pato on Perry Mesa.
- Badger Springs rock art and the Arrastre Creek site on Black Mesa.
- Prehistoric sites on the south rim of Black Mesa.

Low Use area (60,570 acres BLM)

Manage all remaining areas outside the SCRMAs as areas of low public use that are not available for on-the-ground interpretive development or commercial tours. No sites would be allocated to public use in these areas.

2.6.1.5 Recreation Resources

Alternative E would allocate the entire national monument to a Special Recreation Management Area with three Recreation Management Zones within it. These zones include a Back Country RMZ of 57,200 acres to manage and maintain the natural landscape character (Map 2-74). A Passage RMZ of 1,300 acres would be allocated 100 feet from the centerline of designated routes that pass through or enter into the Back Country

RMZ, to manage vehicle-based visitation. The remainder of the monument would be allocated as a Front Country RMZ of 12,440 acres, where management would focus more on recreation and interpretive opportunities. General descriptions of the Front Country, Back Country, and Passage RMZs, including DFCs common to all Alternatives, appear in the Management Common to Agua Fria National Monument section of Chapter 2 under the discussion of Recreation and Public Access.

Land Use Allocation

Front Country Recreation Management Zone (12,440 acres).

Desired Future Condition

The DFC for the Front Country RMZ is described in section 2.7.2.7 of the Management Common to Agua Fria National Monument section of this chapter. In addition, the Front Country RMZ would also do the following.

- recognize that people are part of the ecosystem,
- allow visitors to responsibly interact with the resources,
- offer people with physical limitations a way to enjoy the monument while still maintaining the integrity of the resources and landscape characteristics, and
- give the public sustainable recreation/tourism opportunities while protecting the integrity of the monument's cultural sites and other resources.
- ***Management Actions***

VRM Allocations to achieve the Desired Future Conditions of this Recreation Management Zone are described in section 2.6.1.7.

Special Recreation Permits (SRPs) and Concessions:

- Require groups of 25 or more to obtain an SRP.
- Prohibit competitive motorized or mechanized races, and consider other competitive events on a case-by-case basis as long as they do not conflict with achievement of all resource DFCs for the location.
- Issue SRPs for vending operations if for a permitted event in the monument or recreation site. Vending for permitted events might be included with the SRP for the permitted event if the permittee is responsible for the vending operations. If not, a separate SRP for vending would be required. Consider vending at recreation sites if the service or goods for sale directly enhance the recreation experience and cannot be adequately provided by the closest local community. BLM would not authorize permanent structures.
- Issue recreation concession leases to enhance visitor use, visitor services, and visitor safety and enjoyment if leases are consistent with resource DFCs and monument objectives. Consider concessions on a case-by-case basis and base determinations on consistency with management objectives and a clearly, demonstrated need.
- Close pronghorn fawning areas to SRP activities between April 1 and June 1 annually.

Dispersed Camping:

- Require a free permit for camping. Camping permits could be limited in number if resource damage occurs that conflicts with achieving resource DFCs or threatens resources protected by proclamation, or if health and safety issues emerge. If damage continues, more limitations might be required, including temporary or permanent area closures, limiting camping to designated sites, or seasonal limitations or closures.
- Allow dispersed camping only in existing disturbed areas or at existing

campsites, accessed by designated routes.
- Prohibit camping within a 200-feet radius (70 adult paces) of developed facilities, such as trails, kiosks, entrance signs, signed archeological sites, parking areas, and riparian and water source areas.
- Make management adjustments that respond to recent research and data results.
- Camping would be prohibited within ¼ mile from water sources "...containing water in such a place that wildlife or domestic stock will be denied access to the only reasonably available water (Arizona Revised Statute 17-308, Unlawful Camping).
- The authorized officer may designate or close camping areas as needed to maintain, protect, or enhance resources.

Developed Campgrounds:

- None.

Campfires:

- Prohibit campfires within 1/4 mile of intensive and moderate public use archaeological sites.
- Prohibit campfires within a 200-feet radius of developed facilities, such as trails, kiosks, entrance signs, parking areas, archaeological sites including petroglyphs (rock art) sites, and riparian and water source areas.
- Allow campfires at designated campsites/areas.
- Limit firewood collection to campfire use only. Allow collection of dead, down, and detached material for campfire firewood. Monitor vegetation use and disturbance and temporarily or permanently suspend such use to prevent resource damage.

Recreational Target Shooting:

- Prohibit recreational target shooting throughout the monument.

Trail Construction for Non-motorized Recreation Use

Discussion of recreation trail development can be found in the Transportation and Public Access section 2.6.1.9.

Badger Springs:

- Enhance the entrance to Badger Springs, which may include rerouting, reclaiming, and recontouring routes.
- Enhance the Badger Springs Wash Trail complex, which might include redesigning, rerouting, reclaiming, and recontouring the parking area, trailhead, and trails.
- At or near the trailhead provide visitor amenities, which may include rest and shade areas, restrooms, equestrian parking and supports, and interpretive and directional signs.
- Close to livestock grazing the area encompassing recreation facilities at the Badger Springs Wash trailhead.
- Consider pronghorn movement and habitat needs in any development in the Badger Springs area.
- Provide for route maintenance to reduce erosion and maintain routes to provide for public safety.

Cordes Lakes

- Fence the Cordes Lakes Area (T. 11 N, R. 3 E., Section 20) near the Agua Fria River to prevent motorized access and provide for safe vehicle parking.
- Provide access points for walk-in and universal access.
- Provide visitor amenities, which may include picnic tables, rest areas, shade facilities, directional signs, and interpretive and visitor information opportunities.

Bloody Basin Road Entrance (just beyond the existing kiosk)

- Reclaim and landscape west entrance on the southeast side for desert vegetation.

Land Use Allocation

Back Country Recreation Management Zone (57,200 acres).

Desired Future Condition

The DFC for the Back Country RMZ is described in section 2.7.2.7 of the Management Common to Agua Fria National Monument section of Chapter 2.

Management Actions

VRM Allocations to achieve the Desired Future Conditions of this Recreation Management Zone are described in section 2.6.1.7.

Maintain river crossings at Kelton Ranch, EZ Ranch, Horseshoe Ranch, and Cross Y Ranch.

SRPs and Concessions:

- Require an SRP for groups of 25 or more.
- Authorize no competitive motorized or mechanized races. Consider other competitive events on a case-by-case basis on how they conform to monument values.
- Issue SRPs for vending operations if for permitted events on the monument or recreation site. Include with the SRP vending for permitted events if the permittee is responsible for the vending operations. If not, require a separate SRP for vending. Consider vending at recreation sites if the service or goods for sale directly enhances the recreation experience and cannot be adequately provided by the closest local community. Prohibit permanent structures.
- Issue recreation concession leases to enhance visitor use, visitor services, and visitor safety and enjoyment, if these leases conform to monument values and objectives. Consider concessions on a case-by-case basis and base determinations on consistency with management objectives and a clearly, demonstrated need.
- Close pronghorn fawning areas to SRP activities between April 1 and June 1 annually.

Dispersed Camping:

- Allow dispersed tent camping with free permits. Camping permits could be limited in number if resource damage occurs that conflicts with achieving resource DFCs or threatens resources protected by proclamation, or if health and safety issues emerge. If damage continues, more limitations might be required, including temporary or permanent area closures, limiting camping to designated sites, or seasonal limitations or closures.
- Prohibit motorized campers/units in the back country.
- Make management adjustments that respond to recent research and data results.
- Camping would be prohibited within ¼ mile from water sources "...containing water in such a place that wildlife or domestic stock will be denied access to the only reasonably available water (Arizona Revised Statute 17-308, Unlawful Camping).
- The authorized officer may designate or close camping areas as needed to maintain, protect, or enhance resources.

Developed Campgrounds:

- None.

Campfires:

- Limit firewood collection to campfire use only. Allow collection of dead, down, and detached material for campfire firewood. Monitor vegetation use and disturbance and temporarily or permanently suspend use to prevent resource damage.
- Prohibit campfires within a 200-feet radius of petroglyphs (rock art), archaeological sites such as pueblos, and riparian and water sources.

Recreational Target Shooting:

- Prohibit recreational target shooting throughout the monument.

Trail Construction for Non-motorized Recreation Use

Discussion of recreation trail development can be found in the Transportation and Public Access section 2.6.1.9.

Land Use Allocation

Passage Recreation Management Zone (1,300 acres)

Desired Future Condition

This Passage RMZ consists of a 200-feet-wide corridor (100 feet on each side of centerline) along all designated vehicle routes passing through the Back Country RMZ. The DFC for the Passage RMZ is described in section 2.7.2.7 of the Management Common to Agua Fria National Monument section of Chapter 2.

Management Actions

VRM Allocations to achieve the Desired Future Conditions of this Recreation Management Zone are described in section 2.6.1.7.

SRP and Concessions:

- Require a SRP for groups of 25 or more.
- Authorize no competitive motorized or mechanized races. Consider other competitive events on a case-by-case basis depending on how they conform to monument values.
- Issue SRPs for vending operations if for a permitted event on the monument or recreation site. Include vending for permitted events with the SRP for the permitted event if the permittee is responsible for the vending operations. If not, require a separate SRP for the vending. Consider vending at recreation sites if the service or goods for sale directly enhance the recreation experience and cannot be adequately provided by the closest local community. Prohibit permanent structures.
- Enter into recreation concession leases to enhance visitor use, visitor services, and visitor safety and enjoyment, if these leases conform to monument values and objectives. Consider concessions on a case-by-case basis and base determinations on consistency with management objectives and a clearly, demonstrated need.
- Close pronghorn fawning areas to SRP activities between April 1 and June 1 annually.

Dispersed Camping:

- Allow dispersed camping with a free permit. Camping permits could be limited in number if resource damage occurs that conflicts with achieving resource DFCs or threatens resources protected by proclamation, or if health and safety issues emerge. If damage continues, more limitations might be required, including temporary or permanent area closures, limiting camping to designated sites, or seasonal limitations or closures.
- Allow dispersed camping only in existing disturbed areas or in existing campsites, accessed by designated routes.

- Prohibit camping within a 200-feet radius (70 adult paces) of developed facilities, such as trails, kiosks, entrance signs, signed archeological sites, parking areas, and riparian and water sources.
- Camping would be prohibited within ¼ mile from water sources "...containing water in such a place that wildlife or domestic stock will be denied access to the only reasonably available water (Arizona Revised Statute 17-308, Unlawful Camping).
- Issue with each free permit, monument-specific Leave No Trace/Tread Lightly information to minimize impacts to resources and prevent pollution to desert water resources.
- Make management adjustments that respond to recent research and data results.
- The authorized officer may designate and close camping areas, as needed, to maintain, protect, or enhance resources.

Developed Campgrounds:

- None.

Campfires:

- Allow campfires in existing disturbed areas.
- Prohibit campfires within 1/4 mile of archaeological sites managed for High or Moderate public use.
- Prohibit campfires within a 200-feet radius of developed facilities, such as trails, kiosks, entrance signs, parking areas, archaeological--including rock art--sites, and riparian and water sources.
- Limit firewood collection to campfire use only. Allow collection of dead, down, and detached material for campfire firewood. Monitor vegetation use and disturbance and temporarily or permanently suspend this use to prevent resource damage.

Recreational Target Shooting:

- Prohibit recreational target shooting throughout the Monument.

Trail Construction for Non-motorized Recreation Use

Discussion of recreation trail development can be found in the Transportation and Public Access section 2.6.1.9.

Administrative Actions

With free permits for camping within the monument issue specific Leave No Trace/Tread Lightly information to minimize impacts to the resources and prevent pollution to desert water resources.

Monitor dispersed campsites and establishes limits of acceptable change. Base site carrying capacities on the limits of acceptable change.

Adopt measures to increase visitor responsibility for campfire etiquette and to reduce visual impacts of proliferating campfire rings.

2.6.1.6 Wilderness Characteristics

Land Use Allocation

Within the national monument, 20,900 acres would be allocated to maintain or enhance wilderness characteristics as shown on Map 2-74.

Desired Future Condition

In addition to the DFC and management actions in the Wilderness Characteristics discussion of the Management Common to Both Planning Areas section of this chapter, the following DFC also applies:

Lands within the monument allocated to maintain or enhance wilderness characteristics contain outstanding opportunities for solitude and naturalness. Maintain or enhance these characteristics and provide opportunities for unconfined primitive recreation, adventure, and discovery. Important wildlife populations and habitat are also within these lands and they are recognized as an important component of the naturalness and will be actively managed.

Management Actions

Evaluate non-motorized trails between Bull Tank and Baby Canyon, between Badger Springs/Agua Fria Confluence and Pueblo Pato, and in other areas if needed, to enhance resource protection by encouraging or requiring visitors to use designated routes.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.6.1.7.

Authorize no new rights-of-way.

2.6.1.7 Visual Resources

Land Use Allocations

VRM classes for *Alternative E* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-75.

Within the Agua Fria National Monument, allocate:

- lands allocated to maintain or to enhance wilderness characteristics (37,560 acres) to Class II objectives,
- remaining Back Country Recreation Management Zone and the Passage RMZ to Class II objectives (20,900 acres),
- the Front Country RMZ to VRM Class III (12,440 acres), and
- utility corridor (which is within the Front Country RMZ) would be allocated to VRM Class III.

Desired Future Condition

Throughout the national monument, regardless of VRM class, the objective is to minimize the visual impacts of authorized activities. As much as possible, keep night skies free of light pollution.

Administrative Actions

Cooperate with surrounding communities and national, State, regional, and local entities to minimize the impacts of lighting.

Include clear nights from light standards in new permits/authorizations and in renewing permits/authorizations within all the viewsheds affecting the monument.

2.6.1.8 Rangeland Management

Land Use Allocations

BLM would continue to administer the current 11 grazing authorizations on 10 allotments as shown on Map 2-5.

Desired Future Condition

Watersheds are in properly functioning condition, including their upland, riparian, and aquatic components. Soil and plant conditions support infiltration, storage, and release of water that are in balance with climate and landform.

Ecological processes are maintained to support healthy biotic populations and communities.

Management Actions

Limit livestock grazing in riparian areas to the winter season (November 1 to March 1).

Inventory and/or monitoring studies will be used to determine if adjustments to permitted use

levels, terms and conditions and management practices are necessary in order to meet and/or make significant progress towards meeting the Arizona Standards for Rangeland Health and other Land Use Plan Objectives.

Fence construction and maintenance will follow guidance provided in BLM's handbook on Fencing No. 1741-1.

When lands are devoted to a public purpose that precludes livestock grazing, adjust allotment boundaries to allow for that use.

Remove the immediate area surrounding Badger Springs Wash from the Cordes allotment to provide for developing a visitor parking area, information kiosk, campground, and infrastructure.

2.6.1.9 Transportation and Public Access

Land Use Allocation

The entire monument is allocated as Limited to Designated routes (Map 2-16).

Management Actions

Cross-country motorized travel is prohibited except in the case of an emergency or for approved administrative purposes.

Within Front Country

Trail Construction for Non-motorized Recreation Use:

- Develop trails as needed to protect monument's resources and enhance interpretive opportunities.
- Ensure that all construction is compatible with social and managerial settings.
- Design trails to blend into the environment.
- Build loop, connector, and linear trails, depending on recreation, access, interpretation, education, and resource objectives.
- Build trails to maintain connectivity to recreation opportunities such as equestrian use, hiking, and viewing cultural sites.
- Build trails to link with other connector trails outside the monument.
- Explore opportunities to link networks of trails within the monument to those outside the monument on other BLM's lands, or with the adjacent jurisdictions, where linkages would conform to monument's values and would not impair protecting monument resources.
- Place priority for trail development on archaeological sites developed for interpretive use and visitation.
- Build other trails to enhance visitor access and enjoyment of the monument's resources, including the following: self-guided nature and cultural resource trails; trails to interpretive sites not accessible by vehicle; or longer trails linking multiple sites for day or multiple-day trips.

Route Construction for Motorized Use:

- Relocate segments of routes when needed to reduce resource damage and help protect the monument's resources.
- Allow building of routes for access to public lands around privately owned parcels (inholdings), if needed to meet administrative or public needs. To increase access and provide an interpretive motorized opportunity for ATVs in T. 10 N., R. 3 E., Section 10, build a new route to connect existing routes.
- All construction would be compatible with Desired Future Conditions for the construction area.
- Design construction to blend into the environment.

Off-Highway Vehicle Transportation Access

- All vehicles would be limited to designated routes consistent with the discussion in the Transportation and Public Access section 2.7.2.10.
- Require emergency vehicles, including air support, to use designated routes whenever possible and practical.
- Set speed limits for OHV use to provide for visitor safety and to minimize visitor conflicts.
- Improve access, which may include the following: designing and installing needed improvements at low-water crossings, installing vehicle control guards, and providing for visitor safety on Bloody Basin Road.

Within Back Country

Trail Construction for Non-motorized Recreation Use:

- Build nonintrusive trails to allow visitors to access areas of interest, to enhance recreation experiences, and to protect monument's values. Trail design could vary from built, engineered routes to trails marked only with fiberglass posts without any construction.
- Do not allow trails or trail construction to degrade monument resources.
- Design trails to blend into the environment.
- Keep trails compatible with social and managerial settings and manage them to meet VRM II objectives.

Route Construction for Motorized Use:

- Routes open for administrative use will be maintained as needed to provide for the use.
- Allow emergency trail construction to maintain access for permitted operations and administrative purposes within the Back Country RMZ. No other construction would be allowed unless necessary to meet DFCs.

Off-Highway Vehicles

- Prohibit OHV travel in the Back Country RMZ.
- Permit emergency response vehicles, including aircraft landing, in the Back Country RMZ. If practical, these vehicles should use existing trails or areas void of vegetation and cultural resources.
- Non-emergency administrative use of vehicles may be allowed in the Back Country on missions pre-approved by the BLM's field manager. If practical, these vehicles should use existing routes or areas void of vegetation and cultural resources.

Within Passage

Trail Construction for Non-motorized Recreation Use:

- Same as for Front Country RMZ.

Route Construction for Motorized Use:

- Relocate segments of existing routes to reduce resource damage and to help protect monument's resources.
- All construction would be compatible with Desired Future Conditions for the construction area.
- Design construction to blend into the environment.

Off-Highway Vehicles

- All vehicles would be limited to designated routes consistent with the discussion in the Transportation and Public Access section 2.7.2.10.
- Allow continued vehicular access (both motorized and non-motorized mechanized) along designated vehicle routes. Do not upgrade routes but maintain them for access at current levels, speeds, and types. In some cases, conduct route maintenance to purposely limit vehicular type or

speed. For example, a route may be purposely maintained in a primitive condition to discourage ATVs or four-wheel drive vehicles from traveling at speeds exceeding 25 to 30 miles per hour.
- Ensure that emergency vehicles, including air support, use designated routes whenever possible and practical. When not possible or practical, emergency vehicles should, as much as possible, minimize disturbance of vegetation and the risk to monument resources by using existing openings and disturbed areas.
- Establish speed limits for OHV use to provide for visitor safety and to minimize visitor conflicts.
- Maintain access and provide for visitor safety.

Implementation Actions

Public Access

The designated route network within the national monument would include the following:

- 25 miles of secondary roads, accessible in good weather by two-wheel-drive vehicles,
- 72 miles of tertiary roads, accessible mainly by four-wheel drive or, in some areas, high-clearance, two-wheel drive vehicles, and
- 4 miles of motorized trails, accessible by motorcycles and ATVs.

The designated route network would include closing 70 miles of routes, and building one mile of new route to enhance user enjoyment while protecting monument's resources. Please see Map 2-76. Routes designated in the monument are shown below.

Open Routes 101 miles

Closed Routes 70 miles

New Routes 1 mile

2.6.2 Bradshaw-Harquahala Planning Area

BLM has developed *Alternative E* as the preferred Alternative for the Bradshaw-Harquahala Planning Area. The land use allocations and management actions under this Alternative would best facilitate responsible use of resources within the planning area, while continuing to protect fragile resources. *Alternative E* proposes six MUs (Map 2-77).

2.6.2.1 Management Applicable to the Entire Bradshaw-Harquahala under this Alternative

The following section presents resource management actions for *Alternative E* that apply throughout the Bradshaw-Harquahala Planning Area (i.e. they are not specific to any MU).

2.6.2.1.1 Lands and Realty

Land Tenure Adjustments

Alternative E proposes 38,755 acres of the lands within the Bradshaw-Harquahala Planning Area as potentially suitable for disposal. Of these, 29,230 acres are potentially available for sale or disposal under any authority, and 9,525 acres would be available only through exchange. The lands include scattered parcels outside the planning area and others as shown in Map 2-78. Criteria limiting which lands might be selected as suitable for disposal are described in Management Common to Both Planning Areas section of this chapter in the discussion under Lands and Realty.

Lands considered for potential acquisition would include State and private lands (willing seller) within the planning area and would be in accordance with resource management

prescriptions in this land use plan. These lands would meet the criteria described under Lands and Realty in the Management Common to Both Planning Areas section of this chapter, as well as program objectives reflected in *Alternative E.*

Utility and Transportation Corridors

New utility corridors within the Bradshaw-Harquahala Planning Area (Map 2-79) would be designated for future expected demands. These designations respond to the demand for the intensifying the power grid and conform to the utility regulations of the Arizona Corporation Commission.

2.6.2.1.2 Rangeland Management

Land Use Allocation

Authorize 93 grazing authorizations within the grazing allotment boundaries shown on Map 2-21.

Desired Future Condition

Watersheds are in properly functioning condition, including their upland, riparian, and aquatic components. Soil and plant conditions support infiltration, storage, and release of water that are in balance with climate and landform.

Ecological processes are maintained to support healthy biotic populations and communities.

Management Actions

Implement grazing management changes as needed to produce riparian areas that are in or are making progress toward proper functioning condition. Base grazing management changes on allotment evaluations, which analyze compliance with the Land Health Standards and the Guidelines for Grazing Administration described in the Rangeland Management discussion of the Management Common to Both Planning Areas section of this chapter. Changes could include, but may not be limited to; seasonal grazing, grazing rotation, or no grazing.

Build livestock control fences and alternative water sources where needed to meet natural resource objectives. Fence construction and maintenance will follow guidance provided in BLM's handbook on Fencing No. 1741-1.

2.6.2.1.3 Mineral Resources Management

Leasable Minerals

Open all lands for mineral and geothermal leasing and exploration except lands with existing segregations or withdrawals. Map 2-80 shows the leasable mineral allocations.

Open lands reconveyed to the Federal Government to mineral and geothermal leasing, and exploration.

Issue lease applications, with needed restrictions, to protect important resources. Base stipulations on interdisciplinary review of individual proposals and environmental analysis.

Saleable Minerals (Mineral Materials)

The following management actions for saleable minerals are shown on Map 2-81.

Except for legislatively withdrawn areas and other withdrawn and segregated areas, open all public lands within the planning area to mineral material disposal, on a case-by-case basis.

Open lands that have been reconveyed to the Federal Government and managed by BLM to mineral material disposal under applicable laws, except on the floodplain of riparian areas.

Locatable Minerals

The following management actions for locatable minerals are shown on Map 2-82.

Withdraw Tule Creek ACEC from mineral entry. All other public lands within the planning area would be open to locatable mineral activities except for legislatively withdrawn areas and other withdrawn and segregated areas.

Lands that have been reconveyed to the Federal Government and managed by BLM would be open to location under the mining laws, except within riparian areas.

2.6.2.1.4 Transportation and Public Access

Land Use Allocation

All public lands within the Bradshaw-Harquahala Planning Area would be allocated as limited use areas, with motorized and mechanized vehicle uses limited to designated routes. The Hassayampa River Canyon, Hells Canyon, Harquahala Mountains, Big Horn Mountains and Hummingbird Spring Wildernesses would remain closed to motorized and mechanized uses (Map 2-16).

Desired Future Conditions

Define, designate, implement, and monitor a comprehensive travel management network affording a range of high-quality and diverse motorized and non-motorized recreation opportunities. The network would consist of a system of areas, roads, routes and/or trails. The travel management network and associated recreation opportunities would be consistent with other resource management objectives and recreation settings for the area.

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Administrative Actions

An evaluation process, similar to one described in Appendix D, will be used to establish a designated public access and route system within the Black Canyon Management Unit to support resource objectives consistent with *Alternative B.*

Develop comprehensive Travel and Transportation Management Plans for the management units and other public lands within the planning area. These plans would implement route designations on the public lands.

2.6.2.2 Management Units

The following is the list of list of MUs selected for *Alternative E* and the document sections they are discussed in (Map 2-77):

- Black Canyon MU, section 2.6.2.2.1, Map 2-83.
- Castle Hot Springs MU, section 2.6.2.2.2, Map 2-84.
- Hassayampa MU, section 2.6.2.2.3, Map 2-85.
- Harquahala MU, section 2.6.2.2.4, Map 2-86.
- Harcuvar MU, section 2.6.2.2.5, Map 2-87.
- Upper Agua Fria River Basin MU, section 2.6.2.2.6, Map 2-88.

Each MU represents a geographic region and contains a variety of land use allocations, DFCs, and management actions for the allocations. General DFC and management actions can be found in the Management Units discussion of the Management Common to the Bradshaw-Harquahala Planning Area section of this chapter.

2.6.2.2.1 Black Canyon Management Unit

The Black Canyon MU stretches from the southern end of Table Mesa on the south to Cordes Junction on the north. It is bounded by Agua Fria National Monument and Tonto National Forest on the east and the Prescott National Forest on the west Map 2-83).

The Black Canyon MU contains the following land:

- 68,730 acres of BLM-administered lands,
- 12,600 acres of Arizona State land,
- 6,780 acres of private land, and
- 1,100 acres of county parklands in both Maricopa and Yavapai Counties.

2.6.2.2.1.1 Special Area Designations

Nomination to National Recreation Trail System

Black Canyon Trail

Desired Future Condition

Provide for the ever-increasing outdoor recreation needs of an expanding urban population to promote the preservation of, public access to, travel within, and enjoyment and appreciation of the open-air, outdoor areas and historic resources of the Black Canyon corridor. A National Recreation Trail should be established primarily, near urban areas, secondarily, within scenic areas, and along historic travel routes of the area.

Management Actions

Issue a right-of-way for the trail and ancillary trails, and facilities to preserve public access and long-term character.

Acquire easements or rights-of-way on non-Federal lands if the trail or facilities are proposed for any of these lands.

Recognize and accommodate long-term continuation of the trail and facilities in land tenure actions. Retain a 1/4-mile wide corridor (1/8 mile each side of the trail) along the trail and any ancillary facility for a permanent trail location. Ensure public access to the trail and related facilities through easements, rights-of-way, deed restrictions, or other suitable means.

Develop at least eight trailheads and staging or camping areas near communities and vehicle access points to serve the Black Canyon Trail and adjoining public lands for the following purposes:

- parking,
- unloading of OHVs and horses, and
- picnicking.

Development could include the following:

- information signs,
- kiosks,
- picnic tables,
- water,
- toilets,
- loading ramps, and
- soil stabilization for dust abatement.

Limit to 5 acres the area of exposed barren soil for each site. Mark or delineate the perimeters with barriers to prevent expansion. One proposed site identified during planning is the heavily used site near the intersection of County Road 59 (Crown King Road) and Forest Service Road 684 (Castle Creek Road).

Evaluate the Black Canyon Trail for inclusion into the National Recreation Trail System, as described in the National Trails System Act of 2002 (P.L.90-543).

2.6.2.2.1.2 Lands and Realty

Land Tenure Adjustments

Alternative E proposes no land tenure adjustments for the Black Canyon MU because it proposes no lands for disposal or acquisition.

Communication Sites

The MU has one designated communication site, the Black Canyon City communication site,

which would be retained and subject to valid existing rights.

Utility and Transportation Corridors

Multiple-Purpose Corridors

Alternative E would adjust the western boundary of the Black Canyon corridor 1 mile west of the true center of Interstate 17 and would widen the corridor to 2 miles where it crosses the Black Mesa/Bumble Bee Cultural Resource Priority Areas as shown on Map 2-79. (Note: The Black Canyon corridor includes both the I-17 right-of-way and rights-of-way for other utilities.)

A new corridor southwest of Agua Fria National Monument would be added to extend the Black Canyon utility corridor completely across BLM's land south and west of Black Canyon City.

2.6.2.2.1.3 Biological Resources

No other biological allocations would be made within the Black Canyon MU. Biological resources would be subject to management guidance in Biological Resources from the Management Common to Both Planning Areas section of this chapter and in Biological Resources from the Management Common to the Bradshaw-Harquahala Planning Area section of this chapter.

2.6.2.2.1.4 Cultural Resources

Land Use Allocation

Black Canyon Corridor SCRMA (49,540 acres BLM). Allocate to public use sites that are accessible from the Black Canyon Trail.

Desired Future Condition

Selected prehistoric and historic sites are interpreted for public education and visitation. Interpretive projects are completed in a manner that monitors and protects sites while allowing for public use. For more information on public use of cultural resources, see Appendix E.

Management Actions

Build trails to link these sites to the Black Canyon Trail. Local site types potentially suitable for public use include prehistoric hilltop structures, rock art, mining camps, and features of the historic Black Canyon Sheep Driveway.

Develop historic properties for heritage tourism to contribute to their long-term preservation and productive use.

Implement some or all of the following and other actions at selected sites:

- platforms,
- restrooms,
- picnic tables,
- benches,
- trash receptacles,
- signs along routes and trails to direct visitors to interpreted sites,
- hard-surfaced walking trails,
- interpretive signs and register boxes, and
- brochures and related educational materials or programs.

Stabilize, repair, and maintain sites in good condition, as needed. Regularly monitor the condition of sites.

Authorize commercial and noncommercial group tours if they are conducted with protective stipulations in accordance with BLM's regulations and, where required, SRPs.

Administrative Actions

Select sites for public use by considering the following:

- presence of aboveground features of interest to the public and amenable to interpretive development,

- accessibility to communities, travel routes, and recreation trails,
- site condition and the feasibility of stabilizing areas or features to withstand visitation,
- visitor safety,
- compatibility with other land uses and site values, such as traditional use by Native Americans,
- feasibility of regular inspections by BLM's staff and volunteers, and
- partnership opportunities for interpretive and educational projects.

The BLM's recreation program would participate in developing sites for public use.

BLM would cooperate with agencies, tribes, and local communities in supporting heritage tourism programs that benefit local economies. Historic properties for heritage tourism would be developed to contribute to their long-term preservation and productive use.

BLM would continue to work with the Site Steward Program to regularly monitor the condition of sites.

2.6.2.2.1.5 Recreation Resources

Land Use Allocation

The entire Management Unit would be allocated to the Black Canyon SRMA (68,730 acres BLM) with the following Recreation Management Zones within it:

- Black Canyon Hiking and Equestrian Trails RMZ.
- Table Mesa RMZ.

Desired Future Condition

Preserve scenic and open space values and provide an array of public opportunities for trail-based recreation within diverse and healthy landscapes.

Provide an assortment of intensively managed, intensively used trail-based motorized and non-motorized recreation uses within the SRMA. Emphasize motorized and non-motorized trail links east and west of I-17, links with Prescott and Tonto National Forests, Lake Pleasant Regional Park, the Castle Hot Springs area, the Great Western Trail, and connections to all communities.

Manage the recreation area to function as an open space gateway into Maricopa County from the north, managed for viewsheds and long-range vistas of valleys, hills, and the Bradshaw Mountains. Connect the Maricopa County Park System with a regional non-motorized trail system between Lake Pleasant Regional Park, the Cave Creek Recreation Area, and the Spur Cross Ranch Conservation Area

Facilitate preserving a scenic open space corridor along I-17 between Yavapai and Maricopa Counties, welcoming visitors to Maricopa County and promoting area tourism.

Maintain recreation settings identified through inventory as shown on the Recreation Opportunity Spectrum on Map 3-11, except where otherwise stipulated in prescriptions of other allocations.

Secure more law enforcement and public user group involvement as a high priority to promote environmentally responsible recreation, discourage vandalism, protect the public, and protect the public investment in public lands.

Management Actions

Acquire legal public access to public lands through suitable easements, rights-of-way, or other methods.

Develop a comprehensive trail system centered on the Black Canyon Trail. Identify, analyze, build, and designate new single-use and multi-use, hiking, equestrian, and OHV/vehicle routes for hikers, equestrians, mountain bicycles, ATVs, and four-wheel-drive enthusiasts, and linked to other trail systems and communities.

Routes would include motorized and non-motorized Wickenburg-Lake Pleasant-Black Canyon City trail corridors and direct links with the Great Western Trail.

Specific activities envisioned in this area include trail development for the following:

- differentiated use (separate motorized and non-motorized travel routes),
- single use (e.g. hiking or ATVs only),
- multi use (vehicles, bicycles, hiking, and equestrian use on a single trail), and
- single-track use (e.g. motorcycles or mountain bicycles only).

Locate, analyze, build and designate single or multiple-use, motorized (OHV) special recreation vehicle areas, loops, routes, and management strategies through interdisciplinary plans, with community and user input.

Locate and develop parking, staging areas and trailheads, as suitable, for the following purposes:

- facilitate responsible use,
- ensure resource protection,
- parking, and
- unloading OHVs and horses.

Limit 5 acres per site of exposed barren soil. Mark or delineate the perimeters with barriers to prevent expansion.

Prohibit motorized competitive races in the SRMA.

Minimize visual disturbances to the area's open spaces, vistas, and viewsheds. Co-locate communication towers/facilities on existing powerlines or communication towers, using identified utility corridors whenever possible.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.3.2.2.1.6. Apply visual resource prescriptions for the SRMA or RMZs to all governmental, commercial, and private rights-of-way, easements, and other conveyances.

Pursue legal public access through the Lake Pleasant Regional Park using existing routes to provide access to archaeological and historic sites allocated for public use, or to achieve other resource objectives.

Land Use Allocation

Black Canyon Hiking and Equestrian Trails RMZ (8,325 acres)

Desired Future Condition

Complete the Black Canyon Hiking and Equestrian Trails alignment from State Highway 74 to State Highway 69, with community and citizen participation. The trails will provide high-quality non-motorized recreation experiences for hikers, equestrians, and mountain bikers through the Black Canyon corridor.

Incorporate loops, links, and trailheads for both destination and point-to-point travel into the Black Canyon Trail design. Link the communities of Black Canyon, New River, Anthem, and Phoenix, and eventually develop a connecting trail system to include Lake Pleasant Regional Park and Tonto and Prescott National Forests.

Locate, analyze, build, and designate new trail segments as needed to replace those now used by motorized vehicles. Align these new segments as closely as possible along the historic sheep driveway corridor. Determine exact locations of the trail or any ancillary trails and facilities, in conjunction with; Maricopa and Yavapai County trails committees, communities, equestrian and other user groups, and interested citizens. Citizen working groups will help with trail and facility alignments, site designation, design, and management.

Evaluate the trail for inclusion into the National Recreation Trail System in order to provide for the ever-increasing outdoor recreation needs of

an expanding urban population and in order to promote the preservation of, public access to, travel within, and enjoyment and appreciation of the open-air, outdoor areas and historic resources of the Black Canyon corridor. A National Recreation Trail should be established primarily, near urban areas, secondarily, within scenic areas and along historic travel routes of the area.

Management Actions

Issue a right-of-way for the trail and ancillary trails and facilities to preserve public access and long-term character.

Acquire easements or rights-of-way on non-Federal lands if the trail or facilities are proposed for any of these lands.

Recognize and accommodate long-term continuation of the trail and facilities in land tenure actions. Retain a 1/4-mile wide corridor (1/8 mile each side of the trail) along the trail and any ancillary facility for a permanent trail location. Ensure public access to the trail and related facilities through easements, rights-of-way, deed restrictions, or other suitable means.

Develop at least eight trailheads and staging or camping areas near communities; vehicle access points to serve the Black Canyon Trail and adjoining public lands for the following purposes:

- parking,
- unloading of OHVs and horses, and
- picnicking.

Development could include the following:

- information signs,
- kiosks,
- picnic tables,
- loading ramps, and
- soil stabilization for dust abatement.

Limit to 5 acres the area of exposed barren soil for each site. Mark or delineate the perimeters with barriers to prevent expansion. One proposed site identified during planning is the heavily used site near the intersection of County Road 59 (Crown King Road) and Forest Service Road 684 (Castle Creek Road).

Evaluate the Black Canyon Trail for inclusion into the National Recreation Trail System, as described in the National Trails System Act of 2002 (P.L.90-543).

Land Use Allocation

Table Mesa RMZ (11,050 acres BLM)

Desired Future Condition

Manage for intensive motorized single and two-track routes and general motorized recreation.

Acceptable dust control and compatibility with neighboring communities and landowners.

Semi-primitive motorized and roaded-natural settings. Users will occasionally be concentrated in developed sites, but recreation use will generally be dispersed.

Facilities to meet the basic needs of visitors and to enhance resource protection. Clear yet nonintrusive signing in most of the RMZ.

Management Actions

Develop facilities, staging areas, trails, signage, trailheads, and other sites when needed to protect resources, to promote visitor health and safety, or to maintain recreation opportunities.

Develop one staging area along Table Mesa Road for the following purposes:

- meet high motorized and non-motorized recreation demand,
- provide for parking,
- unloading of OHVs and horses,
- overnight camping, and
- large special events.

Development could include the following:

- informational signs,
- kiosks,
- picnic tables,
- loading ramp, and
- soil stabilization for dust abatement.

Limit to 10 acres the area of exposed barren soil for the site. Mark or delineate the perimeter with barriers to prevent expansion.

Develop at least two small day use areas for up to ten vehicles with trailers for the following purposes:

- parking,
- unloading of OHVs and horses, and
- picnicking.

Development could include the following:

- informational signs,
- kiosks,
- picnic tables,
- loading ramps, and
- soil stabilization for dust abatement.

Limit to 2 acres the area of exposed barren soil for each site. Mark or delineate the perimeters with barriers to prevent expansion.

Manage recreational target shooting consistent with the "Recreational Target Shooting" guidelines in the Recreation discussion of the Management Common to the Bradshaw-Harquahala Planning Area section of this Chapter.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.6.2.2.1.7 (Map 2-75).

Administrative Actions

Engage a diverse group of stakeholders in a collective effort to conserve the scenery, open space, and recreation values of the Black Canyon SRMA. Promote citizen involvement and partnerships as an integral component to the SRMA management. Empower community workgroups to carry out stewardship and resource management activities.

Collaborate with the AGFD, Prescott and Tonto National Forests, Maricopa and Yavapai Counties, Lake Pleasant Regional Park, and land managers of other trails to link to trails on BLM's land.

Complete an OHV designation for all existing and proposed motorized (OHV) routes and non-motorized trails on public land within the Black Canyon SRMA within 2 years of plan approval.

Develop and implement collaborative management partnerships with the Maricopa County Parks and Recreation Department and the communities to share recreation management of the SRMA areas within Maricopa County.

Collaborative efforts would do the following:

- ensure consistent management between partners,
- enhance the recreation experience of visitors and recreation permit holders,
- maintain open space and provide a natural gateway into Maricopa County, and
- facilitate development of the Maricopa County Regional Trails System Plan.

Develop a long-term Black Canyon Hiking and Equestrian Trails master plan within 2 years of plan approval. Define proposed trail alignments, trailheads, linking trails, and other alignments within 1 year of plan approval.

Determine specific areas where comprehensive site assessments would be initiated to do the following:

- determine existing physical and social impacts of recreation activities,
- define desired conditions and standards,
- establish monitoring plans to manage camping and other recreation uses.

2.6.2.2.1.6 Wilderness Characteristics

Land Use Allocation

Within the Black Canyon Management Unit, 13,490 acres would be allocated to maintain or enhance wilderness characteristics as shown on Map 2-89.

Desired Future Condition

Maintain and enhance non-motorized and primitive recreation experiences, tied to open space and natural landscapes. The desired recreation setting is semi-primitive non-motorized. Management retains the area's undeveloped natural desert landscapes and scenic remote character and preserves outstanding solitude and primitive recreation experiences. Conserve rock cabins, artifacts, petroglyph sites, prehistoric structures, and riparian areas. Manage the current motorized segment of the Black Canyon Trail, which crosses this allocation, as a semi-primitive motorized corridor. This trail segment is multi-use, open to both motorized and non-motorized users. Recognize that wildlife populations and habitat are important aspects of the naturalness and actively manage them.

Management Actions

Manage for a semi-primitive motorized recreation setting along designated routes and semi-primitive non-motorized recreation setting beyond ½ mile from designated routes.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.6.2.2.1.7.

Develop non-motorized trails when such trails are determined to be needed to protect resources, enhance recreation opportunities, or provide links with other trail systems.

Administrative Actions

Conduct a detailed site-specific inventory to determine the current level of disturbance. From this baseline data, establish standards to maintain proper levels of recreation and landscape disturbance to conserve the DFCs.

2.6.2.2.1.7 Visual Resources

Land Use Allocations

VRM classes for *Alternative E* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-75.

Within the Black Canyon Management Unit, allocate:

- Lands allocated to maintain or enhance wilderness characteristics to VRM Class II objectives.
- Black Canyon SRMA to VRM Class II objectives, except
    - Table Mesa RMZ to VRM Class III objectives, and a corridor along Interstate 17 near New River to VRM Class IV
    - Utility corridors would be allocated to VRM Class III or IV.

2.6.2.2.1.8 Mineral Resource Management

Management Actions

Close riparian areas in reconveyed lands to mineral entry, and close riparian areas throughout the MU to mineral material disposal, to preserve riparian values (Map 2-82 and Map 2-81).

2.6.2.2.1.9 Transportation and Public Access

Land Use Allocation

The Black Canyon Management Unit would be allocated as a limited use area, with

motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

SCRMAs and cultural resource sites allocated to Public Use are discussed in section 2.6.2.2.1.4.

SRMAs and other recreation allocations are discussed in section 2.6.2.2.1.5.

Allocations to maintain or enhance wilderness characteristics are discussed in section 2.6.2.2.1.6.

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Develop non-motorized trails when such trails are determined to be necessary to protect resources, enhance recreation opportunities, or provide links with other trail systems within the 13,490 acres allocated to maintain or enhance wilderness characteristics as shown on Map 2-83.

Build trails to link the area's cultural sites to the Black Canyon Trail.

Establish the Black Canyon SRMA (68,730 acres BLM) with two Recreation Management Zones: Black Canyon Hiking and Equestrian Trails RMZ and the Table Mesa RMZ. Complete an OHV designation for all existing and proposed motorized (OHV) routes and non-motorized trails on public land, within the Black Canyon SRMA, within 2 years of plan approval.

Establish the Black Canyon Hiking and Equestrian Trails RMZ (8,325 acres). Issue a right-of-way for the trails, ancillary trails, and facilities to preserve public access and long-term character. Acquire easements or rights-of-way on non-Federal lands if the trail or facilities are proposed for any of these lands.

Establish the Table Mesa RMZ (11,050 acres BLM). Manage for intensive motorized single and two-track routes and general motorized recreation.

2.6.2.2.2 Castle Hot Springs Management Unit

Castle Hot Springs MU is bounded by State Route 74 (Carefree Highway) on the south, Prescott National Forest on the north, Black Canyon MU on the east, and Hassayampa MU on the west (Map 2-84). The MU contains the following lands:

- 112,430 acres of BLM-administered lands,
- 53,730 acres of Arizona State land,
- 32,560 acres of private land,
- 22,870 acres of county park lands in both Maricopa and Yavapai Counties (Lake Pleasant Regional Park), and
- 1,100 acres of Bureau of Reclamation lands outside Lake Pleasant Regional Park.

2.6.2.2.2.1 Special Area Designations

Current Special Area Designations within the Management Unit would be managed consistent with Management Actions described in section 2.7.3.2 in the Management Common to the Bradshaw-Harquahala Planning Area section of this chapter.

Area of Critical Environmental Concern

Tule Creek ACEC (640 acres)

Relevance

The Tule Creek area contains significant historic and cultural values, including the Fort Tule site, a prehistoric hilltop ruin occupied from A.D. 1100 to 1300, and a home site occupied by miners in the 1920s and 1930s. Tule Creek is an example of rare Sonoran Desert riparian system

dominated by emergent vegetation and occupied by the endangered Gila topminnow.

Importance

The Fort Tule cultural site was probably used as a significant connection in a regional communication system based on signaling among hilltop sites. Fort Tule's role in the communication system can offer important information on prehistoric social systems during the era it was used.

Tule Creek and its sensitive biological resources are extremely vulnerable to disturbance and degradation from vehicle, mining, and livestock use. Continued protection of Tule Creek is important to the recovery of the endangered Gila topminnow.

Desired Future Condition

The integrity of the riparian area, endangered species habitat quality, and cultural resources are maintained and protected from degradation.

Management Actions

Close the fenced area to livestock grazing and motor vehicles.

Withdraw the ACEC from mineral entry, and close it to mineral materials disposal and mineral leasing.

Develop an interpretive site for biological and cultural resources.

Continue patrols of archaeological sites with help from Site Steward Volunteers. Where needed, take measures to protect sites such as the following:

- stabilizing structures,
- fencing or closing sensitive sites to public visitation,
- excavating to collect scientific information from threatened sites, and
- taking other actions to be determined by site-specific needs.

Ensure that activities that change the visual landscape conform to the historical setting.

Back Country Byways

Constellation Mine Road/Buckhorn Mine Road Back Country Byway

Desired Future Condition

Provide a vehicle route accessible by high-clearance vehicles through the rugged Sonoran Desert landscape in the Buckhorn and Hieroglyphic Mountains, with the high Bradshaw Mountains as a backdrop. Interpret the diverse resources and cultural history to create a greater understanding of the region's resources and a greater appreciation for the people who live there now and lived there in the past. Along this route create a comprehensive visitor experience that is sensitive to both resources and private lands and provides a high-quality visitor experience. Maintain a semi-primitive motorized recreation setting ½ mile to either side of the road's centerline.

Management Actions

Evaluate Constellation Mine Road/Buckhorn Mine Road for nomination as a back country byway. If the byway is designated, implement the following:

- Maintain the public portions of this road at a BLM Level 2 standard, (BLM 9100 Manual) passable by high-clearance vehicles.
- Maintain the current historical visual character ½ mile to either side of the road's centerline.
- Secure easements and rights-of-way where needed to ensure long-term public access along Constellation Mine Road.
- Interpret and protect the route's historical features, including original and stabilized road masonry structures; mining properties; mining districts; and historic homesteads, settlements, and ranches.

- Install directional, safety, and interpretive signs to enhance public use, enjoyment, and stewardship of the route.
- Establish a friends group to monitor and help interpret the route and present the route and area's natural and human history.

2.6.2.2.2.2 Lands and Realty

Land Tenure Adjustments

Alternative E proposes no land tenure adjustments for the Castle Hot Springs MU because no lands there have been proposed for disposal or acquisition.

Communication Sites

The Castle Hot Springs MU has no designated communication sites.

Utility and Transportation Corridors

No new utility corridors would be designated within this MU.

All State highway system routes would be designated as transportation corridors, including a new 1-mile-wide corridor along SR 74, 1/2 mile on either side of the highway centerline.

Public access would be acquired from Highway 74 to Castle Hot Springs Road through Morgan City Wash across several Arizona Trust and private land parcels in Township 6 North, Range 1 West, sections 6, 9, 22, and 23; Township 7 North, Range 2 West, sections 2 and 36; and in Township 7 North, Range 1 West, section 31 (Map 2-90).

Select and develop an improved route north of Lake Pleasant to Table Mesa, extending from French Creek Road to Interstate 17, for public safety, administrative, and recreation access. To ensure long-term public access, secure easements or rights-of-way crossing private or State parcels, when identified. This action would secure motorized legal public access from the Castle Hot Springs community to Interstate 17.

2.6.2.2.2.3 Biological Resources

No other allocations would be made for biological resources within Castle Hot Springs MU. Biological resources would be subject to management guidance in Biological Resources in the Management Common to Both Planning Areas section of this chapter and Biological Resources in the Management Common to the Bradshaw-Harquahala Planning Area section of this chapter.

2.6.2.2.2.4 Cultural Resources

Land Use Allocation

Lake Pleasant/Agua Fria SCRMA (27,240 acres BLM)

Desired Future Condition

Selected prehistoric and historic sites are interpreted for public education and visitation. Interpretive projects are completed in a manner that monitors and protects sites while allowing for public use. For further information on public use of cultural resources, see Appendix E.

Management Actions

The following sites north of Lake Pleasant are allocated to public use: Agua Fria Fort and AZ T:4:1 (PC), which are prehistoric hilltop sites, and the historic Humbug hydraulic mining complex.

Select other sites for public use by considering the following:

- presence of aboveground features of interest to the public and amenable to interpretive development,
- accessibility to communities, travel routes, and recreation trails,

- site condition and the feasibility of stabilizing selected areas or features to withstand visitation,
- visitor safety,
- compatibility with other land uses and site values, such as traditional use by Native Americans,
- feasibility of regular inspections by BLM's staff and volunteers, and
- partnership opportunities for interpretive and educational projects.

Implement a combination of the some or all of following and other actions at selected sites:

- platforms,
- restrooms,
- picnic tables,
- benches,
- trash receptacles,
- signs along routes and trails to direct visitors to interpreted sites,
- hard-surfaced walking trails,
- interpretive signs and register boxes, and
- brochures and related educational materials or programs.

Stabilize, repair, and maintain sites in good condition. Regularly monitor the condition of sites.

Authorize commercial and noncommercial group tours, if they are conducted with protective stipulations, in accordance with BLM's regulations and, where required, SRPs.

Administrative Actions

Select sites for public use by considering the following:

- presence of aboveground features of interest to the public and amenable to interpretive development,
- accessibility to communities, travel routes, and recreation trails,
- condition of the site and the feasibility of stabilizing selected areas or features to withstand visitation,
- visitor safety,
- compatibility with other land uses and site values, such as traditional use by Native Americans,
- feasibility of regular inspections by BLM's staff and volunteers, and
- partnership opportunities for interpretive and educational projects.

The BLM recreation program would participate in developing sites for public use.

Cooperate with agencies, tribes, and local communities in supporting heritage tourism programs that benefit local economies. Develop historic properties for heritage tourism to contribute to their long-term preservation and productive use.

BLM continues to work with the Site Steward Program to regularly monitor the condition of sites.

2.6.2.2.2.5 Recreation Resources

Land Use Allocation

The entire Management Unit would be allocated to the Castle Hot Springs SRMA (112,430 acres BLM) containing the following Recreation Management Zones:

- Hieroglyphic Mountains RMZ.
- Sheep Mountain RMZ.

Desired Future Condition

Emphasize preserving open space and retaining scenic and visual qualities. Sustain recreation, cultural, and biological assets while recognizing and protecting private property rights. Retain and acquire legal access to public lands.

Management emphasizes a wide range of regional recreation needs, while accomplishing the following:

- maintaining the quality of life for local communities,
- preserving open space and natural landscapes, and
- ensuring resource conservation.

Partnerships and collaborative efforts play a key role in successfully managing this SRMA.

Maintain an array of recreation settings (rural, roaded-natural, semi-primitive motorized, and semi-primitive non-motorized) and opportunities. Recreation activities include the following:

- intense route-based motorized use,
- permitted recreation events,
- developed facilities,
- developed hiking and equestrian trails, and
- remote semi-primitive wilderness settings with non-motorized recreation opportunities.

Intensively manage all recreation uses with a significant BLM ground presence by using signing, facilities, law enforcement, and volunteers.

Establish over the long term a system of high-quality OHV and hiking trails affording many opportunities for hikers, equestrians, mountain bikers, four-wheel drivers, ATVs, and motorcycle enthusiasts.

Management Actions

Manage recreational target shooting consistent with the "Recreational Target Shooting" guidelines in the Recreation discussion of the Management Common to the Bradshaw-Harquahala Planning Area section of this Chapter.

Analyze the feasibility and manageability of establishing parts of the SRMA as a fee-for-use area. The feasibility study would include an analysis to determine if fees are necessary to maintain or enhance the recreation opportunities and conditions of the area. Fees would be used to:

- maintain motorized and non-motorized trails and facilities,
- improve law enforcement, and
- enhance user and community education, stewardship, and volunteer programs.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.6.2.2.2.7 (Map 2-75).

Evaluate and designate all existing and potentially mechanized (OHV), non-mechanized trails and routes on public land in the Castle Hot Springs SRMA within three years of plan approval using a structured process, such as the one described in Appendix D.

Design and develop a comprehensive motorized and non-motorized vehicle route system.

Identify, analyze, build, and designate new single-use and multi-use hiking, equestrian, and OHV/vehicle routes. Network design emphasizes connections that would link them to local trail systems and communities. Routes include a proposed motorized and non-motorized Wickenburg-Lake Pleasant Regional Park-Black Canyon Trail corridor. Planning for this network requires collaboration with the AGFD, Prescott National Forest, Maricopa and Yavapai Counties, and Lake Pleasant Regional Park, to link to trails on BLM's land. Activities envisioned in this area include trail development for:

- differentiated use (motorized and non-motorized travel),
- single use (e.g. hiking or ATVs only),
- multi-use (vehicles, bicycles, hiking, and equestrian use),
- single-track use (e.g. motorcycles or mountain bicycles only), and
- multi-use trails and foot, bike, and horse trails linking Wickenburg and the Lake

Pleasant Regional Park, with other links to Peoria and Phoenix trail systems, and the Black Canyon Trail.

Locate and develop staging areas, trails, signs, trailheads, and other sites when needed for resource protection, visitor health and safety, or maintaining recreation opportunities.

Locate and develop small day-use areas for up to ten vehicles with trailers to provide the following:

- parking,
- unloading OHVs and horses, and
- picnicking.

Development could include the following:

- informational signing,
- kiosks,
- picnic tables,
- loading ramp, and
- soil stabilization for dust abatement.

Limit to 2 acres the area of exposed barren soil for each site. Mark or delineate the perimeter with barriers to prevent expansion.

Confine motorized competitive races to the Hieroglyphic Mountains RMZ.

Land Use Allocation

Hieroglyphic Mountains RMZ (16,510 acres BLM).

Desired Future Condition

Manage mainly for intensive camping and OHV use. The area would include motorized single and two-track routes for general motorized recreation use, commercial use, organized OHV events and competitive races.

Emphasize acceptable dust control and compatibility with neighboring communities and landowners.

Maintain semi-primitive motorized and roaded-natural recreation settings with users concentrated in some areas.

Develop facilities with a variety of amenities consistent with the desired recreation setting. Provide nonintrusive directional route signs and user information in the RMZ.

Management Actions

Make all designated routes within this zone available for general motorized recreation use, commercial use, organized OHV events and competitive races.

Locate at least 20 miles of single and two-track motorized routes to provide a unique array of challenges for truck, buggy, ATV, and motorcycle competitive races.

Limit the number of motorized competitive races to two per year.

Locate and develop the Boulders staging area for the following purposes:

- meeting intense motorized recreation demands,
- parking,
- unloading of OHVs,
- overnight camping, and
- large special-event operations.

Development could include the following:

- informational signs,
- kiosks,
- picnic tables,
- vault toilets,
- campground host facilities, and
- soil stabilization for dust abatement.

Limit to 25 acres the area of exposed barren soil. Mark or delineate the perimeter to prevent further expansion.

Manage recreational target shooting consistent with the "Recreational Target shooting" guidelines in the

Recreation discussion of the Management Common to the Bradshaw-Harquahala Planning Area section of this Chapter.

Locate and develop at least one small staging and camping area for up to ten vehicles with trailers for the following purposes:

- parking,
- unloading OHVs, and
- picnicking.

Development could include the following:

- informational signs,
- kiosks,
- picnic tables,
- loading ramp, and
- soil stabilization for dust abatement.

Limit to 5 acres the areas of exposed barren soil. Mark or delineate the perimeter to prevent expansion.

Apply proactive adaptive management to manage potential conflicts with surrounding communities and landowners, and potential impacts to resources. Mitigation may be needed to reduce these problems. The following are examples of mitigation:

- implementing speed limits on routes to reduce fugitive dust,
- stabilizing soil on routes,
- closing routes for some types of activities,
- imposing stricter noise reduction standards, and
- establishing seasonal or time-of-day use restrictions or both.

Determine specific areas where comprehensive site assessments would be initiated to do the following:

- determine existing physical and social impacts of recreation activities,
- define desired conditions and standards, and
- establish monitoring plans to manage camping and other recreation uses.

Conduct these assessments with public collaboration involving interested residents, users, and other interested parties.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.6.2.2.2.7.

Land Use Allocation

Sheep Mountain RMZ (4,270 acres).

Desired Future Condition

Preserve Sheep Mountain's natural landscape, open-space values, and wildlife habitat.

Maintain a semi-primitive non-motorized recreation setting.

Management Actions

Close all vehicle routes identified as reclaimed during our route inventory, except those evaluated to be needed for administrative access to the area.

Prohibit the building of new motorized routes and commercial rights-of-way.

Prohibit discretionary surface-disturbing activities not compatible with achieving the DFC.

Administrative Actions

Establish a citizen, Government, and organization-based partnership to guide management of the SRMA, including community groups, the City of Peoria, Maricopa and Yavapai Counties, user groups, and other interested parties.

Work closely with law enforcement authorities with the Arizona Game and Fish Department, Yavapai County, Maricopa County,

City of Peoria, and other agencies with jurisdiction to:

- enhance visitor and resident safety,
- improve resource protection, and
- ensure BLM's compliance with county, State, or Federal environmental laws.

2.6.2.2.2.6 Wilderness Characteristics

Land Use Allocation

Within the Castle Hot Springs MU, 6,550 acres would be allocated to maintain or enhance wilderness characteristics as shown on Map 2-89.

Desired Future Condition

A natural landscape retained between the Hells Canyon Wilderness and Lake Pleasant Regional Park. This area complements the landscape and recreation opportunities in the regional park and the entire Castle Hot Springs SRMA. Provide high-quality primitive recreation and solitude in a region otherwise allocated to motorized recreation. Preserve desert tortoise habitat, sustain riparian areas, and maintain the area's value for use by a wild burro herd. Maintain semi-primitive motorized recreation setting along designated routes. Manage areas beyond ½ mile from a designated route for a semi-primitive non-motorized setting.

Management Actions

Limit motorized vehicle use to designated routes.

Close to motorized traffic the route between Hells Canyon Wilderness and the lands allocated to maintain or enhance wilderness characteristics (the route along the wilderness boundary that is reclaiming). Manage this route as a hiking and equestrian trail.

Develop up to five non-motorized trails and trailheads to link with the Hells Canyon trail system and ultimately to the Maricopa County trail system. Emphasize hiking and equestrian opportunities in recreation management planning.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.6.2.2.2.7.

2.6.2.2.2.7 Visual Resources

Land Use Allocations

VRM classes for *Alternative E* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-75.

Within the Castle Hot Springs Management Unit, allocate:

- Hells Canyon Wilderness Area is allocated to VRM Class I,
- Constellation Mine Road/Buckhorn Mine Road to Class II standards ½ mile to either side of the road's centerline,
- Lands allocated to maintain or enhance wilderness characteristics to Class II objectives, and
- Castle Hot Springs SRMA to Class II objectives, except Hieroglyphics Mountain RMZ to Class III objectives.

2.6.2.2.2.8 Mineral Resource Management

Management Actions

Withdraw Tule Creek ACEC from mineral entry, close it to mineral and geothermal leasing, and close to mineral material disposal.

2.6.2.2.2.9 Transportation and Public Access

Land Use Allocation

The Castle Hot Springs Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

ACECs and Back Country Byways are discussed in section 2.6.2.2.2.1.

SCRMAs and cultural resource sites allocated to Public Use are discussed in section 2.6.2.2.2.4.

SRMAs and other recreation allocations are discussed in section 2.6.2.2.2.5.

Allocations to maintain or enhance wilderness characteristics are discussed in section 2.6.2.2.2.6.

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Close the fenced area within the Tule Creek ACEC (640 acres) to motor vehicles.

The public portions of the proposed Constellation Mine Road/Buckhorn Mine Road Back Country Byways would be maintained to BLM Level 2 standard, (BLM 9100 Manual) passable by high-clearance vehicles.

The Castle Hot Springs SRMA (112,430 acres BLM) would include containing two Recreation Management Zones, the Hieroglyphic Mountains RMZ and the Sheep Mountain RMZ, with specific vehicle and access prescriptions. Evaluate and designate all existing and potentially mechanized (OHV), non-mechanized trails and routes on public land in the Castle Hot Springs SRMA within three years of plan approval using a structured process, such as the one described in Appendix D. Design and develop a comprehensive motorized and non-motorized vehicle route system.

The Hieroglyphic Mountains RMZ (16,510 acres BLM) would include motorized single and two-track routes for general motorized recreation use, commercial use, organized OHV events, and competitive
races. Make all designated routes within this zone available for general motorized recreation use, commercial use, organized OHV events, and competitive races. Locate at least 20 miles of single and two-track motorized routes to provide a unique array of challenges for truck, buggy, ATV, and motorcycle competitive races.

Within the Sheep Mountain RMZ (4,270 acres) all vehicle routes identified as reclaimed would be closed except those necessary to facilitate administrative access to the area. Prohibit the building of new motorized routes.

Within the 6,550 acres of lands allocated to maintain or enhance wilderness characteristics, limit motorized vehicle use to designated routes, as shown on Map 2-84.

Close to motorized traffic the route between Hells Canyon Wilderness and the lands allocated to maintain or enhance wilderness characteristics (the route along the wilderness boundary that is reclaiming). Manage this route as a hiking and equestrian trail.

Develop up to five non-motorized trails and trailheads within the wilderness character allocation area to link with the Hells Canyon trail system and ultimately to the Maricopa County regional trail system.

Consider development of hard-surfaced walking trails at selected cultural sites within the Lake Pleasant/Agua Fria SCRMA (27,240 acres BLM) for interpretation, education, and visitation to prehistoric and historic sites.

Implementation Actions

Designation of a route network as shown on Map 2-84 would be considered an implementation action.

2.6.2.2.3 Hassayampa Management Unit

The Hassayampa MU is bounded on the east by Prescott National Forest and the Castle Hot Springs MU, and on the west by Harquahala MU. The southern edge is south of the Vulture Mountains, and the northern boundary is north of Yarnell. The Town of Wickenburg is located at the MU's center (Map 2-85). The MU contains the following land:

- 181,910 acres of BLM-administered lands,
- 130,580 acres of Arizona State land,
- 50,610 acres of private land, and
- 460 acres of county-administered lands in Maricopa and Yavapai Counties

2.6.2.2.3.1 Special Area Designations

Current Special Area Designations within the Management Unit would be managed consistent with management actions described in section 2.7.3.2 in the Management Common to the Bradshaw-Harquahala Planning Area section of this chapter.

Areas of Critical Environmental Concern

Vulture Mountain ACEC (6,120 acres BLM)

Relevance

The cliffs along the crest of Vulture and Caballeros Peaks are significant habitat features used by many raptor species. Also, they are a pristine, scenic landmark. These cliffs are essential to maintaining the current biological diversity of the surrounding area. Large concentrations of nesting hawks and falcons use these spectacular cliff faces.

Importance

The value of the cliffs for nesting raptors is significant for a large area. These cliffs are virtually the only suitable nesting cliffs for many miles. Nesting raptors are sensitive to construction-related activities. If the cliffs and surrounding area are not protected from these activities, cliff-nesting raptors would disappear from much of the area.

Desired Future Condition

Maintain the raptor nesting habitat values of the cliffs and the surrounding foraging habitat.

Management Actions

The ACEC boundary provides a 1-mile buffer around the cliffs that are significant to raptor nesting.

Consider building new routes only when necessary to meet natural resource objectives and where routes would not degrade the resources for which the ACEC is being created.

Prohibit building new recreation sites, however, maintain the Vulture Peak Trail and trailheads to their current condition and standards.

Mitigate vehicle routes that conflict with maintaining wildlife values to ensure achieving the DFC. Mitigation measures include relocating routes, limiting season, and closing routes.

Prohibit rock climbing within the ACEC.

Acquire non-Federal lands within the ACEC as available.

Back Country Byways

Constellation Mine Road/Buckhorn Mine Road Back Country Byway

Desired Future Condition

Provide a vehicle route accessible by high-clearance vehicles through views of the rugged Sonoran Desert landscape in the Buckhorn and

Hieroglyphic Mountains, with the high Bradshaw Mountains as a backdrop. Interpret the diverse resources and cultural history in a way that creates a greater understanding of the region's resources and a greater appreciation for the people who live there and have lived there in the past. Along this route create a comprehensive visitor experience that is sensitive to both resources and private lands and provides a high-quality visitor experience. Maintain a semi-primitive motorized recreation setting ½ mile to either side of the road's centerline.

Management Actions

Evaluate Constellation Mine Road/Buckhorn Mine Road for nomination as a back country byway. If it is designated, implement the following actions.

- Keep the public portions of this road maintained at a BLM Level 2 standard, (BLM 9100 Manual) passable by high-clearance vehicles.
- Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.6.2.2.3.7.
- Secure easements and rights-of-way where needed to ensure long-term public access along Constellation Mine Road.
- Interpret and protect the route's historical features, including original road construction structures; mining properties and districts; and historic homesteads, settlements, and ranching history.
- Maintain the road to protect and stabilize its historical features.
- Mitigate wildlife movement as needed.
- Install directional, safety, and interpretive signs to enhance public use, enjoyment, and stewardship of the route.
- Establish a friends group to monitor and help interpret the route and present the route and area's natural and human history.

2.6.2.2.3.2 Lands and Realty

Land Tenure Adjustments

Alternative E proposes 741 acres in Hassayampa MU as suitable for disposal. These lands were selected in accordance with resource management prescriptions in this land use plan as limited by criteria described in section 2.7.1.2 Lands and Realty.

Communication Sites

No designated communication sites are within this MU, and *Alternative E* proposes none for this area.

Utility and Transportation Corridors (Map 2-79)

Multiple-Purpose Corridors

Designate a new 1-mile-wide corridor leg on the Meade-Phoenix corridor (partly in Hassayampa MU, partly in Harquahala MU).

Transportation Corridors

Designate all State highway system routes as transportation corridors, including the following:

- a new 1-mile-wide corridor along U.S. 89 from Yarnell to Wickenburg
- a new 1-mile-wide corridor along U.S. 60 south of Wickenburg
- a new corridor for the Wickenburg Bypass (to be designated as U.S. 93)
- a new corridor for the Canada-Mexico (CanaMex) highway extending north from Interstate 10 to the Vulture Mine Road, connecting with the Wickenburg Bypass somewhere in the vicinity of Vulture Mine.

Two locations for the Wickenburg Bypass are currently under consideration by Arizona Department of Transportation. Once the route is chosen, a 1-mile-wide transportation corridor will be designated along the route. The corridor may not be centered on the right-of-way, but will be located with the bypass within it, and the boundaries adjusted to minimize conflict with

resources or management objectives along its route.

2.6.2.2.3.3 Biological Resources

Alternative E proposes no other biological designations for the Hassayampa MU. Biological resources subject to management guidance are in Biological Resources from the Management Common to Both Planning Areas section of this chapter and Biological Resources from the Management Common to the Bradshaw-Harquahala Planning Area section of this chapter.

2.6.2.2.3.4 Cultural Resources

Land Use Allocations

Wickenburg/Vulture SCRMA (124,000 acres BLM)

Weaver/Octave SCRMA (2,730 acres BLM)

Desired Future Condition

Manage selected prehistoric and historic sites for interpretive development, educational uses, and public visitation. For further information on public use of cultural resources, see Appendix E.

Coordinate with the BLM's recreation program in developing sites for public use.

Cooperate with agencies, tribes, and local communities in supporting heritage tourism programs that benefit local economies. Develop historic properties for heritage tourism in a manner that contributes to their long-term preservation and productive use.

Management Actions

Develop the following historic sites for public use: Vulture City Cemetery, Constellation Road, Monte Cristo Mine, and a cemetery and stone structures in Weaver.

Select other sites for public use by considering the following factors:

- presence of aboveground features of interest to the public and amenable to interpretive development,
- accessibility to communities, travel routes, and recreation trails,
- site condition and the feasibility of stabilizing selected areas or features to withstand visitation,
- visitor safety,
- compatibility with other land uses and site values, such as traditional use by Native Americans,
- feasibility of regular inspections by BLM's staff and volunteers, and
- partnership opportunities for interpretive and educational projects.

A combination of the some or all of the following and other actions could be implemented at selected sites:

- platforms,
- restrooms,
- picnic tables,
- benches,
- trash receptacles,
- signs along routes and trails to direct visitors to interpreted sites
- hard-surfaced walking trails,
- interpretive signs and register boxes, and
- brochures and related educational materials or programs.

Stabilize, repair, and maintain sites in good condition. Regularly monitor the condition of sites.

Authorize commercial and noncommercial group tours, conducted with protective stipulations in accordance with BLM's regulations and, where required, SRPs.

2.6.2.2.3.5 Recreation Resources

Land Use Allocation

The entire Management Unit would be allocated to the Hassayampa SRMA (181,910 acres BLM) with the following Recreation Management Zones within it (Map 2-85):

- Stanton RMZ,
- Wickenburg Community RMZ,
- San Domingo Wash RMZ, and
- Vulture Mine RMZ.

Desired Future Condition

The long-term goals for the area are as follows:

- to conserve the area's natural, scenic, recreation, and cultural resources,
- to recognize and protect private property rights, and
- to maintain diverse recreation activities for residents and visitors.

Management emphasizes meeting a range of local and tourism-based regional recreation needs while maintaining the quality of life for local communities. Recreation activities include the following:

- intense motorized uses,
- permitted recreation events,
- developed facilities, and
- intense non-motorized trail system.

Intensively manage all recreation uses with a significant BLM and citizen volunteer ground presence through signing, facilities, and law enforcement.

Establish a system of high-quality equestrian and motorized trails surrounding Wickenburg. This trail system would afford many opportunities for all recreationists and enhance the lifestyle, culture, and cultural history of community residents.

Emphasize and maintain, in suitable areas, an array of rural, roaded-natural, semi-primitive motorized, and semi-primitive non-motorized settings; and experiences and opportunities for residents, tourists, and winter visitors. Maintain current recreation settings as depicted on the Recreation Opportunity Spectrum on Map 3-11, except where otherwise stipulated in RMZ allocations.

Maintain long-term public access to the Yarnell hang gliding launching area and landing zones (Map 2-32). This site is one of the most valued in Arizona for successful launching of long-distance nonpowered flights.

Management Actions

Work closely with law enforcement authorities; including the Arizona Game and Fish Department, Yavapai County, Maricopa County, City of Peoria, and other agencies with jurisdiction to:

- enhance visitor and resident safety,
- improve resource protection, and
- ensure BLM's compliance with county, State, or Federal environmental laws.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.6.2.2.3.7 (Map 2-75).

Limit motorized use to designated routes. Develop and designate a comprehensive motorized and non-motorized trail system.

Identify, analyze, build, and designate new single- and multi-use, hiking, equestrian, and vehicle routes, and link them to local trail systems and communities. Routes include a proposed motorized and non-motorized Wickenburg-Lake Pleasant Regional Park-Black Canyon Trail corridor. Activities envisioned in this area include trail development as follows:

- Differentiated use (motorized and non-motorized travel),
- Single use (e.g. hiking or ATVs only),

- Multi-use (vehicles, bicycles, hiking, and equestrian use),
- Single-track use (e.g. motorcycles or mountain bicycles only), and
- Multi-use trails and foot, bicycle, and horse trails linking Wickenburg and Lake Pleasant Regional Park, with other links to the Peoria/Phoenix trail systems and the Black Canyon Trail.

Confine motorized competitive races to the San Domingo and Vulture RMZs.

Administrative Actions

Establish a working group to provide recommendations for managing the SRMA, including community groups, the Town of Wickenburg, Maricopa County, civic organizations, user groups, and other interested parties.

Complete a detailed, comprehensive, site-specific inventory and designation of all existing and proposed motorized (OHV) routes and non-motorized trails on public land in the SRMA within 3 years of plan approval.

Land Use Allocation

Stanton RMZ (6,050 acres BLM)

Desired Future Condition

Provide diverse recreation experiences while reducing unacceptable environmental impacts from the following recreation uses:

- excessive and unregulated camping,
- activities of prospecting clubs, and
- motorized activities, and other recreation uses.

Maintain a variety of recreation settings and opportunities with an emphasis on semi-primitive motorized and roaded-natural settings and opportunities.

Management Actions

Prohibit motorized competitive races in the RMZ.

Locate and develop trailheads, staging and camping areas, and other facilities as needed for resource protection. Provide for visitor safety. Resolve social conflicts. Improve the quality of recreation experiences. Increase recreation opportunities.

Develop a diverse network of motorized vehicle routes for a range of OHV experiences and challenges, compatible with the existing non-motorized trails in the RMZ.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.6.2.2.3.7.

Administrative Actions

Determine specific areas where comprehensive site assessments would be initiated to do the following:

- determine existing physical and social impacts of recreation activities,
- define desired conditions and standards, and
- establish monitoring plans to manage camping and other recreation uses.

Land Use Allocation

Wickenburg Community RMZ (72,040 acres BLM) including the Red Top Trail System and "The Box" (Map 2-91).

Desired Future Condition

Collaborate with a diverse group of Wickenburg citizens and organizations in a collective effort to conserve the ecological, cultural, open space, and recreation values of the Wickenburg area, so that it remains a place where people want to live, work, and recreate.

Preserve open space and provide a wide array of landscape-based recreation while conserving

scenic landscapes and maintaining cultural and biological assets.

Offer quality recreation and tourism with proper management and marketing. Users exhibit a strong land ethic for conserving and protecting the natural resources and cultural heritage of the Wickenburg RMZ.

Develop a system of high-quality equestrian and hiking trails that surround Wickenburg, buffer the area from urban sprawl, and preserve the open space of the local landscape. This trail system affords many opportunities for recreationists and enhances the lifestyle and cultural history of community residents.

Emphasize and maintain an array of rural, roaded-natural, semi-primitive motorized, and semi-primitive non-motorized settings; and opportunities in suitable areas for the enjoyment of residents, tourists, and winter visitors.

Conserve the canyon on the Hassayampa River known as "The Box" and surrounding lands as a recreation area for hiking, horseback riding, limited motorized use, picnicking, camping, and social gatherings, while protecting and enhancing the values of the riparian habitat.

Management Actions

Acquire the 19,396 acres of Arizona State land within the SRMA. Prioritize and pursue acquisition using the criteria in the Lands and Realty discussion of the Management Common to Both Planning Areas section of Chapter 2. Lands will be acquired according to the following priorities:

- maintaining access and securing trail alignments,
- enhancing recreation opportunities,
- preserving scenery and open space, and
- conserving riparian values.

Maintain and upgrade the Vulture Peak Trail by rerouting or reengineering eroded trail segments.

Develop and install facilities for horse camping south of Vulture Peak and south of Congress. Amenities could range from developed to more primitive facilities.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.6.2.2.3.7.

Administrative Actions

Complete a comprehensive strategy and trails plan to select and develop new single- and multi-use hiking, equestrian, and OHV trails for all lands in the RMZ.

Red Top Trail System

Desired Future Condition

Provide a high-quality non-motorized trail network and amenities in the Red Top Mountain area. Allow for motorized uses where appropriate to avoid conflicting uses.

Management Actions

Identify, analyze, build and designate new trails less than 52 inches wide, as needed, for resource protection, visitor safety, or meeting management objectives.

Locate and develop a large non-motorized trailhead and staging area for the Red Top Trail System for the following purposes:

- meeting the high demand for non-motorized recreation,
- parking,
- unloading horses,
- overnight camping, and
- and organized events.

Development could include the following:

- informational signs,
- kiosks,
- picnic tables,
- hitching posts,

- troughs for water hauled to the site, and
- soil stabilization for dust abatement.

Limit to 10 acres the area of exposed barren soil. Mark or delineate the perimeter as needed to prevent expansion.

Locate and develop a small day use motorized trailhead and staging area for the Red Top Trail System, to accommodate up to ten vehicles with trailers, for the following purposes:

- meeting the high motorized recreation demand,
- reduce user conflicts,
- parking,
- unloading OHVs, and
- picnicking.

Development could include the following:

- informational signs,
- kiosks,
- picnic tables,
- loading ramp, and
- soil stabilization for dust abatement.

Limit to 2 acres the area of exposed barren soil for each site. Mark the area's perimeter with barriers to prevent expansion.

Identify, analyze, build, and designate an ATV and a motorcycle trail network in the Red Top Trail area to give the local community opportunities to shift motorized use from the designated non-motorized trails. Use existing designated motorized vehicle routes and create new trails less than 52 inches wide, if needed, to meet management objectives.

Administrative Actions

Revise the existing Red Top Trail Project Plan, in cooperation with the local community and interested user groups, to expand the non-motorized Red Top Trail network. The revised plan would address actions to meet the high demand for non-motorized recreation.

"The Box" (Map 2-91)

Desired Future Condition

Provide a high-quality non-motorized recreation use area with amenities in Box Canyon, known as "The Box".

Management Actions

Locate and develop picnic, camping, and public use areas. Develop passenger car access to these sites.

Designate access routes for varied uses such as hiking and horseback riding.

Identify, analyze, build, and designate four-wheel drive, jeep, ATV, sand rail, and dirt bike trails with suitable use areas and limitations. Close areas where improper vehicle activity is occurring.

Develop facilities such as toilets, tables, parking, campsites, and other amenities where needed to protect resources or reduce user conflicts.

Administrative Actions

Establish partnerships with the Town of Wickenburg, Yavapai County, and community groups to pursue management endeavors in this area. Such endeavors include developing and implementing a site plan to guide recreation use.

Create a volunteer service and community partnership program to modify visitor behavior and organize community cleanup efforts.

Develop and conduct monitoring as facilities are built or designated so that suitable use limits can be set for picnic areas and campsites.

Land Use Allocation

San Domingo Wash RMZ (16,040 acres BLM)

Desired Future Condition

Provide a Sonoran Desert wash and upland environment suitable for an array of motorized and non-motorized uses. Manage for semi-primitive motorized and some roaded-natural settings.

Provide opportunities for the following while protecting the natural and cultural resources in the area:

- intensive camping,
- OHV activities,
- equestrian use,
- recreation activities of prospecting clubs,
- event operations, and
- motorized single and two-track routes for general motorized recreation use and competitive races

Management Actions

Locate at least 10 miles of single- and two-track motorized routes to provide an array of challenges for ATVs, and motorcycle competitive races.

Limit the number of motorized competitive to 2 per year.

When needed for resource protection, visitor health and safety, or maintaining recreation opportunities, develop facilities such as the following:

- staging areas,
- trails,
- signs,
- trailheads, and
- other sites.

Locate and develop one large motorized and non-motorized staging and camping area for the following purposes:

- meeting the high motorized and non-motorized recreation demand,
- parking and unloading OHVs and horses,
- overnight camping, and
- event operations.

Development could include the following:

- informational signs,
- kiosks,
- picnic tables,
- loading ramp, and
- soil stabilization for dust abatement.

Limit to 20 acres the site's areas of exposed barren soil. Mark or delineate the perimeter with barriers to prevent expansion.

Locate and develop at least 1 day use motorized and non-motorized staging area for the following purposes:

- meeting the high motorized and non-motorized recreation demand and
- parking and unloading OHVs and horses, and picnicking.

Development could include the following:

- informational signs,
- kiosks,
- picnic tables,
- loading ramp, and
- soil stabilization for dust abatement.

Limit to 5 acres the site's areas of exposed barren soil. Mark or delineate the perimeter with barriers to prevent expansion.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.6.2.2.3.7.

Administrative Actions

Determine specific areas where comprehensive site assessments would be initiated to do the following:

- determine existing physical and social impacts of recreation activities,
- define desired conditions and standards, and
- establish monitoring plans to manage camping and other recreation uses.

Land Use Allocation

Vulture Mine RMZ (30,100 acres BLM)

Desired Future Condition

Provide a Sonoran Desert landscape suitable for intensive motorized single and two-track routes for general motorized recreation use, commercial use, organized OHV events and competitive races.

Emphasize and maintain the roaded-natural and semi-primitive motorized recreation settings.

Preserve the mining and settlement history of the Vulture City Cemetery.

Management Actions

Locate at least 15 miles of single- and two-track motorized routes to provide an array of challenges for truck, buggy, ATV, and motorcycle competitive races.

Limit the number of motorized competitive races to 4 per year.

Locate and develop one large motorized staging and camping area for the following purposes:

- meeting the high motorized recreation demand,
- parking,
- unloading OHVs,
- overnight camping, and
- event operations.

Development could include the following:

- informational signs,
- kiosks,
- picnic tables,
- loading ramp, and
- soil stabilization for dust abatement

Limit to 20 acres the area of exposed barren soil. Mark or delineate the perimeter with barriers to prevent expansion.

Manage recreational target shooting consistent with the "Recreational Target Shooting" guidelines in the Recreation discussion of the Management Common to the Bradshaw-Harquahala Planning Area section of this Chapter.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.6.2.2.3.7.

Administrative Actions

Determine specific areas where comprehensive site assessments would be initiated to do the following:

- determine existing physical and social impacts of recreation activities,
- define desired conditions and standards, and
- establish monitoring plans to manage camping and other recreation uses.

Develop a site management and interpretation plan for the Vulture City Cemetery.

2.6.2.2.3.6 Wilderness Characteristics

Alternative E proposes no allocations to maintain or enhance wilderness characteristics for the Hassayampa MU.

2.6.2.2.3.7 Visual Resources

Land Use Allocations

VRM classes for *Alternative E* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-75.

Within the Hassayampa Management Unit, allocate:

- Constellation Mine Road/Buckhorn Mind Road (½ mile to either side of the road's centerline) to VRM Class II,
- Hassayampa SRMA to VRM Class II except
    - San Domingo Wash RMZ to VRM Class III,
    - Vulture Mine RMZ to VRM Class III,
    - Stanton RMZ to VRM Class III, and
    - Wickenburg Community RMZ to VRM Class II where desired recreation settings are semi-primitive motorized and semi-primitive non-motorized and VRM Class III where desired settings are Rural or Roaded Natural.
- Utility corridors would be allocated to VRM Class III or IV.
- Areas not listed above, VRM classes would be as portrayed on Map 2-75.

2.6.2.2.3.8 Mineral Resource Management

Alternative E proposes no mineral withdrawals or closures within the Hassayampa MU.

2.6.2.2.3.9 Transportation and Public Access

Land Use Allocation

The Hassayampa Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

ACECs and Back Country Byways are discussed in section 2.6.2.2.3.1.

SCRMAs and cultural resource sites allocated to Public Use are discussed in section 2.6.2.2.3.4.

SRMAs and other recreation allocations are discussed in section 2.6.2.2.3.5.

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Mitigate vehicle routes within the Vulture Mountain ACEC (6,120 acres BLM) that conflict with maintaining wildlife values to ensure achieving the DFC. Mitigation measures include relocating routes, limiting season or time-of-day use, and closing routes. Consider building new routes only when needed to meet natural resource objectives. Maintain the Vulture Peak Trail to the current condition and standards

Maintain the proposed Constellation Mine Road/Buckhorn Mine Road, if designated as a back country byway, at a BLM Level 2 standard, (BLM 9100 Manual) passable by high-clearance vehicles.

The Hassayampa SRMA (181,910 acres BLM) would include four Recreation Management Zones. These are the Stanton RMZ, the Wickenburg Community RMZ, the San Domingo Wash RMZ, and the Vulture Mine RMZ. All the RMZs have motorized and non-motorized use prescriptions.

The Wickenburg SRMA would include a system of high-quality equestrian and motorized trails surrounding Wickenburg. Develop and designate a comprehensive motorized and non-motorized trail system. Identify, analyze, build, and designate new single- and multi-use, hiking,

equestrian, and vehicle routes, and link them to local trail systems and communities. Routes include a proposed motorized and non-motorized Wickenburg-Lake Pleasant Regional Park-Black Canyon Trail corridor. Complete a detailed, comprehensive, site-specific inventory and designation of all existing and proposed motorized (OHV) routes and non-motorized trails on public land in the SRMA within three years of plan approval.

The Stanton RMZ (6,050 acres BLM) would offer a diverse network of motorized vehicle routes for a range of OHV experiences and challenges, compatible with the existing non-motorized trails in the RMZ.

The Wickenburg Community RMZ (72,040 acres BLM) would include the Red Top Trail System and "The Box" (Map 2-91). Develop a system of high-quality equestrian and hiking trails surround Wickenburg. Maintain and upgrade the Vulture Peak Trail by rerouting or re-engineering eroded trail segments. Complete a comprehensive strategy and trails plan to select and develop new single- and multi-use hiking, equestrian, and OHV trails for all lands in the RMZ.

Establish the Red Top Trail System to provide high-quality non-motorized trail network experiences. Allow for motorized uses where appropriate to avoid conflicting uses. Identify, analyze, build, and designate new trails less than 52 inches wide, as needed, for resource protection, visitor safety, or meeting management objectives. Identify, analyze, build, and designate an ATV and motorcycle trail network in the Red Top Trail area. Use existing designated motorized vehicle routes and create new trails less than 52 inches wide, if needed, to meet management objectives.

"The Box" area would be designed to provide a high-quality non-motorized recreation use experience. Develop passenger car access to these sites. Designate access routes for varied uses such as hiking and horseback riding. Identify, analyze, build, and designate four-wheel drive, jeep, ATV, sand rail, and dirt bike trails with suitable use areas and limitations. Close areas where improper vehicle activity is occurring.

The San Domingo Wash RMZ (16,040 acres BLM) would offer a Sonoran Desert wash and upland environment experience suitable for an array of motorized and non-motorized uses. Locate at least 10 miles of single- and two-track motorized routes to provide an array of challenges for ATV, and motorcycle competitive races.

The Vulture Mine RMZ (30,100 acres BLM) would offer intensive motorized single and two-track routes for general motorized recreation use, commercial use, organized OHV events and competitive races. Locate at least 15 miles of single- and two-track motorized routes to provide an array of challenges for truck, buggy, ATV, and motorcycle competitive races.

Consider development of hard-surfaced walking trails at selected cultural sites within the Wickenburg/Vulture SCRMA (124,000 acres BLM) and the Weaver/Octave SCRMA (2,730 acres BLM) where needed for for interpretation, education, and visitation to prehistoric and historic sites.

Administrative Actions

Develop a Wickenburg RMZ Travel and Public Access Plan.

Revise the existing Red Top Trail Project Plan, in cooperation with the local community and interested user groups, to expand the non-motorized Red Top Trail network.

2.6.2.2.4 Harquahala Management Unit

Alternatives C, D, and *E* would slightly expand the Harquahala MU. The MU would still be bounded on the east by the Hassayampa MU and would extend west to the PFO boundary near the town of Wenden. However, the MU would include

private and State land south to Interstate 10. The northern boundary would still follow the BLM's property line south of State Route 60, which goes west of Wickenburg through Aguila and Wenden (Map 2-86). The Harquahala MU contains the following land:

- 420,730 acres of BLM-administered lands,
- 48,410 acres of Arizona State land, and
- 29,616 acres of private land.

2.6.2.2.4.1 Special Area Designations

Areas of Critical Environmental Concern

Harquahala Mountains ONA ACEC (96,430 acres BLM).

Relevance

The area constitutes a rare, intact, mountaintop vegetation community surrounded by low desert. As the highest topographic feature in the region, the mountains contain a biologically diverse system, in stark contrast to the surrounding landscape. The mountain range supports a diverse sky island ecosystem, with many species not found in the surrounding Sonoran Desert. The mountains are a natural area with few noticeable human intrusions in a primitive landscape setting. The mountain range is high enough that, from the summit, mountains in Mexico are visible during very clear air conditions. Conversely, the mountain range is a dominant landscape feature for travelers in many areas of southwest Arizona, visible from major highways (such as Interstate 10 and US Highway 60) as much as a hundred miles away.

Importance

The ONA does the following:

- encloses and preserves unique biological resources,
- conserves significant cultural and historic sites, and
- protects distinctive vegetation and wildlife communities.
- The biological richness of the Harquahala Mountains is unique within southwest Arizona. The Harquahala Mountains and surrounding bajadas provide important wildlife habitat to a diverse array of species. The area is an ecoregional conservation site with important biodiversity values.
- The ONA contains the Harquahala Mountain Observatory, which is within a National Register of Historic Places district. The historic Harquahala Peak Pack Trail, Ellison's Camp, and other sites are components of the historic district. The area also includes many well-preserved prehistoric sites along with historic ranching and mining sites. Some archaeological sites may be related to the use of the mountain range by a regional group of the Western Yavapai tribe. The ONA will safeguard important and unfragmented wildlife habitat.

Desired Future Condition

Protect sensitive resources discussed in the statements of relevance and importance.
Minimize the visual intrusion of any management activity so as to retain the outstanding scenic quality and natural landscape appearance consistent with VRM Class II standards.

Achieve long-term conservation of scenic, natural resource, and cultural values.
Preserve outstanding opportunities for high-quality hiking, backpacking, hunting, wildlife observation, and cultural study prospects.
Permit vehicle access only on designated routes.
Practicing backcountry skills,
Attaining isolation from other users
Maintain the plant diversity and richness of the chaparral, riparian/wetland, and Sonoran Desert scrub vegetation communities.

Achieve and maintain unfragmented wildlife habitat, which provides adequate forage, cover,

and access to water for healthy wildlife populations. Accommodate:

- interpretive development,
- educational uses,
- and public visitation at selected prehistoric and historic sites in the ONA. (For further information on public use of cultural resources, see Appendix E.)

Management Actions

Limit motorized vehicle use to designated routes.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.6.2.2.4.7.

Mitigate surface disturbance inconsistent with achieving the DFC.

Unless new vehicle routes and fences are needed to mitigate resource conflicts and achieve DFC, prohibit such construction.

In the Inner Basin prohibit grazing improvements that encourage concentrated livestock use.

Approve improvements in this area if they

- are needed to meet resource objectives,
- would help achieve DFC, and
- conform to the standards and objectives for the area.

Restore and protect all spring sources and the wildlife habitat values of springs.

Acquire from willing parties State and private lands because of the ONA resources on such lands.

Identify, monitor, and protect important cultural resources.

Maintain the Harquahala Observatory historical site and its interpretive facilities to current standards and conditions.

Select specific cultural sites for public use by considering the following factors:

- presence of aboveground features of interest to the public and amenable to interpretive development,
- accessibility to communities, travel routes, and recreation trails,
- site condition and the feasibility of stabilizing selected areas or features to withstand visitation,
- visitor safety,
- compatibility with other land uses and site values, such as traditional use by Native Americans,
- feasibility of regular inspections by BLM's staff and volunteers, and
- partnership opportunities for interpretive and educational projects.

Implement a set of the following actions:

- building visitor facilities,
- installing signs along routes and trails to direct visitors to interpreted sites,
- building hardened walking trails,
- installing interpretive signs and register boxes, and
- preparing brochures and related educational materials or programs

Implement actions to stabilize, repair, and maintain selected cultural sites in a condition that preserves their value to scientific or public uses as needed. Regularly monitor the condition of these sites for possible remedial action. Authorize commercial and noncommercial group tours if they are conducted with protective stipulations, in accordance with BLM's regulations and, where required, special SRPs.

Administrative Actions

The BLM's recreation program would help develop sites for public use. Cooperate with agencies, tribes, and local communities in

supporting heritage tourism programs that benefit local economies. Develop historic properties for heritage tourism to contribute to their long-term preservation and productive use.

Black Butte ONA ACEC (8,260 acres BLM)

Relevance

The area contains the Vulture obsidian source, which was a major source of "Apache tears" used to make stone tools during prehistoric times. The cliffs at the crest of Black Butte are significant habitat features used by raptor species and are a pristine, scenic landmark. These cliffs are essential to maintaining the biological diversity of the surrounding area.

Importance

Archaeologists recognize the Vulture obsidian source as one of the major sources of a valuable trade commodity in prehistoric Arizona. Obsidian (volcanic glass) was used widely in making stone tools. Nodules of Vulture obsidian have a distinctive chemical composition that allows archaeologists to map changes in its distribution, use, and trade by prehistoric peoples. Vulture obsidian has been traced to prehistoric sites within at least a 100-mile radius of Black Butte.

The value of the cliffs for nesting raptors is significant for a large area. Nesting raptors are sensitive to construction-related human activities. If these cliffs are not protected from these activities, cliff-nesting raptors would disappear from much of the surrounding area.

Desired Future Condition

Manage the area to emphasize protecting the sensitive resources discussed in the statements of relevance and importance. Maintain current natural conditions and open space. Minimize the visual intrusion of any management activity so as to preserve the outstanding scenic quality and natural landscape appearance.

Manage the area surrounding Black Butte and Jackrabbit Wash for the following:

- preserving good non-motorized recreation opportunities and settings,
- conserving scenic volcanic landscapes,
- Maintain a semi-primitive non-motorized recreation setting.

Retain Black Butte's cultural significance as an important source of material for prehistoric tool production. Sustain important raptor nesting habitat in the central Black Butte cliffs area. Restore, enhance, and maintain wildlife and plant diversity and species richness of this Sonoran Desert vegetation community. Set as ONA priorities conserving vegetation communities and managing for healthy wildlife populations.

Management Actions

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.6.2.2.4.7.

Mitigate surface disturbance that inhibits achieving DFC.

Prohibit building new recreation sites that conflict with raptor management or cultural prescriptions. Build non-motorized trails and recreation facilities, if needed, to ensure resource protection, protect wildlife habitat, or enhance recreation opportunities.

Manage the ACEC to preserve the Vulture obsidian source, permit scientific study of it, and implement actions to restrict activities that threaten its integrity.

Prohibit rock climbing in the ACEC.

Prohibit the collecting of minerals and fossils if rockhounding increases to the point of damaging the integrity of the Vulture obsidian source and related archaeological sites.

2.6.2.2.4.2 Lands and Realty

Land Tenure Adjustments

The land in the Harquahala MU proposed as suitable for disposal amounts to 3,528 acres (Map 2-78). This land has been selected in accordance with the resource management prescriptions in this land use plan as limited by criteria described in section 2.7.1.2 Lands and Realty.

Communication Sites

The Harquahala Peak communication site is the only such designated site within this MU.

Utility and Transportation Corridors (Map 2-79)

Multiple-Purpose Corridors

- Shift the Central Arizona Project (CAP) corridor to the north, extending it one mile north from the southern CAP right-of-way boundary.
- Add a new 1-mile-wide corridor leg on the Meade-Phoenix corridor (partly in Harquahala MU, partly in Hassayampa MU).

Transportation Corridors

Designate all State highway system routes as transportation corridors, including the new 1-mile-wide corridor along U.S. 60 near the Maricopa-La Paz County line.

2.6.2.2.4.3 Biological Resources

Land Use Allocation

Belmont/Big Horn Mountains WHA (140,310 acres BLM)

Desired Future Condition

Restore, enhance, and maintain the wildlife, plant diversity, and species richness of the Sonoran Desert scrub vegetation community. Unfragmented wildlife habitat provides adequate forage, cover, and access to water for healthy wildlife populations. Conserving and managing for healthy wildlife populations are priorities in managing the area.

Management Actions

Modify existing fences and incorporate design features in new fences to ensure free movement of mule deer and bighorn sheep.

Mitigate vehicle routes that conflict with maintaining wildlife habitat values to ensure achieving DFC. Mitigation includes the following:

- relocating route segments,
- building wildlife passes,
- limiting seasonal or time-of-day use, and
- closing routes.

Acquire State and private lands within the WHA from willing sellers.

Mitigate the impact of future vehicle route improvements on priority wildlife species, especially desert bighorn sheep and desert tortoise to ensure achieving DFC.

Mitigate recreation use and development to minimize impacts on priority wildlife species to ensure achieving DFC.

2.6.2.2.4.4 Cultural Resources

Nearly the entire area of the Harquahala SCRMA is included within The Harquahala Mountains ONA ACEC**.** Management of cultural resources in the Harquahala SCRMA within the Harquahala Mountains ONA ACEC can be found in section 2.6.2.2.4.1. The historic Harquahala Peak Smithsonian Observatory and the Harquahala Peak Pack Trail would be allocated to public use. Allocate other sites for

public use and interpretive development consistent with management actions described for the Harquahala Mountains ONA ACEC.

Acquire 700 acres south of Aguila to protect significant cultural resources. Complete an archaeological survey of this area to evaluate the integrity of archaeological sites and determine site protection measures. Manage cultural resources to conform to prescriptions for the Harquahala Mountains ONA ACEC. Acquire other State and private lands within the MU on a willing seller/willing buyer basis consistent with priorities in the Lands and Realty discussion of the Management Common to Both Planning Areas section of Chapter 2.

2.6.2.2.4.5 Recreation Resources

Though the entire Harquahala MU would be allocated as an ERMA, the following recreation management would apply in addition to those actions described in the Recreation and Public Access - Travel and Transportation Planning discussions of the Management Common to the Bradshaw-Harquahala Planning Area:

Implementation Actions

Select, plan, and develop at least one staging and camping area to meet motorized and non-motorized recreation demand. Have this area provide accommodation for the following:

- parking,
- unloading OHVs and horses,
- overnight camping, and
- large organized event operations.

Development may include the following:

- informational signs,
- kiosks,
- picnic tables,
- hitching posts,
- troughs for water hauled to the site,
- loading ramp, and
- soil stabilization for dust abatement.

Limit to 20 acres the area of exposed barren soil. Mark or delineate the perimeter with barriers to prevent expansion.

Develop at least one day-use area near or adjacent to lands allocated to maintain or enhance wilderness characteristics in the Belmont Mountains. The development would be designed for up to 50 vehicles with trailers to meet the non-motorized recreation demand. The facility would provide for parking, unloading horses, picnicking, and small special event operations. Development may include the following:

- informational signs,
- kiosks,
- picnic tables,
- hitching posts,
- loading ramp, and
- soil stabilization for dust abatement.

Mark or delineate the perimeter of the Belmont Mountain day-use area to prevent expansion. Limit to 5 acres the site's area of exposed barren soil.

2.6.2.2.4.6 Wilderness Characteristics

Land Use Allocation

Within the Harquahala Management Unit, 55,480 acres would be allocated to maintain or enhance wilderness characteristics as shown on Map 2-89.

Desired Future Condition

Maintain and manage wilderness characteristics, open space, and wildlife habitat. Retain natural landscapes. Ensure high-quality natural landscapes, solitude, and outstanding primitive recreation opportunities in a remote setting. Preserve an array of scenic and special features. Restore, enhance, and maintain the wildlife/plant diversity and species richness of this Sonoran

Desert scrub vegetation community. Wildlife populations and habitat are important aspects of the naturalness and will be actively managed. Maintain important and unfragmented habitat for desert tortoises and desert bighorn sheep.

Management Actions

Limit motorized vehicle use to designated routes. Routes proposed to be designated as open are shown on Map 2-86.

Manage the recreation setting along designated routes for a semi-primitive motorized setting. Manage areas away from designated motorized routes as semi-primitive non-motorized.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.6.2.2.4.7.

Prohibit building new fences, unless their construction helps to achieve the DFC.

Acquire State and private lands on a willing seller/willing buyer basis.

Prohibit building new recreation sites that would conflict with wildlife management, habitat, or movement, or would affect sensitive cultural or botanical resources. Build non-motorized trails and recreation facilities only if needed for the following purposes:

- to ensure resource protection,
- to protect wilderness characteristics, and
- to protect wildlife habitat

2.6.2.2.4.7 Visual Resources

Land Use Allocations

VRM classes for *Alternative E* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-75.

Within the Harquahala Management Unit, allocate:

- Harquahala Mountains ONA ACEC, Black Butte ONA ACEC, VRM Class II.
- Lands allocated to maintain or enhance wilderness characteristics VRM Class II and continue VRM Class I in designated wilderness.
- Utility corridors would be allocated to VRM Class III or IV.
- The rest of the Management Unit would be allocated to VRM classes as portrayed on the above referenced map.

2.6.2.2.4.8 Mineral Resource Management

Alternative E proposes no withdrawals or mining closures.

2.6.2.2.4.9 Transportation and Public Access

Land Use Allocation

The Harquahala Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

ACECs are discussed in section 2.6.2.2.4.1.

WHAs are discussed in the Biological Resources section 2.6.2.2.4.3.

Allocations to maintain or enhance wilderness characteristics are discussed in section 2.6.2.2.4.6.

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

Limit motorized vehicle use to designated routes within the Harquahala Mountains ONA ACEC (96,430 acres BLM). Routes that would be designated as open are shown on Map 2-86. Prohibit new vehicle routes unless needed to mitigate resource conflicts and achieve DFC.

Limit motorized vehicle use to designated routes within the Black Butte ONA ACEC (8,260 acres BLM). Proposed open routes are shown on Map 2-86. Build non-motorized trails and recreation facilities within the Black Butte ONA ACEC if needed, to ensure resource protection, protect wildlife habitat, or enhance recreation opportunities.

Mitigate vehicle routes within the Belmont/Big Horn Mountains WHA (140,310 acres BLM) by relocating route segments, building wildlife passes, limiting seasonal or time-of-day use, or closing routes that conflict with maintaining wildlife habitat values to ensure achieving DFC.

Limit motorized vehicle use to designated routes within the 55,480 acres allocated to maintain or enhance wilderness characteristics as shown on Map 2-86. Routes proposed to be designated as open are also shown on Map 2-86.

Implementation Actions

Designation of a route network as shown on Map 2-86 would be considered an implementation action.

2.6.2.2.5 Harcuvar Management Unit

The Harcuvar MU encompasses the easternmost end of the Harcuvar Mountains within the PFO's administrative area. Most of the Harcuvar Mountain range is administered by BLM's Lake Havasu Field Office. The Harcuvar MU is bounded on the west and north by the PFO boundary with the Lake Havasu Field Office, and on the east and south by the boundary between BLM and non-BLM administered lands (Map 2-87). The MU contains the following land:

- 53,200 acres of BLM-administered lands,
- 6,280 acres of Arizona State land, and
- 3,360 acres of private land.

The MU contains no proposed special area designations. VRM classes for *Alternative E* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-75. The entire Management Unit would be allocated as an Extensive Recreation Management Area and managed consistent with the discussion in section 2.7.3.7 of the Management Common to the Bradshaw-Harquahala Planning Area portion of this Chapter.

2.6.2.2.6 Upper Agua Fria River Basin Management Unit

The Upper Agua Fria River Basin MU is sandwiched between Prescott National Forest's Bradshaw Mountains and Verde Ranger Districts. The MU stretches from Cordes Lakes in the south to the Town of Prescott Valley in the north (Map 2-88). The MU contains the following lands:

- 21,520 acres of BLM-administered lands,
- 36,990 acres of Arizona State land, and
- 39,290 acres of private land.

2.6.2.2.6.1 Special Area Designations

Nomination to National Recreation Trails System

Black Canyon Trail

Desired Future Conditions

Provide for the ever-increasing outdoor recreation needs of an expanding urban population to promote the preservation of, public access to, travel within, and enjoyment and appreciation of the open-air, outdoor areas and

historic resources of the Black Canyon corridor. A National Recreation Trail should be established primarily, near urban areas; secondarily, within scenic areas and along historic travel routes of the area.

Management Actions

Consider and study the Black Canyon Trail for inclusion into the National Recreation Trail System, as described in the National Trails System Act of 2002 (P.L.90-543).

Issue a right-of-way for the trail and ancillary trails and facilities to preserve public access and long-term character.

Acquire easements or rights-of-way on non-Federal lands if the trail or facilities are proposed for any of these lands.

Recognize and accommodate long-term continuation of the trail and facilities in land tenure actions. Retain a 1/4-mile wide corridor (1/8 mile each side of the trail) along the trail and any ancillary facility for a permanent trail location. Ensure public access to the trail and related facilities through easements, rights-of-way, deed restrictions, or other suitable means.

2.6.2.2.6.2 Lands and Realty

Land Tenure

No lands would be disposed of within the Upper Agua Fria River Basin MU.

Communication Sites

No designated communication sites are proposed for this MU.

Utility and Transportation Corridors

Multiple-Purpose Corridors

Build a new 1-mile-wide corridor leg centered on the El Paso Natural Gas Line.

Transportation Corridors

Designate all State highway system routes as transportation corridors, including a new 1-mile-wide corridor along SR-69, a 1/2-mile on each side of the centerline.

2.6.2.2.6.3 Biological Resources

Biological resources would be subject to management guidance in the Biological Resources discussion of the Management Common to Both Planning Areas section, and the Biological Resources discussion of the Management Common to the Bradshaw-Harquahala Planning Area section of this chapter. No other biological allocations would be made within the Upper Agua Fria River Basin MU.

2.6.2.2.6.4 Cultural Resources

Land Use Allocation

Galena Gulch SCRMA (2,500 acres BLM). Allocate to public use selected sites that are accessible from the Black Canyon Trail.

Desired Future Condition

Selected prehistoric and historic sites are interpreted for public education and visitation. Interpretive projects are completed in a manner that monitors and protects sites while allowing for public use. For more information on public use of cultural resources, see Appendix E.

Management Actions

Build trails to link public use sites to the Black Canyon trail. Local site types potentially suitable for public use include the following:

- prehistoric hilltop structures,
- rock art,
- mining camps, and
- features of the historic Black Canyon sheep driveway.

Develop historic properties for heritage tourism to contribute to their long-term preservation and productive use.

Implement a combination of some or all of following and other actions at selected sites:

- platforms,
- restrooms,
- picnic tables,
- benches,
- trash receptacles,
- signs along routes and trails to direct visitors to interpreted sites,
- hard-surfaced walking trails,
- interpretive signs and register boxes, and
- brochures and related educational materials or programs.

Take actions to stabilize, repair, and maintain sites in good condition. Regularly monitor site conditions.

Authorize commercial and noncommercial group tours if they are conducted with protective stipulations in accordance with BLM regulations. Where required, issue SRPs.

Administrative Actions

Select sites for public use by considering the following factors:

- presence of aboveground features of interest to the public and amenable to interpretive development.
- accessibility to communities, travel routes, and recreation trails.
- condition of the site and the feasibility of stabilizing selected areas or features to withstand visitation.
- visitor safety.
- compatibility with other land uses and site values, such as traditional use by Native Americans.
- feasibility of regular inspections by BLM's staff and volunteers, and
- partnership opportunities for interpretive and educational projects.

The BLM recreation program would participate in developing sites for public use.

BLM would cooperate with agencies, tribes, and local communities in supporting heritage tourism programs that benefit local economies. Develop historic properties for heritage tourism to contribute to their long-term preservation and productive use.

2.6.2.2.6.5 Recreation Resources

Land Use Allocation

Upper Agua Fria River Basin SRMA (21,440 acres BLM)

Desired Future Condition

Maintain the SRMA's natural landscape and open space. Offer visitors recreation opportunities, scenic views, access to the Black Canyon Trail, and other trail systems.

The open space character of the land is retained, maintaining natural landscapes and recreation opportunities for the future.

Emphasize rural, roaded-natural, and semi-primitive motorized recreation settings where suitable.

Management Actions

Locate, and develop new trails, parking, and staging areas, where suitable, for motorized and non-motorized use.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.6.2.2.6.6 (Map 2-75).

Land Use Allocation

North Black Canyon Hiking and Equestrian Trails RMZ (3,210 acres BLM)

Desired Future Condition

Complete the Black Canyon Trail north and east of Highway 69 to connect with trails in Prescott National Forest. Analyze, build and designate the trail to provide a non-motorized experience along the historic sheep driveway. Identify exact locations of the trail and facilities in conjunction with the Yavapai Trails Association and other interested citizens. Maintain rural roaded-natural and semi-primitive motorized settings as suitable. Consider and study the Black Canyon Trail for inclusion into the National Recreation Trail System, as described in the National Trails System Act of 2002 (P.L.90-543).

Management Actions

Locate and develop staging, or camping areas near communities and vehicle access points to service the north Black Canyon Trail and adjoining public lands for the following purposes:

- parking,
- unloading OHVs and horses, and
- picnicking.

Development could include the following:

- informational signs,
- kiosks,
- picnic tables,
- loading ramps, and
- soil stabilization for dust abatement.

Limit to 5 acres the area of exposed barren soil on each site. Mark or delineate the perimeters to prevent expansion.

Issue a right-of-way for the trail and facilities to preserve public access and protect the trail from incompatible land uses.

Acquire access easements or rights-of-way for non-Federal lands where the trail or facilities are proposed.

Recognize the trail and facilities in any land tenure actions. Retain a 1/4-mile corridor (1/8 mile each side) along the trail.

Allocations for Visual Resource Management designed to achieve Desired Future Conditions are discussed in section 2.6.2.2.6.6.

Evaluate the Black Canyon Trail for inclusion into the National Recreation Trail System, as described in the National Trails System Act of 2002 (P.L.90-543).

Administrative Actions

Work with citizen volunteer groups to complete a comprehensive strategy and trails plan for selecting and developing new single- and multi-use hiking, equestrian, and OHV trails for all lands in the SRMA. Collaborate with the following entities:

- AGFD,
- Prescott National Forest,
- Yavapai County,
- Yavapai County Trails Association, and
- land managers of other trails.

Establish a citizen's working group to help with trail and facility sites, designs, and management. Develop a Black Canyon Trail management and partnership plan with community and citizen input in conjunction with the Black Canyon Trail Plan for the Black Canyon SRMA. Within one year of plan approval define the following:

- proposed trail alignments,
- trailheads,
- linking trails, and
- other alignments.

Complete this master plan within two years of plan approval.

2.6.2.2.6.6 Visual Resources

Land Use Allocations

VRM classes for *Alternative E* throughout the planning area would be allocated as described in Table 2-2 and as portrayed on Map 2-75. The entire Upper Agua Fria River Basin Management Unit would be allocated to VRM Class III objectives.

2.6.2.2.6.7 Mineral Resource Management

Alternative E proposes no mineral withdrawals or closures within the MU.

2.6.2.2.6.8 Transportation and Public Access

Land Use Allocation

The Upper Agua Fria River Basin Management Unit would be allocated as a limited use area, with motorized and mechanized vehicle uses limited to designated routes (Map 2-16).

Other Resource Allocations with Transportation and Public Access Prescriptions

SCRMAs and cultural resource sites allocated to Public Use are discussed in section 2.6.2.2.6.4.

SRMAs and other recreation allocations are discussed in section 2.6.2.2.6.5.

Desired Future Conditions

Define, designate, implement, and monitor a designated and travel management network. The travel management network and associated recreation opportunities would be consistent with other resource management objectives for the area.

Management Actions

No cross-country motorized travel would be permitted except in cases of emergency or for approved administrative purposes.

The Upper Agua Fria River Basin SRMA (21,440 acres BLM) would offer visitors access to the Black Canyon Trail and other trail systems. Locate, and develop new trails, where suitable, for motorized and non-motorized uses.

Within the North Black Canyon Hiking and Equestrian Trails RMZ (3,210 acres BLM), locate and develop staging, or camping areas near communities and vehicle access points to service the north Black Canyon Trail. Issue a right-of-way for the trail and facilities to preserve public access and protect the trail from incompatible land uses. Acquire access easements or rights-of-way for non-Federal lands, where the trail or facilities are proposed. Recognize the trail and facilities in any land tenure actions. Retain a 1/4-mile corridor (1/8 mile each side) along the trail. Evaluate the Black Canyon Trail for inclusion into the National Recreation Trail System, as described in the National Trails System Act of 2002 (P.L.90-543). Complete a new BCT this master plan within 2 years of plan approval.

Build trails to link cultural public use sites to the Black Canyon Trail. Trails could lead to suitable sites including prehistoric hilltop structures, rock art, mining camps, and features of the historic Black Canyon sheep driveway.

Administrative Actions

Apply an evaluation process, similar to one described in Appendix D, to guide establishment of a designated public access and route system to support resource objectives consistent with *Alternative B*.

Develop a Travel and Transportation Management Plan. This plan would implement the designated route system for the Management Unit.

2.7 Management Common to All Action Alternatives

Introduction

While certain planning components vary across the Alternatives, others apply to all Alternatives. Some components common to all Alternatives result from previous land use decisions determined still to be valid and carried forward into the revised plans. Others originate from new planning decisions made since adopting the pre-existing plans. The common actions that apply to both planning areas appear first; those that apply only to Agua Fria National Monument are presented second, and those that apply only to the Bradshaw-Harquahala Planning Area are presented third.

Many scattered, isolated BLM-administered parcels are located outside the planning area boundaries (Map 1-2). These parcels are included in this plan because BLM remains responsible for managing them. Some of the lands are managed under the *Kingman RMP* (BLM 1993a), whereas others are managed under the *Phoenix RMP* (BLM 1988a). According to both of these RMPs, there was no support for retaining these lands for resource allocation, special area designation, or public access concerns. Therefore, the selected Alternatives for these RMPs contained no resource management actions for these parcels. They are difficult to manage because of their isolation and the small size of the individual parcels. As in the *Kingman RMP* and the *Phoenix RMP*, BLM has elected to deal with these lands more generally than with lands inside the planning areas. Still, the scattered parcels are included in the land tenure decisions for each Alternative. The actions or components described below, which are common to all Action Alternatives, were developed during the public involvement and Alternative development phases of the RMP and EIS process.

2.7.1 Management Common to Both Planning Areas

2.7.1.1 Land Health Standards

In managing and implementing all resource programs, BLM must consider the Land Health Standards described in *Arizona Standards for Rangeland Health and Guidelines for Grazing Administration* (Rangeland Management). The Land Health Standards were developed, pursuant to 43 CFR 4180, through a collaborative process involving BLM's staff and the Arizona Resource Advisory Council (RAC). The Land Health Standards were approved by the Secretary of the Interior in April 1997. These standards have been developed to determine the characteristics of healthy ecosystems on public lands and management actions to promote them. When approved, the Land Health Standards became BLM Arizona policy, guiding the planning for and management of BLM-administered lands. The Land Health Standards, therefore, have been incorporated into both the Agua Fria National Monument and Bradshaw-Harquahala RMPs. Listed below are the standards that describe the conditions needed to encourage proper functioning of ecological processes and that have been adopted as the Land Health Standards applicable program wide to BLM Arizona.

Standard One: Upland Sites

Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate, and landform (ecological site).

Criteria for Meeting Standard One

Soil conditions support the proper functioning of hydrologic, energy, and nutrient cycles. Many factors interact to maintain stable soils and healthy soil conditions, including suitable amounts of vegetation cover, litter, and soil porosity and organic matter. Under proper functioning conditions, rates of soil loss and infiltration are consistent with the site's potential.

Ground cover in the form of plants, litter, or rock is present in pattern, kind, and amount sufficient to prevent accelerated erosion for the ecological site; or ground cover is increasing as determined by monitoring over an established period of time.

Signs of accelerated erosion are minimal or diminishing for the ecological site as determined by monitoring over an established period of time.

As indicated by such factors as:

- ground cover,
- litter,
- live vegetation (e.g., grass, shrubs, trees) amount and type,
- rock ,
- signs of erosion,
- flow pattern,
- gullies, and
- rills and plant pedestaling.

Exceptions and exemptions (where applicable):

None.

Standard Two: Riparian-Wetland Sites

Riparian-wetland areas are in properly functioning condition.

Criteria for Meeting Standard Two

Stream channel morphology and functions are appropriate for proper functioning condition for existing climate, landform, and channel reach characteristics. Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate the stream energy of high-water flows.

Riparian-wetland functioning condition assessments are based on examination of hydrologic, vegetation, soil and erosion-deposition factors. BLM has developed a standard checklist to address these factors and make functional assessments. Riparian-wetland areas are functioning properly as shown by the results of applying the appropriate checklist.

The checklist for riparian areas is in Technical Reference 1737-9, Process for Assessing Proper Functioning Condition (BLM 1993d). The checklist for wetlands is in Technical Reference 1737-11, Process for Assessing Proper Functioning Condition for Lentic Riparian-Wetland Areas (BLM 1994c).

As indicated by such factors as the following:

- gradient,
- width/depth ratio,
- channel roughness and sinuosity of stream channel,
- bank stabilization,
- reduced erosion,
- captured sediment,
- ground water recharge, and
- dissipation of energy by vegetation.

Exceptions and exemptions (where applicable):

- Dirt tanks, wells, and other water facilities built or placed at a location to provide water for livestock or wildlife and not determined through local planning to provide for riparian or wetland habitat are exempt.
- Water impoundments permitted for construction, mining, or other similar activities are exempt.

Standard Three: Desired Future Conditions

Productive, diverse upland, and riparian-wetland plant communities of native species exist and are maintained.

Criteria for Meeting Standard Three

Upland and riparian-wetland plant communities meet DPC objectives. Plant community objectives are determined with consideration for all multiple uses. Objectives also address native species and the requirements of the Taylor Grazing Act (TGA); FLPMA; Endangered

Species Act (ESA); Clean Water Act (CWA); and suitable laws, regulations, and policies.

DPC objectives will be developed to assure that soil conditions and ecosystem function described in Standards 1 and 2 are met. These objectives detail a site-specific plant community, which when obtained, will assure rangeland health; State water quality standards; and habitat for endangered, threatened, and sensitive species. Thus, DPC objectives will be used as an indicator of ecosystem function and rangeland health.

As indicated by such factors as the following:

- composition,
- structure, and
- distribution.

Exceptions and exemptions (where applicable):

Ecological sites or stream reaches on which a change in existing vegetation is physically, biologically, or economically impractical are exempt.

2.7.1.2 Lands and Realty

Land Tenure Adjustment

Management Actions

Land tenure decisions determine which lands will be retained, which will be proposed for disposal, and which will be proposed for acquisition. These decisions must achieve the goals, standards, and objectives in the land use plan.

Lands found to be potentially suitable for disposal by sale or exchange in this land use plan meet the criteria in Sections 203 and 206 of the FLPMA of 1976, and other laws and regulations.

For land tenure adjustments, BLM prioritizes acquiring lands that contain habitat recognized by the U.S. Fish and Wildlife Service (USFWS) as needed for the recovery of federally listed threatened or endangered species.

BLM does not dispose of land:

- occupied by species that are listed or proposed to be listed as threatened or endangered under the ESA,
- with designated or proposed critical habitat for a listed or proposed threatened or endangered species,
- supporting listed or proposed threatened or endangered species if such transfer would conflict with recovery needs and objectives or would likely impede the recovery of the listed or proposed species, and/or
- supporting Federal candidate species if such action would contribute to the need to list the species as threatened or endangered.

Exceptions to the above may occur if the recipient of the lands would protect the species or critical habitat equally well under the ESA, such as disposal to a non-Federal governmental agency or private organization if conservation purposes for the species would still be achieved and ensured.

Maintain, obtain, and secure access rights to all BLM-administered lands to meet BLM goals and objectives. This action is accomplished by requiring reciprocal grants (where needed) when granting rights-of-way across BLM-administered lands and pursuing land disposal actions.

Issue right-of-way reservations to BLM on existing designated routes that are needed for implementing the RMP.

In adjusting land tenure (including land exchange, purchase, sale, and donation), consider the following:

- Evaluate and balance all resource requirements and consolidate land

ownership to achieve management efficiency and reduced costs of administration, thereby improving Federal land management.

- Evaluate the effects of land adjustments on sensitive species habitat. Avoid land adjustments that could result in a trend toward Federal listing or a loss of population viability for sensitive species.
- Acquire land that contains resources determined to be important in contributing toward BLM resource management goals and objectives, when these resources are threatened by land use change or when management may be enhanced by public ownership. Resources so identified may include historical or heritage resources, outstanding scenic values, critical ecosystems, or potential recreation opportunities.
- Acquire land that reduces conflicts between public and private landowner objectives.
- Evaluate the effects of long-term adjustments in jurisdiction near urban and rural communities on community economic and social stability and environmental sustainability. Work with a diverse network of residents, user groups, and governments to determine how land tenure adjustments can enhance both local communities and environmental health.

Land Use Allocations

In response to a projected regional transportation demand, designate all State highway system routes (Interstate, U.S. routes, and Arizona State routes) as transportation corridors in the Bradshaw-Harquahala Planning Area.

Specifically, facilities significant enough to be the basis for corridor designation are the following:

- natural gas and other pipelines at least 10 inches in diameter,
- electric transmission facilities accommodating 115 kV lines or greater voltage , and
- significant canals delivering water to urban areas.

Management Actions

Route major utility systems through designated corridors. Encourage new rights-of-way within designated corridors to promote the maximum use of existing routes. Encourage joint use whenever possible.

Collocate smaller utility lines needed for local service near corridors or within a corridor unless doing so would limit the opportunity to collocate other major utility lines in the corridor.

Whenever possible, promote energy transfer efficiency and support alternative energy sources, such as the use of photovoltaic cells (solar energy) and wind power.

Whenever possible, design or route utility transmission lines to minimize adverse visual impacts to the surrounding lands and vistas.

Designate BLM utility corridors consistent with authorities granted under the following:

- FLPMA Title V, Sections 501-511 (43 USC 1761-1771),
- Mineral Leasing Act of 1928 (CFR 2880), and
- BLM Right-of-Way Manual, Sections 2801.11 and 2801.12.

Administrative Actions

BLM continues to cooperate as a partner (with the Forest Service, Arizona Public Service, and Salt River Project, in Arizona) in the Western Utility Group, whose mission is to facilitate an exchange of information and coordinate planning between Federal agencies and utility providers throughout the western United States.

Land Use Allocation

Communication Sites

Management Actions

BLM planning related to communication infrastructure must, in accordance with the Telecommunications Act of 1996, help facilitate implementing wireless telephone systems, in compliance with existing law, by making Federal lands and facilities available for communication sites.

Accept applications for communication sites on a case-by-case basis and in accordance with the resource management prescriptions in this land use plan.

Consider communication site applications on lands that have been identified for disposal on a case by case basis. If an application is approved and the lands are subsequently exchanged or sold, reserve the communication site, subject to valid existing rights. Retain and make subject to valid existing rights previously designated communication sites. On lands that have been acquired or identified for retention, limit communication site development to previously designated sites. Develop communication site plans for all designated sites.

Design communication sites following guidelines developed by the USFWS to minimize impacts to migratory birds.

Administrative Actions

As suitable, coordinate communication-related planning with the Federal Communications Commission (FCC).

Land Use Allocation

Land Use Authorizations

Management Actions

Continue to issue land use authorizations (rights-of-way, leases, permits, easements) on a case-by-case basis and in accordance with resource management prescriptions in this land use plan.

Prohibit apiary (bee keeping) permits within 1/4 mile of facilities such as the following:

- high-use recreation areas such as campgrounds, trailheads, and staging areas,
- designated non-motorized trails,
- areas or routes with permitted recreation activities, and
- active scientific and research areas.

Land Use Allocation

Recreation and Public Purposes (R&PP) Act

Management Actions

Under the R&PP Act, accept applications from State and local governments and non-profit organizations on a case-by-case basis and in accordance with resource management prescriptions in this land use plan.

Land Use Allocation

Public Land Withdrawals and Classifications

Management Actions

Consider public land withdrawals and classifications on a case-by-case basis and in accordance with resource management prescriptions in this land use plan. Actions prohibited by the terms of the withdrawal or classification remain in effect until such withdrawals are revoked or classifications terminated.

2.7.1.3 Soil, Air, and Water Resources

Implementing the Arizona Standards for Rangeland Health and Guidelines for Grazing Administration (Land Health Standards) (BLM

1997a) would meet the requirement for soils to support proper functioning of hydrologic, energy, and nutrient cycles.

Identify, quantify, and secure legal entitlement to all existing water sources on the public lands and seek to acquire water rights, when possible, to ensure water availability to meet multiple-resource needs. Assert Federal reserved water rights, where suitable, in Agua Fria National Monument and the five wilderness areas to secure water for the purposes of the reservations.

Monitor and protect water quality to meet Federal and State standards. Ensure that the water needs of flora and fauna are met.

Ensure that all land tenure decisions are reviewed for their impacts to water resources, including protection of instream flows.

2.7.1.4 Biological Resources

Land Use Allocation

Management of Desert Tortoise Habitat

Desired Future Conditions - Desert Tortoise

Desert tortoise habitat, by habitat category, will be managed to achieve the following desired conditions:

- Category I - Maintain stable, viable populations and protect existing tortoise habitat values and increase populations where possible,
- Category II - Maintain stable, viable populations and halt further declines in tortoise habitat values, and
- Category III - Limit tortoise habitat and population declines to the extent possible through mitigation.

Categories I and II desert tortoise habitat will retain all natural sheltersites (boulders or caliche caves or similar features used by tortoises for sheltering) and be unfragmented. Vegetation will consist of at least 5 percent native perennial grasses, at least 10 percent native perennial forbs or subshrubs, at least 30 percent native trees and cacti, by dry weight, as limited by the potential of the ecological site as described by the Natural Resource Conservation Service (NRCS) ecological site guides.

Management Actions - Desert Tortoise

Standardize desert tortoise management throughout its habitat. Management would be consistent with the following documents:

- Desert Tortoise Habitat Management on Public Lands: A Rangewide Plan (BLM 1988b).
- Strategy for Desert Tortoise Habitat Management on Public Lands in Arizona, Instruction Memorandum No. AZ-91-16 (BLM 1990a)
- Strategy for Desert Tortoise Habitat Management on Public Lands in Arizona: New Guidance on Compensation for the Desert Tortoise, Instruction Memorandum No. AZ-92-46 (BLM 1992), and
- Supplemental Guidance for Desert Tortoise Compensation, Instruction Memorandum No. AZ-99-008 (BLM 1999).

Desert tortoise habitat would be managed according to the categories shown on Map 2-92. Habitat management categories and boundaries would be revised as new population information becomes available. The criteria that would be used in revising categories and boundaries are those in the 1988 Rangewide Plan (BLM 1988b).

The criteria for Category I tortoise habitat areas are the following:

- Habitat areas are essential to maintenance of large, viable populations.
- Conflicts are resolvable.

- Populations are medium to high density or low density contiguous with medium or high density.
- Populations are increasing, stable, or decreasing.

The criteria for Category II tortoise habitat areas are the following:

- Habitat areas may be essential to maintenance of viable populations.
- Most conflicts are resolvable.
- Populations are medium to high density or low density contiguous with medium or high density.
- Populations are stable, or decreasing.

Category III tortoise habitat areas are the following:

- Habitat areas are not essential to maintenance of viable populations.
- Most conflicts are not resolvable.
- Populations are low to medium density not contiguous with medium or high density.
- Populations are stable or decreasing.

No net loss would occur in the quality or quantity of Category I and II desert tortoise habitat to the extent practicable. BLM would address and include mitigation measures in decision documents to offset the loss of quality or quantity of Category I, II, and III tortoise habitats.

Compensation may be required to mitigate residual impacts from authorized actions.

Evaluate on a case-by-case basis all proposed activities, including the following, for impacts to desert tortoise population or habitats:

- requests for rights-of-way,
- easements,
- withdrawals,
- other land tenure actions,
- range improvements,
- wildlife habitat projects,
- mineral material sales, and
- commercial and organized group SRP applications.

Mitigation for adverse impacts is permissible to achieve no net loss in quantity or quality of desert tortoise habitat.

In Category I and II tortoise habitats, all motorized competitive races would be prohibited between March 1 through October 15. All other use requests during this time would be reviewed on a case-by-case basis and may be denied or adjusted to avoid conflict with tortoise activity and habitat. Mitigation for conflicts would be permissible to achieve no net loss in quantity or quality of desert tortoise habitat.

All mining plans of operations would be assessed for impacts to desert tortoise habitat on a case-by-case basis. Adverse impacts to desert tortoise would be mitigated to the extent allowable in the 3809 regulations.

Administrative Actions - Desert Tortoise

Maintain and develop a proactive public education program on the desert tortoise and its habitat requirements, including participation in public events with tortoise habitat information. Update existing tortoise brochure every five years or as needed.

Continue to work with and support other agencies and public entities in desert tortoise conservation.

Management Actions - Priority Species and Priority Habitats

Emphasize and give priority to managing priority species and priority habitats in conflict resolution. Priority species include the following:

- game species,
- special status species,
- birds of conservation concern, and
- raptors.

See Appendix H for a complete list. Priority habitats include areas allocated as WHAs (pronghorn fawning habitat, pronghorn movement corridors, bighorn sheep habitat), ACECs, riparian areas, springs, bat roosts, and desert tortoise habitat.

Reintroductions, transplants, and supplemental stockings (augmentations) of wildlife populations would be carried out in collaboration with AGFD or the USFWS for the following purposes:

- to maintain current populations, distributions, and genetic diversity,
- to conserve or recover threatened or endangered species, and
- to restore or enhance native wildlife species diversity and distribution.

Species that may be reintroduced, transplanted, or augmented include pronghorn; desert bighorn sheep; mule deer; desert tortoise; beavers; lowland leopard frogs; Mexican garter snakes; and native fishes like spikedace, Gila chub, Gila topminnow, desert pupfish, longfin dace, speckled dace, and desert sucker.

Management Actions - Threatened or Endangered Species

The actions described below implement the Terms and Conditions and Conservation Recommendations contained in the following Biological Opinions and Conference Opinion:

- [2-21-88-F-167] The Phoenix Resource Management Plan and Environmental Impact Statement.
- [2-21-96-F-421] The Lower Gila North Management Framework Plan (1983), and Lower Gila North Grazing EIS (1982).
- [2-21-96-F-422] The Eastern Arizona Grazing EIS, Phoenix District Portion.
- [2-21-99-F-031] Reintroduction of Gila Topminnow and Desert Pupfish into Three Tributaries of the Agua Fria River.
- [2-21-03-C-409] Existing Phoenix Resource Management Plan for the Agua Fria National Monument.
- [2-21-03-F-210] BLM Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management.

Acquisition criteria for non-Federal lands would include the potential

- to enhance the conserving and managing of threatened or endangered species habitat, riparian habitat, desert tortoise habitat, key big game habitat and
- to improve the overall manageability of wildlife habitat.

BLM would not transfer from Federal ownership the following:

- designated or proposed critical habitat for a listed or proposed threatened or endangered species,
- lands supporting listed or proposed threatened or endangered species if such transfer would be inconsistent with recovery needs and objectives or would likely affect the recovery of the listed or proposed species, and
- lands supporting Federal candidate species if such action would contribute to the need to list the species as threatened or endangered.

Exceptions to the above could occur if the recipient of the lands would protect the species or critical habitat equally well under the ESA, such as disposal to a non-Federal governmental agency or private organization if conservation purposes for the species would still be achieved and ensured.

Wildlife and prescribed fire management will incorporate the T/E Species Conservation Measures described in Appendix P which resulted from the BLM Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management (BO #2-21-03-F-210).

Desired Future Condition - Gila Topminnow, Gila Chub and Desert Pupfish

All biologically suitable perennial waters on public lands in the planning areas will be occupied by thriving populations of Gila topminnow, Gila chub, and desert pupfish.

Management Actions - Gila Topminnow, Gila Chub and Desert Pupfish

In cooperation with the Arizona Game and Fish Department and the U.S. Fish and Wildlife Service, re-establish Gila topminnow, Gila chub and desert pupfish into suitable habitat sites throughout the planning area.

Stream bank alteration due to recreation activities and livestock grazing in areas occupied by Gila topminnow, Gila chub, and desert pupfish would be limited to 25 percent annually.

Domestic livestock utilization of native riparian trees along streams occupied by Gila chub, Gila topminnow, and desert pupfish would be limited to 30 percent of the apical stems per growing season.

Fuels treatments on watersheds for habitat occupied by Gila topminnow, Gila chub, and desert pupfish would be limited to no more than 1/2 the watershed in any two year period.

Administrative Actions - Gila Topminnow, Gila Chub and Desert Pupfish

In coordination with the Arizona Game and Fish Department, monitor all Gila topminnow, Gila chub and desert pupfish populations annually.

Monitor for mortality of Gila topminnow, Gila chub and desert pupfish populations following significant runoff events within one year of treating the watershed with prescribed burns.

All monitoring results will be shared with the U.S. Fish and Wildlife Service annually.

At Silver Creek and Indian Creek:

- Monitor stream bank alteration and vegetation two times annually, during and following livestock seasonal use period.
- Monitor functional condition and trend every 3 years.

At Tule Creek:

- Inspect and maintain the fenced exclosure two times annually when livestock are present in the area.
- Monitor stream bank alteration and vegetation annually when livestock are present.
- Monitor functional condition and trend every 3 years.

Desired Future Condition - Spikedace

The Agua Fria River, where biologically suitable, is occupied by a thriving population of spikedace.

Management Actions - Spikedace

In cooperation with the Arizona Game and Fish Department and the U.S. Fish and Wildlife Service, re-establish a spikedace population in the Agua Fria River.

Desired Future Condition - Southwestern Willow Flycatcher

Riparian areas that could physically support (due to floodplain width and gradient) southwestern willow flycatcher habitats will attain the vegetation structure, plant species diversity, density, and canopy cover to constitute suitable habitat. Vegetation in these riparian areas will be sufficiently dense and structurally complex to inhibit flycatcher predators and cowbirds from finding flycatcher nests. Livestock management facilities or other facilities will not be located so that they would attract cowbirds to suitable flycatcher habitat.

Management Actions - Southwestern Willow Flycatcher

Within the range of southwestern willow flycatcher, livestock grazing would conform to the guidelines described in the "Not Likely to Adversely Affect" section of Guidance Criteria for Determinations of Effects of Grazing Permit Issuance and Renewal on Threatened and Endangered Species (BLM and US Fish and Wildlife Service, Arizona and New Mexico 1999) or any subsequent agreed-upon amendment to these guidelines.

The current guidance criteria for Not Likely to Adversely Affect states:

1. Disturbance of individuals or nests, predation, or parasitism would not be likely because livestock use would not occur in occupied habitat during any time of the year.
2. Suitability for nesting flycatchers would not be reduced because livestock grazing in unoccupied suitable habitat would not occur during the growing season (key vegetation characteristics are maintained or enhanced and conditions promoting cowbird parasitism are avoided).
3. Cowbird parasitism would be unlikely because grazing would occur greater than five miles from occupied habitat during the breeding season, or
4. Monitoring of flycatcher nests demonstrates that no cowbird parasitism is occurring when livestock use occurs closer than 5 miles, but not within, occupied habitat, or
5. Cowbird parasitism would be unlikely due to the physical juxtapositions of habitat type, terrain, facilities, elevation, and other factors.
6. Progression of potential habitat towards becoming suitable within 10 years would not be impeded by livestock grazing (e.g. regeneration or maintenance of woody vegetation is not impaired by trampling, bedding, or feeding).
7. Sufficient monitoring is in place to demonstrate that habitat suitability is being maintained or enhanced in accordance with two and four above. Such monitoring would continue through the life of the grazing action under consideration.

Desired Future Condition - Bald Eagle

Habitat quality and quantity of riparian areas within the foraging range of bald eagles in the Lake Pleasant area is maintained and nesting and habitat for wintering birds in the Agua Fria River drainage is maintained. Sufficient quantity and quality of these riparian areas provide roosting and potential nesting trees and adequate prey.

Desired Future Condition - Yellow-billed Cuckoo

Riparian areas that could physically support (due to floodplain width and gradient) yellow-billed cuckoo habitats will attain the vegetation structure, plant species diversity, density, and canopy cover to constitute suitable habitat. Livestock utilization will not substantially reduce the abundance, density or distribution of native riparian tree species through herbivory.

Management Actions – Other Priority Species – Desert Bighorn Sheep

Domestic sheep and goat grazing will be prohibited within nine miles of occupied desert bighorn sheep habitat to avoid disease transmission and comply with Bureau guidelines. Desert bighorn sheep habitat is depicted on Map 3-10.

Management Actions – Other Priority Species – Birds of Conservation Concern

Management of habitat for Birds of Conservation Concern will emphasize avoidance or minimizing impacts and restoring and enhancing habitat quality to implement Executive Order 13186. Through the permitting process, ensure the maintenance of habitat

quantity and quality. Take (as defined in the Glossary) of migratory birds from authorized activities will be minimized or avoided.

Desired Future Condition – Riparian Habitat

Riparian areas will include a plant community that consists of streambanks dominated (> 50 percent) by native species from the genera Scirpus, Carex, Juncus, and Eleocharis. The size class distribution of native riparian obligate trees will be > 15 percent seedlings, > 15 percent mid-size, and > 15 percent large size (depending on existing conditions and the site potential). Size classes are defined as follows:

- Seedlings are < 1 inch in basal diameter.
- Mid-sizes are 1 to 6 inches in basal diameter.
- Large sizes are > 6 inches in basal diameter.

Management Actions - Springs

Developed springs, seeps, and other projects affecting water and related resources would be designed to protect ecological functions and processes and to continue to provide habitat at the source for endemic invertebrates, native fishes, and other native aquatic species that may be present.

Water rights needs would be quantified, filed for, and protected, including those for instream flows, streams, springs, and other water sources important to wildlife, fish, and riparian values.

Water quality would be monitored and protected to meet Federal and State standards and to ensure that the needs of fish and wildlife are met along with the needs of people.

Desired Future Conditions – Bat Roosts

The bat roost habitat values associated with natural caves and abandoned mine features are protected and these sites do not pose a threat to human safety.

Management Actions - Bat Roosts

Authorized activities will ensure the maintenance of bat roost habitat quantity and quality, using mitigation to achieve the DFC.

Desired Future Conditions – Wildlife Habitat Across All Areas

Maintain, restore, or enhance the diversity, distribution, and viability of populations of native plants and wildlife, and maintain, restore, or enhance overall ecosystem health. Discretionary activities in the planning areas will be managed to ensure connectivity of habitats and maintenance of unrestricted wildlife movement.

All upland areas will include:

- a plant community that consists of native perennial grass and ground cover adequate to improve wildlife habitat and
- improved watershed function based on monitoring and ecological site potential. Upland sites include five percent or greater dry-weight composition of native perennial grass, as limited by the potential of the ecological site as described by the Natural Resource Conservation Service (NRCS) ecological site guides.

The Desired Plant Community for upland sites will have a long-term stable population of columnar cacti and paniculate agave, where the sites have the potential for such plant communities.

Management Actions - Wildlife Habitat Across All Areas

Identify, minimize, and mitigate for wildlife habitat degradation, loss, and fragmentation to achieve the DFC.

The Land Health Standards described in Arizona Standards for Rangeland Health and Guidelines for Grazing Administration (BLM 1997a) continue to be applied to all activities on the public land.

The density and distribution of wildlife waters would be maintained, improved, or increased throughout the planning areas to sustain and enhance wildlife populations across their range.

All existing wildlife waters would be maintained or improved as needed to maintain the presence of perennial water for wildlife.

New wildlife waters would be built when needed to maintain, restore, or enhance native wildlife populations or distributions.

Reasonable administrative vehicular access would be allowed for AGFD staff to wildlife water facilities for maintenance, repair, or research.

Water developments, including those for purposes other than wildlife would include design features to ensure safe and continued access to water by wildlife.

The planning areas contain suitable habitat for relocating and releasing individual animals and release of rehabilitated wildlife. These types of wildlife releases are not intended to establish new populations but are appropriate in areas of suitable habitat. Wildlife species that could be released include black bears; mountain lions; burrowing owls; and other raptors, reptiles, and game species.

The evaluation of vehicle routes, in conjunction with the route designation process, would consider the effect on wildlife habitat values. Routes that conflict with maintaining sensitive wildlife habitat would be mitigated to achieve DFC. Mitigation would include, but not be limited to the following:

- route closure,
- seasonal use restrictions,
- rerouting,
- vehicle type restrictions,
- vehicle speed restrictions, and
- other mitigation suitable to the nature of the conflict.

Administrative access may be allowed by law enforcement and AGFD and USFWS staff for natural resource management. AGFD's use of motorized and mechanized equipment off designated routes is considered an administrative use and will be allowed in suitable locations (as agreed to by BLM and AGFD) for such purposes including, but not limited to the following:

- water supplementation,
- collar retrieval,
- capture and release of wildlife, and
- maintenance, repair, and building or rebuilding of wildlife waters.

Administrative Actions - Wildlife Habitat Across All Areas

Through cooperative partnerships with AGFD and other State and private entities, BLM would conserve, enhance, and restore wildlife habitats, including natural springs, wetlands, and streams.

Continue to implement wildlife habitat management through wildlife HMPs, developed in cooperation with AGFD to meet the requirements of the Sikes Act and address site-specific habitat management objectives. Existing HMPs would be used until new plans are developed.

Desired Future Condition – Invasive Species

The distribution and abundance of invasive plants and animals will be limited to current levels and through active management, the impact of invasive species on native ecosystems will be reduced from current levels.

Management Actions – Invasive Species

Adverse impacts to natural plant and animal communities from invasive species would be reduced. Efforts to control or eradicate invasive wildlife species would be carried out in cooperation and collaboration with AGFD or suitable weed management associations or other organizations.

Nonintrusive, non-native plant species would be considered suitable where native species:

- are not available,
- are not economically feasible,
- cannot achieve ecological objectives as well as non-native species, and
- cannot compete with already established non-native species.

The use and perpetuation of native plant species would be emphasized when restoring or rehabilitating disturbed or degraded rangelands.

Administrative Actions – Invasive Species

A monitoring, management, and educational program would be established to reduce the spread of plants classified as invasive by the U.S. Department of Agriculture (USDA).

2.7.1.5 Cultural Resources

Land Use Allocation

Allocate sites to one or more of the six use categories defined in BLM's Manual 8110.4:

- scientific use,
- conservation for future use,
- traditional use,
- public use,
- experimental use, and
- discharged from management.

Manage sites in accordance with the guidelines in Manual 8110.4. See Appendix E for information on these use categories.

Permit scientific and historical studies by qualified researchers at selected sites allocated to scientific use. The highest priority for study will be assigned to significant sites that are threatened by vandalism or other types of disturbance. Scientific studies will be guided by historic contexts and research designs. Priorities will also emphasize sites that have the potential to yield important information, as defined in approved research designs.

Allocate selected sites to public use for long-term preservation and public visitation. Consider the following factors in selecting sites suitable for this type of use:

- presence of aboveground features, such as structures or rock art, that are of interest to the public and are amenable to interpretive development,
- the condition of the site and the feasibility of treating or stabilizing selected areas to withstand visitation,
- accessibility to travel routes, and
- visitor safety.

Management Actions

Design and maintain facilities to preserve the visual integrity of cultural resource settings and cultural landscapes consistent with VRM objectives established in the RMP.

Implement physical and administrative protection measures to stop, limit, or repair damage and vandalism to sites. A variety of protection measures, described in BLM's Manual 8140, may be used to protect the integrity of sites at risk:

- closing routes,
- restricting grazing or other uses,
- building fences or other barriers,
- installing erosion control devices,
- placing soil into exposed vandal pits or rooms,
- erecting signs, and
- repairing, shoring up, or stabilizing walls or other parts of structures.

Structural and material stabilization techniques introduce chemical, mechanical, or structural elements to retard the deterioration of cultural resources.

Install and maintain protective signs, including carsonite posts, with the message of the Arizona Site Steward Program on sites that are vulnerable to vandalism. Install protective

signs in a manner to avoid drawing attention to sites.

In evaluating project designs and proposed activities, seek to avoid disturbing or removing Native American human remains and associated items. Avoid directing site visitors toward areas where these items could be observed or disturbed.

Include stipulations in Special Recreation Permits (SRPs) to ensure that commercial tour operations will not damage cultural resources. Require tour operators to report any new vandalism or damage to sites.

Limit groups visiting archaeological sites to 25 people/site at a time. BLM may permit larger groups on a case-by-case basis for educational events, if it implements mitigation to minimize adverse impacts.

Administrative Actions

Ensure that all proposed undertakings and authorizations are reviewed and conducted in compliance with Section 106 of the National Historic Preservation Act (NHPA), the Archaeological Resources Protection Act (ARPA), the Native American Graves Protection and Repatriation Act (NAGPRA), and other applicable laws.

Continue to consult with Indian tribes to identify places of traditional importance and associated access needs. Develop measures for managing and protecting places that might be identified by tribes during the life of the plan.

Complete documentary research and oral histories to gain a better understanding of cultural resources from homesteading, mining, ranching, and other historical period activities.

Restrict public information about the locations of sites that are not allocated to public use (selected for interpretive and educational uses).

Establish collaborative research partnerships with academic institutions, professional and non-profit organizations, and avocational organizations. Provide opportunities for volunteer training and participation in site documentation, research, protection, and educational projects.

Continue to participate in Arizona Archaeology Awareness Month events, along with other educational outreach that highlights the values of cultural heritage resources and the need to protect these resources.

Provide opportunities for tribal participation in research and interpretation.

Honor tribal requests to protect the confidentiality of sensitive information, to the extent permitted by law.

Complete Class II (sample) and Class III (intensive) field inventories to identify cultural resources and evaluate the condition of sites, in accordance with Section 110 of the NHPA. Use the information obtained through these surveys to allocate sites to proper use categories, develop protection measures, and integrate survey results into research designs and interpretation efforts.

Map and document sites before interpretive development for public use, to the extent needed to

- preserve archaeological data,
- plan for interpretive facilities, and
- provide a baseline condition assessment for monitoring changes resulting from visitor use.

Complete interpretive plans for sites allocated to public use through interpretive development.

Implement procedures for systematic monitoring of all sites developed or authorized for public visitation. Restrict visitor access or group tours to prevent any damage from visitor use.

Require that holders of SRPs give site visitors suitable educational information on archaeological site etiquette and resource conservation.

2.7.1.6 Wilderness Characteristics

Land Use Allocation

Lands allocated to maintain or enhance wilderness characteristics.

This allocation complies with guidance in Instruction Memorandum (IM) 2003-275 Change 1, (Appendix I). This allocation is managed consistently with the directions in the referenced IM to maintain or enhance the landscape values described in Attachment 1 of that IM (which can be found in Appendix I).

Desired Future Condition

Lands allocated to maintain or enhance wilderness characteristics contain few human intrusions with primitive and natural landscape settings, providing self-reliant and self-directed visitor experiences. These characteristics have been determined to be reasonably present and of sufficient value (condition, uniqueness, relevance, importance) and need (trend, risk), and to be practical to manage. Wildlife populations and habitat are recognized as important aspects of the naturalness and will be actively managed.

Lands and resources within these areas exhibit a high degree of naturalness. These areas are affected mainly by the forces of nature, and the imprint of human activity is substantially unnoticeable. Naturalness is evaluated by the following:

- occurrence of vehicle routes, fences, wildlife, and range facilities,
- nature and extent of landscape modifications,
- presence of native plant and wildlife communities, and
- habitat connectivity.

Outstanding opportunities for solitude or primitive and unconfined recreation may be present. The use of the area will generally be through non-motorized and non-mechanical means. Motorized use that does not degrade resources or conflict with DFC may be allowed on designated routes. Non-motorized conveyances (such as bicycles) will be allowed on designated trails. There will be no or minimal developed recreation facilities. Lands allocated to maintain or enhance wilderness characteristics will provide opportunities for visitor adventure, challenge, solitude, and discovery. Recreation settings and associated experiences will be semi-primitive non-motorized to primitive with limited areas of semi-primitive motorized around designated vehicle routes. Hunting, hiking, backpacking, camping, horseback riding, mountain bicycling, wildlife observation, photography, and historic/cultural study will be the chief activities with foot or horseback the customary means of travel.

Non-motorized access may include developing some trails, or simply marking foot routes with posts for minimal disturbance of the ground surface. Installing trails may be considered, where needed; to protect resources, to ensure public safety, or to advance public education and interpretation of objectives.

The rapid urbanization of central Arizona is expected to continue and demands on public lands are expected to increase. During the life of the plan, lands allocated to maintain or enhance wilderness characteristics will constitute some of the remaining large unaltered natural vistas within near proximity to the urbanizing areas. This "open space" would be maintained by careful project planning and design to minimize the visual intrusion of any management activity.

Management Actions

Lands allocated to maintain or enhance wilderness characteristics would be managed to protect and enhance primitive characteristics. The management actions are designed to

- maintain low interaction among users,

- reveal minimal evidence of other visitors, and
- provide a high probability of experiencing isolation from the sights and sounds of other humans.

Lands allocated to maintain or enhance wilderness characteristics would be managed to have limited evidence of human-induced management restrictions and controls, except the minimum needed to protect resources. Visitors would be encouraged to practice Leave No Trace skills to avoid human-induced impacts.

Motorized vehicle routes within lands allocated to maintain or enhance wilderness characteristics would be designated in the RMP and shown on maps. Vehicle routes would be mitigated to resolve conflicts with cultural, biological, or other resources to achieve DFC objectives (which may allow for motorized access in these areas). Mitigation measures may include the following:

- rerouting conflicting route segments,
- engineering to reduce conflicts ,
- limiting seasons of use, vehicle type, vehicle speed, or vehicle numbers, and
- closing routes.

BLM would consider building new routes only as a mitigation measure for route and resource conflicts or where necessary to meet approved administrative actions.

Sites and areas affected by human activities would be reclaimed when such locales or sites are no longer needed by authorized land uses.

Commercial recreation and vending operations, guided hunt and associated activities, and concession leases would be allowed when such activities conform to to the following:

- land use plan objectives,
- desired recreation settings,
- VRM classes, and
- other social and managerial settings.

AGFD's use of motorized and mechanized equipment off designated routes is considered an administrative use and will be allowed in suitable locations (as agreed to by BLM and AGFD) for such purposes including, but not limited to the following:

- water supplementation,
- collar retrieval,
- capture and release of wildlife, and
- maintenance, repair, and building or rebuilding of wildlife waters.

Discretionary surface-disturbing activities not compatible with achieving the DFC above or specifically described for each area would be prohibited.

Administrative Actions

Develop and adopt measurement standards for limits of acceptable change for the following:

- trail conditions,
- visitor-to-visitor encounters,
- vegetation changes,
- applying Arizona Land Health Standards, and
- approved motorized and mechanized activities.

A permit system would be applied, if needed, for the following purposes:

- to conserve solitude and primitive recreation opportunities,
- to preserve desired social and managerial settings,
- to safeguard resources, and
- to mitigate resource impacts.

Any permit system would include coordination with other State and Federal entities that issue use permits on Federal lands to assure that authorized permittees have fair and reasonable access to their permitted activity. For example, should a permit system be implemented, BLM will coordinate with AGFD to enable coordination of access for hunters with valid

hunting licenses and permits for the affected hunting unit.

2.7.1.7 Paleontological Resources

Desired Future Condition

Paleontological resources will be managed for their scientific, educational, recreation values, and adverse impacts to these resources will be mitigated. BLM would preserve and protect significant vertebrate paleontological resources for present and future generations. Scientifically significant invertebrates (to be determined by a qualified paleontologist) would also be protected.

Land Use Allocations

Areas would be classified according to their potential to contain vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils. Paleontological Sensitivity Classes are listed in Table 2-6.

Management Actions

BLM would identify and protect significant fossils and allow for scientific research at paleontological sites, in accordance with permitting procedures.

Should paleontological resources be discovered within the planning area, the sites would be evaluated for sensitivity. The sites would then be classified and managed consistent with the land use allocation classifications described above.

Table 2-6. Paleontological Sensitivity Classes

Classification	Definition
Class 1 (Low sensitivity)	Igneous and metamorphic geologic units and sedimentary geologic units where vertebrate fossils or uncommon invertebrate fossils are unlikely to occur.
Class 2 (Moderate sensitivity)	Sedimentary geologic units that are known to contain or have unknown potential to contain fossils that vary in significance, abundance, and predictable occurrence.
Class 3 (Moderate sensitivity)	Areas where geologic units are known to contain fossils but have little or no risk of human-caused adverse impacts or low risk of natural degradation.
Class 4 (High sensitivity)	Areas where geologic units regularly and predictably contain vertebrate fossils or uncommon invertebrate fossils and are at risk of natural degradation or human-caused adverse impacts.

Administrative Actions

BLM would include paleontological resources in its cultural resources public education programs. These programs would:

- provide information directly related to procedures to be followed if fossils are found, and
- specify fines for removing fossils from BLM-administered lands.

BLM would analyze the potential for paleontological resources and do the following:

- Develop a sensitivity map for paleontological resources and require

screening for all projects against potential for the project to impact vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils.
- Allocate through plan amendment if appropriate, all lands within the planning areas as Paleontological Sensitivity Class One, Two, Three, or Four as described in Table 2-6.
- Evaluate newly found vertebrate localities to determine their importance and the potential threat of loss to determine an adequate monitoring program.

2.7.1.8 Visual Resources

Land Use Allocations

Visual Resource Management Areas

Desired Future Conditions

As defined in BLM's Handbook H-8410-1, Visual Resource Inventory, (section B, one through four) objectives for the four VRM classes are described below:

VRM Class I Objective: The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes, but it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

VRM Class II Objective: The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

VRM Class III Objective: The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

VRM Class IV Objectives: The objective of this class is to provide for management activities that require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer's attention. Every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

Management Actions

Project proposals that could result in surface disturbance or may contain visible components would be analyzed using procedures outlined in BLM Handbook H-8431-1, Visual Contrast Rating, to determine their conformance with the VRM allocation of the project area. If necessary, modifications would be made to the project, including design changes or a change of location, for the project to meet the VRM Class objective. In any case, regardless of VRM Class, an effort will be made to make any project proposal with a visible component as visually compatible with its surroundings as practical.

2.7.1.9 Rangeland Management

The following actions would apply to Alternatives in which grazing is permitted. They would also apply to grazing management in the interim period from when grazing is prohibited to the final removal of livestock:

BLM has implemented the application of Standards for Rangeland Health and Guidelines for Grazing Administration (Land Health Standards). Allotment evaluations to determine if grazing practices are achieving the desired standards are conducted before the grazing permit or lease is renewed. Changes in grazing

practices needed to achieve the standards, are then incorporated in the stipulations of the reissued permit or lease. Rest-rotation, deferred-rotation, seasonal or short-duration use, or other management systems may be implemented where needs are identified through monitoring. Monitoring will be used to assess the effectiveness of changes brought about by the new management practices.

Exceptions to Standard 1 and 2 of the Arizona Standards for Rangeland Health may occur on ecological sites or stream reaches where a change in existing vegetation is physically, biologically, or economically impractical.

Public Lands without a grazing permit or lease authorization would remain unauthorized for livestock grazing.

Where livestock grazing is permitted, range improvements needed for proper management of the grazing program would be determined and completed, including repair and/or installation of fences, cattle guards, water developments, and vehicle routes needed to access improvement sites. These improvements would be conducted using a variety of mechanical equipment.

Vehicular access to repair range improvements by the grazing permittee or lessee would be considered administrative access. Use of vehicle routes closed to public use but limited to administrative uses would be allowed to maintain or repair range improvements. Off-route vehicular use would require prior authorization unless the needed access is to resolve an immediate risk to human health, safety, or property.

One-time travel off designated routes to access or retrieve; sick or injured livestock would be authorized as an administrative use for transporting the animal to obtain medical help. Retiring livestock grazing from an allotment would be considered when those lands are devoted to a public purpose that precludes continued livestock grazing.

Arizona Standards for Rangeland Health - Guidelines for Grazing Administration

The Arizona Standards for Rangeland Health and Guidelines for Grazing Administration are a series of management practices used to ensure that grazing meets the standards for rangeland health, which are referred to in this plan as Land Health Standards. The following guidelines apply to all areas where grazing occurs.

Guidelines for Standard One

1-1. Management activities will maintain or promote ground cover that will provide for infiltration, permeability, soil moisture storage, and soil stability appropriate for the ecological sites within MUs. The ground cover should maintain soil organisms, plants, and animals; to support the hydrologic and nutrient cycles and energy flow. Ground cover and signs of erosion are surrogate measures for hydrologic and nutrient cycles, and energy flow.

1-2. When grazing practices alone are not likely to restore areas of low infiltration or permeability, land management treatments may be designed and implemented to attain improvement.

Guidelines for Standard Two

2-1. Management practices maintain or promote sufficient vegetation to maintain, improve or restore riparian-wetland functions of energy dissipation, sediment capture, groundwater recharge, and stream bank stability, thus promoting stream channel morphology (e.g. gradient, width/depth ratio, channel roughness, and sinuosity), and functions suitable to climate and landform.

2-2. New facilities are located away from riparian-wetland areas if they conflict with achieving or maintaining riparian-wetland function. Existing facilities are used in a way that does not conflict with riparian-wetland functions or are relocated or modified when incompatible with these functions.

2-3. The development of springs, seeps, or other projects affecting water, and associated resources will be designed to protect ecological functions and processes.

Guidelines for Standard Three

3-1. The use and perpetuation of native species will be emphasized. When restoring or rehabilitating disturbed or degraded rangelands, nonintrusive, non-native plant species are suitable for use where native species (a) are not available, (b) are not economically feasible, (c) cannot achieve ecological objectives as well as non-native species, and/or (d) cannot compete with already established non-native species.

3-2. Conservation of Federal threatened or endangered, proposed, candidate, and other special status species is promoted by maintaining or restoring their habitats.

3-3. Management practices maintain, restore, or enhance water quality in conformance with State or Federal standards.

3-4. Intensity, season and frequency of use, and distribution of grazing use should provide for growth and reproduction of plant species needed to reach DPC (Desired Plant Community) objectives.

3-5. Grazing on designated ephemeral (annual and perennial) rangeland may be authorized if the following conditions are met:

- Ephemeral vegetation is present in draws, washes, and under shrubs, and has grown to useable levels at the time grazing begins; as well as sufficient surface and subsurface soil moisture exists for continued plant growth.
- Serviceable waters can provide for proper grazing distribution.
- Sufficient annual vegetation will remain on site to satisfy other resource concerns (e.g. watershed, wildlife, wild horses, and burros).
- Monitoring is conducted during grazing to determine if objectives are being met.

3-6. Management practices will target populations of noxious weeds that can be controlled or eliminated by approved methods.

3-7. Management practices to achieve DPCs will consider protecting and conserving known cultural resources, including historical sites, prehistoric sites, and plants of significance to Native American people.

DPC objectives would be quantified for each allotment through the rangeland monitoring and evaluation process. Ecological site descriptions available through the Natural Resources Conservation Service (NRCS), and other data will be used as a guide for addressing site capabilities and potentials for change over time. These DPC objectives are vegetation values that BLM is managing over the long term. Once established, DPC objectives would be updated and monitored by the use of indicators for Land Health Standard Three.

Apply management actions outlined in the Arizona Standards for Rangeland Health and Guidelines for Grazing Administration (Land Health Standards) to recognize and correct potential erosion problems that could degrade other resources, with prioritized emphasis on sites that might directly affect species that have been listed as threatened, endangered, or candidate by the USFWS.

2.7.1.10 Fire Management

Desired Future Conditions

- Fire is recognized as a natural process in fire-adapted ecosystems and is used to achieve objectives for other resources.
- Fuels in the Wildland Urban Interface (WUI) are maintained at non-hazardous levels to provide for public and firefighter safety.
- Prescribed fire complies with Federal and State air quality regulations.
- Each vegetation community is maintained within its natural range of

variation in plant composition, structure, and function, and fuel loads are maintained below levels that are considered to be hazardous (See Table 2-7 and Appendix J for more information on each vegetation community).
- DFCs will be coordinated with the rangeland standard and guidelines allotment evaluations.

Land Use Allocation

Under the proposed action, BLM-administered public lands would be assigned to one of the following two land use allocations for fire management (Table 2-7).

Allocation One - Wildland Fire Use:

Areas suitable for wildland fire use for resource management benefit.

Where wildland fire is desired, few or no constraints exist on its use, and conditions are suitable, unplanned and planned wildfire may be used to achieve desired objectives such as the following:

- to improve vegetation, wildlife habitat, or watershed conditions,
- to maintain non-hazardous levels of fuels,
- to reduce the hazardous effects of unplanned wildland fires, and
- to meet resource objectives.

Where fuel loading is high but conditions are not initially suitable for wildland fire, fuel loads are reduced by mechanical, chemical, or biological means to reduce hazardous fuel levels and meet resource objectives (includes WUI areas).

Management Actions

Use suitable tools for reducing hazardous fuels, including prescribed burning, wildland fire use, and mechanical methods. Methods can include the following:

- chainsaws,
- motorized equipment for crushing brush,
- tractor and hand piling,
- thinning and pruning, and
- treatments selected on a site-specific case that are ecologically suitable and cost effective.

Land Use Allocation

Allocation Two - Non Wildland Fire Use:

Areas not suitable for wildland fire use for resource benefit.

This allocation includes areas such as the following where mitigation and suppression are required to prevent direct threats to life or property:

- areas where fire historically never played a large role in developing and maintaining the ecosystem,
- areas where intervals between fires were very long, and
- areas (including some WUI areas) where an unplanned ignition could harm the ecosystem unless some form of mitigation is applied.

Mitigation may include mechanical, biological, chemical, or prescribed fire means to maintain non-hazardous levels of fuels, reduce the hazardous effects of unplanned wildland fires, and meet resource objectives.

The allocation of lands is based on the DFC of vegetation communities, ecological conditions, and ecological risks. The allocation of lands is determined by contrasting current and historical conditions and ecological risks of any changes (Map 2-93 Fire Land Use Allocation). The condition class concept helps describe changes in key ecosystem components such as species composition, structural stage, stand age, canopy closure, and fuel loadings. BLM fire management plans will include the two allocations and identify areas for including fire use and mechanical, biological, or chemical means to

- maintain non-hazardous levels of fuels,
- reduce the hazardous effects of unplanned wildland fires, and
- meet resource objectives.

Fire management plans will also determine which areas will be excluded from fire (through fire suppression) and which will receive chemical, mechanical, or biological treatments.

Management Actions

In areas not suitable for fire, BLM would implement programs to reduce unwanted ignitions and emphasize prevention, detection, and rapid suppression response.

In areas not suitable for fire where fuel loading is high, BLM would use biological, mechanical, or chemical treatments and some prescribed fire to maintain non-hazardous levels of fuels and meet resource objectives.

In areas suitable for fire where fuel loading is high and current conditions constrain fire use, BLM would emphasize prevention and mitigation programs to reduce unwanted fire ignitions and use mechanical, biological, or chemical treatments to mitigate the fuel loadings and meet resource objectives.

In areas suitable for fire where conditions allow, BLM would do the following:

- allow naturally ignited wildland fire,
- use prescribed fire and a combination of biological, mechanical, and chemical treatments to maintain nonhazardous levels of fuels,
- reduce the hazardous effects of unplanned wildland fires, and
- meet resource objectives.

In areas suitable for fire, BLM would monitor existing air quality levels and weather conditions to determine which prescribed fires can be ignited and which, if any, must be delayed to ensure that air quality meets Federal and State standards. If air quality approaches unhealthy levels, BLM would delay igniting prescribed fires.

In addition to both allocations, to reduce human-caused fires, BLM would undertake education, enforcement, and administrative fire prevention mitigation measures. Education measures would include the following:

- provide media information, including a signing program,
- give the public information on the natural role of fire within local ecosystems, and
- participate in fairs, parades, and public contacts.

Enforcement would train employees interested in determining the cause of fires. Administration would include expanded prevention and education programs with cooperator agencies.

For all fire management activities (wildfire suppression; appropriately managed wildfire use; prescribed fire; and mechanical, chemical, and biological vegetation treatments), conservation measures would be implemented as part of the proposed action to provide statewide consistency in reducing the effects of fire management on federally protected (threatened, endangered, proposed, and candidate) species (see Appendix P).

Use suitable tools for reducing hazardous fuels, including prescribed burning, wildland fires, and mechanical methods. Methods can include chainsaws, motorized equipment for crushing brush, tractors and hand piling, thinning and pruning, and treatments that are selected on a site-specific basis and are ecologically suitable and cost effective.

Conservation measures noted as "recommended" are discretionary for implementation but are recommended to help minimize effects to federally protected species. Incorporated here by reference are procedures within the Interagency Standards for Fire and Fire Aviation Operations (Task Group 2004), including future updates, relevant to fire

operations that may affect federally protected species or their habitat.

Firefighter and public safety are the first priority in every fire management activity. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources must be based on the following:

- values to be protected,
- human health and safety, and
- costs of protection (BLM 2001b).

Implementing, to the extent possible, the following conservation measures during fire suppression and during proposed fire management activities, as required, would minimize or eliminate the effects to federally protected species and habitats.

During fire suppression resource advisors may be designated to coordinate concerns on federally protected species and to serve as liaison between the field office manager and the incident commander and the incident management team. Resource advisors will also serve as field contact representatives responsible for coordinating with the USFWS. Resource advisors will have the needed information on federally protected species and habitats in the area and the available conservation measures for the species. They will be briefed on the intended suppression actions for the fire and will provide input on which conservation measures are suitable within the standard constraints of safety and operational procedures. The incident commander has the final decision making authority on implementation of conservation measures during fire suppression.

Conflicts may occur in attempting to implement all conservation measures for every species potentially affected by a particular activity, because of the number of species within the action area for the proposed statewide land use plan amendment (Dynamac Corporation 2004); and the variety of fire suppression and proposed fire management activities.

Implementing these conservation measures would depend on:

- the number of federally protected species and
- their individual life histories or habitat requirements within a particular location that is being affected by either fire suppression or a proposed fire management activity.

Conflicts could particularly arise from timing restrictions on fuel treatment if the ranges of several species with differing restrictions overlap. It could; therefore, be impossible to effectively implement the activity. Resource advisors (in coordination with USFWS), fire management officers, incident commanders, and other resource specialists would need to coordinate to determine which conservation measures would be implemented during a particular activity. If conservation measures for a species cannot be implemented, BLM would be required to initiate Section 7 consultation with USFWS for that activity.

BLM will update local fire management plans to include site-specific actions for managing wildfire and fuels in accordance with the new Federal fire policies, based on guidance provided in the decision records for this statewide land use plan amendment (Dynamac Corporation 2004). These plans will be coordinated with USFWS and the AGFD to address site-specific concerns for federally protected species. These plans will incorporate the conservation measures included in this statewide land use plan amendment for federally protected species occurring within each fire management zone. BLM will consult with USFWS on these project-level plans, as needed.

Categories A, B, C, and D, polygons are referenced in the 1998 Fire Management Plan (FMP). The new FMP planning process will be completed in 2006 and will have fire management units containing polygons based on the following:

- vegetation communities,
- fire regime condition classes, and
- closeness to urban interface areas.

As a fuels management tool, BLM uses prescribed fire and mechanical treatment to maintain semi-desert grasslands in Agua Fria National Monument. BLM has designated 24 burn units, encompassing 50,000 acres, to receive treatment on a 5- to 10-year rotation. Prescribed fire in this area is coordinated closely with similar projects conducted by Prescott and Tonto National Forests to provide an ecosystem-wide effort to maintain the Agua Fria grasslands.

Resource objectives under the current fire management plan include the following:

- reducing woody species,
- increasing ground cover,
- increasing perennial grass cover and production,
- increasing annual grass and forb production, and
- improving pronghorn antelope habitat.

Prescribed fire is used in the Weaver Mountains within the Bradshaw-Harquahala Planning Area. The Weaver Mountain Hazard Fuels Reduction Project was developed to treat hazard fuel accumulations, which are located on 14,000 acres of BLM, State, and private lands in chaparral vegetation 17 miles north of Wickenburg. Project objectives are (1) to reduce the risk of large, catastrophic wildfire and (2) to maximize benefits to wildlife and livestock by reducing dense chaparral cover by 30 percent to 80 percent. During prescribed burning about 1,000 acres of chaparral will be treated annually over the next 5 to 10 years to create mosaic patterns in the mixed age class chaparral community throughout the 14,000 acre project area.

Special Area Designations

Fire management activities in Agua Fria National Monument would ensure that no adverse effects occur to the resources listed in the proclamation (Appendix A) as the reasons for establishing the area.

In wilderness areas, when suppression actions are required, minimum impact suppression tactics (MIST, Interagency Standards for Fire and Fire Aviation Operations [Task Group 2004]) would be applied and coordinated with wilderness area management objectives and guidelines.

Fire management activities along national historic trails would be conducted to ensure that no adverse effects occur to resources listed in the legislation designating the trail.

Fire management efforts along river segments recommended as eligible for designation under the WSR Act would use measures that avoid degrading the outstandingly remarkable values that qualify the rivers for designation.

ACECs and back country byways are established in land use plans. BLM would consider the desired conditions and management prescriptions for these special area designations in implementing fire management activities.

Wildfires resulting from natural fire starts (lightning) from an adjoining ownership may be allowed to cross jurisdictional boundaries if the fire meets predetermined, prescription criteria, and the ownerships have an agreement.

2.7.2 Management Common to Agua Fria National Monument

2.7.2.1 Management Units

The size and complexity of Agua Fria National Monument do not require subdivision into MUs. For this analysis the monument is a MU in and of itself.

2.7.2.2 Special Area Designations

Management Actions

Continue to manage the suitable WSR proposals for non-impairment (Map 2-2).

Remove the designations of Larry Canyon and Perry Mesa ACECs because the monument proclamation (Appendix A) provides for a higher level of protection and management across a more extensive landscape, rendering these designations obsolete.

2.7.2.3 Lands and Realty

In accordance with the FLPMA and the national monument proclamation (Appendix A), no lands within the monument may be disposed of or exchanged. Consider acquiring non-Federal lands within the monument if they become available from a willing seller. Upon acquisition, these lands would automatically become a part of the monument. Consider acquiring adjacent non-Federal lands that would enhance monument values if they become available from a willing seller.

Land Use Allocations

Utility and Transportation Corridors and Communication Sites

Management Actions

New utility corridors, whether interstate, intrastate, or local, would not conform to the national monument's proclamation. Therefore, such corridors within the monument would not be considered.

New transportation corridors, whether interstate, intrastate, or local, would not conform to the proclamation. Therefore, such corridors within the monument would not be considered.

New BLM communication site areas designated in advance of demand would not conform with the proclamation. Therefore, new communication site areas within the monument would not be considered.

Access to existing utilities on existing vehicle routes is considered an administrative use and is allowed. Continued maintenance of authorized facilities is also allowed with suitable mitigation to minimize affects to monument resources. Design maintenance of vehicle routes for access to correct hazardous or unsafe conditions, but keep them to the smallest size and condition necessary to provide access.

2.7.2.4 Soil, Air, and Water Resources

Management Actions

Maintain and protect water quantity and quality, in springs and streams.

Prohibit surface water diversions and groundwater pumping that removes water from the monument or adversely affects the monument's values.

Collaborate with State and local entities to protect surface and subsurface water in the monument.

Administrative Actions

Develop and implement a water quality/quantity monitoring program to establish baseline data needed to quantify the Federal reserved water right for the monument. monitoring may include the following:

- periodic measurements of spring and stream flows,
- periodic measurements of water levels in selected wells, and
- regular sampling and water quality analysis of surface water throughout the monument.

2.7.2.5 Biological Resources

Management Actions

Fuels reduction projects may include provisions for permitting firewood collection on a case-by-case basis.

Written authorization from the monument manager is needed for collecting plant materials for scientific purposes.

Prohibit all other vegetation collection or removal.

2.7.2.6 Cultural Resources

Land Use Allocations

The following sites would be allocated to the category of "conservation for future use":

- Rattlesnake Pueblo and other prehistoric masonry structures in the back country region south of Perry Tank Canyon,
- all rock art sites larger than a single, isolated boulder, and
- the historic stone features at Arizona N:16:70 (MNA).

For more information on this use category and associated actions, see Appendix E.

Allocate to scientific use sites that would allow for study under approved research plans.

The use category of "discharged from management" would be applied in a limited manner, consistent with the protection of monument resources and the cultural landscape of the Perry Mesa National Register District. The allocation of "discharged from management" would be applied mainly to properties that have lost their heritage values through the following:

- damage or destruction by natural processes,
- unauthorized activities, and
- actions conducted before the monument was established (2000).

Selected sites would be allocated to public use for long-term preservation and public visitation. See Appendix E for more information on this use category.

Management Actions

At sites allocated to conservation for future use, scientific studies would be limited to surveys, mapping, and other noninvasive documentation methods. Preserve the integrity of these sites and their settings through use restrictions and protective measures.

Scientific use allocations would allow for the following:

- detailed documentation through such techniques as mapping, photography, photogrammetry, and remote sensing,
- sample collections of artifacts,
- collections of samples for radiocarbon, archaeomagnetic, pollen, and flotation analyses, and
- limited excavations.

Studies may be conducted for the following purposes:

- to obtain critical data relevant to research objectives,
- to assess site protection and stabilization needs, and
- to support interpretive planning for properties also allocated to public use.

Research plans would ensure that most architectural features and cultural deposits remain intact at habitation sites with multiple rooms. Protection would remain a priority for sites that have been allocated to scientific uses.

Assign a high priority for detailed documentation to the following sites:

- Pueblo la Plata, Fort Silver, Baby Canyon Pueblo, and Pueblo Pato.
- Rock art sites on Black Mesa and along Baby Canyon and Perry Tank Canyon on Perry Mesa.
- The remnants of the historic Richinbar Mine water delivery system in the Agua Fria River Canyon.

Allocate specific sites to public use within Special Cultural Resource Management Areas. The degrees of interpretive development within these areas would be consistent with relatively High or Moderate levels of use. Sites would not be allocated to public use within areas set aside for low use. Actions that could be implemented at or near selected sites in each level of use area are described as follows.

Potential Management Actions for Special Cultural Resource Management Areas

High Public Use

- Building visitor facilities, which may include gravel parking areas, restrooms, picnic tables, trash receptacles, and benches.
- Improving routes with signs installed along vehicle routes to direct visitors to interpreted sites and visitor facilities. Routes would not be paved.
- Closing routes within 1/4 to 1/2 mile of sites, with single- and two-track routes converted to non-motorized use to improve visitor flow and site protection.
- Establishing hardened walking trails.
- Installing interpretive signs and visitor register boxes.
- Conducting limited excavations, backfilling pueblo rooms, or stabilizing walls to protect or display portions of sites.
- Establishing interpretive loop trails connecting archaeological sites and natural features. Non-motorized or motorized trail systems could be linked to sites in Tonto National Forest.
- Preparing brochures and other educational materials or programs focused on sites.
- Showing site locations on maps, monument brochures, and BLM's websites.
- Authorizing commercial and other group tours, conducted in accordance with special SRPs.

Moderate Public Use

- Installing interpretive signs and visitor register boxes.
- Establishing non-motorized trails, including hardened walking trails.
- Closing existing trails within 1/4 to 1/2 mile from sites to vehicles and converting to non-motorized use to improve site protection.
- Producing fact sheets or brochures.
- Providing limited publicity and limited access for commercial tours.
- Placing emphasis on conveying an experience of discovery.

Low Public Use

- Allocating no sites to public use for interpretive development.
- Installing no interpretive signs or facilities.
- Building no trails.
- Developing no fact sheets or interpretive media about specific sites.
- Issuing no special recreation permits for commercial tours.
- Publicizing and showing no sites on maps and brochures.
- Allowing hikers and other visitors to experience a sense of discovery by encountering and observing undeveloped sites in pristine settings.

Administrative Actions

Conduct field inventories to identify significant resources in the geographic “data gap” north of Perry Mesa.

Conduct a Class III survey of 500 acres at the north end of Black Mesa to complete a 100 percent level of inventory coverage of the mesa, which north of Sunset Canyon.

Conduct Class III surveys of corridors at least 200-feet wide along 20 miles of Bloody Basin Road, Forest Road 14, and other regularly used routes on Perry Mesa.

Conduct Class III surveys of corridors at least 1/4 mile wide totaling 12 miles along the Agua Fria River, Silver Creek, Sycamore Creek, Indian Creek, and Ash Creek.

Conduct Class III surveys of at least 2,000 acres surrounding Pueblo la Plata, Baby Canyon Pueblo, and Pueblo Pato.

Continue to monitor at least 15 pueblo villages and rock art sites that are at greatest risk from vandalism, with help from partners who may include the Civil Air Patrol and volunteers from the Arizona Site Steward Program. Develop and implement systematic monitoring protocols for selected sites.

Focus monitoring on rock art sites and habitation sites with 20 or more rooms, particularly sites within 1/2 mile of travel routes. This strategy conforms to the results of a vandalism study by BLM and Tonto National Forest (Ahlstrom and others 1992).

Develop and maintain an active program of public education on the nature and values of the monument's cultural resources and the need to preserve them. Assist BLM's National Heritage Education Program and its partner organizations in pursuing and implementing grants to produce educational materials.

Actively pursue partnerships with professional and avocational organizations, academic institutions, tribal governments, and other entities for an orderly process of cultural research, recordation, and education. Coordinate with tribes and Tonto National Forest to prepare an ethno-historical study of the history of Native American uses and heritage values in the Perry Mesa National Register District.

2.7.2.7 Recreation Resources

Recreation within the monument boundaries would focus on activities or experiences that depend on the monument's resources and cannot readily be obtained elsewhere. Recreation uses that do not depend on the lands within the monument would be encouraged to move to other BLM lands. Emphasis would be placed on maintaining ecological resources by monitoring and managing recreation uses.

It is highly desirable that the public understand its role in sustaining the monument's archaeological, historical, and biological resources. Partnerships with adjacent communities would play a vital role in realizing the monument's DFC. Through these partnerships, members of these communities could explore ways to benefit socially and economically from public lands by offering needed services while still protecting monument values.

The emphasis of recreation management on monument lands would be guided under provisions presented for a Special Recreation Management Area containing three Recreation Management Zones (RMZs). The RMZ allocations are as follows: Front Country, Back Country, and Passage.

Land Use Allocation

Front Country Recreation Management Zone

Desired Future Condition

This zone will be the focal point for both motorized and non-motorized visitation, concentrating public access, recreation activities, development along major travel routes, and more intensively visited use areas. The Front Country RMZ will contain more developed opportunities, such as interpretive opportunities at popular sites, and supporting recreation facilities where intensive management is

needed. Management will place an emphasis on maintaining public access to the Front Country RMZ for public use, while maintaining the integrity of monument resources and values. Some areas may be designated as day use to promote visitor safety, and for resource protection.

Desired recreation opportunity experiences, and settings within the Front Country RMZ will range between rural, roaded-natural, and semi-primitive motorized. Both day use and overnight recreation uses will be acceptable unless otherwise specified in the land-use plan allocations. Day-use areas with more intensive use will be evaluated and sited within the Front Country.

Visual Resource Management DFCs related to Recreation can be found in section 2.7.2.8.

Management Actions

Provide interpretive sites, trails, overlooks and other amenities, visitor services where appropriate to protect monument resources, or enhance public use and enjoyment. Selected cultural sites allocated to public-use levels High and Moderate would be interpreted for public visitation/education. Access to improvements may include development of non-motorized trails of dirt, pavement, or other hard surfaces in order to assist visitor travel and minimize disturbance to cultural and natural resources.

Management Actions related to motorized and non-motorized recreation routes are described in the Transportation and Public Access section 2.7.2.10.

Land Use Allocation

Back Country Recreation Management Zone

Desired Future Condition

This zone will provide an undeveloped, primitive, and self-directed visitor experience and landscape setting without provisions for motorized or mechanical access. The management emphasis will be to preserve natural, undeveloped landscapes. Back Country will be managed to maintain a natural landscape character. The Back Country RMZ will provide opportunities for adventure, challenge, solitude, and discovery. Facilities will be minimal: provided only where vital for resource protection or public safety, or for approved administrative purposes. Facilities will generally be limited to trails, signs and other amenities, which are essential to the protection of monument resources. Maintaining the integrity of the monument values and resources is integral to any activity.

The desired recreation settings and associated experiences within this zone are mainly semi-primitive and non-motorized. The Back Country RMZ will offer non-motorized access and recreation opportunities within primitive settings, where self-reliant and properly equipped visitors can experience solitude. Encounters with other users will be lower than in the Front Country RMZ. Recreation experiences will be primitive, with hunting, hiking, backpacking, wildlife observation, cultural study, photography, and camping as the main activities. Trail and cross-country foot or horseback travel may be permitted.

Visual Resource Management DFCs related to Recreation can be found in section 2.7.2.8.

Management Actions

Management Actions related to motorized and non-motorized recreation routes are described in the Transportation and Public Access section 2.7.2.10.

Land Use Allocation

Passage Recreation Management Zone

Desired Future Condition

The Passage RMZ includes secondary travel routes and associated areas where visitor use will not be directed or encouraged but will be accommodated. Rudimentary facilities, such

as the following could be provided or available where needed for resource protection or public safety:

- toilets,
- designated or dispersed primitive campsites,
- scenic turnouts,
- kiosks,
- interpretive sites,
- signs,
- parking and staging areas, and
- trailheads.

This zone will center on the designated motorized travel and transportation network within the Back Country RMZ. The Passage RMZ will be 200 feet-wide, 100 feet on each side of the centerline of designated vehicle routes.

Desired recreation opportunities, experiences, and settings within the Passage RMZ will range from roaded-natural to semi-primitive motorized. Both day use and overnight recreation use will be acceptable, unless otherwise specified in the land use plan allocations. Archaeological sites allocated to Moderate public use could be interpreted within this zone.

Visual Resource Management DFCs related to Recreation can be found in section 2.7.2.8.

Management Actions

Management Actions related to motorized and non-motorized recreation routes are described in the Transportation and Public Access section 2.7.2.10.

General Recreation Management

Management Actions

Paintball activities would be prohibited within the monument.

Geocaching would be prohibited in areas managed for primitive or semi-primitive non-motorized settings. Caches would not be allowed within archaeological sites.

Equestrian use would be monitored and managed to meet Arizona Land Health Standards (Land Health Standards).

Horses or other stock animals would be prohibited at signed archaeological sites.

The use of weed-free feed would be encouraged to prevent introducing noxious, invasive weeds.

Camping

Camping would be limited to 14 days within the monument unless authorized by the monument's manager.

Collection of Natural Resources

Collecting all natural organic and natural inorganic materials (except for trash and litter) within the monument would be prohibited except for scientific, research and other pre-approved purposes by obtaining written approval from the field office's manager or the monument's manager. (See the Biological Resources discussion in the Management Common to Agua Fria National Monument section of this chapter.)

Adaptive Management

Adopt limits of acceptable change indicators and standards.

New forms of recreation opportunities and technological advances affecting the monument's values would be managed to protect the monument's resources. If use is perceived as inconsistent with or deleterious to the monument, this activity would be suspended until data is collected and analyzed and the monument's manager makes a final recommendation based on research findings.

Establish criteria through external collaboration to determine when monument's values are at risk

and to adjust on-the-ground management strategies and actions.

The current authority for collection of recreation user fees would not allow for collection of such fees on the Agua Fria National Monument. Under the Federal Lands Recreation Enhancement Act of 2004, P.L.108-447, fees may be charged at a site that has:

- clearly defined access points and area boundaries,
- substantial expenditure in operations and maintenance costs,
- significant investment in facilities (including roads and trails), and
- contains all of the following amenities:
    - a designated and developed parking area,
    - permanent toilet,
    - permanent trash receptacle,
    - kiosks,
    - picnic tables, and
    - security services commensurate with use levels.

Should the above criteria be met in the future, a study would be initiated to determine the need and feasibility of charging a recreation use fee.

Special Recreation Permits

Issuing of SRPs is at the discretion of BLM. BLM's evaluation of permit applications would be based on applicable laws and regulations and would conform to the monument proclamation (Appendix A). The decision to authorize a proposed use would depend on the following:

- potential resource impacts,
- conflicts with other users,
- health and safety concerns,
- past or present performance with BLM or other agencies,
- BLM's ability to timely process the application and effectively administer the permit, and
- the number of permits issued during the 365 days (one year) prior to permit application.

Leases and Land Use Permits

Recreation concession leases, long-term authorizations for the use of public lands, are authorized under 43 CFR 2920. BLM would evaluate concession leases on a case-by-case basis to determine whether they conform to the monument values. The proposed concession would need to conform to the managerial and social settings as described in the document such as recreation settings, VRM, and other special use area prescriptions.

Apiary permits would be prohibited within 1/4 mile of identified high-use areas, such as facilities, trailheads, and areas subject to SRP events, or at active scientific and research areas.

Commercial filming or still photography requiring a permit in accordance with Public Law 106-206 would be issued under the SRP guidelines when associated with permitted recreation activities. BLM would evaluate applications on a case-by-case basis to determine whether they are consistent with monument values. The fee schedule would be used as outlined in 43 CFR 2920 commercial filming regulations. Non-recreation related commercial filming will be managed by the appropriate 2920 guidelines.

Administrative Actions

Develop partnerships and identify sustaining recreation and tourism-based economic opportunities with communities.

Support collaborative efforts with the public on monument issues and efforts.

Post a toll-free phone number for the BLM's dispatch office on kiosks, maps, brochures, permits, and other public outreach conveyances to keep the public involved in reporting emergencies and criminal activities, including damage to the monument's resources.

SRP applicants would be strongly encouraged to have a working knowledge of Leave No Trace or Tread Lightly principles. Additionally,

applicants would be asked to incorporate Leave No Trace and Tread Lightly principles into their tour, program, or event activities.

To the greatest extent possible, all new construction and modifications for recreation facilities, outdoor developed areas, and any related programs and activities will be accessible to people with disabilities in accordance with the Architectural Barriers Act of 1968 and Section 504 of the Rehabilitation Act of 1973, with later amendments. Guidance, requirements, and standards applicable to conform with the above legislation may be found in the following:

- Uniform Federal Accessibility Standards.
- Americans with Disabilities Act Accessibility Guidelines.
- ADA-ABA Accessibility Guidelines (use whichever guidance is most stringent).
- Proposed Outdoor Developed Areas Guidelines (U.S. Access Board found at www.access-board.gov and 43 CFR Part 17, Subpart E found at http://www.gpoacess.gov/cfr/index.htm)

Interpretation and Environmental Education

Pursue interpretation and environmental educational opportunities, outreach development, and implementation of on-site and off-site programs for adults and children.

Establish repository of photographs and images that will illustrate BLM's mission, including digital photographs and slides for program design.

Apply learning modalities and incorporate various learning styles in program design and delivery.

Encourage the use of multiple intelligence or other theories for program presentations.

Develop school curricula focusing on the BLM's mission with willing staff from schools, school districts, and other learning institutions.

Support existing educational and interpretive programs and initiatives such as Project Archaeology; Leave No Trace; Tread Lightly; Project Learning Tree; and other proven national, State, regional, and local programs.

Develop websites, brochures, maps, access guides, and information sheets to publicize OHV rules and regulations, with an emphasis on Leave No Trace and Tread Lightly practices.

2.7.2.8 Visual Resources

Desired Future Conditions related to achieving Recreation related DFCs by Recreation Management Zone

Front Country

Visual resource objectives would emphasize retaining the current natural vistas while allowing visually sensitive visitor-related development.

Back Country

Visual resource objectives in this zone will emphasize retaining the current visual landscapes and vistas.

Passage

VRM objectives would emphasize retaining the current natural vistas while allowing visually sensitive visitor-related development.

Management Actions

Manage the visual landscape to minimize visual impacts of authorized activities. As much as possible, maintain night skies free of light pollution. Work with surrounding communities and other agencies to minimize the impact of lighting.

2.7.2.9 Mineral Resource Management

Management Actions

All Federal minerals in Agua Fria National Monument would remain withdrawn or closed from all forms of location, sale, or leasing, including withdrawn from location, entry, and patent under the mining laws. Federal minerals are also withdrawn from disposition under all laws relating to mineral and geothermal leasing and from disposal under the Mineral Materials Act. Mineral interests may be exchanged if such exchange furthers the protective purposes of the monument. Any mineral interests acquired by the United States within the monument are reserved as part of the monument and are subject to the aforementioned withdrawals.

For lands encumbered by mining claims, no activity beyond casual use, as defined in the 43 CFR 3809 regulations, is allowed without determination of valid existing rights. A mining plan of operations is required for any activities beyond casual use.

2.7.2.10 Transportation and Public Access

Land Use Allocations

Motorized and mechanized uses on all monument lands will be Limited to Designated Routes only.

Limited to Designated Routes = 70,900 acres

Desired Future Conditions

Define, designate, implement, and monitor a comprehensive travel management network affording a range of high-quality and diverse motorized and non-motorized recreation opportunities. The network would consist of a system of areas, roads, routes and/or trails. The designated travel management network and associated recreation opportunities would be consistent with all monument resource management objectives, recreation settings, and preservation of monument objects.

Management Actions

All motorized vehicles and mechanized equipment would be limited to designated routes, except in emergency situations. Motorized use shall keep within the designated route with reasonable use of the shoulder and immediate roadside, allowing for vehicle passage, emergency stopping, or parking unless otherwise posted.

Vehicle access on designated routes may be temporarily closed when weather creates muddy conditions. When conditions are such that travel by vehicle cannot be accomplished without damaging the existing roadway, departing the roadway and traveling across country, the route is closed until the roadway can once again support a vehicle without damage.

Cross-country motorized vehicle or mechanized equipment travel would be prohibited except in response to emergencies, or for BLM- or interagency-authorized tasks.

Mechanized or motorized vehicles would not be used off designated routes to retrieve game. Non-motorized wheeled game-carriers would be permitted to travel cross-country.

OHV use would be mitigated where it is determined to be inconsistent with established monument management objectives or such use is harming monument resources. Possible mitigation measures may include the following:

- closing routes,
- limiting seasonal use,
- limiting vehicle types, speeds, and noise,
- rerouting offending route segments, and
- modifying routes to reduce or eliminate conflicts.

Vehicle routes would receive the least amount of maintenance needed to provide desired access.

Many routes would be retained in a primitive condition to discourage excessive speeds so as to protect monument values and promote public safety.

Interconnecting routes could be developed where feasible and consistent with resource management goals and monument values. Vehicle routes may be developed if needed for protection of monument resources, visitor education and appreciation, and visitor safety.

All vehicle route construction must be consistent with other resource objectives, desired social and managerial settings, and VRM objectives.

Management Actions Specific to Recreation Management Zones

Front Country

Maintaining, enhancing or developing routes or trails for non-motorized and motorized visitor travel may be done within the Front Country RMZ if such actions further protect monument resources, ensure public safety, or to achieve land-use plan objectives. All closed vehicle routes may be considered for hiking, equestrian and/or mechanized trail development under the above guidelines.

Back Country

Non-motorized access may include development of some trails, or simply marking foot routes with fiberglass posts with minimal ground disturbance. Installation of trails may be considered where needed to protect monument resources, ensure public safety, or to further public education and interpretation objectives. Non-motorized trails may be evaluated for their potential to link areas of interest and provide a network of connecting trails. Such areas may include the following:

- Bull Tank and Baby Canyon,
- Badger Springs/Agua Fria Confluence and Pueblo Pato, and
- the Black Canyon City area into the southern part of Black Mesa.

Motor vehicle travel routes entering or traversing the Back County RMZ will be managed under the Passage RMZ provisions.

Passage

Designated secondary and tertiary roads or single-track motorized vehicle routes would be maintained at their current condition except where resource degradation or user conflicts occur. No routes will be upgraded, but routes would be minimally maintained to current standards. Routes would be maintained for the following reasons:

- to ensure access by authorized users such as BLM's permittees and lessees,
- to allow access for wildlife enhancement and maintenance projects,
- to ensure public safety by correcting hazardous conditions,
- to protect monument values, and
- to mitigate resource damage.

No new motorized routes would be built except for the following reasons:

- to protect monument values,
- to mitigate resource conflicts or damage,
- to correct hazardous travel conditions, and
- to meet other resource management objectives.

Any rerouting or building of vehicle routes must be consistent with protecting the monument resources and must meet management objectives.

2.7.3 Management Common to the Bradshaw-Harquahala Planning Area

2.7.3.1 Management Units

GENERAL MANAGEMENT OF MUs

The Alternatives explore different combinations of Management Units (MUs). The following Desired Future Conditions for the MUs apply to any Alternative where that MU is proposed.

Management Unit

Black Canyon

Desired Future Condition

A diverse group of interested citizens engaged in a collective effort to conserve the ecological, cultural, open space, and recreation values of the Black Canyon MU, so that it remains a well-managed, publicly owned urban interface area where people want to live and recreate. The MU's natural character is maintained while continuing to provide an array of public opportunities in the future for visual resources, environmental education, recreation, and exploration within the framework of a healthy, properly functioning landscape. This view includes multiple uses that are consistent with and support the overall community vision. The scenic views and recreation opportunities are maintained while protecting the watershed functions. The area offers properly managed and marketed quality recreation and tourism.

The scenic corridor along Interstate 17 between Yavapai and Maricopa Counties is preserved to promote tourism and welcome visitors to the area.

A comprehensive strategy and trails plan is completed to select and develop new single-use and multi-use trails, hiking, equestrian use, and vehicle routes for all lands within the MU. The strategy represents a collaborative effort with the AGFD, Prescott and Tonto National Forests, Maricopa and Yavapai Counties, and land managers of other trails to link to trails on BLM's lands. The strategy includes a coordinated trail linkage between the Black Canyon City and Wickenburg areas.

A joint-citizen, agency, and Government workgroup is engaged to identify nonpublic (private and State) lands within the Black Canyon MU with high-value biological, cultural, scenic, open space, access, or recreation resources. Recommendations and objectives on land access and open space conservation are delivered to BLM and other responsible agencies.

An environmental education program exists to instill a land use ethic and educate school youth and adult users about the MU. Recreation opportunities are expanded in the MU for new and non-traditional users.

Management Unit

Castle Hot Springs

Desired Future Condition

The values of open space and scenic and visual quality are emphasized. Recreational, cultural, and biological assets are maintained.

The MU's scenic and natural landscape settings are maintained while offering visitors a diverse array of recreation opportunities, including both human-powered and motorized-based activities. The following principles are emphasized:

- maintaining the rural and natural setting,
- protecting visual resources,
- allowing increased recreation use in suitable areas,
- protecting natural and cultural resources, and
- recognizing and protecting private property rights.

A healthy, properly functioning, and natural-appearing landscape is preserved. Multiple uses

that conform to and support the overall community vision continue.

A system of high-quality OHV and hiking trails exist that afford a multitude of opportunities for mountain bike, four-wheel drive, ATV, and motorcycle enthusiasts.

A diverse group of interested citizens are engaged in a collective effort to conserve the ecological, cultural, open space, and recreation values of the MU, so that it remains a place where people want to live, work, and recreate.

A citizen, community, and Government working group exists to identify management options for land acquisition or alternative protection for State and private lands within the Castle Hot Springs MU. State and private lands with high-value biological, cultural, scenic, open space, access, or recreation resources have been identified and prioritized. This group would deliver to BLM and other responsible agencies all recommendations and management objectives on proposed acquisition, easements, access, and open-space conservation actions.

When BLM is the suitable entity, acquire lands, easements, development rights, or conservation agreements through the following:

- exchange of private lands;
- conservation agreements for high-value cultural, open space, biological, or recreation lands; and
- purchase of access agreements or rights-of-way.

Study and, if feasible and consistent with law, establish parts of the MU as a fee-for-use area. Apply fees for the following purposes:

- to fund and maintain motorized routes and non-motorized trails and facilities;
- to improve law enforcement, and
- to enhance user and community education, stewardship, and volunteer programs.

Management Unit

Wickenburg

Desired Future Condition

A system of high-quality equestrian trails surround Wickenburg to buffer the area from urban sprawl and preserve the open-space value of the local landscape. This trail system affords many opportunities for all recreation enthusiasts and serve to enhance the lifestyle, culture, and cultural history of community residents.

A diverse group of Wickenburg residents is engaged in a collective effort to conserve the ecological, cultural, open space, and recreation values of the Wickenburg area, so that Wickenburg remains a place where people want to live, work, and recreate.

Properly managed and marketed quality recreation and tourism activities are offered throughout the MU which promote conservation and a strong land ethic, while protecting the natural resources and cultural heritage of the MU.

The MU is managed with an emphasis on the values of open space, scenic and visual quality, and cultural and biological assets. The lands within the MU are managed for multiple uses, including livestock grazing and OHV use.

A joint citizen, community, and Government working group exists to determine management options for land acquisition or alternative protection for State and private lands within the Wickenburg MU. State and private lands with high-value biological, cultural, scenic, open space, access, or recreation resources are identified and prioritized. This group delivers to BLM and other responsible agencies, all recommendations, management objectives, proposed acquisition, easements, access, and open-space conservation actions.

When BLM is the suitable entity, acquire lands, easements, development rights, or conservation agreements through the following means:

- exchange of private lands;

- conservation agreements for high-value cultural, open space, biological, or recreation lands; and
- purchase of access agreements or rights-of-way.

Management Unit

Harquahala

Desired Future Condition

The Harquahala Mountains are renowned for their cultural history, the quality and uniqueness of their biotic communities, and the diversity of their recreation opportunities. The mountain ranges in this MU (Harquahala, Big Horn, and Belmont Mountains) and the areas between them create a complex of wildlife habitats and wildlife movement corridors that the AGFD recognizes as priority management areas. The abundant recreation opportunities include the following:

- primitive experiences,
- designated hiking trails,
- a back country byway,
- backpacking,
- wildlife viewing,
- hunting,
- rock hounding,
- equestrian uses,
- cultural sightseeing, and
- OHV-driving opportunities.

The MU's scenic and natural landscape are maintained while offering visitors a diverse array of recreation opportunities. Such opportunities within the MU include both motorized and non-motorized activities. At the same time, a priority is placed on maintaining, enhancing, and restoring natural, biological, and cultural resources.

Management Unit

Harcuvar

Desired Future Condition

The MU's natural landscape and open space values are maintained. Recreation opportunities, scenic backdrops, and access to recreation features beyond the planning area boundary in adjoining areas are available to users.

Semi-primitive motorized settings with roaded-natural settings along primary routes are maintained. The Harcuvar MU is mainly an extension of the Harcuvar Mountains, which are managed by BLM's Lake Havasu Field Office. Management actions are closely coordinated with that field office.

Management Unit

Peeples Valley

Desired Future Condition

BLM's lands in the Peeples Valley MU are generally in relatively small, highly irregular pieces surrounded by State and private land. The resources on these lands are used by both local residents and recreation visitors and are considered important by those users. Further, regional features (mountain ranges, riparian areas) contain valuable wildlife habitat, especially for desert tortoise and bighorn sheep. The area also has a long mining and ranching history that has contributed to local settlement patterns and culture. For these reasons, Peeples Valley MU was created to explore long-term, coordinated management of the region's valuable recreation, wildlife, minerals, and other resources.

A regional approach to development and land management that preserves the quality and quantity of valuable recreation, wildlife, and other resources, while maintaining the stability of local economies and cultures is emphasized.

A citizen, agency, and Government working group exists to explore a regional approach to planning and managing lands that emphasizes sustainability of both natural resources and local communities. In conjunction with State, county, and local governments with planning and management jurisdiction within the MU, a

coordinated approach to achieving commonly established goals and objectives is used.

Management Unit

Upper Agua Fria River Basin

Desired Future Condition

The MU's natural landscape and open space is maintained. Visitors to public lands can find recreation opportunities, scenic community backdrops, and access to the Black Canyon Trail.

A citizen, agency, and Government working exists group to determine which nonpublic (private and State) lands within the MU have high-value biological, cultural, and scenic resources; open space; and access or recreation resources.

Acquire lands and easements, or establish conservation agreements through the following:

- exchange of private lands,
- conservation agreements for high-value cultural, biological, and recreation lands, and
- purchase of access agreements or rights-of-way.

Communication facilities are collocated on existing powerlines or communication towers whenever possible to minimize obstructions to the viewshed. “Stealth” construction techniques are used, such as color and design, to blend in with the natural surroundings as much as possible.

New utility rights-of-way, when needed, are constructed near roads and highways, or in less sensitive areas.

2.7.3.2 Special Area Designations

Designated Wilderness Areas

Management Actions

Within wilderness areas and in the absence of group size limitations in existing wilderness or activity plans, group size for casual use activities will be limited to 25 people. BLM would evaluate requests for groups of more than 25 people on a case-by-case basis to ensure that resources are protected. Groups exceeding 25 people would require prior written authorization from the authorized officer. A SRP would be required for groups over 50 people.

Repetitive or ongoing commercial recreation and vending operations would not be allowed in the Harquahala Mountains, Hummingbird Springs, and Big Horn Mountains Wilderness Areas, (including, but not limited to, such activities as guided horse rides or guided hikes that occur on a regular and repeated schedule) except for guided hunt and outfitter services. Organized groups conducting a one-time fund raising event would be allowed on a case-by-case basis when consistent with wilderness management objectives. Commercial recreation and vending operations will be allowed in the Hassayampa River Canyon and Hells Canyon Wilderness Areas when such activities conform to wilderness management plans, resource protection, and wilderness management objectives.

Wilderness areas are allocated as closed to motorized vehicles. Exceptions to this closure could be allowed for such wildlife management activities when approved by the BLM's manager, including, but not limited to the following:

- water supplementation,
- collar retrieval,
- capture and release of wildlife, and
- maintaining, repairing, rebuilding, or building wildlife waters, when such motorized and mechanized equipment is determined to be the minimum tool needed to do the job.

These types of activities will be evaluated on a case-by-case basis as the need arises in the Big Horn Mountains, Hummingbird Springs, and Harquahala Mountains Wilderness Areas. Existing wilderness management plans will guide wildlife management within Hells Canyon and Hassayampa River Canyon Wilderness Areas.

Develop and adopt measurement standards for limits of acceptable change for trail conditions, visitor-to-visitor encounters, vegetation changes, Arizona Land Health Standards (Land Health Standards), and approved motorized/mechanized activities. Exceeding the limits of acceptable change could result in implementing actions such as the following:

- developing and distributing Leave-No-Trace or other educational information,
- initiating a permit system,
- closing damaged areas or trails to camping to allow natural restoration,
- realigning trails,
- reclaiming damaged areas,
- installing alternative access points,
- monitoring or removing non-native or invasive plants or animals, and
- mitigating the evidence (sights and sounds) of any authorized mechanized/mechanical uses.

Harquahala Mountain Summit Back Country Byway

Management Actions

Maintain the Harquahala Mountain Summit Back Country Byway and facilities to current standards and conditions. Management is currently conducted under an activity plan and portions of that plan not superseded by this Resource Management Plan will continue as valid guidance for management of the Back Country Byway.

2.7.3.3 Lands and Realty

Land Tenure Decisions

Management Actions

Lands are to be considered for potential acquisition under all Alternatives. Some of the criteria for selecting such lands (willing seller) are specific to each Alternative's resource program objectives. Other criteria are identified under the Lands and Realty discussion of the Management Common to Both Planning Areas section of this chapter. No land disposal management prescriptions are common to all Action Alternatives.

BLM would initiate a withdrawal, which would close to mineral location, mineral leasing, and mineral sales and prohibit all land use authorizations on 20 acres of public land in Lot 21, eastern half of the southwest quarter of Section 6, Township 8N, Range 5W, for the BLM-Wickenburg fire station.

Land Use allocation

Utility and Transportation Corridors

Management Actions

The existing corridors contain many major transportation facilities and are major multiple-use corridors. They also house utilities at or above the threshold levels cited in the Lands and Realty discussion under Management Common to Both Planning Areas section of this chapter. Certain State routes, U.S. routes, or interstate highways would be designated as transportation corridors rather than multiple-purpose corridors. This designation would result because no current or projected demand exists for other utilities that would meet the threshold levels within these corridors.

All major utilities would be routed through designated corridors.

Land Use Allocation

Communication Sites

Management Actions

In accordance with the Telecommunications Act of 1996, BLM planning for communication infrastructure must help facilitate the implementing of wireless telephone systems by making Federal lands and facilities available for communication sites.

BLM will retain the designated White Tank Mountains, Lone Mountain, Burnt Mountain, Harquahala Mountain, Valencia, and Black Canyon City communication sites.

Other Land Use Authorizations

Land Use Permits for non-recreation related commercial filming will be authorized in conformance with 43 CFR 2920 guidelines.

Administrative Actions

BLM would, as appropriate, coordinate communication-related planning efforts with the FCC.

2.7.3.4 Soil, Air, and Water Resources

Administrative Actions

Initiate steps with the Arizona Department of Environmental Quality (ADEQ) and Maricopa County Environmental Services Department to install and operate air pollution monitors near Lake Pleasant, or an alternate location that is experiencing high emission rates of particulate matter (PM_{10}).

Maintain and enhance stream flows in special management areas.

2.7.3.5 Biological Resources

Management Actions

Limit firewood collection to campfire use only.

Allow collection of dead, down, and detached material for campfire firewood.

Include in fuel reduction projects provisions for permitting firewood collection on a case-by-case basis.

Limit collecting of cacti skeletons, ironwood, and mesquite for personal use to 100 pounds per person per year.

Prohibit collecting cacti skeletons, ironwood, mesquite, and any other plant or plant product for commercial purposes.

Allow collecting of plant materials for scientific purposes with prior authorization.

Prohibit removal of all other vegetation material not specifically authorized by permit.

Coordinate vegetation salvage with the State of Arizona, and to the extent practicable, open it to the public.

2.7.3.6 Cultural Resources

Focus proactive (Section 110) inventories on areas defined as Special Cultural Resource Management Areas. Complete at least 200 acres of proactive survey, distributed among one or more of these areas during each fiscal year. (See Appendix F for a description of these areas.)

Retain in public ownership BLM lands within Special Cultural Resource Management Areas. Conduct Class III surveys on 10 percent of zones above 3,500 feet in elevation, which are the target areas for prescribed burns and other fuel treatment projects. Focus surveys on areas that are most likely to contain flammable historic structures, as identified by documentary research, to develop measures to protect these sites during fuel treatment projects.

Continue to monitor at least 25 sites, which are at greatest risk from vandalism or disturbance,

with help from such partners as Arizona Site Steward Program Volunteers.

Allocate properties from the following classes of prehistoric sites to scientific use:

- pueblos and other residential sites,
- hilltop "forts" and masonry structures,
- pit house villages,
- rock art localities,
- caves and rock shelters,
- agricultural features,
- wells and water control features; and
- roasting pits,
- trails and camps,
- resource processing sites,
- rock features and alignments,
- intaglios ("ground figures"),
- lithic quarries,
- grinding implement production sites ,
- artifact scatters that can yield important information and meet the Arizona State Museum definition of a "site" as opposed to an isolated occurrence.

Allocate properties from the following classes of historic sites to scientific use:

- mines, mills, and associated features,
- settlements and camps,
- rock walls and features,
- ranches, homesteads, and associated features ,
- livestock driveways, roads, and trails,
- other public works,
- facilities used in commerce,
- sites of military activities ,
- agricultural features,
- wells and water control features, and
- artifact scatters that can yield important information and meet the Arizona State Museum (ASM) definition of a “site” as opposed to an isolated occurrence.

Allocations and Management Actions: Special Cultural Resource Management Areas

Eight areas are regarded as Special Cultural Resource Management Areas, common to all plan Alternatives. These areas contain significant resources that, in many cases, are at risk of damage (Appendix F). Management actions within priority areas will be incorporated into annual work planning for the PFO's Cultural Heritage Program. As described below, selected sites are allocated to the categories of conservation for future use, scientific use, and public use. For further information on these use categories and associated actions, refer to Appendix E.

Black Mesa/Bumble Bee

Protection of significant prehistoric and historic archaeological sites, which are allocated to conservation and scientific uses. Ongoing scientific studies of occupation and use during multiple time periods, particularly the highly significant period from A.D. 900-1250, before the Perry Mesa Tradition in nearby Agua Fria National Monument.

Prepare and submit the required documentation to nominate a "Black Mesa Rim" archaeological district to the National Register of Historic Places.

Conduct cultural resource inventories (surveys) to obtain critical information needed to identify significant sites, allocate these sites to use categories, and integrate survey results into protective strategies and research designs.

Identify survey areas in reference to geographic gaps in previous coverage and the likelihood of finding significant sites at risk, including sites next to travel routes.

Continue to patrol at least three major sites with the help of volunteer site stewards.

Allocate the Running Deer site (NA 5856) and Archaic site AZ N:16:224 (ASM) to scientific use for study by qualified researchers.

Install protective signs at the Running Deer site and associated sites.

Install fences or barriers to exclude livestock from the Running Deer site.

Close transportation routes that lead directly to significant sites.

Galena Gulch

Conduct cultural resource inventories (surveys) to obtain critical information needed to identify significant sites, allocate them to use categories, and integrate survey results into protective strategies and research designs. Identify survey areas in reference to geographic gaps in previous coverage and the likelihood of finding significant sites at risk, including sites next to travel routes.

Patrol at least three major sites with the help of volunteer site stewards.

Allocate the historic McCabe Cemetery to "conservation for future use" to ensure long-term preservation.

Allocate the Humboldt Ruin (NA 4637) to scientific use.

Install signs and other suitable protection measures at the Humboldt Ruin and selected sites.

Maintain the barbed wire fence and erosion control features at the McCabe Cemetery.

Black Canyon Corridor

Conduct cultural resource inventories (surveys) to obtain critical information needed to identify significant sites, allocate them to use categories, and integrate survey results into protective strategies and research designs. Identify survey areas in reference to geographic gaps in previous coverage and the likelihood of finding significant sites at risk, including sites next to travel routes.

Continue to patrol at least five major sites with the help of volunteer site stewards.

Complete site documentation projects at the DeNoyelles site (AZ N:12:60 (ASM)) and Spring Pueblo prehistoric habitation sites that have been damaged by vandalism. Use the information to assess and implement measures to reduce further architectural deterioration.

Allocate the Euler Site, the Spanish Hill Fort, the DeNoyelles site, and Spring Pueblo to scientific use for study by qualified researchers.

Maintain or install signs at AZ N:12:60 (ASM), Spring Pueblo, Spanish Hill Fort, and other sites.

Close transportation routes that lead directly to significant sites.

Preserve the remaining historical signs and features of the historic Black Canyon Livestock Driveway and allocate them to public use to interpret the stock driveway's history.

Allocate to public use selected sites that are accessible from the Black Canyon Hiking and Equestrian Trail. Local site types suitable for public use include hilltop structures, rock art, historic mining camps and ranching facilities, and historic trails. This allocation will be applied to selected sites that

- have aboveground features amenable to interpretive development,
- can be stabilized to withstand public visitation, and
- would be of interest as exhibits-in-place.

Associated actions may include interpretive signs, trails, brochures,
and authorizing commercial tours.

Lake Pleasant/Agua Fria

Conduct cultural resource inventories (surveys) to obtain critical information needed to identify significant sites, allocate them to use categories, and integrate survey results into protective strategies and research designs. Identify survey areas in reference to geographic gaps in previous coverage and the likelihood of finding significant sites at risk, including sites next to travel routes.

Acquire the portions of the historic Gillette site that are outside federally administered lands.

Continue to patrol at least six major sites with the help of volunteer site stewards.

Complete site documentation projects with scientific use allocations at the Agua Fria Fort, Fort Tule, and AZ T:4:1 (PC), a hilltop site near Lake Pleasant. *Alternatives B, C*, and *E* allocate these sites to public use for long-term preservation and interpretation.

Maintain protective fences at Gillette, and sites associated with the Agua Fria Fort.

Maintain or install protective signs on at least five sites.

Coordinate with the Bureau of Reclamation (BOR) and Lake Pleasant Regional Park staff in resource protection and public education. Cooperate in nominating the historic Humbug hydraulic mining complex to the National Register of Historic Places. Under all Alternatives except *Alternative D* allocate the Humbug site to public use for long-term preservation and interpretation.

Wickenburg/Vulture

Conduct cultural resource inventories (surveys) to obtain critical information needed to identify significant sites, allocate them to use categories, and integrate survey results into protective strategies and research designs. Identify survey areas in reference to geographic gaps in previous coverage and the likelihood of finding significant sites at risk, including sites next to travel routes.

Patrol at least three major sites with the help of volunteer site stewards.

Allocate the Vulture City Cemetery and historic engineering features along Constellation Road to "conservation for future use" to ensure long-term preservation. Ensure that road maintenance activities are implemented, to the extent possible, to preserve and stabilize the historic structural features of Constellation Road.

Allocate the unique San Domingo Mill site to scientific use, and complete a detailed documentation of the site.

Maintain the protective fence around the Vulture City Cemetery.

Under all Alternatives except *Alternative D*, allocate the Vulture City Cemetery, Constellation Road, and Monte Cristo Mine to public use for tours, interpretive development, or both.

Weaver/Octave

Continue to patrol at least two major sites with the help of volunteer site stewards.

Allocate the historic Weaver Cemetery to "conservation for future use."

Maintain the fence installed around the Weaver Cemetery.

Assess the condition of the rock cabin and other historic structures at Weaver and the feasibility of stabilization and allocation to public use.

Allocate historic mining sites and settlements to scientific use.

Under *Alternatives B* and *E*, allocate the historic Weaver Cemetery to public use. Install one or more interpretive signs outside the fence.

Harcuvar Mountains

Conduct cultural resource inventories (surveys) to obtain critical information needed to identify significant sites, allocate them to use categories, and integrate survey results into protective strategies and research designs. Identify survey areas in reference to geographic gaps in previous coverage and the likelihood of finding significant sites at risk, including sites next to travel routes.

Allocate pictograph sites (i.e. painted rock art) to "conservation for future use" for long-term preservation.

Patrol at least one site with the help of volunteer site stewards.

Coordinate with the Lake Havasu Field Office in developing strategies to manage cultural resources in the Harcuvar Mountains.

Harquahala Mountains

Acquire parcels with significant sites around Eagle Eye Peak, which is south of Aguila.

Conduct cultural resource inventories (surveys) to obtain critical information needed to identify significant sites, allocate them to use categories, and integrate survey results into protective strategies and research designs. Identify survey areas in reference to geographic gaps in previous coverage and the likelihood of finding significant sites at risk, including sites next to travel routes.

Continue to patrol at least two major sites with the help of volunteer site stewards. Add sites in selected canyons to the monitoring program.

Allocate the Harquahala Peak Smithsonian Observatory to "conservation for future use" and public use. Continue to maintain the condition of the building to ensure its long-term integrity. Continue to maintain the associated interpretive signs and visitor facilities. Allocate the historic Harquahala Peak Pack Trail to public use.

Allocate sites associated with the observatory and prehistoric sites in selected canyons to scientific use. Complete recording and documentation of site concentrations in selected canyons and near springs.

2.7.3.7 Recreation Resources

The DFC and management actions that follow will apply to all public lands, including those within MUs in the Bradshaw-Harquahala Planning Area, unless superseded by management actions for SRMAs, RMZs, or other land use allocations. Where management actions in SRMAs, RMZs, or other land use allocations are silent on the subjects listed below, the actions listed below will apply.

Land Use Allocation

The designated Wilderness areas will all be allocated as Special Recreation Management Areas. Wilderness Areas included in this planning area are:

- Harquahala Mountains Wilderness,
- Hummingbird Springs Wilderness,
- Big Horn Mountains Wilderness,
- Hassayampa River Wilderness, and
- Hells Canyon Wilderness.

Desired Future Conditions

Wilderness areas will be managed for primitive settings to preserve their outstanding opportunities for solitude, primitive and unconfined recreation, and naturalness.

Land Use Allocation

Extensive Recreation Management Areas

Management Actions

General Recreation

All recreation actions such as facilities, projects, programs, amenities, and trails, as described in the sections below, would conform to land use plans, activity plans, and resource management objectives. The proposed actions need to conform to the managerial and social settings described in the document, such as recreation settings, VRM, SRMA, RMZ, lands allocated to maintain or enhance wilderness characteristics, and other management prescriptions.

Camping

Dispersed camping would be permitted on all planning area lands unless otherwise specifically designated as closed or restricted for resource protection or public safety purposes.

The current 14-day length of stay camping limit would continue to be policy for all public lands in the planning area, unless otherwise specifically designated or modified by management actions in this plan. The 14-day limit may be reached by continuously occupying one site or by occupying more than one site within a 25-mile radius within a 90-day period. Following the 14-day period, the party may not relocate to a campsite within a distance of 25 miles that was previously occupied, nor may they return to any sites previously occupied. After 14 days, the party may also choose to move to a designated camping area or move off public land. Extensions beyond the 14-day length of stay may be permitted on a case-by-case basis where needed for resource protection and land use management provisions.

Designated camping locations and camping length of stay limits (long- and short-term) would be developed as needed for the following purposes:

- protecting resources,
- ensuring visitor safety,
- resolving social conflicts,
- improving recreation experiences, and
- increasing recreation opportunities.

All campsite construction or designation would be compatible with social and managerial recreation settings and VRM objectives. Communities, user groups, or agency staff can bring camping site proposals forward for management attention.

Self-contained or vehicle-based camping would be permitted within 100 feet of the centerline of designated routes.

Campsites would be designated and developed at mining sites and prospecting areas when needed for resource protection due to trail proliferation, loss of soil and vegetation cover, public health and safety concerns, or user conflicts.

Any trailhead or staging area could be closed to overnight camping upon written authorization of the authorized officer.

It is unlawful for a person to camp within 1/4 mile of a natural water hole containing water or man-made watering facility containing water in such a place that wildlife or domestic stock will be denied access to the only reasonably available water (Arizona Revised Statute 17-308, Unlawful Camping).

Group Use (Non-commercial)

Existing vehicle parking and camping sites must be large enough to accommodate the group size without increasing the footprint of the disturbance area. Large group activities and events with 75 or more people would require a special recreation permit unless otherwise specified in special management areas, designated sites, or when special management and monitoring are determined to be needed.

Group Use in Wilderness (Non-commercial)

Large group activities in wilderness areas would be managed consistent with the provisions in section 2.7.3.2 under the discussion of Designated Wilderness Areas.

Equestrian Activities

Monitor and manage equestrian use according to the Arizona Land Health Standards (Land Health Standards).

Encourage the use of weed-free animal feed to prevent the introduction of noxious, invasive weeds.

Geocaches

The placement of geocaches would be prohibited in archaeological and raptor nesting

sites. Virtual caches may be allowed within archaeological sites with prior written authorization from the authorized officer.

Other sites may be prohibited if it is determined that the placement of these caches creates unacceptable resource impacts, conflicts with other users or health and safety concerns.

Paintball Activities

Paintball activities would not be allowed in wilderness areas and ACECs. Such activities would be allowed elsewhere in the planning area, if suitable to other resource management objectives and special management allocations. The following stipulations would apply:

- Require nontoxic, biodegradable and water soluble paintball capsules.
- Allow temporary obstacles or structures to be used but require that they be removed at the end of the visit to the public lands. Allow no mechanized or motorized cross-country travel to set up or remove structures. Authorize no permanent structures.
- Require goggles and masks protecting the ears, face, and throat.
- Prohibit shooting paintballs at wildlife and saguaro cacti. Prohibit the use of natural features, such as boulders and vegetation, as paintball targets.
- Require participants to pick up and remove from the area all items related to paintball activities, including capsules and any other trash.
- Require SRPs for paintball activities with more than 15 participants, unless otherwise specified in special management areas.
- Prohibit paintball activities within 1/4 mile of
    - high-use recreation areas such as campgrounds, trailheads, and staging areas
    - designated non-motorized trails
    - areas with permitted recreation activities
    - active scientific and research areas

Rock Collecting

Allow the collecting of rocks, minerals, semi-precious gemstones, invertebrate fossils, and petrified wood in reasonable amounts. In BLM Arizona, reasonable limits for personal use are defined as up to 25 pounds per day, plus one piece, with a total of 250 pounds per person per year.

Special Recreation Permits

General

No permit or event limits would be established at this time for the planning area. Allow permit and/or event limits to be established later in response to monitoring of resources, users, or social conflicts.

SRPs would be authorized on a case-by-case basis for all recreation activities meeting the requirements in 43 CFR 2930 and applicable manuals, policies, and guidance. SRPs would be required for all commercial or competitive use recreation activities. SRPs may also be required for the following:

- noncommercial, noncompetitive organized group activities and events
- vending operations;
- individual noncommercial recreation use in special area designations
- academic, educational, scientific or research uses

The criteria for when permits are required for these uses may be found in BLM Manual H-2930-1, Recreation Permit Administration Manual and Handbook. Definitions of the types of uses may be found in the Glossary.

Issuance of SRPs is at BLM's discretion. BLM would evaluate permit applications on the basis of applicable laws and regulations and conformance with existing land use plans, including consistency with recreation and other

resource objectives. The decision to authorize a proposed use would depend on the following:

- potential resource impacts,
- conflicts with other users,
- health and safety concerns,
- past or present performance with BLM or other agencies, and
- BLM's ability to timely process the application and effectively administer the permit.

Permits would be authorized, ensuring compliance with Federal, State, county, and local air quality and noise regulations.

Vending

SRPs may be issued for vending operations at a recreation site, or in conjunction with a permitted activity or event. The SRP for the activity or event may include vending operations if the operations are directly related with the permitted activity or event, and the permittee is responsible for the vending operations. If the permittee is not responsible for the vending operations, a separate SRP for the vending would be required.

Vending may be considered at recreation sites if the service or goods for sale:

- directly enhances the recreation experience and
- cannot be readily provided by the closest local community.

Permanent structures would not be authorized under a vending permit.

Competitive Races

All motorized competitive races would need to comply with the desert tortoise policy in the Biological Resources discussion of the Management Common to All Action Alternatives section of this chapter.

Motorized competitive speed races would be authorized only in SRMAs or RMZs where an allocation for such use has been made.

Leases and Land Use Permits

Concession Leases

Recreation concession leases, long-term authorizations for the use of public lands, are authorized under 43 CFR 2920. BLM would evaluate concession leases on a case-by-case basis to determine whether they conform to land use plans, activity plans, and resource management objectives. The proposed concession would need to conform to the managerial and social settings such as recreation settings, VRM objectives, and other special use area prescriptions. A strong public demand must also be demonstrated for the proposed products or services to be considered.
Leases would be awarded on a competitive bid basis and evaluated by the following traits of the concessionaire:

- experience,
- ability to provide quality services,
- financial stability and integrity, and
- past or present performance and financial offer.

Apiary Permits

Apiary (bee keeping) permits will be prohibited within 1/4 mile of the following:

- high-use recreation areas such as campgrounds, trailheads, and staging areas,
- designated non-motorized trails,
- areas or routes with permitted recreation activities, and
- active scientific and research areas.

Commercial Filming Permits

Permits for commercial filming or still photography, in accordance with Public Law 106-206, would be issued under the SRP guidelines when associated with permitted

recreation activities. The fee schedule would be used as outlined in 43 CFR 2920 commercial filming regulations. Proposals would be evaluated on a case-by-case basis to determine if they conform to land use plans, activity plans, and resource management objectives. Proposed activities would need to conform to the managerial and social settings as described in the document such as recreation settings, VRM objectives, and other special use area prescriptions. Land Use Permits for non-recreation related commercial filming will be authorized in conformance with 43 CFR 2920 guidelines**.**

Recreation Opportunity Spectrum

Maintain current inventoried recreation settings within ERMAs. ROS inventory is portrayed on the Recreation Opportunity Spectrum on Map 3-11. Since the areas allocated as ERMA and SRMA change by alternative, actual desired settings also change by alternative.

Facilities

Recreation management facilities would be planned and installed where needed for the following:

- protecting resources,
- providing for visitor safety,
- resolving social conflicts,
- improving the quality of recreation experiences, and
- increasing recreation opportunities.

Facilities can include water sources, toilets, scenic turnouts, cultural interpretive sites, kiosks, signs, parking areas, staging areas, and trailheads. Installed facilities must be compatible with recreation management objectives and desired settings and VRM standards. Communities, user groups, or agency staff can bring facility proposals forward for management attention.

Recreational Target Shooting

Recreational target shooting has increased in popularity on BLM lands as the population in Central Arizona has increased and availability of land to shoot on has decreased. BLM land is, for the most part, open to recreational target shooting. Public lands are shared by many users. It is imperative the target shooter select a shooting site that is both safe to other public land users and considerate of natural resources. The following discussion includes criteria for selection of safe and considerate shooting sites.

It is the ultimate responsibility of the recreational target shooter to ensure the projectiles they fire are contained within the shooting site they select. While shooting is allowed in most public land areas, the shooter should make no concession concerning safety. Consideration of other people using public lands is not only considerate, *Arizona Revised Statutes Title 13-1201* says:

(A). A person commits endangerment by recklessly endangering another person with a substantial risk of imminent death or physical injury.

(B). Endangerment involving a substantial risk of imminent death is a class six felony. In all other cases, it is a class one misdemeanor.

Therefore, it is paramount that shooters continually evaluate their shooting activities and the requirements necessary to ensure those activities can be conducted with projectile/bullet containment as a primary goal.

General considerations for selecting a suitable shooting site include the following:

- Make sure you have a safe backstop. That means you can see where the bullets are hitting behind the target. A hill or pushed-up berm of dirt is perfect. Remember that bullets can ricochet off flat surfaces—that includes rocks, dirt and water. Put your targets right in front of the backstop to ensure your bullets stop in the dirt. (Detailed guidelines for

backstops and side berms can be found below.)

- Select a site that doesn't put others at risk. Do not shoot towards or across areas where other people congregate such as hiking trails, vehicle parking and staging areas, and trail heads. It is a violation of Arizona State law (*A.R.S. 17-301B*) to shoot across a maintained road. Though this law only pertains to maintained roads, there are many routes in the desert that are used by motorcycles, quads, and four-wheel drive vehicles that are not as apparent as a maintained road. Shooting in the direction, or across them, though not a violation of the reference law, could be just as dangerous to people using them. Choose a site that avoids shooting across or towards motorcycle, quad, or four-wheel-drive routes as well.
- In addition to motorized routes, there are many popular hiking, bicycling and equestrian trails. Select a site that doesn't cross or shoot in the direction of a trail that could put people at risk.
- Selection of a safe shooting site would include staying more than ¼ mile from any residence or occupied structure. When selecting a site, assume any structure is occupied. It is a violation of Arizona State Law to knowingly discharge a firearm at a structure. The statue (*A.R.S 13-1211A and B*) says:

  (A). A person who knowingly discharges a firearm at a residential structure is guilty of a class two felony.

  (B). A person who knowingly discharges a firearm at a nonresidential structure is guilty of a class three felony.

- Selection of a site should include avoiding such improvements as wildlife or livestock water facilities, livestock control facilities such as corrals and fences, signs or kiosks installed to provide information, barns or other rural developments, or any other improvement that was not specifically designed to be shot at.
- It is a violation of Arizona State law (*A.R.S. 13-1603A 1)* if a person "Throws, places, drops or permits to be dropped on public property or property of another which is not a lawful dump any litter, destructive or injurious material which he does not immediately remove." This includes not only trash, but also brass or shells (including shotgun shells) from spent ammunition and items used as targets. Shooters are required to remove any targets, items on which targets are mounted, and brass from spent ammunition. BLM Phoenix Field Office policy is to only use targets that do not produce litter, and to remove them when you are finished shooting.
- Under the Code of Federal Regulations (*43 CFR 8365.2-5(a)*) no person shall "Discharge or use firearms..." on a developed recreation site. *43 CFR 8360.0-5(c)* defines "Developed Recreation Sites and Areas" as "...sites and areas that contain structures or capital improvements primarily used by the public for recreation purposes. Such sites or areas may include such features as: delineated spaces for parking, camping or boat launching; sanitary facilities; potable water; grills or fire rings; or controlled access."

Selecting sites with side berms and backstops is optional where the shooter can be assured of safe shooting 1.5 miles downrange for pistol or 3.5 miles downrange for high powered rifles, with appropriate left and right ricochet safety zones. With the popularity of public lands for recreation and other uses, this scenario is the exception rather than the rule. Therefore, the primary purpose for selection of backstops and side berms is to protect against the injury of people, the damage of property or both.

The type of firearms being fired and the shooting activity being conducted will dictate the extent of the backstops, side berms and safety fans required to achieve that goal.

A downrange safety fan is an area beyond the backstop and side berms that is free of people or property that can be injured or damaged by errant bullets. It is important to remember that, depending on the suitability of the backstop and side berms, a safety fan downrange will be required to assure a safe shooting area. Below are ideal specifications for both backstops and side berms. Sites with less than ideal backstops and side berms must have increasingly longer downrange safety fans, approaching the distances described above of 1.5 miles for pistols and 3.5 miles for high power rifles. Even with an ideal backstop and side berms, site selection should still consider downrange safety and a downrange safety fan.

The characteristics of safe backstops and berms recognized as needed for safe shooting practices are as follows:

- Height. Preferred backstops include naturally occurring hills or mountainsides, or steep-sided wash banks. Backstops of soft dirt are preferred over hard surfaces, and rocky slopes should be avoided as they create a high ricochet hazard. A minimum height of 15 feet is acceptable but 20 to 25 feet is recommended. Remember that bullet ricochet can happen even on the best backstop. Site selection should consider ricochet possibilities and backstops that exceed 20 to 25 feet should be chosen where possible to reduce ricochet away from the shooting area.
- Width/Length. The width of the backstop should be at least as wide as it is high. Targets should be placed directly in front of or on the backstop with sufficient backstop on either side to catch bullets. Ideally, side berms should be the same height and the full length of the shooting area from the backstop to even with the firing line.
- Slope. The range side slope (side facing the shooter) must be as steep as possible, but not less than a 45-degree slope (a ratio of one-to-one). Side berm slops should have the same dimensions.

Remember, even with the perfect backstop and side berms, finding a suitable shooting area must include a safety fan beyond the backstop.

The bottom line is to select a shooting site in harmony with adjacent properties and other public land users. The site should prevent adjacent properties and other public land users from experiencing any risk from the shooters activities. The overall responsibility of the shooter is to stop fired bullets before they exit the selected shooting area. It is the intention of the BLM to provide a safe and pleasant experience for any public land user. If shooting areas emerge that are contrary to the above criteria they will be clearly construed as putting other public land users at risk and they may be closed to shooting by the authorized officer, either temporarily or permanently.

As the demand for recreation shooting grows along with the demand for other recreation opportunities, the need may arise to identify and designate areas as shooting ranges.
Many locations within the planning area would be suitable for this use and could provide a safe and enjoyable shooting experience.
Identification and future management would be defined through further site specific planning and analysis.

Adaptive Management

Public lands are experiencing intensive use from motorized and non-motorized recreation. Impacts to natural resources are worsened by rapidly increasing urbanization and population growth next to the public lands. Other land uses are also contributing to the social conflicts and resource impacts on these lands. Some recreation use areas do not conform to other resource management objectives, such as

Arizona Land Health Standards (Land Health Standards).

Therefore, within two years of plan approval BLM will form a collaborative partnership with universities, external agencies, and interested communities and citizens to list and prioritize these areas of concern. The effort will then focus on developing a Limits of Acceptable Change (LAC) framework to determine suitable and acceptable use levels for recreation uses, considering natural resource, socio-political, and managerial factors. This process would consist of four major components:

1. specifying acceptable and achievable resource and social conditions, defined by a series of measurable indicators,
2. analyzing the relationship between existing conditions and those judged acceptable,
3. selecting management actions to best achieve these desired conditions, and
4. implementing a monitoring and evaluation process to determine if management goals and objectives are being met.

During this process, inventories, surveys, and studies of existing resource and social conditions would be conducted to obtain and establish baseline data from which standards can be set and measured. Indicators would include both resource and social impacts such as the following:

- campsite proliferation or expansion,
- social trailing,
- soil compaction and erosion, and
- the number of social encounters.

Management Actions may include the following:

- providing public information and education,
- setting use and party-size limits,
- increasing visitor contacts and enforcement, and
- closing areas seasonally or shifting use to other areas.

Monitoring strategies may include measurements, rapid site assessments, photography, or other suitable techniques.

This process will be a dynamic approach in which adaptive management practices will be applied to facilitate learning and improve effectiveness. Efforts to coordinate with other resource disciplines will also be an integral part of this process.

Thresholds may be adjusted as needed to ensure resource protection, manage recreation use, minimize user conflicts, or react to new information or research, if warranted, due to changing circumstances or changes in management objectives.

The current authority for collection of recreation user fees would not allow for collection of such fees within the Bradshaw-Harquahala planning area. Under the Federal Lands Recreation Enhancement Act of 2004, P.L.108-447, fees may be charged at a site that has:

- clearly defined access points and area boundaries,
- substantial expenditure in operations and maintenance costs,
- significant investment in facilities (including roads and trails), and
- contains all of the following amenities:
    - a designated and developed parking area
    - permanent toilet
    - permanent trash receptacle
    - kiosks
    - picnic tables
    - security services commensurate with use levels

Should the above criteria be met in the future, a study would be initiated to determine the need and feasibility of charging a recreation use fee.

Administrative Actions

Develop partnerships and determine sustaining recreation and tourism-based economic opportunities with communities.

Interpretation and Environmental Education

Pursue multicultural interpretation and environmental education opportunities, outreach, development, and implementation of programs for adults and children. Apply learning modalities and incorporate various learning styles in program design and delivery. Encourage the use of multiple intelligence or other theories for program presentations.

Develop school curricula focusing on the BLM's mission with staffs from schools, school districts, and other learning institutions.

Allow cultural and natural resource interpretation signs and facilities where needed for visitor enjoyment or resource protection. Interpretive developments must be compatible with recreation management objectives, desired recreation settings, and VRM standards.

Develop websites and distribute brochures, maps, access guides, and information sheets to publicize the following:

- off-highway and specialized recreation opportunities,
- OHV rules,
- camping and non-motorized trails information,
- shooting policies, regulations and safe shooting practices, and
- applying Tread Lightly and Leave No Trace practices.

Accessibility

To the highest extent possible, all new construction and modifications for recreation facilities, outdoor developed areas, and any related programs and activities will be accessible to people with disabilities in accordance with the Architectural Barriers Act of 1968 and Section 504 of the Rehabilitation Act of 1973, with later amendments. Guidance, requirements and standards for conforming to the above legislation may be found in the following:

- Uniform Federal Accessibility Standards.
- Americans with Disabilities Act Accessibility Guidelines, and the ADA-ABA Accessibility Guidelines (use whichever guidance is most stringent).
- Proposed Outdoor Developed Areas Guidelines (U.S. Access Board found at www.access-board.gov and 43 CFR Part 17, Subpart E found at http://www.gpoaccess.gov/cfr/index.html).

2.7.3.8 Transportation and Public Access

Motorized and Mechanized Travel and Public Access

Land Use Allocations

All designated wilderness areas are closed to motorized and mechanized vehicle uses. Motorized and mechanized uses on all other BLM's lands will be Limited to Designated Routes.

Closed = 96,820 acres

Limited to Designated Routes = 799,820 acres

Desired Future Condition

Define, designate, implement, and monitor a designated and comprehensive travel management network affording a range of high-quality and diverse motorized and non-motorized recreation opportunities. The network would consist of a system of areas, roads, routes and/or trails. The travel management network and associated recreation opportunities would be consistent with other resource management objectives and recreation settings for the area.

Motorized routes connect neighboring communities, local jurisdictions, and lands administered by county, State, and Federal agencies to allow for multiple-day OHV experiences.

A regional network of motorized routes and access exists for long-distance OHV back country touring. Looping, regional routes connect the Black Canyon, Bradshaw Foothills, Wickenburg/Vulture, and Harquahala-Big Horn areas, and continue north to the Wagoner and Skull Valley area to connect to Prescott National Forest and the Great Western Trail. Economic development of local communities to the south, east, and west of Phoenix is synergistic with providing outstanding motorized recreation.

Management Actions

All motorized vehicles and mechanized human conveyances (such as bicycles) would be limited to designated routes. All routes would be designated within five years of plan approval. Until route-specific designations are made, all motorized/mechanized vehicle travel and access would be limited to vehicle routes selected by BLM through inventory. Where inventories are not complete, use will be limited to existing routes. Inventoried routes will be updated with input from BLM, partnerships, user groups, and citizens. For these purposes, livestock and game trails are not considered existing routes or trails. Cross-country travel off designated routes would be prohibited, except for the following reasons:

- public health, safety, and law enforcement emergencies;
- administrative uses; or
- BLM-authorized tasks approved by the authorized officer.

Vehicle access on designated routes may be temporarily closed when weather creates muddy conditions. When conditions are such that travel by vehicle cannot be accomplished without damaging the existing roadway or departing the roadway and traveling across country, the route is closed until the roadway can once again support a vehicle without damage.

A structured evaluation process would be applied to develop a designated travel and transportation system for all routes within the Bradshaw-Harquahala Planning Area. A description of the current BLM Arizona standard process used to evaluate and designate routes can be found in Appendix D. These designations would apply to motorized vehicles and mechanized equipment designed to provide a mechanical advantage and intended for human conveyance, including automobiles, trucks, ATVs, motorcycles, mountain bikes, and other conveyances with one, two, three, four, or more wheels or tracks.

Single or multiple-use OHV and technical vehicle loops, routes, specialized sport sites and management strategies would be designed and developed through interdisciplinary plans, with community and user input. Routes and areas would be developed as needed for the following purposes:

- protecting resources,
- ensuring visitor safety,
- satisfying local community needs, and
- improving recreation experiences or increasing recreation opportunities, such as for rock crawling and motorcycle trials.

Limits of acceptable change indicators and standards would be developed in site-specific planning to reduce user and resource conflicts. All motorized vehicle route construction would be compatible with social and managerial recreation settings and VRM standards. Communities, user groups, or agency staff can bring motorized vehicle route proposals forward for management attention.

Existing routes would be selected and designated for inclusion into a regional route network.

General long-distance travel corridors for OHV travel between field offices and other adjoining lands would be designated.

Loop route opportunities would be recognized and spur trails connected to augment the existing route network where no resource conflicts preclude the actions.

Easements or rights-of-way across key private and State-administered lands would be acquired to ensure long-term network viability and public access. Easements or rights-of-way actions would be undertaken when:

- route system effectiveness is or would be adversely effected by outside actions;
- opportunity becomes available and the action is consistent with recreation settings and goals;
- recreation and resource disciplines need public and/or administrative access to sites;
- portal access is desired to support resource objectives of safety and sustainability.

Where (1) a route creates a conflict between route users and natural or cultural resources, or (2) an OHV or special vehicle use conflicts with recreation management objectives, the following or other mitigation could be applied:

- closing routes;
- limiting season of use and vehicle types, speeds, and noise;
- rerouting offending route segments; or
- modifying routes to reduce or eliminate conflicts.

Motorized vehicles may not be used off designated vehicle routes to retrieve game. The cross-country use of wheeled game carriers is permitted, except in wilderness areas.

Permits would be authorized ensuring compliance with Federal, State, county, and local regulations for air quality and noise.

Administrative Actions

Coordinate route designation with adjoining field offices and land management agencies.

Establish relationships and enter into agreements with local OHV groups and the business community for long-term route maintenance and community support.

Motorized Technical Vehicle Activities

Desired Future Condition

Certain types of motorized activities, such as rock crawling and motorcycle observed trails, require extreme terrain features and are not conducive to general motorized use by traditional stock 4-WD vehicles. These sites would not be evaluated and established during motorized route designation for the travel and transportation system; however, access to these sites would be evaluated during the route designation.

Management Actions

Technical vehicle sites would be evaluated and established on a case-by-case basis. Sites would be established if they result in no net loss of quality or quantity of sensitive resources such as cultural sites, wildlife habitat for priority species, sensitive soil resources, and other resources sensitive to motorized activities.

Limitations to assure the safe and intended use of these sites will be established as necessary. BLM, working with user groups and enthusiasts, would define the limitations in order to provide and maintain challenging opportunities for specialized sport activities. Motorized users would be informed of the required equipment and skills necessary to utilize these sites through the development of signing, information sheets, and outreach programs.

Administrative Actions

Evaluate and establish technical vehicle sites on a case-by-case basis, with community and user input. Sites will be developed as needed for the following purposes:

- ensuring visitor safety,
- meeting enthusiast needs,
- improving recreation experiences,
- increasing recreation opportunities

Site plans will establish limits of acceptable change indicators and standards. All sites must be compatible with social and managerial recreation settings and VRM standards; satisfy biological and ecological land health standards; protect or mitigate cultural resources; and achieve water quality standards for influenced drainages and watersheds.

Non-motorized Trail Networks

Desired Future Condition

Provide a local and regional network of designated non-motorized trails for short and long-distance travel by foot, horseback, and human-powered conveyances (e.g. mountain bikes). Connect communities and Sonoran Desert landscapes by linking regional areas and communities through trail planning and implementing as coordinated by a State of Arizona trails plan. Develop trails that connect Black Canyon City with the Black Canyon Trail and Agua Fria National Monument. Also, use long-distance trails to link communities and areas such as (but not limited to) the following:

- Prescott Valley,
- Mayer,
- Black Canyon,
- Bradshaw Foothills,
- Wickenburg area,
- Vulture Mountains, and
- Harquahala Mountains.

Assist tourism and economic development of communities by providing non-motorized outdoor recreation experiences.

Management Actions

Non-motorized activities that require SRPs would be limited to existing trails, which for these purposes do not include livestock and game trails. Casual hiking and equestrian activities are not restricted to trails unless prescribed in the management actions of a special area designation or allocation. The authorized officer may close areas to casual hiking or equestrian use, or require these activities to be limited to trails, to mitigate resource damage.

Administrative Actions

Plan, designate, and develop new hiking, equestrian, or mountain bike trails through interdisciplinary plans with community and user input. Trails will be developed as needed for the following purposes:

- protecting resources,
- ensuring visitor safety,
- meeting community needs,
- improving recreation experiences, or
- increasing recreation opportunities.

Trails project plans will establish limits of acceptable change indicators and standards. All trail building must be compatible with social and managerial recreation settings and VRM standards. Communities, user groups, or agency staff can bring trail proposals forward for management attention.

An evaluation process, similar to one described in Appendix D, will be used to establish a designated public access and route system within the Bradshaw-Harquahala area public lands, consistent with the land use plan resource management objectives.

Develop comprehensive Travel and Transportation Management Plans for the management units. These plans would implement the route designations for the area.

2.7.3.9 Visual Resource Management

Manage visual resources to minimize the visual intrusion of any authorized activity. Apply VRM class standards consistent with other resource objectives.

If possible, avoid placing strobes and other lights that will affect the quality of night skies.

2.7.3.10 Rangeland Management

Implement ephemeral range designation, where suitable, for managing vegetation and ecological processes as determined through the Arizona Land Health Standards (Land Health Standards) allotment evaluation process.

BLM may designate those areas for ephemeral grazing by applying criteria established in the Special Ephemeral Rule. In applying the rule, all the following criteria must be met at the same time:

1. The area is within the hot desert biome.
2. Annual precipitation is less than 8 inches.
3. The land produces less than 25 pounds/acres of desirable perennial forage.
4. The land contains less than five percent composition of desirable perennial forage plants.
5. The area is below 3,500 feet in elevation.
6. Total forage production is highly unpredictable, and forage is usually available only for a short time.
7. The growth depends upon abundant moisture and other favorable climatic conditions.
8. The area lacks potential to improve the current ecological conditions and produce a dependable supply of forage by applying intensive rangeland management.

2.7.3.11 Mineral Resource Management

Should the mineral estate under lands now closed to mineral entry be opened to mineral entry, manage those lands, including mineral estate, consistent with the decisions made in this plan.

Deny mineral material disposal applications if the disposal would result in a net loss of desert tortoise habitat.

On split estate lands:

- Where BLM manages the Federal mineral estate but the surface is not in Federal ownership, BLM will manage the lands as public lands under FLPMA.
- Unless it is determined to be detrimental to the public interest, BLM will not normally allow mineral material disposal without the surface owner's consent.
- Where the private surface has been developed for non-mineral use, BLM will limit or forgo mineral materials sales.
- On split estate lands, BLM will not normally manage for solid mineral development without surface owner consent, unless it is determined to be detrimental to the public interest.

2.7.3.12 Wild Burro Management

Management decisions from the previous RMP concerning the Lake Pleasant Herd Management Area (HMA) will be carried forward. Management of burros within the Lake Pleasant HMA will continue in accordance to the provisions of the Lake Pleasant Herd Management Plan and at the Appropriate Management Level (AML) set in that plan. Burros would be removed from the Lake Pleasant HMA when the population exceeds the AML or if they are determined to be nuisance animals as defined by the Wild Horse and Burro act of 1972.

A manageability analysis of the Harquahala HA is included in Appendix G. This analysis is the basis for future burro management within the Harquahala Herd Area. In response to the manageability analysis, the Harquahala HA would not be managed as a HMA. Burros would be removed from the herd area as funding is available with the target of reaching a population of zero.

BLM will coordinate with the AGFD and other affected interests during its evaluation of any proposals for burro management.

2.8 Alternatives Considered But Not Analyzed in Detail

This section briefly describes management options that were suggested either during scoping or the development workshops. However, BLM determined these management options should not be included in an Alternative. The elements are described along with the reasoning for excluding them from further consideration.

Designated Shooting Areas within Agua Fria National Monument or the Bradshaw-Harquahala Planning Area

Designated shooting areas were not established because of safety concerns for areas where shooting would concentrate; therefore, would not be managed as shooting ranges. In addition, the potential concentrations of lead in such areas would require compliance with EPA regulations for site cleanup and monitoring. BLM and the AGFD can issue citations for the unsafe discharge of firearms. However, maintenance of safe conditions is considered achievable under current regulations, at current enforcement levels, and with the direction written in section 2.7.3.7 under the discussion of Recreational Target Shooting.

Restrict Shooting in Utility Corridors

Designating corridors as off-limits to shooting would be difficult to enforce because corridors are not physically marked on public lands. It is difficult for recreationists to know if they are in a corridor because many utilities do not include aboveground facilities. We feel enforcement of safe and proper recreational shooting is achievable with the direction written in section 2.7.3.7 under the discussion of Recreational Target Shooting.

Open OHV Areas

Designating areas open to cross-country OHV use was not proposed because a complete designated route system will be prepared after the RMP is approved. The Bradshaw-Harquahala Planning Area vehicle routes are being inventoried, but the comprehensive inventory is not complete. The route evaluation/decision tree process used for the national monument will be applied to develop a transportation plan for the planning area. Most areas with existing heavy OHV use is located within desert tortoise habitat, and more degradation of habitat would not be permitted.

Reclassify Some Areas of Desert Tortoise Habitat from Category II to Category I

The classification process evaluates several characteristics, including habitat quality and manageability. If habitat areas had met the criteria for Category I during the evaluation process, these areas would be reflected as such in the current category mapping.

Establish User Fees for Agua Fria National Monument

BLM believes that, as much as possible, the public should have access to public lands, including national monuments, without paying fees. The expected level of improvements and visitor facilities should not require extensive additional staffing, and fees should not be required to manage the monument's resources at this time. Furthermore, fee collection on the monument under current conditions would be inconsistent with the Federal Lands Recreation Enhancement Act of 2004, P.L.108-447.

Establish Permit Program and User Fees in the Bradshaw-Harquahala Planning Area

As noted for the monument, BLM believes that fees should be avoided whenever possible. The collaborative planning process used for this

effort has resulted in multiple contacts with local community groups that BLM will continue to work with throughout the implementing of the plan. The increased community contact should result in a higher level of awareness of the value of public lands and assist in long-term management through volunteer programs and site stewardship. Therefore, BLM believes that adequate management can be maintained without imposing user fees and adding staff. Furthermore, fee collection under current conditions would be inconsistent with the Federal Lands Recreation Enhancement Act of 2004, P.L.108-447.

Identify Locations and Management for Recreational Prospecting

All forms of mining, including casual use (sometimes referred to as recreational prospecting), are managed under existing mining laws and regulations. Managing prospecting as a recreation activity would require changes to the mining laws and regulations that are beyond the purview of the RMP process.

2.9 Typical Management Actions and Standard Operating Procedures

2.9.1 Typical Management Actions

2.9.1.1 Vegetation Treatment

Several treatment methods and standard operating procedures would be used in a vegetation treatment program. BLM's policies and guidance for public land treatments would be followed in implementing all treatment methods. Many guidelines are provided in the following documents:

- Manual Section 1740, BLM Arizona Standards for Rangeland Health (Land Health Standards).
- Programmatic documents such as BLM's Environmental Impact Statement for Vegetation Treatments, Watersheds and Wildlife Habitats on Public Lands Administered by the BLM in the Western United States, including Alaska (BLM 1991).
- Other general and specific program policy, procedures, and standards for implementing renewable resource improvements.

The following manual, chemical, mechanical, biological, and fire treatment methods would be used under all Alternatives.

Manual Vegetation Treatment

Hand-operated power tools and hand tools are used in manual vegetation treatment to cut, clear, or prune herbaceous and woody plants. In manual treatments workers do the following:

- cut plants above ground level,
- pull, grub, or dig out plant root systems to prevent later sprouting and regrowth,
- scalp at ground level or remove competing plants around desired vegetation, and
- place mulch around desired vegetation to limit the growth of competing vegetation.

Hand tools such as the handsaw, axe, shovel, rake, machete, grubbing hoe, mattock (combination of axe and grubbing hoe), brush hook, and hand clippers are used in manual treatments. Axes, shovels, grubbing hoes, and mattocks can dig up and cut below the surface to remove the main roots of plants such as prickly pear and mesquite that have roots that can quickly resprout in response to surface cutting or clearing. Workers also may use power tools such as chainsaws and power brush saws.

Although manual vegetation treatment is labor intensive and costly, compared to prescribed

burning or herbicide application, it can be extremely species selective and can be used in areas of sensitive habitats or areas that are inaccessible to ground vehicles. Manual treatment of undesired plants would be used on sites designated as categories a, b, or c, where fire (prescribed or naturally ignited) is undesirable or where significant constraints prevent widespread use of fire as a management tool. These sites comprise a range of vegetation communities or habitat types. They include areas where there may be wildlife concerns, yet it is deemed beneficial to remove trees, shrubs, or other fuel-loading vegetation. Manual vegetation treatments cause less ground disturbance and generally remove less vegetation than prescribed fire or mechanical treatments.

Mechanical Vegetation Treatment

Mechanical vegetation treatments employ several different types of equipment to suppress, inhibit, or control herbaceous and woody vegetation. The goal of mechanical treatments is to kill or reduce the cover of undesirable vegetation and thus encourage the growth of desirable plants. BLM uses wheeled tractors, crawler-type tractors, mowers, or specially designed vehicles with attached implements for mechanical vegetation treatments. Mechanical equipment is used to reduce fuel hazards in accordance with BLM established procedures. Re-seeding after mechanical treatments is important to help ensure that desirable plants and not weedy species will become established on the site. Mechanical treatment and reseeding should occur at a time to best control the undesirable vegetation and encourage the establishing of desirable vegetation. The best mechanical method for treating undesired plants in a particular location depends on the following factors:

- characteristics of the undesired species present, such as plant density stem size, woodiness, brittleness, and resprouting ability,
- need for seedbed preparation, revegetation, and improved water infiltration rates;
- topography and terrain,
- soil characteristics such as type, depth, amount and size of rocks, erosion potential, and susceptibility to compaction,
- climatic and seasonal conditions, and
- potential cost of improvement as compared to expected results.

Bulldozing consists of a wheeled or crawler tractor with a heavy hydraulic controlled blade. Bulldozers push over and uproot vegetation and leave it in windrows or piles. Bulldozing is best adapted to removing scattered stands of large brush or trees. Several different kinds of blades can be used, depending of the type of vegetation and goals of the project. The disadvantage of bulldozing is that is disturbs soil and damages non-target plants.

Disk plowing in its various forms can be used for removing shallow-rooted herbaceous and woody plants. Disk plows should only be used where all of the vegetation is intended to be killed. Several different kinds of root plows are specific for certain types of vegetation. In addition to killing vegetation, disk plowing loosens the soil surface to prepare it for seeding and to improve the rate of water infiltration. The disadvantage of disk plowing is that it may be expensive and usually kills all species. Also, plowing is usually not practicable on steep slopes (> 35-45 percent slope) or rocky soil. Plant species that sprout from roots may survive.

Vegetation is chained and cabled by dragging heavy anchor chains or steel cables hooked to tractors in a U-shape, half circle, or J-shaped manner. Effective on rocky soils and steep slopes, chaining and cabling are best used to control non-sprouting woody vegetation such as small trees and shrubs. Desirable shrubs may be damaged in the process. This control method normally does not injure herbaceous vegetation. It is cost effective because it can readily treat large areas. The chains or cables also scarify the soil surface in anticipation

of seeding desirable species. The disadvantage is that weedy herbaceous vegetation can survive this treatment.

Various tractor attachments are used for mowing, beating, crushing, chopping, or shredding vegetation, depending on the nature of the plant stand and goals of the project. The advantage in using this type of equipment is that selective plants may be targeted to achieve specific goals. For example, mowing is effective in reducing plant height to a desirable condition, and mowing usually does not kill vegetation. Mowing is more effective on herbaceous than woody vegetation. On the other hand, a rolling cutter leaves herbaceous vegetation but can kill woody nonsprouting vegetation by breaking stems at ground level. Mowing, beating, crushing, chopping, or shredding usually do not disturb soil. Rocky soil and steep slopes may limit the use of this equipment.

Debris management after a mechanical treatment is critical in fuels reduction projects. Vegetation material that is left on a site will dry and may become more hazardous than before the treatment. Herbaceous material is usually not a problem because it will decompose relatively fast, depending on soil moisture and ambient humidity and temperature. Woody vegetation should be piled and burned under acceptable fire management practices.

Biological Vegetation Treatment

Biological methods of vegetation treatment employ living organisms to selectively suppress, inhibit, or control herbaceous and woody vegetation. This method is viewed as one of the more natural processes because it requires the proper management and plant-eating organisms and precludes the use of mechanical devices, chemical treatments, or burning.

The use of biological control agents will be conducted in accordance with procedures in BLM Manual 9014, Use of Biological Control Agents of Pests on Public Lands (BLM 1990b). Insects, pathogens, and grazing by cattle, sheep, or goats would be used as biological control methods under all Alternatives, but these methods can control only a few plant species. Insects are the main natural enemies now being used. Other natural enemies include mites, nematodes, and pathogens. This treatment method will not eradicate the target plant species but merely reduces the target plant densities to more tolerable levels. This method also reduces competition with the desired plant species for space, water, and nutrients. This treatment method will be used on larger sites where the target plant has become established and is strongly competitive.

Gradually, biological methods using cattle, sheep, or goats would avoid erosion hazard areas, areas of compactable soils, riparian areas susceptible to bank damage, and steep erodible slopes.

Biological control using cattle, sheep, or goats would be applied to treatment areas for short periods. In using grazing animals as effective biological control measures, several factors will be considered:

- target plant species present,
- size of the infestation of target plant species,
- other plant species present,
- stage of growth of both target and other plant species,
- palatability of all plant species present,
- selectivity of all plant species present by the grazing animal being considered for use,
- availability of that grazing animal within the treatment site area,
- type of management program that is logical and realistic for the treatment site, and
- potential impacts to native wildlife and their habitat.

These factors will be some of the options taken when developing the treatment for a site.

Cattle, sheep, and goats are not truly biological agents but are livestock used to control only the

top growth of certain noxious weeds. The following are some advantages of using livestock, mainly sheep or goats, for noxious weed control.

- They use weeds as a food source.
- After a brief adjustment period, they sometimes consume as much as 50% of their daily diet of this species.
- Average daily gains of offspring grazing certain weed-infested pastures can sometimes be significantly higher than average daily gains of offspring grazing grass pastures.
- Sheep or goats can be used in combination with herbicides.

Following are some of the disadvantages of using livestock:

- They also use non-target plants as food sources;
- The use of domestic animals, like sheep or goats, requires a herder or temporary fencing;
- The animals may be killed by predators such as coyotes;
- Heavy grazing of some weed species, such as leafy spurge, tends to loosen the stool of grazing animals;
- Most weed species are less palatable than desirable vegetation, and overgrazing would result;
- Livestock may accelerate movement of non-native plants by ingesting and excreting seeds.
- Livestock may transmit parasites or pathogens to resident native wildlife species.

Particular insects, pathogens, or combinations of these biological control agents may also be introduced into an area of competing or undesired vegetation to selectively feed upon or infect target plants and eventually reduce their density within that area. Only on rare occasions will one biological control agent reduce the target plant density to the desired level of control. Therefore, a complex of biological control agents is most often needed to reduce the target plant density to a desirable level. Even with a complex of biological control agents, often 15 to 20 years are needed to bring about an economic control level, especially on creeping perennials. In most circumstances, biological control agents are not performing control. They are only creating stresses on weeds, which is not the same as control.

Some advantages of using natural enemies to control weeds are as follows:

- They are self-perpetuating.
- They can be comparatively economical once studied and established.
- They can be highly selective.
- They offer a high degree of environmental safety.
- They do not require fossil fuel energy.

Biological control does have the following imitations:

- It is a slow process.
- It does not achieve eradication but merely reduces weed densities to more tolerable levels.
- It is highly selective, attacking one weed existing among a complex of other weeds.
- It cannot be used against weeds that are valued in some situations because insects or pathogens do not recognize boundaries.
- It cannot be used against weeds that are closely related to beneficial plants because the insects or pathogens may be unable to discriminate between related plant species.
- It cannot be used against weeds when the biological control agent requires an alternate host that may be a beneficial plant.

To develop a biological weed control program, the following steps must be taken:

1. Identify weed species and determine origin.

2. Determine if any natural enemies occur at the point of origin.
3. If possible, collect natural enemies.
4. Hold preliminary screening trials on the natural enemies of the weed in the United States.
5. Hold further screening trials in the United States.
6. Raise biological control agents before the first release.
7. Release biological control agents for the first time onto selected sites.
8. If biological control agents survive and increase in numbers, collect agents and release onto other sites of weed infestation.

Usually a complex of at least three to five different biological agents, such as insects, must be used to attack a weed infestation site. Even with a complex of biological agents, often 15 to 20 years are needed to bring about an economic control level, especially on creeping perennial plants.

Chemical

Chemical treatment would be used to control unwanted vegetation, and in some instances would be followed by a prescribed burn. Treatments would be conducted in accordance with BLM procedures and would meet or exceed individual State label standards. The chemicals can be applied by many different methods, and the selected technique depends on several variables, including the following:

- treatment objective (removal or reduction),
- accessibility, topography, and size of the treatment area,
- characteristics of the target species and the desired vegetation,
- the location of sensitive areas in the immediate vicinity (potential environmental impacts),
- expected costs and equipment limitations; and
- meteorological and vegetation conditions of the treatment area at the time of treatment.

Herbicide applications are scheduled and designed to minimize potential impacts on nontarget plants and animals, while remaining consistent with the objective of the vegetation treatment program. The rates of application depend on the target species, presence and condition of nontarget vegetation, soil type, depth to the water table, presence of other water sources, and the requirements of the label.

In many circumstances the herbicide chosen, time of treatment, and rate of application of the herbicide differs from the most ideal herbicide application for maximum control of the target plant species to minimize damage to the non-target plant species, and to ensure minimum risk to human health and safety.

The chemicals would be applied aerially with helicopters or fixed-wing aircraft or on the ground using vehicles or manual application devices. Helicopters are more expensive to use than fixed-wing aircraft. They are more maneuverable and effective in areas with irregular terrain and in treating specific target vegetation in areas with many vegetation types. Manual applications are used only for treating small areas or areas inaccessible by vehicle.

The typical and maximum application rates of each chemical would vary, depending on the program area being treated.

Prescribed Burning

Prescribed burning is the planned application of fire to wildland fuels in their natural or modified state, under specific conditions of fuels, weather, and other variables, to allow the fire to remain in a predetermined area and to achieve site-specific fire and resource management objectives.

Management objectives of prescribed burning include the following:

- controlling of certain species,

- enhancing growth, reproduction, or vigor of certain species,
- managing fuel loads, and
- maintaining vegetation community types that best meet multiple use management objectives.

Treatments would be implemented in accordance with BLM's procedures in Prescribed Fire Management (BLM 2000c)

Before conducting a prescribed burn, a written plan must be prepared. The plan must:

- consider existing conditions (amount of fuel, fuel moisture, temperatures, terrain, weather forecasts) and
- name the people responsible for overseeing the fire.

Also, natural fire that is allowed to burn needs to be carefully monitored to ensure that it will not threaten communities, ecosystems, and other values to be protected. This monitoring may require special expertise such as fire-use management teams that support the overall fire management program. Planning and implementation for a specific prescribed fire project entails the following four phases:

Phase One: Information/assessment includes the following:

- determining the area to be treated,
- inventorying and assessing site-specific conditions (live and dead vegetation densities, dead and down woody fuel loadings, soil types),
- analyzing historic and present fire management,
- identifying resource objectives from land use plans, and
- conducting NEPA analysis and compliance.

Phase Two: Prescribed fire plan development includes the following:

- developing the site-specific prescribed fire plan to BLM's standards,
- reviewing the plan, and
- obtaining plan approval from local BLM's field office administrators.

Phase Three: Implementation includes the following:

- preparing the prescribed fire boundary to ensure that the fire remains within prescribed boundaries,
- preparing the site, which may include building firelines and improving vehicle routes and wildlife and stock trails by limbing trees and clearing debris, and
- igniting the fire according to the plan's prescribed parameters.

Phase Four: Monitoring and evaluation includes assessment and long-term monitoring of the fire treatment to ensure that the prescribed fire has met the objectives of the approved prescribed fire plan.

2.9.2 Appropriate Management Response

2.9.2.1 Fire Management

The appropriate management response concept represents a range of available management responses to wildland fires. Responses range from full fire suppression to managing fires for resource benefits (fire use). Management responses applied to a fire will be listed in the fire management plan by the following:

- relative risk to resources, the public, and fire fighters,
- potential complexity, and
- the ability to defend management boundaries.

Any wildland fire can be aggressively suppressed, and any fire in an area designated for fire use can be managed for resource benefits if it meets the prescribed criteria from an approved fire management plan.

Fire Suppression Actions

The following constraints to fire suppression actions are common to all Alternatives:

- Use suppression tactics that limit damage or disturbance to the habitat and landscape. Use no heavy equipment (such as dozers) unless approved.
- Use fire retardants or chemicals next to waterways in accordance with the Environmental Guidelines For Delivery of Retardant or Foam Near Waterways (Interagency Standards for Fire and Aviation Operations Task Group 2004).
- Protect all known cultural resources from disturbance.
- In wilderness areas when suppression is required, use MIST and coordinate with wilderness area management objectives and resource advisors.
- Implement general and species-specific conservation measures to the extent possible to minimize harm to federally listed, proposed, or candidate species within the action area.

2.9.3 Standard Operating Procedures

STANDARD OPERATING POLICIES AND PROCEDURES

BLM operates under a number of policies and procedures separate from the management decisions that are required to be analyzed in this planning process. The policies and procedures either already exist, or have been identified through the collaborative planning process and will be used to guide the implementation of the management decisions. The following section summarizes the policies and procedures for both the monument and the Bradshaw-Harquahala Planning Area, for those resource categories that have identified such policies and procedures.

GENERAL STAMDARD OPERATING PROCEDURES

All activities planned or conducted on BLM's land are subject to environmental analysis in compliance with the National Environmental Policy Act (NEPA). The process to comply with NEPA first involves a determination that the proposal is in conformance with our existing plans. Next, a determination of NEPA adequacy is conducted to determine if existing environmental analysis is adequate to address the proposal. And finally, if additional analysis is required, an environmental analysis (EA) is written to address site specific environmental impacts that might occur. Some projects, because of where they occur or for other reasons, may have adequate NEPA compliance through Categorical Exclusion. In any case, all projects require clearance for cultural resources and sensitive wildlife habitats. If it is determined there may be an effect to significant cultural resources, a mitigation(s) is/are recommended and consultation with the State Historic Preservation Officer is initiated. If it is determined there may be an effect to Threatened or Endangered species or their habitat, consultation with the Fish and Wildlife Service is initiated.

AGUA FRIA NATIONAL MONUMENT

Special Recreation Permits

Commercial permits are issued to qualified applicants on a first-come, first-served basis based on monument values and how they meet resource and public health and safety concerns.

Competitive and organized group and event activity permits are issued on a case-by-case basis based on monument values and how they meet resource and public health and safety concerns.

Permit allocations for commercial and organized groups and events could be adjusted based on monitoring of areas to be used, to accurately accommodate level of use, to sustain monument

objects and resources while maintaining desired social and managerial settings.

Non-Motorized Trail Construction

Trails are designed to minimize surface disturbance.

Linear areas of interest would be marked with fiberglass posts or rock cairns to establish the footpath.

Consider alternative types of transportation to link areas of interest within the monument.

Develop partnerships with local clubs and organizations to help maintain and monitor trails.

Motorized Trail Construction

Minimize surface disturbance by, where possible, using existing roads for motorized recreation.

Develop partnerships with local clubs and organizations to help maintain and monitor trails.

Lands and Realty

Obtain reasonable public and administrative access to BLM's lands within the monument in the following way:

- Require reciprocal access easements to meet specific program needs.
- Consider and manage the use of public lands for rights-of-way, right-of-way reservations, easements, permits, leases, licenses, agreements, etc, except for those areas identified as exclusion areas.
- Secure access easements as needed to prevent closing of access to public lands.
- Consider and evaluate acquisitions that would reduce conflicts between BLM and non-Federal landowner objectives, especially when conflicts are adversely affecting BLM management.
- Consider opportunities to acquire non-Federal lands where lands are valuable for achieving BLM resource management objectives within the Aqua Fria National Monument. Evaluate the following:
    - key wildlife habitat, fisheries management areas and habitat for threatened, endangered, or sensitive species lands with water frontage, such as lakes, streams, flood plains, wetlands, and associated riparian ecosystems Land with important value for outdoor recreation purposes
    - land needed for visual resource protection
    - lands needed to bring existing BLM's land into consolidated geographical units.
    - consider partial interest acquisitions, such as access, minerals, water rights or conservation easements to benefit public land management within the monument
    - consider public/private land management and stewardship opportunities to assist in the management of BLM's lands within the Aqua Fria National Monument

Communication Sites

Any future communication sites will be designated only within the boundaries of designated utility corridors within the monument.

BRADSHAW-HARQUAHALA PLANNING AREA

Travel and Transportation Planning

Plan, designate, and develop single- or multiple use off-highway and special recreation vehicle areas, loops, routes, and management strategies through interdisciplinary plans, with community

and user input. Planning shall adopt limits of acceptable change indicators and standards and reduce user conflicts.

Evaluate roads, routes, and trails, on a case-by-case basis, for permitted events and determine suitability or if they will require action such as, closure, re-routing, rehabilitation, upgrading or authorization as an approved permitted course.

Enact road, route, trail, or area closures or mitigation where off-highway vehicle or special vehicle use is determined to be inconsistent with established recreation management objectives, and/or such use is causing harm to natural or cultural resources.

Permit motorized cross-country use only when specifically authorized for completing a BLM authorized task.

Develop brochures, maps, access guides, and information sheets and disseminate off-highway and special recreation vehicle information to the public.

Recreation

Parking, Staging Areas, and Facilities

Parking and staging areas will be allowed for visitors' needs to enhance recreation resources, to protect natural resources, to satisfy local community needs, or for public safety purposes.

Conduct site-specific planning, on a case-by-case basis.

Authorize facilities where needed for resource protection, visitor safety, improving the recreation experience or increasing recreation opportunities.

In non-designated areas, establish designated camping locations, off-highway and special recreation vehicle use areas and sites as needed for resource protection, visitor safety, improving the recreation experience or increasing recreation opportunities.

Evaluate, as needed, planning and installation of improvements for long-and short term camping areas, commercial and competitive off-highway and special recreation vehicle use areas, water, toilets, scenic turnouts, cultural interpretive sites, kiosks, hiking, equestrian or mountain bike trails, road and portal signage and road maintenance as needed and identified by communities, user groups, or agency staff.

Recreation Sites

Develop brochure guides for developed sites.

Allow cultural and natural resource interpretation where needed for visitor enjoyment or resource protection.

Camping

Close trailhead facilities to overnight camping upon authorization of the Field Manager.

Recreation Management in SRMAs/RMZs

Allow for increased recreation use in appropriate areas, while protecting natural and cultural resources through limitations in sensitive areas. Preserving a healthy, properly functioning, and natural appearing landscape would be essential.

Engage a diverse group of stakeholders in a collective effort to conserve the ecological, cultural, open space and recreation values of the area so that it remains a place where people want to live, work and recreate.

Initiate acquisition of lands, easements, or establish conservation agreements through:

- exchange of private lands,
- conservation agreements for high value cultural, biological, or recreation lands,
- purchase of access agreements or rights-of-way.

Assist local community efforts to work with the Arizona State Land Department for recreation easements across State land.

Form citizen, agency, and Government working groups to identify non-public (private and State) lands with high-value biological, cultural, scenic, open space, access or recreation resources that should be protected.
Deliver recommendations and objectives on land, access and open space conservation to BLM or the appropriate entity early enough so objectives can be met.

Maintain the scenic and natural landscape settings while offering visitors a diverse array of recreation opportunities, including both human-powered and motorized-based activities. Emphasis would be placed on maintaining the rural and natural settings, protecting visual resources. Multiple uses that are consistent with and support the overall community vision would continue.

Enter into Recreation and Public Purposes Act leases or patents with qualified entities when appropriate to achieve resource objectives.

Avoid vehicle and recreation uses/access to areas with known listed, sensitive, threatened, and/or endangered species (plant and wildlife).

Minimize recreation use and vehicular traffic when the soils are wet or during high-fire threat conditions.

Form partnership with communities and user groups to prevent and restore areas impacted by litter/dumping.

Complete comprehensive trails strategy and planning to select and develop new single-use and multi-use, hiking, equestrian, and OHV trails where appropriate to meet resource objectives. Then, implement that plan.

Work with private property owners to reduce conflicts between private owners and recreational activities.

Manage the lands within SRMAs/RMZs for multiple uses, including livestock grazing and OHV uses.

Complete a comprehensive inventory and description of all existing and potentially mechanized and non-mechanized trails and routes on public land.

Evaluate roads, routes, and trails, on a case-by-case basis for permitted events and determine suitability for closure, re-routing, rehabilitation, upgrading or authorization as an approved permitted course.

Develop brochures, maps, access guides, and information sheets and disseminate off-highway and special recreation vehicle information to the public.

Plan, designate and develop single- or multiple use off-highway and special recreation vehicle areas, loops, tours, routes and management strategies through interdisciplinary plans, with community and user input. Emphasis will be placed on all-terrain vehicle opportunities and trail linkages with the Black Canyon, New River, Anthem, Wickenburg, Cordes Lakes, and other communities. Planning shall adopt limits of acceptable change indicators and standards and emphasize reducing user conflicts.

Mineral Resources

Unless otherwise restricted, all Federal mineral estates administered by BLM within the Planning Area are available for orderly and efficient development of mineral resources. Mineral exploration and development is generally encouraged on public land in keeping with BLM's multiple resource concepts. Overall guidance on the management of mineral resources appears in the *Mining and Minerals Policy Act of 1970*, Sec. 102(a)(120 of FLPMA, *National Materials and Minerals Policy, Research and Development Act of 1980* and BLM's *Mineral Resources Policy of May 29, 1984*.

Exploration and development of all mineral resources will be conducted in accordance with all applicable laws and regulations.

Acquired lands will be opened to mineral entry unless critical resource values (threatened and endangered species, riparian habitat, scenic values, etc.) or public health and safety require closure. Upon approval of proposed regulations at 43 CFR 2201.8-2(b), newly acquired lands would automatically be open to operation of the public lands and mineral laws within a specified timeframe after acceptance of title unless critical resource values such as those listed above require closure.

Issuing rights-of-way where there are active mining claims is routine and covered by legislation and regulation. The right-of-way purchaser or permittee is informed of the rights of the mining claimant. Mining might intermittently or temporarily obstruct the right-of-way.

Locatable Minerals

The 43 CFR 3715 and 3809 regulations provide for the management of surface disturbance associated with mineral exploration and development including mining claim use and occupancy. The BLM reviews mining notices and plans in the time allotted as identified in the regulations. For notice level operations, if time permits, a site visit would be conducted for lands identified in a mining notice by the geologist and an archeologist and biologist if they are available. A site visit would always be conducted by BLM during the processing of a plan of operations.

Mining plans and notice level operations when mining claim occupancy is proposed are required to have the proper NEPA documentation prepared. BLM will work with operators to insure that notices and plans are processed efficiently and in a timely manner. Reclamation plans and bonds are required for each notice and plan per regulation. The amount of such bonds is for the full amount required to complete 100% of the required reclamation as if BLM were required to hire independent contractors to do the work.

In addition to the requirements of 43 CFR 3715 and 43 CFR 3809, State and Federal law provides for numerous other permits including, but not limited to: an Aquifer Protection Permit and a NPDES permit both issued by the Arizona Department of Environmental Quality, a Section 404 permit issued by the Army Corps of Engineers and a flood control permit issued by the county. Also, Arizona State law requires mining claimants to keep mining property in a safe condition. The State Mine Inspector's Office is responsible for enforcing this law. BLM will cooperate all interested agencies to ensure that operations conducted on BLM administered lands are in full compliance with all Federal, State and local health, safety and environmental laws as required by 43 CFR 3715.5.

All occupancy of mining claims must meet the requirements of 43 CFR 3715 and must meet the specific requirements of 43 CFR 3715.2. At a minimum, all occupancies will meet the requirements and standard stipulations for occupancy contained in the BLM Arizona Programmatic EA for Mining Claim Use and Occupancy.

Surface disturbing activities at a level greater than casual use in wilderness areas, national monuments, areas of critical environmental concern and other areas identified in 43 CFR 3809.11 will require a plan of operations before mining can begin. Operations proposed for lands that are withdrawn from mineral entry will cause BLM to initiate a validity examination and will be allowed only on claims with a valid discovery and location existing before designation. Before BLM can approve mining plans of operation submitted for work in areas withdrawn from mineral entry, a BLM mineral examiner must verify that a valid claim exists. The mineral examination and mineral report must confirm that minerals have been found and the evidence is of such character that a person of ordinary prudence would be justified in the further expenditure of his labor and means with a reasonable prospect of success in developing a valuable mine.

Leasable Minerals

Lease applications will be considered on a case-by-case basis. Leases will be issued with needed restrictions to protect resources. Stipulations to protect important surface values will be based on interdisciplinary review of individual proposals and environmental analysis.

Wild Horses and Burros

Continue to monitor burro numbers and habitat conditions in the Lake Pleasant Herd Management Area.

During times of high water levels in Lake Pleasant, relocate burros trapped on temporary islands if they are in danger, or if there is insufficient habitat for survival.

Monitor and maintain Harquahala herd at current population levels.

Lands and Realty

Land Tenure Adjustments

- Consolidate land ownership to achieve management efficiency and reduced costs.
    - Consider and evaluate the overall combination of all resource values and factors including wildlife habitat, riparian areas, wetlands, cultural resources, recreation opportunities, scenic value, watershed protection, timber and mining resources, rangelands, public access and a broad array of recreation uses.
    - Consider the use of patent reservations and habitat management plans when conveying lands from Federal ownership
    - Consider and evaluate making public land available for disposal to local governments and non-profits under the Recreation & Public Purposes Act.
    - Obtain reasonable public and administrative access to BLM lands in the following ways:
    - Require reciprocal access easements to meet specific program needs.
    - Consider and manage the use of public lands for rights-of-way, right-of-way reservations, easement, permits, leases, licenses, agreements, etc, except for those areas identified exclusion areas.
    - Secure access easements as needed to prevent closing of access to public lands.
    - Consider and evaluate in land adjustment actions (including disposal, acquisition, sale, donation) the following:
        - Reduction of BLM administrative costs and improvement of management efficiency.
        - Identify for disposal relatively small, isolated, inaccessible tracts of BLM that do not meet resource management needs.
        - Consider and evaluate conveyances or acquisitions that would reduce conflicts between BLM and non-Federal landowner objectives, especially when conflicts are adversely affecting BLM management.

- Consider opportunities to acquire non-Federal lands by purchase or exchange (willing seller) where lands are valuable for achieving BLM resource management objectives. Evaluate the following:
    - key wildlife habitat, fisheries management areas and habitat

for threatened, endangered, or sensitive species
- designated wilderness and other special management areas
- lands with historical or important heritage resources, outstanding scenic values, or critical ecosystems when these resources are threatened by change of use, or when management may be enhanced by public ownership
- lands with water frontage, such as lakes, streams, flood plains, wetlands, and associated riparian ecosystems
- land with important value for outdoor recreation purposes
- land needed for visual resource protection
- lands needed to bring existing BLM land into consolidated geographical units.
- lands that will maintain or stabilize the economies of local government
- lands where BLM programs will provide the best insurance against existing or potential uses that are incompatible with effective watershed management.
- consider partial interest acquisitions, such as access, minerals, water rights or conservation easements to benefit public land management.
- consider public/private land management and stewardship opportunities to assist in the management of BLM lands
- consider disposal of Federal subsurface estate under non-Federal surface estate on a case-by-case basis. Seek opportunities to consolidate surface and mineral ownership

Utility and Transportation Corridors and Communication Sites

Corridors to be designated in the Resource Management Plans (RMPs) and EIS should be considered on the basis of their suitability to accommodate right-of-way for facilities of particular threshold sizes or volumes. A corridor is defined only if it contains or is planned for one or more of the following major facilities:

- natural gas and other pipelines are at least10 inches in diameter,
- electric transmission facilities have a capacity of 115 kV lines or greater voltage,
- significant canals are those which provide delivery of water to urban areas, and
- transportation facilities are those formally defined as Current or Proposed Roads of regional Significance or Current or Proposed Major Arterials (functional class) identified by a local government jurisdiction as regionally significant and projected to carry 20,000 or more vehicles per day by the year 2015.

Utilities, whether interstate, intrastate, or local, should be co-located in designated corridors to the maximum degree possible to minimize impacts to BLM-administered lands.

Transportation routes, whether interstate, intrastate, or local, should be co-located with utilities in designated corridors to the maximum degree possible to minimize impacts to BLM-administered lands.

BLM will strive to coordinate applicable transportation-related planning efforts for the Bradshaw-Harquahala Planning Area with the Arizona Department of Transportation (ADOT), the Maricopa County Department of Transportation (MCDOT), and the Maricopa Association of Governments (MAG), and Yavapai County.

Smaller utility lines needed for local service in the vicinity of the corridors should be collocated within a corridor unless doing so would limit the

opportunity to collocate additional major utility lines in the corridor.

Avoidance of sensitive or special resources is a primary consideration in future planning and designation of utility corridors.

BLM's planning should promote, whenever possible, optimal energy transfer efficiency and support alternative energy sources such as use of photovoltaic cells (solar energy) and wind power.

In February 2003, the Department of Homeland Security (DHS) issued the National Strategy for the Physical Protection of Critical Infrastructures and Key Assets (DHS 2003) which summarized the initial assessment of, and planning to protect against, vulnerabilities to the terrorist threat. As DHS continues to carry out its mandate, the designation of utility and transportation corridor location and the planning and maintenance of utilities, railroads, and Federal, State, and interstate highways that cross BLM-administered lands, will be consistent with any directives, policies, and procedures that DHS may institute to minimize vulnerabilities to the energy grid.

Whenever possible, utility transmission lines will be designed and/or routed so as to minimize adverse visual impacts to the surrounding lands and vistas.

BLM's utility corridor designations must be consistent with authority granted under FLPMA Title V, Sections 501–511 (43 USC 1761–1771), the Mineral Leasing Act of 1928 (CFR 2880) and the BLM Right-of-Way Manual, Sections 2801.11 and 2801.12.

In accordance with Executive Order No. 13212, the Energy Project Streamlining process (signed May 18, 2001), Federal energy-related planning must serve to expedite the production, transmission, or conservation of energy.

BLM will continue to cooperate as a full partner (with U.S. Forest Service, APS, and SRP, in AZ) in the Western Utility Group, whose mission is to facilitate an exchange of information and coordinate planning efforts between Federal agencies and utility providers throughout the western U.S.

BLM will, as appropriate, coordinate communication-related planning efforts with the Federal Communications Commission (FCC).

BLM's planning related to telecommunication infrastructure must, in accordance with the Telecommunications Act of 1996, help facilitate implementation of wireless telephone systems, in compliance with existing law, by making Federal lands and facilities available for communication sites.

Land Uses Requiring Permits

The common land uses requiring permits are commercial photography, apiaries, geological and hydrological testing, and some military activities. The recipients of R&PP leases or patents are State and local governments and qualified nonprofit organizations.

ENTIRE PLANNING AREA

Fire Management

Fire suppression will be carried out in a manner consistent with Interagency Standards for Fire and Aviation Operations, which is updated on an annual basis by the National Interagency Fire Center. Logistical support, operation and coordination, and policies and procedures for mobilization of fire fighting resources are outlined in the Southwest Area Mobilization Guide. This guide provides direction for Federal and State agencies Arizona, New Mexico and Texas.

BLM’s PFO consulted with the State Historic Preservation Officer (SHPO) in 1993 on the effects of fire management in the Perry Mesa National Register District, in what is now Agua Fria National Monument. The two agencies agreed that emphasis will be placed on avoiding direct disturbances to archaeological sites from fire initiation, management, and suppression. In

the past decade, efforts have been undertaken to fulfill this objective in order to protect known sites in the national monument as well as in other areas.

Fire management will continue to avoid the physical disturbance of known archaeological sites or sites found during fire management activities. Fires will not be intentionally started at known sites. Archaeologists will serve as resource advisors for fire management and help develop and implement fire and fuels management plans, which would address effects on cultural resources. Fire crews will be educated about the need to protect cultural resources.

Public Health and Safety

Minimize releases of hazardous materials through compliance with current regulations. When hazardous materials are released into the environment, assess their impacts on each resource and determine the appropriate response, removal, and remedial actions to take.

Evaluate all actions (including land use authorizations and disposals, mining and milling activities, and unauthorized land uses) for hazardous materials, waste minimization, and pollution prevention. Identify appropriate mitigation for surface-disturbing and disruptive activities associated with al types of hazardous materials and waste management and all types of fire management.

Complete site-specific inventories when lands are being disposed or acquired. It is departmental policy to minimize potential liability of the Department and its bureaus by acquiring property that is no contaminated unless directed by Congress, court mandate, or as determined by the Secretary.

Inspect mining and milling sites to determine appropriate management for hazardous materials.

Identify parties responsible for contamination who will be liable for cleanup and resource damage costs, as prescribed by law.

Paleontological Resources

For all authorized surface disturbing activities.

- Inventories will be conducted on a case-by-case basis, as deemed necessary by the authorized officer, for each proposed surface-disturbing activity to ensure maintenance or integrity of paleontological values.
- User/operators shall be responsible for informing all persons associated with a project that they shall be subject to prosecution for damaging, altering, excavating, or removing any vertebrate or noteworthy occurrences of invertebrate or plant fossils on site.
- If vertebrate or noteworthy occurrences of invertebrate or plant fossils are discovered, the user/operator shall suspend all operations that further disturb such materials and immediately contact the authorized officer.
- User/operators shall not resume until written authorization to proceed is issued by the authorized officer.
- Within five working days, the authorized officer will evaluate the discovery and inform the operator of actions that will be necessary to prevent loss of significant scientific values.
- The user/operator shall be responsible for the cost of any mitigation required by the authorized officer.
- Upon verification from the authorized officer that the required mitigation has been completed, the operator shall be allowed to resume operations.

Grazing

Rest rotation, deferred rotation, seasonal or short duration use, or other grazing management systems may be implemented where the need has been identified through monitoring. Monitoring will be used to assess the

effectiveness of changes brought about by new management practices.

Intensity, season and frequency, and distribution of grazing use should provide for growth and reproduction of the plant species needed to reach desired plant community objectives.

Consider deferment of livestock where possible in cooperation with lease and permit holders. This deferment may allow for the use of prescribed fire or other vegetative treatments, or the use of the area as a grass bank to allow for rest in other grazing allotments.

Administrative vehicular access to repair range improvements by the grazing lessee is assured through issuance of the grazing permit.

One time travel to access sick or injured livestock away from designated routes is authorized to transport the individual to a medical facility.

Any compensation for a loss of range improvements within these pastures will be made in accordance with 43 CFR 4120.3-6.

Livestock management changes may be made when sufficient assessment, inventory, or monitoring data are available.

Fence construction and maintenance will follow guidance provided in BLM handbook on Fencing No. 1741-1

Threatened or Endangered Species

The Endangered Species Act (ESA) of 1973, as amended, provides for the protection of threatened, endangered and proposed threatened or endangered species of plants and animals. Specifications of the ESA pertain to both the Agua Fria National Monument and the Bradshaw-Harquahala Planning Area.

The following requirements are prescribed in the BLM's Manual 6840:

1.The BLM shall conserve T/E species and the ecosystems upon which they depend and shall use existing authority in furtherance of the purposes of the ESA. Specifically the BLM shall:

a. Determine, to the extent practical, the occurrence and distribution of all T/E species on lands administered by BLM, and evaluate the significance of lands administered by BLM in the conservation of those species.

b. Identify land administered by BLM that is essential habitat and designated Critical Habitat of T/E species, and prescribe management for the conservation of these habitats in land use plans.

c. Develop and implement management plans that will ensure the conservation of T/E species and their habitats.

d. Evaluate ongoing management activities to ensure T/E species conservation objectives are being met.

e. Ensure that all activities affecting the populations and habitats of T/E species are designed to be consistent with recovery needs and objectives.

2. The BLM shall ensure that all actions authorized, funded, or carried out by the BLM are in compliance with the ESA. To accomplish this, the BLM shall:

a. Screen all proposed actions to determine if T/E species or their habitat may be affected. Normally the environmental analysis process is used.

b. Initiate consultation with the FWS/NMFS, as appropriate, for those actions that may affect T/E species or their habitats.

c. Not carry out any actions that would cause any irreversible or irretrievable

commitment of resources or reduce the future management options for the species involved until the consultation proceedings are completed and a final decision has been reached.

d. Ensure that no BLM action will adversely affect the likelihood of recovery of any T/E species.

3. The BLM shall cooperate with the FWS/NMFS in planning and providing for the recovery of T/E species. To accomplish this the BLM shall:

a. Participate on recovery teams and in recovery plan preparation, as well as State or regional working teams responsible for T/E species recovery.

b. Review technical and agency review drafts of recovery plans for species affected by BLM management to ensure that proposed actions assigned to BLM are technically and administratively feasible and consistent with BLM's mission and authority.

c. Ensure that the decisions, terms, and conditions of resource management plans, and more detailed site-specific plans, prepared for lands covered by previously approved recovery plans are consistent with meeting recovery plan objectives.

4. The BLM shall retain in Federal ownership all habitat essential for the survival or recovery of any T/E species, including habitat used historically by these species.

5. Species proposed for listing as T/E and proposed Critical Habitat shall be managed with the same level of protection provided for T/E species except that formal consultations are not required. The BLM shall confer with the FWS/NMFS on any action that will adversely affect a proposed species or proposed critical habitat.

6. Candidate species will be managed so as not to contribute to the need for them to become listed as threatened or endangered.

2.10 Implementation and Monitoring

2.10.1 Implementation

Many land use plan decisions are implemented or become effective upon approval of the RMP. Examples of such decisions include the following:

- decisions on land health standards and DFC,
- land use allocation decisions, and
- all special area designations such as ACECs.

Management actions that require more site-specific project planning as funding becomes available will require further environmental analysis. Decisions to implement site-specific projects are subject to administrative review when such decisions are made.

BLM will continue to involve and collaborate with the public while implementing this plan. Opportunities to become involved in the plan implementation and monitoring will include development of partnerships and community-based citizen working groups. BLM and citizens can collaboratively develop site-specific implementation plans that mutually benefit public land resources, local communities, and the people who live, work, or play on the public lands.

Some commercial and organized group uses requiring SRPs have little to no resource impacts, user conflicts, or health and safety concerns, and require little monitoring. Examples of such uses are hunting outfitter and guide operations, motorized tours, photography tours, nature hikes, dual-sport rides, horseback rides, and organized club campouts. Special

stipulations for SRPs have been developed to protect natural resources, reduce user conflicts, and minimize health and safety risks. These stipulations are included with all authorized SRPs and must be followed to keep the permit valid. These stipulations may be found in Appendix K.

No further environmental analysis for these permit applications will be needed under any of the following conditions.

- These special stipulations are incorporated with the permit.
- The proposed activities occur on designated vehicle routes.
- The proposed activities are confined to existing disturbed areas where allowable use limits have been established or have been designated for such activities.
- There are no expected public concerns or user conflicts.

Final decisions for permit issuance may still be based on other valid concerns, including the following:

- performance,
- other conflicting activities such as hunt seasons,
- BLM's ability to process the permit, and
- other unforeseen circumstances.

The permitted uses must also comply with any special MU allocations or restrictions. Proposed uses that do not meet the above criteria will be subject to further environmental analysis.

2.10.2 Monitoring

Monitoring of actions related to implementing land use plans is an important part of adaptive management. Tracking progress of actions and measuring changes resulting from these activities is important for determining success and the need for a different management approach.

BLM's PFO monitors many activities and events. For example, grazing utilization and vegetation trends are measured to support decisions on allotment Standards and Guidelines evaluations. OHV events are monitored to determine that permit stipulations are followed and necessary site rehabilitation is undertaken.

This RMP recognizes many monitoring needs that will require further effort to design and plan. The PFO invites citizens to help develop an effective monitoring and evaluation plan that lets citizens help monitor effects of implemented plan decisions on public land resources, local communities, and public land users.

2.11 Administrative Actions

Although BLM's intent and commitment to accomplish administrative actions are generally addressed in RMP/EIS-level documents, such activities are neither land-use-plan-level decisions nor implementation-level management-action decisions. Administrative actions are day-to-day activities conducted by BLM, often required by FLPMA but not requiring a NEPA analysis or a decision by a responsible official to be accomplished. Examples of administrative actions include mapping, surveying, inventorying, monitoring, collecting needed information such as research and studies, and completing project-specific or implementation-level plans.

2.12 Requirements for Further Environmental Analysis

The proposed RMP/EIS is a programmatic statement describing the impacts of implementing the proposed land use plan

decisions and management actions described for the planning areas.

Land use plan decisions that are implemented upon approval of the RMP do not require any further environmental analysis or documentation. Whenever implementation-level plans (e.g. ACEC management plans) are prepared, more environmental analysis and documentation would be required. Individual management actions or projects requiring more site-specific project planning as funding becomes available, would require more environmental analysis.

Site-specific environmental analysis and documentation (including the use of categorical exclusions and determinations of NEPA adequacy where suitable) may be prepared for one or more individual projects, in accordance with management objectives and decisions established in the approved land use plan. In addition, BLM will ensure that the environmental review process includes evaluation of all critical elements; to include cultural resources and threatened and endangered species; and completes required USFWS, Section 7, consultations and coordination with the State Historic Preservation Office (SHPO) in accordance with the BLM Cultural Resources National Programmatic Agreement and Arizona's BLM-SHPO Protocol.

Interdisciplinary impact analysis will be based on this and other applicable EISs. If the analysis prepared for site-specific projects finds potential for significant impacts not already described in an existing EIS, another EIS or a supplement to an existing EIS may be warranted.

Upon providing public notice of a decision, supporting environmental documentation will be sent to all affected interests and made available to other publics on request. Decisions to implement site-specific projects are subject to administrative review when such decisions are made.

2.13 Interrelationships

BLM's PFO conducts many activities that require coordination between BLM, State, or other Federal agencies. Coordination has been ongoing throughout this planning effort. Coordination is conducted as a matter of course when implementing land use plan decisions through project development and site-specific activities.

As a part of this planning effort and in implementing on-the-ground activities, BLM conducts ESA, Section 7 consultation with the USFWS. In 2003, BLM and USFWS finalized a consultation agreement to establish an effective and cooperative ESA, Section 7, consultation process. The agreement defines the process, products, actions, schedule, and expectations of BLM and USFWS on project consultation. One Biological Assessment (BA) will be prepared to determine the effect of the preferred Alternative on all relevant listed, proposed, and candidate species, and associated critical habitat. The BA will expose all expected environmental effects, conservation actions, mitigation, and monitoring, including analysis of all direct and indirect effects of plan decisions and any interrelated and interdependent actions. As this plan's decisions are implemented, actions determined through environmental analysis to potentially affect species listed or candidate species for listing under ESA will initiate more site-specific consultation on those actions.

Consultation with the Arizona SHPO is also conducted, in compliance with Section 106 of the National Historic Preservation Act (NHPA). BLM actions will also comply with other Federal environmental legislation, existing programmatic environmental analyses, land use plans, and vegetation treatment documents, such as the Clear Air Act (CAA), the CWA, and the Safe Drinking Water Act (SDWA), and with State and local government regulations

(Applicable Laws, Regulations, Policies, and Planning can be seen in Appendix C).

The Sikes Act (16 U.S.C. 670 et seq.) authorizes the Department of the Interior (DOI), in cooperation with State agencies responsible for administering fish and game laws, to plan, develop, maintain, and coordinate programs for conserving and rehabilitating wildlife, fish, and game on public lands within its jurisdiction. The plans must conform to overall land use and management plans for the lands involved. The plans could include habitat improvement projects and related activities and adequate protection for species of fish, wildlife, and plants considered endangered or threatened. BLM must also coordinate with suitable State agencies in managing State-listed plant and animal species when the State has formally made such designations. The PFO has two habitat HMPs for lands within the planning areas. These documents have satisfied the Sikes Act requirements in the past and will be reviewed in the context of these plans shortly after the records of decision are signed.

The Bureau of Land Management is responsible for management of wildlife habitats on public lands, while the Arizona Game and Fish Department is responsible for managing wildlife populations and game harvest. Proclamation 7263, creating Agua Fria National Monument (Appendix A), states, "Nothing in this proclamation shall be deemed to enlarge or diminish the jurisdiction of the State of Arizona with respect to fish and wildlife management." In this regard, the State agency responsible for fish and wildlife management is the Arizona Game and Fish Department (AGFD). Continued efforts would be made to coordinate with AGFD for opportunities to enhance wildlife habitat, species diversity, and riparian health. Coordination occurs between the agencies on management plans and activities to achieve the optimum health of wildlife species and populations. Currently, coordination efforts are conducted consistent with a statewide Memorandum of Understanding between the agencies. In addition, a Memorandum of Understanding has been signed giving Arizona Game and Fish Department cooperating agency status on Resource Management Plan efforts now being conducted in Arizona. To further promote interagency coordination, a Cooperative Agreement was signed between the agencies, establishing a liaison position in the Arizona Game and Fish Department. This liaison is assigned coordination responsibility on all ongoing land use plans and spends a portion of their work schedule in the Arizona State Office.

Regional transportation planning and construction of roadways and highways is generally conducted by State or regional agencies, such as Arizona Department of Transportation, county departments of transportation, and city transportation departments. When these agencies plan and develop roadways that cross public lands, BLM is involved in their design and contributes to environmental impact analysis. In that process, BLM will coordinate with the responsible agency to develop design features that minimize the fragmenting effect of the planned roadway. BLM will work with the responsible agency to evaluate and incorporate safe and effective wildlife crossings to ensure long term species viability and maintaining habitat connectivity. Where planned roadways potentially fragment other resources, such as (but not limited to) recreation routes or trails, grazing allotments, or mining operations, BLM will work with the responsible agency to provide continued connectivity for those purposes as well. BLM will also work with the agency to provide continued safe access to public lands from any developed roadway for recreation and other public land users.

2.14 Comparison of Impacts by Alternative

A summary comparison of impacts by Alternative can be found on Table 2-8.

Table 2-8. Summary Comparison of Impacts by Alternative

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.6 Impacts to Special Area Designations					
4.6.1 Fr Management of Special Area Designations	No impacts are expected.	Increased visitation along Bloody Basin Rd Bck Ctry Byways could lead to potential degradation of eligible WSR values. Similar effects could occur in Hassayampa River Wilderness from Constellation Mine Road Backcountry Byway.	-Impacts are expected to be similar to Alt B. No impact is expected from add'l WSR evals or from ACECs. -Harquahala Mountain ACEC would reduce effects of vehicles on the Harquahala Mountains Wilderness.	Impacts are expected to be similar to Alternative C.	Impacts from designating new Back Country Byways are expected to be similar Alternative B. Impacts of Harquahala Mountain ONA ACEC would be similar to Alternative C.
4.6.2 From Lands and Realty Management	-No expected impacts. -Acquiring lands within wilderness areas and WSR corridors would benefit management and prevent development activities that increase disturbance. -Retaining Yarnell utility corridor could degrade the wilderness values.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.
4.6.3 From Management of Soil, Air, and Water Resources	-No impacts are expected. Air quality standards could reduce fugitive dust in ACECs. -Inventorying and filing water rights in Wilderness Areas would preserve the wilderness values of water sources.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.
4.6.4 From Biological Resource Management	Management could enhance eligible WSR segments, wilderness areas (WAs), and ACECs.	-Elimination of Larry Canyon ACEC would have no effect.- Management of Harquahala Mountain WHA would enhance values in Harquahala Mountains Wilderness.	-Management of pronghorn WHAs could enhance eligible WSR segments. Controls on vehicle routes and recreational development would help maintain	Effects of management for wildlife in the monument would be the same as in Alternative C, except more ACECs would be created.	The Harquahala Mountains ONA ACEC and the movement corridors would protect wildlife habitat and help maintain natural conditions.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		-New wildlife waters may slightly reduce naturalness in wilderness areas.	biological resources. -Management of the Harquahala/Belmont/Big Horn wildlife corridor/ the Belmont/Big Horn WHA would enhance values in WAs.		Impacts of new wildlife waters would be the same as Alternative B.
4.6.5 From Cultural Resource Management	No impacts are expected.	Development of sites for public use could increase wildlife disturbance and litter. This could slightly decrease naturalness in wilderness areas. Increased visitor education and presence of people may reduce illegal dumping and other undesirable uses, but may reduce opportunities for solitude Conducting cultural inventory could reduce opportunities for solitude during data collection.	Impacts are expected to be similar to those described for Alt B, except the Badger Springs petroglyph site would have fewer facilities/create fewer impacts.	Impacts are expected to be similar to those described for Alt B, except the Wickenburg/Vulture SCRMA no public use thus reducing impacts in this area.	Potential impacts would be limited to Harquahala Mountains Wilderness Area and would be the same as described for Alternative B.
4.6.6 Fr Paleonto Res Mgnt	No impacts expected.	No impacts are expected.	No impacts expected.	No impacts expected.	No impacts expected.
4.6.7 From Recreation Management	Increased visitation is expected to increase motorized use in eligible WSR segments and wilderness areas. This could progressively degrade values of these areas. Impacts to ACECs are not expected.	-Bck Ctry alloc should protect values along elig WSR segments.-Frnt Ctry/developed cmpgrnds could incrse motorized visits/area of people to elig WSR segment, degrading values. - Hieroglyphic Mtn SRMA could diminish solitude. Incrsed veh use could incrse fugitive dust entering Hells Cnyon Wilderness, obscuring vistas.	Impacts in the monument are the same as for Alternative B. Impacts on Hells Canyon Wilderness from the Hieroglyphic Mountains SRMA would be similar to those described for Alternative B.	Impacts in the monument are the same as for Alternative B. The phase-out of motorized activity in the Hieroglyphic Mountains would enhance solitude, naturalness, and visitor experience.	Impacts in the monument would be similar to those described for Alternative B. The Hieroglyphic Mountains SRMA would also be similar to Alternative B. No SRP-related impacts on wilderness areas, ACECs, or back country byways are expected.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.6.8 From Visual Resource Management	In the monument no impacts are expected. Within Bradshaw-Harquahala, proposed projects could lessen the quality of the recreation setting and viewshed by allowing human intrusions into visual landscapes.	Managing the Front Country to VRM Class III could allow visual intrusions that degrade the scenic quality of the eligible WSR segments. Other special area designations are not expected to be affected by VRM management.	Impacts in the monument would be similar to Alternative B except that they would mainly be limited to the northern WSR segment. Managing the Hassayampa River Wilderness to VRM Class II objectives would restrict visual impacts of projects.	Impacts to WSR would be similar to Alt C. - Managing the Harquahala Mountains ACEC to Class I would maintain the appearance of naturalness across a large landscape. - Managing the Sheep Mountain RNA ACEC and the Black Butte ONA ACEC to Class I will retain the natural settings of those areas.	Impacts to WSR would be similar to those under Alt C. -Impacts to wilderness areas would be similar to Alt A. Managing Harquahala Mtn ONA to VRM Class I would min visual intrusions into the landscape. Impacts of managing the Black Butte ONA to Class I objectives would be similar.
4.6.9 From Rangeland Management	Applying land health standards should maintain or improve habitat characteristics. No impacts to wilderness areas, ACECs, or back country byways are expected.	Impacts are expected to be similar to Alt A, except riparian grazing would be limited to the winter season. Riparian and overall ecological conditions in the WSR corridor/the riparian corridor in the Hassayampa River Canyon Wilderness would improve.	Impacts to the riparian corridors would be similar to those described for Alternative B, except that the year-round restriction of grazing should further improve and enhance the wildlife and scenic values.	Impacts similar to those described for Alternative C.	Impacts similar to Alternative B.
4.6.10 From Minerals Management	-No impacts are expected in the monument. -Mining near wilderness areas and along Back Country byways could reduce solitude, increase noise, dust, and traffic; and detract from the visual setting. -In Bradshaw-Harquahala there is little or no leasable or locatable mineral potential, and no impacts are expected from future	Impacts would be similar to Alternative A, closing Tule Creek ACEC to all mineral development would benefit the resources that are important to ACEC designation.	Impacts would be similar to Alternative B, except areas allocated to maintain or enhance wilderness characteristics be closed, thereby reducing the potential area for ground disturbance and maintaining the primitive open space.	Impacts from managing Tule Creek ACEC would be similar to those described for Alternative B, except that closing more area would be closed to mining.	Impacts would be the similar to those under Alternative D.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	development.				
4.6.11 From Fire Management	- Prescribed burning would affect the WSR by reducing visual values over the short term, until vegetation regenerates. Air quality/visibility could also be negatively affected. -Prescribed fire could temporarily increase runoff and erosion along the Agua Fria River. Over the long term, use of fire as a natural process in the monument should lead to increased ecosystem health.	Impacts would be similar to Alternative A. Visitors would be restricted from parts of the wilderness during prescribed burns. The fire damage would detract from the visual setting until the vegetation recovers.	Impacts similar to Alternative B.	Impacts similar to Alternative B.	Impacts similar to Alternative B.
4.6.12 From Wild Horse and Burro Management	Impacts of vegetation damage, soil and vegetation trampling in gathering areas / trailing would continue to diminish the natural setting, especially near water sources and in canyons. Natural landscape settings would continue to exist in most areas.	Impacts similar to Alternative A.	Removing burros from the Harquahala HA would eliminate impacts to some Wilderness Areas. Trailing and vegetation impacts now occurring in Hells Canyon Wilderness would continue.	Impacts similar to Alternative C.	Impacts similar to Alternative C.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.6.13 From Management of Transportation and Public Access	-No impacts are expected on existing ACECs, the five wilderness areas, or the Harquahala Mountain Summit Road Back. -Country Byway. Veh rtes and developments are currently restricted to protect values, including riparian habitat and wildlife in proposed suitable WSR segments.	Impacts of establishing the Hieroglyphic Mountains SRMA could concentrate OHV use, and increase traffic, noise, and dust at the southwest edge of the Hell's Canyon wilderness. Impacts on suitable WSR segments would be the same as for Alternative A.	Impacts similar to Alternative B.	Would enhance nonmotorized recreation settings and opportunities within the Hells Canyon wilderness. Impacts on suitable WSR segments would be the same as for Alternative A.	Impacts similar to Alternative B.
4.6.14 From Management of Wilderness Characteristics	No direct impacts are expected. Indirect benefits could retain more primitive and natural conditions.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.
4.7 Impacts on Lands and Realty Management					

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.7.1 From Management of Special Area Designations	Wilderness areas would remain closed to rights-of-way and land use authorizations. Acquiring inholdings would block up federal ownership in sensitive resource areas.	-Special area designations would not preclude developing an urban transportation network. -Stipulations consistent with the protection of Tule Creek ACEC would be written into future authorizations. Locations, or the terms of use and rights-of-way could be restricted to protect Tule Creek. -The effects of wilderness areas would be the same as in Alt A.	-Lands adjoining Harquahala Mountains ACEC would be of higher priority for acquisition than other lands. -A utility corridor width of 2 miles would avoid impacts to archaeological sites. -The effects of wilderness areas would be the same as in Alt A. -The impacts from Tule Creek on lands actions would be the same as Alt B.	-Designating the Agua Fria Riparian Corridor ACEC would constrain the location of rights-of-way in the Black Canyon corridor. -The impacts from Tule Creek and Harquahala Mountains ONA would be the same as Alt B. - No new rights-of-way would be permitted in the Baldy Mtn ONA. Pvt interests could have to use a more circuitous and expensive route.-The effects of WAs would be the same as Alt A.	Impacts would be the same as Alternative A.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.7.2 From Lands and Realty Management	In the monument, land ownership would not change. No new or widened transportation corridors would be designated, though BLM might permit new rights-of-way. - Lands suitable for R&PP use would be issued on a case-by-case basis. -Major rights-of-way and communication sites would be issued across public lands on a case-by-case basis.	-Impacts in the monument would be similar to Alt A, except that the existing corridor would be narrowed. Future utility uses would locate in undisturbed areas, resulting in possible increased costs. -Land acquisition would consolidate mngemnt in five MUs and would likely reduce costs. -Impacts of land leases and patents for R&PP would be the same as Alt A. -Designating corridors would prevent the proliferation of major utility sys across public lands.	-BLM would issue no leases or patents for land within the monument to local govts or non-profit organizations under the R&PP Act. -Rights-of-way and communication sites would be similar to Alternative B, except the existing corridor would be eliminated from the monument. -Land acquisition would be similar to Alternative B, except that the lands would be consolidated into six MUs	-Impacts of new rights-of-way would be similar to Alternative B, except that the corridor in Bradshaw-Harquahala would be extended, not widened. -Land acquisition would be similar to similar to Alternative B, except that lands would be consolidated into seven MUs. -Land use authorizations would be similar to Alternative B, except that no new electric or gas corridors would be designated.	-Impacts of new rights-of-way within the monument would be the same as Alt B. -Land acquisition would be similar to Alternative C. -Impacts of land leases and patents for R&PP use would be similar to Alt A. -Land use authorizations would be the same as Alternative B.
4.7.3 From Management of Soil, Air, and Water Resources	Efforts to minimize impacts to soils, water, and air would result in increased project costs and possible project redesign or shifted location.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.
4.7.4 From Biological Resource Management	Acquisition of lands to enhance management of species is given a high priority and would result in acquisition of those areas in preference to others.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.
4.7.5 From Cultural Resource Management	The potential discovery of cultural and historical sites could cause restricted land use authorizations. Mitigation could increase project costs.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.7.6 From Paleontological Resource Management	No impact is expected, but should resources be discovered, land use authorizations could be restricted or relocated.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.
4.7.7 From Recreation Management	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
4.7.8 From Visual Resource Management	Modification of rights-of-way to achieve VRM objectives could lead to increased costs.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.
4.7.9 From Rangeland Management	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
4.7.10 From Minerals Management	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
4.7.11 From Fire Management	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
4.7.12 From Wild Horse and Burro Management	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
4.7.13 From Management of Trans and Public Access	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
4.7.14 From Management of Wilderness Characteristics	No impacts expected.	Allocations to maintain or enhance wilderness characteristics would be closed to rights-of-way and inconsistent land use authorizations. Future utilities and private requestors would find other routes through these areas.	Impacts similar to Alternative B.	Impacts similar to Alternative B.	Impacts similar to Alternative B.
4.8 Impacts on Soil Resources					
4.8.1 From Management of Special Area Designations	70,900 acres of AFNM, including Perry Mesa ACEC would be protected from increased erosion and decreased soil moisture/productivity by	Impacts would be similar to Alternative A for eligible WSR segments. -In Bradshaw-Harquahala closing the fenced area of the Tule Creek ACEC to	In the monument, impacts would be similar to Alternative A for eligible WSR corridors. -In Bradshaw-Harquahala 8 ACECs,	Impacts in the monument would be similar to Alternative C. -In Bradshaw-Harquahala 10 ACECs, totaling 314,580 acres,	Impacts in the monument would be similar to Alternative C. -In Bradshaw-Harquahala, ACEC (111,450 acres) impacts

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	limiting motor vehicle use. -Existing designated Wilderness would be managed to maintain soil productivity.	motorized vehicles and grazing could reduce soil disturbance and compaction.	totaling 55,710 acres, would reduce soil erosion and improve soil moisture and productivity.	would have impacts similar to those under Alternative C.	would be similar to Alternative C.
4.8.2 From Lands and Realty Management	-Short term disturbance may occur from current activities. -In Bradshaw-Harquahala, land disposal and subsequent development could result in loss of soil productivity. Short term disturbance could result from utility, transportation/communications rights-of-way.	In the monument, no impacts are expected from land tenure adjustments or from utility and transportation corridors or communication sites. In Bradshaw-Harquahala, impacts are expected to be similar to Alternative A.	Impacts similar to Alternative B.	Impacts similar to Alternative B.	Impacts similar to Alternative B.
4.8.3 From Management of Soil, Air, and Water Resources	-In the monument, soil resources are expected to improve through measures to reduce loss/improve productivity. -No impacts expected in the Bradshaw-Harquahala.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.
4.8.4 From Biological Resource Management	Proposals to improve habitat would contribute to soil improvement at specific locations, resulting in an overall slight improvement.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.
4.8.5 From Cultural Resource Management	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
4.8.6 From Paleontological Resource Management	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
4.8.7 From Recreation Management	In the monument, current recreation management practices could cause localized soil loss and	Impacts might occur in the Frnt Ctry and Passage RMZ as rec use incrses. -In Bradshaw-Harquahala,	Impacts in the monument would be similar to Alternative B.	Impacts in monument would be similar to Alt C, though more area would be allocated to	Impacts in monument would be similar to Alternative C.D

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	reduced soil productivity. -Lack of OHV management in Bradshaw-Harquahala could lead to progressively increasing soil erosion, compaction, and overall loss of soil productivity. -Concentrated recreation and OHV use could result in the loss of or reduced vegetation cover, soil compaction, and streambank instability in riparian and wash areas, thus reducing soil moisture and soil productivity.	vehicle route designations and closures in Tule Creek ACEC and allocations to maintain or enhance wilderness characteristics would slightly reduce soil impacts. -Area designations within the Castle Hot Springs and Harquahala MUs, would slightly reduce soil disturbance, erosion, and compaction by OHV use. -Selected route closures and planned, sited, and engineered recreation facilities are designed to reduce soil impacts of recreation activities.	In Bradshaw-Harquahala impacts would be similar to Alternative B, but MUs would slightly reduce soil disturbance, erosion, and compaction by OHV use. Soil erosion from improper events and OHV use would be lessened by implementing vehicle route designations throughout the Bradshaw-Harquahala.	Back County RMZ. -Impacts would be reduced in the southern portion of the castle Hot Springs MU by phasing out motorized uses. -Eliminating recreational vehicle use in designated MUs would reduce soil erosion. -Increased BLM signing, OHV route development and connectivity, public education, and better managed motorized and non-motorized recreation in SRMAs would lessen impacts to soils over the long term.	Route closures would likely reduce soil disturbance, erosion, and compaction by OHV use. -Impacts in the Bradshaw-Harquahala would be similar to Alternative B, except vehicular travel would be curtailed in allocations to maintainor enhance wilderness characteristics and the Harquahala Mountains and Black Butte ONAs. Impacts of vehicular travel would be curtailed by eliminating vehicle use in Tule Creek ACEC.
4.8.8 Fr Vis Res Mgnt	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
4.8.9 From Rangeland Management	Implementing guidelines adopted in Arizona Standards for Rangeland Health and Guidelines for Grazing Administration would improve soil conditions.	Impacts would be similar to Alternative A, except grazing would be limited in riparian areas to the winter. This would encourage more rapid recovery of riparian vegetation and reduce impacts to soils from grazing.	Impacts similar to Alternative B, except grazing in riparian areas would be eliminated, increasing soil cover and reducing streambank damage.	Cessation of grazing throughout the planning area would give the greatest benefit to soils of any alternative.	Impacts similar to Alternative B.
4.8.11 From Fire Management	-The use of heavy equipment and mechanical thinning of trees could increase the potential for erosion. Soil moisture and productivity could be reduced in the short term, but increased in the long term.	Impacts are similar to Alternative A, except that fire use would be allowed in adapted ecosystems. When lightning fires occur, larger wildfires could be allowed, resulting in short term increases in soil loss.	Impacts similar to Alternative B.	Impacts similar to Alternative B.	Impacts similar to Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	-Prescribed burning would reduce soil erosion. -Full suppression in fire adapted communities could cause herbaceous cover to decline with related soil effects.				
4.8.13 From Management of Transportation and Public Access	Increased soil erosion is expected from increased visitation, multiplying numbers of routes, and greater use of OHVs. Bank washes could be broken down and made unstable in wash "play" areas.	In the monument, impacts might occur in the Frnt Ctry and Passage Zones. The net reduction of 33 route mi. would likely reduce these effects. -In Bradshaw-Harquahala route closures in Tule Creek ACEC and allocations to maintain or enhance wilderness charac would slightly reduce soil disturbance, erosion, and compaction by OHV use.	-Impacts in the monument would be similar to those discussed for Alternative B, except the net reduction of 44 miles of route would marginally protect more soil resources. -Reducing vehicle traffic routes in the MUs would slightly reduce soil disturbance, erosion, and compaction by OHV use.	-Impacts in the monument would be similar to Alternative C, except would provide the most protection due to route closures. -Restricting vehicle use to designated routes would further reduce soil impacts in all other parts of the planning area.	-Impacts in the monument would be similar Alternative C. The reduction in route mileage would reduce soil disturbance more than Alternatives B and C, but less than Alternative D. -Soil erosion caused by vehicular travel would be curtailed in Tule Creek ACEC, and by reducing cross-country travel.
4.8.14 From Management of Wilderness Characteristics	No impacts expected.	56,040 acres would be alloc for wilderness charact. Soil disturbances, compaction, and erosion caused by human induced activities would be reduced.	Impacts are expected to be similar to Alt B except that 107,510 acres would be alloc. Soil disturbance would be reduced the most in this Alt.	Impacts would be similar to Alt B except that 91,480 acres would be allocated. This would provide more protection than Alt B, but less than Alts C and E.	Impacts are expected to be similar to Alt B except that 96,420 acres would be allocated. Soil protection would be more than Alts B and D, but less than Alt C.
4.9 Impacts on Air Quality					
4.9.1 From Management of Special Area Designations	-Restrictions resulting from special area designations are likely to increase emissions because of population growth and increases in OHV use. -In Bradshaw-Harquahala, BLM would continue to	Recreation prescription in ACECs, RNAs and SRMAs would shift OHV users to sites where OHV recreation is allowed and intensify use in remaining areas. The result would be (1) reduced localized air quality	-Designation of Bk Ctry byways could attract more regional OHV users. This is not expected to increase regional OHV use or regional fugitive dust emissions.	-The relative shift in air quality impacts between newly restricted areas and the remaining accessible areas would be greatest. -Air quality effects and fugitive dust emissions	Site-Specific prescriptions and restrictions applied on ACECs (including ONAs), along with cultural and wildlife management prescriptions, would shift

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	prohibit OHV use in five wilderness areas (96,820 acres) and encourage OHV use on one back country byway (Harquahala Mountain Summit Road).	impacts in the new restricted areas and (2) increased temporary and localized, degraded air quality in the remaining OHV areas.	-In Bradshaw-Harquahala, seven ACECs would further shift OHV use and possible air quality impacts. Reducing vehicle travel routes and use in Harquahala Mountains ONA would reduce fugitive dust emissions in the immediate area.	from vehicular travel and OHV use would be curtailed by eliminating or mitigating recreation vehicle use in the Sheep Mountain RNA.	the locations of increases in OHV use and resulting fugitive dust and emissions.
4.9.2 From Lands and Realty Management	-Land disposal actions would not delay the region's compliance with the air quality standards. -New residential development on previously rural BLM land would have a minor effect immediately downwind from each new development. -Implementing available dust control best management practices would ensure that impacts would be temporary and limited to the immediate area of the construction. -Ongoing maintenance and improvement of facilities and roadways would require use of construction equipment. This would generate fugitive dust and tailpipe emissions.	-Narrowing the existing utility corridor is not expected to affect air quality, but it would shift the location of future air quality emissions into a smaller area. -In Bradshaw-Harquahala new utility corridors would be designated for future expected demands. Any such construction would likely generate fugitive dust and tailpipe emissions. -Impacts from ongoing maintenance and improvements of facilities and roadways would be similar to Alternative A.	-In the monument, elimination of Black Canyon utility corridor would maintain current emissions. Impacts from ongoing maintenance would be similar to Alternative A. -In Bradshaw-Harquahala impacts would be the same as Alternative B. -Any construction in non-attainment areas would be subject to comply with county air quality rules.	Impacts in the monument would be similar to those described for Alternative C. The portion of the Black Canyon Multi-Use corridor would be extended. If utilities elect to use this corridor in the future, they would generate criteria pollutants and fugitive dust through earthmoving and the use of heavy equipment.	Impacts similar to Alternative C.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.9.3 From Management of Soil, Air, and Water Resources	Improvements resulting from management of soil, water, and air resources are expected to reduce emissions of fugitive dust.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.
4.9.4 From Biological Resource Management	In the monument, measures to protect biological resources, including the use of prescribed fire may result in small amounts of temporary, localized emissions. -In Bradshaw-Harquahala, measures to protect ground cover, biological areas, and habitats would minimize impacts. -Implementation of Land Health Standards would reduce production of windblown fugitive dust not related to roads.	Impacts similar to Alternative A.	Limitations in WHAs and ACECs would improve air quality in these areas. Emissions might increase in remaining areas where OHV use and recreational site developments are allowed.	Motor vehicle routes that fragment pronghorn habitat and cross known movement corridors would be closed, limited, or mitigated. The shift in impacts between newly restricted areas and the remaining areas would be greatest under Alternative D.	Impacts similar to Alternative C.
4.9.5 From Cultural Resource Management	No impacts expected.	Increased visitation to cultural sites developed for public use is expected to slightly increase emissions of criteria pollutants and fugitive dust.	Impacts similar to Alternative B except to a lesser degree due to less High Public Use designations.	-In the monument, impacts from vehicle traffic would be limited to Bloody Basin Road and the Pueblo la Plata area. Levels of airborne pollutants would be lower than under Alts B or C. -In Bradshaw-Harquahala, impacts generated by site visits would be lower than Alts B and C.	In the monument, impacts would be lower than Alternative B and greater than Alternatives C and D. In the Bradshaw-Harquahala, impacts would likely be lower than Alternative B and greater than Alternatives C and D.
4.9.6 Fr Paleont Res Mgt	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.9.7 From Recreation Management	-Current recreation uses could generate emissions of criteria pollutants and fugitive dust from OHV travel, as well as emissions and smoke from campfires and stoves. -Prohibiting cross-country, OHV use in the monument would reduce levels of criteria pollutants and fugitive dust. In Bradshaw-Harquahala OHV travel would generate increased emissions of criteria pollutants and fugitive dust.	-Impacts are expected to be similar to Alternative A, except increased management actions in SRMAs and RMZs are expected to locally address production of fugitive dust and could reduce dust emissions in those areas. -Building and maintaining roadways, trails, and recreation facilities would generate temporary and short-lived emissions of criteria pollutants and fugitive dust from heavy equipment and earthmoving.	-In the monument impacts would be similar to Alternative B, except that more vehicle routes would be closed or limited to motorized vehicles. -In Bradshaw-Harquahala, impacts would be similar to Alternative B, except BLM would designate seven ACECs, further shifting OHV use and possible air quality impacts. -Implementation of SRMAs could reduce air quality effects/fugitive dust emitted by improper activity, scheduled OHV events/ intensive OHV use.	-Impacts are expected to be similar to Alt C except that: The relative shift in impacts between newly restricted areas and the remaining areas would be greatest because of restrictions on the most land. -In the monument, BLM would issue no SRPs. This would lead to a decrease in emissions of criteria pollutants. -Closing more routes would improve air quality and lessen dust emissions. -Impacts of SRMAs would be similar to Alternative C.	Impacts would be similar to Alternative C.
4.9.8 From Visual Resource Management	No impacts expected.	Restrictions to development may slightly reduce dust emissions.	Impacts similar to Alternative B.	Impacts similar to Alternative B.	Impacts similar to Alternative B.
4.9.9 From Rangeland Management	May have increased production of windblown dust in areas denuded by frequent livestock concentration. Implementation of Rangeland Health Standards and Guidelines for Grazing Management is expected to reduce dust emissions by increasing ground cover.	Impacts similar to Alternative A, except winter season use of riparian areas would lead to increased vegetation densities in those areas, potentially slightly reducing localized windblown dust.	Impacts similar to Alternative B, except closure of riparian areas to livestock grazing year round would lead to higher vegetation densities and more rapid growth than Alternative B.	Cessation of grazing would result in overall increases in ground cover, reducing windblown dust emissions more than any other alternative.	Impacts similar to Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.9.10 From Minerals Management	-No impact is expected on the monument. -Within the Bradshaw-Harquahala, mining/associated activities could cause localized increases in fugitive dust/ vehicular exhaust. These are expected to be relatively small.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Alternative D would reduce the amount of land open mining more than other alternatives. This action would reduce emissions of criteria pollutants and fugitive dust.	Impacts similar to Alternative A.
4.9.11 From Fire Management	-Use of prescribed fire would generate short term smoke emissions. Fire prescriptions minimize smoke drift into populated areas and Class I or II airsheds. Impacts are minimized. -The use of heavy equipment and the mechanical thinning of trees would generate emissions of criteria pollutants as well as fugitive dust.	Impacts would be similar to Alternative A except: Naturally occurring wildfires could be managed to meet resource objectives. The opportunity for smoke drift into populated areas and/or Class I or II airsheds would increase over Alternative A.	Impacts would be similar to Alternative B.	Impacts would be similar to Alternative B.	Impacts would be similar to Alternative B.
4.9.12 From Wild Horse and Burro Management	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.	No impacts expected.
4.9.13 From Management of Transportation and Public Access	-Prohibiting cross-country OHV use in the monument would reduce levels of criteria pollutants and fugitive dust. -In Bradshaw-Harquahala OHV travel would generate increased emissions of criteria pollutants and fugitive dust.-Any potential	-In the monument, 140 miles of route would be left open and 33 net miles of route would be closed. Route closures could impacts. -In Bradshaw-Harquahala routes would be reduced by 82 miles. Route closures would concentrate more	-In the monument, impacts would be similar to Alt B, except that more vehicle routes would be closed or limited to motorized vehicles (44 miles). -In Bradshaw-Harquahala, impacts of	-In the monument, negative impacts would be the least due to the highest amount of route closures over other Alt (122 miles). -In Bradshaw-Harquahala 1,108 miles of routes would be closed. The route	-In the monument, Impacts are expected to be similar to Alt B, except that more net route miles would be closed (70 miles). -Impacts in the Bradshaw Harquahala Planning Area would be similar to those described under

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	opening of new routes would increase fugitive dust during construction as well as increase emissions created by vehicles once the route is opened.	vehicles on remaining roads and thereby increase localized air quality impacts and fugitive dust levels. -Building and maintaining routes would generate temporary and short-lived emissions and fugitive dust from heavy equipment and earthmoving.	OHV use would be similar to Alternative B except BLM would designate seven ACECs, further shifting OHV use and possible air quality impacts.	closures would reduce opportunities for air quality emissions and fugitive dust.	Alternative B.
4.9.14 From Management of Wilderness Characteristics	No impacts expected.	56,040 acres would be allocated to the management of wilderness characteristics, which would limit or restrict vehicle use. This could intensity vehicle travel into remaining areas resulting in reduced localized air quality impacts in newly restricted sites and increased impacts in other areas.	Impacts are expected to be similar to Alternative B, except that more area would be allocated to the management of wilderness characteristics (107,510 acres).	Impacts are expected to be similar to Alternative C, except that more area would be allocated to the management of wilderness characteristics (91,480 acres).	Impacts are expected to be similar to Alternative D except that less area would be allocated to the management of wilderness characteristics (96,420 acres).
4.10 Impacts on Water Resources					
4.10.1 From Management of Special Area Designations	-Perry Mesa ACEC is likely to continue to experience minor degrad of water quality. -Eligible WSR seg would continue to be managed for nonimpairment to WSR values. -In Bradshaw-Harquahala mgment of wilderness areas would improve hydrologic function.	Impacts in the monument would be similar to Alt A. -In Bradshaw-Harquahala, impacts in wilderness areas would be the same as for Alt A. In addition, withdrawal of Tule Creek from mineral development would eliminate disturbance to streambanks, soils, and ground cover.	Designating 4 ACECs in the monument will close the areas to grazing/veh. This would encourage revegetation of disturbed areas/would improve hydrologic function. -In the Bradshaw-Harquahala designation of six ACECs would have effects similar to those described above.	Impacts in the monument would be similar to those described for Alt A. -In Bradshaw-Harquahala impacts would be similar to Alternative C, but Alternative D would close more areas to mineral entry.	Impacts in the monument are expected to be similar to Alternative A. In Bradshaw-Harquahala, management prescriptions for four ACECs would result in impacts similar to Alternative C.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.10.2 From Lands and Realty Management	-Water quality could be affected by construction/ maintenance of facilities authorized under right-of-way. -Impacts from land disposal of 54,370 acres include the potential loss of vegetation from development/possible increased erosion and sediment yield. -Acquiring larger blocks of BLM managed land could improve vegetation conditions/reduce stream sedimentation.	-In the monument, narrowing Black Canyon utility corridor could reduce options for locating towers or other facilities, which could result in slightly higher than normal impacts. -Impacts of disposal of 58,400 acres of public land similar to those described for Alternative A.	-Impacts of rights-of-way are similar to Alternative A. Eliminating the Black Canyon utility corridor would prohibit more utility right-of-way allocations. -The impacts of disposing of 49,100 acres of BLM lands would be similar to Alternative B. -Utility corridors and communication sites would have impacts similar to Alternative B.	Impacts in the monument would be the same Alternative C. The impacts on water resources from acquiring private or State lands would be similar to those described for Alternative B. Utility corridors and communication sites would have impacts similar to Alternative B.	Impacts in both planning areas would be similar to Alternative B.
4.10.3 From Management of Soil, Air, and Water Resources	Management actions designed to improve soil conditions would have the affect of improving water quality.	Alternative B would provide more protection for water resources than Alternative A.	Impacts are expected to be similar to Alternative B, but more protection of water resources.	Would provide the most protection of water resources.	Impacts are expected to be similar to Alternative C.
4.10.4 From Biological Resource Management	Designating the Agua Fria River riparian corridor would improve functional condition of the riparian zone. In Bradshaw-Harquahala impacts are expected from acquiring water rights to maintain or enhance spring/riparian habitats.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.
4.10.5 Fr Cult'l Res Mgnt	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.10.6 Fr Paleont ResMgnt	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.10.7 From Recreation Management	-Areas disturbed by concentrated recreation use	In Front Country and Passage RMZs in the	In the monument, impacts would be similar	In the monument, impacts would be similar	Impacts in the monument are expected to be similar

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	would continue to contribute to stream sediments and turbidity. -Cross-country OHV use could increase soil erosion, sediment yield, damage to banks of drainages, and sediment deposition. -In Bradshaw-Harquahala, impacts are expected from the increased water use by visitors and the proliferation of unplanned and unmanaged recreational trails and facilities.	monument, OHV use would degrade water resources. In Bradshaw-Harquahala allocating eight SRMAs and two areas to maintain or enhance wilderness characteristics for management of recreation use could reduce soil erosion and sediment yield into drainages.	to Alternative B, except the Front Country RMZ would be reduced and the Passage RMZ would be reduced. Impacts under Alternative C are expected to be similar to those described for Alternative B, but to a lesser degree.	to Alternative C, except the Front Country RMZ would be reduced and the Passage RMZ would be increased. In Bradshaw-Harquahala impacts are expected to be similar to those described for Alternative C, but to a lesser degree.	to those under Alternatives C and D. Riparian and upland vegetation would benefit from decreased access, resulting in improved functional condition of riparian zones. Impacts In Bradshaw-Harquahala are expected to be similar to those described for Alternative C.
4.10.8 From Visual Resource Management	No impacts are expected.	Implementation of VRM standards could reduce the disturbance of new projects, reducing sediment loading and improving water quality.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.
4.10.9 From Rangeland Management	-Impacts would include trampling and reduced vegetation, resulting in increased soil erosion and reduced streambank stability in riparian areas. -In Bradshaw- Harquahala implementation of the Land Health Standards and the Guidelines for Rangeland Health would result in overall water quality improvements.	Impacts are expected to would be similar to Alternative A, except limiting grazing in riparian areas to the winter season would reduce bank instability and increase riparian vegetation cover, slightly reducing grazing impacts to water resources.	Impacts are expected to would be similar to those describe for Alt A, except the prohibition of grazing in riparian areas would result in more rapid bank and vegetation recovery, further increasing riparian vegetation cover and bank stability, further reducing grazing impacts to water resources.	Alternative D would cause the greatest improvement for water resources and riparian zone vegetation.	Impacts are expected to be similar to Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.10.10 From Minerals Management	-No impacts are expected impact in the monument. -Mining is expected to somewhat degrade water quality through increased sedimentation. -Extraction of saleable mineral from flood plains could impair stream hydrologic function.	No impacts are impacts expected in the monument. In Bradshaw-Harquahala Impacts would be similar to those discussed in Alternative A.	No impacts are expected in the monument. In Bradshaw-Harquahala impacts would be substantially lower than Alternative B because more land would be removed from mineral development.	-No impacts are impacts expected in the monument. -Impacts In Bradshaw-Harquahala would be lowest under this Alternative since the most amount of land would be removed from mineral development.	-No impacts are expected in the monument. -In Bradshaw-Harquahala impacts would be similar to Alt A, except that riparian areas in the Black Canyon corridor would be closed to mineral material disposal.
4.10.11 From Fire Management	-Prescribed fire would temporarily result in increased surface water turbidity and sedimentation. Vegetative composition will improve in the long-term. -Full suppression of wildfires could lower infiltration, increase runoff, increase erosion, and increase sedimentation. -Use of heavy equipment and construction could increase soil loss and turbidity and sedimentation of waterways.	Fire use would have impacts similar to those described in Alternative A.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.
4.10.12 From Wild Horse and Burro Management	-No impacts are expected to monum. In Bradshaw-Harquahala, maintaining AMLs in the Lake Pleasant HMA and removing burros in the Harquahala HA, would allow heavily used areas to recover/min impacts to water quality/ hydrologic function.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.10.13 From Management of Transportation and Public Access	-Unplanned and unmanaged routes could continue to degrade stream bank stability and water resources. -In Bradshaw-Harquahala unlimited cross-country OHV use on the public lands west of Highway 93 could increase soil erosion, sediment yield, damage to banks of drainages, and sediment deposition	In the monument OHV use could continue to degrade water resources-Closing routes would reduce impacts. Riparian and upland vegetation would benefit from decreased access, resulting in improved functional condition of riparian zones. -In Bradshaw-Harquahala, maintaining a diverse network of motorized vehicle routes would harden some areas.	Impacts are expected to be similar to those described for Alternative B, but to a lesser degree due to an increase in closed miles of motorized routes.	Impacts are expected to be similar to those described for Alternative C, but to a significantly lesser degree due to a greater net closure of motorized travel routes.	In the monument, impacts would be similar to those under Alternative C and D. Impacts In Bradshaw-Harquahala are expected to be similar to those described for Alternative C.
4.10.14 From Management of Wilderness Characteristics	No impacts are expected	In the monument, no impacts are expected. -In Bradshaw-Harquahala, 56,040 acres would be allocated for the management of wilderness characteristics. This could reduce soil erosion and sediment yield into drainages.	Impacts are expected to would be similar to Alternative B, except that a larger area would be allocated for management of wilderness characteristics (107,510 acres).	Impacts are expected to be similar to Alternative B except that 91,480 acres would be allocated for management of wilderness characteristics.	Impacts are expected to be similar to Alternative B except that 96,420 acres would be allocated for management of wilderness characteristics.
4.11 Impacts on Biological Resources					

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.11.1 From Management of Special Area Designations	Managing WSR eligible segments will reduce vehicle impacts to wildlife and habitat; reduce stream bank erosion, water quality degradation, and disturbance to riparian vegetation. -Within Bradshaw-Harquahala, vehicles on the Harquahala Mountain Summit Scenic Road Back Country Byway would occasionally disturb bighorn sheep and kill desert tortoise. -Management of designated Wilderness protects vegetation and wildlife habitat through prohibition of OHV use.	In the monument, management of WSR segments would have impacts similar to Alternative A. -Within Bradshaw-Harquahala, Tule Creek ACEC would improve Gila topminnow and riparian habitat, as well as desert tortoise habitat. Closing the stream channel to vehicle use and grazing and withdrawing this area from mineral entry would limit habitat damage from mining equipment. -Increased recreational use of the Constellation Road Back Country Byway would increase wildlife disturbance. Making Bloody Basin Road into a Back Country Byway could increase wildlife deaths from vehicle impacts, as well as impede pronghorn movement and breeding.	In the monument, ACECs would have no new impacts to wildlife. -In Bradshaw-Harquahala, management of seven ACECs will increase bighorn sheep forage; protect unique vegetation communities; reduce habitat fragmentation; protect spring sources; protect riparian areas; protect high value desert tortoise habitat; and protect important raptor nesting sites. -The designation of these 10 ACECs would add additional protection to 60,420 acres of Category I desert tortoise habitat, 15,310 acres of Category II habitat and 2,050 acres of Category III habitat as well as emphasize protection of 10.4 miles of riparian habitat.	In the monument, impacts would be similar to Alternative C. Within the Bradshaw-Harquahala, the eight ACECs will have impacts similar to those described in Alternative C, but over a larger area. The designation of these nine ACECs would add additional protection to 66,940 acres of Category I desert tortoise habitat, 167,710 acres of Category II habitat and 6,000 acres of Category III habitat as well as emphasize protection of 49.5 miles of riparian habitat.	In the monument, impacts of designating Bloody Basin Road as a back country byway would be similar to those described for Alternative B. In the Bradshaw-Harquahala, management of four ACECs would be similar to that described in Alternative C. Management of designated Wilderness would have the same impacts as in alternative A. Designation of 4 ACECs would add additional protection to I desert tortoise habitat, as well as emphasize protection of 1.7 miles of riparian habitat.
4.11.2 From Lands and Realty Management	In the monument, existing utility right-of-ways could temporarily disturb vegetation for wildlife habitat, and provide sites for invasive species encroachment. -In Bradshaw-Harquahala, acquisition of lands to	In the monument, narrowing the utility corridor would reduce the likelihood of impacting wildlife habitats. -In the Bradshaw-Harquahala, disposal of 53,143 acres would reduce wildlife habitat, including	In the monument, eliminating the utility corridor would reduce the potential for the impacts described in Alternative A. -In the Bradshaw-Harquahala, impacts from acquisition would be similar to Alternative B.	-In the monument, impacts are the same as in Alt C. -In Bradshaw-Harquahala, building and maintaining facilities in transportation and utility corridors and at communication sites	In the monument, impacts are the same as Alternative B. In the Bradshaw-Harquahala, impacts from acquisition and disposal would be the same as Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	consolidate BLM management would improve wildlife habitats. -Increased corridors, along with more communication sites, could lead to more habitat disturbance, prevent wildlife movement, result in loss of habitat, result in human presence and harassment, displace individual animals, and facilitate long-term human population growth. -Building and operating facilities in these corridors could create barriers to wildlife movement and disturb Category I, II, and III tortoise habitat.	10,709 acres of desert tortoise habitat. -Acquisition of lands would help consolidate blocks of BLM land and add high value resources to those already being managed by BLM. -The impacts of utility and transportation corridors would be the same as described in alternative A, except the Black Canyon Corridor would be widened 1 mile to the west. No impacts are expected within the life of the plan.	Disposal of 49,100 acres of BLM land would also have similar impacts to Alternative B. -Transportation and utility corridors would have similar impacts as described for Alternative A, except the Black Canyon Corridor would be widened 2 miles to the west.	would have impacts similar to Alternative A. -The Black Canyon would be expanded south. This may increase the possibility of having power line towers impacting sensitive resources. Impacts from acquiring private or state lands would be similar to those in Alternative B.	Impacts of utility and transportation corridors would be similar to Alternatives B and C as the Black Canyon Corridor would be widened. Impacts from acquiring private or state lands would be similar to those in Alternative B.
4.11.3 From Management of Soil, Air, and Water Resources	Plans to maintain or improve watershed conditions, soil cover, and water flows would maintain or improve riparian vegetation quality, species diversity, and water quality in select drainages.	Impacts are similar to Alternative A.	Impacts are similar to Alternative A.	Impacts are similar to Alternative A.	Impacts are similar to Alternative A.
4.11.4 From Biological Resource Management	In the monument, proposed landscape improvements would improve riparian habitats. Continued stocking of native fish would increase the overall viability of sensitive native species.	Implementation of the Land Health Standards would make progress toward achieving desired plant communities, and reducing invasive species. Habitat needs of special status species would be a high priority.	-Impacts are expected to be similar to Alternative B, except: -In the monument, management of the WHA for pronghorn would limit or mitigate vehicular access, prohibit developing new recreational facilities, require all fences to meet -	-Impacts to biological resources would be similar to Alternative B, except: -In the monument, impacts of the Pronghorn WHA would be similar to Alternative C, except that the removal of fences in the absence of	-Impacts to biological resources would be similar to Alternative B, except: -In the monument, impacts to pronghorn would be similar to Alternative C, except seasonal use restrictions on SRPs during the

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	-Modification of livestock fencing would improve pronghorn movement. -In the Bradshaw-Harquahala, protection measures on specific stream reaches would improve wildlife habitat along them. -With Arizona Game and Fish, acquisition of water rights could reduce competition for water and ensure legal availability and maintenance of flows.-Use of native species for restoration of degraded rangelands would reestablish native plant communities and improve wildlife habitat.-Protection of significant cliffs for nesting raptors would improve nesting conditions for sensitive raptor species. In the vicinity of these cliffs, limits to use by burros and restrictions on rights-of-way would protect the foraging habitat of the same birds. -Protection of the bighorn lambing areas in the Harquahala Mountains would increase forage and reproductive success in sheep populations.	-Reintroduction, transplanting, and supplemental stocking of wildlife would contribute to conservation and recovery of T&E species. -Implementing desert tortoise management standards would protect tortoise populations and habitat. -DFC objectives would protect and conserve priority habitats and species contribute to recovery of T&E species. -Wildlife water availability would ensure access. Distribution and abundance of some species would be enhanced. Actions to protect springs and seeps would prevent overexploitation. -Prohibiting domestic sheep and goat grazing by desert bighorn sheep habitat will reduce the likelihood of disease transmission. -Guidance on exotic species management would emphasize the restoration and maintenance of native species.	BLM standards, and emphasize management of wildlife habitats. Prescribed burns would improve pronghorn forage and reduce invasive species. -The management of Belmont-Big Horn Mountains and the Date Creek Mountains WHAs would improve species distribution and maintain genetic diversity. They would also ensure bighorn sheep are given priority consideration in future road improvements.-The Upper Agua Fria River Basin WHA would reduce wildlife-vehicle conflicts and improve pronghorn and mule deer movement.-The designation of the WHAs would add additional protection to 6,520 acres of Category I desert tortoise habitat, 129,590 acres of Category II habitat and 7,840 acres of Category III habitat as well as 14.7 miles of riparian habitat by emphasizing wildlife habitat management in these areas.	livestock grazing would greatly reduce habitat fragmentation.-Impacts of management for the Date Creek WHA would be similar to those described in Alternative C, except that it would futher reduce habitat fragmentation and loss of tortoise habitat. -Impacts of management for the Upper Agua Fria River Basin WHA would be similar to those described for Alternative C; except they would be applied to a larger area and removal of all fences in the absence of livestock grazing would further facilitate big game movement.-The designation of the WHAs would add additional protection to 2,850 acres of Category II habitat and 3,630 acres of Category III habitat as well as 5 miles of riparian habitat by emphasizing wildlife habitat management in these areas.	fawning season would reduce human caused impacts.-Impacts of management for WHAs would be similar to those described for Alternative C. The designation of the WHAs would add additional protection to 3,610 acres of Category I desert tortoise habitat, 129,340 acres of Category II habitat and 4,040 acres of Category III habitat as well as 14.7 miles of riparian habitat by emphasizing wildlife habitat management in these areas.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.11.5 From Cultural Resource Management	Management actions for cultural resources that prohibit surface disturbance near known archaeological sites would protect vegetation and wildlife habitat in those areas.	In the monument, development of High public use at four sites could degrade biological resources. Development of four Moderate public use areas would have fewer impacts. No impact is expected from Low public use sites.-In Bradshaw-Harquahala, impacts from public use would depend on site location, size, and surrounding habitat. In desert tortoise habitat, the decision to accept no net loss of habitat would reduce impacts from site development.	In the monument, impacts of two High public use areas would be similar to those described for Alternative B, but to a lesser degree. Impacts of developing eight Moderate public use sites would be similar to those described in Alternative B, but on more sites. Overall, impacts are expected to be lower than in Alternative B.-Impacts in Bradshaw-Harquahala are expected to be similar to Alternative B, but in fewer locations.	In the monument, impacts from developing the two Moderate public use sites described would be similar to those described for Alternative B, but at fewer sites. In the Bradshaw-Harquahala, impacts of public use development would be similar to those described in Alternative B, but in fewer locations than Alternative C.	In the monument, impacts of High public use at three sites and Moderate public use at four sites would be similar to those described for Alternative B. Within the Bradshaw-Harquahala, impacts of public use development would be similar to those described for Alternative B.
4.11.6 Fr Paleont Res Mgnt	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.11.7 From Recreation Management	In the monument, recreation uses would be allowed if they are consistent with the proclamation. In Bradshaw-Harquahala, current levels of recreation management would inadequately protect biological resources. Informal concentrated recreational use areas would continue to develop and grow causing increasing levels of habitat loss and disturbance. The location and use of these	In the monument, Front Country and Passage zones could lead to some additional disturbances to wildlife habitats. Campgrounds could disturb pronghorn movement and fawning behavior. Designation of 12,700 acres of Back Country, would result in less ground disturbance to vegetation and wildlife habitat. In the Bradshaw-Harquahala, seasonally restricting motorized events in Category I and II desert	In the monument, impacts would be similar to Alternative B, except impacts of visitor use in Front Country would affect 42,410 acres and 70 acres of Passage RMZ. The Badger Springs campground could potentially affect pronghorn behavior and fawning success on Black Mesa. Impacts from Back Country would be similar to Alternative B, but the zone would increase to 28,420 acres.	In the monument, impacts to biological resources would be similar to Alternative B, except impacts in Front Country would affect only 1,530 acres and 990 acres of Passage Zone. The Back Country would be expanded to include 68,380 acres. Impacts from allocating a Passage zone would be similar to Alternative B except that the zone would consist of 990	In the monument, Impacts are expected to be similar to Alternative B, except impacts of visitor use in Front Country would affect 12,440 acres and 1,300 acres of Passage RMZ. Since Back Country would include 57,200 acres, the impacts to wildlife described in Alternative B would be over a much larger area. Within the Bradshaw-Harquahala, impacts

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	areas would continue to be unplanned and may conflict with sensitive biological resources, priority species, or priority habitats.	tortoise habitat would avoid impacts to desert tortoises. Limiting designation of rock crawling sites would protect resources. In the Table Mesa, Hieroglyphic Mountains, and San Domingo SRMAs, development of OHV staging areas would destroy the vegetation and habitat in those sites.	Impacts from allocating a Passage zone would be similar to Alternative B, except that the zone would occupy just 70 acres. Impacts of staging areas and route designation would be reduced from Alternative B.	acres. In Bradshaw-Harquahala, impacts from OHV staging areas and route designations would be reduced from Alternative C. Shifting use in the Hieroglyphics SRMA from motorized to non-motorized would reduce habitat fragmentation as well as disturbance and displacement of wildlife.	from staging areas and route designations would be similar to those described for Alternative C.
4.11.8 From Visual Resource Management	Assigning VRM Class I or II could limit the design and location of some wildlife management developments. This could adversely affect wildlife populations. There are 96,820 acres of VRM Class I.	Impacts to would be similar to those under Alternative A, except that the area in VRM Class I would be 96,820 acres and VRM Class II would be allocated to 437,579 acres.	Impacts to would be similar to those under Alternative B, except that the area in VRM Class I would increase to 100,456 acres and the area in VRM Class II would increase to 449,022 acres.	Impacts to would be similar to those under Alternative B, except that the area in VRM Class I would decrease to 298,309 acres and the area in VRM Class II would decrease to 340,877 acres.	Impacts are expected to be similar to Alternative B, except that the area in VRM Class I would increase to 116,132 acres and the area in VRM Class II would increase to 454,868 acres.
4.11.9 From Rangeland Management	Implementing the Land Health Standards would reduce soil erosion, restore functional conditions of riparian habitats, and reduce the presence of invasive species. Implementing would prioritize the habitat needs of special status species where wildlife and other land use conflict. Implementing changes in	Impacts of Land Health Standards are the same as in Alternative A. Applying the Special Ephemeral rule could result in the increase of native grass production, shrub and tree cover, and habitat complexity. Retirement of allotments could increase plant	Impacts are expected to be similar to those described for Alternative B, except: Impacts of closing riparian areas to grazing would occur quicker and could be more pronounced. A seasonal grazing closure in the Harquahala Mountains ONA ACEC during bighorn lambing	The affects of removing all livestock from federal lands in both planning areas would be similar to those described for riparian and upland areas under Alternative C. However, Alternative D would affect a much larger area. Eliminating all range improvements that serve	Impacts are expected to be similar to those described in Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	grazing practices would increase vegetation density and cover. Fence modifications would improve big game movement. Development of water facilities for grazing may improve water availability for some species, while being mortally dangerous to others. Congregation of livestock in and around water developments can result in some habitat loss. Congregations also attract cowbirds, which are nest parasites to other birds, including the endangered southwestern willow flycatcher.	diversity and habitat complexity. In the monument, limiting riparian areas to winter use would increase the diversity and abundance of plant species and the complexity of the wildlife habitat. In Bradshaw-Harquahala, implementing riparian management would have similar impacts to riparian habitats but more slowly and less consistently.	season would increase forage abundance and availability to bighorn sheep during the critical lambing season, improving their health and potentially improving lamb fitness and survival. Prohibiting the developing of facilities that would increase livestock use in Browns Canyon and the Inner Basin would eliminate concentrated livestock use from sensitive riparian and upland habitat areas.	no purpose in the absence of livestock grazing would remove many fences and corrals that hinder natural movement of pronghorn, mule deer, and bighorn sheep.	
4.11.10 From Minerals Management	In the monument, no impacts are expected. In Bradshaw-Harquahala, minerals actions would be evaluated on a case-by-case basis and impacts to biological resources would be mitigated and avoided to the extent allowable by regulation. Some residual loss of desert tortoise habitat is likely.	Impacts within the monument would be the same as Alternative A. In Bradshaw-Harquahala, closing areas to mineral extraction will protect them from disturbance and will protect the wildlife that depend on those areas. Riparian areas would especially benefit. Opening reconvened lands to mining could degrade	Impacts within the monument would be the same as Alternative A. Impacts of closing areas to mineral extraction would be similar to those described in Alternative B. Opening reconvened lands to mining could degrade desert tortoise habitats and habitats for priority species, but in this alternative, riparian habitats would be	Impacts within the monument would be the same as Alternative A. Impacts of closing areas to mineral would be similar to those described in Alternative B.	Impacts within the monument would be the same as Alternative A. In the Bradshaw-Harquahala, impacts to biological resources from management of reconvened lands would be similar to those described for Alternative C.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		riparian and areas and habitats for priority species.	protected.		
4.11.11 From Fire Management	In the monument, use of prescribed fire affects pronghorn habitats and helps control invasive species and restores the natural fire cycle. Full suppression of natural fire starts could interrupt the natural fire cycle required for natural succession, allowing establishment of invasive species, and a buildup of fuel loading. In Bradshaw-Harquahala, full suppression of fires in fire adapted communities would have the same impact. Full suppression of fires in Sonoran desertscrub habitat would decrease mortality to species not adapted to fire.	The impacts of prescribed fire use in fire adapted plant communities would be the same as Alternative A. Treatments would reduce the population size of invasive species in fire-adapted environments, reducing competition between invasive species and native vegetation. Allowing natural starts to burn when conditions are suitable would allow natural fire cycles to return, creating natural mosaics of vegetation age classes and successional stages, improving wildlife habitat and helping to control invasive species. Impacts of full suppression would be the same as described in Alternative A.	Impacts are similar to Alternative B.	Impacts are similar to Alternative B.	Impacts are similar to Alternative B.
4.11.12 From Wild Horse and Burro Management	No impacts are expected in the monument. In Harquahala HA, continued degradation of sensitive habitats and increased competition with wildlife for scarce	Impacts are similar to Alternative A.	Impacts in the monument and the Lake Pleasant area are the similar to Alternative A. In Bradshaw-Harquahala, eliminating the burro population in the	Impacts are similar to Alternative C.	Impacts are similar to Alternative C.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	resources. In Lake Pleasant HMA, Managing for AML will minimize competition with wildlife and livestock.		Harquahala HA will help sensitive habitats recover and reduce competition for forage, water, or other habitat.		
4.11.13 From Management of Transportation and Public Access	In the monument, biological resources would benefit from prohibiting cross-country OHV use, which would prevent the destruction of vegetation and priority wildlife habitats. In Bradshaw-Harquahala, prohibiting cross-country OHV use would provide some protection for sensitive desert tortoise habitat. Use of routes that degrade the value of sensitive riparian and tortoise habitat would likely continue and increase. Allowing cross-country OHV use would harm vegetation and wildlife. Open OHV use could cause the loss of priority habitat and habitat for priority species, including desert tortoise.	In the monument, Designating 140 miles of road as open and closing 38 miles would reduce habitat fragmentation and human disturbance to priority habitats, including riparian and pronghorn habitats. Closed roads would reclaim and restore habitat. In Bradshaw-Harquahala, designating vehicle routes and closing undesignated routes and cross-country travel would benefit biological resources by reducing (1) habitat fragmentation, (2) vegetation destruction, and (3) human disturbance of wildlife.	Impacts in the monument would be similar to those described for Alternative B, except that 129 miles of roads would remain open, providing less habitat fragmentation.	Impacts in the monument would be similar to those described for Alternative B, except that 47 miles of roads would remain open, fragmenting even less habitat than under Alternative C.	Impacts in the monument would be similar to those described for Alternative B, except that 101 miles of roads would fragment less habitat than would Alternative C, but more than would Alternative D.
4.11.14 From Management of Wilderness Characteristics	No impacts are expected.	Allocations to maintain or enhance wilderness characteristics would recognize wildlife	Impacts are expected to be similar to Alternative B, except that allocating 107,510 acres to maintain	Impacts are expected to be similar to Alternative C, except 91,480 acres would be allocated to	Impacts are expected to be similar to Alternative C, except 96,420 acres would be allocated to

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		populations and habitat as important aspects of naturalness and actively manage them. Allocating 56,040 acres in the Harquahala Management Unit, along with restrictions to roads and vehicles, would reduce disturbances to priority wildlife habitats. Closing lands allocated to maintain or enhance wilderness characteristics to mineral material disposal would reduce ground disturbance and impacts to vegetation and wildlife habitat.	or enhance wilderness characteristics in 3 management units, along with restrictions to roads and vehicles, would further reduce disturbances to priority wildlife habitats.	maintain or enhance wilderness characteristics.	maintain or enhance wilderness characteristics.
4.12 Impacts on Cultural Resources					
4.12.1 From Management of Special Area Designations	Management of WSR eligible segments of the Agua Fria River for non-impairment will also continue to protect cultural resources. Management of designated Wilderness will preserve cultural resources in current condition.	Impacts are similar to Alternative A, except ACEC designation for Perry Mesa and Larry Canyon would be removed. Increased use from Back Country byways could increase vandalism, accelerated erosion at roadside sites, and create a need for more maintenance to preserve historic features off of Constellation Road. Designating Tule Creek would limit surface disturbances that could	Proposed ACEC designations would include restrictions on transportation routes, rights-of-way, livestock grazing, and minerals actions. Such restrictions would help protect cultural resources by limiting public access and ground-disturbing activities. Impacts of Back Country Byways would be the same as Alternative B.	No back country byways are proposed; therefore, no impacts to cultural resources are expected. ACEC designations would have similar impacts to those discussed for Alternative C. Designating more ACECs would further restrict motorized access and other land uses, thereby better protecting cultural resources.	Impacts are similar to Alternative B except ACEC protection would be more like Alternative C, extending to 111,450 acres. Black Mesa would be recommended for recognition in the National Register of Historic Places. Impacts from Bloody Basin and Constellation Mine Roads as Back Country byways would be similar to Alternative

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		damage archaeological features.			B.
4.12.2 From Lands and Realty Management	Land acquisitions would acquire valuable cultural resources and consolidate important areas. This would increase protection of many sites and assure their availability for future scientific or public uses. Installation of utilities within the Black Canyon Corridor could reduce the physical integrity and visual setting of the monument's natural and cultural landscape. Disposal of lands in the Upper Agua Fria River Basin could remove significant cultural resources from Federal protection.	Acquisitions would have the same impacts as Alternative A. Narrowing the Black Canyon Corridor and restrictions on utility development should help maintain integrity of cultural and natural landscapes. Acquiring or disposing of lands in Bradshaw-Harquahala might add or remove significant cultural resources from federal protection. Impacts would be assessed on a case-by-case basis. Widening the Black Canyon Corridor could put more sites at risk of disturbance. Installation of above-ground facilities would detract from the visual setting. Establishing corridors protects sites outside of corridors.	Acquisitions would have the same impacts as Alternative A. Eliminating the Black Canyon utility corridor would reduce the likelihood that cultural resources would be affected by ground disturbance or visual intrusions from future utility development. In Bradshaw-Harquahala, disposal of 600 acres would be unlikely to affect significant cultural resources. Disposal of 49,100 acres could transfer significant cultural resources out of federal protection. Widening the Black Canyon Corridor two miles west would have similar impacts to Alternative B, but would allow additional flexibility.	In the monument, eliminating the Black Canyon utility corridor would have impacts similar Alternative C. In the Bradshaw-Harquahala, acquiring state and federal lands would likely increase the level of protection for cultural resources on those lands, much as would Alternative C.	In the monument, Impacts are expected to be similar Alternatives C. In Bradshaw-Harquahala, Impacts are expected to be similar to those described in Alternative B.
4.12.3 From Management of Soil, Air, and Water Resources	Actions to improve soil and vegetation stability will help protect cultural resources from eroding.	Impacts are similar to Alternative A.	Impacts are similar to Alternative A.	Impacts are similar to Alternative A.	Impacts are similar to Alternative A.
4.12.4 From Biological	In the monument,	Actions designed to protect	Limiting vehicle routes	Impacts are similar to	Impacts are similar to

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Resource Management	modification of existing fences would have no affect, but new fences could disturb cultural resources and degrade the visual setting. Restricting public access to sensitive wildlife habitats would have the spin off benefit of also reducing disturbance and vandalism to cultural sites.	wildlife habitats generally also protect cultural resources. Building wildlife management facilities, such as water developments, could disturb cultural resources. Specific surveys and mitigation would be needed that is specific to any proposal. Travel limitations could restrict access to cultural sites for research or cultural heritage tourism.	in pronghorn corridors might restrict access to cultural resources, protecting them from human intrusion, while limiting opportunities for research, monitoring, and interpretation. In the monument, fence modifications would have impacts similar to those in Alternative A. In Bradshaw-Harquahala, closing or limiting routes in sensitive habitats could restrict access that leads to damage.	Alternative C.	Alternative C.
4.12.5 From Cultural Resource Management	In the monument, restrictions to surface disturbance would help protect cultural resources, but may limit research opportunities. Protective actions would minimize disturbance to cultural resources. Mitigation devised under section 106 of the National Historic Preservation Act would help ensure protection of National Historic Register eligible sites.	Proactive management helps protect sites from disturbance. Inventories and consultation with tribes will help identify sites and needs for future uses or protective measures that may be important. Implementation of measures could stop, limit, or repair damage from vandalism, erosion and other disturbances, or could improve success in prosecution. Scientific research methods might disturb sites.	Impacts to cultural resources would be similar to those described in Alternative B, except: In the monument, one site would be developed for High public use and eight sites would be allocated to a less intensive Moderate. Impacts of public use development would be similar to Alternative B, but in fewer areas and less intensive for the Moderate developed sites. Overall there is less potential for damage	In the monument, no sites would be developed to High public use and one site would be developed to Moderate public use. This alternative would subject the fewest sites to potential damage, but also develop the fewest sites for public education and enjoyment. In Bradshaw-Harquahala, sites would be allocated to public use in two SCRMAs. This alternative subjects the fewest sites to potential	Impacts to cultural resources would be similar to those described in Alternative B, except: Three sites would be allocated to High public use development and six sites would be allocated to Moderate. Impacts would be very similar to those described under Alternative B, but slightly less. At least 60,570 acres in the monument would be excluded from public use allocations. In these

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		Development of sites for public use could improve understanding, reducing behaviors that put cultural sites at risk. Attracting people to particular sites can cause disturbance. Cultural Heritage Tourism can provide an economic benefit to nearby communities. Development of four sites to High public use within the monument would potentially result in increased disturbance, but would provide the greatest opportunity for interpretation, public education and enjoyment. In the Bradshaw-Harquahala, sites would have the largest potential for damage as well as having the greatest opportunity for interpretation, public education and enjoyment.	to cultural resources and reduced opportunity for public education and enjoyment of cultural sites than in Alternative B. In the Bradshaw-Harquahala, sites in four cultural priority areas would be developed for public use, reducing the potential for damage, but also reducing the opportunities for public education and enjoyment of cultural sites. Alternative C entails a moderate potential for damage to sites from public use, as well as a moderate potential benefit in public education and the recreational opportunities and economic returns of cultural heritage tourism.	damage from visitation, but also provides the least opportunities for public education, recreation, and economic return from cultural heritage tourism.	remote areas, visitors could encounter and observe archaeological sites under conditions of solitude in pristine settings. In the Bradshaw-Harquahala, sites in six cultural priority areas would be developed for public use, reducing the potential for damage to cultural sites from Alternative B, but also reducing the opportunities for public education and enjoyment of cultural sites.
4.12.6 From Paleontological Resource Management	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.12.7 From Recreation Management	In the monument, limiting motorized vehicle use would help protect sites.	Prohibiting geocaches on sites will reduce vandalism and disturbance.	This alternative would allocate a smaller proportion of the monument to the Front	This alternative would create the lowest level of visitation and the least risk of damage to cultural	In the monument, the relatively large area allocated to the Back Country zone, along with

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	In Bradshaw-Harquahala, continued protection and interpretation of the Harquahala Peak Observatory would enhance opportunities for public education and cultural heritage tourism. The potential for damage could continue as public awareness and subsequent casual use increases.	Restricting camping and campfires near sites could reduce damage. For SRPs, limiting group size will help preserve integrity of sites and reduce potential disturbance. Public outreach and education programs could make the public more aware of cultural values and may discourage damaging behaviors. Vehicle route designations can reduce damage. Routes that increase the risk of damaging particular sites can be closed. This alterantive would allow the highest amount of visitation and access by motorized vehicles and would have the greatest potential for site disturbance along with the greatest opportunity for interpretation and education.	Country RMZ than Alternative B with an expected reduction in levels of recreational facilities and visitation. Impacts to archaeological sites are expected to be less extensive in areas allocated to the Back Country zone. Site visitation and educational opportunities from interpretive development of archaeological sites would also decline. In the Bradshaw-Harquahala, reductions in travel routes are expected to contribute to lower levels of damage. Opportunities for cultural heritage tourism partnerships would slightly decrease.	resources. Access restrictions would limit the regular monitoring of sites in remote areas, leaving some sites vulnerable to vandalism. Reduced access would reduce opportunities for interpretation and public education, as well as reduced opportunities for scientific research. In Bradshaw-Harquahala, more emphasis on nonmotorized recreation, issuance of fewer SRPs, and more miles of closed routes would reduce the potential of damage. Opportunities for public education, community partnerships, and revenues from cultural heritage tourism would be reduced.	a number of route closures, would contribute to protecting cultural resources, while still allowing for unobtrusive interpretive uses and access for scientific research and monitoring. In Bradshaw-Harquahala, there would be an intermediate level of recreational facilities and route closures. Impacts would likely be similar to Alternative C. Recreational activities would continue to threaten cultural resources but community partnerships would be developed. This would enhance the long-term effectiveness of public education, stewardship, and cultural resource protection by enlisting citizens as partners in these efforts.
4.12.8 From Visual Resource Management	A lack of VRM Class objectives throughout the planning area could lead to a steady degradation of visual landscapes that contribute to prehistoric	Establishing VRM classes through RMP decisions, along with actions that minimize or mitigate visual intrusions, would protect the integrity of cultural	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	and historic sites.	resources.			
4.12.9 From Rangeland Management	Livestock grazing can cause physical damage to sites from rubbing or walking on them. Sites could be damaged by soil erosion resulting from the loss of stabilizing vegetation or the trampling of streambanks. Damage is expected to be greatest at sites where livestock tend to concentrate. Installing and maintaining livestock management facilities could damage the physical or visual integrity of cultural sites. Implementing the Land Health Standards and Guidelines for Rangeland Health will reduce soil erosion impacts to cultural sites.	Impacts are expected to be similar to Alternative A, except that grazing riparian areas in winter only will reduce impacts. Grazing in the Front Country may result in conflict between livestock and visitors to sites developed for public use. Projects for installing and maintaining livestock management would avoid or mitigate impacts to physical or visual integrity.	In both planning areas reductions in upland grazing and the removal of livestock from riparian habitats would reduce damage to cultural resources in nearby areas. Other impacts are expected to be similar to those discussed for Alternative B.	Removing grazing from public lands would eliminate livestock impacts to cultural resources and enhance primitive experiences for visitors.	Impacts are expected to be similar to Alternative B.
4.12.10 From Minerals Management	Surface disturbance from mining can disturb or destroy cultural sites. Two active mining claims occur within the monument that may continue to be mined for casual use. In the Bradshaw-Harquahala, archeological	In the monument, impacts are expected to be similar Alternative A. In the Bradshaw-Harquahala, impacts are expected to be similar to those described in Alternative A, except more areas would be closed to, or contain restrictions to	In the monument, impacts are expected to be similar Alternative A. In the Bradshaw-Harquahala, impacts are expected to be similar to those described in Alternative B, except more areas would be closed to, or contain	In the monument, impacts are expected to be similar Alternative A. In the Bradshaw-Harquahala, impacts are expected to be similar to those described in Alternative C, except even more areas would be closed to, or contain	In the monument, impacts are expected to be similar Alternative A. In the Bradshaw-Harquahala, impacts are expected to be similar to those described in Alternative B, except mining closures in Tule Creek ACEC and in

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	surveys are conducted to evaluate if cultural resources might be affected by proposed mining. However, casual use mining does not require a mining plan and impacts to cultural resources may occur.	mining, increasing protection of cultural resources.	restrictions to mining, increasing protection of cultural resources.	restrictions to mining, further increasing protection of cultural resources.	riparian areas within the reconveyed lands would be closed to mineral materials disposal, protecting cultural sites in these areas.
4.12.11 From Fire Management	Fires (wild or prescribed) can damage cultural sites, especially those with flammable components. Fires could temporarily affect visual settings. Methods to fight fire or prepare a site for prescribed burning can disturb cultural sites and cause surface disturbances. Prescribed fire planning includes input from an archeologist to avoid or minimize potential damage. Wildfires that may threaten cultural sites have archeologist input on tactics to minimize the potential for resource damage.	Impacts are similar to Alternative A, except archeological surveys would help locate sensitive resources that may require special attention. MIST would be used to reduce potential damage.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.
4.12.12 From Wild Horse and Burro Management	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.12.13 From Management of Transportation and Public Access	Continued restrictions that limit the use of motorized vehicles to designated routes in the monument would help protect cultural resources. Continued use of existing	Selected routes that lead directly to sites that have been damaged or are threatened by vandalism would be closed. Limiting vehicle traffic on	Impacts are expected to be similar to Alternative B, except Alternative C would allocate fewer transportation routes. More limited public access would be expected	Alternative D would close the largest number of transportation routes in both planning areas. In the monument, only limited motorized use would be allowed in the	Impacts from transportation and public access would be similar to those described under Alternative C for The monument. The number of route closures would

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	roads leading to large archaeological sites might increase the potential for vandalism and damage.	fragile sites would help protect the surface and could deter illegal digging and collecting activities. Alternative B would allow for a more extensive network of transportation routes, which could increase the potential for damage. A more extensive network would facilitate access to a larger number of sites, increasing vulnerability to vandalism and theft. Conversely, increased access would also allow for more interpretation, which could enhance understanding and stewardship of cultural resources.	to reduce the impacts to archaeological sites from vehicle and visitor traffic in both planning areas.	extensive Back Country RMZ. While this would reduce the levels of damage, fewer areas would be available for site visitation and cultural heritage tourism projects. Restricted access would also limit the regular monitoring of archaeological sites in remote areas. Restrictions on access for permitted scientific studies would limit the scientific use of sites and the gathering of information useful for research and resource management.	contribute to protecting cultural resources, while still allowing for unobtrusive interpretive uses and access for scientific research and monitoring. In Bradshaw-Harquahala, there would be an intermediate level of route closures. Impacts to cultural resources would likely be similar to those described for Alternative C.
4.12.14 From Management of Wilderness Characteristics	No impacts are expected.	Management of wilderness characteristics would preserve the visual integrity and natural settings of archaeological sites and cultural landscapes.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.
4.13 Impacts on Paleontological Resources					
4.13.1 From Management of Special Area Designations	Impacts expected to be minimal. Where resources are discovered, management for reduced public use would diminish potential impacts.	Impacts are expected to be similar to Alternative A except in the Bradshaw-Harquahala, fencing Tule Creek ACEC would prevent damage and special area designations would protect more areas than Alternative A.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.13.2 From Lands and Realty Management	Impacts are expected to be minimal.	Impacts are expected to be similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.	Impacts similar to Alternative A.
4.13.3 From Management of Soil, Air, and Water Resources	Management to improve soil conditions in the monument could preserve potential sites. No impacts are expected in the Bradshaw-Harquahala.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.
4.13.4 From Biological Resource Management	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.13.5 From Cultural Resource Management	Actions to protect cultural resources may preserve potential paleontological sites.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.
4.13.6 From Paleontological Resource Management	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.13.7 From Recreation Management	Impacts are expected to be inadvertent and minimal. Damage may occur from concentrated recreation use.	Impacts are expected to be similar to Alternative A, except reduction of routes may help preserve potential sites.	Impacts are expected to be similar to Alternative B, but more routes would be closed and more area allocated to Back Country RMZ.	Impacts are expected to be similar to Alternative C, except more routes would be closed and more area allocated to Back Country RMZ.	Impacts are expected to be similar to Alternative B, except more routes would be closed and more area allocated to Back Country RMZ.
4.13.8 From Visual Resource Management	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.13.9 From Rangeland Management	Continued grazing may reduce vegetation and increase erosion.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Elimination of grazing could help preserve potential sites.	Impacts are expected to be similar to Alternative A.
4.13.10 From Minerals Management	No impacts are expected. Should sites be found, potential damage would be mitigated.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.
4.13.11 From Fire Management	Prescribed burning equipment may affect potential sites.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.
4.13.12 From Wild Horse and Burro Management	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.13.13 From Management of Transportation and Public Access	No impacts are expected in the monument. Unmanaged vehicle use in Bradshaw-Harquahala could damage potential sites.	OHV use in the monument could damage potential sites. Limiting travel in Bradshaw-Harquahala could help preserve potential sites.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.
4.13.14 From Management of Wilderness Characteristics	No impacts are expected.	Management could help preserve potential sites by maintaining primitive settings.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.
4.14 Impacts on Recreation					
4.14.1 From Management of Special Designations	Existing recreation opportunities in the eligible WSR corridors and wilderness areas would be retained. Potentially growing numbers of nonmotorized users could impair solitude opportunities and contribute to trailing and campsite use impacts along the edge and in the interior of the wilderness areas.	Designating Bloody Basin Road as a back country byway could increase traffic and interaction among visitors. Primitive recreational experiences in the eligible WSR corridor could be diminished. The interpretive elements of the byway would increase visitor awareness, appreciation, and enjoyment. Designating a back country byway along Constellation Mine Road would have impacts similar to Bloody Basin Road. Conflicts between byway users and large OHV groups could diminish the scenic drive experience. Designating Tule Creek	Impacts of Back Country Byways would be the same as in Alternative B. ACEC designation would have little to no impacts within the monument. Designating Tule Creek ACEC would have impacts similar to those under Alternative B. Designating ACECs in the Bradshaw-Harquahala Planning Area would improve opportunities for primitive recreation experiences. Route closures in ACECs would lessen opportunities for	No Back Country Byways are proposed, so there would be no impacts. Designating ACECs would have impacts similar to those described for Alternative C. Route closures would reduce the connectivity of the route network more than under Alternative C and could disrupt cross-country touring routes. Motorized recreationists would be displaced and would potentially travel to other areas and routes. Impacts to wilderness areas due to group size and permit restrictions	Impacts of Back Country Byways would be similar to Alternative B, except inclusion of Buckhorn Road in the Constellation Mine Road Byway would enhance opportunities for loop and longer touring trips. Designating Tule Creek would have similar impacts as in Alternative B. Designating Black Butte and Harquahala Mountains ONAs would assure opportunities for primitive recreation. Impacts of closing routes in the ACECs would be less than under

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		ACEC would reduce opportunities for vehicular recreation. Eliminating grazing would retain a more natural setting and reduce conflicts with livestock. Interpretive elements would increase appreciation of the natural and cultural resources. In wilderness areas, establishing criteria to manage larger group activities will protect wilderness values.	motorized activities Impacts to wilderness areas due to group activities and permit restrictions would be the same as in Alternative B.	would be the same as in Alternative B.	Alternatives C and D, but more than Alternative B. Cross-country touring routes could be disrupted. Opportunities nonmotorized recreation would be maintained in designated wilderness areas. Impacts to wilderness areas due to group activities would be the same as in Alternative B.
4.14.2 From Lands and Realty Management	Disposal of lands would reduce or eliminate recreation opportunities in those areas. OHV use in Skull Valley and Table Mesa would relocate elsewhere. In the Upper Agua Fria River Basin, some recreation connectivity between local communities and the Prescott National Forest would be lost. Corridors are not expected to impact recreation until future projects are proposed. Impacts of utility proposals would be analyzed at the time of application.	Acquiring nonfederal lands that enhance monument's values would improve recreation opportunities by improving access. Narrowing the utility corridor in the monument would reduce the area affected if a future utility project were proposed. Lands in the Table Mesa area would be retained and recreation on those lands could continue. Acquiring lands could enhance opportunities for recreation by increasing connectivity of public	Impacts would be similar to Alternative A.	In the monument, impacts would be similar to Alternative C. No lands would be disposed, and no impacts are expected. Impacts from corridors would be similar to Alternative A.	In the monument, impacts would be similar to Alternative B. No impacts are expected to result from disposing of lands because parcels are small, isolated, or generally an urban area. Because recreation on these parcels is generally minimal, relocating the activities to other BLM lands is not expected to have great impacts. Impacts from other lands actions would be similar to Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		lands.			
4.14.3 From Management of Soil, Air, and Water Resources	In the monument, maintaining water quality would enhance wildlife viewing opportunities and water related recreation. Managing air quality could result in restrictions to recreation activities that have the potential to exceed standards. Any recreation related facilities would need to be designed to address emissions.	Impacts would be similar to Alternative A.	Impacts would be similar to Alternative A.	Impacts would be similar to Alternative A.	Impacts would be similar to Alternative A.
4.14.4 From Biological Resource Management	In the monument, fence modifications and development of additional wildlife waters could enhance wildlife viewing opportunities. Protection of sensitive habitat could reduce motorized recreation opportunities, but improved habitat could improve wildlife viewing opportunities. Development of wildlife waters and protection of big horn sheep habitat would improve hunting and wildlife viewing opportunities. Motor vehicle restrictions	Impacts in the monument would be the same as Alternative A. Designation of Harquahala Mountains Wildlife Habitat Area (WHA) would Protect sensitive wildlife habitat through route closures would diminish opportunities for motorized recreation. Management for desert tortoise could limit development of new motorized vehicle routes. Seasonal limitations on motorized special events the number of events that could occur in some places and could limit future expansion of those events.	Limitation of routes in pronghorn movement corridors could reduce connectivity of motorized routes within the monument. Prohibiting recreational sites in pronghorn corridors could enhance the recreation experience of some users. Modifying fences to allow wildlife to move more freely could enhance viewing opportunities. Closing or limiting vehicle routes in the designated WHA and wildlife corridor could affect the connectivity of	Impacts from route limitations and development of sites for recreation in pronghorn corridors would be similar to Alternative C. Removal of all fences would maintain route connectivity and enhance the natural appearance of the landscape. Wildlife viewing might be enhanced. In the Bradshaw-Harquahala, impacts from wildlife management would be the same as those discussed in Alternative B.	Designation of specified pronghorn corridors in the monument would have the same impacts as Alternative C. Prohibiting the development of recreational sites would have the same impacts as Alternative C. Prohibiting new fences in specified WHA would help maintain the current connectivity of the route network. Closing or limiting vehicle routes in the designated areas would have the same impacts as

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	in desert tortoise, Arizona night lizard, and Sonoran mountain king snake habitats could reduce motorized recreation opportunities.	Ensuring connectivity of wildlife habitats could reduce motorized recreation by closing routes that cross sensitive areas or movement corridors. Wildlife viewing might be enhanced.	the route network and diminish recreational opportunities. Impacts from desert tortoise restrictions would be the same as those identified in Alternative B.	Management of desert tortoise wildlife corridors could limit recreation activities. Other impacts from desert tortoise restrictions would be the same as Alternative B.	Alternative C. Impacts from desert tortoise restrictions would be the same as those identified in Alternative B.
4.14.5 From Cultural Resource Management	More permits could lead to allocation and protection problems if larger numbers of tours and activities visit the same sites. Allocation to scientific use or preservation would limit certain sites for commercial or general recreation use.	Potential route closures could reduce motorized recreation opportunities. Conflicts among users could reduce, and the opportunities to experience cultural resources in a natural setting would be enhanced. Developing interpretive programs would lead to a better appreciation of the sites selected to be open to the public. Stipulations on SRPs would reduce damage caused by visitation from large groups. Improving routes and trails could open sites to a wider variety of users, but could limit access for some users. Educational programs and interpretive signs would raise visitor awareness and	In the monument, impacts would be similar to Alternative B, except that one site would be allocated to High public use and eight sites would be allocated to Moderate public use. In Bradshaw-Harquahala four areas would be allocated for public use. Impacts would be similar to Alternative B, although this would not provide the educational and interpretive opportunities provided by Alternative B. Closing routes that lead to archeological sites would affect the ability of motorized users to access those areas and could lead to fragmentation of the route network.	In the monument, no sites would be developed to High public use and one would be developed to Moderate use. Education and awareness afforded by developed sites would be least under this alternative. Self-discovery opportunities would be greatest. User conflicts could increase. In the Bradshaw-Harquahala, impacts would be similar as described for Alternative B, except sites in two cultural priority areas would be developed for public use. Educational and interpreted recreational opportunities would be less than in Alternative C. Opportunities for self-discovery would	Impacts would be similar to Alternative B, except: closing of routes as a protective measure would affect recreational activities and visitor awareness and education programs would increase. In the monument, impacts would be similar to Alternative B except that two sites would be developed for High public use and six sites for Moderate public use. In the Bradshaw-Harquahala Planning Area developing sites for public use in each cultural priority area would increase awareness and recreational opportunities for experiencing cultural resources.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		sensitivity. Developing five sites for High public use and four sites for Moderate public use in the monument would increase access and education programs on 16,000 acres. Development of public use sites in eight cultural priority areas would increase awareness and opportunities within Bradshaw-Harquahala.	Restricting SRPs to educational tours could reduce recreational and educational opportunities for casual users but could lead to better protection and stewardship of sites for long-term preservation.	increase, but potential conflicts between users might increase also.	
4.14.6 From Paleontological Resource Management	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.14.7 From Recreation Management	Increasing recreation could diminish the experience of some users and alter the setting for many activities. A lack of proactive, activity based recreation management could result in inappropriate use in sensitive areas, overcrowding and user conflicts. Dispersed camping would be expected to proliferate. Conflicts between users and resource disturbance are	Managing the monument's Back Country RMZ for more primitive recreational opportunities would benefit visitors seeking non-motorized activities. Managing the Front Country RMZ would concentrate more intensive uses. In the monument, restrictions on dispersed camping might slightly reduce impacts. The two developed	In the monument, impacts would be similar to those described for Alternative B, except: Front Country allocation would be 42,410 acres and Back Country would encompass 28,420 acres. Camping in Front Country would be allowed only at designated dispersed camp sites. Impacts of developed campground would be similar as described in Alternative	In the monument, impacts would be similar to those described for Alternative C, except: The Front Country zone would be reduced to 1,530 acres and the Back Country zone would be 68,380 acres. Impacts of dispersed camping would be similar to Alternative C, except it would be restricted to designated sites to minimize impacts.	In the monument, dispersed camping would have the same impacts as Alternative B. Impacts from vehicles of dispersed camping are expected to be similar to Alternative D. Recreational target shooting would have the same impacts as Alternative D. Nonmotorized trail connections would have the same impact as in Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	expected to escalate. Closures in some OHV routes or activity areas could limit recreation, but resources would be protected. In Bradshaw Harquahala, cross-country could disrupt other recreational settings. The settings would shift over time to more motorized settings. Increased demand for large recreation events requiring SRPs would continue. With no limits on the number of motorized competitive races the number of permits could increase.	campgrounds would increase vehicle based camping opportunities. Some popular shooting areas would be closed for safety reasons. Shooters would be displaced to other locations. Developing connecting trails for nonmotorized activities would enhance recreation opportunities and reduce conflicts. Competitive OHV events would be reduced to 16 annual events. The North Black Canyon Trail SRMA would enhance opportunities for nonmotorized trails, primarily equestrian recreation. On the monument, 35 miles of route would be closed to reduce resource conflicts and 5 miles of new route construction would be built to improve route connectivity and looping opportunities. Cross-country travel would be prohibited for game	B, but in only one place. Campfires would be allowed at dispersed campsites with some limitations. Vehicles would be allowed to pull off no more than 15 feet for day use or dispersed camping, reducing disturbance, but potentially hindering camper accommodations. Impacts of recreational target shooting would be similar to Alternative B, except the Front Country zone would be closed to that activity. Management actions in the Bradshaw-Harquahala would reduce impacts on natural and cultural resources, resolve conflicts among recreation users, maintain recreation opportunities and settings, increase public safety and attempt to maintain dispersed high quality recreation opportunities. Providing staging and	Vehicles would be allowed to pull off routes 15 feet to park for day use, but designated routes would further reduce disturbance of vehicle pull offs. Campfires would be allowed at dispersed sites, but wood for campfires must be brought in from outside the monument. Denying use of local material for campfires would reduce disturbance of woody species. Closure of the monument to recreational target shooting would displace all non-hunting shooters to locations outside the monument. 56,240 acres of SRMAs and RMZs would be allocated for more intensive recreation management. The overall area available for intensive motorized use would be smaller than all other alternatives. Many users	Once completed, the Black Canyon Trail would become a trail of regional significance for mountain bikers, equestrians, and hikers. Management actions applied to the entire Bradshaw-Harquahala would be the same as in Alternative C. 384,510 acres would be allocated to SRMAs and RMZs in this alternative. Availability of public lands for motorized races would be decrease and only 8 races would be allowed annually. The allocation of Yarnell SRMA would preserve hand gliding takeoff and landing areas for long term use, limiting potential safety accidents. With increased long term access and to the North Black Canyon Trail RMZ, nonmotorized recreation experiences would be enhanced.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		retrieval, potentially diminishing hunting opportunities. Route closures would diminish opportunities for traditional users. Area closures could disconnect multiple routes in the network. Protecting biological and cultural resources through the closures would preserve the natural setting. Management of 149,760 acres of BLM land in SRMAs for OHV and intensive recreation would ensure that recreation opportunities would be maintained while reducing conflicts with other users. Development of facilities would enhance the recreation experience for many users. Increasing SRP permits to 12 on the monument could increase opportunities for structured tour groups, while potentially increasing conflicts between commercial tours and casual users at developed sites. In the Bradshaw-Harquahala, impacts	trail areas for multiple recreation activities and creating new trails would enhance recreation experiences by increasing opportunities and reducing user conflict. Alternative C would significantly reduce the overall availability of public lands for motorized competitive races. In the designated areas, the number of races would be limit to 6 per year. The impacts of OHV management and route closures in ACECs and lands allocated to maintain or enhance wilderness characteristics would be Similar to Alternative B, except that more area would be designated as ACECs and WHAs resulting in increased limitations on areas available for motorized recreation. In the monument, impacts of SRPs would be similar to those described for Alternative B, except the maximum number to be authorized	and activities would be displaced to other areas. Conflicts between casual users and larger group activities would intensify and conflicts between motorized and nonmotorized recreationists could increase. The impacts of OHV management and route closures in ACECs and lands allocated to maintain or enhance wilderness characteristics would be the highest under this alternative. . Prohibiting SRPs in the monument may reduce or eliminate the ability of some users to experience the monument resources. It could also eliminate conflicts between casual visitors and large groups, especially at popular locations. In the Bradshaw-Harquahala, impacts regarding the number of SRPs issued would be the same as in the Alternative A. Limiting the number of allowable	OHV management and route closures in ACECs and lands allocated to maintain or enhance wilderness characteristics to achieve recreation settings would somewhat reduce the amount of lands open to vehicle-based and motorized recreation. Most closures would occur in the lands allocated to maintain or enhance wilderness characteristics in the vicinity of Black Butte, and within the Belmont Mountains and in the Harquahala Mountain and Black Butte ONAs. In the Bradshaw-Harquahala, impacts are similar to those described in Alternative C except: The number of race events could be increased to 4 per year in the Vulture Mountains RMZ, representing an increase of two for the area. This is expected to meet potential future demand, but some casual users would be further inconvenienced or

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		regarding the number of SRPs issued would be the similar to those described in Alternative A except: the number of motorized competitive races would be limited to 14 per year. Annual limits would be set for each SRMA which would spread the potential number of races throughout the five SRMAs allocated for such use. This would minimize potential user conflicts in those and allow diverse OHV opportunities in these areas. Restricting competitive, commercial, and organized group events to certain VRM and ROS classes could limit the opportunities to find new areas for events. Limiting group events to allocated VRM standards and recreation could limit the total area open to existing events and prevent designating locations for new events.	across the monument would be six. In the Bradshaw-Harquahala, impacts from SRP management would be similar to those described in Alternative A, except: a maximum of six motorized competitive races would be authorized per year. In this alternative, races would not be allowed in the Table Mesa SRMA, reducing routes available to that use. Overall, available routes should meet demand, but annual limits for races in each SRMA may result in races being relocated to a less desirable location if the requested location has been allocated. These limits in each SRMA would minimize potential user conflicts in those areas and allow for more diverse OHV opportunities.	races in this alternative to two is less than the current situation of three races per year. No races will be allowed in the Hieroglyphic Mountains SRMA. This could be a severe impact on motorized racing enthusiast because it is moving the only remaining race location further from Phoenix and it limits the racing to one SRMA that has less diverse routes. Racing opportunities would be inevitably lost and the demand will no longer be met.	displaced.
4.14.8 From Visual Resource Management	No impacts are expected.	In the monument, managing 12,700 acres as VRM Class II and 57,900 acres as Class III would enable the Back	In the monument, impacts would be similar to Alternative B, except VRM Class III would be	In the monument, impacts would be similar to Alternative B, except VRM Class III would be	In the monument, impacts would be similar to Alternative B, except VRM Class III would be

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		Country zone to be maintained as natural appearing and the Front Country zone to accommodate recreation related activities and developments. Managing lands allocated to maintain or enhance wilderness characteristics as VRM Class II would help retain appearance of naturalness in the areas and the primitive recreational experience. Improvements would need to be designed to meet VRM standards and may require design modifications to do so.	reduced to 42,410 acres and VRM Class II would increase to 28,490 acres. In the Bradshaw-Harquahala, impacts would be similar as described for Alternative B, except 134,920 acres would be allocated to maintain or enhance wilderness characteristics and allocated to VRM Class II. Managing Sheep Mountain ONA ACEC as VRM Class I would enhance the visual setting of the area.	reduced to 1,530 acres and VRM Class II would increase to 69,370 acres. In the Bradshaw-Harquahala, 226,400 acres of lands would be allocated to maintain or enhance wilderness characteristics and 142,700 acres of ONA ACEC would be managed for VRM Class I. Impacts to recreation would be to maintain the natural and open space character of the visual landscaped with minimal visual impacts from proposed developments.	on 12,440 acres of Front Country, VRM Class II on 47,700 acres of Back Country and Passage, and VRM Class I on 23,200 acres allocated to maintain or enhance wilderness characteristics. In the Bradshaw-Harquahala, impacts would be similar to Alternative B, except 55,480 acres allocated to maintain or enhance wilderness characteristics would be managed as VRM Class II and 104,690 acres of ONA ACEC would be managed as VRM Class I.
4.14.9 From Rangeland Management	Increasing recreation use is increasing conflicts between recreation users and livestock grazing. If private landowners close access across their lands, BLM lands will be unavailable for recreation uses resulting in reduced recreation opportunities.	In the monument, limiting grazing in the riparian to winter season would degrade the recreational experience during those months. The primitive recreation experience would be enhanced in the summer months. Livestock control facilities would potentially degrade the visual landscape. Impacts would be similar in the rest of the monument. Improved riparian	In the monument, removal of livestock from riparian areas would eliminate conflicts with cattle and enhance the recreational experience in those areas. Other grazing related impacts would be similar to those described in Alternative B.	The potential for conflicts with livestock would be eliminated. Both motorized and primitive recreation experiences could improve as recreation settings become free of livestock inconveniences. Access to some public lands could be lost if ranchers sell their private property. The number of areas where ranchers have traditionally	Impacts from grazing are expected to be similar to Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		conditions from livestock management would enhance settings in riparian areas, as well as improve wildlife viewing opportunities. Less conflict with livestock could occur in the Front Country zone during summer, but the fencing improvements could disrupt the vehicular route network, restrict accessibility for people with disabilities, and diminish the recreation experience for those users. Improved riparian conditions would enhance the recreation setting for hunting, nature study, and wildlife and bird watching. In the Bradshaw-Harquahala, impacts would be similar to those described for the monument above. Improved vegetation conditions would improve the recreation setting for nonmotorized users.		permitted public access across private land could decline, making some public land inaccessible in areas notable for interspersed private ranch and BLM lands.	
4.14.10 From Minerals Management	In the monument, no impacts from mining are expected. Increased recreation demand is increasing	In the monument, no impacts from mining are expected. Closing lands allocated to maintain or enhance	In the monument, no impacts from mining are expected. Impacts would be similar to Alternative B, except a	In the monument, no impacts from mining are expected. Impacts would be similar to Alternative B, except a	In the monument, no impacts from mining are expected. Impacts would be the same as in Alternative A

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	conflict between recreation users and mining. Mining in popular areas for recreation will degrade the recreational experience, potentially reduce recreation opportunities. Most impacts would result from developing saleable minerals. Designated wilderness areas and Agua Fria National Monument--an area of 172,510 acres--are closed to mineral material disposal.	wilderness characteristics and ACECs to mineral material disposal would improve recreation opportunities and settings on 96,150 acres. There would be no impacts from leasable minerals management and few impacts from locatable minerals.	total of 325,970 acres would be closed to mineral material disposal. Visual settings would be better maintained because mining projects would be consistent with view management objectives.	total of 469,680 acres would be closed to mineral material disposal. Closures would ensure the retaining of recreation opportunities in undisturbed natural settings over the largest area under any of the alternatives.	with a total of 172,80 acres closed to mineral material disposal. Closures would ensure the retaining of high-quality primitive recreation opportunities in undisturbed natural settings.
4.14.11 From Fire Management	Prescribed and natural fires would displace recreation users from burned areas until recovery and would potentially limit recreation areas. Improved vegetation conditions resulting from burns in adapted environments could improve recreational experiences and wildlife viewing opportunities.	Impacts would be the same as for Alternative A, except that natural fire starts would be allowed to burn in the prescribed burn areas. This practice could increase opportunities for fires to start during each season because only planned, human-set fires are now allowed to burn. More fire starts could increase disruptions to recreation by increasing the instances of area closures.	Impacts would be the same as Alternative B.	Impacts would be the same as Alternative B.	Impacts would be the same as Alternative B.
4.14.12 From Wild Horse and Burro Management	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.14.13 From Management of Transportation and Public Access	OHVs and other mechanized users will only be allowed to use routes and areas compatible with their recreation because	In the monument, 140 miles, of routes would remain open to vehicular travel. The route system would enhance	In the monument, the impact of route closures and openings would have the same impact as Alternative B, except 129	In the monument, 47 miles of routes would remain open to vehicular travel. Opportunities for motorized recreation	In the monument impacts of route closures and openings would be similar to Alternative C, except 88 miles of

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	heavy OHV use has adverse effects on the land. No closures are expected for motorized route-based recreation in the monument. However, cross-country motorized travel is prohibited. In the Bradshaw-Harquahala, 2,240 miles of vehicle routes would remain open, and motorized recreation opportunities would not be affected.	opportunities for motorized recreation by creating loop trails, which would allow connected touring, provide for an increase in access, and offer extended recreational opportunities. Closing 38 mils of route could limit opportunities for motorized recreation and displace users elsewhere. Up to 48 miles of route in the Bradshaw-Harquahala would be closed. The closures would affect and displace motorized recreational opportunities for traditional users of those routes. A total of 168 miles of routes would be closed to (1) protect resources, (2) reduce redundancy, and (3) limit routes for administrative use. 14 miles of new routes would be established to mitigate losses from the closures and to achieve better route connectivity. Limiting all mechanized vehicles to inventoried routes would eliminate cross-country OHV travel.	miles of routes would remain open and 50 miles of existing routes would be closed. The impacts on opportunities for recreation in the Bradshaw-Harquahala would be similar to those under Alternative B, except that the model route system for Alternative C would close 382 miles of routes Route closures in special area designations would have the same impact as described in Alternative B. Developing connecting route networks would have the same impacts as Alternative B. Limiting routes in pronghorn corridors in Agua Fria National Monument could reduce the connectivity of the route network and diminish the motorized recreation experience of some users. Closing or limiting	would be limited, and loop trails would not be developed. The route system would close 122 miles of existing routes and could diminish opportunities for motorized recreation and public access in some areas. Opportunities for non-motorized recreation would be enhanced throughout the monument. There would be more opportunity to experience solitude and natural landscape settings. In the Bradshaw-Harquahala, impacts from route designations on recreational opportunities would be similar to Alternative B, except that 412 miles of routes in ACECs and lands allocated to enhance wilderness characteristics would be closed. Impacts from route limitations and development of sites for recreation in the pronghorn corridors in	secondary and tertiary roads would be designated as open and 70 miles of route would be closed. Impacts on opportunities for recreation in the Bradshaw-Harquahala Planning Area would be similar to Alternative C except in designated areas 114 miles of routes would be closed and 179 miles of routes would remain open. Route closures in special area designations would have the same impact as Alternative C. Prohibiting the building of new routes in WHA areas and ACECs could affect motorized recreation opportunities by preventing maintenance of route connections when other routes are closed for resource protection. Moreover, new routes could not be built to satisfy the public demand for more interesting, challenging, and long-

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		Restricting all motorized and non-motorized vehicles to existing routes would prevent development of new routes. Enacting specific route, wash, or area closures in designated areas would affect the recreational opportunities of motorized users. Area closures could disconnect multiple routes in the network. Protecting biological and cultural resources through the closures would maintain resources and preserve the natural setting for future recreational opportunities. Developing connecting route networks allow all types of users to enjoy activities consistently, in more areas, and with fewer user conflicts. Managing the North Black Canyon Trail SRMA would enhance the non-motorized recreation experience in the northern portion of the planning area. The closure of routes in sensitive wildlife areas	vehicle routes in the Belmont/Big Horn Mountains WHA area and in the Harquahala/Belmont/Big Horn Wildlife Corridor could affect the connectivity of the route network and diminish the recreational experience and opportunities for motorized users. Fragmented route systems could diminish the recreational experience for some users and possibly lead to an increase in unauthorized cross-country travel to connect routes. Impacts from desert tortoise restrictions would be the same as those identified in Alternative B.	Agua Fria National Monument would be similar to those under Alternative C. Removing all fences and prohibiting new ones in the monument would maintain connectivity in the motorized route system developed for Alternative D. ACEC designations could limit motorized recreation developments and restrict activities, diminishing the recreation experience of some users. Impacts from desert tortoise restrictions would be the same as those identified in Alternative B.	distance route systems and loops. The Black Canyon Trail from the Carefree Highway to north of Highway 69 would become a major trail of regional significance for mountain bikers, equestrians, and hikers. Moreover, the trail would link the communities of the Black Canyon corridor and the north boundary of the Phoenix-Peoria metropolis. Managing the North Black Canyon Trail RMZ would enhance the nonmotorized recreation experience in the northern portion of the planning. Impacts from desert tortoise restrictions would be the same as those identified in Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		would diminish motorized recreation opportunities. Opportunities for wildlife viewing could be enhanced. Lessening or limiting development of new routes in areas managed for desert tortoise habitat would limit opportunities for trail-based individual, organized group or special motorized recreation uses.			
4.14.14 From Management of Wilderness Characteristics	In the monument, no impacts are expected. In the Bradshaw-Harquahala, opportunities for primitive and nonmotorized types of recreation would decline over the life of the plan due to increasing motorized recreation and land use authorizations. Lands with semi primitive nonmotorized recreation settings and could decline.	In the monument, no impacts are expected. In the Bradshaw-Harquahala, 56,040 acres of land would be managed to maintain or enhance wilderness characteristics. Designation of these areas would impede the ability of motorized recreational users to access washes, single-track cattle paths, and little-used tertiary routes in these areas. Motorized recreationists would be displaced and forced to travel to nearby areas and routes offering motorized opportunities. More crowded motorized routes would make the increase encounters with	In the monument, no impacts are expected. In the Bradshaw-Harquahala, impacts would be the same as Alternative B except that 107,510 acres of land would be managed to maintain or enhance wilderness characteristics. This increased number of acres could create more displacement of motorized recreationists than Alternative B. Designation of a larger amount of area to manage for wilderness characteristics would provide non-motorized users more recreational opportunities than	In the monument, no impacts are expected. The impacts of managing lands in the Bradshaw-Harquahala allocated to maintain or enhance wilderness characteristics would be similar to those under Alternative B and C, except that the total area of public lands affected would be 91,480 acres. Alternative D would designate some of the lands identified to maintain or enhance wilderness characteristics described in Alternatives B and C as ONA ACECs.	In the monument, no impacts are expected. In the Bradshaw-Harquahala, impacts would be the same as Alternative B except that 96,420 acres of land would be managed to maintain or enhance wilderness characteristics. This increased number of acres could create more displacement of motorized recreationists than Alternative B. Designation of a larger amount of area to manage for wilderness characteristics would provide non-motorized users more recreational opportunities than

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		other motorized users. This would reduce the quality of dispersed recreational experiences for some visitors. Non-motorized users would benefit from the limitation on vehicles in areas designated to manage or enhance wilderness characteristics by being able to recreate in a more natural setting.	Alternative B.		Alternative B but not as much as Alternative C.
4.15 Impacts on Visual Resources					
4.15.1 From Management of Special Designations	Present conditions would be maintained. BLM would evaluate future projects for visual impacts, but would give no guidance to consistency of area values. The two ACECs in the monument would be maintained, and the Agua Fria River would remain eligible for WSR designation. No VRM classes have been assigned. In the Bradshaw-Harquahala Planning Area, 5 wilderness areas would be managed by VRM Class I standards.	In the monument, WSR eligibility would be maintained. Corridors should maintain the natural views within those corridors. Back Country Byway designation on the Bloody Basin Road would have very low impacts from proposed associated facilities. In the Bradshaw-Harquahaha, retaining the Harquahala Mtn Summit Road would not affect existing scenic quality. The wilderness areas would remain under VRM Class I. Tule Creek ACEC could result in slightly degraded views by requiring fences	In the monument, WSR eligibility would be maintained. The addition of four ACECs requiring fencing to prohibit livestock could slightly degrade the visual resources. Limitation to vehicle routes may result in some route closures that could improve the visual character of the areas. In the Bradshaw-Harquahala, impacts would be similar to those described in Alternative B, except: Management of seven ACECs could slightly degrade visual resources,	In the monument, WSR eligibility would be maintained. Designation of the 13,070 acre ACEC along the Agua Fria River would have similar impacts to those described for the ACECs in Alternative C, but over a somewhat larger area. In the Bradshaw-Harquahala, impacts would be similar to those described in Alternative B. Designation of the 8 ACECs would be similar to those described in Alternative C, except over a much larger area. Complete closure of the	In the monument, impacts would be the same as Alternative B. In the Bradshaw-Harquahala, impacts would be similar to Alternative C, except the proposed ACEC designation would be increased.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		to prohibit livestock. Improved vegetation conditions and closure to mining could steadily improve the visual character of the ACEC.	but could improve visual resources by prohibiting mining, closing some roads, precluding new recreational sites, and prohibiting construction of new range improvements in some areas.	ACECs to motorized travel will potentially improve visual character by allowing existing vehicle routes to slowly disappear. The wilderness areas would remain in VRM class I.	
4.15.2 From Lands and Realty Management	In the monument, land acquisition would be evaluated for visual resource on a project-specific environmental review. New utility proposals could affect the visual character of the landscape. The impacts would be limited to the western end of the monument, where there are already visual disturbances from previous utility projects. In the Bradshaw-Harquahala, no impacts are expected from land acquisition. Acquisitions would be evaluated for visual resources under a project-specific environmental review. Future utility, mining, or development projects would no longer have to	In both planning areas, visual resources would benefit because newly acquired parcels would be inventoried and managed according to the VRM system. Land disposal could impair visual resources by eliminating BLM's management control over the disposed parcels. Adding designated utility corridors could affect visual resources by increasing the potential installation of utility structures. Narrowing the corridor in the monument could affect visual resources by confining new utilities to areas already visually affected by existing structures. An expansion of the corridor could impact the Bumble Bee area and	Impacts would be similar to those described for Alternative B, except: Eliminating the existing utility corridor in the monument would eliminate potential impacts of future utilities. A corresponding expansion of the corridor two miles west could extend impacts of utility development even further into the Bumble Bee area and into the line of sight from the Sunset Point Scenic Overlook, but may also give enough room within the corridor to site any utility so its impact was either screened from view or minimized. In the Bradshaw-	Impacts to visual resources from land and realty management actions would be similar to those in Alternative B, except: Impacts in monument from utility corridors would be similar to those under Alternative C. In the Bradshaw-Harquahala, no acreage has been found to be suitable for disposal. BLM would retain management of all public lands, and projects would be subject to design review to ensure compliance and consistency with VRM class objectives.	Impacts to visual resources from land and realty management actions would be similar to those discussed for Alternative B, except: Impacts from utility corridors would be similar to Alternative B for the monument and to a combination of B and C for lands west of Interstate 17. Expanding the Black Canyon Utility Corridor will aloe for future development to meet demand in the Phoenix area, while allowing flexibility to adjust to facilities to minimize visual impacts as views from scenic overlooks along I-17.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	conform with existing VRM class standards. Aesthetically incompatible projects could be introduced onto the public lands. These projects and authorizations could degrade recreation settings, view sheds, and open space qualities of public lands.	sites visible from Sunset Point Scenic Overlook. Future telecommunication infrastructure projects would undergo environmental review that would analyze visual resources. Requiring projects to be designed to keep with the VRM class in which they occur would minimize impacts. In the Bradshaw-Harquahala, 58,400 acres have been determined to be suitable for disposal. All highway system routes and proposed corridors southwest of the Wickenburg Bypass corridor, would be inconsistent with VRM objectives.	Harquahala, impacts of Disposal of 49,100 acres would be similar to those described for Alternative A. Impacts to visual resources from transportation corridors would be similar to those described for Alternative B.		
4.15.3 From Management of Soil, Air, and Water Resources	Preventing or reducing impacts on air quality by developing mitigation during project planning could benefit visual resources by maintaining the local clarity of the visual landscape.	Impacts are similar to Alternative A.	Impacts are similar to Alternative A.	Impacts are similar to Alternative A.	Impacts are similar to Alternative A.
4.15.4 From Biological Resource Management	Negligible impacts are expected.	Impacts would be similar to Alternative A, except: Designing wildlife management projects to	Impacts would be similar to Alternative B, except the area of WHAs in the monument would increases to 39,300 acres	Impacts would be similar to those described for Alternative C, except much of the management of important biological	Impacts would be similar to those described for Alternative C.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		comply with VRM Classes I and II in some places would reduce visual impacts from those projects to a minimum. Potential closure of vehicle routes within 64,220 acres of Wildlife Habitat Areas (WHAs) could improve visual landscapes where closures occur.	in the monument and 157,180 acres in the Bradshaw-Harquahala. WHAs could enhance the visual landscape by removing existing disturbances.	areas would be in ACECs, and an additional 24,290 acres of WHA would be added.	
4.15.5 From Cultural Resource Management	No impacts are expected.	Implementing physical and administrative protection measures to stop, limit, or repair damage and vandalism to sites could affect visual resources. Building fences or other barriers could impair visual resources. Closing routes and restricting grazing could increase vegetation cover, creating a more natural-appearing landscape. Authorizing commercial and other group tours could degrade visual resources because of disturbance. In the monument, 4,438 acres would be allocated to High public use area for cultural resources. High public use could disturb visual resources by adding visitor facilities, improving	In the monument, 11,600 acres would be allocated to High public use and would experience some of the same impacts as the areas designated for High public use in Alternative B. Two sites could experience impacts similar to those described under the Cultural Resources section of Management Common to Both Planning Areas: Fort Silver and the Pueblo la Plata complex. In the Bradshaw-Harquahala, the allocation of four SCRMAs could result in actions affecting visual resources. Impacts would be the same as those described for SCRMAs under	Impacts to visual resources from cultural resources would be similar to those discussed in the Visual Resources section of Management Common to Both Planning Areas. In the monument, no sites would be allocated to High public use. In the Bradshaw-Harquahala, the allocation of two SCRMAs could result in the actions affecting visual resources. Impacts would be the same as described for Alternative B.	Impacts in Agua Fria National Monument would be would be similar to those in Alternative C. Impacts in the Bradshaw-Harquahala Planning Area would be similar to those in Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		routes and signs, and developing a motorized or nonmotorized loop trail system. In the Bradshaw-Harquahala, development of public use sites would have similar impacts to those described in the monument. In this alternative, public use sites would be developed in all eight SCRMAs.	Alternative B.		
4.15.6 From Paleontological Resource Management	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.15.7 From Recreation Management	In the monument, visual resources could be affected by installing signs at monument boundaries, in addition to disturbances and potential damage caused by target shooting. In the Bradshaw-Harquahala, installing more signs could degrade visual resources. Large public land areas west of Highway 93 remaining open to cross-country and OHV activity would continue to affect visual resources. As visitation increases over the life of the plan, visual	In the monument, in the Front Country zone (57,900 acres), maintaining or enhancing both nonmotorized and motorized visitor travel could affect visual resources by introducing human facilities into the view shed, developing cultural sites, and building visitor amenities. In the Back Country zone (12,700 acres) no impacts are expected. The Passage RMZ (300 acres) would contain the major vehicle routes or traverse across the Back	Impacts would be similar to those discussed for Alternative B, except Front Country allocated to Class III would be decreased to 42,410 acres, and VRM Class II in Back Country increased to 28,420 acres, and Passage would be decreased to 70 acres. In the Bradshaw-Harquahala Planning Area, impacts would be similar to Alternative B, except Alternative C would increase the allocation of nine SRMAs to 164,780 acres, and increase areas	Impacts to visual resources from recreation management would be similar to those under Alternative B. In the monument, Front Country would be decreased to 1,530 acres, Back Country would be increased to 68,380 acres, and Passage would be increased to 990 acres. Impacts to visual resources in the Bradshaw-Harquahala Planning Area would be similar to Alternative B, except BLM would decrease the allocation of	Impacts to visual resources from recreation management would be similar to those under Alternative B. In the monument, Front Country would be decreased to 12,440 acres, Back Country would be increased to 57,200 acres, and Passage would increase to 1300 acres. Impacts in the Bradshaw-Harquahala Planning Area would be similar to Alternative B, except BLM would allocate seven SRMAs,

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	qualities could be further degraded by landscape damage and increasing levels of dust.	Country RMZ. VRM objectives would allow maintaining the current visual character while providing limited management activities. Some visitor related development could occur, but it would not create significant impacts. In the Bradshaw-Harquahala, all lands in MUs would be allocated as ERMAs, unless superseded for SRMAs or RMZs. Visual resources could be affected by this allocation by the establishment of recreational and visitor facilities. Management prescriptions for 9 SRMAs could affect visual resources by the development of staging/ camping areas and visitor facilities. Motorized events in lands allocated to maintain or enhance wilderness characteristics within the Harquahala Mountains could alter the visual landscape by reducing local visual clarity. Impacts, however, would be minimized by the restrictive	allocated to maintain or enhance wilderness characteristics to four, totaling 98,430 acres.	SRMAs to seven, totaling 56,240 acres. Areas allocated to maintain or enhance wilderness characteristics would increase to six, but decrease in total acreage to 91,480.	increasing the acreage to 384,510, and six areas allocated to maintain or enhance wilderness characteristics, increasing the acreage to 109,910.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		timeframe for holding events.			
4.15.8 From Visual Resource Management	Current conditions would be maintained, and since no VRM management classes were established through prior planning, the visual landscape is expected to gradually decline. A lack of clear management, direction can also be accounted for the decline of visual aesthetics in both planning areas.	In the monument, 57,900 acres would be allocated to VRM Class III, and 13,000 allocated to VRM Class II. This combination of VRM Classes allows protection of visual landscapes while meeting the objectives of managing recreation demands. In the Bradshaw-Harquahala, division of VRM allocation into 4 classes allows management of resources consistent with the objective of Alternative B, while protecting the scenic and open space values in sensitive areas. Proposed projects over the life of the plan are expected to create visual intrusions in places where they do not already exist. However, the changes are expected to be minimal.	In the monument, visual resource impacts would be the same as in Alternative B, except: 42,410 acres of Front Country would be managed as VRM class III and 28,480 acres of Back Country and Passage zones would be managed as VRM Class II. In the Bradshaw-Harquahala, there will be 4 designated VRM classes. Impacts would be similar to those in Alternative B, except that more land would be included in VRM Class II. This increase is expected to preserve the existing open space in a larger areas for the life of the plan.	In the monument, the visual resource impacts would be the same as those in Alternative B, except: 1,530 acres of Front Country would be managed as VRM Class II and 69, 370 acre of Back Country and Passage zone would be managed as VRM class II. In Bradshaw-Harquahala,. Impacts would be similar to those from Alternative C, except that the increase of land in VRM class I would place a higher standard for managing intrusions across a larger landscape. Preserving broad natural-appearing landscapes is a high priority. The extent of the landscape preserved would be greater than under Alternative C.	In the monument, visual resource impact would be similar to those in Alternative D, except that 12,440 acres of Front Country would be managed as VRM Class III, 35,300 acres of Back Country and Passage zone would be managed as VRM Class II, and 23,160 acres would be allocated to maintain or enhance wilderness characteristics and would be managed under VRM class I. In the Bradshaw-Harquahala, VRM classes would be allocated into 4 classes. The impacts would be similar to those in Alternative D.
4.15.9 From Rangeland Management	Construction of more livestock control facilities could contribute to a steady decline in visual quality across the planning area.	Impacts would be similar to those described in Alternative A, except: Construction of facilities to control livestock access to riparian areas could increase the number of	Impacts would be similar to Alternative B, except the improvements to riparian vegetation could be faster.	Removing livestock would, reduce the visual intrusion of fences, corals, and other developments. Improved vegetation conditions will also improve visual	Visual impacts would be the same as described in Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		livestock control facilities planned, but conformance of project design with established VRM classes will minimize the visual intrusion of projects.		landscapes. Increases in livestock related developments in adjacent nonfederal lands, or conversion to nonagricultural uses could greatly degrade visual landscapes. Improved plant health could improve visual landscapes in higher desert and grassland communities.	
4.15.10 From Minerals Management	In the monument, only lands encumbered by mining claims are open to mining. No activity beyond casual use would be allowed without determinations of valid existing rights. Therefore, mineral development on existing claims would have minimal impacts on visual resource. In the Bradshaw-Harquahala, most of the planning area would remain open to mineral location and development. Mining would alter the existing visual landscape by adding mining scars, facilities for operations, and routes. Localized degradation of air quality and visual clarity could result from mine	In the monument, impacts are the same as in Alternative A. In the Bradshaw-Harquahala, minerals management could affect visual resources over most of the planning area. Mining impacts would be minimized by compliance with VRM Class allocations. Alternative B would allow more visual intrusion into the landscape than would Alternatives C, D, or E. Alternative B would protect the visual landscape more than would Alternative A. In addition, mining would be prohibited from some lands as follows: ▪ 268,260 acres would be	In the monument, impacts are the same as in Alternative B, except that visual impacts from the different types of mining would be eliminated on the following lands (including Wilderness acres): ▪ 325,970 acres would be closed to development of saleable minerals ▪ 188,450 acres would be closed to development of locatable minerals 188,190 acres would be closed to development of leasable minerals	Impacts to visual resource management from minerals management would be similar to those under Alternative B, except visual impacts from the different types of mining would be eliminated on the following lands (including Wilderness acres): ▪ 469,680 acres would be closed to development of saleable minerals ▪ 446,440 acres would be closed to development of locatable minerals ▪ 453,550 acres would be closed to development of leasable minerals	Impacts to VRM from minerals management would be similar to those under Alternative B, except visual impacts from the different types of mining would be eliminated on the following lands (including Wilderness acres): ▪ 172,780 acres would be closed to development of saleable minerals ▪ 171,940 acres would be closed to development of locatable minerals ▪ 171,680 acres would be closed to development of leasable minerals

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	emissions and increased dust emissions. The five designated Wilderness areas (96,820 acres) would continue to be closed to any mineral development. Visual impacts from the different types of mining would be eliminated on the following lands (including Wilderness acres): ▪ 172,510 acres would be closed to development of saleable minerals ▪ 171,680 acres would be closed to development of locatable minerals ▪ 171,680 acres would be closed to development of leasable minerals	closed to development of saleable minerals ▪ 171,680 acres would be closed to development of locatable minerals ▪ 171,680 acres would be closed to development of leasable mineral			
4.15.11 From Fire Management	Prescribed burning would reduce visual quality in the short term but improve vegetation health and visual quality in the long term. Wildfires would have a similar affect, but in non fire adapted communities visual impacts could last for decades.	Impacts would be the same as for Alternative A except some natural start fires may be allowed to burn in the national monument, increasing slightly the potential visual impacts.	Impacts would be similar to Alternative B.	Impacts would be similar to Alternative B.	Impacts would be similar to Alternative B.
4.15.12 From Wild Horse and Burro Management	No impacts are expected.	No impacts are expected.	Removal of burros from the Harquahala Herd Area could improve vegetation cover.	Impacts are similar to Alternative C.	Impacts are similar to Alternative C.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
			Scenery would change because natural conditions would be restored.		
4.15.13 From Management of Transportation and Public Access	In the monument, no significant impacts are expected. In the Bradshaw-Harquahala, lands would remain undesignated per VRM Classes. New roads and routes authorized or pioneered could eventually create visual disturbances in the planning area. Roads up hillsides, through riparian zones, and along-term soil and vegetation damage would impact visual resources over both the short and long-term.	In the monument, no significant impacts are expected. In the Bradshaw-Harquahala, a wide range of impacts are anticipated from management of travel, transportation and public access. Small transportation projects would be mitigated and consistent to the appropriate VRM classes. Impacts would be most significant on lands proposed for consideration as major highway corridors.	Impacts are similar to Alternative B.	In the monument, no significant impacts are expected. In the Bradshaw-Harquahala, less adverse impacts are anticipated than other alternatives. VRM allocations will maintain the natural appearance of the monument landscapes while meeting other resource management objectives. Impacts would be greatly reduced than those considered under Alternatives B and C. As described in Alternative B, there could be significant visual impacts from major county, state and federal highway projects. Overall, allocated VRM classes would maintain or enhance the appearance of public lands.	In the monument, no significant impacts are expected. In the Bradshaw-Harquahala, impacts would be similar to those under Alternative B and projects would be installed mostly consistent with VRM objectives.
4.15.14 From Management of Wilderness	No areas are under consideration for management of wilderness characteristics. Therefore,	Visual and scenic resource conditions would be maintained and protected within landscapes allocated	Impacts are similar to Alternative B.	Impacts are similar to Alternative B.	Impacts are similar to Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Characteristics	there are no impacts on visual resources.	to maintain or enhance wilderness characteristics. Light pollution could be less and dark skies more effectively maintained.			
4.16 Impacts on Rangeland Management					
4.16.1 From Management of Special Designations	Exclusion of grazing in Larry Canyon ACEC has a negligible effect on rangeland management. Designation of the WSR corridors would institute a restriction for livestock use during the winter season on the riparian segments of the corridor. Vegetation health and density would improve, and with it forage conditions in the riparian areas would improve. During the period the riparian is closed, the altered livestock distribution could cause increased disturbance in areas livestock congregate. There is also slight potential of vehicle-livestock impacts along the Harquahala Summit Scenic Road Back Country Byway.	Designation of the Bloody Basin Road and Constellation Mine Road as back country byways would increase traffic and recreation use in the area, therefore increasing animal-vehicle collisions. In the Bradshaw-Harquahala, Tue Creek ACEC would exclude grazing from fenced areas. This would improve health of riparian vegetation and negligibly decrease AUMs for the grazing allotment.	Impacts would be similar to Alternative B, except: Exclusion of livestock from 810 acres of riparian ACEC in the monument would have a negligible affect on livestock grazing. In the Bradshaw-Harquahala, reduced surface disturbance from non-grazing activities restricted by ACEC designation on 87,310 acres would improve forage conditions and reduce potential for vehicle-animal collisions. Designating the Constellation Mine Road as a back country byway would have the same impacts as in Alternative B.	Management of the 13,070 acres of ACEC in the monument would help improve range conditions by reducing vehicle traffic, damage to riparian vegetation, disturbance by recreational users, wildlife stress, and potential vectoring of noxious and invasive species. Designation of 8 ACEC in the Bradshaw-Harquahala would have similar impacts to those described in Alternative C, but over a larger area (314,580 acres).	In the national monument, there are no ACEC proposals under this alternative. In the Bradshaw-Harquahala, impacts from ACECs would be similar to Alternative C, except the ACEC acreage in would cover 111,450 acres.
4.16.2 From Lands and Realty Management	In the monument, no impacts are expected. In the Bradshaw-	In the monument, narrowing the utility corridor to existing rights-of-way would restrict	Eliminating the Black Canyon corridor would eliminate the development of short	Impacts to rangeland vegetation would be similar to that described in Alternative C, except	In the monument, narrowing of the Black Canyon utility corridor would have similar

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	Harquahala, maintenance or construction of utilities in corridors may slightly disturb vegetation and disrupt grazing operations temporarily. Acquiring privately owned and state-held lands would create large blocks of federally managed lands. These blocks could consolidate management, and increase AUM. Land disposal of 54,370 acres would reduce available grazing lands and/or livestock developments located on those lands. Depending on the size of parcels, AUMs may be reduced or whole allotments may be closed.	impacts to vegetation from new utility. In the Bradshaw-Harquahala, lands and realty related impacts would be similar to those described for Alternative A, except: Lands available for disposal would be 58,400 acres. Authorized AUMs might need to be adjusted. The total acreage from the sale, conveyance, or R&PP would represent a potential loss of less than 6% of the land available for livestock grazing in Bradshaw-Harquahala.	term vegetation disturbances, stress to livestock and wildlife, animal-vehicle collisions, and vectoring weeds. In the Bradshaw-Harquahala, impacts would be similar to Alternative A. Impacts of the land tenure adjustment of 49,100 acres of BLM-managed federal lands would be similar to those described for Alternative B. The total acreage from these actions would represent a potential loss of five percent of the lands available for livestock grazing.	impacts to grazing and livestock would end with the cessation of grazing.	impacts to those described in Alternative B. Any future land acquisition could increase forage. Any increase in AUMs would be negligible and grazing authorization would increase. In the Bradshaw-Harquahala, impacts would be similar to those described for Alternative C, except that 38,755 acres would be offered for disposal (4% of which is loss for livestock. grazing).
4.16.3 From Management of Soil, Air, and Water Resources	Reducing or eliminating livestock grazing would accelerate the rate of improvement. These actions could result in reduced authorized livestock numbers for grazing permits. Promoting increased vegetation cover and reduced soil erosion should decrease localized emissions of naturally occurring windblown fugitive dust.	Impacts similar to Alternative A.	Impacts are similar to Alternative A.	Impacts are similar to Alternative A.	Impacts are similar to Alternative A.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.16.4 From Biological Resource Management	In the monument, the use of prescribed fires has short term impacts on vegetation. The results could improve vegetation quantity and quality. Limits on mechanical vegetation treatment have the potential to assist invasive species to encroach. Modifying fencing to allow for wildlife movement could increase the movement of livestock across pastures and allotments. Native fish transplants could require restricting livestock use or excluding livestock from the site to prevent harming the fish. In the Bradshaw-Harquahala, mitigation and closure of waters could result in poor livestock distribution and added operation costs.	Impacts on the monument are similar to Alternative A. In the Bradshaw-Harquahala, prohibiting construction of range improvements in Browns Canyon could limit opportunities to improve livestock distribution in the Aguila allotment. Potential restrictions to vehicle routes could limit access to range improvements, increasing maintenance costs. Reduced vehicle use may reduce vehicle-animal impacts and disturbance. Prohibiting domestic sheep and goat grazing within 9 miles of occupied desert bighorn sheep habitat would affect 1 grazing allotment where sheep are currently an authorized class of livestock.	Impacts are similar to Alternative B.	Impacts are similar to Alternative B.	Impacts are similar to Alternative B.
4.16.5 From Cultural Resource Management	Site protection measures to exclude livestock from sites through fencing may slightly reduce available forage. Impacts are expected to be negligible.	For both planning areas, High public use development would damage vegetation in the immediate area of the site construction. Depending on the level of public use, surrounding vegetation could also be damaged by increased visitor use. If the protected areas contain	Impacts would be the same as described by Alternative B.	Impacts would be the same as described by Alternative B.	Impacts would be the same as described by Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		existing livestock water sources, more watering locations or facilities would need to be developed outside of these areas. Moderate public use impacts to vegetation would be minimal, and Low public use impacts would even be smaller.			
4.16.6 From Paleontological Resource Management	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.16.7 From Recreation Management	Current OHV designations, limited to existing roads and trails, lead to proliferation of vehicle routes, disturbance to vegetation, vehicle-animal encounters, and vandalism of range improvements and private property. SRPs have the potential to have similar effects, but may be slightly lower due to imposed limitations and restrictions.	Recreation allocations on the monument are not expected to affect rangeland resources or use. Increased visitation is expected to bring increased vehicle numbers, increasing animal-vehicle encounters, and vectoring of invasive weeds. Limiting vehicles to designated routes will reduce vehicle related impacts. Other recreation impacts in the Bradshaw-Harquahala would include recreational target shooting being prohibited on 27,570 acres and restricted near High public use areas, resulting in a decreased risk of	Impacts would be similar to Alternative B, except: In the monument, reduced Front Country and increased Back Country RMZs would reduce people-livestock encounters and associated visitor impacts. Reductions in route miles may make some areas difficult to access, increasing operating costs of grazing permits. In the Bradshaw-Harquahala, recreational target shooting restrictions could further reduce potential conflicts with livestock and shooting. Reduced	Impacts in from recreation would be similar to those described for Alternative C, except that the Cessation of grazing would eliminate impacts to livestock.	In the monument, allocations for the Front Country, Back Country, and Passage zones are not expected to affect rangeland resources or use. For both planning areas, confining vehicles to designated routes would have impacts are similar to Alternative C. Activities authorized through Special Recreation Permits (SRPs) are expected to have impacts similar to those in Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		animal stress and mortality. Depending on the size of the campground/staging areas to be developed iauthorized livestock grazing might need to be adjusted. New trails established for pedestrian, non-motorized, and motorized use could increase the risk of animal stress and potential mortality from collisions with vehicles.	special use permits issued motorized race events could reduce the risk of disturbance to livestock and mortality from collisions with vehicles.		
4.16.8 From Visual Resource Management	No impacts are expected from VRM.	Impacts resulting from VRM management classes would include increased costs of range project developments to conform to VRM class objectives, location of some projects in less desirable places, or possible denial of some projects that cannot conform to VRM class objectives.	Impacts would be the same as described for Alternative B.	Alternative D eliminates grazing from the planning area, so no impacts are expected from VRM management.	Impacts would be the same as described for Alternative B.
4.16.9 From Rangeland Management	No impacts are expected.	Winter only grazing in riparian areas would improve health and density of vegetation. Livestock distributions may be disrupted in some areas, and loss of water sources in summer may require development of range improvements to replace the lost water.	Impacts would be similar to Alternative B, except: Prohibiting grazing in riparian areas in the monument would close 25,989 acres to livestock. Prohibiting grazing in Bradshaw-Harquahala would potentially close 249,400 acres to livestock.	Closing all allotments to grazing would eliminate 13,492 AUMs in the monument and 69,568 AUMs in the Bradshaw-Harquahala. If ranchers cannot find alternative forage for their livestock, holders of all 104 permits and leases will go out of business. Cost of removal of unnecessary	Impacts would be similar to those in Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		Implementation of the Land Health Standards and Guidelines for Grazing Administration could reduce livestock numbers, rest or close pastures, or convert some pastures or allotments to ephemeral use.	For both planning areas, the potential loss in availability to livestock grazing from riparian closure would be greater than for closing upland areas. The loss of water sources in some instances could result in no grazing on public lands. Riparian vegetation and vegetation cover would increase more rapidly than in Alternative B.	range improvements would be born by the BLM, as well as costs of maintaining facilities used for other purposes. Vegetation conditions would improve until environmental stability is reached.	
4.16.10 From Minerals Management	The monument is closed to new mineral entry. This action eliminates the risk of increased livestock-vehicle collisions. Also avoided would be the loss of productive rangeland vegetation to the surface disturbance of mining. Impacts in the Bradshaw-Harquahala are expected to be negligible.	Impacts are similar to Alternative A.	Impacts are similar to Alternative A.	Impacts are similar to Alternative A.	Impacts are similar to Alternative A.
4.16.11 From Fire Management	Short term impacts from removal of forage and closure of pastures before and after burning. Fire treatments would affect grazing, but would also improve vegetation quality and quantity.	Impacts are similar to Alternative A.	Impacts are similar to Alternative A.	Impacts are similar to Alternative A.	Impacts are similar to Alternative A.
4.16.12 From Wild Horse and Burro Management	No impacts are expected in the monument because of	Impacts are similar to Alternative A.	Impacts are similar to Alternative A.	Impacts are similar to Alternative A.	Impacts are similar to Alternative A.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	the lack of burros in the area. In the Bradshaw-Harquahala, current conditions for burros would be maintained in the Lake Pleasant HMA. If all herds are removed, upland vegetation would increase, riparian areas would improve, and competition for water between livestock and wildlife would decrease.				
4.16.13 From Management of Transportation and Public Access	Vehicle limitations in Perry Mesa ACEC have reduced the potential for upland vegetation damage by unauthorized cross-country OHV travel. Damage to roadside vegetation has increased due to unauthorized OHV travel around poorly maintained segments of roadway. Decreased OHV travel would reduce the potential for animal stress. The OHV travel restriction has also decreased the potential for animal-vehicle collisions.	Limiting vehicular travel in these same areas would reduce damage to upland and riparian vegetation, stress to animals, risk of animal-vehocle collisions, and potential vectoring of noxious weeds.	Impacts would be similar to Alternative B.	Impacts would be similar to Alternative B.	Impacts would be similar to Alternative B.
4.16.14 From Management of Wilderness Characteristics	No impacts are expected.	For both planning areas, small impact are expected by preventing the construction of new range	Impacts would be similar to Alternative B.	Impacts would be similar to Alternative B.	Impacts would be similar to Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		improvements. This may have an adverse impact on improving livestock distribution through the prohibition of development of new livestock waters.			
4.17 Impacts on Minerals and Energy Resources					
4.17.1 From Management of Special Area Designations	Mining closed in designated areas, including wilderness and the monument prevents any potential resources in these areas from being developed. Potential is low for leasable minerals, moderate for salable minerals, and varies for locatable minerals. Current needs and future demands of public users would be affected.	Impacts would be the similar to Alternative A, except Tule Creek ACEC in Bradshaw-Harquahala would be closed to mining. This is expected to have negligible impact. This could result in a loss of economic opportunity or prohibit future development or expansion.	Impacts would be the similar to Alternative A in the monument. Impacts in Bradshaw-Harquahala would be similar to Alternative B, except more areas would be closed to mining including Sheep Mountain RNA ACEC. Material disposal in Vulture Mountains Raptor Area ACEC and Black Butte ONA ACEC would prevent the sale of sand, gravel and decorative rock.	Impacts would be the similar to Alternative C, except more acreage would be specially designated. Mineral development would also be closed in Baldy Mountain ONA ACEC, Harquahala Mountains ONA ACEC, and Vulture Mountains ACEC. Any potential leasing and sales would not occur in the Belmont-Big Horn Mountains ACEC.	Acreage of closures are similar to Alternative A, but desired future conditions for the ACECs makes the impacts more like Alternative C.
4.17.2 From Lands and Realty Management	No impacts are expected in the Monument. Acquisition of nonfederal mineral estate in two RCAs would increase potentially developable mineral resources. Closure of reconveyed lands in the Black Canyon corridor precludes opportunities for mineral development.	No impacts are expected in the monument. Rights-of-way, leases, and patents establish superior rights to future mineral development, but may also cause access restrictions. However, rights-of-way for roads, highways, and powerlines could improve access and infrastructure. Land ownership	Impacts would be similar to Alternative B, except opening small tracts and reconveyed lands for high potential areas only would limit future development opportunities. This would potentially reduce conflict with surface owners.	Impacts would be similar to Alternative B, except that keeping all small tract and reconveyed lands closed to mineral development would be the same as Alternative A.	Impacts would be similar to Alternative B, except small tract lands would remain closed. Reconveyed lands would be opened, but riparian areas would remain closed to mineral material sales. Impacts to mining development are expected to be minimal.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	Small tract lands closed to location could cause conflicts with surface owners.	adjustments may dispose of or acquire valuable mineral resources. Opening reconveyed lands to mineral development might provide further opportunities. Opening small tracts to locatable mineral development could increase opportunities but potentially create conflict with surface owners.			
4.17.3 From Management of Soil, Air, and Water Resources	Actions to protect soil, air, and water resources generally increase mine productions costs, occasionally rendering operations economically unfeasible.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.
4.17.4 From Biological Resource Management	Tortoise habitat restrictions decrease opportunities for developing mineral resources. Stipulations and mitigation for wildlife increase operating costs and permitting timeframes, and may potentially constrain mining actions. Mineral development is restricted in habitat for T&E species and discovery of a T&E species may	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	interrupt operations.				
4.17.5 From Cultural Resource Management	Cultural survey and mitigation for found cultural resources create delays in approval of mining operations and increase cost of mineral development.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.
4.17.6 From Paleontological Resource Management	Discovery of paleontological resources during development could increase the costs of mineral extraction.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.
4.17.7 From Recreation Management	Allocations such as SRMAs might minimize potential surface disturbances from mineral development and where development can occur. Though most of these allocations do not close areas to mining, compliance with management prescriptions could increase development costs.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.
4.17.8 From Visual Resource Management	No VRM Classes have been established. VRM has generally been managed to Class III, which is not expected to affect minerals and energy management.	Impacts of VRM Class III and IV would be similar to current standards, though Class IV would allow additional flexibility. VRM Class I and II would increase mining costs. Some discretionary mining and related infrastructure may be excluded if it cannot conform to allocated VRM standard.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.
4.17.9 From Rangeland	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Management					
4.17.10 From Minerals Management	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.17.11 From Fire Management	Prescribed burning and wildfires may affect access to mineral resources during fire operations. Management can protect mine developments by reducing the risk of devastating wildfires. Impacts would short term and would not affect long-term development potential.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.
4.17.12 From Wild Horse and Burro Management	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.17.13 From Land Health Standards	Land Health Standards would potentially raise reclamation standards and costs, and result in a greater delay in bond release.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.
4.17.14 From Management of Transportation and Public Access	Transportation management requirements impose more limits on the number and location of roads and require mitigation to reduce impacts. Authorization would be required to drive off road to access mining claims or conduct exploration. Fewer access roads would inhibit access for prospecting. Improved road conditions leading to improved access would facilitate operating existing and potential mines.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.17.15 From Management of Wilderness Characteristics	No impacts are expected.	Lands allocated to maintain or enhance wilderness characteristics would be closed to mineral material disposal. Closing these areas would prevent the exploitation of potential resources, but would ensure preservation of natural and primitive characteristics.	Impacts are expected to be similar to Alternative B.	Impacts would be the similar to Alternative B except that in addition to closing lands allocated for management of wilderness characteristics to mineral material disposal, mineral and geothermal leasing would also be prohibited.	All public lands within the planning area would be open to mining except for legislatively withdrawn and segregated areas. As a result, areas allocated to manage wilderness characteristics would have no impact.
4.18 Impacts on Fire and Fuel Resources					
4.18.1 From Management of Special Area Designations	In areas with limits on motorized vehicles, the potential for human-caused wildfire ignitions could be reduced. Travel restrictions would not affect management. Areas of limited development with fewer improvements and structures would affect suppression. Wilderness areas limit suppression and access. No mechanized equipment can be used, affecting fire suppression strategies and options for fuel treatment.	Designation of Bloody Basin Road and **Constellation Mine Road** as Back Country Byways could increase the risk of human caused fires.	Vehicular travel would be further limited in this alternative, decreasing risk of human-caused ignition. Prohibiting grazing in the Harquahala Mountains ACEC could increase fine fuels on the surface, resulting in easier ignition and a more continuous fuel bed.	Impacts are expected to be similar to Alternative C.	Impacts are expected to be similar to Alternative C.
4.18.2 From Lands and Realty Management	Continued use of existing utility rights-of-way could increase opportunities for human caused ignition. Improvements and structures require additional fire protection, introduce	Impacts would be similar to Alternative A, except disposal increases to 58,400 acres.	Impacts would be similar to Alternative A, except disposal decreases to 49,100 acres.	Impacts would be similar to Alternative A. However, impacts related to land disposal are eliminated as no acres are available for disposal.	Impacts would be similar to Alternative A, except potential disposal acres are 38,755.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	hazards to aircraft and ground resources, and restrict fire operations, thereby increasing overall costs. Disposing of 54,370 acres can consolidate federal lands, making fire operations more efficient and less expensive. Conversion of disposed acres to development would increase human populations and change ignition potential, fire behavior, and risk decisions.				
4.18.3 From Management of Soil, Air, and Water Resources	Meeting air quality standards limits the amount of prescribed burning. An approved prescribed burn plan defines measures that would be taken to reduce impacts. Implementing prescribed fire in fire-adapted environments and fuel treatments in other high-risk locations would improve watershed conditions, increase soil cover, and promote proper water flows.	Impacts would be the same as Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.18.4 From Biological Resource Management	Management of sensitive species limits prescribed fire, fire treatment, and fire suppression operations. The allocation of WHAs may decrease the occurrence of human-caused fires and overall suppression costs.	Impacts would be similar to those described for Alternative A, except further closures of vehicle routes to protect biological resources could reduce visitor use and decrease the opportunity for human-caused ignitions.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.
4.18.5 From Cultural Resource Management	The use of MIST minimizes the impacts on cultural resources and the landscape, although unintentional damage could occur. For fire suppression, consideration for cultural resources can result in larger fires and higher costs. Mitigation measures during prescribed burning would increase costs and time associated with planning projects, and excludes some areas from prescribed burns.	Impacts would be similar to those described for Alternative A, except increased public visitation from development of public use cultural sites may increase the risk of human caused fires. In addition, increased numbers and types of facilities could lead to changes in suppression decisions and commitments of suppression resources In Bradshaw-Harquahala, impacts would increase due to allocation of 316,103 acres SCRMAs and developing sites for interpretation.	Impacts would be similar to those described for Alternative B, except the number of sites developed for public use would be less and 276,527 acres are allocated to SCRMAs.	Impacts would be similar to those described for Alternative C, except the number of sites developed for public use would be less than in Alternative C and 125,292 acres are allocated to SCRMAs.	Impacts would be similar to those described for Alternative B, except the number of sites developed for public use would be less (but more than for Alternative C).
4.18.6 From Paleontological Resource Management	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.18.7 From Recreation Management	Allowing continued open areas increases the risk of human caused fire ignitions as recreation use increases. Allowing target shooting	Continued dispersed camping will increase the risk of human-caused ignitions.	Impacts would be similar to those described in Alternative B, except the restriction of vehicle use in SRMAs could	Impacts would be similar to those described in Alternative B, except more routes would be closed than in Alternative	Impacts would be similar to those described for Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	increases the potential for ignitions as shooting is a common cause of wildfire in some areas.	In both planning areas, increased visitor use could increase the risk of human-caused fires and change suppression decisions, prioritization of resources, and resulting costs.	decrease the potential of human-caused ignition.	C.	
4.18.8 From Visual Resource Management	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.18.9 From Rangeland Management	Livestock grazing can reduce the loading of fine fuels, reducing the frequency and size of wild fires. However, grazing can also convert ecological types resulting in lower frequencies but higher intensities. Conversion to fire dependent annual grass communities greatly increases fire risk in these areas and may result in the eventual loss of native desert vegetation. Improvements for managing livestock present potential hazards to fire fighters and fire operations. However, suppression actions often depend on water from range improvements. In areas planned for fire treatment, livestock use can remove enough forage to	Impacts would be similar to Alternative A, except some naturally ignited fires may be allowed to burn in the monument. This may reduce the cost of prescribed burning, but may increase the risk of escaped wildfires.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	preclude prescribed burning.				
4.18.10 From Minerals Management	Mineral development in the Bradshaw-Harquahala may result in an increase in human-caused fire ignitions. Development associated with mining also increases the risk and complexity of wildland fire suppression operations. No impacts are expected in the monument.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.
4.18.11 From Fire Management	Full suppression of all wildfires helps to keep some fires small, reducing harm to resources. In Bradshaw-Harquahala 14,000 acres have been selected for prescribed fire treatments in the Weaver Mountains to treat hazardous fuel accumulations and reduce the threat of large catastrophic wildfires. Existing roads and disturbed areas would be used to avoid impacts to other resources. Wildland fire would not be allowed in Wildland Urban Interface. Prescribed fire	Impacts would be similar to Alternative A, except wildland fire could be allowed if defined prescriptive conditions are being met, especially in the Monument's tobosa grasslands. Wildland fire use would help to maintain and enhance grassland ecosystem, encourage perennial grass species, and reduce the encroachment of woody species. Wildland fire use would be beneficial in both planning areas except in the Sonoran Desert vegetation communities.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	operations would also be limited and costs increased.				
4.18.12 From Wild Horse and Burro Management	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.18.13 From Management of Transportation and Public Access	Restricting vehicles to existing roads and trails would reduce the potential for accidental human-caused ignitions. Initially, no major impacts are expected, but as increases in vehicle travel on designated routes continue, the potential for human-caused fire will also increase.	Impacts to fire under Alternative B would be similar to those described for Alternative A. Road closures would reduce access to fires by ground initial attack resources, increasing initial attack response time. Fewer roads could be used as firelines, and larger fires may result with increased suppression costs. Road closures might also result in the need to build more firelines.	Impacts would be similar to Alternative B, except more vehicle routes would be closed or limited.	Impacts would be similar to Alternative B, except more vehicle routes would be closed or limited than in Alternative C.	Impacts are expected to be similar to Alternative B
4.18.14 From Management of Wilderness Characteristics	No impacts are expected.	For both planning areas, management of wilderness characteristics may impact fire suppression by preventing the construction of new firelines using heavy equipment. Management response will offset the impacts from the potential loss of heavy equipment.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.
4.19 Impacts on Wild Horses and Burros					
4.19.1 From Management of Special Area Designations	No impacts are expected.	Fencing burros out of Tule Creek ACEC would have a negligible effect.	Impacts are expected to be similar to Alternative B, except more areas would be specially designated.	Impacts are expected to be similar to Alternative B, but more areas than Alternative C would be specially designated.	Impacts would be the same as Alternative C.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.19.2 From Lands and Realty Management	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.19.3 From Management of Soil, Air, and Water Resources	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.19.4 From Biological Resource Management	Development of springs and seeps to improve ecological function could improve forage conditions and reliable water supplies. However, fencing those areas would reduce availability of forage and water.	Impacts would be similar to Alternative A, except for the Harquahala Mountain WHA allocation which would have no effect on the burros.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.
4.19.5 From Cultural Resource Management	Fencing cultural sites could reduce available range and forage for burros. The impact is expected to be negligible.	Impacts would be similar to Alternative A, except development of sites for public use could result in the increased congregation of visitors. This could increase the risk of injury to both visitors and burros and may reduce the quantity and quality of habitat.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.
4.19.6 From Paleontological Resource Management	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.19.7 From Recreation Management	Increasing OHV use can increase vehicle-burro conflicts and burro-human encounters, increasing the risk of injury to both people and burros. Increased vegetation disturbance from recreation uses could slightly reduce available forage.	Impacts would be similar to Alternative A, except closing some vehicle routes could decrease the number of vehicle-burro conflicts. Areas allocated to non-motorized settings could help minimize impacts to vegetation from motorized recreation, increasing available forage.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
4.19.8 From Visual Resource Management	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.19.9 From Rangeland Management	Implementing Rangeland Health Standards and Guidelines for Grazing Management could improve habitat conditions. Maintaining existing grazing practices could result in more water sources, but competition for these sources and forage would continue.	Impacts would be similar to Alternative A, except construction of fences or other barriers to restrict riparian grazing would also restrict burros. This could limit available forage and water, decrease available range size and increase competition.	Impacts are expected to be similar to Alternative B.	Eliminating grazing would eliminate forage and water competition between burros and livestock. Removal of unneeded grazing improvements could decrease water sources, but may also allow burros to expand their range.	Impacts are expected to be similar to Alternative B.
4.19.10 From Minerals Management	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.19.11 From Fire Management	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.19.12 From Wild Horse and Burro Management	Management of the Lake Pleasant HMA would potentially enhance genetic viability of the herd. The social structure of the herd may be disrupted by removal of burros. All burros from the Harquahala HA are to be removed.	Impacts to the Lake Pleasant HMA would be similar to Alternative A. The Harquahala HA would not become an HMA, and removal of nuisance burros and burros damaging sensitive habitats could result in elimination of the herd.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.
4.19.13 From Management of Transportation and Public Access	Increasing OHV use could increase the possibility of vehicle-burro conflicts and cause a loss of habitat. The amount of available forage could be slightly reduced. The incidence of burro-human encounters could increase, intensifying the	Designated motorized routes could decrease the amount of available habitat and increase the risk of bodily injury to burros. Increasing levels of use by visitors on designated nonmotorized trails would further fragment burro	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	risk of injury to people and burros.	habitat. Burros could be harassed by visitors. Closing vehicle routes could decrease vehicle-burro conflicts. Areas allocated to non-motorized settings could minimize impacts to vegetation from motorized recreation, and increase available forage.			
4.19.14 From Management of Wilderness Characteristics	No impacts are expected.	Lands with wilderness characteristics would have minimal impacts on the number or location of wild burros. Closing vehicle routes could decrease vehicle-burro conflicts. Harassment would be less since most areas with wilderness characteristics have few trails and overall lower levels of visitation. Increases in primitive recreation in burro areas could increase harassment and movement of burros away from visitors. This would be significant only if the visitors occupy critical burro watering areas during periods of heat stress.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.
4.20 Transportation and Public Access					
4.20.1 From Special Area Designations	The monument would be closed to cross-country motorized travel. Existing routes would remain open. No impacts are likely to	Impacts would be similar to Alternative A, except slightly more routes would be closed.	Impacts in the monument are expected to be similar to Alternative B, except more routes would be closed (69.7% of routes	Impacts in the monument would be similar to Alternative B, except only 27.8%, of routes would remain open and	In the monument, 41% of route would be closed and one mile of new route would be added. There would be a

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	occur unless monument resources are damaged. Closing areas to protect monument resources could limit recreation. The Larry Canyon ACEC would remain closed and the Perry Mesa ACEC would limit motorized vehicles to designated routes. Five designated wilderness areas (96,820 acres) in Bradshaw-Harquahala would remain closed to motorized vehicle use. Motorized use on the Harquahala Mountain Backcountry Byway would continue. Interpretation, staging areas, amenities, route markings and periodic maintenance would benefit transportation and access.	Impacts of ACECs, wilderness areas, and Back Country byways are expected to be similar to Alternative A, except the Constellation Mine Road Backcountry Byway would positively affect the transportation network. Increased management would result in more positive visitor experiences, but use would also increase. This may negatively impact local residents. Improved management by signing, mapping and volunteers could lessen the impacts to local residents.	would remain open). In Silver Creek ACEC, 0.45miles of route would be closed to protect Gila Chub. The Bloody Basin Road Backcountry Byway would improve the opportunity for touring in the monument. Increased use could add to noise, litter and dust although mitigation may decrease these impacts. Impacts of ACECs would be similar to Alternative B, except the Black Mesa ACEC would restrict travel on routes traveling directly to or through cultural Sites and the Vulture Mountains ACEC would prevent new vehicle routes. The Harquahala Mountains ONA ACEC would also prevent new vehicle routes from being constructed. Travel in Jackrabbit wash would likely be closed which could impact some users. Wilderness areas and the Harquahala Mountain Summit Backcountry Byway would have impacts similar to	new routes would not be added. Opportunities for motorized recreation would be limited. The Agua Fria River Riparian Corridor ACEC Would be designated in the monument. In ACECs within Bradshaw-Harquahala, 412 miles of routes would be closed. The quality and quantity of motorized recreational opportunities would diminish significantly. These closures could lead to the disruption and disconnection of multiple routes in the travel network. Impacts would be similar to those described in Alternatives B and C, except Baldy Mountain ONA ACEC, Belmont-Big Horn Mountains ACEC, and Sheep Mountain RNA ACEC would close more routes. Additionally, Vulture Mountains ACEC would increase by 3,320 acres and Harquahala Mountains ACEC would increase by 10,780acres.	noticeable loss of vehicle-based activities. Travel networks could be disrupted or diminished in some areas. Designating Bloody Basin Road Backcountry Byway would have impacts similar Alternative B. In ACECs within Bradshaw-Harquahala, 114 miles of vehicle routes would be closed. Most ACEC closures would occur in Harquahala Mountain ONA and Black Butte ONA. Impacts would be similar to Alternative C. Nominating the Black Canyon Trail would have impacts similar to Alternative D. Wilderness areas and the Harquahala Mountain Backcountry Byway would have impacts similar to Alternative A.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
			Alternative A.	Wilderness areas and the Harquahala Mountain Backcountry Byway would have impacts similar to Alternative A. Nominating the Black Canyon Trail as National Recreation Trail could positively impact nonmotorized trail users.	
4.20.2 From Lands and Realty	Authorizations would potentially expand the travel network as new rights of ways for private and state land access, and installation of new utilities continues. This would increase the route network less than 1% annually. Development of state and private lands could lead to the disruption or loss of public access.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.
4.20.3 From Management of Soil, Air, and Water Resources	Actions to protect or mitigating damage to soil, water and air resources could diminish the motorized route network. Examples of potential resources issues affecting private and state lands include fugitive dust and PM-10 emissions from public roads and OHV travel, soil erosion from hill	Impacts would be similar to Alternative A, except BLM would take direct action to lessen or avoid impacts on soil, water and air resources. The designation of routes, application of dust suppression technology, re-routing or closure of problem routes, application of buffer zones, SRMA prescriptions, and the improvement of	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B, except Alternative D would close more routes and networks within sizeable areas of the Hieroglyphic Mountains SRMA and associated locales.	Impacts are expected to be similar to Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	climbs and cross-country OHV travel, and changes in water courses or water quality due to OHV travel and the public use of non-engineered or poorly engineered travel routes.	existing routes would reduce impacts. Potentially, route networks could be reduced to protect air, water and soil resources, but this would not be significant.			
4.20.4 From Biological Resources Management	No impacts are expected.	Transportation routes and public access would be reduced. ACECs would contribute to a decline in access but would increase preservation of biological resources. In Bradshaw-Harquahala, 64,220 acres would be managed as WHAs which would limit access and vehicle routes that interfere with preservation of the habitat. This could shift transportation to other areas and concentrate vehicle usage on routes that remain open.	Management would increase over Alternatives A and B. More area would be restricted from motorized transportation. Impacts of WHAs would be similar to Alternative B, except 157,180 acres would be managed as WHAs in Bradshaw-Harquahala and 39,330 acres in the monument.	This alternative would close the most area to motorized access due to biological resource management and ACEC designation. Impacts of managing WHAs would be similar to Alternative C, except 18,020 acres would be managed as WHAs in Bradshaw-Harquahala.	Management would restrict less motorized access than Alternative D, but more than Alternative C. Impacts of managing WHAs would be similar to Alternative C, except 140,310 acres in Bradshaw-Harquahala would be managed as WHAs.
4.20.5 From Cultural Resources Management	Little impact is expected. A few specific vehicle travel routes could be closed to protect cultural sites or mitigate damage, but this would have little overall impact.	Some routes could be closed for cultural site protection. Route connectivity could be diminished and the quality of vehicle-based recreation pursuits would decline.	Impacts would be similar to Alternative B, except management could further reduce route availability if conflicts were determined.	Impacts are expected to be similar to Alternative C.	Impacts would be similar to Alternative B. The potential closing of routes to protect cultural sites could diminish motorized recreation activities and possibly reduce the connectivity of route networks. Opportunities for access to some cultural sites

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
					would be reduced.
4.20.6 From Paleontological Resource Management	No impacts on expected.	No impacts on expected.	No impacts on expected.	No impacts on expected.	No impacts on expected.
4.20.7 From Recreation Resource Management	The monument is closed to cross-country motorized travel. Closing routes to protect resources could limit motorized-recreation opportunities. In Bradshaw-Harquahala, 2,240 miles of vehicle routes would remain open. Existing recreation opportunities would be unchanged. In some areas, route mileage would increase over the long-term as there is no limitation on motorized cross-country travel. These new routes would also expand into presently unroaded areas.	Impacts in the monument would be similar to Alternative A, except 38 miles of existing routes would be closed. Users of these routes would be displaced to other areas within and outside the monument. Recreational opportunities for motorized users would be enhanced by creating loop trails. Developing connecting route networks would allow all types of users to enjoy activities with fewer user conflicts. In Bradshaw-Harquahala, up to 48 miles would be closed in designated ACECs. In the remainder of the area, about 98% of existing routes would remain open. Up to 14 miles of new routes would mitigate losses from the closures and achieve better route connectivity. The total distance of open routes would eventually reach 2,100 miles. The overall effect would be to maintain	Impacts in the monument would be similar to Alternative B, except 69.7%, of routes would remain open to Vehicular travel. Impacts in Bradshaw-Harquahala would be similar to Alternative B, but Alternative C would close 382 miles of routes (mainly in ACECs and lands allocated to maintain or enhance wilderness characteristics). In the rest of the planning area, 1,889 miles of routes would remain open, and 382 miles of closures would be mitigated by up to 26 miles of new routes. The total distance of open routes would be 15% less than the existing routes. As a result, traditional users could be displaced and recreation opportunities diminished.	Impacts in the monument would be similar to Alternative B, except 27.8% of routes would remain open and no new routes would be added. Opportunities for motorized recreation would be limited, as loop trails would not be developed. Impacts in Bradshaw-Harquahala would be similar to Alternative B, except Alternative D would close 412 miles of routes in ACECs and lands allocated to maintain or enhance wilderness characteristics. Motorized recreational opportunities would be lessened by enacting specific route, wash, or area closures. This could result in disconnection of routes. In the rest of the planning area, 1,645 miles of routes would remain	Impacts would be similar to Alternative C in the monument. 101 miles of route would remain open, 1 one mile of new route would be constructed, and 70 miles would be closed. In Bradshaw-Harquahala, 211 miles of routes would be closed, 39 miles would be constructed, and 2,028 miles would remain open. Closures represent 9% of current routes. Management in ACECs and lands allocated to maintain or enhance wilderness characteristics would somewhat reduce the amount of lands open to vehicle-based motorized recreation and public access. Developing connecting route networks would have impacts similar to Alternative B. Once completed, the Black Canyon Trail from the Carefree Highway to

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		existing settings and opportunities. Limiting all mechanized vehicles to inventoried routes before completing the route designation process would eliminate cross-country OHV travel. This would not affect most users. Restricting vehicles to existing routes would prevent development of new routes.		open, 723 miles would be closed and 62 miles of new routes developed. The total distance of routes would represent a loss of 24% of the existing routes.	north of Highway 69 would become a major trail that would link the communities of the Black Canyon corridor and the north boundary of the Phoenix-Peoria metropolis. Managing the North Black Canyon Trail RMZ would enhance the non-motorized recreation. Impacts of limiting vehicles to inventoried routes before completion of the route designation process would be similar to Alternative B.
4.20.8 From Visual Resource Management	No impacts are expected.	Designation of VRM I and II classes could affect route construction or cause re-alignment of existing routes. Class I designation would allow few major motorized routes. Non-motorized routes would be easier to install. Class I and II designations could allow for routes in ACECs, but routes could be considerably restricted in ONAs with scenic values and landscapes.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		Installation of new travel routes within Class III and IV VRM class areas enable development of reasonable levels of access.			
4.20.9 From Rangeland Management	Little to no impact is expected. New rangeland developments might slightly increase access if routes are made available for public use. Closure of rangeland developments could eventually contribute to the loss of public access. Vandalism to livestock facilities from visitors could potentially lead to closure of routes.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.
4.20.10 From Minerals Management	New mineral sales, leases, NOIs or plans of operations may increase public access if routes are made available for public use. New mining routes could displace traditional trail users. Closure of mining could eventually contribute to the loss of public access when routes are reclaimed. Existing routes may be closed if active mining operations pose a threat to public health or safety.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.
4.20.11 From Fire Management	Some routes could be closed on a temporary basis due to fire suppression or controlled burns.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.
4.20.12 From Wild Horse	No impact is expected.	No impact is expected.	No impact is expected.	No impact is expected.	No impact is expected.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
and Burro Management					
4.20.13 From Management of Transportation and Public Access	The monument is closed to cross-country motorized travel, but existing routes are open. No impacts are likely to occur unless resources are found to be damaged. In Bradshaw-Harquahala, 2,240 miles of vehicle routes would remain open, and recreation would not be affected. Cross-country travel by some users could affect others by disrupting recreational and disturbing recreation settings.	Most routes would remain open to vehicular travel in the monument. About 5 miles of new routes would be developed and 38 miles of existing routes would be closed which could diminish some opportunities for motorized recreation. In Bradshaw-Harquahala 48 miles of routes in ACECs and lands allocated to maintain or enhance wilderness characteristics would be closed, which would decrease the opportunities of motorized recreationists but enhance the experience of nonmotorized users. 2,086 miles, or 98%, of routes would remain open. A total of 168 miles of routes would be closed and 14 miles of new routes would be established. The total distance of open routes would be 2,100 miles. The closures represent 6.3% of routes in the planning area. Limiting mechanized	Impacts would be similar to Alternative B, except: In the Monument, 50 miles of routes would be closed and about 6 miles of new routes would be developed. (129 miles, or 69.7%, of routes would remain open). In Bradshaw-Harquahala, 382 miles of routes would be closed in ACECs and lands allocated to maintain or enhance wilderness characteristics. Up to 26 miles of new routes would be developed and 1,889 miles of routes would remain open. The total distance of open routes would be 1,915 miles or 15% less than the existing routes.	Impacts would be similar to Alternative B, except: In the Monument, no new routes would be added and 122 miles would be closed. Only 47 miles, or 27.8%, of routes would remain open to vehicular travel. Loop trails would not be developed. In Bradshaw-Harquahala 412 miles of routes would be closed in ACECs and lands allocated to maintain or enhance wilderness characteristics. Routes might be closed to meet resource management objectives and settings. In the rest of the planning area 1,645 miles of routes would remain open, and 723 miles of potential closures would be mitigated by developing 62 miles of new routes. The total distance of open routes would be 1,706 miles, representing a loss of 24% of the	Impacts would be similar to Alternative B except: In the Monument 70 miles of route would be closed, 1 mile of new route would be constructed, and 101 miles of existing route retained. The Black Canyon Trail would become a major trail for mountain bikers, equestrians, and hikers. Limiting motorized access on 216,900 acres would reduce travel in some secondary and tertiary routes, washes, and single-track cattle paths. A total of 211 miles of routes would be closed, and 39 miles of new routes would be established. The total length of open routes would be 2,028 miles. The closures represent 9% of the routes in the planning area.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		vehicles to inventoried routes would eliminate cross-country OHV travel. Cross-country travel would also be prohibited for game retrieval, potentially diminishing hunting opportunities. Restricting vehicles to existing routes would prevent development of new routes.		existing routes.	
4.20.14 From Management of Wilderness Characteristics	No impacts are expected.	Impacts of route closures in areas allocated to maintain or enhance wilderness characteristics would slightly reduce the amount of lands open to vehicle-based and motorized recreation opportunities.	Impacts would be similar to Alternative B except areas allocated to maintain or enhance wilderness characteristics are increased. Restrictions could be imposed on specific route, wash, or area closures, further diminishing opportunities for traditional motorized users.	Impacts would be similar to Alternative B except Alternative D proposes the greatest number of closed routes in lands allocated to maintain or enhance wilderness characteristics. Motorize d route systems would be significantly reduced or eliminated.	Impacts would be similar to Alternative B except 114 miles of routes in lands allocated to maintain or enhance wilderness characteristics would be closed.
4.21 Impacts on Wilderness Characteristics					
4.21.1 From Special Area Designations	No identified management actions are anticipated that would directly impact wilderness characteristics.	Impacts would be similar to Alternative A	Impacts would be similar to Alternative A.	Impacts would be similar to Alternative A.	Impacts would be similar to Alternative A.
4.21.2 From Lands and Realty	No impacts are expected.	56,040 acres would be managed for wilderness characteristics. Impacts may have a minor effect on wilderness	Impacts are the same as Alternative B, except 107,510 acres would be managed for wilderness characteristics.	Impacts are the same as Alternative B, except that seven areas totaling 91,480 acres would be allocated for managing or enhancing	Impacts are the same as Alternative B, except 96,420 acres would be managed for wilderness characteristics.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		characteristics within the Harquahala Mountain range. Realty actions deemed incompatible with maintaining or enhancing wilderness characteristics, would not be allowed.		wilderness characteristics.	
4.21.3 From Management of Soil, Air, and Water Resources	Management actions to maintain or enhance water, soil, and air quality would help maintain wilderness characteristics and provide a more natural experience for recreationists.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.
4.21.4 From Biological Resource Management	Habitat improvements could enhance wildlife populations and viewing opportunities, increasing the experience of wilderness users. Ensuring connectivity of habitat for wildlife could result in route closures for motorized vehicles, which could help maintain wilderness characteristics by limiting the number of visitors who have access to these lands.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.
4.21.5 From Cultural Resource Management	No impacts are expected.	Potential route closures could be used to protect cultural sites. This could benefit wilderness characteristics by reducing in public access and increasing opportunities for	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		solitude. Limiting group sizes at some cultural sites could maintain a more natural experience. Development of sites for public use would allow concentrations of users in certain areas, while limiting development would preserve the natural setting of places with wilderness characteristics.			
4.21.6 From Paleontological Resources	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.21.7 From Recreation Resource Management	Increasing intensity of recreation next to lands allocated to maintain or enhance wilderness characteristics could result in a loss of some of those values. Increasing numbers of non-motorized users could impair solitude opportunities and contribute to trailing and campsite use impacts. No SRMAs or RMZs would be allocated, which could further result in loss of wilderness characteristics along fringes. Increased number of SRPs	Designating Front Country and Back Country RMZs could benefit wilderness characteristics through management of more intensive recreation uses. Opportunities for solitude would be enhanced in the Back Country RMZ. The restriction of motorized access could allow non-motorized users to recreate in a more natural setting. This would assure the availability of areas offering outstanding primitive recreational and solitude opportunities. Reduction in lands	Impacts are expected to be similar to Alternative B, except that further restrictions on motorized use, a larger Back Country RMZ, and fewer SRPs would offer more solitude opportunities and retain more wilderness characteristics.	Impacts are expected to be similar to Alternative C, except for further restrictions on motorized recreational use in the planning areas, more Back Country RMZ acreage, and fewer SRPs.	Impacts are expected to be similar to Alternative B, although motorized access would be somewhat reduced and restrictions on SRPs would more closely resemble Alternative C.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	could lead to increased numbers of users and conflicts, further deteriorating opportunities to experience solitude and wilderness characteristics.	available for competitive OHV events would help maintain opportunities to experience more natural settings.			
4.21.8 From Visual Resource Management	The application of VRM Class III standards may eventually lead to some intrusions in to the visual landscape in or around lands allocated to maintain or enhance wilderness characteristics.	Management of lands allocated to maintain or enhance wilderness characteristics to VRM Class II would retain the current physical setting of 96,150 acres and enhance primitive recreational experiences. Design criteria would maintain the area with little to no visual impacts and would retain natural appearance and open space value.	Impacts are expected to be similar to Alternative B, except 134,920 acres would be managed to VRM Class II.	Impacts are expected to be similar to Alternative B, except 226,400 acres would be managed to VRM Class I, which would require more stringent design criteria.	Impacts are expected to be similar to Alternative B, except that 55,480 acres would be managed to VRM Class II.
4.21.9 From Rangeland Management	Impacts would be minimal. Site specific water projects, fencing, or vegetation projects may impact small areas and associated local recreational users. Potential visual resource impacts will be mitigated and consistent with the management and enhancement of wilderness characteristics.	Impacts would be the similar to Alternative A	Impacts would be similar to Alternative A.	No expected impacts.	Impacts would be similar to Alternative A.
4.21.10 From Minerals Management	No impacts are expected in the monument. Wilderness characteristics could be impaired, decline	Closing the allocation to maintain or enhance wilderness characteristics to mineral material disposal would reduce the	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B, except wilderness characteristics would also be closed to mineral	Closing the allocation to mineral material disposal and sales would reduce the potential for landscapes to be marred

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	or be foregone withIn Bradshaw-Harquahala in areas not afforded protection of their wilderness characteristics.	potential area for ground disturbance and maintain primitive open space.		and geothermal leasing and mineral entry. This may impact the ability to meet future demands, but would further maintain primitive open space.	by mining and exploration activities. Natural areas and open space would be maintained and conserved.
4.21.11 From Fire Management	No impacts are expected	No impacts are expected	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.21.12 From Wild Horse and Burro Management	No impacts are expected	No impacts are expected	No impacts are expected	No impacts are expected.	No impacts are expected.
4.21.13 From Management of Transportation and Public Access	No impacts are expected in the monument. In Bradshaw-Harquahala road and route development, access rights-of-way and other developments requiring roads could adversely affect wilderness characteristics.	Adverse impacts on wilderness characteristics would be of a lesser scale than described under Alternative A.	Impacts would be similar to those described under Alternative B, except adverse impacts would be of a lesser degree than described under Alternatives A or B.	Impacts would be similar to those described under Alternative B, except adverse impacts on wilderness characteristics would be considerably less than estimated under Alternatives A, B or C.	Impacts would be similar to those described under Alternative C.
4.21.14 From Management of Wilderness Characteristics	Primitive or semi-primitive non-motorized settings would likely be maintained due to the management guidelines set forth in the Monument Proclamation. Wilderness characteristics could be impaired, decline or be foregone withIn Bradshaw-Harquahala in areas not afforded protection of their wilderness characteristics.	Allocation of wilderness characteristics would reduce access of motorized users. Nonmotorized uses would increase. These nonmotorized individuals would be able to recreate in a more natural and remote setting. Wilderness characteristics would be maintained or enhanced over the long term for proposed WSR suitable segments, ACECs	Non-motorized users would benefit more than under Alternative B as additional lands are allocated to maintaining or enhancing wilderness characteristics. Loss of wilderness characteristics would be minimal under Alternative C.	Impacts would be similar to Alternative C, except 91,480 acres would be managed to maintain or enhance wilderness characteristics. This alternative would designate some of the areas described under Alternatives B and C as ONA ACECs.	Non-motorized users would benefit more than under Alternative B, but less than under Alternatives C and D.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		and ONA ACECs.			
4.22 Impacts on Social and Economic Conditions					
4.22.1 Planning Area Growth and Development					
Recreation Related Impacts	Designating the monument will likely result in increased visitor use. Activities that might be less available in the monument might place greater demands on surrounding lands. Use of land in the planning areas would continue to increase as the population increases. Visitation is expected to increase 55% by 2025. Growth and a continuation of current access would yield economic benefit to local communities that provide services compatible with recreation. Access for OHV users and equestrians would continue to benefit the economy. In the long term, as recreation continues to increase, resource conditions could deteriorate thereby increasing the need for more management.	Impacts would be similar to Alterative A, but development of recreation facilities would be encouraged to improve recreational experiences, resulting in increase visitation and use. Protection of biological and cultural resources would enhance the quality of experiences and increase visitation. 2,100 miles of routes would be designated. The allocation of nine SRMAs and eight SCRMAs would increase visitor use. One WHA and two areas proposed for lands allocated to maintain or enhance wilderness characteristics would attract visitors seeking more primitive experiences. Designation of Bloody Basin and Constellation Mine Roads as Back Country Byways could increase visitation.	Primitive recreation would be favored in the monument. The number of commercial and guide/outfitter permits would be about half of those than under Alternative B. Public access to cultural resources would also be more limited. Public access in Bradshaw-Harquahala would also be more restrictive than Alternatives A or B. Biological and cultural resources would be more protected. Visitation and visitor spending would be reduced. Economic benefits to local communities would be less for this Alternative than for Alternatives A or B but greater than Alternative D. Designation of Bloody Basin Road and Constellation Mine Road would have impacts as similar to Alternative B.	The emphasis on nonmotorized recreation would reduce visitation more than any other alternative by closing the most vehicle routes. No motorized competitive races would be authorized. Public access to cultural resources would be more limited than any other alternative. Visitation and OHV use would decline, resulting in somewhat lower visitor spending. If this loss is offset by increased nonmotorized recreation, the difference between the impacts of Alternative D and the other alternatives would not be so great. 1,707 miles of routes would be designated and use of trails would be limited. SCRMAs would be reduced to two, the number of areas allocated to maintain or enhance	Primitive recreation would be favored in the monument, but overall access would be greater than Alternative D. Total visitation and related expenditures are expected to be less than Alternatives A, B, or C.. Access in Bradshaw-Harquahala would be more limited than Alternative B, but less than C. Designated vehicle routes (2,067 miles) are expected accommodate use at current levels. Increased opportunities for nonmotorized recreation may increase overall visitation, but this is unlikely to greatly increase spending. Allocating SRMAs to more intensive recreation could attract more users. Use is expected to increase along with user satisfaction. Overall, the economic benefits of

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
		Overall, recreation demand would increase more than in the other alternatives resulting in increased overall spending by recreationists in nearby communities. The long term impacts of recreational use would be the same as Alternative A.	1,915 miles of routes would be designated. SCRMAs would be reduced to four, lands allocated to maintain or enhance wilderness characteristics would increase, and 11 ACECs would be designated, which would likely reduce visitation, although some communities would continue to benefit from providing services to recreationists. The long term impacts of recreational use would be the same as Alternative A.	wilderness characteristics would increase to six, and eight ACECs would be designated. Visitation and related spending would likely decline, although some communities would continue to benefit.	recreation are expected to be lower than under Alternatives A, B, and C, but greater than under Alternative D. Six SCRMAs would contain sites allocated to public use, which would have impacts similar to Alternative B. The increase in areas allocated to maintain or enhance wilderness characteristics and designation of 4 ACECs would provide nonmotorized opportunities. Allocation of Bloody Basin Road and Constellation Mine Road would be the same as Alternative B. The long term impacts of recreational use would be the same as Alternative A, except that management actions should result in sustainable conditions.
Ranching, Agriculture, and Livestock Production-Related Impacts	Increases in population and urbanization have resulted in loss of agricultural land and increased conflicts with	Impacts are expected to be the similar to Alternative A except that grazing in riparian areas would be	Impacts are expected to be the similar to Alternative B except livestock grazing is	Closing BLM lands to grazing would significantly affect holders of grazing leases,	Impacts would be the similar to Alternative B, except six SCRMAs will be allocated which might

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	farm and ranch operations. Livestock production on BLM land contributes to the local economy. Prohibiting grazing in the Larry Canyon ACEC and the WSR eligible/suitable areas has minimal impact on production and the economic impacts would not change.	limited to winter. Grazing would likely decline but would not measurably differ from current livestock management. Should allocating eight SCRMAs result in restricting grazing, livestock production may decrease.	prohibit in riparian areas, which would reduce the number of allotments to 43. This may eliminate or reduce some allotments to the point that ranches would no longer be viable. Impacts on the regional economy would be minimal.	local economies, and reduce livestock production in the state.	result in fencing some areas from grazing use.
Minerals-Related Impacts					
Locatable Minerals	The monument is closed to all forms of mineral entry. Bradshaw-Harquahala would generally be left open to mineral location and development. Should prices reach a high enough level to begin exploration or reopen mines, there would be a positive economic impact in mining employment and earnings. Recreational prospecting for gold has resulted in the formation of numerous prospecting clubs that hold mining claims. Businesses have begun to cater to their needs and support their social structure. Current access will allow continued use by these groups, and the	Impacts are expected to be similar to Alternative A, except Alternative B would be the most encouraging to mineral development. Tule Creek ACEC would be closed to mineral location and development. VRM standards may increase costs of mining by requiring rehabilitation standards. Increased rehabilitation may result in economic benefits if local labor and/or material are used.	Impacts are expected to be similar to Alternative A, except for the closure of 3 ACECs and riparian areas. This could result in some economic limitations. Casual use miners and prospecting clubs could continue with their activities, except route closures may make it difficult or expensive to maintain access to claims. Impacts from VRM would increase compared to Alternative B, but be less than those under Alternative D.	This alternative would tend to more or less eliminate mining via attrition over the duration of the plan. It would also reduce mining-related additions to the local and regional economies, thereby limiting economic opportunity more than the other alternatives. Impacts would be similar to Alternative C, but more acreage would be closed to mining, and more areas would be classified as VRM I and II.	Impacts are expected to be similar to Alternative B, except fewer acres would be allocated to VRM Classes II and IV, and more acres would be allocated to VRM Class III. Re-conveyed lands, mainly in the Black Canyon area between Black Canyon City and Bumblebee, would be closed to mineral location and development along with Tule Creek ACEC.

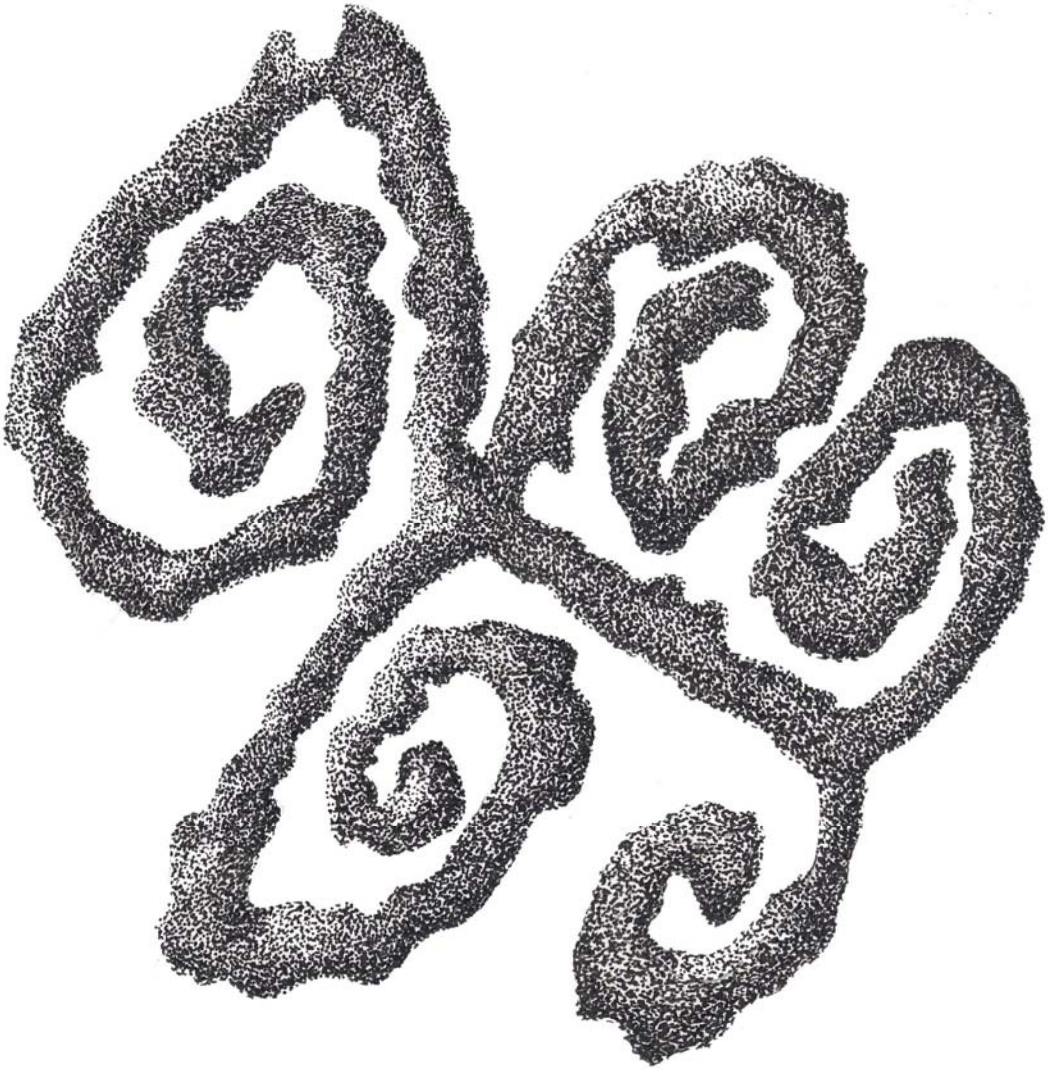
Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	possibility of expansion to new areas.				
Saleable Minerals	Continued sale of mineral materials would contribute to local economies. BLM would continue to issue free use permits to the state and to local communities as the need arises. The result would be the continued availability of materials. Impact of mineral material sales is expected to be slight.	Impacts would be similar to Alternative A, except Tule Creek ACEC and two areas allocated to maintain or enhance wilderness characteristics would be closed to mineral material sales. This would somewhat reduce the opportunity to extract those commodities, but the impact is expected to be negligible.	Impacts would be similar to Alternative A, except ACECs and areas allocated to maintain or enhance wilderness characteristics would be closed to mineral material sales. These areas would be larger than in Alternative A or B.	Impacts would be similar to Alternative C, except more acres would be closed to mineral material sales. In the short term, demand is expected to be met by nonfederal and federal production. But future demand may not be met. Increased costs of importing building material will increase building costs in all parts of the economy.	Impacts would be similar to Alternative A, except Tule Creek ACEC and riparian areas would be closed to mineral material disposal. Impacts are expected to be minimal. VRM standards might affect mineral material and decorative rock mining.
Leasable Minerals	No known viable sources of leasable minerals exist within the planning area. No measurable economic impacts are expected except in areas that might be explored north of the planning area but within the PFO boundary.	Impacts are expected to be similar to Alternative A, except Tule Creek ACEC would be closed to mineral leasing which would have a negligible impact.	Impacts are expected to be the similar to Alternative A except mineral leasing would be prohibited in four ACECs and on scattered lands outside the planning area.	Impacts are expected to be the similar to Alternative A except mineral leasing would be prohibited in a number of ACECs and lands allocated to maintain or enhance wilderness characteristics.	Impacts are expected to be similar to Alternative B.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
Lands and Corridors-Related Impacts	Disposal of 54,370 acres of BLM land would contribute not be a significant growth inducing action. -Development of disposed land would increase resource demands on remaining BLM land and could contribute to the loss of small, rural communities by increasing traffic and the need for more urban services. However, growth could also contribute to local economies. -Maintaining current utility corridors would meet future demand. Jobs related with future utility development could contribute to local economies.	Impacts are expected to be similar to Alternative A, except 58,400 acres would be available for disposal. The 58,400 acres would mainly affect the communities of Dewey, Humboldt, Mayer, and Goodyear for future potential development.	This alternative considers two options for land disposal. Under Option 1, 600 acres would be available, and impacts would be similar to Alternative D. In Option 2, 49,100 acres would be available for disposal and impacts are expected to be similar to Alt A. -Impacts of the multi-use utility and transportation corridor that includes the Interstate 17 right-of-way would be similar to Alternative A, except the corridor would be narrowed to move it out of the monument.	No BLM land would be available for disposal. This would have no measurable impacts on potential growth or availability of land for development. Retaining all BLM land may contribute to maintaining rural lifestyles in some parts of the planning area. Reduction in the level of corridors would support continued growth but may somewhat constrain siting of potential utilities in the future.	Impacts are expected to similar to Alternative A, except 38,755 acres would be available for disposal. This would mainly affect the communities of Buckeye, Goodyear, Wickenburg, and the greater Phoenix area. Impacts of utility and transportation corridors would also be similar to Alternative A.
4.23 Environmental Justice					
Impacts to Minority and Low Income Populations	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
4.24 Cumulative Impacts					
Population Growth and Development	Potential effects of growth include the loss of ranching/related western lifestyle, and change in social leadership resulting from increases in urban values. Growth will result in economic changes. 54,370 acres of BLM land would be available for disposal by sale or	Impacts are expected to be similar to Alternative A, but 58,400 acres would be available for disposal.	Impacts are expected to be similar to Alternative A, but 49,100 acres would be available for disposal.	Impacts are expected to be similar to Alternative A, even though BLM would make no land available for disposal.	Impacts are expected to be similar to Alternative A, but 38,755 acres would be available for disposal.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	exchange, but this is not expected to be a significant growth-inducing action and so there would be no measurable cumulative impact. However, growth would continue to impact resources on BLM land.				
Recreation and Visitation	Impacts would include intensified use in certain areas, especially for motorized activities, as recreation increases and growth and development occur. General plans for the counties and communities include provisions for open space, which is likely to further concentrated motorized activities on BLM land. Increased visitation is expected to result in increased local spending for recreational goods and services.	Impacts are expected to increase over those in Alternative A since visitation is expected to increase the most in this alternative. The trend toward non-motorized recreation in urban areas would be similar to Alternative A.	Impacts are expected to decrease as compared Alternatives A and B as this alternative favors primitive recreation and visitation would likely decline. The beneficial economic effects of recreation and visitation would be lower than under Alternatives A and B, but greater than under Alternative D.	Impacts are expected to decrease more than under Alternative C, as this alternative would devote the most area to nonmotorized recreation and close more areas to vehicular access. Visitation is expected to be the lowest and so cumulative affects would be least.	Primitive recreation would be favored in the monument and access would also be somewhat reduced in Bradshaw-Harquahala. Visitation and related expenditures are expected to be less than Alternatives A and B, but more than C or D.
Air Quality	Cumulative air quality impacts have been addressed by air quality non-attainment plans and maintenance plans prepared by MAG and ADEQ. -It is possible that increased OHV use would cause increased fugitive dust impacts immediately near the roads and trails. But future OHV emissions	Impacts are expected to be similar to Alternative A, except the miles of trails open to recreation would decrease by 3%. Air quality impacts on the region would be minimal.	Impacts are expected to be similar to Alternative A, even though miles of trails open to recreation would decrease by 4%.	Impacts are expected to be similar to Alternative A, although OHV emissions and particulates in rural areas would possibly be less, given more restrictions on areas open to OHV use and competitive events.	Impacts are expected to be similar to Alternative A, although miles of trails open to recreation would decline.

Resource	Alternative A (Current Management)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred Alternative)
	would probably decline and contribute a proportionately smaller fraction of emissions.				
Soils	Cumulative effects are generally limited to a site. Management practices have led to some detrimental conditions. Development may compact and displace soil and remove vegetation. Soil productivity in these areas is lost for all practical purposes.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be the least of all Alternatives given that recreation and mining would be more restricted and grazing would be prohibited.	Impacts are expected to be less than Alternatives A or B, but more than C or D given that motorized recreation would be more restricted and fewer acres would be available for disposal and eventual development.
Water Resources	Many watercourses in central Arizona have been degraded by increased sediment load due to urbanization, livestock grazing, and recreation as well as leachate from mining. Under this alternative, these activities would continue.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be similar to Alternative A.	Impacts are expected to be less than those under other alternatives, given that recreation and mining would be more restricted and grazing would be prohibited.	Impacts are expected to be less than Alternatives A or B, but more than C and or D given that motorized recreation would be more restricted and fewer acres would be available for disposal and eventual development.
Wild Horse and Burro Management	No noticeable cumulative affects are expected.	Impacts are expected to be similar to Alternative A, even though the Harquahala HA would not be a managed herd.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.	Impacts are expected to be similar to Alternative B.

Chapter Three



Chapter 3 - Affected Environment

3.1 Introduction

This chapter describes the environmental components of BLM-administered Federal lands within the planning areas that would potentially be affected by implementation of the proposed RMPs/EIS. These environmental components include lands, vegetation, wildlife habitat, cultural and paleontological resources, recreation, wilderness, rangeland, minerals, visual resources, wild horses and burros, soils, water, air quality, and socioeconomics. The data contained within this chapter is drawn from the Management Situation Analysis (BLM PFO 2003), and detailed resource assessments completed for each of the environmental components occurring within the planning area. The detailed resource assessments and the Management Situation Analysis are available for public review at the BLM's PFO.

3.2 Special Area Designations

3.2.1 Introduction

Special Area Designations are areas, which have special values that warrant or require special management or protection. These areas, which will be specifically addressed through this planning process, include Areas of Critical Environmental Concern (ACEC), Scenic and Back Country Byways, Wilderness Areas (WAs), and areas designated as part of the Wild and Scenic River System.

3.2.2 Wilderness Areas

Five congressionally designated wilderness areas administered by BLM are located within the Bradshaw-Harquahala Planning Area, including the Big Horn Mountains Wilderness, Harquahala Mountains Wilderness, Hassayampa River Canyon Wilderness, Hells Canyon Wilderness, and Hummingbird Springs Wilderness (Map 1-1). Castle Creek Wilderness, administered by the U.S. Forest Service, is located next to BLM lands in the Bradshaw-Harquahala Planning Area. Agua Fria National Monument does not have designated wilderness. BLM-managed wilderness totals 96,820 acres within the planning areas.

3.2.3 Areas of Critical Environmental Concern (ACECs)

ACECs are areas where unique resources exist, making them worthy of a higher than normal level of concern and protection. A designation of ACEC on BLM's managed lands requires approval by the Arizona State Director, who can also remove the designation. Once an ACEC is designated, the focus is to preserve and restore the resources that inspired the recommendation for designation.

There are two ACECs located within the Agua Fria National Monument. The first is the Perry Mesa ACEC, encompassing 9,580 acres, which was designated in 1988 to protect its significant cultural resources, and the second is the Larry Canyon ACEC, totaling 80 acres, which was designated in 1988 to protect its unique riparian-forest/desert ecosystem habitat. Currently, the Bradshaw-Harquahala Planning Area does not have ACECs.

3.2.4 Wild and Scenic Rivers

BLM is an active participant in managing designated wild and scenic, and recreational rivers. It is also involved in studying the eligibility, classification, and suitability of rivers. Presently, there are not any officially designated wild and scenic rivers flowing within either planning area, portions of the Agua Fria River were identified in the 1994 Arizona Statewide Wild & Scenic Rivers Legislative Environmental Impact Statement (BLM 1994b) as being suitable for designation. More specifically, in the Final Legislative Environmental Impact Statement for Wild and Scenic Rivers (BLM 1994), the Agua Fria River was found to have outstandingly remarkable values for its scenic characteristics, fish and wildlife habitat, and cultural resources. The scenic value reflects the topographic diversity and ancient volcanic activity of the area. Mesas and grasslands border a lush riparian valley surrounded by cliffs. The fish and wildlife habitat is representative of a rare riparian system that supports wildlife populations in the desert. The value of the landforms and habitat contributed to developing one of the most important systems of late prehistoric archaeological sites in central Arizona. However, while awaiting congressional determination of designation, BLM is managing these river portions under the 1968 National

Wild and Scenic Rivers Act and according to guidance in BLM's Manual 8351, section 53.

According to the Agua Fria River Wild and Scenic River Study Area EIS (BLM 1994a), three river segments totaling 22.4 miles qualify for designation as either wild, scenic, or recreational, depending on the segment characteristics (Table 3-1).

Table 3-1. Special Area Designations: Wild and Scenic Rivers

River/ Classification Eligibility	Distance	Location
Agua Fria River/Scenic	7.7 miles	Sycamore Creek to the juncture of Bloody Basin Road at Horseshoe Ranch.
Agua Fria River/Wild	10.3 miles	Horseshoe Ranch to the Arizona Department of Transportation pump house.
Agua Fria River/Scenic	4.4 miles	Segment between pump house to Larry Canyon.

Additionally, portions of the Hassayampa River were identified as possibly suitable for further study in the wild and scenic river evaluation process. However, in the preferred Alternative developed in the 1994 Arizona Statewide Wild and Scenic Rivers Legislative EIS, BLM determined after further study that the Hassayampa River was not suitable. Therefore, BLM did not recommend the river to Congress for inclusion in the National Wild and Scenic River System (WSR).

3.2.5 Back Country Byways

Agua Fria National Monument does not have designated Back Country Byways. However, in the Bradshaw-Harquahala Planning Area, the Harquahala Mountain Summit Road Scenic Drive has been designated a Back Country Byway. Located 40 miles west of Wickenburg, it includes 10.5 miles of dirt vehicle route leading from Eagle Eye Road to the Harquahala Peak Observatory.

3.3 Lands and Realty

3.3.1 Land Tenure

BLM is authorized under several authorities to acquire, dispose of, convey, and lease portions of the federally owned land it manages for the benefit of the national interest. Land tenure decisions select lands for retention, proposed

disposal, acquisition, or lease. The Federal Land Policy and Management Act (FLPMA) requires that BLM-managed lands be retained in Federal ownership unless BLM determines through the land use planning process that conveyance of a particular parcel will serve the national interest (43 USC 1701). Land tenure decisions must achieve the goals, standards, and objectives outlined in the land use plan. Land tenure options include the following:

- land purchase,
- land exchange,
- land conveyance by public sale, and
- land patents and leases under the 1954 Recreation and Public Purposes (R&PP) Act.

Land ownership in the planning area is a complex mosaic of Federal, State, and private ands. As shown in Table 3-2, BLM, the Arizona State Land Department (ASLD) and private owners each administer about one-third of the area.

3.3.2 Agua Fria National Monument (AFNM)

Agua Fria National Monument is located in Yavapai County, in central Arizona, 40 miles north of Phoenix. The 70,900 acres of Federal land consist of Perry Mesa and Black Mesa, the public land to the north of these mesas, and the Agua Fria River Canyon.

The national monument has 1,444 acres of scattered private lands within its boundary. In addition to recreation and hunting, the most common uses for these lands are ranching and mining.

As a requirement of the January 2000 monument proclamation (Appendix A), all Federal lands and interests in lands within the monument, are appropriated and withdrawn from all forms of entry, location, selection, sale, leasing, or other disposition under the public land laws. The monument is also protected from disposition under all laws relating to mineral and geothermal leasing, other than by exchange. This protection furthers the purposes of the monument. Although, existing withdrawals, reservations, or appropriations are not revoked within the monument, Federal lands may not be disposed of. Lands and interests in lands within the monument that are not owned by the United States shall be reserved as a part of the monument upon acquisition of title thereto by the United States.

3.3.3 Bradshaw-Harquahala Planning Area

The Bradshaw-Harquahala Planning Area is located within Maricopa, Yavapai, and La Paz Counties. It includes portions of the Phoenix metropolitan area, the fourteenth largest and one

Table 3-2. Details of Land Ownership within the Planning Area

Surface Management	Agua Fria National Monument	Bradshaw-Harquahala	Total Acreage	Percentage of total (%)
Federal				
Bureau of Land Management	70,900	896,100	967,000	30%
National Forest Land	0	308,300	308,300	10%
Bureau of Reclamation	0	2,670	2,670	<1%
Subtotal	70,900	1,207,070	1,277,970	41%
State and County				
Arizona State Land Department (ASLD)	0	863,450	863,450	28%
State and County Parks	0	52,770	52,770	2%
County Lands	0	2,220	2,220	<1%
Subtotal	0	918,440	918,440	30%
Tribal Lands	0	450	450	<1%
Private Lands	1444	841,366	842,810	28%
Total	72,344	2,967,326	3,039,670	100%

of the fastest growing metropolitan areas in the United States. This planning area also includes the following:

- The cities of Glendale, Peoria, Surprise, El Mirage, and Litchfield Park; portions of the cities of Phoenix, Prescott, Avondale, and Goodyear; portions of the towns of Buckeye and Prescott Valley.
- The unincorporated communities of Sun City, Sun City West, Sun City Grand, Black Canyon City, Castle Hot Springs, Cordes Junction, Mayer, Humboldt, Dewey, Morristown, Congress, Yarnell, and Aguila; and portions of the unincorporated communities of New River and Tonopah.

BLM issues permits in response to requests for public-use easements or rights-of-way across the planning area. These easements are generally confined to clearly identified corridors. Corridors may be used for highway, railroad, and utilities including electric, gas, water and communications. Information on corridors appears in the Utility and Communications Corridors section of this chapter (Table 3-3).

Table 3-3. Existing Utility Corridors

Corridor Name	Width	Current Utility/Transportation Uses
Black Canyon	2 miles	Electricity, Gas
Wickenburg-Yarnell	1 mile	Transportation
Meade-Phoenix	1 mile	Electricity
Parker-Liberty	2 miles/varies	Electricity
Palo Verde-Devers	1 mile	Electricity
CAP Canal	1 mile	Water
Palo Verde-West Wing	1 mile	Electricity
Wenden-Wickenburg	1 mile	Transportation

In some cases land ownership is separated into (1) surface interests and (2) subsurface or mineral estate interests. BLM administers 945,160 acres of mineral estate within the planning areas. Where one party owns the surface estate and another owns the mineral estate, the land is termed "split estate."

A total of 58,400 acres within the Bradshaw-Harquahala Planning Area have been determined to be suitable for disposal. More than 100,000 acres in the Bradshaw-Harquahala Planning Area--mainly State and privately owned lands--have been determined to be potentially suitable for acquisition. BLM has acquired some lands since the adoption of the previous plans. The most commonly employed criterion for acquisition continues to be to create contiguous blocks of federally managed lands.

3.3.4 Utility and Communications Corridors

BLM easement procedures, including corridor designation, are set out in the BLM Rights-of-Way Manual, Sections 2801.11 and 2801.12. FLPMA and this manual are consistent in saying that designated utility corridors should include existing facilities that would lend themselves to a corridor designation. Once corridors have been designated, all future assigned uses should be compatible with existing uses. The eight major designated corridors within the Bradshaw-Harquahala Planning Area are listed in Table 3-3 and shown in Map 2-7). Their widths and general-use categories are also shown in Table 3-3. A portion of the Black Canyon utility corridor runs parallel to Interstate 17 and edges into Agua Fria National Monument along its western boundary.

The existing corridors were designated in accordance with BLM's regulations in effect at the time of designation. While the corridor locations have not changed since they were shown in the Lower Gila North Management Framework Plan (BLM 1983) and the Phoenix RMP and EIS (BLM 1988a), the regulatory framework and adjacent BLM's area designations have changed.

Each of the existing utility corridors, except Wickenburg–Yarnell, has at least one active right-of-way occupying its full length.

National monument status for the Agua Fria area dictates that no new utility corridors will be designated on monument lands. Existing utilities as shown in Figure 2-2, including the Black Canyon utility corridor, comply with regulations as prior existing uses.

The BLM's Rights-of-Way Manual, Section 2801.12, states that microwave communication sites, associated pathways, and communication lines for interstate use are to be considered for designation as corridors. Some of the designated communication site corridors in the Bradshaw-Harquahala Planning Area existed when the manual went into effect. The nine communication sites within the Bradshaw-Harquahala Planning Area are Lone Mountain, Harquahala Mountain, Burnt Mountain, Valencia, Black Canyon, and White Tank Mountain Park sites (North, Middle, East, and West). No communication sites are within the national monument.

3.3.5 Transportation Corridors

Transportation corridors are included as a part of the utility corridors in both planning areas. These corridors were first identified in the Phoenix RMP and EIS (BLM 1988a). All of the information about existing utility corridors also applies to the transportation corridors. Designated corridors that contain highways and railroads are shown on Map 2-7.

In the Bradshaw-Harquahala Planning Area the highway study corridor that appears in the Maricopa Association of Governments (MAG) Long Range Transportation Plan 2002 Update (MAG 2002) is the CANAMEX Trade Corridor. The CANAMEX corridor, as defined by Congress in the 1995 National Highway Systems Designation Act, is a high-priority corridor. It follows Interstate 19 from Nogales to Tucson, I-10 from Tucson to Phoenix, U.S. 93 from near Phoenix to Las Vegas, and Interstate 15 from Las Vegas through Montana to the Canadian border.

A MAG resolution for designating the CANAMEX corridor through the Maricopa region included a recommendation for a portion of it to be “an alignment in the general vicinity of Wickenburg Road and Vulture Mine Road that connects to the future U.S. 93/U.S. 60 Wickenburg Bypass, the specific alignment of which is to be determined following the completion of needed studies by ADOT; and the future U.S. 93/U.S. 60 Wickenburg bypass from its junction with Vulture Mine Road to U.S. 93” (MAG 2002).

The MAG Northwest Area Transportation Study is underway. In its draft form, it shows a “rural expressway/highway” at the above-described CANAMEX corridor location. It also explores the possibility of an expressway beginning at 339th Avenue and I-10 and proceeding north and then east at roughly the Patton Road alignment. That corridor (if adopted in the final MAG Northwest study) would lie 2 to 5 miles southeast of most BLM's lands in western Maricopa County. Such a corridor should be monitored for its eventual importance as part of the network to access BLM's lands.

Railroads, particularly freight, are a key part of the transportation system within the planning areas. Rail is not considered a factor in designating more corridors because no new rail line locations are likely to be proposed in the foreseeable future.

3.4 Soil, Air, and Water Resources

3.4.1 Soil Resources

Most of the planning areas are located within the Basin and Range Geologic Province. The northern sections fall within the Central Highlands. The basins generally consist of surficial and sedimentary deposits. The

mountain ranges consist of granitoid and metamorphic rock. The Bradshaw-Harquahala Planning Area includes several mountain ranges. The White Tank Mountains, Harquahala Mountains, and mountain ranges surrounding the town of Wickenburg are in the Basin and Range Province. The Bradshaw Mountains are within the Central Highlands region.

Geologic faults in central Arizona are generally short, discontinuous, normal faults that date back to the Quaternary Period, the last two million years. The Verde Fault, a potentially active fault, is located 25 miles northeast of Prescott near the town of Jerome. The only areas of concern for earthquake hazard within the planning areas are at the moderate to low level for the northern portions near Prescott. The remainder of the planning areas is in the low hazard level. The last known earthquake in the planning areas, in 1930, occurred near Constellation, Arizona.

Soil consists of mineral particles of different sizes, organic matter, and many species of living organisms. The planning areas contain a wide array of soil textures, including various types of cobble, gravel, clay, loam, silt, sand, and stone as shown in Map 3-1.

Soil texture in the monument is mainly clay loam. Small portions along the monument's southern boundary and the southern portion of the Agua Fria River are classified as very gravelly-sandy loam.

The Bradshaw-Harquahala Planning Area contains a more complex soil composition. Southern portions consist of an assortment of gravelly-sandy loam textures. The Hummingbird Springs and Big Horn Mountains Wilderness Areas, and White Tank Mountain Regional Park, however, contain soil textures that are extremely stony-coarse, sandy loam. Areas, immediately surrounding these regions, have extremely gravelly-sandy loam. Additionally, the southeast corner of this planning area has one large parcel containing fine-sandy loam just west of the Agua Fria River. Soil on the eastern side of the Agua Fria is classified as loam.

3.4.2 Air Resources

The climate in central Maricopa, La Paz, and Yavapai Counties, including the planning areas is characteristic of the Sonoran Desert, with hot summers, mild winters, and annual average precipitation totals of about 8 inches (Map 3-2). From 1960 to 1995, the long-term annual average rainfall was 7.99 inches, and the median rainfall was 7.62 inches (CH2M HILL et al. 1997).

Air quality is evaluated by measuring ambient concentrations of pollutants known to have deleterious effects. The Environmental Protection Agency (EPA) has issued primary and secondary National Ambient Air Quality Standards (NAAQS) for six criteria pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter (PM_{10}), ozone (O_3), sulfur dioxide (SO_2), and lead (Pb). Primary standards are adopted to protect public health, and secondary standards are adopted to protect public welfare. States are required to adopt ambient air quality standards that are at least as stringent as the Federal NAAQS. The Arizona Department of Environmental Quality (ADEQ) regulates air quality in the State and has adopted the Federal NAAQS as State standards.

EPA has designated several places within Arizona as nonattainment areas for criteria pollutants. Once an area has been designated as a nonattainment area, the State's implementation plan must be developed to show the measures that will be undertaken to reduce the pollutant levels to meet the air quality standards. Cumulative air quality impacts in the planning areas have been addressed by the air quality nonattainment plans and air quality maintenance plans that MAG and ADEQ have been required to prepare for approval by the EPA (MAG 2004; MAG 2003). These plans are required because the Phoenix area is already a nonattainment area for several air pollutants and these plans are, in reality, quantitative cumulative air quality impact assessments. The general steps the

agencies conduct for their air quality forecasting are as follows:

- The counties in the region coordinate to predict future regional population and transportation growth. MAG assumes that all of BLM's parcels would be developed into residential areas at the same rate and intensity as all of the surrounding parcels, so MAG's forecasts accounts for the issue of "induced growth" by BLM's land disposal.
- ADEQ develops regulations to reduce emissions from industry, while MAG (1) develops fugitive dust regulations for construction and commercial operations, (2) tracks trends in improved automobile emissions, and (3) prepares measures to reduce emissions from on-road and off-road engines. Using this data, MAG forecasts future air pollutant emissions throughout the region, accounting for new ADEQ air regulations and vehicle emission trends. MAG then models future air pollutant concentrations to show that future air pollutant concentrations would be within allowable Federal limits. Future population growth in the outlying areas of the planning area is built directly into MAG's air quality modeling. MAG's modeling (using EPA's Urban Airshed Model) for future photochemical smog revealed that the maximum 1-hour ozone concentration in 2015 would be less than the Federal limit of 0.120 ppm at all points in the planning area (MAG 2004).

Yavapai and La Paz counties are in attainment for all criteria pollutants and do not need a SIP (ADEQ 2002a). However, Maricopa County is considered a nonattainment area for three criteria pollutants, including PM_{10}, carbon monoxide, and ozone. Criteria pollutant attainment status for the planning areas and sources of pollutants are described in the following sections.

3.4.2.1 PM 10

On June 10, 1996, EPA reclassified Maricopa County as being in serious nonattainment for PM_{10}. Map 3-3, shows the current PM_{10} nonattainment area for the Phoenix metropolitan area. On July 8, 1999, the Maricopa Association of Governments (MAG) submitted to EPA the MAG 1999 Serious Area Particulate Plan for PM-10 (Executive Summary)(MAG 1999). This plan addressed both the 24-hour and annual PM_{10} standards. In February 2000, MAG submitted a revised PM_{10} nonattainment plan. That plan requested that EPA extend Phoenix's PM_{10} attainment date to December 31, 2006. ADEQ submitted a SIP revision of the Agricultural PM-10 General Permit (Arizona Administrative Code, Title 18, Chapter 2, §609–611) on July 11, 2000. On June 13, 2001, ADEQ submitted to EPA a later SIP revision package for the Agricultural Best Management Practices program (Maricopa County PM-10 Serious Area State Implementation Plan Revision Agricultural Best Management Practices) to address issues with agricultural sources. On January 10, 2002, EPA announced the approval of Arizona's plan for attaining the annual and 24-hour standards for PM_{10} in the metropolitan Phoenix area. In addition, EPA granted a 5 year extension of the required attainment date for both the 24-hour and annual PM_{10} standards from December 31, 2001, to December 31, 2006. This extension was based on the showing that, even by implementing the best available control measures, attainment by 2001 was not possible (ADEQ 2002b).

Emission Sources: According to ADEQ (2002b), the main sources of particulate pollution in the Phoenix area are fugitive dust from

- paved roads,
- construction sites,
- unpaved vehicle routes,
- windblown dust from agricultural fields,
- disturbed areas on construction sites,
- vacant lots.

On June 10, 1996, EPA reclassified Maricopa County as being in serious nonattainment for carbon monoxide. Map 3-4 shows the boundaries of the Phoenix carbon monoxide (CO) nonattainment area. MAG submitted the required CO SIP to EPA on July 8, 1999. On April 18, 2001, MAG submitted A Revised MAG 1999 Serious Area Carbon Monoxide Plan (Executive Summary) (MAG 1999). On October 9, 2001, EPA determined the plan was complete, and approval is pending (ADEQ 2002b). The plan sets forth the required actions to bring Phoenix into attainment with the Federal carbon monoxide standards by December 31, 2005.

Emission Sources: The main sources of carbon monoxide (ADEQ 2002b) are

- on-road mobile sources,
- non-road mobile sources, and
- area sources (e.g. fuel combustion, onsite incineration, open burning, fireplaces, and woodstoves).

3.4.2.2 Ozone

On February 13, 1998, EPA reclassified Maricopa County as being in serious nonattainment for ozone. Since that time, the area has experienced 3 clean years of air quality data, which is the minimum amount of time required to demonstrate attainment. The Maricopa County Serious Area One-hour Ozone SIP was submitted by ADEQ to EPA in December 2000 to fulfill the attainment demonstration requirements. On May 15, 2001, EPA determined that Maricopa County had reached attainment for the 1-hour ozone standard. EPA must receive and approve a maintenance plan showing how the area will maintain compliance with the standard for the next 10 years, before EPA can redesignate Maricopa County as an attainment area.

Emission Sources: Ozone is a gas formed by a chemical reaction between oxides of nitrogen (NO_x) and volatile organic compounds (VOCs) in the presence of sunlight. VOC and NO_x emissions come from point, non-road, area, stationary, motor vehicle, and biogenic sources (ADEQ 2002b).

3.4.3 Water Resources

The public lands in both planning areas fall within the three major watersheds of south-central Arizona: the Middle Gila, Verde, and Bill Williams (See Map 3-5 for the locations of the major watersheds and sub-watersheds within the planning areas). These watersheds can be defined into river basins that collectively drain the watersheds. The river basins of the Middle Gila watershed that pertain to this planning effort include the Hassayampa, Agua Fria, and Lower Salt Rivers. The Agua Fria River originates northeast of Prescott and drains into the Gila River south of Avondale.

The Hassayampa River originates in the Bradshaw Mountains south of Prescott and drains the central Bradshaw-Harquahala Planning Area, flowing south into the Gila River east of Arlington. The Hassayampa is mainly an ephemeral stream, flowing typically when it rains. It flows perennially for several miles in limited reaches, where the shallow depth of the bedrock maintains the flow at the surface. The Hassayampa flows most commonly at the northern end of the planning area, notably in Hassayampa River Canyon Wilderness. At the southern end of the planning area, the Hassayampa River fills the basin during high rainfall events, providing short-term recharge to the basin fill aquifer.

Tributaries of the Salt River, including the Grand and Arizona Canals, cross the extreme southeast portion of the Bradshaw-Harquahala Planning Area. In the Prescott area, the Verde watershed drains to the north via several small drainages, including tributaries of Willow, Miller, and Granite Creeks. This planning area also includes the extreme eastern portion of the Bill Williams watershed, which is drained by the tributaries of the Santa Maria River, including Kirkland, Cottonwood, and Date Creeks.

The groundwater in the planning areas is confined to the unconsolidated sand and gravel

aquifer that underlies most of western Arizona. The planning areas extend across several designated groundwater basins and sub-basins, including the

- Phoenix Active Management Area (AMA),
- Prescott AMA, and
- Upper Agua Fria, Upper Hassayampa, Bill Williams, McMullen Valley, Tiger Wash, and Harquahala sub-basins.

Map 3-6 shows the major groundwater basins, sub-basins, and AMAs within the planning areas.

Groundwater in the planning areas occurs mainly in unconsolidated sand and gravel deposits, which fill the bottom of the Agua Fria River Canyon and occur locally in stream alluvium along streams in the Agua Fria River drainage and in drainages in mountainous areas. Water levels are generally within a few feet of the surface near streams and tens of feet in areas away from streams. Groundwater also occurs locally in limited amounts within 20 to 50 feet of the surface in fractures in the rock that form most of the mountains in the northern part of the Bradshaw-Harquahala Planning Area. In deposits where pumping has lowered shallow groundwater supplies, water levels have declined.

In the southwest part of the Bradshaw-Harquahala Planning Area where broad basins dominate the landscape, groundwater occurs in basin fill deposits and in unconsolidated alluvium in the Bradshaw-Harquahala Basin, the Hassayampa Plain, and the West Salt River Valley. In these basins, irrigation has lowered groundwater levels. Declines range from 50 feet to more than 400 feet in some basins (USGS 1992). The magnitude of the water-level declines varies from basin to basin and reflects the influences of hydro-geologic conditions and the amount and length of pumping. Groundwater also occurs in limited amounts within fractures in rock in localized areas. Well yields are often low, and these units are not a major source of groundwater.

Public lands in the planning areas are located within the Gila River System and Source General Water Rights Stream Adjudication (See Map 3-7 for adjudication watershed basins). BLM has filed claims for State-based water rights for stockwatering, wildlife, and recreation on many small springs, seeps, stock ponds, streams, and wells within the Agua Fria River, Upper Salt River, and Lower Gila River subwatersheds. In addition, BLM is quantifying its Federal reserved water rights established by the 1990 Arizona Desert Wilderness Act for the five wilderness areas within the Bradshaw-Harquahala Planning Area and by the proclamation establishing Agua Fria National Monument. The proclamation (Appendix A) states that "subject to valid existing rights, a quantity of water sufficient to fulfill the purposes," for which the national monument was established is reserved, and that "nothing in this reservation shall be construed as a relinquishment or reduction of any water use or rights reserved or appropriated by the United States," on or before the date of the proclamation.

For more detailed information on water resources in the Agua Fria River watershed, please see Reconnaissance Watershed and Hydrologic Analysis on the Upper Agua Fria Watershed (Barnett and others 2002) and the U.S. Geological Survey 2004 draft report Hydrologic Characteristics of the Agua Fria National Monument, Arizona, Determined from the Phase One Reconnaissance Study (Fleming 2004).

3.5 Biological Resources

3.5.1 Vegetation

BLM manages vegetation within the planning areas to ensure high-quality wildlife habitat and

to protect water resources and watershed conditions.

Agua Fria National Monument is dominated by a variety of grassland communities, with some mixed paloverde-cacti communities along its southern boundary.

Mixed paloverde-cacti and creosote-bursage communities dominate the Bradshaw-Harquahala Planning Area. Grassland communities are most abundant in the central portions of Yavapai County, which includes the northwest and northeast portions of the planning area. Evergreen sclerophyll (dry forests) dominate the north-central portions of the planning area. Pinyon-juniper and desert scrub grasslands are predominant in this planning area's north portion that is managed directly by BLM (Map 3-8).

The planning areas include a single-type of wetland plant community and five upland vegetation formations. Most wetland formations in the planning areas are concentrated in riparian corridors along perennial and ephemeral streams, rivers, and washes.

3.5.2 Riparian Resources

Approximately 140 miles of riparian corridor occur generally in the north and northeast sections of the two planning areas, 47 miles within Agua Fria National Monument and 92 miles within the Bradshaw-Harquahala Planning Area (Map 3-9). These corridors are important resources that support a variety of rare plants, vertebrates, invertebrates, and native fishes. These corridors also serve as important water sources, habitat, and resting areas for many migratory birds. Additionally, livestock use these streams as water sources.

Since 1995, BLM completed a Proper Functioning Condition (PFC) assessment of the riparian corridors on BLM's lands. The table in Appendix Q1 and in Appendix Q2, summarizes the results of PFC assessments for both planning areas. Within the monument, 18.30 miles of riparian corridor were classified as PFC. The classification functional–at risk, indicating that riparian areas were functioning but susceptible to degradation, was assigned to 29.49 miles of riparian corridor. Of these 29.49 miles, 16.39 were considered in an upward trend toward PFC, 8.80 miles were showing no apparent trend and the remaining 4.30 miles were considered to be in a downward trend from PFC. Management factors that influence the condition and trend of riparian areas include livestock grazing and trampling, recreation uses including off-highway vehicle use, roads and mining.

Within the Bradshaw-Harquahala Planning Area, 35.14 miles of riparian corridors were classified as PFC. The classification functional–at risk was assigned to 54.95 miles, and 2.50 miles were classified as nonfunctional. Of those classified as functional–at risk, 12.36 miles were considered in an upward trend toward PFC, 9.40 miles were considered to be in a downward trend from PFC, and 33.19 miles were found to be having no apparent trend.

3.5.3 Terrestrial Games Species

BLM manages habitat for wildlife on public lands. The Arizona Game and Fish Department (AGFD) manage the wildlife populations. The AGFD administers hunting, including permitting, bag limit identification, and population tracking. Hunting categories include big game, small game, upland birds, waterfowl, and predators. Throughout the State, AGFD's management of this program is based on the numbers of animals present in game management units (GMUs). The monument falls within GMU 21, while GMUs 19A, 20A, 20B, 20C, 42, and 44 are located within the Bradshaw-Harquahala Planning Area.

Large game species within the planning areas include black bear (Ursus americanus), desert bighorn sheep (Ovis canadensis), elk (Cervus elaphus), javelina (Pecari tajacu), mountain lion (Felis concolor), mule deer (Odocoileus hemionus), pronghorn antelope (Antilocapra

americana), and white-tailed deer (Odocoileus virginianus). Occupied desert bighorn sheep habitat is depicted on Map 3-10. Recent drought conditions have generally affected large game population trends.

Upland bird and small game species within the planning areas include Gambel's quail (Callipepla gambelii), mourning dove (Zenaida macroura), white-winged dove (Zenaida asiatica), and desert cottontail rabbit (Sylvilagus auduboni). Climate and habitat conditions dictate the relative abundance of these species. Upland bird and small game populations have also been affected by the recent drought conditions.

Furbearers found within the planning areas include the raccoon (Procyon lotor), ringtail cat (Bassariscus astutus), bobcat (Felix rufus), coyote (Canis latrans), gray fox (Urocyon cinereoargenteus), skunks (Mephitis sp. and Conepatus leuconotus), and badger (Taxidea taxus).

3.5.4 Aquatic Game Species

BLM also manages habitat for sport fish species. While most of the fish populations can be found in Lake Pleasant, some perennial streams and stock ponds in the planning areas also support populations. Sport fish within the planning areas are non-native, introduced species. These include largemouth bass (Micropterus salmoides), white bass (Morone chrysops), striped bass (Morone saxatilis), yellow bullhead (Ameiurus natalis), black crappie (Pomoxis nigromaculatus), channel catfish (Ictalurus punctatus), flathead catfish (Pylodictus olivaris), common carp (Cyprinus carpio), bluegill (Lepomis macrochirus), and green sunfish (Lepomis cyanellus).

3.5.5 Federal Endangered, Threatened, Proposed, and Candidate Species

Federally listed endangered, threatened, and candidate species known to occur within the planning areas include the bald eagle (Haliaeetus leucocephalus), western yellow-billed cuckoo (Coccyzus americanus occidentalis), southwestern willow flycatcher (Empidonax traillii extimus), desert pupfish (Cyprinodon macularius), Gila topminnow (Poeciliopsis occidentalis), and Gila chub (Gila intermedia). Federally listed endangered, threatened, and candidate species, which are not known to presently occur within the planning areas, but were historically recorded there or for which suitable habitat exists, include cactus ferruginous pygmy-owl (Glaucidium brasilianum cactorum) and spikedace (Meda fulgida).

3.5.5.1 Bald Eagle (Haliaeetus leucocephalus)

Previously listed as endangered, this species was down-listed to threatened status in 1995. The bald eagle averages about 3-feet in length and has a 6 to 7-foot wingspan. It feeds mainly on fish; however, waterfowl, small mammals, and carrion can constitute a portion of its diet. Bald eagles winter throughout Arizona, with at least 200 to 300 individuals identified each year. They have been observed nesting at the north end of Lake Pleasant for many years. They are occasionally observed along the portion of the Agua Fria River above Lake Pleasant as far north as Cordes Junction within Agua Fria National Monument.

3.5.5.2 Cactus Ferruginous Pygmy Owl (Glaucidium brasilianum cactorum)

The cactus ferruginous pygmy-owl is a small owl, typically weighing 2.3 to 3.2 ounces and having a wingspan of 13 to 15 inches. It is federally listed as endangered. This owl has generally been found in Sonoran Desert habitat (1) in river bottom woodlands containing large mesquites with cavities or (2) in ephemeral

washes with large columnar cactus, paloverdes, and other components of mixed desert scrub. Cactus ferruginous pygmy-owls were historically found in central and southern Arizona, including in riparian drainages and semi-desert grassland vegetation communities, similar to those throughout the planning areas. The decline in the numbers of owls has been attributed to the urbanization of the species' historic range, and the resulting degradation and habitat loss along Arizona's riparian corridors. Extensive surveys for this species have not been completed within the planning areas. The nearest recent record of this is from the Picacho Mountains, 75 miles southeast of the planning areas. The planning areas are considered outside the current range of this species.

3.5.5.3 Southwestern Willow Flycatcher (Empidonax traillii extimus)

A small (5.75 inches), generally olive-colored or grayish-brown, neo-tropical migratory bird, the federally listed endangered southwestern willow flycatcher is a riparian obligate species, whose range once included southern California, southern Nevada, southern Utah, Arizona, New Mexico, western Texas, and southwest Colorado. The flycatcher breeds in dense riparian habitats of the southwest United States along rivers, streams, or other wetlands where trees and shrubs are next to or near surface water.

Loss or modification of habitat is the main cause of the flycatcher's decline. Nesting habitats tend to be uncommon, isolated, and widely dispersed. The habitat has been historically unstable due to natural floods, fire, and drought. Increasing human demand for water from riparian systems has modified, reduced, or destroyed mechanisms that contribute to the natural production of suitable habitat. This species has nested in the Hassayampa River Preserve, south of Wickenburg, for the past several years. In 2004, it was documented as nesting along the Agua Fria River channel below the dam at Lake Pleasant. Survey efforts have not recorded this species elsewhere in either planning areas. Most riparian areas in the planning areas are not considered suitable habitat for this species because stream gradient, channel width and flood frequency preclude the development of suitable habitat patches.

3.5.5.4 Western Yellow-billed Cuckoo (Coccyzus americanus occidentalis)

The western yellow-billed cuckoo is a brownish, medium-sized migratory bird. Adults are typically about 12 inches long and breed in dense willow and cottonwood stands in river floodplains. This species became a candidate species under review for listing as threatened or endangered on June 13, 2002.

A total of 168 yellow-billed cuckoo pairs and 80 single birds were found in Arizona in 1999, according to the preliminary results from a statewide survey that covered 265 miles of river and creek bottoms. The loss of riparian habitat is the main reason for yellow-billed cuckoo declines in the western United States. Despite habitat loss, the cuckoo can still be found in all counties in Arizona and has been recorded along several riparian areas in both planning areas.

3.5.5.5 Desert Pupfish (Cyprinodon macularius)

The desert pupfish is a small (less than 2 inches long), federally listed endangered fish with a smoothly rounded body and narrow, vertical dark bars on its sides. Once common in desert springs, marshes, backwaters and tributaries of the Rio Sonoita, San Pedro River, Santa Cruz River, lower Gila River, and lower Colorado River drainages in Arizona, California, and Mexico; this species is now restricted to three natural populations in California, along with the human-made irrigation drains around the Salton

Sea. Desert pupfish are also found in restricted locations in Sonora and Baja California, Mexico.

In 1997 pupfish were transplanted into AD Wash, which is on State Trust Land within the Bradshaw-Harquahala Planning Area; however, the populations did not survive. Reintroduction efforts, managed jointly by Arizona Game and Fish Department, the U.S. Fish and Wildlife Service, and BLM are ongoing and may include other perennial streams within the planning area. In 2001 pupfish were transplanted into Lousy Canyon Creek, within Agua Fria National Monument, where they continue to exist.

3.5.5.6 Gila Chub (Gila intermedia)

The Gila chub is a small-finned, deep-bodied minnow that was proposed for listing as endangered in 2002, with a designation of critical habitat. If it is listed, the critical habitat designation could include portions of Silver, Larry, Lousy Canyon, and Indian Creeks. Portions of these creeks, tributaries of the Agua Fria River, are within the national monument. Gila chub prefer quiet pools and have a tendency to remain near cover such as terrestrial vegetation, boulders, and fallen logs in smaller streams, springs, and cienegas (desert wetlands). Grazing in adjacent uplands and high levels of recreation can degrade the remaining Gila chub habitat. Additionally, competition or predation by introduced non-native aquatic species contributes to population declines.

Naturally occurring populations of Gila chub can be found within the national monument in Indian and Silver Creeks. Additionally, in 1995 Gila chub were transplanted into Larry and Lousy Canyon Creeks within the monument; these introduced populations continue to exist.

3.5.5.7 Gila Topminnow (Poeciliopsis occidentalis)

The federally listed endangered Gila topminnow is a small, guppy-like, live-bearing fish that prefers vegetated margins and backwaters of intermittent and perennial streams and rivers. Adults tend to congregate in waters of moderate current below riffles, and along the margins of flowing streams in accumulated algae mats. A decline in Gila topminnow populations has resulted from the following:

- the introduction and spread of nonindigenous predatory and competitive fishes, including the mosquitofish (Gambusia affinis),
- water impoundments and diversions,
- water pollution,
- groundwater pumping,
- stream channelization, and
- habitat modification.

Gila topminnows were transplanted to Tule Creek (within the Bradshaw-Harquahala Planning Area) in the early 1970s and to AD Wash on State Trust Land in the early 1990s. In 2000, this fish was transplanted into Lousy Canyon Creek within the national monument. Gila topminnow populations exist at all three of these locations.
Reintroduction efforts are ongoing and may include perennial streams and springs within the planning areas.

3.5.5.8 Spikedace (Meda fulgida)

A small fish, federally listed as threatened, the spikedace is unique in that it is the only species in its genus. Spikedace were once abundant and widespread in moderate and large rivers and streams within the Gila River basin, including the Gila, Salt, and Verde Rivers and their tributaries--the San Pedro, San Francisco, and Agua Fria Rivers. The current distribution in Arizona is restricted to Aravaipa Creek, Eagle Creek and the upper Verde River. The decline of this species has been attributed to habitat destruction or alteration and interactions with non-native fishes. The Agua Fria River is

historic habitat that could still support a spikedace population with active management.

3.5.6 Other Special Status Species

The AGFD has a list of wildlife of special concern in Arizona. This list includes taxa that are federally listed as threatened or endangered under the Endangered Species Act as well as many that are not listed. BLM manages these species so as not to contribute to the need to list them as threatened or endangered. Within the planning areas are 4 bats, 13 birds, and 5 reptiles or amphibians on the State list. Most of these species depend on riparian habitats.

In accordance with BLM's Manual 6840, the BLM's State Director, in concert with staff professionals, developed a list of BLM's sensitive species. These are species that BLM believes warrant special consideration but are not on the list of wildlife of special concern in Arizona. Within the planning areas, there are three BLM's sensitive plant species, and 18 BLM sensitive wildlife species. The wildlife species include nine bat, three bird, three reptile, and three native fish species.

All of the wildlife of special concern in Arizona's and BLM's sensitive species, within the planning areas, is listed as priority species in Appendix H.

Within the planning areas, six "conservation areas" have been identified as important to the long-term maintenance of biodiversity within the Sonoran Desert Ecoregion in An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion (Marshall et. al. 2000). The conservation areas identified are the Harquahala Mountains, Harcuvar Mountains, Hassayampa River south of Wickenburg, Agua Fria Watershed, Black Pearl, and El Tigre Mine.

Four additional conservation areas in the planning areas were identified in the Apache Highlands Ecoregion in An Ecoregional Analysis of Conservation Priorities in the Apache Highlands Ecoregion (Marshall et. al. 2004). These conservation areas identified are the Agua Fria River/Sycamore Mesa, Castle Creek/Black Canyon, Hassayampa River/Blind Indian Creek and Kirkland Creek/Peeples Valley Grassland. Two of the conservation areas in the Apache Highlands Ecoregion are overlapped by the Agua Fria Watershed Conservation Area in the Sonoran Desert Ecoregion.

3.5.6.1 Sonoran Desert Tortoise (Gopherus agassizii)

The Mojave population of the desert tortoise, which inhabits northern Arizona, California, Utah, and Nevada (not within the planning areas), has been federally listed as threatened. BLM has worked cooperatively to complete a management plan to stabilize the Sonoran population of the desert tortoise, which inhabits these planning areas and is considered a sensitive species by BLM and the AGFD. In addition, the BLM is working with the AGFD and others on a conservation agreement specifically addressing the Sonoran population of desert tortoise.

The habitat preference for the Sonoran populations of the desert tortoise consists of paloverde-mixed cacti vegetation communities on rocky or bouldery slopes below 3,500 feet in elevation. Three habitat classifications, based on population, viability, size, density, trend, and manageability, were devised from BLM's inventories of desert tortoise habitat throughout the planning areas between 1989 and 1999. Map 2-92, shows tortoise distribution and habitat classification based on the inventory. The criteria used to classify the habitat areas are as follows:

- Category I – Habitat area essential for maintenance of large, viable populations. Conflicts resolvable. Medium to high density or low density contiguous with medium or high density. Increasing, stabilizing, or decreasing population.
- Category II – Habitat area may be essential to maintenance of viable

populations. Most conflicts resolvable. Medium to high density or low density contiguous with medium or high density. Stable or decreasing population.

- Category III – Habitat area not essential to maintenance of viable populations. Most conflicts not resolvable. Low to medium density not contiguous with medium or high density. Stable or decreasing populations.

The planning areas contain 93,600 acres of desert tortoise habitat classified as Category I, 429,400 acres classified as Category II and 136,980 acres classified as Category III.

BLM is managing habitat for the desert tortoise under two existing plans; the Desert Tortoise Habitat Management on Public Lands: A Rangewide Plan (BLM 1988b) and Strategy for Desert Tortoise Habitat Management Plan on Public Lands in Arizona (BLM 1990a).

3.5.7 Invasive Species

Invasive species occur throughout the two planning areas and can generally be defined as "alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health" (Executive Order 13112). Invasive species, which have often been accidentally introduced into ecosystems by humans, can be detrimental to the environment because they can directly harm native species, either by predation or competition. In turn, this harm can affect general ecosystem functions.

Some of the floral invasive species known within the planning areas include African mustard (Brassica tournefortii), fountain grass (Pennisetum alopecuroides), bufflegrass (Cenchrus ciliaris), wild oats (Avena fatua), saltcedar (Tamarix ramosissima), and Malta's star thistle (Centaurea melitensis), which occurs within the monument. Invasive aquatic plants are also known to occur within some riparian areas. Other species are also likely to occur because of the presence of suitable conditions, substrates, or both.

Invasive animals, both terrestrial and aquatic, include starlings (Sturnus vulgaris), crawfish (Procambarus clarkii), bullfrogs (Rana catesbeiana), spiny soft-shell turtles (Trionyx spiniferus), mosquitofish (Gambusia affinis), and green sunfish (Lepomis cyanellus). Infestation by some of these species is so great that some native species are threatened with extirpation.

3.6 Cultural Resources

West-central Arizona has a rich and diverse cultural heritage. Native American groups have lived in the region for thousands of years. Settlers of European descent first arrived in small numbers in the late 16th century, and then in much larger numbers in the late 19th and early 20th centuries. Cultural resources represent the tangible remnants of this rich legacy; which include prehistoric and historic sites and places of traditional cultural importance. Today, portions of the planning areas are among the fastest growing regions in the United States. This growth threatens important cultural resources at an alarming rate.

BLM manages cultural resources to protect and make proper use of their important scientific, educational, and cultural heritage values. Within the planning areas, BLM's Phoenix Field Office manages some of the most important and best-preserved prehistoric and historic archaeological sites in the American Southwest (Ahlstrom and Roberts 1995; North 2002; Stone 1986). Additionally, cultural resources include sites of significance to Indian tribes.

Archaeological evidence reveals that Archaic hunters and gatherers began to live in the region at least 6,000 years ago. Later, occupants included the farmers of the prehistoric Hohokam, Perry Mesa, Prescott, and Patayan traditions. These people may have been ancestors of the O'odham, Hopi, Yavapai, and Yuman Indian tribes.

Prehistoric archaeological sites include properties as diverse as pueblo ruins, agricultural terraces, hunting camps, seasonal settlements, lithic quarries, trails, and rock art. Many of the prehistoric and historic native people moved to different sites on the landscape during different seasons to gather a wide range of plant and animal resources. Therefore, many of the artifact scatters and other archaeological sites represent temporary camps or resource collection and processing areas.

This region of central Arizona played an important role in Arizona's modern history. It includes Arizona's two State capitals, Prescott and its successor Phoenix. Moreover, the region includes some of the most significant historical mining districts in the State, concentrated in the Bradshaw, Vulture, and Weaver mountain ranges.
Homesteaders, ranchers, merchants, and dam builders followed the miners. Historic archaeological sites include properties as diverse as mines, mills, ghost towns, ranches, homesteads, roads, and trails.

Agua Fria National Monument was established to protect significant cultural and natural resources. The monument contains more than 400 known archaeological sites, including prehistoric pueblo ruins and spectacular rock art. The monument is likely to contain thousands of sites, because archaeological surveys have covered less than five percent of its area. The zone north of Perry Mesa remains largely unexplored but may contain significant resources.

Perry Mesa Archaeological District is listed on the National Register of Historic Places. The district was established on BLM-administered land in 1974, when much of Perry Mesa consisted of State Trust Land. BLM and the Tonto National Forest cooperated to expand the district in 1996. Its territory of about 50,000 acres encompasses Black Mesa and Perry Mesa, including important sites in Tonto National Forest. The district represents a cultural landscape defined by a well-preserved settlement system of communities occupied between A.D. 1250 and 1450. The sites within this system include the following:

- Pueblos and other masonry structures ranging from one to more than 100 rooms,
- Hilltop sites that may have served defensive purposes,
- Agricultural terraces,
- Rock art, and
- Artifact scatters left by a wide range of temporary activities.

BLM recognized the significance of these resources in designating the Perry Mesa Area of Critical Environmental Concern in the Phoenix Resource Management Plan (BLM 1988a). Although prehistoric sites represent most of the known cultural resources, the monument also contains historic sites, including features from ranching history and the operation of the Richinbar Mine.

Under the existing management direction for the Phoenix RMP (BLM 1988a) and Agua Fria National Monument, BLM has carried out proactive management of cultural resources in the Perry Mesa ACEC and surrounding zones on Perry Mesa and Black Mesa. Since 1990 management accomplishments have included the following:

- archaeological inventories on Perry Mesa and Black Mesa (Heuett and Long 1995, North 2002);
- documentation of rock art sites;
- coordinated efforts with Tonto National Forest to prepare a site vandalism study (Ahlstrom et al. 1992),
- an archaeological overview (Ahlstrom and Roberts 1995),
- documentation for expanding the Perry Mesa National Register District in 1996; and
- monitoring of significant sites by the Civil Air Patrol and Arizona Site Steward Program volunteers.

These actions have provided enhanced knowledge and protection of cultural resources.

Prehistoric sites on Perry and Black Mesas have suffered damage from vandalism and artifact theft over decades. In the early 1990s, BLM and Tonto National Forest produced a comprehensive study of the history and effects of these activities (Ahlstrom and others 1992). The publicity from the legal case against Jones, Jones, and Gevara, caught in 1977, vandalizing a site on Perry Mesa in Tonto National Forest, contributed to the enactment of the Archaeological Resources Protection Act. The recent publicity surrounding the designation of the national monument attracted attention that may have put sites at greater risk. Since early 2000 BLM, has increased levels of patrol and site surveillance, and there have been no major incidents of vandalism.

The statewide AZSITE database lists more than 1,500 archaeological sites in the Bradshaw-Harquahala Planning Area, including slightly more than 200 BLM-administered sites. Also, this region has approximately a five percent level of archaeological survey coverage. Surveyed areas are clustered near urban areas and along transportation routes, utility lines, and the Central Arizona Project aqueduct. In addition, before preparing the Lower Gila North Management Framework Plan (BLM 1983), BLM completed a sample survey of one percent of Federal lands within the Vulture and Harcuvar Planning Units in the western desert.

Given the incomplete status of the AZSITE database and the low level of survey coverage, one can reasonably expect that several thousand prehistoric and historic sites remain undiscovered on public lands in the planning areas. Table 3-4. Known Cultural Sites summarizes the periods of occupation (ages) of known sites within both planning areas, regardless of land status.

Away from Agua Fria National Monument, the highest density of prehistoric sites is along the Agua Fria River and other streams north of Phoenix. These data, although incomplete, may well reflect the distribution of prehistoric populations, which tend to cluster near perennial streams and water sources. Several mountain ranges, notably the Bradshaw foothills, the White Tanks, the Harquahalas, and the Harcuvars, also appear to have relatively high densities of prehistoric sites. Sites generally are concentrated along the lower slopes and in canyons because of the presence of springs, natural tanks, and wild food resources in these zones. Additionally, many of the more productive mountain ranges were home to several regional bands of the Yavapai Tribe. The Vulture, Big Horn, and Harcuvar mountain ranges contained localized sources of high-quality materials for stone tools, sometimes transported or traded over great distances. Although people used the desert expanses west of the Hassayampa River over several thousand years, this arid zone has a relatively low density of archaeological sites. It does contain distinctive features, such as prehistoric trails potentially linked into networks extensive enough to connect villages along the Colorado and Gila Rivers.

Historic period sites tend to be concentrated near the modern towns of Prescott, Wickenburg, and Black Canyon City. Many significant mines or mining-related sites are on public lands in and around the Bradshaw foothills and the Vulture and Weaver Mountains. Among the notable historic roads and trails is the route of large-scale sheep drives through the Black Canyon corridor. Many sites reflect the critical interdependencies among mining, ranching, homesteading, commerce, and economic development.

The Harquahala Peak Smithsonian Observatory, a unique building at the summit of the Harquahalas, supported astronomical studies by the Smithsonian Institution during the 1920s. The Harquahala Mountain Observatory Historic District listed on the National Register of Historic Places; includes the observatory building, the historic Harquahala Pack Trail, Ellison's Camp, and associated features. This observatory is the only cultural site within the planning areas that has been the focus of interpretive development for public visitation.

Table 3-4. Ages of Known Cultural Sites in the Planning Areas			
Age	**Number of Sites**	**Percentage of Total**	**Comments**
Prehistoric	774	45.58	12,000 BC to AD 1500
Historic	641	37.75	AD 1500 to 1950
Unknown	196	11.54	No diagnostic information or not listed on site card
Multicomponent	53	3.12	Historic and prehistoric elements
Recent	28	1.65	AD 1950 to present
No information	6	0.35	No information or no site card available

Interpretive signs have been installed at the observatory building and at a kiosk along the Harquahala Peak Back County Byway located at the base of the mountains.

Historically, Pima groups of the O'odham people lived in the southern portion of the Bradshaw-Harquahala Planning Area, generally south of the Bradshaw foothills and east of the Hassayampa River. These groups claim cultural ties to the prehistoric Hohokam, who ranged further north during prehistoric times. Their descendants now live in the Salt River Pima-Maricopa, Gila River, and Ak-Chin communities.

The Yavapai people occupied the remaining zones within the planning areas, including Agua Fria National Monument. The Kewevkapaya (Southeastern Yavapai) lived in the Bradshaw Mountains. The Yavepe (Central Yavapai) occupied the area around present-day Prescott, and the Tolkapaya (Western Yavapai) lived in the desert and mountains of western Arizona. The Yavapai now live in the Fort McDowell, Prescott, Middle Verde, and Clarkdale communities.

The Maricopa and Mohave tribes, who spoke Yuman languages and lived along the Gila and Colorado rivers, likely hunted or collected natural resources in the western portion of the planning area.

The Hopi, who currently reside several hundred miles northeast of Phoenix, have oral traditions that describe extensive migrations throughout Arizona. The conspicuous presence of Hopi Yellow Ware pottery at villages in Agua Fria National Monument shows prehistoric cultural ties to the Hopi people.

Tribes have expressed concerns regarding preserving cultural heritage values of prehistoric archaeological sites. Tribes often cite special significance to rock art, springs, habitation sites, and cemeteries. Therefore, ongoing consultations are needed to determine which traditional cultural properties or other places are of singular significance.

Cultural diversity in the planning areas also encompasses the history of ethnic groups, including Mexican and Cornish miners, Chinese workers, Basque shepherds, and African-American settlers. Archaeological sites in the planning areas may hold compelling clues about their lives and challenges in the Arizona desert.

Damage and destruction from natural processes and human activities threaten cultural resources. Natural sources of damage include geological processes such as, erosion and deflation. Prehistoric and historic standing structures are in

danger of collapse from the effects of weathering. Rapid population growth and urban expansion have intensified the risks of damage from development and recreation activities. Damage from trash dumping, indiscriminant off-highway vehicle use, looting, and vandalism is expected to increase as more people travel farther and more often into previously remote areas.

The Phoenix Field Office strives to avoid or mitigate adverse effects to cultural resources in evaluating and implementing proposed projects and activities. However, it is more difficult to manage impacts caused by unplanned and casual activities. Frequently monitoring inspections and public education can help protect archaeological sites, particularly those near the Phoenix urban area, rural towns, and transportation routes. Through a partnership with the Arizona Site Steward Program, BLM regularly monitors at least 50 sites within the planning areas. In the future, community partnerships may provide more opportunities for site monitoring, public education, and interpretive developments for cultural heritage tourism.

Most known sites represent native archaeological cultures such as the Hohokam and Sinagua. A substantial percentage of sites are Euro-American. The number of native archaeological culture sites conforms closely with the prehistoric sites, whereas the number of Euro-American sites fit closely to the number of historical period sites. Some sites were affiliated with both prehistoric and Euro-American cultures, and a small fraction represents unlisted or unidentified cultural affiliation. An even smaller portion consists of sites affiliated with extant Native American cultures, such as the Yuman or Pai groups.

3.7 Paleontological Resources

Paleontological resources, or fossils, are a nonrenewable resource that provides scientific value and clues to the geologic history of central Arizona. While a minimal amount of paleontological research has been conducted in the region, 11 paleontological sites are known to occur within, or in close proximity to the planning areas. None of the known paleontological occurrences have been found on BLM-managed land within the two planning areas.

Paleontological resources are not currently actively managed under any existing management plans for these two planning areas.

3.8 Recreation

The closeness of the planning areas to the fast-growing Phoenix metropolitan area has dramatically increased the level of recreation within the planning areas. While opportunities for developed or formalized recreation exist at relatively few locations, such as the Lake Pleasant area, open recreation opportunities abound throughout both planning areas. BLM is responsible for integrating recreation needs and demands with other uses on public lands.

BLM uses a planning tool known as the Recreation Opportunity Spectrum (ROS) to determine which areas are suitable to be managed or maintained for various types of recreation. The ROS classification system is a way to help assure that people recreate in desirable settings and opportunities exist for a broad range of users. The Recreation Opportunity Spectrum on Map 3-11, shows the ROS inventory prepared as part of the planning process.

BLM issues Special Recreation Permits (SRPs) for commercial and competitive uses, organized group events and activities, and vending operations conducted on public lands. The permits can be for one-time events, such as an OHV race or horse ride, or for on-going commercial uses such as jeep tours. BLM issues SRPs on a first-come, first-served basis. BLM issued 57 SRPs in 2004,

to include 3 competitive races; 18 motorized and non-motorized special events and organized group fundraisers, and 32 commercial permits for outfitter and guide activities such as big game hunting, OHV tours and horse trail rides.

To help direct future management and planning, BLM's Phoenix Field Office engaged Arizona State University (ASU) West to conduct a survey to better understand and quantify recreation use in the planning areas (Andereck and others 2002). Respondents said, hiking/walking were their most frequent activities, followed by four-wheel driving, sightseeing, motorcycle/all-terrain vehicle (ATV) riding, and camping. Other activities include visiting cultural sites, picnicking, photography, wildlife and bird watching, target shooting, and hunting. The demand for these types of recreation is likely to increase as the Phoenix metropolitan area experiences accelerated growth over the next several decades. Especially, with the population of Maricopa and Yavapai Counties expected to increase from 3,829,200 in 2005 to 5,923,500 in 2025. Additionally, visitation to the planning areas is expected to increase proportional or higher to the rate of population growth of the two counties, or by 55 percent, by 2025.

No reliable user-day information is available for the planning areas. But, according to the AGFD web site, OHV use increased about 1.5 times faster than the population of Arizona from 1997 to 2003. Additionally, the number of OHVs sold in Arizona increased from 7,964 vehicles in 1997 to 23,568 vehicles in 2002. A 1990 study by Arizona State Parks estimated that there were more than 500,000 OHVs in Arizona. Some of the most rapid population growth is in Maricopa County. According to data collected by Arizona State University (Andereck and others 2002), Maricopa and Yavapai Counties account for about 70 percent of the visitors to the planning areas. The projected increase of more than two million people in the two counties is expected to substantially increase recreation use, especially OHV use, in the planning areas. OHV use is a significant form of recreation on BLM lands. In the Agua Fria National Monument, dispersed camping is allowed in most areas. Popular sites lie along the network of roads and off spurs. Many sites exist throughout the monument, and all have been established through public use. Many sites exist in illegal zones such as within ¼ mile of water facilities and at archaeological sites.

The substantial environmental concerns reported in the survey were litter, trash dumping, and vandalism. Additionally, social concerns focus on use of unregulated OHVs, target shooting, and residential/commercial development in the Bradshaw-Harquahala Planning Area. Respondents commented that the following are generally insufficient:

- information on the area,
- informational signs,
- drinking water,
- law enforcement, and
- toilet facilities.

In this same ASU West study (Andereck 2003), the Agua Fria National Monument recreation visitor profile showed a greater interest in the following:

- hiking and walking,
- nature study,
- visiting historical and cultural sites,
- dispersed camping, and
- wildlife and bird watching.

There was less interest in motorized activities, mountain biking, and picnicking. However, there was a strong preference for retaining the natural character of the environmental setting while developing visitor support facilities and increasing road maintenance, interpretive programs, and visitor services.

Those surveyed ranked social concerns for the monument accordingly:

1. unregulated OHV use,
2. off-road vehicles,
3. inconsiderate people, and
4. target shooting.

Environmental concerns stated were litter, erosion, vandalism, livestock grazing, trash dumping, and vehicle damage to soils and plants.

Designating Agua Fria National Monument elevated the area, from the perspective of the general population, to a unique status, thus increasing the public interest. Recreation professionals often refer to this as a "designation effect," which describes the increase in interest of an area once it has been recognized through legislation or executive action as an area that is "special."

3.9 Wilderness Characteristics

In concert with Agua Fria National Monument and the Bradshaw-Harquahala RMP, BLM has considered certain public lands for the presence of wilderness characteristics, including naturalness, solitude, and opportunities for primitive and unconfined recreation. BLM evaluated lands with wilderness characteristics:

- In response to public comment obtained through scoping,
- Pursuant to sections 201 and 202 of the Federal Land Policy and Management Act of 1976,
- In applying Washington Office Instruction Memorandum 2003-274, BLM Implementation of the Settlement of Utah v. Norton Regarding Wilderness Study and Instruction Memorandum No. 2003-275, change one, Consideration of Wilderness Characteristics in Land Use Plans (Excluding Alaska) (both of which can be found in Appendix I), and
- In reviewing the 1981 Section 603 wilderness inventory findings--these findings are the wilderness inventory for public lands in the planning areas.

Landscape features associated with the concept of wilderness may be considered in land use planning when BLM determines that those characteristics are:

- reasonably present,
- of sufficient value (condition, uniqueness, relevance, importance) and need (trend, risk), and
- practical to manage.

Also, what must be present are naturalness and outstanding opportunities for solitude, and/or primitive and unconfined recreation wilderness characteristics.

Agua Fria National Monument

All 70,900 acres of Agua Fria National Monument were examined for the presence of wilderness characteristics in August and September 2002. These lands were acquired and placed in public ownership after 1976, and have never been examined for the presence of wilderness characteristics. Wilderness characteristics are found in four areas of the national monument (Map 3-12):

- Agua Fria River Canyon, extending south of Bloody Basin Road to the powerline and pumping station,
- Baby Canyon, extending from Bloody Basin Road to the Agua Fria River confluence,
- Silver Creek/Long Gulch drainage and uplands, and
- Perry Mesa, centered on Larry and Lousy Canyons.

Bradshaw-Harquahala Planning Area

Public comments and scoping supported assessments of wilderness characteristics in parts of the Harquahala Mountains, the Big Horn Mountains, the Hassayampa River Canyon and Round Mountain area, the Belmont Mountains, Baldy Mountain (west of Lake Pleasant), and Black Butte. The following areas, formerly Section 603 Wilderness Study Area (WSA) lands, were determined to be natural and to have wilderness characteristics (Map 3-12):

- Harquahala Mountains,
- Big Horn Mountains, and
- Hassayampa River Canyon/Round Mountain areas.

These areas were essentially in the same condition as reported by the Section 603 wilderness inventory in 1981. They also represented important desert tortoise and big horn sheep habitat, general wildlife habitat, and scenic open space values. They were considered landscapes at risk due to increasing OHV use, visitation, and population growth.

Parts of the Belmont Mountains, the Black Butte area, and a part of the Hieroglyphic Mountains named Baldy Mountain were also examined for wilderness characteristics in response to public scoping comments. BLM examined these areas and determined that they are essentially natural and have wilderness characteristics. These locales also encompass important desert tortoise habitat, big horn sheep habitat, raptor habitat, geologic values, and scenic open space opportunities and values. They were considered landscapes at risk due to increasing OHV use, visitation, and population growth.

3.10 Visual Resources

The planning areas are generally located in the Basin and Range Physiographic Province. Scenery varies greatly. Mesas and deep canyons characterize the terrain of Agua Fria National Monument. The scenery of the Bradshaw-Harquahala Planning Area includes rugged mountains, striking cliff formations, foothills, mesas, washes, bajadas, and broad plains. Major visual intrusions include highways and other vehicle routes, evidence of mining and ranching, and utility rights-of-way.

BLM is required to manage public lands to protect their scenic values. To consistently evaluate its lands within their regional context, BLM developed the Visual Resource Management (VRM) program. BLM uses the VRM process to manage the scenic quality of the landscape and to reduce the impact of development on the scenery.

The VRM program consists of inventory and analysis components. The inventory is a process through which BLM determines the quality, sensitivity, and management issues of the visual setting of public lands. The analysis component is used to assess the visual impacts of specific projects before they are implemented. The VRM process includes the following steps.

- Evaluate the quality of existing scenery,
- Consider the distance from which that scenery is viewed, and
- Rate the public's sensitivity to changes in the landscape.

The VRM program has not been applied to all of the lands within the planning areas. VRM classes were established in 1982 for all public lands in the Lower Gila North MFP area as part of the Lower Gila North Grazing EIS (BLM 1982). A range of Class II, III, and IV classes were established, based on inventories completed in the 1970s. In 1990, Class I standards and objectives were applied to 96,820 acres within five designated wilderness areas. Other parts of the planning areas are managed under an interim Class III standard.

BLM is aware these planning areas contain a wide range of visual features needing protection from degradation in managing and implementing other land uses. Moreover, much development has occurred, and public attitudes about landscapes and open space have changed in the quarter century since the original VRM inventories were completed. BLM's lands, once remote, are now near or within growing urban and rural population centers and are crossed by new paved highways.

The wild, west landscape is rapidly being converted to housing developments as millions of people move to Arizona. This growth has resulted in a vanishing desert landscape. The people moving to Arizona are no longer mainly retired seniors. Growing job

markets are attracting a diversity of people; resulting in a wide range of demographics. Phoenix is the fifth largest city in the United States with continuous growth. Because these communities back up to BLM lands, maintaining scenic quality is crucial for social, psychological, and spiritual well-being.

Accordingly, as part of this planning effort, BLM has developed an updated VRM inventory to do the following:

- Examine scenic quality,
- Consider viewing distances, and
- Assess public sensitivity to landscape changes.

The inventory was prepared according to the basic methodology outlined in BLM's Manual H-8410-1. Several of the steps were performed using a geographic information system. The inventory determined that 96,820 acres fit the criteria for Visual Resource Inventory Class I, 593,450 acres fit criteria for Class II, 162,000 acres fit Class III, and 114,730 acres fit Class IV. See Map 3-13, for the results of the VRM inventory.

3.11 Rangeland Management

Grazing on BLM's land in Arizona is managed under Title 43 of the Code of Federal Regulations (CFR), section 4100, and is based on the following:

- Taylor Grazing Act (TGA) (43 U.S.C. 315, 315a through 315r),
- FLPMA (43 U.S.C. 1701 et seq.), and
- Public Rangeland Improvement Act (43 U.S.C. 1901 et seq.), and other executive and public land orders.

Leases and permits are valid for 10 years, with use reports annually submitted by leaseholders and permittees. BLM typically changes allotment schedules, stocking rates, class of livestock, or other grazing practices if a resource concern arises. BLM evaluates allotments when leases or permits are scheduled for renewal, consistent with the Arizona Standards for Rangeland Health and Guidelines for Grazing Administration (Land Health Standards).

BLM analyzes rangeland allotments by resource characteristics, ecological potential, opportunities, and needs. Allotments are then managed by the three categories of "Maintain," "Improve," or "Custodial." Agua Fria National Monument has 10 BLM-authorized grazing allotments (11 permittees), totaling 72,587 acres (70,820 BLM acres). These allotments have a permitted carrying capacity of 13,492 animal unit months (AUMs) of forage. An AUM is the amount of forage needed to sustain one cow, or its equivalent, for 1 month. The Bradshaw-Harquahala Planning Area has 91 BLM-authorized grazing allotments, totaling 1,855,738, acres (896,000 BLM acres) and 69,568 AUMs of forage. Appendix O shows allotment names and numbers, permitted AUMs, and livestock numbers and types for the planning areas.

In 2002 a total of 36,000 head of cattle were raised in Maricopa and Yavapai Counties, the two counties that include the planning area.

Within the planning areas, grazing allotments can be classed in one of three ways according to the availability of forage: (1) perennial, (2) perennial/ephemeral, or (3) ephemeral.

Perennial allotments produce a fairly dependable amount of forage every year, and the allotment stocking rate is based on that production. Perennial allotments are at the upper elevations of the planning areas, where precipitation is higher and more dependable than at lower elevations.

In the lower deserts, allotments that produce enough perennial forage to support a small herd but periodically produce large amounts of springtime forage from annual plants can be classed as perennial/ephemeral.

Allotments that typically produce little perennial forage and where livestock use depends on forage production from springtime annuals can be classed as ephemeral.

The "Special Ephemeral Rule" was developed to determine when allotments should be classified as either Ephemeral or Perennial/Ephemeral. That rule is described in the Rangeland Management section of Management Common to Both Planning Areas in Chapter 2. There are four Ephemeral permits in the planning areas. All the rest are either Perennial or Perennial/Ephemeral. Sheep are currently authorized on three allotments (one allotment on the monument), goats are authorized on one allotment and all the rest are authorized cattle or horses.

Grazing permits or leases authorize lands for grazing. A grazing permit authorizes grazing on public or other lands administered by BLM within grazing districts under Section 3 of the TGA. A grazing lease authorizes grazing use on public or other lands administered by BLM outside of grazing districts under Section 15 of the TGA.

Within allotments, seasonal grazing may be required in some pastures. Moreover, grazing practices may be managed to achieve resource or grazing objectives, as described in the allotment grazing permit or lease.

3.12 Mineral Resources

BLM manages the minerals on many lands beyond those where BLM manages the surface. Areas where the land surface and subsurface minerals are under different ownership are referred to as split estate lands. Acreage totals in this section account for the subsurface mineral lands.

BLM administers programs that allow production of three types of minerals and energy resources on public lands. These mineral assets fit into categories of saleable, locatable, and leasable minerals. Saleable minerals include sand, gravel, and other common minerals. Locatable minerals consist of precious metals such as gold, silver, and some industrial minerals such as gypsum and clay. Fuels such as oil, gas, coal, and certain other substances are leasable minerals.

The minerals' planning area (Map 1-2) extends far to the north and east beyond the boundaries of the planning areas. Map 2-10, provides a more detailed look at current minerals management in the immediate environs of the planning areas. The minerals planning area is the area with federally administered minerals, where the surface rights are held by BLM, the State of Arizona, or private parties, and located within the administrative boundaries of BLM's Phoenix Field Office but are not being planned for in the Sonoran Desert National Monument RMP and Phoenix South RMP Revision.

The planning areas sit astride three geologic provinces. The Colorado Plateau Province includes the northern third of Arizona, bounded on the south by the Mogollon Rim. Scattered BLM-administered public lands outside the planning areas are located in this province. Nearly horizontal, stratified, eroded sedimentary rocks characterize this province.

The Transition Zone Province bisects Arizona from northwest to southeast and is present in the central portion of the planning areas. The Transition Zone is a geologically complex area where the monocline and uplift tectonic characteristics of the Colorado Plateau are developed on Precambrian basement rocks and Mesozoic granitic rocks, and complicated by extensive block faulting encompassing and/or overlain by Tertiary volcanic and sedimentary rocks.

Covering the southern portion of the planning areas, the Basin and Range Province features northwest-trending block-faulted mountain ranges separated by deep, alluvium-filled basins. Mountain ranges in the planning area generally consist of Precambrian (Proterozoic) to Tertiary

igneous, or metamorphic rocks bounded by block-faulted and folded Mesozoic to Cenozoic sedimentary rocks or Tertiary volcanic rocks. The deep intermontane basins generally contain slightly altered Paleozoic and Mesozoic sedimentary rocks overlain by Tertiary sedimentary and volcanic sequences.

Geologic conditions are suitable for the potential occurrence of leasable fluid minerals, which include the energy minerals oil and gas and the nonenergy mineral carbon dioxide (CO_2). Mature petroleum source rocks are present in Tertiary evaporites in the southern portions of the planning areas. Sandstone and limestone contain reservoir-quality porosity for fluid minerals to accumulate beneath structural and within stratigraphic traps in the northern scattered lands.

Sodium and coal are leasable solid mineral resources. Sodium may be present in deep evaporite deposits in Tertiary basins throughout the Bradshaw-Harquahala Planning Area, and is extracted near Luke. There are no reported coal resources in the planning areas.

Five areas of potential sodium exist in the planning area's subsurface. There has been no significant development of those resources and no indications for future leasing and development. The absence of sodium leasing in the planning area (except in the Luke Basin) is probably due to the limited demand for sodium and the great expense of exploring and developing it. Morton Salt is solution mining salt for industrial purposes from the Luke salt deposit. BLM has one lease with Morton for solution mining on the Luke deposit.

There are no known viable sources of leasable minerals in the Bradshaw-Harquahala Planning Area, but all land in the area is now open to mineral leasing. Sites north of the planning area within the BLM PFO do have some potential for exploration.

Geothermal energy resource potential exists throughout the planning area. A high potential for occurrence exists for using low-temperature geothermal energy in 16 geothermal resource areas. Most of these resource areas are defined by multiple water well fields, but these fields have not been developed. Moderate potential for occurrence of geothermal energy is also present throughout southern Arizona, which has several isolated geothermal wells. The potential for fluid, gaseous, and solid leasables (including geothermal energy) is shown on the Map 3-14.

Five low-temperature geothermal resource regions are recognized in the Bradshaw-Harquahala Planning Area. These regions are shown as moderate potential areas on Map 3-17. There has been no significant development of geothermal resources. These low-temperature resources might be used for small-scale space heating and for resort spas.

The Bradshaw-Harquahala Planning Area has no geothermal energy leases and no indications for future leasing. The absence of geothermal leasing probably results from the limited uses for low-temperature resources and the great expense to explore and develop them.

Although the potential for oil and gas leasing is low to medium throughout the minerals planning area, the potential for leasing is low. The potential is somewhat higher in the areas north of 35 degrees north latitude.

Oil and gas exploration was active in the Bradshaw-Harquahala Planning Area from 1913 to the 1980s. No oil and gas development has occurred on public lands, and no proven reserves have been documented. There is now no leasing interest. However, areas of moderate oil and gas potential do exist (Map 3-17).

The price of crude oil was a significant driving force for increased oil and gas exploration in the 1970s. The 1980s saw active exploration in the Basin and Range Physiographic Province of Arizona to test the Laramide Overthrust Trend. There has been no drilling since the 1980s. A trend toward increasing exploration is occurring throughout the United States as the active rig count increases with rising crude oil prices.

Thus, there is potential for domestic crude demand to stimulate oil and gas exploration in the mineral planning area.

Locatable minerals exist throughout the planning areas, including porphyry copper, volcanic-epithermal, placer, vein, vein/replacement, and alteration of sedimentary rocks. Past mining for metallic minerals has mainly produced gold, silver, copper, lead, zinc, tin, and uranium. There is potential for occurrence of those and other metallic minerals and a high potential for occurrence of nonmetallic minerals. There are few active locatable mineral operations. The potential for locatable minerals is shown on Map 3-15.

Mineral districts in the Bradshaw-Harquahala Planning Area are regions of known occurrences of and high potential for locatable metallic and nonmetallic minerals (Map 3-15). Most of the mines have been inactive for many years because the cost to mine the commodity exceeds the commodity's market value. Several small-scale locatable mines now operate in the planning area. These mines generally operate on a sporadic basis, depending on market conditions and financial support. These operations focus on placer gold, lode gold, and some industrial minerals.

Saleable mineral materials are found at Precambrian to Tertiary rock outcrops and in extensive Quaternary deposits of alluvial sand and gravel, piedmont alluvium, colluvium, and eolian sand throughout the planning areas. Pits, quarries, and prospects for saleable minerals are mapped to show the potential for occurrence of saleable mineral resources. These saleable minerals have high potential to be found in the planning areas (Map 3-16).

The Bradshaw-Harquahala Planning Area has many locations for saleable mineral resources. Known occurrences (quarries and pits), prospects, and potential locations for saleable material on BLM-administered lands are shown on Map 3-20. Those locations have high potential for saleable mineral resources because they are known to occur. Most of the locations are actively used for dimension stone, decorative rock, or local construction.

BLM-managed mineral resources include minerals underlying BLM-managed surface, as well as thousands of acres of mineral estate beneath land surface that is owned by others, including State and private lands.

Minerals development in the Bradshaw-Harquahala Planning Area involves mainly saleable materials, particularly because of the area's closeness to a rapidly urbanizing area that places demands on materials such as sand, gravel, and decorative rock.

3.13 Fire Management

After the devastating wildfire season of 1994, the Federal Government created a single Federal Wildland Fire Management Policy and Program Review (WFMP) (BLM 2001b), establishing uniform Federal policies and programs, which essentially are given the assumption that wildland fire respects no boundaries and firefighting resources, are relatively meager.

The development of these principles and policies, which led to the development of a National Fire Plan (NFP) in 2000, assisted the Secretaries of Agriculture and the Interior in responding to severe wildland fires, reducing fire impacts on rural communities and ensuring effective firefighting in the future.

Implementing the National Fire Plan and its 10-year comprehensive strategy requires action at the national, regional, and local levels. The National Interagency Fire Center (NIFC), in Boise, Idaho, houses seven Federal agencies that work cooperatively to support firefighting and other natural-disaster relief work across the country.

The Southwest Area is one of 11 geographic areas established by NIFC to provide regional management of wildfires. The Southwest Area

is managed by the Southwest Area Coordinating Group (SWCG), which consists of Federal and State agencies, including BLM, the U.S. Forest Service, National Park Service, U.S. Fish and Wildlife Service, Bureau of Indian Affairs, and the States of Arizona/New Mexico. The SWCG has the overall responsibility for the following:

- prioritizing resource allocations during times of multiple incidents,
- overseeing the mobilization of emergency resources as a whole,
- developing incident management teams, and
- coordinating information and intelligence within the area.

Management zones divide the Southwest Area for local management coordination and mobilization of firefighting resources. The two planning areas are within the Central West Zone.

Both planning areas are within the Phoenix-Kingman Fire Zone. BLM's Phoenix and Kingman Field Offices have developed a joint wildfire management strategy, which involves delineating fire management units and devising management strategies based on whether the lands within these units are suitable for wildland fire use for resource benefit (See Map 3-17 and Appendix L).

Areas suitable for wildland fire use for resource management benefit include, areas where wildland fire is desired, and there are few or no constraints for its use. Where conditions are suitable, unplanned and planned wildfire may be used to achieve desired objectives, such as; to improve vegetation, wildlife habitat or watershed conditions, maintain non-hazardous levels of fuels, reduce the hazardous effects of unplanned wildland fires and meet resource objectives. Where fuel loading is high but conditions are not initially suitable for wildland fire, fuel loads are reduced by mechanical, chemical or biological means to reduce hazardous fuels levels and meet resource objectives (includes WUI areas).

Areas not suitable for wildland fire use for resource benefit include areas where mitigation and suppression are required to prevent direct threats life or property. It includes areas where fire never played a large role, historically, in the development and maintenance of the ecosystem, and some areas where fire return intervals were very long. It also includes areas (including some WUI areas) where unplanned ignition could have negative effects to ecosystem unless some form of mitigation takes place. Mitigation may include mechanical, biological, chemical or prescribed fire means to maintain non-hazardous levels of fuels reducing the hazardous effects of unplanned wildland fires and meeting resource objectives. The allocation of lands is based on the desired future condition of vegetation communities, ecological conditions, and ecological risks. The allocation of lands is determined by contrasting current and historical conditions and ecological risks associated with any changes (Figure 2.1). The condition class concept helps describe alterations in key ecosystem components, such as species composition, structural stage, stand age, canopy closure, and fuel loadings. BLM's Fire Management Plans, will include the two allocations and identify areas for including fire use, mechanical, biological or chemical means to maintain non-hazardous levels of fuels, reduce the hazardous effects of unplanned wildland fires and meet resource objectives. Additionally, they will identify areas for exclusion from fire (through fire suppression), chemical, mechanical, and/or biological treatments.

3.14 Wild Burros

Upon passage of the 1971 Wild Free-Roaming Horse and Burro Act, BLM became responsible for protecting wild horses and burros and their habitats. Following the act, BLM was directed to delineate herd areas (HAs) where animals were known to occur. Within the Bradshaw-Harquahala Planning Area, herd areas were found to surround Lake Pleasant and to occur in the area spanning the Harquahala and Big Horn Mountains. Agua Fria National

Monument has no wild horse and burro areas (Map 2-5.).

The Phoenix RMP (BLM 1988a) determined that the herd area around Lake Pleasant was manageable and established a herd management area (HMA). The management of wild horses and burros on public land requires the following:

- removing nuisance animals from adjacent private or State land when requested,
- preparing a herd management plan,
- maintaining a herd inventory, and
- removing and disposing of excess animals through public adoption, if possible.

BLM prepared a herd management plan for the Lake Pleasant HMA.

The Lake Pleasant HMA lies 25 miles northwest of Phoenix, partly within the city of Peoria and partly in unincorporated Maricopa and Yavapai Counties. The HMA consists of 80,800 acres of Sonoran Desert, mainly with paloverde and mixed cacti vegetation types. The HMA's overall capacity, referred to as the appropriate management level (AML), is 208 burros. Determined using resource inventory and monitoring information, the AML is used to manage an ecological balance between a viable herd population and a healthy habitat that provides a stable source of forage.

The Harquahala HA is located in western Maricopa County within the Harquahala Management Unit. It contains portions of the Harquahala, Big Horn, and Hummingbird Springs Wilderness Areas. The herd size in the HA is estimated to be less than 50 animals. Its vegetation is a mix of creosote-bursage, mixed paloverde, and cacti communities. The Lower Gila North Management Framework Plan (BLM 1983) suggested the removal of all the burros in this herd area. A manageability analysis (Appendix G) recently conducted found that the Harquahala burro herd is not manageable as a sustainable herd over the long term. The Lake Pleasant HMA, containing 80,800 acres, and the Harquahala HA, containing 156,255 acres, are both entirely within the Bradshaw-Harquahala Planning Area. Both areas had a census in 1999, and herd numbers for the HMA and the HA are as follows:

- Lake Pleasant HMA 206 burros
- Harquahala HA 47 burros

In these areas, no other landowners or managers similarly manage wild horses and burros.

Burros and horses move either by wandering or by managed transportation (either drives or use of vehicles). BLM's policy is that gathered animals are either adopted out of the Federal system or transported to holding facilities or sanctuaries in the Midwest. No animals are moved from one HMA to another.

3.15 Social and Economic Conditions

3.15.1 Population and Household Characteristics

This section summarizes socioeconomic data collected for the baseline socioeconomic analysis of the planning areas prepared in January 2003, by James Kent Associates (JKA). For purposes of this analysis, Maricopa and Yavapai Counties represent the economic study areas because they include the areas where direct social or economic impacts of planning decisions would likely occur.

BLM contracted separately with JKA to develop more specific socioeconomic information. This more specific data is provided, when suitable, as part of the socioeconomic analysis of the study area. JKA developed data subdivided by human resource units (HRUs) (Map 3-18). HRUs, as defined by JKA, identify the "sense of place or community" with which local residents identify, and in which the many daily routines of

everyday life take place. Correlating U.S. Census data with the local human geography (i.e. HRUs) allows for data interpretation that is more meaningful and helps to reveal a region's diversity that might not otherwise be apparent. The planning areas have five HRUs: Wickenburg, Prescott, Lake Pleasant, Phoenix, and Buckeye.

Table 3-5 highlights the changes in population and household levels in the planning areas. Between 1990 and 2000, Maricopa and Yavapai Counties experienced significant population increases.

The Lake Pleasant HRU showed the greatest increase in population of all the HRUs, with a growth rate of 148 percent. The Wickenburg HRU, at 28 percent, experienced the least amount of growth. Combined, the HRUs within the planning areas averaged a 71 percent growth rate between 1990 and 2000. This rate compares with a 40 percent growth rate for the State of Arizona, a 45 percent growth rate in Maricopa County, and a 56 percent growth rate in Yavapai County. This growth trend is also reflected in the total number of households, which increased simultaneously with the population. As shown in Table 3-6, between 1990 and 2000 total housing units increased in all HRUs, with the greatest increase again occurring in the Lake Pleasant HRU. Concurrently, the average value of these housing units increased in all HRUs, with the greatest increase in value also occurring within the Lake Pleasant and Buckeye HRUs.

3.15.2 Employment and Earnings

The U.S. Department of Commerce Bureau of Economic Analysis (BEA) estimates annual employment and earnings for counties throughout the United States. To examine trends in employment by industry over this period, data was obtained from BEA on total annual employment for each county within the study area and Arizona.

Table 3-7 and Table 3-8 summarize, by industry, the percentage of employment and earnings for 2000 for the economic study area.

The categories of Services, Retail/Wholesale Trade, and Manufacturing provided the largest contributions to both employment and earnings. Services, Retail, and Wholesale Trade, Construction, and the combined Finance, Insurance, and Real Estate (FIRE) category showed large increases in earnings from 1990–2000. Farm and Agricultural-Related Services and Mining had very small increases in earnings during the same period and represented relatively low earnings during 2000.

Table 3-7. Employment by Sector (by Percent %)

Sector	Maricopa County	Yavapai County
Farm, Agricultural Services, Forestry, and Other	1.7	2.4
Mining	0.6	2.2
Construction	7.5	10.3
Manufacturing	9.0	5.8
Transportation and Public Utilities	4.9	2.6
Retail and Wholesale Trade	22.0	22.6
Finance, Insurance, and Real Estate	11.0	8.8
Services	33.4	33.1
Government	9.9	12.2
Total Employment	1,896,035	71,985

Source: U.S. Department of Commerce Bureau of Economic Analysis

Table 3-8. Earnings by Sector (by Percent %)		
Sector	**Maricopa County**	**Yavapai County**
Farm, Agricultural Services, Forestry, and Other	1.0	1.9
Mining	0.1	2.7
Construction	7.7	14.6
Manufacturing	13.9	7.6
Transportation and Public Utilities	6.1	3.5
Retail and Wholesale Trade	17.6	16.9
Finance, Insurance, and Real Estate	11.4	5.9
Services	31.0	28.8
Government	11.2	18.1
Total Earnings	$67,771,606	$1,650,234
Source: U.S. Department of Commerce Bureau of Economic Analysis		

The Services category includes professional/technical services, management services, education, accommodations/food service, entertainment/recreation services, and health care/social assistance. Trade includes businesses involved directly with wholesale/retail enterprise. Both the Services/Retail and Wholesale Trade categories reflect economic activity related to growth, tourist, and visitor activity in both Maricopa and Yavapai Counties. The FIRE and Construction categories include businesses and employment that would be expected to increase as a result of the high rate of population growth experienced in both Maricopa and Yavapai Counties over the past decade.

The average earnings per job in Maricopa County increased from $32,456 in 1970 to $35,744 in 2000. The figures for Yavapai County showed a decline in earnings from $28,493 in 1970 to $22,925 in 2000 (Sonoran Institute 2003).

Earnings from mining in the two counties in the planning areas increased from $444,623,000 in 1992 to $727,712,000 in 2000. Mining employment has also increased by 74 percent during the same period. However, mining employment and earnings represent a relatively low percentage for the planning areas (Employment is 0.2 percent; earnings are 0.2 percent).

3.15.3 Unemployment

Changes in the labor force and unemployment rates can provide information on the status of the local economy. Average unemployment rates are shown in Table 3-9. Unemployment rates have generally declined in both counties within the study area and are consistent with rates for Arizona as a whole.

3.15.4 Property Valuation

Table 3-10 summarizes property valuations for each county. The Arizona Department of Revenue assigns values to utilities, airlines, railroads, mines, communications, and pipelines. These are referred to as "Centrally Valued Properties." Counties are responsible for assessing other classes of property, including residential, commercial, industrial, and agricultural properties, which are referred to as "Locally Assessed Properties." For tax year 2003, the net valuation of property assessed by the State of Arizona was $7,158,828,578 for the two counties. Also, total net local assessments for tax year 2003 equaled $19,805,829,810 for the two counties.

A source of local government revenue directly attributable to the public lands in each of the counties consists of payments in lieu of taxes (PILT). BLM administers PILT payments, which are provided by the Federal Government to offset tax revenues lost because of tax-exempt Federal land in their jurisdictions. PILT payments are used for a number of purposes, to include; support community services such as firefighting and police protection, and to provide health care in rural communities.

Congress appropriates funds for PILT payments to eligible units of local government each year. BLM calculates the amount of payments using a formula based on population and the amount of Federal land in a particular local jurisdiction.

These payments are in addition to Federal revenues transferred to local governments under other programs, such as income generated from timber harvests, mineral receipts, and the use of Federal land for livestock grazing.

Table 3-11 shows the PILT payments to Maricopa and Yavapai Counties from BLM during for the period of 1999-2003.

3.15.5 Recreation and Tourism

Increased interest in recreation over the past decade, combined with a large increase in population in the Phoenix metropolitan area and within the planning areas; has resulted in heavy use of BLM's lands for recreation. Currently BLM collects data on visitation to BLM lands through visitor registers at trailheads and recreation sites, and with vehicle counters at a few key locations. BLM's staff noted an increase in the recreation use of public lands through analysis of the data and through personal observation.

National trends in recreation and tourism show a continued expansion of the tourism and recreation sector (American Recreation Coalition 2001). Recreation use of BLM's lands is correspondingly expected to increase at a significant rate (Cabe and Coupal 2001). Understanding the economic importance of recreation use in this area is critical to proper planning for resource protection, economic sustainability, and quality of life.

Employment provided by recreation and tourism is typically classed within the Service and Trade sectors. These sectors also provide diversification to the local economy. They typically reflect the following:

- a growing population involved in retail and commercial businesses,
- a visitor population that uses local services, and
- increasing numbers of retirees as a segment of the population that brings money into the economy through

Table 3-9. Unemployment

		County		Human Resource Unit (HRU)				
Arizona		Maricopa	Yavapai	Wickenburg	Prescott	Lake Pleasant	Phoenix	Buckeye
1990								
Number	123,902	64,742	2,655	282	1,845	2,019	61,133	907
Percent	7.1	4	3	4	2	2	4	6
2000								
Number	133,368	70,931	3,616	175	1,614	4,651	64,567	925
Percent	3.4	3	3	2	2	2	3	3

Note: HRUs represent distinct areas and do not necessarily coincide with jurisdictional boundaries.
Source: U.S. Census Bureau and JKA.

transfer payments and local spending.

During 2000, total service and trade earnings in Maricopa and Yavapai Counties were $33 billion. During 2000, about 1.1 million workers in the service and trade sectors earned an average of $32,000. Recreation in the planning areas will continue to increase due to State and regional population growth, as well as an aging population that may demand increased opportunities for leisure and recreation.

Table 3-11. Payments in Lieu of Taxes

County	1999	2000	2001	2002	2003
Maricopa	$969,069	$1,019,264	$1,465,414	$1,539,003	$1,725,495
Yavapai	$879,521	$973,796	$1,417,178	$1,473,737	$1,359,624

Source: U.S. Bureau of Land Management

OHV use constitutes a rapidly growing recreation use of BLM's lands. Between 1997 and 2002, the number of OHVs sold in Arizona increased from 7,964 to 23,568 vehicles. The direct economic impact to Yavapai County from OHV recreation is an estimated $183 million per year and to Maricopa County exceeds $1.358 billion per year (Silberman 2003).

The following are facts concerning OHV use in Yavapai and Maricopa Counties (Arizona State Parks 2003):

- A total of 27 percent of Yavapai County households are OHV users, compared to 21 percent statewide.
- A total of 19 percent of Maricopa County households are OHV users.
- OHV use supports more than 15,000 jobs in both counties.
- OHV recreation accounts for more than two billion dollars per year in the two counties.

The equestrian industry, including self-housed, self-boarded, and commercially boarded horses, represents a significant contribution to the economic base of the planning areas. Estimated annual direct expenditures in the above activities, using calculations from "A Partial Economic Impact Analysis of Arizona's Horse Industry" (Beattie and others 2001), is $8.5 million for the Wickenburg area alone. Impact on the broader Wickenburg area economy is about $14 million. Equestrian use, boarding stables, and retail have strong roots throughout the greater Phoenix area and in adjacent towns and communities that use BLM's lands for recreation.

3.15.6 Ranching-Agriculture

Farming and ranching have historically been significant contributors to the Arizona economy. In recent years, extensive population growth within the planning areas have resulted in loss of agricultural land and increased conflicts with farm and ranch operations.

The United States Department of Agriculture (USDA) National Agricultural Statistics Service reports livestock production statistics for all counties. Data for Maricopa and Yavapai Counties for livestock receipts during 1999 through 2002 shows that inventories of cattle remained fairly constant during this four year period (see Figure 3-1). In 2002, a total of 36,000 head of cattle were raised in these two counties. The period from 1999 to 2002 experienced the following:

- Cattle inventories remained fairly constant,
- Cash receipts for livestock averaged $500,000 per year, and
- Total agricultural product receipts averaged $900,000 per year.

Cash receipts from crops were relatively low in Yavapai County (about one percent of the total for the two counties). Receipts from cattle represented a more significant portion of the

receipts (nine percent of the total for the two counties).

Total net income from farming and ranching in Maricopa County rose from 1970 to 1985, and then dropped steadily to the year 2000. In Yavapai County, net income dropped from $9 million (1970) to $2.8 million (1986), and then rose to $9.7 million in 2000.

3.16 Environmental Justice

In 1994, the President of the United States issued Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority and Low-Income Populations." The objectives of the executive order include the following:

- develop Federal agency implementation strategies,
- identify minority and low-income populations where proposed Federal actions could have disproportionately high and adverse human health and environmental effects, and
- encourage the participation of minority and low-income populations in the NEPA process.

Two types of data must be reviewed to evaluate environmental justice effects: minority populations and income levels. Minority and income level data for the HRUs were obtained from the 2000 census data.

3.16.1 Minority Populations within the Planning Areas

According to U.S. Census Bureau for 2000, the combined minority population of the planning areas averaged 23.9 percent of the population. Arizona has a similar minority population rate of 24.4 percent. Table 3-12 shows minority populations by different areas in the planning areas.

The planning areas were analyzed at a block-group level to determine where higher-than-average minority populations lived. Minority populations were identified in the Bradshaw-Harquahala Planning Area but not within Agua Fria National Monument. The largest minority population was located to the west and southwest of Wickenburg. Other portions of the Bradshaw-Harquahala Planning Area with significant minority populations included the following:

- a small parcel of tribal land just outside Prescott,
- an area extending along Interstate 60 near the towns of Circle City and Wittmann, and
- several populations scattered throughout the northwest Phoenix metropolitan area.

Using the county averages for comparisons, each Human Resource Unit (HRU) and Community Resource Unit (CRU) was evaluated to determine whether the percentage of minority population was greater than the county average. If HRU or CRU percentages exceeded the county averages, they were evaluated for environmental justice effect on the basis of their minority population and income levels.

Table 4-9 shows HRUs and CRUs whose percentage of Hispanic populations and percentage of populations living below the federally mandated poverty level exceed those of their counties. Minority populations and poverty are the two criteria for an environmental justice analysis.

Table 3-13. Persons Below Poverty Level

Persons Below Poverty Level (BPL)	Arizona	Maricopa County	Yavapai County	Wickenburg	Prescott	Lake Pleasant	Phoenix	Buckeye
1990 Population BPL	564,362	257,359	14,308	1,370	8,999	9,424	239,334	5,330
% of population BPL	**16	12	13	16	15	8	12	24
2000 Population BPL	698,669	355,668	19,552	1,484	9,286	13,700	332,297	6,153
% of population BPL	**14	12	12	14	10	4	12	15

Notes: ** Percentage of persons living below the poverty level was determined by dividing population below poverty level by total population of county or HRU as appropriate.

HRUs represent distinct areas and do not necessarily coincide with jurisdictional boundaries.

Source: U.S. Census Bureau and JKA.

The only HRU in Yavapai County with minority populations that exceed the county average is the Wickenburg HRU. The percent of Hispanics in the Wickenburg HRU (11 percent) exceeds the Yavapai County percentage of Hispanics (10 percent) by only 1 percent. In the Wickenburg HRU, the percentage of Hispanics in the Aguila CRU (16 percent) exceeds the Yavapai County percentage of Hispanics by 6 percent.

The percentage of Hispanics in the Phoenix HRU (27 percent) exceeds the Maricopa County percentage of Hispanics (25 percent) by 2 percent. In the Phoenix HRU, the percentage of Hispanics in the community of Tolleson (78 percent) exceeds the Maricopa County percentage of Hispanics by 53 percent.

The percentage of Hispanics in the Buckeye HRU (26 percent) exceeds the Maricopa County percentage of Hispanics (25 percent) by 1 percent. In the Buckeye HRU, the percentage of Hispanics in the Buckeye CRU (28 percent) exceeds the Maricopa County percentage of Hispanics by 3 percent, and the West Tonopah CRU (32 percent) exceeds the Maricopa County percentage of Hispanics by 7 percent.

3.16.2 Low-Income Populations within the Planning Areas

According to U.S. Census Bureau for 2000, 11.4 percent of the total population within the planning areas was below the poverty level. Within Arizona, 13.9 percent of the total population was below the poverty level. The entire population within Agua Fria National Monument was statistically below the poverty level. Additionally, most of the west, northwest, and northeast portions of the Bradshaw-Harquahala Planning Area were classified as below the poverty level. Table 3-13 shows populations below poverty level by county and HRU.

Using the county averages for comparisons, the percentage of persons living below the poverty level for each HRU and CRU was compared to the county average. If HRU or CRU percentages exceeded the county averages, they were evaluated for environmental justice effect on the basis of their income levels.

Table 4-9 shows HRUs and CRUs whose percentage of Hispanic populations and percentage of populations living below the federally mandated poverty level exceed those of their counties.

The Wickenburg HRU (14 percent) exceeds Yavapai County (12 percent) by 2 percent. In the Wickenburg HRU, both the Aguila CRU (20 percent) and Yarnell CRU (16 percent) exceed the county level by 8 percent and 4 percent, respectively. While the Prescott HRU is lower

than that of the county's, in the Prescott HRU, the Agua Fria CRU (15 percent) exceeds the county level by 3 percent.

The Phoenix HRU (13 percent) exceeds the Maricopa County level (12 percent) by one percent. The Buckeye HRU (17 percent) exceeds the Maricopa County level by 5 percent.

3.17 Health and Safety

BLM has several programs that guide management to protect public health, safety, and property. These responsibilities include such activities as identifying abandoned mine lands (AML), protecting lands from illegal dumping of solid and hazardous materials, preventing theft of Federal property or misuse of resources, and managing wildfire. The proximity of the AFNM and Bradshaw-Harquahala Planning Area to metropolitan Phoenix, along with the accelerated growth of Maricopa County over the past two decades, has put considerable user pressure on these lands, emphasizing the need for BLM to develop and implement additional strategies for protecting the health and safety of visitors.

3.17.1 Abandoned Mine Lands

Due to the high level of mining in and around the Bradshaw Mountains, thousands of abandoned mines are potentially within the planning areas. Most of these mines are unmarked, unfenced, and pose serious or fatal risks to humans who may accidentally come upon them or deliberately seek them. In addition, hazardous materials are present at some of the abandoned mines.

Since 1992, BLM has teamed with the Arizona State Mine Inspector and Federal/State agencies, to evaluate the need for clean-up and closure of abandoned mine sites that pose safety risks to visitors; or are causing environmental damage. Since that time, about 9,000 sites throughout the State have been inventoried and mapped (Arizona State Mine Inspector 2002). Additionally, BLM has joined an aggressive program to heighten public awareness of the safety and environmental hazards of abandoned mine lands.

A total of 957 abandoned mines were documented and mapped within the the planning areas. Map 3-19 shows the distribution of these mines. Through the Abandoned Mine Lands program, the following mines were fenced (Arizona State Mine Inspector 2001):

- New River-Black Canyon Mines in June 2000,
- Mayer Shafts in Yavapai County in November 2000,
- Prescott and Humboldt Mines in March 2001, and
- King Midas and Morgan Butte Mines in June 2001.

3.17.2 Hazardous Materials

BLM's Hazardous Materials program addresses both solid and hazardous wastes, in accordance with the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). These acts provide comprehensive guidance to BLM for performing required assessments, monitoring, pollution prevention, recordkeeping, reporting, response actions, and training on a timely basis. BLM is also responsible for compliance with Federal, State, interstate, and local regulations.

Waste is defined to include solid and hazardous waste, hazardous materials, and hazardous substances, as defined by the statutes reference in 518 DM 2.3 (Department of Interior - Department Manual). Site-specific hazardous material inventories are completed when lands are either acquired or disposed. BLM cannot acquire contaminated lands unless directed by Congress, court mandate, or as determined by the Secretary of the Interior (602 DM 2). Land disposal actions must comply with disclosure requirements in 40 CFR 373.

A total of 637 hazardous materials occurrences were found in the planning areas, mostly in the Phoenix metropolitan area (Map 3-20). Six of the 637 hazardous material sites are on BLM-administered lands. Five of the sites are leaking underground storage tanks, and one site is an inactive solid waste landfill. These sites are listed in Table 3-14.

3.18 Transportation and Public Access

Travel designations for the planning area vary based on the management plan in effect. Where the travel designation is Open or Limited to Existing Roads and Trails, route proliferation at some level has occurred over time. A route inventory is currently being conducted on the entire planning area to build a route network database for planning. The inventory is scheduled to be complete by January, 2006.

Routes are inventoried using GPS equipment mounted on motorcycle, ATV, truck or on foot. The data collected includes route type, level of use, points of interest along the route and a photo is taken on each route. Route inventory crews review the routes to screen out random cross country travel from actual existing routes. Under current management in the planning areas, a total of 2,240 miles of routes have been identified. A current portrayal of the route inventory can be found on maps 3-21, 3-22, 3-23, 3-24 3-25, 3-26.

Upon completion of the Resource Management Plan, the route network that will continue to be managed by BLM will be determined using a structured route evaluation process such as that described in Appendix D - Route Evaluation and Designation Process. Decisions of which specific routes will be open, closed, or somehow limited to continued vehicular use are implementation actions that will be made through a separate process.

Table 3-14. Summary of Hazardous Materials Sites on BLM Lands within the Planning Area

First Search ID	Database	Site Name	Site Location	County
0-000288	LUST	ADOT Cordes Junction Maintenance Yard	I-17 MP 263 & Junction State Route 69 Mayer, Ariz. 86333	Yavapai
0-000937	LUST	Texaco #23	I-17 Highway 69 Intersection Cordes Junction, Ariz. 86333	Yavapai
0-002602	LUST	Carioca/Cordes Junction Chevron	I-17 & Highway 69 Cordes Junction, Ariz. 86333	Yavapai
0-002736	LUST	Sunward/JSJ Mining Co West	11701 West Indian School Road Phoenix, Ariz. 85038	Maricopa
0-003625	LUST	Canyon Service Center	34400 Old Black Canyon Highway Black Canyon City, Ariz. 85324	Yavapai
SW17	SWLF	Sundog Ranch*	1.3 miles Northeast of AZ 89 on Sundog Ranch Road, Prescott, Ariz.	Yavapai

Notes: * Site is inactive

ADOT - Arizona Department of Transportation

LUST - Leaking Underground Storage Tank

MP - Milepost

SWLF - Solid Waste Landfill

Chapter Four

Chapter 4 - Environmental Consequences

4.1 Introduction

Chapter 4 analyzes the environmental impacts of implementing each Alternative described in Chapter 2. The affected environment described in Chapter 3 comprises the baseline used for projecting impacts. Management that could affect resources or resource uses has been analyzed, and the conclusions drawn from that analysis are described for the resource consequence section.

Resource management plans (RMPs) are designed to provide broad guidance and are not intended to be site or project specific. Current planning guidance allows implementation-level decisions to be made in a RMP when suitable. The impacts discussed in this chapter are general, described at a landscape or regional level. RMPs are implemented through site-specific projects and activity plans; these steps often require a separate site-specific National Environmental Policy Act (NEPA) analysis.

Many management actions are common to all Alternatives or to several Alternatives. Similarly, the impacts of implementing a given set of management actions might be common to a range of Alternatives or even to several seemingly disparate resources and uses. When a proposed activity is not addressed in a specific section, no impact is expected.

4.2 Analytical Assumptions

The following general assumptions and guidelines were used in the analysis of environmental consequences. Other assumptions specific to a particular resource are presented under that resource.

- Funding and personnel would be sufficient to implement any of the Alternatives as described for Chapter 2.
- The laws, regulations, and policies that direct Bureau of Land Management's (BLM) work would be applied consistently and as suitable across all Alternatives.
- All Alternatives would maintain vegetation resources and meet the need for water, nutrients, and energy cycling.
- The approved RMP would remain in effect for 15 to 20 years. The first year that the RMP would be in effect would be 2005. For items that were analyzed over time, the analysis was carried out to 2025.
- County populations for 2005 and 2025 would be as reported in the projections used in this RMP. Population projections for Maricopa and Yavapai Counties for 2005 were calculated by extrapolation from the year 2000 Census and the official Arizona Department of Economic Security annual population estimate for 2003. For the year 2025, this RMP uses the Maricopa Association of Governments (MAGs) interim projections by Municipal Planning Area (MPA) in Maricopa County. For the year 2025, a projection was developed for this RMP for Yavapai County from the known deviation between the 1997 population projection series for future years, the year 2000 Census (an actual county population that was 110 percent of the projected population), and the Arizona Department of Economic Security (DES) population estimate for 2003 for Yavapai County and its

incorporated places (an estimated county population that was 112 percent of the projected population).

- Short-term impacts are those expected to occur during and within 1 to 5 years of implementing the activity. Long-term impacts are those that would occur after the first 5 years of implementation.
- Recreational use in the planning areas would continue to increase. A visitor use study prepared by Arizona State University West (Andereck and others 2002) lists the general themes of recreation. The study was based on meetings with focus groups for various types of recreation and on surveys of recreation users in the planning areas.
- A total of 70 percent of visitors to BLM's lands in the planning areas reside in Maricopa and Yavapai Counties. The analysis assumed that the 70 percent share would remain constant throughout the life of the plan.
- Appendix C lists the laws and regulations with which all activities must comply and that might limit the range of management actions.

4.3 Types of Effects to be Addressed

This chapter describes the direct, indirect, and cumulative impacts of implementing *Alternative A*--the No-Action Alternative--and each of the four other Alternatives.

The impacts of the planning decisions on the visitor's experience would depend on the expectations and values of the individual visitor. A particular action could benefit some users and adversely affect others. The degree of impact would also vary relative to user sensitivity. Sensitivity would vary among user types and might also differ between new users and traditional users of a particular resource.

The impact analysis presents effects that might enhance or improve a resource as well as those that might degrade a resource. Instead of analyzing every minor interaction and cause-effect relationship, the impact analyses are confined to actions that have direct, immediate, and significant effects on the planning areas. Cumulative impacts, discussed at the end of the chapter, are effects that the Alternatives could have in relation to other past, current, and reasonably foreseeable future actions in and adjacent to the planning areas.

4.4 Incomplete or Unavailable Information

Federal regulations (43 CFR 1502.22) mandate that agencies evaluating reasonably foreseeable significant adverse effects on the human environment, in an Environmental Impact Statement (EIS), must discuss incomplete or unavailable information if that information is essential to a reasoned choice among Alternatives. This EIS is based on the best available data for each resource.

4.5 Critical Elements that will not be Addressed

There would be no known adverse impacts on certain critical elements of the human environment. These elements include prime or unique farmlands, floodplains, and hazardous or solid waste. This plan has not addressed these critical elements because they are not present in the planning areas or would not be affected by the management activities under the Alternatives. These critical elements would be considered, as suitable, in site-specific project design and implementation processes. Each of these excluded elements is discussed below.

Prime and Unique Farmlands: There are no prime or unique farmlands or farmlands of

statewide or local importance on public lands in the planning areas. None of the actions in the Alternatives analyzed in detail would disturb farmlands. Therefore, impacts on prime and unique farmlands are not analyzed further.

Floodplains: Although floodplains exist in the planning areas, no projects or activities resulting in permanent fills or diversions in, or placement of permanent facilities, on floodplains of major rivers are projected to occur under any of the proposed Alternatives. Therefore, impacts on floodplains are not analyzed further.

Hazardous and Solid Waste: No hazardous, toxic, or unapproved solid waste sites are known to occur on public lands in the planning areas. None of the actions, activities, and uses projected to occur with implementing the plan Alternatives would require the handling, storage, or release of significant amounts of these wastes. Therefore, impacts on or from hazardous and solid wastes are not analyzed in detail.

Indian Trust Assets: Indian trust assets are lands, natural resources, money, or other tangible assets held by the Federal Government in trust or restricted against alienation for Indian tribes and individual Indians. BLM has determined that the actions described for this land use plan would not affect Indian trust assets.

4.6 Impacts on Special Area Designations

This analysis covers the suitable Wild and Scenic River (WSR) segments of the Agua Fria River in Agua Fria National Monument, five existing wilderness areas, the Harquahala Mountain Summit Road Back Country Byway, proposed back country byways, and existing and proposed Areas of Critical Environmental Concern (ACEC).

The five existing wilderness areas were studied and found to have sufficient values of naturalness, solitude, and primitive and unconfined recreation opportunities to be designated by Congress. The values are somewhat diminished at the edge of the areas because of complex boundaries where different land uses occasionally affect core wilderness values.

A 1996 Colorado study found that scenic byway designation led to an increase in traffic on 8 of 21 new byways. This analysis assumes that proposed byways would increase traffic on the proposed routes because the routes accentuate cultural and scenic resources in the national monument and near the Wickenburg area.

4.6.1 From Special Area Designations

***Alternative A* (No Action)**

Alternative A would create no new special area designations. No impacts are expected to proposed suitable WSR segments, ACECs, the five wilderness areas, or the Harquahala Mountain Summit RoadBack Country Byway. Perry Mesa and Larry Canyon ACECs in Agua Fria National Monument would be maintained. No impacts are expected because the ACEC resources of relevance and importance are protected by the monument proclamation (Appendix A).

Alternative B

Designating Bloody Basin Road as a back country byway could affect the segments of the Agua Fria River suitable for WSR designation by increasing traffic and visitor access near the river crossing. More traffic and visitor use could diminish the scenic and habitat values and alter the recreation experience in the corridor. Since the road would be maintained to BLM type three standard, which would require high-clearance vehicles to traverse it, the increase in visitation is expected to be small. Byway visitors would have their recreational experience enhanced by

interpretation of Agua Fria National Monument's resources along the route.

Intensified traffic and recreation could affect the residents of the Horseshoe Ranch because of increased visitation, trespass, dust, and road maintenance needs. In turn, more visitors and traffic could impede pronghorn movement and migration.

Establishing the Constellation Mine Road Back Country Byway would increase the number of visitors along the road as well as to Hassayampa River Canyon Wilderness. Vehicular traffic would intensify along the byway, adversely affecting residents and ranchers residing in the area. Increased traffic, dust, road maintenance needs, and visitor levels would be expected. The increase in visitors could degrade the Hassayampa River Canyon wilderness experience for some visitors by reducing solitude opportunities. Conversely, byway visitors would have their recreation experience enhanced by interpretative signs placed along the byway describing resource and cultural values, including the area's ranching and mining history.

No impacts to the Harquahala Mountain Summit Road Back Country Byway are expected.

Alternative C

Impacts from designating back country byways would be similar to those described for *Alternative B.*

Finding tributary segments as eligible for designation as part of the Agua Fria WSR proposal would not affect the now protected and suitable WSR corridor in Agua Fria National Monument. Interim management protection prescriptions would be extended to other river tributary segments. This action would prevent impairment of any outstandingly remarkable values on another 6,600 acres of WSR corridor. The total area in existing and proposed corridors would be 13,100 acres or more than double the size of the existing proposed WSR corridor.

Designating four ACECs for protecting Gila chub habitat would not affect suitable or proposed WSR segments. Management actions proposed for the ACECs could be accomplished without affecting proposed WSR segments.

The Harquahala Mountain Outstanding Natural Area (ONA) ACEC maintains undeveloped lands, offers dispersed and resource-dependent recreational experiences, enhances natural quiet and dark sky conditions, and safeguards wildlife habitats and connectivety. Reduced dust from limited vehicle travel designations could maintain air quality, improving vistas from adjoining wildernesses and the Harquahala Mountain Summit Back Country Byway.

Alternative D

Designating the Agua Fria Riparian Corridor ACEC would not affect segments of the Agua Fria River suitable for WSR status. Under current WSR interim management, vehicle routes and developments might be restricted to protect outstandingly remarkable values, including riparian habitat and wildlife. Acquiring land along Indian Creek and removing the Perry Mesa and Larry Canyon ACECs would not affect the proposed ACEC or the Purpose and Significance of Agua Fria National Monument.

Impacts on designated wilderness from establishing Baldy Mountain ONA ACEC would be similar to those described for Harquahala Mountain ACEC in *Alternative C*.

***Alternative E* (Preferred Alternative)**

Impacts from designating the Bloody Basin Road and Constellation Mine Road/Buckhorn Mine Road Back Country Byways would be similar to those described for *Alternative B*. No impacts to the Harquahala Mountain Summit Road Back Country Byway are expected.

Acquiring land along Indian Creek and removing the Perry Mesa and Larry Canyon ACECs would have no resource impacts on

segments suitable for wild and scenic river status.

Impacts on designated wilderness from establishing the Harquahala Mountain ONA ACEC would be similar to those described for *Alternative C*.

4.6.2 From Lands and Realty Management

***Alternatives A* (No Action), *B, C, D* and *E* (Preferred Alternative)**

In Agua Fria National Monument disposing of land is not an option, and acquiring private lands (inholdings) would be consistent with management effectiveness and the national monument's Purpose and Significance. Disposal of lands would not affect any existing wilderness area, ACEC, or back country byway.

Acquiring lands within wilderness areas would benefit wilderness management by consolidating management of all lands within their boundaries. This outcome would prevent future development of non-Federal lands and retain wilderness values.

The Agua Fria WSR Corridor was found suitable for designation with the existing utility corridor and utilities in place. New utilities proposed for the corridor would be subject to approval for protecting the resources of the Agua Fria National Monument and the interim management guidelines of the WSR corridor. Facilities approved for construction under these criteria would not affect the existing WSR corridor.

Acquiring lands in the eligible segments of the WSR corridor in the national monument could benefit the segments by potentially adding more lands to the interim nonimpairment status. Such acquisitions would prevent the following:

- development on private lands, such as resumed mining on the Richinbar site,
- building new structures and range improvements, and
- installing communication towers and technological supports.

Such activities could increase ground disturbance and noise and add new structures visible from the WSR corridor. These developments could also diminish scenic values, including night skies, and disturb riparian habitat and wildlife populations on public land.

Allowing continued development of small utility distribution systems could degrade existing wilderness if development was proposed for in-holdings or on property near wilderness boundaries. Developments could affect wilderness character by adding noticeable human-made elements to the landscape. Increased presence of people and activity could lead to loss of solitude in some wilderness areas and lessen the recreation experience.

Retaining an existing multi-use utility corridor extending from Yarnell along the southwest portion of Hassayampa River Canyon Wilderness could degrade the wilderness. Projects added to the corridor could alter the natural and visual character of the area and diminish the wilderness experience for some visitors. Retaining other utility corridors should not affect other wilderness areas because the wilderness values were found to exist with the corridors in place and the potential for utility development was known.

4.6.3 From Management of Soil, Air, and Water Resources

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Impacts to the WSR in Agua Fria National Monument should be prevented by (1) general guidance to maintain or improve resource conditions and (2) management to protect national monument resources. Obtaining legal

entitlement of water resources could benefit the WSR segments of the Agua Fria River by securing water availability to maintain the remarkable values that led to designation. Some of these values are described in the national monument's Purpose and Significance statements.

Requirements to maintain compliance with local and regional dust standards could improve air quality in some ACECs and wilderness areas, and enhance vistas from wilderness and back country byways.

No impacts are expected from soil and air resource management as described for the Lower Gila North Management Framework Plan (MFP) (BLM 1983). However, ensuring the legal availability of water and maintaining adequate flows of springs in the Harquahala Mountains would protect the wilderness area by protecting special spring and riparian features, sustaining diverse wildlife habitat, and maintaining habitat quality near springs.

Inventorying and filing for water rights in the Harquahala Mountains, Big Horn Mountains, Hummingbird Springs, Hassayampa River Canyon, and Hells Canyon Wilderness Areas would protect the areas by preserving the wilderness values of water sources.

4.6.4 From Biological Resource Management

***Alternative A* (No Action)**

Managing existing biological resources could affect the Agua Fria WSR Corridor. Opportunities to enhance wildlife habitat, species diversity, and riparian health exist in the national monument. Prescribed burning, tree planting along the river and its tributaries, and other actions to restore natural ecological conditions would enhance the values that make the river segments eligible for Wild or Scenic designation.

Transplanting populations of Gila chub would benefit the Larry Canyon and Perry Mesa ACECs by ensuring persistence of the species.

Alternative B

Impacts under *Alternative B* would be the same as described for *Alternative A* for Agua Fria National Monument except that Larry Canyon ACEC would be eliminated.

The Harquahala Mountains Wildlife Habitat Area (WHA) could affect Harquahala Mountains Wilderness by strengthening wildlife populations and maintaining more natural conditions next to the wilderness. New wildlife waters installed in wilderness areas could decrease naturalness by introducing more human developments in the wilderness. The wildlife waters would not be noticeable because they would be installed for consistency with Visual Resource Management (VRM) Class I objectives.

Alternative C

Impacts under *Alternative C* would be the same as described for *Alternative B* for Agua Fria National Monument. Managing pronghorn movement corridors could enhance the proposed eligible segments of the WSR in the Agua Fria River. Other controls on vehicle routes and recreation site development where wildlife corridors cross the river would help retain the outstandingly remarkable values that led to the areas' suitability.

The Harquahala/Belmont/Big Horn wildlife corridor and the Belmont/Big Horn WHA area would benefit Hummingbird Springs, Big Horn Mountains, and Harquahala Mountains Wilderness Areas by retaining natural open space and wildlife populations next to the wilderness and allowing wildlife movement between the wilderness areas**.** Protected wildlife movement areas would help sustain natural populations in the wilderness areas by providing extended habitat and maintaining the genetic diversity to assure long-term viability as individual animals move from one area to

another. Healthy wildlife populations in and around the wilderness areas would increase opportunities for wildlife viewing and hunting and retain the natural character of open space. The impact of new wildlife waters installed in wilderness would be the same as for *Alternative B*.

Alternative D

Impacts from wildlife management in Agua Fria National Monument would be similar to those described for *Alternative C*.

In the Bradshaw-Harquahala Planning Area biological resources are mainly managed through ACEC designations in locations that could affect wilderness areas. These impacts are discussed in section 4.6.1.

***Alternative E* (Preferred Alternative)**

The Harquahala Mountains ONA ACEC and the movement corridors would protect wildlife habitat and help maintain natural conditions, open space, and wildlife habitat/populations on public lands. Protecting and enhancing wildlife populations contributes to the naturalness of the area and to supplemental values that enhance visitor experiences, such as increased opportunities for wildlife viewing or hunting.

Impacts of new wildlife waters installed in wilderness would be the same as for *Alternative B*.

4.6.5 From Cultural Resource Management

***Alternative A* (No Action)**

There are no impacts expected.

Alternative B

Under *Alternative B* the historic Teskey homestead near the Agua Fria River would be allocated to public use and developed for public education and visitation. Visitors might disturb wildlife or leave trash in the area. Conversely, the presence of site visitors could help to deter illegal trash dumping. Developing an interpretive site is consistent with the recommended scenic status of this river segment since the Teskey site is not visible from the river. According to BLM's Manual 8351, recreational facilities are compatible with areas that are suitable for WSR status if such facilities are unobtrusive and do not adversely affect the natural character of a WSR area.

The Badger Springs petroglyph site, next to the proposed wild segment of the Agua Fria River, would also be interpreted for public visitation. The high level of visitation in this area would enhance the effectiveness of educational exhibits. Increased awareness of the site could make it more vulnerable to vandalism, which is why BLM has completed a detailed documentation of the site. On-site facilities would be limited to a small number of unobtrusive interpretive signs. More substantial recreational facilities would be located away from the river. The increase in visitors to the site and impacts are expected to be insignificant because Badger Springs Wash is already a popular area that serves as the most accessible and easy route for hiking in the river canyon.

Conducting Class III surveys along 12 miles of the Agua Fria River would provide useful information necessary to identify and protect cultural resources that comprise one of the outstanding values of WSR suitability.

In conducting surveys and scientific research in cultural priority areas in the Harquahala Mountains and Hassayampa River Canyon Wilderness Areas, these crews could temporarily diminish wilderness values, such as solitude. Most of these activities are expected to take place outside of wilderness areas to assess zones where cultural resources are more accessible and at greater risk of damage.

Sites developed for public use could affect the Harquahala Mountains and Hassayampa River Canyon Wilderness Areas through increased

visitation and activity, leading to a diminished sense of solitude for some visitors.

Alternative C

Impacts would be similar to those described for *Alternative B;* except that the area surrounding the Badger Springs petroglyph site would be developed with fewer facilities, in accordance with the Moderate public use level.

Alternative D

Potential impacts would be limited to Harquahala Mountains Wilderness and would be the same as described for *Alternative B*. The Wickenburg/Vulture Special Cultural Resource Management Area (SCRMA) would not be developed for public use under *Alternative D*.

***Alternative E* (Preferred Alternative)**

Potential impacts would be limited to Harquahala Mountains Wilderness Area and would be the same as described for *Alternative B*.

4.6.6 From Paleontological Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected.

4.6.7 From Recreation Management

***Alternative A* (No Action)**

Current recreation uses would continue. Greater levels of visitation and motorized recreation use could lessen the values of eligible WSR segments of the Agua Fria River through increased noise, litter, and vehicular travel at several crossings. Existing vehicle routes in the national monument would remain open except for those in the WSR corridor. Increasing levels of recreation use and motorized activity on the boundaries of the five designated wilderness areas could lessen, to varying degrees, the quality of wilderness-based recreation and solitude opportunities in the interior and along wilderness boundaries. Existing ACECs would be maintained, and no impacts from recreation activities are expected.

Alternative B

The Back Country RMZ in Agua Fria National Monument would help preserve the values of the wild segment and the southern scenic segment of the Agua Fria River. A recreation setting of mainly semi-primitive non-motorized, in conjunction with VRM Class II objectives, would maintain the natural character and visual quality making the areas eligible for designation. Only dispersed camping is permitted in the Back Country RMZ, and this activity would not degrade the WSR segments.

The Front Country RMZ in the monument could affect the northern scenic segment of the Agua Fria River. Roaded natural and semi-primitive motorized recreation settings could lead to more vehicular travel in areas near the scenic corridor and diminish the recreation experience for some users in the corridor. Developing campgrounds would lead to concentrations of visitors. If the river is easily accessible from the sites, the increase in recreation use could change the character of the corridor in certain areas by adding to noise levels and litter. Dispersed camping would continue but is not expected to significantly affect the area. Restricting target shooting near high-use areas would affect the WSR segments by enhancing the recreation experience for other users. Visitors could still target shoot in the remaining areas within the corridor, which might degrade WSR values by damaging cultural resources such as petroglyphs.

Hieroglyphic Mountains Special Recreation Management Area (SRMA) could concentrate off-highway vehicle (OHV) use, increase traffic,

and increase noise at the southwest edge of the wilderness. This would diminish the sense of solitude and natural quiet for visitors in the wilderness. Greater fugitive dust could potentially enter Hells Canyon Wilderness, obscuring vistas.

No Special Recreation Permit (SRP)-related impacts are expected on wilderness areas, ACECs, or back country byways.

Alternative C

Impacts to Agua Fria National Monument would be similar to those described for *Alternative B*.

Impacts on Hells Canyon Wilderness from the Hieroglyphic Mountains SRMA would be similar to those described for *Alternative B*.

No SRP-related impacts to wilderness areas, ACECs, or back country byways are expected.

Alternative D

Impacts to Agua Fria National Monument would be similar to those described for *Alternative B*.

Managing the Hieroglyphic Mountains SRMA to phase out motorized use over a 10 to 20 year period could enhance management within the Hells Canyon wilderness. Removing the sights and sounds of OHV activities over time could reduce the degradation of wilderness values of solitude and naturalness and improve the primitive recreation experiences of visitors to wilderness users. Impacts to the Hells Canyon wilderness from motorized activities would be similar to those described under *Alternative B* until motorized use is phased out.

Managing the allocation to maintain or enhance wilderness characteristics would be compatible with managing the proposed Belmont-Big Horn Mountain ACEC. Maintaining natural conditions and providing opportunities for primitive recreation would not influence the resources within the proposed ACEC. The ACEC would contain 23,088 acres of the allocation to maintain or enhance wilderness characteristics.

No SRP-related impacts to wilderness areas, ACECs, or back country byways are expected.

***Alternative E* (Preferred Alternative)**

Impacts to Agua Fria National Monument would be similar to those described for *Alternative B*.

The Hieroglyphic Mountains SRMA would also be similar to *Alternative B*.

No SRP-related impacts on wilderness areas, ACECs, or back country byways are expected.

4.6.8 From Visual Resource Management

***Alternative A* (No Action)**

In Agua Fria National Monument, no impacts are expected to WSR suitable segments.

Within the Bradshaw-Harquahala Planning Area, proposed projects near wilderness areas could lessen the quality of the recreation setting and viewshed by allowing human intrusions into visual landscapes. Wilderness would remain VRM Class I areas and experience no visual change in their boundaries.

Alternative B

In the monument, managing the Front Country RMZ to VRM Class III objectives could degrade the WSR segments by allowing projects to more visually intrude into the landscape next to the river segments and by diminishing the scenic values that led to the determination of eligibility.

Alternative B is not expected to affect the visual resources of wilderness areas, existing or proposed back country byways, or the Tule Creek ACEC.

Alternative C

Impacts in Agua Fria National Monument would be similar to those under *Alternative B* except that they would mainly be limited to the northern WSR segment because the Back Country RMZ would be expanded and managed to VRM Class II objectives. Managing the back country byway to VRM Class II would prevent substantial visual intrusions in the byway's viewshed.

Alternative D

Impacts in Agua Fria National Monument would be similar to those under *Alternative C*.

Managing Harquahala Mountain ONA ACEC to VRM Class I objectives would benefit Harquahala Mountains Wilderness by raising the VRM class of 106,990 acres surrounding the area to the same class as the wilderness area, thus maintaining a large natural appearing landscape from within the wilderness area. Managing the ACECs to Class I objectives would benefit the Sheep Mountain Research Natural Area (RNA) and Black Butte ONA by minimizing visual intrusions into the natural setting of both areas. No future change or impairment to the viewshed in these areas would be expected.

***Alternative E* (Preferred Alternative)**

Impacts to Agua Fria National Monument would be similar to those under *Alternative C* on the proposed WSR segments.

Impacts to wilderness areas, which would remain VRM Class I in the Bradshaw-Harquahala Planning Area, would be the same as for *Alternative A*. No visual impacts to wilderness areas, existing or proposed back country byways, or to Tule Creek ACEC are expected.

Managing Harquahala Mountain ONA to VRM Class I objectives would benefit the adjacent Harquahala Mountains, Big Horn Mountains, and Hummingbird Springs Wilderness Areas by minimizing visual intrusions into the landscape. Impacts of managing the Black Butte ONA to Class I objectives would be similar.

4.6.9 From Rangeland Management

***Alternative A* (No Action)**

Applying the *Arizona Standards for Rangeland Health* (see Section 2.7.1.1) and *Guidelines for Grazing Administration* (see Section 2.7.1.9) would reduce impacts and improve characteristics for which special area designations, like wilderness, were designated. Land health standards would improve upland soils and vegetation to minimize erosion and other ground disturbance produced by inadequate vegetation cover. Additionally, the standards would improve riparian areas and stream functions, which would enhance the habitat and help sustain the landscape's natural character.

Reaches of the Agua Fria River were determined to have WSR values despite grazing in the corridor. Continued grazing should not degrade values, and applying Land Health Standards should maintain or improve habitat characteristics.

This Alternative is not expected to affect wilderness areas, ACECs, or back country byways.

Alternative B

Impacts of applying the Land Health Standards and Rangeland Management guidelines would be the same as for *Alternative A*.

In the uplands of special area designations, *Alternative B* would have impacts as described in the impacts of applying Land Health Standards above. Restricting grazing of riparian areas to winter would have impacts on the Agua Fria River WSR corridor and the riparian corridor in the Hassayampa River

Canyon Wilderness. Wildlife habitat would likely be improved, and wildlife and livestock would compete less for resources during the winter. Improving vegetation and forage conditions would also benefit wilderness areas by improving natural and natural-appearing ecological conditions, enhancing wilderness values and improving visitor's experience.

Alternative C

Impacts of applying the Land Health Standards and Rangeland Management guidelines would be the same as for *Alternative A*.

Impacts to the riparian corridors would be similar to those described for *Alternative B*, except that the year-round restriction of grazing should eliminate all competition between wildlife and livestock for resources in the WSR and riparian corridors. Habitat should be further improved, enhancing the wildlife and scenic values of the eligible WSR segments of the Agua Fria River and in Hassayampa River Canyon Wilderness.

Alternative D

Because *Alternative D* would eliminate grazing, impacts would be similar to those described for *Alternative C*.

***Alternative E* (Preferred Alternative)**

Impacts would be the same as described for *Alternative B*.

4.6.10 From Minerals Management

***Alternative A* (No Action)**

Minerals management under *Alternative A* is not expected to affect Agua Fria National Monument as the monument is closed to all forms of mineral entry, leasing, and sales except for casual use and valid existing rights on existing claims.

Mining near wilderness areas, in ACECs, and along back country byways could reduce solitude in some areas; increase noise, dust, and traffic; and detract from the visual setting. The potential for leasable and locatable minerals is very low, and areas with locatable potential are not near wilderness areas. Areas of potential saleable minerals (e.g. sand and gravel) are near rivers and washes and are not near wilderness areas. Decorative rock and other saleable mineral operations exist in the Bradshaw-Harquahala Planning Area; however, did not affect the findings of wilderness values. Future requests for similar development near wilderness areas could have impacts as described, but potential areas for such operations are unknown.

Alternative B

As in *Alternative A*, no impacts are expected on Agua Fria National Monument.

Closing Tule Creek ACEC to all mineral development would benefit the biological and cultural resources that are relevant and important to ACEC designation by eliminating the potential for disturbing and damaging these resources.

Impacts of mineral development on wilderness areas, back country byways, and ACECs would be the same as described for *Alternative A*.

Alternative C

No impacts are expected on Agua Fria National Monument.

Closing Tule Creek ACEC and Sheep Mountain RNA to all mineral development would have impacts similar to those described for *Alternative B*.

Alternative D

No impacts are expected on Agua Fria National Monument.

Impacts from managing Tule Creek ACEC would be similar to those described for *Alternative B*.

Closing Baldy Mountain ONA ACEC to all forms of mineral entry would benefit Hells Canyon Wilderness by reducing the potential area susceptible to ground disturbance and maintaining primitive open space. The potential for disturbance from leasable and locatable mineral development would be eliminated and the natural open space and resources of the ONA ACEC would be maintained.

***Alternative E* (Preferred Alternative)**

Impacts would be the similar to those under *Alternative D*.

4.6.11 From Fire Management

***Alternative A* (No Action)**

Under the No-Action Alternative, fire would be managed throughout the planning area according to the *Arizona Statewide Land Use Plan Amendment for Fire, Fuels and Air Quality Management, September 2003.*

Agua Fria National Monument grasslands are a fire-adapted ecosystem with a 0–35-year fire return frequency. As fire continues to be used as a natural process to restore ecosystem health, the national monument's grasslands would continue to be subject to prescribed burning. The burning would affect the WSR corridor through vegetation mortality and blackening of the landscape in grasslands that extend into the corridor. Prescribed burning would reduce the visual values in the corridor over the short term, until vegetation regenerates. Air quality and visibility would also decline during the burn period, and the decline could temporarily diminish the visual setting and character of the corridor.

As stated in the Statewide LUP Amendment for Fire, Fuels and Air Quality Management, fire management would try to avoid altering the natural character of special area designations. Should a prescribed fire escape containment, however, more damage to riparian vegetation could occur in the WSR corridor. The damage could further degrade the visual character and habitat in the corridor and diminish the remarkable values that led to WSR eligibility.

Use of prescribed fire could affect the WSR corridor by initially increasing runoff and erosion along the Agua Fria River in the national monument. This outcome could temporarily decrease water clarity, increase sedimentation, and diminish the corridor's visual character.

Over the long term, use of fire as a natural process in the national monument should lead to increased ecosystem health and enhanced habitat that would maintain the remarkable visual and habitat values of the corridor that led to WSR eligibility.

Fire suppression could degrade wilderness areas by using mechanized equipment and aircraft. Impacts would include the temporary increase in noise that would diminish opportunities for solitude in other areas of the affected wilderness area. Use of mechanized equipment would leave visible ground disturbance that could remain for long periods. Retardant use could leave visible residue on the landscape for several years. The same impacts could alter the setting and character of the landscape near the Harquahala Mountain Summit Road Scenic Byway and temporarily diminish the scenic quality of the byway travel experience.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

Impacts from fire management would be similar to *Alternative A*, including temporary impacts at the northwest and eastern end of Hassayampa River Canyon Wilderness. Visitors would be restricted from parts of the wilderness during prescribed burns. The fire damage would detract from the visual setting for users until the vegetation recovers.

4.6.12 From Wild Horse and Burro Management

***Alternative A* (No Action)**

Current conditions would be maintained. Sufficient wilderness values were found to designate the Hummingbird Springs, Harquahala Mountains, Big Horn Mountains, and Hells Canyon Wilderness Areas, with burros present in the existing Herd Areas (HAs) that encompass parts of these areas. While management in the *Lower Gila North Management Framework Plan* (BLM 1983) called for the herd level in the Harquahala HA to be zero, the action was not completed. The current impacts of vegetation damage, soil and vegetation trampling in gathering areas, and trailing (or creating multiple new paths across the landscape) would continue to diminish the natural setting in localized parts of the wilderness areas, especially near water sources and in canyons. Natural landscape settings would continue to exist in most portions of the wilderness areas.

Alternative B

The impacts of retaining the current burro herd level would be the same as under *Alternative A* for all wilderness areas.

***Alternatives C, D,* and *E* (Preferred Alternative)**

Removing burros from the Harquahala HA would eliminate impacts to the Harquahala Mountains, Hummingbird Springs, and Big Horn Mountains Wilderness Areas. Trailing and vegetation impacts now occurring in Hells Canyon Wilderness would continue.

4.6.13 From Management of Transportation and Public Access

***Alternative A* (No Action)**

No impacts are expected from current management of transportation and public access on existing ACECs, the five wilderness areas, or the Harquahala Mountain Summit Road Back Country Byway.

Under current WSR interim management, vehicle routes and developments are currently restricted to protect outstandingly remarkable values, including riparian habitat and wildlife. Therefore, no impacts are anticipated on the proposed suitable WSR segments within the Agua Fria National Monument

Alternatives B* and *C

The effects from transportation and public access route designations associated with establishing the Hieroglyphic Mountains Special Recreation Management Area (SRMA) could concentrate off-highway vehicle (OHV) use, increase traffic, and increase noise at the southwest edge of the Hells Canyon wilderness. These effects could diminish the sense of solitude and natural quiet for wilderness visitors. Greater levels of fugitive dust could potentially enter Hells Canyon Wilderness, obscuring vistas.

Impacts on suitable WSR segments would be the same as for *Alternative A*.

Alternative D

Managing the Hieroglyphic Mountains SRMA to facilitate phasing out and restricting motorized recreation and motorized trails over a 10 to 20 year period could enhance the non-motorized recreation settings and opportunities within the Hells Canyon wilderness. The sights and sounds of motorized activities and fugitive dust entering the wilderness from vehicle travel would be lessened or eliminated when SRMA motorized routes are closed or use is restricted. In the interim time period (less than 20 years), impacts to the Hells Canyon wilderness from motorized activities would be similar to those described under *Alternative B*.

Impacts on suitable WSR segments would be the same as for *Alternative A*.

***Alternative E* (Preferred Alternative)**

Impacts on special area designations from management of transportation and public access would be similar to those described for *Alternatives B* and *C*.

4.6.14 from Management of Wilderness Characteristics

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred)**

The management of certain lands to maintain or enhance wilderness characteristics would have no direct effects on existing special area designations. The social, physical, and managerial conditions and settings desired on lands managed for wilderness characteristics, are compatible with public lands currently managed as Areas of Critical Environmental Concern, Back Country Byways, and Wilderness Areas. Indirect benefits from management of wilderness characteristics could indirectly influence lands with special area designations as the allocation maintains undeveloped settings, offers dispersed non-motorized recreation experiences, enhances natural quiet and dark sky conditions, potentially reduces fugitive dust emissions, safeguards intact scenery and landscape vistas, and secures more intact wildlife habitats.

4.7 Impacts on Lands and Realty Management

This analysis addresses both the entire current inventory of BLM's surface lands in the planning areas and lands in the planning areas considered for acquisition because of their resources. These lands include 967,000 surface acres, with 896,100 acres of BLM's land in the Bradshaw-Harquahala Planning Area and 70,900 acres of BLM's land in Agua Fria National Monument. Interspersed in the Federal lands are parcels that might be available for acquisition from a willing seller. For the Bradshaw-Harquahala area, demands on Federal land management in and around the Phoenix metropolitan area resulting from rapid urbanization would be fulfilled by the following:

- land tenure management prescriptions, (including disposal and acquisition),
- Recreation and Public Purposes (R&PP) leases or patents,
- right-of-way authorizations, and
- land use permit management prescriptions.

Each of the large tracts of BLM land is next to large tracts of State land. Because the future legislative framework governing State land transactions is uncertain (including the potential for the exchange of land between the Arizona State Land Department (ASLD) and the Federal Government, State land is assumed for this analysis to be ineligible for development.

The impact analysis employed land use modeling completed for BLM for the planning area to show the distribution of residential growth between the years 2000 and 2025 (Appendix M). The land use model is consistent with the undeveloped land base shown in the general and comprehensive plans of each city or town and both counties.

The model was run four times, once each for the four Alternatives for BLM's land available for disposal. The model assumes that all BLM's land eligible for disposal would change from Federal to private ownership during the planning period 2005 to 2025, and then would undergo residential development. Other than BLM's land, the model assumes that the amount of suitable vacant land available for residential growth for Maricopa and Yavapai Counties would be the same under all of the Alternatives.

The model uses one set of assumptions about such factors as follows:

- persons per household,
- lot sizes, and
- the tendency for new housing to be attracted to areas next to areas that already have housing.

The model assumes that the availability of BLM's land for development would not induce growth countywide or increase the total population projected for the two counties in 2025. Both counties are already undergoing rapid growth, yet both counties already have a vacant residential land capacity that would meet the need for growth beyond 2025. Therefore, the availability of BLM's land for development would affect the phasing of land development on the vacant residential land, rather than the development projected for 2025.

For Agua Fria National Monument the land tenure management prescriptions, (acquisition only) right-of-way authorizations, and land use permit management prescriptions would fulfill the protective purposes of the national monument.

The broad categories of land uses requiring right-of-way grants are the following:

- electrical generation,
- transmission, and distribution systems,
- oil and gas related systems,
- telecommunication transmission and reception systems,
- transportation systems, and
- water-related systems.

The common land uses requiring permits are commercial photography, apiaries, geological and hydrological testing, and some military activities. The recipients of R&PP leases or patents are State and local governments and qualified non-profit organizations.

This analysis also addresses the impacts on designated right-of-way corridors on BLM's land in the planning areas.

The resolution of mining claims has a bearing on the sequence of land disposal. When someone expresses an interest in acquiring land that BLM has proposed for disposal, under the Federal Land Transaction Facilitation Act (FLTFA) the land is temporarily closed to the filing of mining claims. Typically, the prospective new owner purchases any claims and relinquishes them to BLM, at which point the mining claim is resolved. Generally, BLM prefers to dispose of the surface and subsurface mineral rights to the same new owner, and the above-described relinquishing of mining claims typically results in such disposal of surface and subsurface.

Occasionally, BLM keeps the subsurface in Federal ownership when it is deemed to be in the public interest for BLM to continue to control the potential for future mining.

Issuing rights-of-way where there are active mining claims is routine and covered by legislation and regulation. The right-of-way purchaser or permittee is informed of the rights of the mining claimant. Mining might intermittently or temporarily obstruct the right-of-way.

4.7.1 From Special Area Designations

***Alternative A* (No Action)**

Wilderness areas would remain closed to rights-of-way and land use authorizations. BLM would try to acquire non-Federal wilderness in-holdings when there are willing sellers or the potential for a land exchange. Acquiring in-holdings would block up Federal ownership in sensitive resource areas.

Alternative B

Special area designations generally constrain lands and realty activities in the following ways:

- limiting the lands open to exchange or disposal in any zone,

- reducing the demand for the number and type of realty use authorizations,
- restricting the ability to build or relocate roads for legal access, and
- eliminating options of authorization or conveyance of land to resolve a trespass.

Special area designations might require mitigating or relocating an activity. For example, mitigation for conflicts is permissible to achieve no net loss in amount or quality of desert tortoise habitat while accommodating requests for rights-of-way, easements, withdrawals, or other land tenure actions. At the most, the activity might be prohibited altogether.

None of the proposed special area designations are located in areas slated for development between 2005 and 2025 in Maricopa, Yavapai, or La Paz Counties. None of the special area designations are in a location that would otherwise be a part of the most direct route for workers to commute to work. In addition, the special area designations are generally a part of the open space designated in the general plans of the counties and municipalities. Therefore, the special area designations would not preclude developing a typical urban transportation network in the planning area.

Tule Creek ACEC (640 acres) is proposed for designation in the Bradshaw-Harquahala Planning Area, and stipulations consistent with its protection would be written into any future land use authorizations in the ACEC. The locations could be affected, or the terms of use of access easements and rights-of-way could be restricted to protect Tule Creek.

The effects of wilderness areas would be the same as in *Alternative A.*

Alternative C

Lands adjoining Harquahala Mountains ACEC would be of higher priority for acquisition than other lands because of their biological and cultural values. Therefore, these lands might be acquired instead of other lands.

Black Mesa ACEC would be established to protect significant cultural resources. To the west of Interstate 17, the utility corridor width of 2 miles would allow for flexibility in planning and designing transmission facilities to avoid impacts to archaeological sites. The presence of the interstate highway provides some protection by limiting public access to these sites. In coordination with the Arizona Department of Transportation (ADOT), BLM would implement measures to mitigate the effects to archaeological sites of widening and maintaining the highway.

The effects of wilderness areas would be the same as *Alternative A*

The impacts from Tule Creek on lands actions would be the same as those under *Alternative B.*

Alternative D

Designating the Agua Fria Riparian Corridor ACEC in Agua Fria National Monument would constrain the location of rights-of-way in the Black Canyon corridor. In the Bradshaw-Harquahala Planning Area acquiring private and State in-holdings and adjacent lands (provided the seller is willing) to protect biological resources in the Belmont-Big Horn Mountains would give these lands a higher priority area for acquisition than in-holdings without similarly high biological values. As such, BLM might acquire these lands instead of the other lands.

As in *Alternative B*, lands adjoining Harquahala Mountains ONA would also be of higher priority for acquisition than other lands because of biological and cultural values.

The impacts on lands and reality management of designating Tule Creek ACEC would also be the same as under *Alternative B.*

The effects of wilderness areas would be the same as in *Alternative A.*

No new rights-of-way would be permitted in the Baldy Mountain ONA, so private interests needing vehicular or utility access to private

lands could have to use a more circuitous and potentially more expensive route.

***Alternative E* (Preferred Alternative)**

Impacts are the same as under *Alternative A.*

4.7.2 From Lands and Realty Management

***Alternative A* (No Action)**

In Agua Fria National Monument public land ownership would not change. These retained lands would be managed according to the guidelines set forth in the proclamation designating the monument (Appendix A).

BLM could issue no leases or patents in the monument to local governments or non-profit organizations under the R&PP Act.

Since no communication sites would be designated within the monument, industry would rely on existing sites, which might not meet suitable industry needs. Industry would also rely on current transportation corridors, which might not be adequate to meet future demand needs.

Land ownership in the Bradshaw-Harquahala Planning Area would remain unchanged from existing management practices.

Lands suitable for R&PP use would be issued on a case-by-case basis to local governments and non-profit organizations under the R&PP Act.

Alternative A would continue Lands and Realty management as it is now occurring. As a result, no impacts would be expected.

Alternative B

Impacts in Agua Fria National Monument would be similar to *Alternative A*, except that the existing corridor would be narrowed so that the eastern boundary of the utility corridor would follow the easternmost boundaries of any existing rights-of-way in the corridor. The corridor boundary in the Bradshaw-Harquahala Planning Area would compensate for the monument boundary narrowing by widening the corridor 1 mile to the west of Interstate 17. Future utility uses would then be forced to locate in undisturbed areas, resulting in possible increased costs for industry.

The total acreage of public land ownership in the Bradshaw-Harquahala Planning Area would depend on whether all lands recommended for acquisition are acquired. The lands consolidated in the five Management Units (MUs) would improve management efficiency and would likely reduce management costs.

Impacts of land leases and patents for R&PP would be the same as *Alternative A.*

Impacts of major rights-of-way and communication sites would be similar to *Alternative A*, except no new communication sites could be designated, and these facilities could not proliferate. This situation would allow for the orderly development of these facilities in designated sites, eliminating user conflicts. As technology continues to advance, BLM might have to review its decisions to determine if its plan is meeting industry needs. Multiple new utility corridors, including all State route highway systems (including the proposed Wickenburg Bypass), would be designated as corridors across public lands. Designating corridors would prevent the proliferation of major utility systems across public lands.

Land use authorizations would be precluded or restricted on lands in the MUs, decreasing the location flexibility for rights-of-way and increasing construction costs for utility rights-of-way.

Alternative C

The impacts of public land ownership and R&PPs in the national monument would be the same as *Alternative A.*

BLM would issue no leases or patents for land within the monument to local governments or non-profit organizations under the R&PP Act.

Rights-of-way and communication sites in the monument would be similar to *Alternative B*, except that the existing corridor would be eliminated from the monument. The corridor boundary in the Bradshaw-Harquahala Planning Area would be adjusted to make up for the loss of the corridor in the monument boundary by being widened 2 miles to the west of Interstate 17. Future utility uses would then be forced to locate in undisturbed areas, possibly increasing costs for industry.

Public land ownership in the Bradshaw-Harquahala Planning Area would be similar to *Alternative B*, except that the lands would be consolidated into six MUs

Impacts of land leases and patents for R&PP use would be the same as *Alternative A.*

Land use authorizations (including rights-of-way, communication site leases, and utility corridors) would be the same as *Alternative B.*

Alternative D

The impacts of public land ownership and R&PPs in the national monument would be the same as *Alternative A.*

Impacts of new rights-of-way within the monument would be similar to *Alternative B,* except that the corridor in the Bradshaw-Harquahala Planning Area would be extended, not widened so that it would be continuous north and south on BLM's lands. Any future need to locate utilities in the corridor would not be met, creating a need to locate elsewhere and increasing industry costs. This limitation could also restrict any future attempts to widen Interstate 17 as potential growth warrants.

Public land ownership in the Bradshaw-Harquahala Planning Area would be similar to *Alternative B*, except that the lands would be consolidated into seven MUs.

Impacts of land leases and patents for R&PP use would be the same as *Alternative A.*

Land use authorizations (including rights-of-way, communication site leases, and utility corridors) would be similar to *Alternative B*, except that no new electric or gas corridors would be designated. As the potential demand for electricity and gas increases, the supply would not be sufficient. Costs might increase because of a lack of resources.

***Alternative E* (Preferred Alternative)**

The impacts of public land ownership and R&PPs in the national monument would be the same as *Alternative A.*

Impacts of new rights-of-way within the monument would be the same as *Alternative B.*

Public land ownership in the Bradshaw-Harquahala Planning Area would be the same as *Alternative C.*

Impacts of land leases and patents for R&PP use would be the same as *Alternative A.*

Land use authorizations (including rights-of-way, communication site leases, and utility corridors) would be the same as *Alternative B.*

4.7.3 From Management of Soil, Air, and Water Resources

Alternatives A, B, C, D,* and *E

In all Alternatives, efforts to minimize impacts to soils, water, and air would result in increased project costs and may result in project redesign or a shifted location. All permitted activities within air quality nonattainment areas would be required to meet county standards and incorporate county stipulations into their project proposal. For qualifying projects, meeting air quality standards may increase project costs.

4.7.4 From Biological Resource Management

***Alternatives A* (No Action), *B, C, D* and *E* (Preferred Alternative)**

Acquisition of lands to enhance BLM's management of habitat critical to threatened or endangered species as well as habitat for other sensitive species is given a high priority and would result in acquisition of those areas in preference to other areas. Biological resource management would otherwise not affect lands and realty management in either planning area.

4.7.5 From Cultural Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

The potential discovery of cultural and historical sites across public lands could cause BLM to restrict land use authorizations. Land use authorizations might have to be relocated/ rerouted, or a treatment plan might have to be developed to include mitigation measures, such as scientific data recovery. Such measures could prove to be expensive, resulting in projects that are uneconomical to complete.

4.7.6 From Paleontological Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Since no known areas with paleontological resources occur within the planning areas, no impact is expected.

Should paleontological resources be discovered, BLM could restrict land use authorizations. Land use authorizations might have to be relocated/rerouted, or a treatment plan might have to be developed to include mitigation measures, such as scientific data recovery. Such measures could prove to be expensive, resulting in projects that are uneconomical to complete.

4.7.7 From Recreation Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Recreation management would not affect lands and realty management under any of the Alternatives.

4.7.8 From Visual Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

VRM would only slightly affect lands and realty management under any of the Alternatives. In VRM Class I and II areas, rights-of-way would be buried, relocated as needed, or otherwise designated to be compatible with their surroundings to ensure scenic integrity. BLM would not approve land use authorizations that are inconsistent with VRM Class I and Class II, thus creating the need to select a more suitable location. Such a situation could prove to be costly to certain project proposals.

4.7.9 From Rangeland Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Rangeland management would not have any expected impacts on lands and realty management under any of the Alternatives.

4.7.10 From Minerals Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Minerals management would not have any expected impacts on lands and realty management under any of the Alternatives.

4.7.11 From Fire Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Fire management would not have any expected impacts on lands and realty management under any of the Alternatives.

4.7.12 From Wild Horse and Burro Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Wild horse and burro management would not have any expected impacts on lands and realty management under any of the Alternatives.

4.7.13 From Management of Transportation and Public Access

***Alternative A* (No Action), *B, C, D* and *E* (Preferred Alternative)**

There are no impacts expected in this area.

4.7.14 From Management of Wilderness Characteristics

***Alternative A* (No Action)**

Currently, there are no areas specifically managed for wilderness characterisitcs. Resulting in no expected impacts.

***Alternatives B, C, D* and *E* (Preferred Alternative)**

In any proposed Alternative, the allocations to maintain or enhance wilderness characteristics would be closed to rights-of-way and inconsistent land use authorizations. Future utilities and private requestors for access would be required to find other alternative routes through these areas. Land use authorizations in these areas would only be slightly affected.

4.8 Impacts on Soil Resources

4.8.1 From Special Area Designations

***Alternative A* (No Action)**

Under current management of Agua Fria National Monument, soil resources in the Perry Mesa ACEC (9,580 acres) would likely be protected from increased erosion and soil loss; and from decreased soil moisture and productivity by limiting motor vehicle use. However, current management would not affect soil resources there because of the inaccessibility of the Larry Canyon ACEC to both livestock and motor vehicles. Similar to Larry Canyon ACEC, most of the eligible WSR corridors (6,030 acres) are in narrow, inaccessible canyons where there are few conflicts with the nonimpairment provisions of current interim management. Some places in the northern reaches of the Agua Fria River are accessible by vehicles. Restrictions on vehicular

use of interim management should maintain or improve soil productivity and reduce soil loss. All of the Special Management Areas (SMAs) in the national monument are in areas of moderate potential soil erodibility with some small areas of severe and extremely severe potential soil erodibility.

Existing management of Congressionally Designated Wilderness (96,820 acres) would maintain current soil productivity by imposing management restrictions on activities.

Alternative B

In Agua Fria National Monument, interim management of the eligible WSR corridor under *Alternative B,* would be the same as described for *Alternative A.* Removing the ACEC designation in Larry Canyon and on Perry Mesa would not affect the soil because the same activities limited by the ACEC designation would be limited under the national monument designation. Removal of these ACECs would not affect soils.

In the Bradshaw-Harquahala Planning Area closing the fenced area of the Tule Creek ACEC to motorized vehicles and grazing could benefit soil resources by reducing soil disturbance and compaction. Therefore, this area is rated to have slight potential soil erodibility. Reduced soil disturbance would result in slightly reduced erosion and increased soil infiltration and productivity.

Alternative C

In Agua Fria National Monument, the four designated ACECs are all in areas with moderate to very severe potential soil erodibility. Management actions for these ACECs would only negligibly affect soil resources beyond protections afforded by the national monument proclamation (Appendix A). Interim management of the eligible WSR corridor would be the same as described for *Alternative A*.

In the Bradshaw-Harquahala Planning Area the protective measures of designating six ACECs, totaling 55,710 acres would reduce soil erosion and improve soil moisture and productivity. These areas are rated to have slight potential soil erodibility.

Alternative D

Impacts from the ACECs and eligible WSR corridors in Agua Fria National Monument would be the same as those described for *Alternative C*. In the Bradshaw-Harquahala Planning Area eight ACECs, totaling 244,090 acres are proposed; impacts to soil resources would be similar to those under *Alternative C*.

***Alternative E* (Preferred Alternative)**

Impacts from the special area designations in Agua Fria National Monument would be the same as those described for *Alternative C.* In the Bradshaw-Harquahala Planning Area four ACECs, totaling 89,970 acres are proposed; impacts to soil resources would be similar to those under *Alternative C.*

4.8.2 From Lands and Realty Management

***Alternative A* (No Action)**

Activities subject to valid existing rights in the national monument might continue, and applications, proposals, and future use requests that were pending when the national monument was created are subject to the terms of the monument proclamation (Appendix A). These activities could degrade soil resources if construction-related erosion, soil disturbance, or compaction occurs. These disturbances are temporary; therefore, long-term changes to soil resources would not be probable.

Impacts to soil resources from utility and transportation corridors, and communication sites are not expected under the current management of Agua Fria National Monument.

In the Bradshaw-Harquahala Planning Area disposal and consequential development of lands

could result in long-term reductions in soil productivity. Acquiring lands would not be expected to affect soil resources.

Building small utility distribution systems could affect soil resources if construction-related erosion, soil disturbance, or compaction occurs. These disturbances are temporary; therefore, long-term changes to soil resources might not be probable.

Building major utility lines in existing corridors could affect soil resources, mainly from development, service roads, and increased traffic. Additionally, road building could degrade soil resources by erosion, soil disturbance, or compaction.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

In Agua Fria National Monument no impacts are expected from land tenure adjustments, utility and transportation corridors, or communication sites.

In the Bradshaw-Harquahala Planning Area impacts to soil resources from utility and transportation corridors and communication sites would be similar to those discussed for *Alternative A*. Impacts to soil resources from utility and transportation corridors, and telecommunication sites would also be similar to those discussed for *Alternative A*.

4.8.3 From Management of Soil, Air, and Water Resources

***Alternative A* (No Action)**

Impacts to soil resources in Agua Fria National Monument are expected from the following:

- maintaining and improving soil cover and productivity through erosion preventative measures and land treatments;
- implementing activity plans to maintain or increase ground cover that would improve infiltration, permeability, soil moisture storage, and soil stability; and
- implementing watershed improvement projects to increase ground cover and reduce erosion.

Under the current management of the Bradshaw-Harquahala Planning Area no impacts are expected on soil resources.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

Impacts to soil resources are expected to be similar to those in *Alternative A.*

4.8.4 From Biological Resource Management

***Alternative A* (No Action)**

In Agua Fria National Monument improvements to soil resources are expected from the following:

- improving the Agua Fria River riparian corridor by mitigating past impacts and implementing management actions to protect soils,
- reducing soil erosion by planting cottonwood and willow along the Agua Fria River and its tributaries, and
- discontinuing the use of vegetation chaining and other vegetation manipulation methods that substantially disturb the surface.

In the Bradshaw-Harquahala Planning Area impacts to soil resources are expected from the following:

- developing projects, including springs, seeps, and other features affecting water;
- maintaining or enhancing spring/riparian habitats in the planning unit. Sites would be determined in the Habitat

Management Plan (HMP) to meet the plan's goals; and
- reducing competition for cover, water, and space among big game, livestock, and burros by reducing livestock aggregations and removing all burros at waters in the Big Horn, Granite Wash, and Harquahala Mountains.

Soil resources might slightly improve from all of these activities.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

Impacts would be similar to those described in *Alternative A.*

4.8.5 From Cultural Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected to soil resources from cultural resource activities under any alternative.

4.8.6 From Paleontological Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected to soil resources from managing paleontological resources under any alternative.

4.8.7 From Recreation Management

***Alternative A* (No Action)**

Under the current management of Agua Fria National Monument, areas of concentrated recreation could result in the loss or reduction of vegetation cover, compaction of soils, and streambank instability in riparian areas, thus decreasing soil moisture and productivity.

OHV use designations vary between the east and west parts of the Bradshaw-Harquahala Planning Area. In the area covered by the Phoenix RMP (BLM 1988a), vehicle travel is limited to existing roads and trails except for areas closed or restricted to designated roads and trails. West of Highway 93, unlimited cross-country OHV use is allowed except in wilderness and other designated areas.

Increasing visitor use and vehicle travel in the area addressed by the Phoenix RMP would intensify soil erosion due to increasing numbers of OHV users and poorly engineered or non-engineered trails and routes. Despite users being confined to existing routes, erosion could increase on OHV trails ascending steep terrain and crossing unstable soils on hillsides. Overall, impacts from OHV use on soils are expected to be less than in other parts of the Bradshaw-Harquahala Planning Area as users are now restricted to using existing routes.

West of Highway 93, increased soil erosion is expected from increased visitation, multiplying numbers of routes, and greater use of OHVs on steep slopes. Bank washes would be broken down and made unstable in wash "play" areas. Soil damage and erosion could result from surface disruption, soil compaction, and damage to soil-holding plants. Furthermore, soils could be permanently damaged on steep slopes and across loosely graveled gentle slopes. Vehicle tracks on the lands here, especially desert pavement surfaces and hillsides, could last for 60 years or perhaps centuries, from evidence of Native American artwork and tread marks from World War II desert training exercises.

Under the current management of the areas west of Highway 93 and north of Wickenburg, areas of concentrated recreation and OHV use could result in the loss of or reduced vegetation cover, soil compaction, and streambank instability in riparian and wash areas, thus reducing soil moisture and soil productivity.

Moreover, the lack of OHV-related management facilities and amenities would contribute to increasing damage to soils across the Bradshaw-Harquahala Planning Area. Vegetation and infiltration could decrease, wash bank and riparian area stability would decline throughout the area, and increased amounts of soil would be exposed to erosion and compaction.

All new routes would be built in ways intended to minimize soil disturbance, erosion, and compaction.

Alternative B

In Agua Fria National Monument 57,900 acres of Front Country, 12,700 acres of Back Country, and 300 acres of Passage RMZs would be established, and recreation uses and opportunities in the zones would be managed for protecting natural resources. Impacts to soil resources, including increased surface disturbance and erosion, might occur in the Front Country and Passage RMZ as recreation use increases. However, impacts are not expected in the Back Country RMZ.

In the Bradshaw-Harquahala Planning Area route, closures in Tule Creek ACEC and allocations to maintain or enhance wilderness characteristics within the Castle Hot Springs and Harquahala Management Units, would slightly reduce soil disturbance, erosion, and compaction by OHV use. Some of these routes are in soil mapping units with moderate potential soil erodibility, but most are in slight potential erodibility.

Soil erosion from improper events and OHVuse would be lessened by implementing vehicle route designations throughout the Bradshaw-Harquahala Planning Area along with well-planned, sited, and signed special recreation management areas (SRMAs) addressing intensive recreation. Included would be both motorized and non-motorized uses in the Table Mesa, the Hieroglyphic Mountains, Stanton, Wickenburg, San Domingo Wash, and Vulture Mine SRMAs. Facilities and outreach/education would lessen improper OHV activities, further decreasing soil erosion, disruption, and compaction.

Alternative C

Impacts on the national monument would be similar to those discussed for *Alternative B* and would occur on moderate to very severe soil erodibility areas on 42,410 acres of Front Country RMZ and 70 acres of Passage RMZ.

In the Bradshaw-Harquahala Planning Area impacts from recreation management would be similar to those discussed for *Alternative B*. Reducing vehicle travel routes and use in Harquahala Mountains ONA, and the allocations to maintain or enhance wilderness characteristics within the Black Canyon MU, the Hassayampa MU, and the Harquahala MU, would reduce recreation and OHV-related erosion, compaction, and surface disruption of soils. Some of these routes are in soil mapping units with moderate potential erodibility areas, but most are in slight potential erodibility.

Implementing well-planned, sited, and managed SRMAs addressing intensive recreation, including both motorized and non-motorized use, and vehicle route designation throughout the planning area would lessen soil erosion from improper events and intensive OHV use. Associated facilities and outreach/education efforts would lessen improper OHV activities, further decreasing soil damage.

Alternative D

Impacts on the national monument would be similar to those discussed for *Alternative C* and would occur on moderate to very severe soil erodibility areas on 1,530 acres of the Front Country RMZ and 990 acres of the Passage RMZ.

Phasing out OHV use of the Hieroglyphic Mountains SRMA would eventually reduce the potential for soil disturbance, compaction, and erosion caused by motorized activities on 16,510 acres. The overall management of the Castle Hot Springs Management Unit (MU) as a

regional recreation management area would reduce soils impacts in the southern portion of the MU by phasing out motorized uses. As routes are reclaimed or are reduced in width for non-motorized use, cover vegetation would increase, increasing infiltration and reducing the amount of soil exposed to erosion and compaction.

The specified management of special recreation management areas (SRMAs) and restricting vehicle use to designated routes would further reduce soil impacts in all other parts of the planning area. Increased BLM signing, OHV route development and connectivity, public education, and better managed motorized and non-motorized recreation under *Alternative D* would lessen impacts to soils over the long term. As routes are designated, reclaimed, or reduced in width for non-motorized use, cover vegetation would increase, increasing infiltration and reducing the amount of soil exposed to erosion and compaction.

***Alternative E* (Preferred Alternative)**

In this alternative, 57,200 acres would be allocated to Back Country, 12,440 to Front Country, and 1,300 acres to Passage RMZs. Impacts on the national monument would be similar to those discussed for *Alternative C* and *D*, except that 70 miles of route would be closed and 1 mile of new route built. The net reduction of routes would be 69 miles. These route closures would likely reduce soil disturbance, erosion, and compaction by OHV use. All of the routes that would be closed or opened are located in moderate to very severe potential soil erodibility areas.

Soil erosion caused by vehicular travel would be curtailed by eliminating vehicle use in Tule Creek ACEC, and by reducing vehicle routes and cross-country travel in allocations to maintain or enhance wilderness characteristics and the Harquahala Mountains and Black Butte ONAs. Curtailing or reducing vehicle use in the above areas would benefit soil resources by eventually reducing the potential for soil disturbance, compaction, and erosion caused by motorized activities.

The overall management of the planning areas, along with the allocation of recreational vehicle use to designated routes only, would reduce impacts to soils in all parts of the planning area. Increased BLM signing, route development, route connectivity, and better managed motorized and non-motorized recreation would lessen potential impacts to soils over the short and long term. As routes are designated, reclaimed, or reduced in width for non-motorized use, cover vegetation would increase, increasing infiltration and lessening the amount of soil exposed to erosion and compaction.

4.8.7.1 From Special Recreation Permit Program

***Alternative A* (No Action)**

The predominant impacts to soils from the SRP program are soil compaction and accelerated erosion from concentrating activities in certain areas. Broken soil crusts and decreased vegetation cover exposes more soil to potential erosion and reduce infiltration. Most SRPs are issued for activities, such as jeep tours, horse events, and guided big game hunts, which occur on existing routes or disturbed areas and create minimal soil impacts. It is standard operating procedure to conduct environmental analysis before any SRP is authorized. Consequently, any permitted activities that could cause adverse impacts to soils are mitigated to minimize those impacts and rehabilitation is required when necessary.

Within the national monument, few SRPs are currently issued; for instances, those permitted have been for commercial tour groups and for hunting guides. These permits use areas where similar activities have been taking place for many years and have been determined to have little or no impact.

In the Bradshaw-Harquahala Planning Area, the permitted recreation activity that causes the most

disturbances to soils are the three motorized competitive races that are held annually. Currently, the soil impacts from these races are closely monitored and the soils are rehabilitated as close to pre-race conditions as possible. However, under *Alternative A*, an unlimited number of competitive races could be authorized between October 15 and March 31, and in areas currently not used for such activities. Thus, without any set limitations on the number of races and the areas in which they can occur, this increased vehicle activity will inevitably lead to unacceptable cumulative soil impacts, perhaps most notably in previously undisturbed areas.

Limited staffing will make it difficult to adequately manage and mitigate the effects from such use including increased soil compaction and vegetation disturbance in camping and staging areas. Moreover, depressions, holes, rills, and deep ruts will become more visible and larger gullies will form due to poor drainage during heavy rains. Routes used for the racing activities will be impacted from the racing vehicles churning up the soils on the routes, and breaking soil crusts due to vehicle passing, accidents or course cutting. More soil berms will be created at curves and corners which will lead to increased wind and water erosion. Areas with finer soils will be especially affected and difficult to rehabilitate. Even with close monitoring and rehabilitation efforts, due to the arid desert conditions, once soil crusts are disturbed and barren soil is exposed they can take a long time to recover.

Alternative B

In the Agua Fria National Monument, BLM would issue up to 12 permits per year. This is a 400 percent increase over the current situation and could lead to additional soil disturbance in new areas as permittees seek new locations for activities to avoid crowding. However, due to the monument proclamation requiring the protection of monument objects, permit requests will be scrutinized and permit activities closely monitored so soil impacts are expected to be slight.

For the Bradshaw-Harquahala Planning Area, impacts to soil resources from SRPs other than the competitive races would be similar to those discussed in *Alternative A,* except that the number of permits would be expected to increase. However, due to continuing implementation of mitigation measures the impacts to soils from most of the permitted activities would be expected to increase only slightly.

For competitive races, the number of races each year would be limited to 14 and additional limits would be established for the Hieroglyphic Mountains, Vulture Mountains, Stanton, San Domingo, and Table Mesa SRMAs. Races would be prohibited in the Wickenburg SRMA and in the ERMAs. However, the allowable number of races is still a substantial increase from current conditions and therefore soil impacts would be much higher. It is anticipated that these impacts could be difficult to mitigate, manage, and rehabilitate to acceptable levels if the upper end of the allowed number of races is reached.

Alternative C

For the Agua Fria National Monument, impacts to soils from SRPs would be less than those discussed for *Alternative B* as only six permits per year could be issued. While still a 200% increase over current conditions, this would lead to a slight, if any, increase in soil disturbance.

In the Bradshaw-Harquahala Planning Area impacts to soils from SRPs other than races would be the same as those described for *Alternative B*.

For competitive races, the number would be limited to six per year and no races would be allowed in the Table Mesa SRMA in addition to the SRMA limits identified in *Alternative B*. Further, set limits for Hieroglyphic Mountains and Vulture Mountains SRMA would keep the number of races near current levels thereby keeping soil impacts at existing conditions. Only one new race would be allowed in the Stanton and San Domingo SRMAs making management

of the activities more feasible in keeping soil impacts to a minimum.

Alternative D

Under *Alternative D*, BLM would not issue SRPs for the national monument; therefore, eliminating any potential impacts to soils.

In the Bradshaw-Harquahala Planning Area impacts to soils from SRPs, other than competitive races, would be the same as those described for *Alternative B*.

No competitive races would be allowed. This would eliminate any continued impacts to soils from this activity, and soils would be allowed to recover from previous races.

***Alternative E* (Preferred Alternative)**

Impacts in the national monument are expected to be similar to those described in *Alternative A*.

In the Bradshaw-Harquahala Planning Area, no permit levels would be established for SRPs other than competitive races. Permit numbers would be expected to rise over current conditions for both planning areas and soil impacts would be similar to those discussed in *Alternative B.*

Competitive races would be limited to eight per year which is slightly higher than current conditions. Impacts would be similar to those addressed in *Alternative C*, except that the number of races could increase to four per year in the Vulture Mountains SRMA. However, the soil types in this SRMA are more resilient so impacts would be expected to be slight.

4.8.8 From Visual Resource Management

***Alternative A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected to soils from management for Visual Resources.

4.8.9 From Rangeland Management

Many studies suggest watersheds exposed to moderate grazing generally have decreased vegetation cover, increased rates of soil compaction, and lower infiltration rates resulting in increased run-off during precipitation (Beeson and Doyle 1995; Bull 1997; Clifton 1989; DeBano and Schmidt 1989; Graf 1979; Kauffman et al. 1983; Myers and Swanson 1993; Rush et al. 1997; Rutherfurd et al. 1995; Ryan 1992). Increased run-off and the resulting increased erosion can deliver excess sediment into streams. The loss of stabilizing vegetation reduces soil moisture and soil productivity. Where grazing is permitted in riparian areas, cattle trampling can also destabilize streambanks, creating more sediment sources near the stream channel.

Other studies in the inter-mountain West found that livestock trampling lowers infiltration rates but that sediment yields remain uniform after vegetation cover reaches 50 percent (Dadkhah and Gifford 1980). Additionally, in semiarid and arid settings, soil compaction might be offset by soil loosening from invertebrates (e.g. termites and ants) where enough plant litter is maintained to support large invertebrate populations (Whitford et al. 1995).

***Alternative A* (No Action)**

In both planning areas, implementing the guidelines adopted in *Arizona Standards for Rangeland Health and Guidelines for Grazing Administration* (Land Health Standards) would increase ground cover, which would provide for infiltration, permeability, soil moisture storage, and soil stability suitable for the ecological sites in the MUs. Implementation would also maintain or promote enough vegetation to maintain, improve, or restore riparian-wetland functions of energy dissipation, sediment capture, groundwater recharge, and streambank

stability, thus promoting stream channel morphology (e.g. gradient, width/depth ratio, channel roughness, and sinuosity) and functions suitable for climate and landform.

Alternative B

In Agua Fria National Monument expected impacts to soil resources from rangeland/grazing management in uplands would be similar to those described for *Alternative A*. However, limiting grazing in riparian areas to the winter would encourage more rapid recovery of riparian vegetation and reduce impacts to soils from grazing.

In the Bradshaw-Harquahala Planning grazing in riparian areas would also be limited to the winter. Winter-only grazing in riparian areas would encourage more rapid recovery of riparian vegetation and reduce impacts to soils from grazing.

Alternative C

In both planning areas impacts to soils from grazing in uplands would be similar to those discussed for *Alternative B*. Some reduction in upland grazing could occur. Grazing in riparian areas would be eliminated, increasing soil cover and reducing streambank damage from grazing under *Alternative B*. For grazing allotments that lack adequate fencing, the entire pasture would be closed to grazing. *Alternative C* would substantially reduce upland grazing as well as the use of riparian areas. This adjustment could be substantial in pastures or allotments that cannot be fenced in riparian areas from the upland areas. In these cases, the whole pasture could be closed from grazing.

Alternative D

In both planning areas soils would benefit from closing livestock grazing allotments, canceling livestock authorizations for the duration of the plan, and installing fencing to control livestock use of unfenced public lands.

Alternative D would result in the greatest improvement of the current impacts from livestock grazing on soil. Soil disturbance, soil compaction, and erosion would be lower than under any of the other Alternatives.

***Alternative E* (Preferred Alternative)**

Impacts for both areas would be similar to those described for *Alternative B*.

4.8.10 From Minerals Management

***Alternative A* (No Action)**

In the Agua Fria National Monument, minerals management is not expected to affect soil resources. Existing mining claims are limited to casual use and valid existing rights. Impacts to soils, such as erosion and vegetation disturbance, would be limited to small areas under casual use.

Under the current management of the Bradshaw-Harquahala Planning Area, mining that involves building access roads, is likely to disturb soils. Road building would increase soil erosion, disturbance, and compaction.

Should exploration or development of locatable, saleable, and/or leasable minerals be pursued, special stipulations would be included in the mining plan of operations after the results of site-specific EAs for each action are known. Impacts cannot be projected before preparing such assessments, which would include methods, mitigation, and rehabilitation plans to meet the conditions required to protect soil. Therefore, such measures could minimize effects on soils.

Locatable Minerals

Mining itself might disturb soils and potentially result in accelerated erosion and loss of soil productivity. These effects to soils could be mitigated under 43 CFR 3715 and 43 CFR 3809, the regulations that implement the Federal Land

Policy and Management Acts (FLPMA) mandate to prevent unnecessary or undue degradation from the surface disturbance of mining under the Mining Law of 1872.

Saleable Minerals

Extracting mineral materials would result in loss of soils and vegetation cover in mining areas and could lead to increased soil erosion.

Leasable Minerals

Mining that could occur in areas remaining open to leasable minerals development could degrade soils through compaction and increased erosion. From the RFD scenario described for the section of Chapter 4, Impacts on Minerals and Energy Resources, the likely scope of leasable mineral development is small. Therefore, impacts to soil are also likely to be small.

Alternative B

Impacts of minerals management on soil would be similar to those discussed for *Alternative A*.

Alternative C

Impacts to soils in Agua Fria National Monument would be similar to those discussed for *Alternative A*.

In the Bradshaw-Harquahala Planning Area impacts to soil resources from minerals management would be similar to those discussed for *Alternative A*, but the closure of many areas to mineral entry, mineral material disposal, and mineral leasing under *Alternative C* would reduce potential soil disturbance from mining.

Alternative D

In Agua Fria National Monument impacts to soil from minerals management would be similar to those discussed for *Alternative A*.

In the Bradshaw-Harquahala Planning Area impacts to soil resources would be similar to those discussed for *Alternative A*, but the closure of many areas to mineral entry, mineral material disposal, and mineral leasing under *Alternative D* would even further reduce potential soil disturbance from mining.

***Alternative E* (Preferred Alternative)**

In both planning areas soil impacts from mining are expected to be similar to those under *Alternative A*, except that the closure to mineral disposal in ONAs and allocations to maintain or enhance wilderness characteristics would reduce the potential for mining-related soil disturbance.

4.8.11 From Fire Management

***Alternative A* (No Action)**

Where prescribed burning is conducted in Agua Fria National Monument, the use of heavy equipment and mechanical thinning of trees could affect soils, increasing the potential for soil erosion. Soil moisture and productivity could be reduced in the short term, but increased in the long term. Prescribed burning would offer the following benefits:

- increasing vegetation diversity,
- moving vegetation communities in target areas toward a natural desert grassland community, and
- reducing the risk of catastrophic fires.

These benefits would result in more vegetation cover that would reduce soil erosion.

Under the current management of both planning areas, full suppression of wildfires is needed to maintain healthy Sonoran Desert communities, which are highly sensitive to fire. Full suppression in interior chaparral or desert grassland communities, which are fire-adapted vegetation types, would limit the natural beneficial affects of fire, encouraging vegetation type conversions towards higher proportions of

woody species. As a result, herbaceous cover on the soil surface would likely decline with related soil effects, including decreased infiltration and increased runoff and erosion. The use of heavy equipment during suppression could also increase soil disturbance and potentially increase erosion.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

Impacts are similar to those described in *Alternative A*, except that fire use would be allowed in adapted ecosystems. When lightning fires occur, larger wildfires could be allowed to occur, resulting in short term increases in soil loss. The long term recovery of natural fire adapted vegetation communities that respond rapidly to post fire conditions should make this a very short period.

Management actions of full suppression would continue in Sonoran Desert vegetation communities and in Wildland-Urban Interface (WUI) areas. In these areas, full wildfire suppression would have impacts similar to those described for *Alternative A*.

4.8.12 From Wild Horse and Burro Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

No wild horses or burros inhabit Agua Fria National Monument.

Under the current and alternative management of the Bradshaw-Harquahala Planning Area maintaining herd numbers at current levels in the Lake Pleasant Herd Management Area (HMA) would minimize impacts to soil from wild burros. In the Harquahala HA, removal of nuisance burros and burros from sensitive habitats would improve soil stability and productivity in the Harquahala MU.

4.8.13 From Management of Transportation and Public Access

***Alternative A* (No Action)**

Increasing visitor use and vehicle travel in the area addressed by the Phoenix RMP would intensify soil erosion due to increasing numbers of OHV users and poorly engineered or non-engineered trails and routes. Despite users being confined to existing routes, erosion could increase on OHV trails ascending steep terrain and crossing unstable soils on hillsides. Overall, impacts from OHV use on soils are expected to be less than in other parts of the Bradshaw-Harquahala Planning Area as users are now restricted to using existing routes.

West of Highway 93, increased soil erosion is expected from increased visitation, multiplying numbers of routes, and greater use of OHVs on steep slopes. Bank washes would be broken down and made unstable in wash “play” areas. Soil damage and erosion could result from surface disruption, soil compaction, and damage to soil-holding plants. Soils could be permanently damaged on steep slopes and across loosely graveled gentle slopes. Vehicle tracks on the lands here, especially desert pavement surfaces and hillsides, could last for 60 years or perhaps centuries, from evidence of Native American artwork and tread marks from World War II desert training exercises.

Under the current management of the areas west of Highway 93 and north of Wickenburg, areas of concentrated recreation and OHV use could result in the loss of or reduced vegetation cover, soil compaction, and streambank instability in riparian and wash areas, thus reducing soil moisture and soil productivity.

The lack of OHV-related management facilities and amenities would contribute to increasing damage to soils across the Bradshaw-Harquahala Planning Area. Vegetation and infiltration could decrease, wash bank and riparian area stability would decline throughout the area and increased

amounts of soil would be exposed to erosion and compaction. All new routes would be built in ways intended to minimize soil disturbance, erosion, and compaction.

Alternative B

In Agua Fria National Monument, impacts to soil resources, including increased surface disturbance and erosion, might occur in the Front Country and Passage Zones due to increased transportation and public visitation. In the monument, 38 miles of route would be closed and 5 miles of route would be built. The net reduction of 33 route miles would likely reduce soil disturbance, erosion, and compaction by OHV use. All of the routes that would be closed or opened are located in moderate to very severe potential soil erodibility areas.

In the Bradshaw-Harquahala Planning Area route closures in Tule Creek ACEC and allocations to maintain or enhance wilderness characteristics within the Castle Hot Springs and Harquahala Management Units would slightly reduce soil disturbance, erosion, and compaction by OHV use. Some of these routes are in soil mapping units with moderate potential soil erodibility, but most are in slight potential erodibility.

Alternative C

Impacts on the national monument would be similar to those discussed for *Alternative B.* In the monument, 50 miles of route would be closed and 6 miles of new route would be built. Moreover, this net reduction of 44 miles of route would marginally protect more soil resources than *Alternative B.*

Reducing vehicle travel routes and use in Harquahala Mountains ONA, and the allocations to maintain or enhance wilderness characteristics within the Black Canyon MU, the Hassayampa MU, and the Harquahala MU, would reduce recreation and OHV-related erosion, compaction, and surface disruption of soils. Some of these routes are in soil mapping units with moderate potential erodibility areas, but most are in slight potential erodibility.

Alternative D

Impacts on the national monument would be similar to those discussed in *Alternative C*. In the monument, 122 miles of route would be closed and no new routes would be built. Consequently, this alternative would provide the most protection to soil resources due to route closures.

Soil erosion resulting from vehicular travel would be curtailed by eliminating or mitigating recreation vehicle use in the allocations to maintain or enhance wilderness characteristics within the Black Canyon MU, the Hassayampa MU, and the Harquahala MU.

Restricting vehicle use to designated routes would further reduce soil impacts in all other parts of the planning area. As routes are designated, reclaimed, or reduced in width for non-motorized use, cover vegetation would increase, increasing infiltration and reducing the amount of soil exposed to erosion and compaction.

***Alternative E* (Preferred Alternative)**

Impacts on the national monument would be similar to those discussed for *Alternative C* and *D*, except that 70 miles of route would be closed and one mile of new route built. The net reduction of routes would be 69 miles. This reduction in route mileage would reduce soil disturbance more than *Alternatives B* and *C*, but less than *Alternative D*.

Soil erosion caused by vehicular travel would be curtailed by eliminating vehicle use in Tule Creek ACEC, and by reducing vehicle routes and cross-country travel in allocations to maintain or enhance wilderness characteristics and the Harquahala Mountains and Black Butte ONAs. Curtailing or reducing vehicle use in the above areas would benefit soil resources by eventually reducing the potential for soil

disturbance, compaction, and erosion caused by motorized activities.

4.8.14 From Management of Wilderness Characteristics

***Alternative A* (No Action)**

There are no impacts expected.

Alternative B

For the management of wilderness characteristics 56,040 acres would be allocated. In these areas soil disturbances, compaction, and erosion caused by human induced activities would be reduced.

Alternative C

Impacts would be the same as *Alternative B* except that 107,510 acres would be allocated for the management of wilderness characteristics. Soil disturbance created by these designations would be reduced the most in this alternative.

Alternative D

Impacts would be same as *Alternative B* except that 91,480 acres would be allocated for the management of wilderness characteristics. This alternative would provide more protection than *Alternative B*, but less than *Alternatives C* and *E*.

***Alternative E* (Preferred Alternative)**

Impacts would be the same as *Alternative B* except that 96,420 acres would be allocated for the management of wilderness characteristics. Soil protection as a result of these designations would be more than *Alternatives B* and *D*, but less than *Alternative C.*

4.9 Impacts on Air Quality

Air Quality Impacts from OHVs

Most of the air emissions generated in both planning areas are generated by OHVs. OHV use is an important recreation activity for residents of Maricopa and Yavapai Counties. On a countywide basis, OHVs generate much fugitive dust and tailpipe emissions.

Table 4-1 shows estimated current countywide emission rates for fugitive dust and nitrogen oxides (NOx) generated by countywide OHV use in the two counties. Table 4-1 also compares the OHV emission rates to the regional emissions generated inside the densely populated Phoenix nonattainment areas. Although no estimates were made to apportion OHV use in both planning areas, only a fraction of the countywide use listed in Table 4-1is likely to affect the planning areas. Countywide emissions generated by OHVs are only a small fraction of the overall regional emissions, and most of the countywide OHV use occurs in remote rural areas. Therefore, one can reasonably conclude that OHVs cause elevated air pollutant concentrations immediately near the routes on which they operate but that OHVs are unlikely to contribute to any meaningful regional air quality impacts that would affect the Phoenix nonattainment area or sensitive areas downwind of Phoenix.

Note that the current countywide OHV emission rates shown in Table 4-1 might increase in the future. The population of both Maricopa and Yavapai Counties are forecast to increase dramatically, and historical per-capita OHV use has increased faster than the rate of population growth. Thus, future emissions of fugitive dust would likely be higher than the current rates listed in Table 4-1. But recently enacted Federal emission limits for OHVs would ensure that the tailpipe emissions from individual OHVs would decrease in the future. Therefore, countywide nitrogen oxides emissions from OHVs could decrease in the future if the emission reductions from individual OHVs more than offset the increase in the number of OHVs operating.

General Conformity Regulatory Requirements

Each of the Alternatives specifies a different set of parcels that would be suitable for land disposal. Land disposal in the Bradshaw-Harquahala Planning Area is a Federal action that is subject to the Federal General Conformity air quality regulations, if the land disposal triggers induced population growth that would increase regional air emissions in the Phoenix nonattainment areas for ozone and PM_{10}. If the General Conformity rule applies, BLM is required to implement one of the following actions:

- Through discussions with the Maricopa Association of Governments (MAG) and the Arizona Department of Environmental Quality (ADEQ), confirm that MAG has already accounted for population growth and emissions from the land disposal parcels inside the nonattainment area and that MAG has included those emissions in its nonattainment area plans that are periodically submitted to Environmental Protection Agency (EPA) for approval.
- If induced growth emissions from the disposal parcels have not been included in the MAG Nonattainment Area Plans, BLM must implement emission offsets for the entire induced emissions from parcels inside the nonattainment areas.

Forecast Land Disposal Population Growth and Emissions

Table 4-2 lists the Year 2025 population and air pollutant emissions that would be generated by land disposal parcels in the ozone and PM_{10} nonattainment areas. The table assumes that

Table 4-1. Estimated Emissions from Countywide OHV Use

County	Annual OHV Trips	PM^{10} Emissions		Nitrogen Oxides (NO_x) Emissions	
		Emission Factor (lbs/trip)	Annual Countywide Emissions (tons/yr)	Emission Factor (lbs/trip)	Annual Countywide Emissions (tons/yr)
Maricopa	2,087,000(1)	4(3)	4,200	0.14(4)	146
Yavapai	1,195,000(2)	4(3)	2,400	0.14(4)	84
Total Emissions From All Sources In Phoenix Nonattainment Areas		Total PM^{10} Emissions (Year 2001)	79,500(5)	Total NO_x Emissions (Year 1999)	81,000(6)

Example calculation (NOx emissions within Maricopa County)
NO_x emission factor = 0.14 lbs per 25-mile ORV trip
Maricopa County ORV usage = 2,087,000 trips/year
Annual NO_x emissions = (2,087,000 trips/year) x (0.14 lbs/trip) / (2000 lbs/ton) = 146 tons per year of NO_x

Data Sources:

(1) Arizona State Parks, 2003

(2) Arizona State Parks, 2003

(3) Emission factor from Imperial Sand Dunes Recreation Area EIS (BLM 2003), assuming 25 miles per OHV trip

(4) NO_x emission factor from Imperial Sand Dunes Recreation Area EIS (BLM 2003)

(5) Maricopa Association of Governments (MAG) 2000

(6) MAG 2002

each parcel would be developed to a residential density based on that parcel's Regional Analysis Zone (RAZ) designation. For perspective, the table compares emissions from the land disposal parcels with the overall emissions from the entire nonattainment area.

Note that Table 4-2 lists air emissions only in the Phoenix nonattainment area. More population growth and emission increases would occur outside the nonattainment areas. As described later in this section, emission increases outside the nonattainment area have been accounted for in MAG air quality analyses.

It is not clear whether residential development of BLM land disposal parcels represents "induced growth" subject to General Conformity. The air quality agencies (MAG, ADEQ, and EPA) are aware of the upcoming land developments, and they have already accounted for the population growth in their air quality plans to improve regional air quality. BLM consulted with MAG and confirmed that MAG has already accounted for population growth and emissions from BLM's land disposal parcels within and outside the nonattainment area. MAG assumes that each BLM parcel would become fully developed according to the same time schedule and residential density as all other marketable parcels in the respective RAZ. MAG then estimates the residential emissions from all parcels (including BLM's) and uses the emissions to model air quality concentrations. The emission estimates and air quality modeling have been included in MAG's most recent nonattainment and maintenance plans.

Estimated emissions from population and transportation for the combined land disposal parcels inside the nonattainment areas exceed the General Conformity applicability thresholds: 50 tons/year of NO_x; and 70 tons/year of PM_{10}. Thus, if one assumes that the population residing on the land disposal parcels is “induced growth,” BLM's land disposal for each Alternative requires a General Conformity analysis. The required analysis is presented below.

General Conformity Analysis: Air Quality Impacts of Land Disposal

As described previously, land disposal would allow residential development on now-rural parcels, thereby contributing to regional population growth and regional air pollutant emissions. BLM's land disposal actions might be determined to trigger Federal General Conformity air quality requirements. In any case BLM's actions satisfy the General Conformity requirements for the following reasons:

- MAG and ADEQ have already accounted for full residential development of BLM's parcels within and outside the nonattainment areas. The population, vehicle travel, and emissions from each BLM parcel have been assumed to increase under the same schedule and intensity as the neighboring parcels.
- The future increases of emissions from BLM parcels inside the nonattainment areas have been directly accounted for. The emissions from each one-acre gridded parcel have been included in MAG's periodic emission inventories and air quality modeling used to show future improvements in ambient concentrations as part of the nonattainment plans and maintenance plans approved by EPA.
- Future emission increases for parcels outside the nonattainment area have been indirectly accounted for. MAG models emissions from all parcels inside the nonattainment by synthesizing each parcel into composite one-acre grid cells for input to the air quality computer model. Emissions from residential areas outside the nonattainment area are indirectly included in the computer modeling by specifying “boundary condition” (i.e. upwind) ambient concentrations at the nonattainment area boundary. As a worst-case assumption, MAG assumes that these upwind concentrations would remain constant in the future. In reality, the upwind

concentrations are likely to decrease in the future because major improvements in tailpipe emissions from off-road vehicles (ORV) and non-road engines would more than offset forecast population growth.

- The predictive modeling in MAG's nonattainment plans and maintenance plans showed that air quality in the nonattainment area can be improved by implementing EPA-approved air quality regulations. The air quality control measures approved by EPA include the following:
    - PM_{10} emission reductions can be achieved by tightening controls on construction, by paving roads and parking areas, and by enhancing street sweeping.
    - Emission reductions for ozone precursors emitted by off-road vehicles can be achieved mainly by encouraging the public to continue to replace their existing cars with new, cleaner vehicles. MAG would be required to continue to operate its Enhanced Inspection/Maintenance program for passenger cars to demonstrate the expected ongoing improvements do, in fact, occur.
    - Emission reductions from stationary industrial sources would be achieved by implementing new, more stringent, regulations on volatile organic compound emissions.

From the above analysis, one can conclude that BLM's land disposal actions satisfy the General Conformity Regulation. New residential development on previously rural BLM's land would have a minor effect on air quality immediately downwind from each new development. The ambient concentrations near each residential development would be less than allowable State and Federal limits. MAG's air quality modeling shows that regional air quality would continue to improve even after accounting for future population growth.

Air Quality Issues of Utility Corridors

Each of the Alternatives specifies a different set of utility access corridors, related mainly to the width of each corridor. At this time none of the utilities have filed permits to build new pipelines or transmissions lines through any of the available corridors. If new utilities were permitted in the future and were built in the narrower corridor, then building and maintaining the new utility would generate temporary, localized fugitive dust impacts immediately nearby. In those cases, EAs or, as suitable, Environmental Impact Statements (EISs) would be required for each new utility. The EA or EIS for each action would specify required fugitive dust controls. Any construction in nonattainment areas would have to comply with county dust control requirements. Typical dust control measures include the following:

- watering unpaved roads and staging areas,
- prohibiting work during high winds,
- covering or watering temporary stockpiles,
- washing trucks entering public streets from construction zones,
- sweeping paved areas, including public streets, and
- promptly revegetating disturbed areas.

4.9.1 From Special Area Designations

***Alternative A* (No Action)**

Most special area designations specify limiting, curtailing or mitigating land use development and OHV use. Restrictions resulting from special area designations are likely to increase emissions in the future because of forecast regional population growth and increases in regional OHV use.

Under its current management, two areas in Agua Fria National Monument have special area designations: Larry Canyon ACEC (80 acres) and Perry Mesa ACEC (9,580 acres). Larry Canyon ACEC would continue to be closed to motorized vehicles under *Alternative A*. Motorized vehicles in Perry Mesa ACEC are limited to designated roads and trails. Since Larry Canyon ACEC is inaccessible to vehicles, fugitive dust and emissions do not occur there. Restricting motorized vehicles to designated roads and trails in Perry Mesa ACEC would allow the continued generating of fugitive dust and tailpipe emissions.

Emissions from OHV use at the RCA and two MRMAs, would likely increase as a result of regional population growth and increased regional OHV use. OHV emissions might cause localized, temporary air quality impacts along the roads and trails, but would be likely to contribute little to regional air quality impacts when compared to the much larger emissions generated by the densely populated Phoenix metropolitan area.

Under the current management of the Bradshaw-Harquahala Planning Area BLM would continue to prohibit OHV use in five wilderness areas (96,820 acres) and encourage OHV use on one back country byway (Harquahala Mountain Summit Road).

Increased visitor use travel along the 10.5 mile Harquahala Mountain Summit Road Back Country Byway would increase fugitive dust in the immediate area of Blue Tank Wash and the Harquahala Mountains Wilderness, but this increase is not considered of more than local significance. Motorized vehicles are prohibited in wilderness areas and so designation of wilderness areas would not contribute to air emissions.

Alternative B

Site-specific recreation prescription in ACECs, RNAs and SRMAs would likely shift OHV users away from these areas to sites where OHV recreation is allowed and intensify vehicle travel and OHV use in the remaining accessible areas long designated routes. The result would be (1) reduced localized air quality impacts in the new restricted areas and (2) increased temporary and localized, degraded air quality in the remaining OHV areas.

Alternative C

The existing Harquahala Mountain Summit Road Back Country Byway, designating the Constellation Mine Road and Bloody Basin Roads as back country byways and later use of these roadways could attract more regional OHV users, drawing them away from other OHV areas. This shift in location is not expected to increase regional OHV use or regional fugitive dust emissions. The shift would concentrate more emissions onto each byway, thereby increasing localized air quality impacts.

In the Bradshaw-Harquahala Planning Area, BLM would designate seven ACECs, further shifting OHV use and possible air quality impacts.

Reducing vehicle travel routes and use in Harquahala Mountains ONA would reduce fugitive dust emissions in the immediate area of these land use designations.

Alternative D

Impacts from designating either new ACECs would be similar to *Alternative B*. The relative shift in air quality impacts between newly restricted areas and the remaining accessible areas would be greatest under *Alternative D* because it would apply new restrictions on the most land.

Air quality effects and fugitive dust emissions from vehicular travel and OHV use would be curtailed by eliminating or mitigating recreation vehicle use in the Sheep Mountain RNA.

***Alternative E* (Preferred Alternative)**

Site-Specific prescriptions and restrictions applied on ACECs (including ONAs), along with cultural and wildlife management prescriptions, would shift the locations of increases in OHV use and resulting fugitive dust and emissions. These actions would probably not affect the total future amounts of either OHV use or fugitive dust emissions throughout Agua Fria National Monument or the Bradshaw-Harquahala Planning Area.

4.9.2 From Lands and Realty Management

***Alternative A* (No Action)**

Most of the air quality issues from Lands and Realty Management are related to population growth and emissions involving land disposal, as described previously in section 4.9. From these sections one can conclude that BLM's actions satisfy all General Conformity requirements and that land disposal actions would not delay the region's compliance with the air quality standards.

New residential development on previously rural BLM's land would have a minor effect on air quality immediately downwind from each new development. The ambient concentrations near each residential development would be less than allowable State and Federal limits. MAG's air quality modeling shows that regional air quality would continue to improve even after accounting for future population growth.

Impacts on air quality would occur in two distinct phases and intensities. The first construction (or reconstruction) phase would contribute to elevated levels of criteria pollutants and fugitive dust, but generally over a limited area and only for short periods. Longer term impacts would result from continuing maintenance operations but generally at a much lower level of production of pollutants. All utility construction proposals would be subject to air quality restrictions (e.g. fugitive dust best management practices), procedures, and stipulations defined in site-specific environmental analysis of the project.

Air Quality Issues of Utility Corridors

Existing utility rights-of-way in the monument would be modified, removed, or maintained in accordance with BLM's agreements with utility providers for as long as the demand exists for the utility. Within the Bradshaw-Harquahala Planning Area, all major utilities would be routed through designated corridors. If new utilities were permitted in the future, then building and maintaining the new utility would generate temporary, localized fugitive dust impacts immediately nearby which would require mitigation. Implementing available dust control best management practices would ensure that any air quality impacts would be temporary and would be limited to the immediate area of the construction.

Air Quality Impacts Caused by Ongoing Maintenance

Under the current management of both planning areas ongoing maintenance and improvement of facilities and roadways would require continued use of construction equipment. This use would continue and could generate fugitive dust and tailpipe emissions by earthmoving and the use of heavy equipment. Each construction or maintenance action would cause a temporary, localized increase in ambient pollutant concentrations for the duration of the activity.

Alternative B

Alternative B would narrow the existing utility corridor in Agua Fria National Monument. This change is not expected to alter existing utility maintenance in the corridor and new utility construction could be permitted, subject to air quality procedures and stipulations defined in site-specific environmental analysis of the project. Thus, narrowing the existing utility corridor is not expected to affect air quality, but it would shift the location of future air quality emissions into a smaller area.

In the Bradshaw-Harquahala Planning Area new utility corridors would be designated for future expected demands. These designations would respond to the demand for the intensification of the power grid and would be consistent with the utility regulations of the Arizona Corporation Commission. Designating new utility corridors and widening the Black Canyon corridor for utility development might result in new pipelines or transmission lines being built through the area. Any such construction would likely generate fugitive dust and tailpipe emissions through earthmoving and the use of heavy equipment.

Impacts from ongoing maintenance and improvement of facilities and roadways would be the same as *Alternative A.*

Alternative C

Under *Alternative C* the Black Canyon utility corridor would be eliminated from Agua Fria National Monument. This action would maintain current emissions of criteria pollutants and fugitive dust. Though the utility corridor would be eliminated, BLM would continue to authorize existing utilities. Air quality impacts from ongoing maintenance would be the same as *Alternative A.*

In the Bradshaw-Harquahala Planning Area impacts would be the same as *Alternative B.*

Right-of-way applications in corridors would precipitate site-specific environmental analysis that would address air quality and actions to minimize impacts. Any construction in nonattainment areas would be subject to comply with county air quality rules.

Alternative D

Impacts in Agua Fria National Monument would be similar to those described for *Alternative C.*

In the Bradshaw-Harquahala Planning Area no new electric and gas corridors would be designated. The portion of the Black Canyon Multi-Use corridor would be extended so that it would be continuous north and south on BLM's land. If utilities elect to use this corridor in the future, they would generate criteria pollutants and fugitive dust through earthmoving and the use of heavy equipment. All utility construction in the planning area would be subject to air quality restrictions, procedures, and stipulations defined in site-specific environmental analysis for the project.

***Alternative E* (Preferred Alternative)**

Impacts under *Alternative E* would be similar to those described for *Alternative C.*

4.9.3 From Management of Soil, Air, and Water Resources

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Under the current management of both planning areas, soil, water, and air management would promote soils and ground cover and implement preventive erosion measures. This approach would reduce localized emissions of naturally occurring windblown fugitive dust.

4.9.4 From Biological Resource Management

***Alternative A* (No Action)**

In the Agua Fria National Monument, continued measures to protect biological resources, including the use of prescribed fire and mechanical vegetation treatment, may result in small amounts of temporary, localized emissions as discussed in section 4.9.11.

In the Bradshaw-Harquahala Planning Area, continued measures to protect ground cover, biological areas, and habitats would minimize emissions of criteria pollutants and windblown fugitive dust. Implementation of Land Health

Standards is expected to result in progressive increases in ground cover, which would result in reduced production of windblown fugitive dust not related to roads. In addition, measures designed to improve wildlife habitat would limit disturbance from building construction, land clearing, removal of downed wood, or woodcutting, which would also reduce emissions of criteria pollutants.

Alternative B

Impacts would be similar to those under *Alternative A*.

Alternative C

In Agua Fria National Monument two new WHAs would be allocated for enhancing pronghorn habitat. Four new ACECs would be designated for managing biological resources. This action would limit vehicle routes and prohibit new recreational site developments in pronghorn movement corridors, improving air quality in the newly designated areas. However, emissions might increase in the remaining areas where OHV use and recreational site developments are allowed.

The use of prescribed fire to improve habitat for pronghorn would have the same impacts as those discussed for *Alternative A*.

In the Bradshaw-Harquahala Planning Area BLM would designate seven ACECs. This would increase the acreage under strict management for motorized recreation and result in fewer cultural resource areas devoted to intensive public use. Localized air quality impacts would be reduced in the newly restricted areas while increasing the temporary, localized air quality impacts at the remaining OHV and public use areas.

Alternative D

In Agua Fria National Monument two wildlife habitat areas and one ACEC would be designated for managing biological resources. Motor vehicle routes that fragment pronghorn habitat and cross known pronghorn movement corridors would be closed, limited, or mitigated.

Alternative D would redesignate the most land subject to OHV restrictions. The impacts of this action would be similar to *Alternative C*, except that the relative shift in air quality impacts between newly restricted areas and the remaining accessible areas would be greatest under *Alternative D.*

All fences in the national monument would be removed. Removing fences would generate small amounts of localized, temporary emissions of criteria pollutants and fugitive dust.

The use of prescribed fire would have the same impacts as those discussed for *Alternative A*.

In the Bradshaw-Harquahala Planning Area impacts would be similar to those under *Alternative A*.

***Alternative E* (Preferred Alternative)**

Air quality impacts under *Alternative E* would be similar to those under *Alternative C*.

4.9.5 From Cultural Resource Management

***Alternative A* (No Action)**

There no impacts on air quality expected from existing Cultural Resource Management (CRM) in either planning area.

Alternative B

In both planning areas developing access, interpretive facilities, and interpretive media at selected sites would result in more vehicle trips as visitors access these areas. Five sites in the Agua Fria National Monument would be developed for high public use standards, which allows for the building of parking areas. Eight areas in the Bradshaw-Harquahala Planning Area would be managed as SCRMAs with sites

developed for public visitation. The result would be increased emissions of criteria pollutants and fugitive dust.

Alternative C

In Agua Fria National Monument impacts would be similar to those discussed for *Alternative B*. However, impacts would be of lower magnitude because only one site would be developed to High public use standards and nine sites would be developed to Moderate public use standards.

In the Bradshaw-Harquahala Planning Area impacts would be similar to those discussed for *Alternative B,* except the impacts would be of lower magnitude because only four areas would be managed as SCRMAs.

Alternative D

In Agua Fria National Monument only the Pueblo la Plata site complex would be developed for public visitation. Air quality impacts from vehicle traffic would be limited to Bloody Basin Road and the Pueblo la Plata area. Therefore, the levels of airborne pollutants under *Alternative D* would be lower than under *Alternatives B* or *C*.

In the Bradshaw-Harquahala Planning Area levels of pollutants generated by site visits would be lower than under *Alternatives B* or *C* because only two areas would be managed as SCRMAs with sites developed for public visitation.

***Alternative E* (Preferred Alternative)**

In Agua Fria National Monument two sites would be developed for public visitation under High public use actions, and six sites would be developed in accordance with Moderate public use management actions. The projected impacts on air quality would be lower than expected under *Alternative B* and greater than expected under *Alternatives C* and *D.*

In the Bradshaw-Harquahala Planning Area six areas would be managed as SCRMAs with sites developed for public visitation. The projected impacts on air quality would likely be lower than expected under *Alternative B* and greater than expected under *Alternatives C* and *D.*

4.9.6 From Paleontological Resource Management

Alternatives A (No Action), B, C, D,* and *E (Preferred Alternative)

There are no impacts to air quality expected as a result of paleontological resource management in either planning area.

4.9.7 From Recreation Management

Each of the Alternatives would impose new restrictions on motorized recreation in portions of the planning areas. These restrictions would shift OHV users away from the newly restricted areas but might increase OHV uses in the remaining areas. Adverse air quality impacts would be reduced in the newly restricted areas, but there could be temporary, localized increases in emissions in the remaining areas accessible to OHVs.

***Alternative A* (No Action)**

Prohibiting cross-country OHV use in Agua Fria National Monument would reduce levels of criteria pollutants and fugitive dust. In the Bradshaw-Harquahala Planning Area OHV travel would generate increased emissions of criteria pollutants and fugitive dust.

The current recreation uses (hiking, target shooting, viewing prehistoric sites, and dispersed camping with a 14-day limit) could generate emissions of criteria pollutants and fugitive dust from OHV travel, as well as emissions and smoke from campfires and stoves. Over time, as these uses continue to increase, so will the emission of criteria

pollutants associated with them. Under *Alternative A*, an unlimited number of competitive races could be authorized between October 15 and March 31, and in areas currently not used for such activities. This increased activity would potentially increase the amount of fugitive dust. However, all proposed races will be required to comply with county air quality standards thereby significantly reducing the potential for any noticeable increase of airborne emissions.

Areas open to camping would generate criteria pollutants and fugitive dust from OHV travel, as well as small amounts of emissions and smoke from campfires and stoves. The use of roadways and trails by motor vehicles would result in tailpipe emissions and fugitive dust from vehicular travel. Building and maintaining recreation-related roadways, trails, and facilities would generate temporary and short-lived emissions of criteria pollutants and fugitive dust from heavy equipment and earthmoving.

Alternative B

In Agua Fria National Monument emphasis in the Back Country RMZ would be on managing and maintaining the character of the natural landscape. In the Front Country RMZ, more focus could be placed on recreation and interpretation. OHV use in the portions of the national monument accessible to OHVs would generate emissions of criteria pollutants and fugitive dust.

Site-specific recreation prescriptions in ACECs, ONAs, RNAs, SRMAs, allocations to maintain or enhance wilderness characteristics, RMZs, and other allocations would likely shift OHV users away from these areas to areas where OHV recreation is allowed and intensify vehicle travel and OHV use in the remaining accessible areas along designated routes. The result would be (1) reduced localized air quality impacts in the newly restricted areas and (2) increased temporary and localized, degraded air quality in the remaining OHV areas.

Thus, new and displaced OHV users would increase criteria pollutants and fugitive dust concentrations in and immediately near designated routes. The number of competitive races would be limited to 14 which is significantly higher than current conditions. However emissions of particulate matter are not expected to be considerable due to mitigation measures placed on these races to comply with county air quality standards. In addition, countywide OHV emissions are only a small fraction of the total emissions generated by the Phoenix metropolitan area. They are unlikely to contribute any regional air quality impacts that would affect the metropolitan area or any sensitive areas downwind of Phoenix.

Emissions of criteria pollutants and fugitive dust in the planning areas would be reduced in some areas by route closures or restrictions. In the Bradshaw-Harquahala Planning Area net dirt roads would be reduced by 82 miles, and there would be 24 fewer miles of dirt road in Agua Fria National Monument. These route closures would likely reduce fugitive dust emissions in the immediate area along the routes. Regionally, these closures would not decrease vehicle use or emissions and fugitive dust.

Building and maintaining roadways, trails, and recreation facilities would generate temporary and short-lived emissions of criteria pollutants and fugitive dust from heavy equipment and earthmoving. BLM's development activities would comply with local and county dust control ordinances to limit emissions and fugitive dust.

Alternative C

In Agua Fria National Monument impacts from recreation on air quality would be similar to *Alternative B*, except that more vehicle routes would be closed or limited to motorized vehicles.

In the Bradshaw-Harquahala Planning Area, impacts of OHV use would be similar to *Alternative B*, except BLM would designate seven ACECs, further shifting OHV use and possible air quality impacts.

Alternative C would implement well-planned, sited, and managed SRMAs and address intensive recreation and OHV use and vehicle route designations at Table Mesa, the Hieroglyphic Mountains, Stanton, Wickenburg, San Domingo Wash, and Vulture Mine locales. The SRMAs would reduce air quality effects and fugitive dust emitted by improper activity, scheduled OHV events, and intensive OHV use. The number of competitive races would be limited to 6 per year which is slightly higher than current conditions. Air quality emissions from these activities would remain the same or lessen over time due to management actions.

Alternative D

Vehicular access would be limited under *Alternative D*, and a Back Country RMZ would be established throughout most of Agua Fria National Monument to preserve natural landscapes. Most Cultural Resource Management areas would be designated for limited public use. No other areas for intensive public use would be developed to replace the areas that would become restricted. Larger areas would be managed for more primitive recreation. This approach is not expected to reduce overall regional emissions, but it would (1) shift air quality impacts away from newly restricted areas and (2) intensify localized air quality impacts in the remaining areas where OHV recreation remains accessible. The relative shift in air quality impacts between newly restricted areas and the remaining accessible areas would be greatest under *Alternative D* because it would apply new restrictions on the most land.

In Agua Fria National Monument BLM would issue no SRPs. The decrease in visitors to the area from reduced recreation would lead to fewer vehicle trips, which would decrease emissions of criteria pollutants. Camping would generate criteria pollutants and fugitive dust from OHV travel, as well as small amounts of emissions and smoke from campfires and stoves. Building and maintaining roadways, trails, and facilities would generate emissions of criteria pollutants and fugitive dust from heavy equipment and earthmoving.

In the Bradshaw-Harquahala Planning Area new restrictions on OHV use would be enacted on more land under *Alternative D* than under any of the other Alternatives.

In the Bradshaw-Harquahala Planning Area 1,108 miles of routes would be closed. The route closures would reduce opportunities for air quality emissions and fugitive dust. Phasing out the use of the Hieroglyphic Mountains SRMA for OHV use would improve air quality and lessen dust emissions by eventually reducing and ending motorized activities on 16,510 acres.

Alternative D would implement well-planned, sited, and managed SRMAs addressing intensive recreation and OHV use and vehicle route designation at Table Mesa, the Hieroglyphic Mountains, Stanton, Wickenburg, San Domingo Wash, and the Vulture Mine areas. The result would be reduced air quality effects and fugitive dust emitted by improper activity, scheduled OHV events, and intensive OHV use. Under this alternative, no competitive races would be allowed. Therefore, air quality emissions from these activities would be expected to be reduced over time due to management actions.

***Alternative E* (Preferred Alternative)**

Impacts of site-specific prescriptions and restrictions within the Agua Fria National Monument and the Bradshaw-Harquahala Planning Area would be similar to *Alternative C.*

The impacts of SRMAs would be similar to *Alternative C*

The number of competitive races in this alternative would be limited to eight. Air quality effects and fugitive dust emissions would be negligible due to mitigation measures placed on these races to comply with county air quality standards. Therefore, air quality emissions from these activities would remain the same or be reduced over time due to management actions.

4.9.8 From Visual Resource Management

***Alternative A* (No Action)**

No policy standards are now directed toward visual resources.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

The managing of areas under Class I, II, and III standards could contribute to restrictions on some kinds of land development and use. The overall regional levels of construction-related pollutants and fugitive dust would be reduced if projects are modified or prohibited to satisfy VRM objectives.

4.9.9 From Rangeland Management

***Alternative A* (No Action)**

Under current grazing management, proper grazing practices should maintain adequate vegetation cover to keep windblown dust levels to near natural conditions. In areas of livestock concentration, such as around waters, salt grounds, and corrals, greatly reduced vegetation cover would increase potential windblown dust emissions. The affect of this windblown dust is generally localized near the source. Implementing the *Standards for Rangeland Health* (Land Health Standards) and the *Guidelines for Grazing Management* (Rangeland Management) would allow regular evaluation of grazing practices and remediation of problems that might lead to reduced air quality.

Alternatives B

Air quality impacts of *Alternative B* would be similar to those described for *Alternative A*, except that winter-only grazing of riparian areas would lead to higher vegetation densities in those areas. These higher densities would slightly reduce the potential for windblown dust.

Alternative C

Impacts of *Alternative C* would be similar to those under *Alternative B*, except that higher vegetation densities in riparian areas would be achieved more quickly with no grazing than with winter-only grazing.

Alternative D

In both planning areas existing livestock grazing allotments would be closed and any current livestock authorizations would be cancelled for the duration of the plan. This approach would decrease the amount of fugitive dust generated by livestock removing forage and ground litter. In addition, places livestock concentrate would slowly revegetate, reducing dust emissions even more.

***Alternative E* (Preferred Alternative)**

Impacts would be the same as those described for *Alternative B*.

4.9.10 From Minerals Management

***Alternative A* (No Action)**

There are no impacts expected in Agua Fria National Monument.

In the Bradshaw-Harquahala Planning Area locatable, saleable, and leasable mineral development could create short-term and periodic increased emissions of criteria pollutants and fugitive dust from construction, vehicular traffic, and other activities. Federal mineral rights on scattered lands that are outside the planning area and designated open to location, entry, and patenting could create short-term and periodic increased emissions of criteria pollutants and fugitive dust from construction, vehicular traffic, and other activities. In areas that would remain open to mineral exploration and development continued mining would result in long-term increases in emissions. However, these increases would likely be localized and are

subject to Federal and State emission regulations designed to mitigate impacts to air quality. For facilities in nonattainment areas, such regulations could result in off-sets or other facility-specific mitigation that would reduce air quality impacts.

Each of the Alternatives specifies a different set of areas where mining would or would not be allowed. From the Reasonable Foreseeable Development Scenarios described for section 4.17, one can estimate the following mineral development:

- 2 oil and gas exploratory wells, which could disturb as much as 20 acres;
- 60 to 100 small locatable mines and 1 or 2 large mines, which could disturb 1400 to 2400 acres;
- as many as 20 saleable mineral pits, which could disturb as much as 800 acres, over the next 20 years.

Air quality impacts from such mining would be mainly fugitive dust from equipment at the mine site, in addition to dust and exhaust from haul trucks. Any mining in the PM_{10} nonattainment area would have to comply with Maricopa County dust abatement and air quality rules. The impact of these operations would be mainly local (within 1/2 mile of the mine and haul road) and would contribute to the PM_{10} particulate count in the nonattainment area.

Alternatives B* and *C

In the Bradshaw-Harquahala Planning Area impacts would be the same as those discussed for *Alternative A*.

Alternative D

In the Bradshaw-Harquahala Planning Area reconveyed lands would be closed per public land order. *Alternative D* would also reduce the amount of land open to location, entry, and patent of locatable, saleable, and leasable minerals. This action would reduce emissions of criteria pollutants and fugitive dust.

***Alternative E* (Preferred Alternative)**

Impacts of *Alternative E* would be similar to those described for *Alternative A*.

4.9.11 From Fire Management

***Alternative A* (No Action)**

The use of prescribed fire and mechanical vegetation treatment in the Agua Fria National Monument would result in short-term, localized episodes of smoke and reduced visibility. Burning prescriptions account for smoke and contain smoke management plans. These plans require burning conditions that encourage rapid smoke dispersal and discourage smoke drift into either highly populated areas or ADEQ Class I or II airsheds. ADEQ would continue to require that BLM obtain prescribed burning approvals before each event to ensure that prescribed burns are conducted only during favorable weather to reduce air quality impacts. In this way, air quality impacts from prescribed burning are minimized.

When wildfires strike wilderness areas, suppression strategies are selected on a case-by-case basis in considering fire control opportunities, environmental impacts, and risks to public health and safety. Smoke might degrade local and regional air quality during these wildfires. The degree of smoke production and air quality impact depends on the suppression approach employed and the weather at the time of the fire.

Wildfires both on and off the national monument would also increase levels of smoke and reduce visibility during the fire. Weather conditions might cause high smoke columns and smoke drift into both high population areas and over ADEQ Class I and II airsheds. In most years, these events are of short duration (1 week or less) but might persist for longer periods. Multiple fire incidents, either simultaneously or sequentially, could increase the effects from smoke, or could increase the duration of the

smoke impact. Typically, the fire season is from April through July. The use of heavy equipment and the mechanical thinning of trees would generate small amounts of temporary, localized emissions of fugitive dust and tailpipe exhaust.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

Air quality impacts would be the same as described for *Alternative A*, except that naturally occurring wildfires could be managed to meet resource objectives in fire adapted ecosystems if conditions are favorable. Smoke management would be a consideration in making the decision to manage a wildfire, similar to the process applied for prescribed fires. The opportunity for smoke drift into populated areas and/or Class I or II airsheds would be increased over that described for *Alternative A*.

4.9.12 From Wild Horse and Burro Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected.

4.9.13 From Management of Transportation and Public Access

***Alternative A* (No Action)**

Prohibiting cross-country OHV would reduce levels of criteria pollutants and fugitive dust. In the Bradshaw-Harquahala Planning Area OHV travel would generate increased emissions of criteria pollutants and fugitive dust.

Any potential opening of new routes would increase fugitive dust during construction as well as increase emissions created by vehicles once the route is opened.

Alternative B

The net amount of roads closed or opened in the Agua Fria National Monument could have impacts on emissions and fugitive dust. In Agua Fria National Monument 140 miles of route would be left open and 33 net miles of route would be closed. Route closures could reduce fugitive dust created by construction as well as reduce emission of vehicles that used the route.

In the Bradshaw-Harquahala Planning Area net dirt roads would be reduced by 82 miles, and there would be 24 fewer miles of dirt road in Agua Fria National Monument. These route closures would likely reduce fugitive dust emissions in the immediate area along the routes. Regionally, these closures would not decrease vehicle use or emissions and fugitive dust. Route closures would concentrate more vehicles on remaining roads and thereby increase localized air quality impacts and fugitive dust levels.

Building and maintaining roadways, trails, and recreation facilities would generate temporary and short-lived emissions of criteria pollutants and fugitive dust from heavy equipment and earthmoving. BLM development activities would comply with local and county dust control ordinances to limit emissions and fugitive dust.

Alternative C

In Agua Fria National Monument, impacts on air quality would be similar to *Alternative B*, except that more vehicle routes would be closed or limited to motorized vehicles (44 miles).

In the Bradshaw-Harquahala Planning Area, impacts of OHV use would be similar to *Alternative B* except BLM would designate seven ACECs, further shifting OHV use and possible air quality impacts.

Alternative D

In Agua Fria National Monument, negative impacts to air quality would be the least due to the highest amount of route closures over other Alternatives (122 miles).

In the Bradshaw-Harquahala Planning Area 1,108 miles of routes would be closed. The route closures would reduce opportunities for air quality emissions and fugitive dust.

***Alternative E* (Preferred Alternative)**

In the Agua Fria National Monument, impacts would be the same as *Alternative B*, except that more net route miles would be closed (70 miles).

Impacts in the Bradshaw Harquahala Planning Area would be similar to those described under *Alternative B*.

4.9.14 From Management of Wilderness Characteristics

***Alternative A* (No Action)**

There are no impacts expected.

Alternative B

Under this Alternative, 56,040 acres would be allocated to the management of wilderness characteristics. Allocations to manage wilderness characteristics, which would limit or restrict vehicle use, could intensity vehicle travel to remaining accessible areas resulting in reduced localized air quality impacts in newly restricted sites and increased temporary and localized, degraded air quality in other areas.

Alternative C

Impacts would be the same as described in *Alternative B*, except that more area would be allocated to the management of wilderness characteristics (107,510 acres).

Alternative D

Impacts would be the same as described in *Alternative B,* except that more area would be allocated to the management of wilderness characteristics (91,480 acres), but less area would be allocated than in *Alternative C*.

***Alternative E* (Preferred Alternative)**

Impacts would be the same as described in *Alternative B* except that more area would be allocated to the management of wilderness characteristics (96,420 acres), but less area would be allocated than in *Alternative C* and more than in *Alternative D*.

4.10 Impacts on Water Resources

Impacts to water resources include effects on watershed resources such as soils, groundwater, vegetation cover, and surface water quality and quantity. These factors contribute to the riparian functional condition. Riparian system proper functioning condition, as defined in BLM's Riparian-Wetland initiative, is also included. The functioning condition of riparian-wetland areas is a result of interaction among geology, soil, water, and vegetation. Riparian-wetland areas are in proper functioning condition under the following conditions:

- Adequate vegetation, landform, or large woody debris is present to dissipate stream energy from high water flows, thereby reducing erosion and improving water quality.
- Sediments are filtered, bed-load is captured, and floodplains develop.
- Flood water retention and groundwater recharge are improved, root masses that stabilize streambanks against cutting action develop; and diverse ponding and channel characteristics are created to provide the habitat and the water depth, duration, and temperature needed for fish production, waterfowl breeding, and other uses.
- Greater biodiversity is supported.

This analysis focuses on management actions that could change the hydrologic functions of the

planning areas. The functions of most concern are soil compaction and vegetation removal, which lead to increased runoff, erosion, and later sediment deposition downslope or into a stream. Please review Section 4.8 for the discussion of impacts on soils.

Soil compaction along roads that traverse slopes can create an impermeable barrier to downslope subsurface water flow. This barrier can convert subsurface runoff to surface runoff. They can then route surface runoff to stream channels, and increase peak flows and sediment delivery to streams (Megan and Kidd 1972). Therefore, watersheds with higher road densities, especially roads close to streams, have a higher probability of increased peak flows and sediment yield.

4.10.1 From Special Area Designations

***Alternative A* (No Action)**

Under the current management of Agua Fria National Monument, Perry Mesa ACEC is likely to continue to experience minor degradation of water quality. The degradation occurs from disturbances created by vehicle and OHVs entering stream channels near road crossings and the effects of delivery of sediment from roadways into stream channels.

The national monument's eligible WSR segments would continue to be managed for nonimpairment to WSR values. Management actions to preserve these values would limit or preclude development or vehicular activities that would disturb soil and vegetation. Moreover, no new disturbance and the recovery of existing disturbance would likely reduce erosion and sedimentation, improving the river's hydrologic functions.

Current management of the Bradshaw-Harquahala Planning Area has designated five wilderness areas: Hells Canyon (9,900 acres), Hassayampa River Canyon (11,840 acres), Harquahala Mountains (22,880 acres), Hummingbird Springs (31,200 acres), and Big Horn Mountains (21,000 acres). Under current management in these wilderness areas, erosion and sedimentation of streams would be reduced, and hydrologic function of the areas is likely to improve because of restrictions on motorized vehicles. Managing other uses to minimize disturbance would also improve hydrologic function.

Table 4-3. Areas of Critical Environmental Concern (ACEC) Acreages

ACEC	Alternative A (Current)	Alternative B	Alternative C	Alternative D	Alternative E (Preferred)
Agua Fria National Monument					
Agua Fria Riparian Corridor				13,070	
Indian Creek			330		
Larry Canyon	80		50		
Lousy Canyon			80		
Perry Mesa	9,580				
Silver Creek			350		
Subtotal:	9,660		810	13,070	
Bradshaw-Harquahala Planning Area					
Baldy Mountain ONA				9,080	
Belmont-Big Horn Mountain				77,730	
Black Mesa			5,540	5,540	
Black Butte Raptor Area/ONA			800	14,480	8,260
Harquahala Mountain ONA			41,670	74,940	74,950
Sheep Mountain RNA			4,270	4,270	
Tule Creek		640	640	640	640
Vulture Mountain Raptor Area			2,790	6,120	6,120
Subtotal:		640	55,710	192,800	89,970
Total Acres:	**9,660**	**640**	**56,520**	**205,870**	**89,970**

Alternative B

Under *Alternative B* the impacts of special area designations on water resources in the National Monument would be the same as those described for *Alternative A*.

In the Bradshaw-Harquahala Planning Area managing Tule Creek ACEC would include its closure from mineral development (withdrawal from mineral entry). Withdrawal would eliminate the potential for disturbance to streambanks, soils, and ground cover from mining equipment/vehicle use and other related activities. In the portion closed to vehicles, former routes would revegetate, improving hydrologic function.

Alternative C

Designating four ACECs in Agua Fria National Monument (Silver Creek, Indian Creek, Larry Creek, and Lousy Canyon) will impact water resources by closing the areas to grazing and vehicles. This would encourage revegetation of disturbed areas and would improve hydrologic function.

In the Bradshaw-Harquahala Planning Area six ACECs are proposed under *Alternative C* (Table 4-3).

The following management actions would improve hydrologic function by encouraging revegetation of disturbed areas and reducing erosion and downstream sedimentation:

- mineral entry withdrawal,
- changes or elimination of livestock grazing, and
- closure or mitigation of motorized vehicle routes.

Alternative D

In Agua Fria National Monument, the designation of the Agua Fria River Riparian Corridor ACEC, which would include the ACECs proposed by *Alternative C,* would have impacts similar to *Alternative C.* Management

actions include closing, limiting, or mitigating vehicle routes and planned land acquisitions along Indian Creek. These actions would reduce OHV impacts to native vegetation, streambanks, and water quality. This ACEC is unlikely; however, to result in any measure of protection for water resources beyond that provided by the proclamation (Appendix A).

In the Bradshaw-Harquahala Planning Area impacts under *Alternative D* would be similar to those described for *Alternative C*, but *Alternative D* would close more areas to mineral entry.

***Alternative E* (Preferred Alternative)**

Alternative E would propose no new special area designations in Agua Fria National Monument. Impacts to water resources would be the same as described for *Alternative A*.

In the Bradshaw-Harquahala Planning Area management prescriptions for four ACECs (89,970 acres) would result in impacts similar to those described for *Alternative C*.

4.10.2 From Lands and Realty Management

***Alternative A* (No Action)**

Under the current management of Agua Fria National Monument, lands and realty management is subject to valid existing rights granted before the national monument's designation. Activities might continue if they are not precluded by the proclamation (Appendix A) and do not conflict with the established purpose.

In Agua Fria National Monument, actions for managing valid existing rights could lower water quality under the following conditions:

- construction-related delivery of pollutants and sediment occurs near surface drainages, or
- areas of groundwater recharge or natural processes of wetland or riparian function (e.g. runoff rate, soil erosion rate, water infiltration rate) are compromised.

Disturbances would be temporary, so hydrologic function would probably not change in the long-term.

In the Bradshaw-Harquahala Planning Area, impacts from disposal of as much as 54,370 acres outside MUs, include the potential loss of vegetation from developing those lands and possible increased erosion and sediment yield. Eventual development of the disposal lands in the Upper Agua Fria River watershed could also increase sediment yield in the upstream tributaries of the Agua Fria River and lower the water quality in Agua Fria National Monument. An increase in development could include an increase in the number of wells and increased groundwater use, which could lower groundwater levels and decrease contributions of groundwater to surface flows in the monument.

Acquiring privately owned and State-held lands in the Black Canyon and Lake Pleasant RCAs would create two large blocks of federally managed lands. These acquisitions would consolidate management and help develop healthy native plant communities in the upland and the riparian communities. This outcome, in turn, might affect water resources by increasing ground cover and potentially reducing sediment yield.

Similarly, acquiring lands in the Cordes Junction, Bumble Bee/Williams Mesa MRMAs, and the 4-mile reach of State land along the Hassayampa River would help BLM institute the land health standards that would protect and potentially improve the vegetation and might reduce sediment yield.

Building and maintaining facilities in planned transportation/utility corridors and at communication sites could degrade water quality as construction and operation create ground disturbance that could lead to increased soil erosion and result in increased stream turbidity.

Construction could also disturb riparian vegetation and change the proper functioning condition over limited areas of construction.

Alternative B

The Black Canyon utility corridor would be maintained but narrowed. This narrowing would affect water resources by reducing potential impacts from building and operating utilities in the corridor. Controls on development would minimize runoff into streams and route disturbance in such a way as to minimize impacts to water resources.

In the Bradshaw-Harquahala Planning Areaimpacts from disposal of land would be similar to *Alternative A*, except as much as 58,400 acres are available for disposal.

Building and maintaining planned transportation/utility corridors and communication sites would have impacts similar to those described for *Alternative A*.

Alternative C

Impacts on water resources in the Agua Fria National Monument would potentially be lower from the elimination of the Black Canyon utility corridor which would prohibit more utility right-of-way allocations. Impacts from operating and maintaining current facilities with prior existing rights would be similar to *Alternative A*.

The impacts of disposing of 49,100 acres of BLM-managed Federal lands would be similar to those for the disposal of lands under *Alternative B*.

Building and maintaining planned transportation/utility corridors and communication sites would have impacts similar to those described for *Alternative A*.

Alternative D

Impacts in Agua Fria National Monument would be the same as those described for *Alternative C*.

The impacts on water resources from acquiring private or State lands would be similar to those described for *Alternative B*.

Building and maintaining planned transportation/utility corridors and communication sites would have impacts similar to those described for *Alternative A*.

***Alternative E* (Preferred Alternative)**

Impacts in both planning areas would be similar to *Alternative B*.

4.10.3 From Management of Soil, Air, and Water Resources

***Alternative A* (No Action)**

In Agua Fria National Monument water resources are generally expected to improve through applying erosion prevention measures such as (1) limits on grazing access along streams and (2) control of OHV use in the river corridor. Management would focus on maintaining and improving riparian vegetation cover, which would reduce streambank erosion and sediment yield and generally contribute to the proper functioning condition of riparian areas. In the Bradshaw-Harquahala Planning Area water resources would benefit from incorporating salinity control measures (such as runoff controls and drainage routing) into erosion prevention strategies and rehabilitation treatments. Water resources would also benefit from implementing strategies for assuring spring flows. These actions would increase riparian and upland vegetation cover, which would reduce erosion and sediment yield.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

In both planning areas management prescriptions for soil, air, and water resources would protect water quality to meet Federal and State standards for designated uses. Moreover,

all land tenure decisions (such as land sales or exchanges) would be reviewed for their impacts to water resources (including protection of instream flows).

The Alternatives progress in their protection of soils, air, and water resources with *Alternative A* being the least protective and *Alternative D* being the most protective. Therefore, *Alternative E* is similar to the protections of *Alternative C.*

4.10.4 From Biological Resource Management

***Alternative A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

In Agua Fria National Monument impacts to water resources are expected from designating the Agua Fria River riparian corridor, which includes management actions, such as planting cottonwood and willow along the Agua Fria River and its tributaries. These changes in riparian vegetation would improve functional condition of the riparian zone.

In the Bradshaw-Harquahala Planning Area impacts to water resources are expected from acquiring water rights to maintain or enhance spring/riparian habitats in the planning unit, which would improve the hydrologic functioning condition of those systems. Additionally, removing all burros at water sources in the Big Horn, Granite Wash, and Harquahala Mountains would reduce soil disturbance and potential soil erosion near those locations, and would promote growth of riparian vegetation at springs, seeps, and streams throughout the planning areas.

Management prescriptions for biological resources would benefit water resources by conserving, enhancing, and restoring water bodies and by increasing native grasses on upland sites and streambanks. These grasses would protect soil, increase infiltration, and reduce sediment yield. BLM would monitor water quality to ensure compliance with Federal and State standards.

4.10.5 From Cultural Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected.

4.10.6 From Paleontological Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected.

4.10.7 From Recreation Management

***Alternative A* (No Action)**

Under the current management of both planning areas, sites with concentrated recreation could lose vegetation cover (both in riparian and upland vegetation communities) and undergo soil compaction. In riparian areas streambank stability could decrease. Decreased streambank stability could increase soil erosion, sediment yield, and sediment deposition.

SRPs would have conditions and stipulations in place to prevent damage to active or seasonal water courses. Authorized SRPs would not greatly affect current watershed conditions.

Under the current management of the Bradshaw-Harquahala Planning Area unlimited cross-country OHV use on the public lands west of Highway 93 could increase soil erosion, sediment yield, damage to banks of drainages, and sediment deposition. Limiting vehicles to existing routes would maintain current conditions.

Also, in the Bradshaw-Harquahala Planning Area, impacts to water resources from recreation management are expected from the increased water use by visitors and the proliferation of unplanned and unmanaged recreational trails and facilities. Increased water use includes the need to secure legal entitlement to water for recreation and domestic uses (e.g. equestrian trails, campgrounds) and possibly drilling wells or developing spring sources to provide water for visitors.

Impacts from recreation management include the following:

- soil compaction from visitor use and OHV traffic,
- erosion due to vegetation loss,
- increased sediment yield due to concentrated use in and near water,
- decreased water quality by leaking OHV engine oil, and
- degradation of air quality by OHV engine emissions.

Alternative B

In the Front Country (57,900 acres) and Passage (300 acres) RMZs within Agua Fria National Monument sediment would continue to move from roadways into stream channels in certain areas open to OHV use. OHVs crossing streams would continue to increase turbidity in stream channels. OHVs crossing streams could degrade water quality by leaking engine oil. In *Alternative B* there would be 145 miles of open motorized route.

In the Bradshaw-Harquahala Planning Area allocating eight SRMAs and two areas to maintain or enhance wilderness characteristics for management of recreation use could reduce soil erosion and sediment yield into drainages due to (1) building new facilities, such as parking lots and staging areas, and (2) maintaining a diverse network of motorized vehicle routes. These actions would harden some of the heavily used areas and would require motorized vehicles to stay on designated trails. Some activities that degrade water resources, as described in *Alternative A*, would continue.

Alternative C

In the Agua Fria National Monument, impacts would be similar to those described for *Alternative B*; except the Front Country RMZ would be reduced to 42,410 acres and the Passage RMZ would be reduced to 70 acres. Open motorized routes would also be reduced to 135 miles.

Impacts under *Alternative C* are expected to be similar to those described for *Alternative B*, but to a lesser degree due to (1) an increase in closed miles of motorized routes (Appendix N) and (2) the addition of more-restrictive motorized and non-motorized recreation prescriptions in nine SRMAs, six areas allocated to maintain or enhance wilderness characteristics, three ONA ACECs, one RNA ACEC, and nine other ACECs.

Alternative D

In the Agua Fria National Monument, impacts would be similar to those described for *Alternative C;* except the Front Country RMZ would be reduced to 1,530 acres and the Passage RMZ would be 990 acres. Open motorized routes would also be reduced to a total of 47 miles.

In the Bradshaw-Harquahala Planning Areaimpacts are expected to be similar to those described for *Alternative C*, but to a significantly lesser degree. *Alternative D* proposes a greater net closure of motorized travel routes and the addition of more-restrictive motorized and non-motorized recreation travel prescriptions in nine SRMAs.

***Alternative E* (Preferred Alternative)**

In the national monument, impacts would be similar to those under *Alternative C* and *D* because of moderately restrictive limitations on vehicular access and visitor use in a Back Country Zone of 57,200 acres. Riparian and upland vegetation would benefit from decreased access, resulting in improved functional condition of riparian zones. As a result, improvements would occur in streams from increased riparian zone health and streambank stabilization, enhancing stream morphology.

Impacts in the Bradshaw-Harquahala Planning Area are expected to be similar to those described for *Alternative C.* As modeled in Appendix N, the net closure of motorized travel routes would be similar to those in *Alternative B.* Application of motorized and non-motorized recreation travel prescriptions would occur in three large SRMAs and six Recreation Management Zones (RMZs).

4.10.8 From Visual Resource Management

***Alternative A* (No Action)**

There are no impacts expected.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

Applying VRM Class I, II, and III standards and objectives to all new projects and land use authorizations could result in restrictions on some kinds of land development and use in the national monument and in all management units. Streams and drainages would experience decreased delivery of sediment due to limitations on construction projects and OHV use.

4.10.9 From Rangeland Management

***Alternative A* (No Action)**

Except for the Larry Canyon ACEC, livestock grazing would continue under the terms of existing permits and leases. Impacts to water resources would include trampling and reduced vegetation, resulting in increased soil erosion in riparian areas (see section 4.8). Livestock grazing in riparian areas can also reduce streambank stability by reducing vegetation cover. This can lead to increased sediment yield, sediment deposition in streams, and possible changes in stream morphology, which reduces the functional condition of the riparian system.

In the Bradshaw-Harquahala Planning Area, applying rangeland health standards to livestock grazing would decrease soil disturbance, compaction, and erosion. Water resources would benefit from reduced sediment yield and deposition in streams, as well as from enhanced overall riparian functional condition. In both planning areas the guidelines adopted in Arizona Guidelines for Grazing Administration (see Rangeland Management) would benefit water resources by:

- maintaining or promoting ground cover that would provide for infiltration, permeability, soil moisture storage, and soil stability suitable for the ecological sites in management units; and
- maintaining or promoting sufficient vegetation to maintain sediment capture, groundwater recharge, and streambank stability, thus promoting stream channel morphology (e.g. gradient, width/depth ratio, channel roughness, and sinuosity) and functions suitable to climate and landform.

With the implementing of these guidelines, hydrologic function would improve with decreases in soil erosion, sediment yield, and sediment deposition in streams.

Alternative B

In both planning areas, impacts to water resources from rangeland/grazing management in uplands would be similar to those described for *Alternative A* except that grazing in riparian areas would be limited to winter, which would further reduce impacts to riparian hydrologic functions. This practice would reduce impacts to riparian vegetation and provide enhanced stabilization of stream morphology and decreased stream erosion.

Alternative C

In both planning areas, impacts to water resources from grazing in uplands would be similar to those described for *Alternative A*, except that upland grazing would be greatly reduced and grazing in riparian areas would be eliminated. This would further reducing impacts to hydrologic functions and significantly improve riparian vegetation and stream morphology.

Alternative D

In both planning areas water resources would benefit from the following:

- closing existing livestock grazing allotments,
- canceling all current livestock authorizations for the duration of the plan, and
- building fencing to control livestock use of the unfenced public lands.

Of all the Alternatives, *Alternative D* would cause the greatest improvement in water resources and riparian zone vegetation. Soil disturbance, sediment yield, and sediment deposition in streams would be lower than under any other Alternative.

***Alternative E* (Preferred Alternative)**

For the national monument, impacts would be the same as those under *Alternative B*, under which livestock would not graze in riparian areas during winter. Vehicular access would also be limited in the Back Country RMZ, which would benefit both riparian and upland vegetation to some extent by lessening damage to riparian areas, thus improving the overall functional condition of hydrologic processes in the riparian zones. Decreased erosion and sediment loading in streams would result.

For the Harquahala-Bradshaw Planning Area, impacts would be similar to *Alternative A*. management actions would focus on improving proper functioning condition; although, no specific restrictions are prescribed at this time. Restrictions such as seasonal grazing limitations could be implemented if monitoring finds deteriorating functional conditions.

4.10.10 From Minerals Management

***Alternative A* (No Action)**

For the national monument all Federal minerals would be withdrawn from all forms of mineral entry, including exploration. Thus, no impacts to water resources are expected from new mining claims. Valid existing mining claims might be developed, which could degrade water resources. These claims are gold placer claims and could affect water resources if they are developed, because stream gravels are processed by suction dredge and washed and screened to concentrate the gold particles. Impacts from placer mining could include the following:

- increasing sediment and turbidity in the stream,
- disrupting the streambed,
- changing stream morphology, and
- altering streamflow patterns and possibly riparian areas.

In the Bradshaw-Harquahala Planning Area, should exploration or development of mineral resources be pursued, special stipulations would be incorporated into the operating plan after the results of site-specific environmental assessments for each action are known. Impacts

cannot be projected before preparing such assessments, which would include methods, mitigation, and rehabilitation plans to meet the required conditions established in aquifer protection permits, Section 404 permits, and other permits for protecting water quality. Adverse effects to water resources from minerals management would then be minimized.

Locatable Minerals

The planning area would generally be left open to mineral location and development. Exploration for and development of locatable minerals are likely to somewhat degrade water resources and could result in increased soil erosion, sediment yield, and sediment deposition in streams, and changes in stream morphology. BLM would continue to administer mining in the Bradshaw-Harquahala Planning Area on a case-by-case basis and comply with regulations to prevent unnecessary and undue degradation of the environment (43 CFR 3715 and 43 CFR 3809).

Saleable Minerals

BLM-administered mineral estate serves as a major source of aggregate. Removing aggregate from floodplains could impair floodplain hydrologic function by destabilizing streambanks and contributing to increased erosion and sedimentation. Increased soil erosion, sediment yield, and sediment deposition in streams could also result.

Leasable Minerals

Areas open to leasable mineral development under current management could become a potential source of water quality degradation, if they are mined.

Alternative B

Impacts to Agua Fria National Monument would be the same as for *Alternative A*.

In the Bradshaw-Harquahala Planning Area, potential impacts on water resources are related to the amount of land open to mineral development (see Table 4-4). All Federal lands would be open to mineral entry except for areas legislatively withdrawn and other specially segregated areas. Impacts for this Alternative would be similar to *Alternative A.*

Alternative C

Impacts to Agua Fria National Monument would be the same as for *Alternative A*.

As in *Alternative B*, potential impacts in the Bradshaw-Harquahala Planning Area are related to the amount of land open to mineral development. Under this Alternative, the impacts would be substantially lower than those under *Alternative B* because more land would be removed from mineral development.

Alternative D

Impacts to Agua Fria National Monument would be the same as for *Alternative A.*

Impacts in the Bradshaw-Harquahala Planning Area would be lowest under this Alternative since the most amount of land would be removed from mineral development.

***Alternative E* (Preferred Alternative)**

Impacts to Agua Fria National Monument would be the same as for *Alternative A*.

In the Bradshaw-Harquahala Planning Area under *Alternative E*, impacts would be similar to those under *Alternative A*, except that riparian areas in the Black Canyon corridor would be closed to mineral material disposal, which would keep activity that could reduce water quality from occurring in those areas.

For the Bradshaw-Harquahala Planning Areaimpacts to mining would be the same as those under *Alternative B.*

4.10.11 From Fire Management

***Alternative A* (No Action)**

Where prescribed burning is conducted in Agua Fria National Monument the use of heavy equipment could disturb soil cover, thereby increasing soil erosion and stream sedimentation. The benefits of prescribed burning would greatly outweigh the potential harm from the use of heavy equipment.

Prescribed burning would allow fire to create a natural mosaic and establish vegetation communities of uneven age classes. Species diversity would be maintained, desirable perennial grasses would increase, and brush would decrease. This would increase ground cover, which results in increased infiltration and reduced runoff, erosion, and sedimentation. Because fire-related disturbances are temporary, long-term impacts to water resources would be unlikely.

Under the current management of both planning areas, full suppression of wildfires would decrease desirable perennial grasses and increase brush. The resulting increase in bare ground could increase soil erosion, sediment yield, and sedimentation. Shrubs would continue to invade the upland areas at the expense of desirable perennial grasses. As a result, herbaceous cover on the soils surface would decline with related hydrologic effects, including lower infiltration, increased runoff, increased erosion, and increased sedimentation. Over time, greater peak flood flows and sedimentation could alter channel morphology. Possible adjustments to stream channels include increased bank instability, filling of pools, and channel widening. Use of heavy equipment during suppression could also degrade soils by promoting an increase in soil disturbance.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

In both planning areas fire use, including natural starts, prescribed burning and mechanical treatments, would have impacts similar to those described in *Alternative A* for the Agua Fria National Monument.

4.10.12 From Wild Horse and Burro Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

No wild horses or burros are present in Agua Fria National Monument, so no impacts would occur.

In the Bradshaw-Harquahala Planning Area removing burros that damage sensitive areas, such as Browns Canyon, would allow those areas to recover from intense use, leading to improved vegetation conditions on streambanks and improved hydrologic function.

4.10.13 From Management of Transportation and Public Access

***Alternative A* (No Action)**

Proliferation of unplanned and unmanaged routes could continue to degrade stream bank stability and water resources.

Under the current management of the Bradshaw-Harquahala Planning Area unlimited cross-country OHV use on the public lands west of Highway 93 could increase soil erosion, sediment yield, damage to banks of drainages, and sediment deposition. Limiting vehicles to existing routes would maintain current conditions.

Alternative B

In Agua Fria National Monument sediment would continue to move from roadways into stream channels in certain areas open to OHV

use. OHVs crossing streams would continue to increase turbidity in stream channels. OHVs crossing streams could degrade water quality by leaking engine oil.

Closing routes would reduce the above described impacts. Riparian and upland vegetation would benefit from decreased access, resulting in improved functional condition of riparian zones.

In the Bradshaw-Harquahala Planning Area, maintaining a diverse network of motorized vehicle routes would harden some of the heavily used areas and would require motorized vehicles to stay on designated trails.

Alternative C

Impacts under *Alternative C* are expected to be similar to those described for *Alternative B,* but to a lesser degree due to an increase in closed miles of motorized routes.

Alternative D

Impacts are expected to be similar to those described for *Alternative C*, but to a significantly lesser degree. *Alternative D* proposes a greater net closure of motorized travel routes.

***Alternative E* (Preferred Alternative)**

In the national monument, impacts would be similar to those under *Alternative C* and *D* because of moderately restrictive limitations on vehicular access and visitor use.

Impacts in the Bradshaw-Harquahala Planning Area are expected to be similar to those described for *Alternative C*.

4.10.14 From Management of Wilderness Characteristics

***Alternative A* (No Action)**

Currently no areas are allocated for the management of wilderness characteristics. As a result, no impacts are expected.

Alternative B

In the Agua Fria National Monument no impacts are expected.

In the Bradshaw-Harquahala Planning Area, 56,040 acres would be allocated for the management of wilderness characteristics. These management areas could reduce soil erosion and sediment yield into drainages caused by human activity.

Alternative C

Impacts would be the same as *Alternative B,* except that a larger area would be allocated for management of wilderness characteristics (107,510 acres).

Alternative D

Impacts would be the same as *Alternative B* except that 91,480 acres would be allocated for management of wilderness characteristics.

***Alternative E* (Preferred Alternative)**

Impacts would be the same as *Alternative B* except that 96,420 acres would be allocated for management of wilderness characteristics.

4.11 Impacts on Biological Resources

Data Summary/Analytical Assumptions

The statements made in the analysis of impacts to the biological resources are based on the professional judgment of biologists reviewing and analyzing the Alternatives.

All activities undertaken or authorized by the BLM are subject to standard policy and guidance for the implementation of the Endangered Species Act and the National Environmental Policy Act. These policies and procedures should be fundamental considerations when evaluating the impacts of management actions and decisions on listed species.

4.11.1 From Special Area Designations

***Alternative A* (No Action)**

According to the current management guidance for Agua Fria National Monument, designating Larry Canyon and Perry Mesa ACECs are decisions that would remain in place following the implementing of this RMP. The 80-acre Larry Canyon ACEC was designated to protect pristine riparian habitat. As a result, motor vehicles and mineral entry are prohibited. However, Larry Canyon ACEC is located entirely within a steep canyon inaccessible to cattle and without any vehicle routes. Because the national monument proclamation withdrew the area from mineral entry, retaining the ACEC designation provides no measure of protection not otherwise provided by the proclamation (Appendix A).

Perry Mesa ACEC would provide the same level of protection from OHV impacts as provided by the proclamation.

In the eligible WSR segments of the Agua Fria River, wildlife habitat would benefit from actions taken to ensure no adverse impacts occur to values that define suitability for designation. Vehicle restrictions would reduce streambank erosion, water quality degradation, and adverse impacts to riparian vegetation and wildlife habitat.

Retaining the Harquahala Mountain Summit Scenic Road, which is an unpaved OHV route, would harm wildlife. Vehicle traffic along the route would occasionally disturb bighorn sheep and occasionally kill desert tortoises.

Management actions in designated wilderness areas (Hells Canyon, Hassayampa River Canyon, Harquahala Mountains, Hummingbird Springs, and Big Horn Mountains) would protect vegetation and wildlife habitat by continuing to restrict OHV use of these areas.

Alternative B

As in *Alternative* A, in Agua Fria National Monument continued management of the areas suitable for wild and scenic river corridors would protect sensitive riparian habitat. Designating Bloody Basin Road as a back country byway would likely increase recreation use of the area, thereby increasing ground disturbance from vehicular use and periodic maintenance. Wildlife deaths might occur as vehicular use increases. Bloody Basin Road crosses both arms of the pronghorn antelope movement corridor, near the Horseshoe Ranch and west of Badger Springs Wash, connecting habitat in Agua Fria National Monument to habitat in the Prescott and Tonto National Forests. Increased recreational use of the Bloody Basin Road Back Country Byway might impede pronghorn movement in the corridor and potentially alter behavior, including breeding.

In the Bradshaw-Harquahala Planning Area, designating Tule Creek ACEC would protect 1.3 miles of riparian habitat for the endangered Gila topminnow and other riparian and aquatic species by focusing conservation management on the area's regionally important deciduous

riparian vegetation. Closing the stream channel to vehicle use and livestock grazing and withdrawing this area from mineral entry would do the following:

- protect streambanks,
- reduce soil erosion, and
- limit riparian habitat damage from mining equipment/vehicle use and other mining.

The management actions would benefit 640 acres of Category II desert tortoise habitat by providing more protection and management emphasis to the area.

Designating the Constellation Mine Road as a Back Country byway could increase recreational use of the roadway and could increase human disturbance of wildlife populations and vehicle-related wildlife mortality.

Impacts from wilderness management would be the same as described for Alternative A.

Alternative C

Four new ACECs would be created in the national monument to protect 810 acres of rare riparian deciduous forest and habitat that supports the Gila chub, yellow-billed cuckoo, and several other priority species. Limiting vehicular travel in the Silver Creek (350 acres), Indian Creek (330 acres), Larry Creek (50 acres), and Lousy Canyon (80 acres) ACECs would have little effect on wildlife because only Silver Creek has any vehicular access which is only a single ford. As in *Alternative A*, these ACECs are unlikely to result in any measure of wildlife habitat protection beyond that currently provided by the monument proclamation (Appendix A), the Endangered Species Act (ESA), and Land Health Standards.

In the Bradshaw-Harquahala Planning Area six ACECs are proposed for designation under *Alternative C*: Harquahala Mountains (64,170 acres), Vulture Mountains (2,790 acres), Black Butte Raptor (800 acres), Sheep Mountain RNA (4,270 acres), Black Mesa (5,540 acres), and Tule Creek (640 acres).

The management actions for designating the Harquahala Mountain ACEC would (1) increase forage for bighorn sheep by reducing livestock competition during lambing season and (2) protect unique vegetation communities. Banning new vehicle routes would reduce impacts to vegetation and the likelihood of habitat fragmentation. Spring sources would be protected from livestock impacts, increasing riparian vegetation, wildlife cover, and forage. Management actions would better protect desert tortoise habitat from conflicting human activities. Some temporary impacts to vegetation and wildlife habitat might occur during fence building to exclude livestock from springs.

Management actions related to designating the Vulture Mountains and Black Butte ACECs would benefit nesting raptors by reducing the potential for human harassment within 1/2 mile of nest sites during the nesting season and providing added protection against disturbance of adjacent foraging areas. The actions would also provide more protection for desert tortoise habitat from conflicting human activities.

Management actions related to designating the Sheep Mountain RNA ACEC would benefit wildlife, including desert tortoises, by reducing human harassment and providing some protection of habitat from ground disturbances, including mining.

Impacts related to designating Tule Creek ACEC would be similar to those described for *Alternative B*. Impacts related to designating Constellation Mine Road as a back country byway would be similar to those described for *Alternative B*. Designating Black Mesa ACEC, while not specifically for biological resources, would provide management emphasis and some degree of habitat protection from mining disturbances. Wilderness management would have the same impacts as described for *Alternative A*.

The designation of these 10 total ACECs in the planning areas would add additional protection to 60,420 acres of Category I desert tortoise habitat, 15,310 acres of Category II habitat and 2,050 acres of Category III habitat as well as emphasize protection of 10.4 miles of riparian habitat. See Table 4-5 for comparisons of tortoise and riparian habitats protected in ACECs and WHAs by alternative.

Table 4-5. Desert Tortoise Habitat Acres by Alternative

Desert Tortoise Habitat	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E
ACEC (Total Acres)	*9,660*	*640*	*56,520*	*192,800*	*89,970*
Category 1 (ac)	0	0	37,470	51,920	51,570
Category II (ac)	0	640	5,890	106,030	19,040
Category III (ac)	0	0	5,940	15,510	7,750
Riparian (mi)	15.50	1.30	10.40	49.50	1.70
WHA (Total Acres)	*0*	*64,220*	*196,510*	*57,530*	*179,640*
Category I (ac)	0	60,420	6,520	0	3,610
Category II (ac)	0	1,710	126,740	2,850	129,340
Category III (ac)	0	2,050	10,690	3,630	4,040
Riparian (mi)	0	0.40	14.70	5.00	14.70

Alternative D

In Agua Fria National Monument the Agua Fria River Riparian Corridor ACEC (13,070 acres) would include the ACECs proposed by *Alternative C* but would also incorporate much more riparian habitat. Management actions include closing, limiting, or mitigating vehicle routes and prioritizing land acquisitions along Indian Creek. These actions would benefit wildlife species and habitat, including the Gila chub, yellow-billed cuckoo, and several other priority species in a few areas. OHV impacts to native vegetation, streambanks, and water quality would be reduced. However, this ACEC is unlikely to result in any measure of wildlife habitat protection beyond that provided by the monument proclamation (Appendix A), the Endangered Species Act, and Land Health Standards.

In the Bradshaw-Harquahala Planning Area eight ACECs are proposed for designation under *Alternative D*: the Baldy Mountain ONA (9,080 acres), Sheep Mountain RNA (4,270 acres), Vulture Mountains (6,120 acres), Harquahala Mountains ONA (74,940 acres), Belmont-Big Horn Mountains (77,730 acres), Black Butte Raptor ONA (2,580 acres), Black Mesa (5,540 acres), and Tule Creek (640 acres).

Management actions and impacts related to designating Sheep Mountain RNA ACEC would be similar to those described for *Alternative* C, but would also include removing all fencing, which would allow unimpaired movement of wildlife with large home ranges.

Fencing would be removed because grazing would be eliminated on BLM's lands.

Impacts of designating Vulture Mountains ACEC would include those described for *Alternative C*. In addition, *Alternative D* would expand the ACEC from 2,790 acres to 6,120 acres, protect nest sites from disturbances within 1 mile and include the total closure of the area to mineral entry, protecting nesting raptors and desert tortoise habitat from a wider range of potential threats.

Black Butte Raptor ONA ACEC would be expanded to 2,580 acres to protect a larger area. The impacts would be similar to those described for *Alternative C,* but would include the total closure of the area to mineral entry, protecting nesting raptors and desert tortoise habitat from a wider range of potential threats over a larger area.

Management actions in Harquahala Mountains ACEC would be similar to those described for

Alternative C but would include prohibiting the building of new livestock fences and removing all fencing, which would facilitate wildlife movement throughout the area. Closing the ACEC to all forms of mineral entry would result in minimal human intrusion and less ground disturbance from mining. These management actions would benefit the resident bighorn sheep population, desert tortoises, and other wildlife by reducing mining impacts to vegetation.

Designating Belmont-Big Horn Mountains ACEC would benefit wildlife populations and habitat by doing the following:

- reducing or limiting vegetation disturbance and harassment from some activities,
- potentially acquiring important habitat, and
- eliminating fences that hinder deer and bighorn sheep movement.

Management actions would add management emphasis and protection to desert tortoise habitat.

Designating Baldy Mountain ACEC would benefit wildlife, including desert tortoises, by reducing human harassment and providing some protection of habitat from ground disturbances, including mining.

Impacts of designating Tule Creek ACEC would be similar to those described for *Alternative B* but would include protecting more area from vehicle disturbances, which affect upland wildlife, including desert tortoises.

Impacts from wilderness management would be the same as described for *Alternative A*.

The designation of these nine ACECs would add additional protection to 66,940 acres of Category I desert tortoise habitat, 167,710 acres of Category II habitat and 6,000 acres of Category III habitat as well as emphasize protection of 49.5 miles of riparian habitat. See Table 4-5 for comparisons of tortoise and riparian habitats protected in ACECs and WHAs by Alternative.

***Alternative E* (Preferred Alternative)**

In Agua Fria National Monument impacts of designating Bloody Basin Road as a Back Country byway would be similar to those described for *Alternative B*.

In the Bradshaw-Harquahala Planning Area four ACECs are proposed for designation: Harquahala Mountains ONA ACEC (74,940 acres), Vulture Mountains ACEC (6,120 acres), Black Butte ONA ACEC (8,260 acres), and Tule Creek ACEC (640 acres).

Impacts of designating Tule Creek ACEC would be similar to those described for *Alternative C*. Impacts of designating the Vulture Mountains ACEC would be similar to those described for *Alternative D* except that the habitat would remain susceptible to mining disturbances.

Designating and managing the Harquahala Mountains ONA ACEC would reduce motor vehicle disturbances to bighorn sheep, desert tortoises, and other wildlife. It would also set a high priority on restoring and maintaining vegetation diversity, spring sources, and healthy wildlife populations. Closing Browns Canyon to livestock grazing would increase riparian vegetation diversity and abundance, thus improving habitat quality for wildlife. Limiting the building of new roads and fences would facilitate wildlife movement throughout the area. Allocating the area as VRM Class II may affect wildlife management activities (see section 4.11.8 From Visual Resource Management). Developing visitor facilities might alter wildlife movement through and around those facilities.

Management actions for designating the Black Butte ONA ACEC would benefit nesting raptors (1) by reducing the potential for human harassment within 1 mile of nest sites during the nesting season and (2) by providing added protection against disturbance of adjacent foraging areas. The actions would better protect desert tortoise habitat from conflicting human activities. Allocating the area as VRM Class II may affect wildlife management activities (see

section 4.11.8 From Visual Resource Management).

The designation of these four ACECs would add additional protection to 74,490 acres of Category I desert tortoise habitat, 19,040 acres of Category II habitat and 7,780 acres of Category III habitat as well as emphasize protection of 1.7 miles of riparian habitat. See Table 4-5 for comparisons of tortoise and riparian habitats protected in ACECs and WHAs by Alternative.

Impacts from wilderness management would be the same as described for *Alternative A.*

4.11.2 From Lands and Realty Management

***Alternative A* (No Action)**

In Agua Fria National Monument, continued use of the existing utility right-of-way is expected to temporarily harm vegetation because of ground disturbance during operation and maintenance. These activities can also encourage the establishment of invasive weeds in or next to the disturbed areas.

Acquiring privately owned and State-held lands in the Black Canyon and the Lake Pleasant RCAs would create two large blocks of federally managed lands. These blocks would consolidate management and help develop healthy native plant communities in upland and riparian communities. Healthy native plant communities, in turn, would benefit wildlife, including special status species; such as desert tortoise, by providing adequate forage, cover, and breeding habitat.

Similarly, acquiring lands in the Cordes Junction, Bumble Bee, and Williams Mesa MRMAs and the 4 mile reach of State land along the Hassayampa River would help BLM institute the Land Health Standards that would protect and restore wildlife habitat in these areas.

Building more utilities, transportation corridors, and communications sites would disturb vegetation in the facility footprint and could encourage the establishment of invasive weeds in or next to the disturbed areas. Linear features normally authorized by right-of-way can have the following affects:

- fragment habitat,
- prevent wildlife movement,
- result in loss of habitat
- result in wildlife collisions,
- increase human presence and harassment,
- displace individual animals,
- degrade habitat quality, and
- facilitate long-term human population growth.

Building and operating facilities in the Meade-Phoenix and Parker-Liberty transportation corridors, the Central Arizona Project corridor, the future gas line corridor, and the El Paso Natural Gas Company's No. 1104 corridor could create barriers to wildlife movement and disturb Category I, II, and III tortoise habitat.

Alternative B

In Agua Fria National Monument narrowing the Black Canyon utility corridor would reduce potential impacts to vegetation and wildlife habitat during the building and operating of utilities.

Impacts from disposing of up to 53,143 acres of land outside the MUs would include the potential loss of vegetation and wildlife habitat on those lands, including 10,709 acres of desert tortoise habitat.

Acquiring lands meeting the criteria described for Management Common to All Action Alternatives would benefit vegetation and wildlife by consolidating management under Federal ownership and reducing the potential for habitat disturbance from non-Federal projects.

Building and maintaining facilities in planned transportation and utility corridors and

communication sites would have similar impacts to those described for *Alternative A.* The Black Canyon Corridor would be expanded 1 mile west of its current western boundary to accommodate future utilities outside the national monument. There are no current plans by industry to construct additional utility lines through that corridor within the life of this plan. Proposals for utility development would be confined to the expanded corridor and impacts would be addressed in an Environmental Assessment or Environmental Impact Analysis conducted when a project is proposed.

Alternative C

Eliminating the Black Canyon utility corridor would prohibit more utility rights-of-way in Agua Fria National Monument. No other utility impacts to vegetation or wildlife habitat are expected beyond operating and maintaining the existing facilities with prior existing rights.

In the Bradshaw-Harquahala Planning Area the impacts on biological resources from acquiring non-Federal lands and disposing of 49,100 acres of BLM managed Federal land would be similar to those described for *Alternative B.*

Building and maintaining planned transportation and utility corridors and communication sites would have similar impacts to those described for *Alternative A*. The Black Canyon Corridor would be expanded 2 miles west of its current western boundary to accommodate future utilities outside the national monument. There are no current plans by industry to construct additional utility lines through that corridor within the life of this plan. Proposals for utility development would be confined to the expanded corridor and impacts would be addressed in an Environmental Assessment or Environmental Impact Analysis conducted when a project is proposed.

Alternative D

In Agua Fria National Monument eliminating the Black Canyon utility corridor would have impacts similar to those described for *Alternative C.*

In the Bradshaw-Harquahala Planning Area, building and maintaining facilities in planned transportation and utility corridors and at communication sites would have impacts similar to those described for *Alternative A.* The portion of the Black Canyon corridor west of Interstate 17 would remain the same as it is currently, but the corridor would be expanded south to include BLM's land past Black Canyon City and across Table Mesa. This would create a couple of very narrow places in the corridor which may make it impractical for future utility development, or which will limit placement of facilities, increasing the possibility of having power line towers impacting sensitive resources.

The impacts on biological resources from acquiring private or State lands would be similar to those described for *Alternative B.*

***Alternative E* (Preferred Alternative)**

In Agua Fria National Monument narrowing the Black Canyon utility corridor would have impacts similar to those described for *Alternative B.*

In the Bradshaw-Harquahala Planning Area the impacts on biological resources from acquiring non-Federal lands and disposing of 38,755 acres of BLM's managed Federal lands would be similar to those described for *Alternative B.*

In the Bradshaw-Harquahala Planning Area, building and maintaining facilities in planned transportation and utility corridors and at communication sites would have impacts similar to those described for *Alternative A,* but the portion of the Black Canyon corridor west of Interstate 17 would be expanded westward 1 mile from the Bumblebee area south, and 2 miles from Bumblebee north. The impacts of the corridor expansion would be similar to those describe in *Alternatives B* and *C.*

The impacts on biological resources from acquiring private or State lands would be similar to those described for *Alternative B*.

4.11.3 From Management of Soil, Air, and Water Resources

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Implementing activity plans to maintain or improve watershed conditions, soil cover, and water flows would benefit biological resources by maintaining or improving riparian vegetation quality, species diversity, and water quality in select drainages.

4.11.4 From Biological Resource Management

***Alternative A* (No Action)**

In Agua Fria National Monument proposed landscape improvements, such as cottonwood and willow plantings along the Agua Fria River and its tributaries, would increase the density and quality of the riparian plant communities and improve the quality of wildlife habitat.

Firewood collection within the monument would be prohibited where it affects wildlife habitat, so no impact to biological resources is expected.

Continued stocking of federally listed sensitive native fish such as the Gila chub, Gila topminnow, and desert pupfish, into suitable habitat in the Agua Fria watershed could increase the population size, geographic distribution, and overall viability of these native fishes.

Modifying livestock fencing would facilitate pronghorn antelope movement between lambing and foraging areas.

Protecting Arrastra Creek, Antelope Creek, Weaver Creek, and the Harquahala Mountains would maintain vegetation and wildlife habitat.

Cooperating with the Arizona Game and Fish Department (AGFD) to acquire water rights in addition to reducing competition for water among big game species, livestock, and burros would ensure the legal availability of water and maintenance of flows in seeps and springs throughout the Bradshaw-Harquahala Planning Area. This water would maintain aquatic and wetlands vegetation and wildlife.

The use of native plant species when restoring or rehabilitating disturbed or degraded rangelands would reestablish native rangeland plant communities and improve forage and habitat quality for wildlife.

Protecting significant cliff areas in the Big Horn and Vulture Mountains and the Black Butte area would benefit raptors, including golden eagles, by reducing human harassment during their nesting season. Limits on the use of the area by wild burros and restrictions on other rights-of-way would protect raptor foraging areas from degradation and disturbance.

Protecting bighorn sheep lambing areas in the Harquahala Mountains from habitat disturbance and disposal would increase forage quality and quantity and reproductive success in sheep populations.

Alternative B

Most of the management prescriptions for biological resources apply to all action Alternatives; therefore, with the exception of allocated wildlife habitat areas and other special areas that influence habitat management, there is little difference between Alternatives. All of the actions discussed below are designed to maintain or improve the condition of priority wildlife populations and priority habitats.

Applying the Land Health Standards to all BLM-authorized activities would benefit biological resources by:

- reducing soil erosion,
- restoring and maintaining the functional condition of riparian habitats,
- ensuring that progress is made toward desired plant communities in both riparian and upland areas, and
- reducing the presence of invasive species.

Implementing these standards would place a high priority on the habitat needs of special status species where wildlife and other land uses conflict.

Reintroducing, transplanting, and supplemental stocking of wildlife, including game, nongame, and endangered species, would enhance biological resources by (1) restoring or maintaining wildlife populations, distributions, and genetic diversity and (2) contributing to the conservation and recovery of listed species.

Implementing desert tortoise management standards and actions would lead to conserving and protecting tortoise populations and habitat. Habitat protection for tortoises would affect other wildlife species that use the same habitat, such as rosy boa, chuckwalla, Gila monster, mule deer, and desert bighorn sheep.

Management direction provided by Desired Future Condition (DFC) objectives would benefit biological resources. The objectives would protect and conserve priority habitats and priority species, implement approved recovery plans, and contribute toward the conservation and recovery of listed threatened or endangered species.

Considering the impacts of permitted activities on priority wildlife species and priority habitats in determining conformance with the management direction provided by the DFC objectives would ensure maintenance of habitat quantity and quality, minimize or avoid "Take" of migratory birds, and generally conserve biological resources.

Management direction provided by DFC objectives would benefit biological resources by establishing habitat standards whereby habitat quality would be protected for many riparian and upland species. These objectives would be considered part of Standard Three of the Land Health Standards and be implemented using BLM's discretion.

The management action designed to protect springs and seeps would affect biological resources by protecting from overexploitation these important habitat features and their value to biological resources and natural processes.

The management action to maintain wildlife water availability would ensure that water-dependant wildlife would continue to have access to existing water sources and new water sources could be built where needed to maintain, restore, or enhance populations. This action would affect the distribution and abundance of some wildlife during some seasons. Research is ongoing to look at impacts of artificial wildlife waters.

Implementing standards for artificial water design, water quality monitoring, and water rights protection would benefit biological resources by protecting aquatic wildlife habitat quality and quantity as well as wildlife access to water.

Prohibiting domestic sheep and goat grazing within nine miles of occupied desert bighorn sheep habitat will significantly reduce the likelihood of disease transmission to the wild sheep populations.

Guidance on exotic species management would benefit biological resources by protecting native wildlife and plants by emphasizing the restoring and maintenance of native species.

The management action to evaluate and mitigate impacts to sensitive wildlife habitat would benefit biological resources by giving wildlife habitat a priority over motorized recreation when conflicts are found.

Land tenure decisions would affect biological resources by ensuring that endangered species

conservation or recovery values are retained on Federal lands.

The management action to continue to manage wildlife habitat cooperatively and in partnership with the AGFD and other entities would benefit biological resources by focusing management emphasis and resources on high-priority issues and avoiding costly redundancy.

The Agua Fria National Monument Proclamation (Appendix A) describes wildlife and habitats, emphasizing their management. This emphasis places a high priority on biological resources when conflicts arise between wildlife management and other land uses.

Collection of dead and down firewood for campfire use in the monument would remove small amounts of dead woody material used by some wildlife species. In most places the woody material selected for firewood is from species targeted for reduction in plans to enhance the diversity and health of the native desert grasslands. Impacts to biological resources are expected to be negligible. Collection of firewood in riparian areas could reduce habitat for wildlife dependent on dead and down woody material. Though the impact of wood collection is expected to be low, provisions to temporarily or permanently close areas to wood collection to prevent resource damage should ensure it.

In the Bradshaw-Harquahala Planning Area impacts to biological resources from firewood and vegetation collection would be essentially the same as those described for the national monument, except that noncommercial collection of some wood and cacti skeletons is allowed. Restricting commercial collection would protect from overexploitation stands of ironwood and mesquite that provide valuable habitat for many birds and other wildlife. In addition to closing, limiting, or mitigating motorized vehicle routes in the Harquahala Mountains WHA (64,220 acres), prohibiting the building of rangeland improvements in Browns Canyon and the Inner Basin would benefit biological resources by reducing impacts to Sonoran desertscrub, chaparral vegetation, and priority wildlife habitat, including habitat for mule deer, bighorn sheep, and desert tortoise.

The designation of the Harquahala Mountain WHA would add additional protection to 60,420 acres of Category I desert tortoise habitat, 1,710 acres of Category II habitat and 2,050 acres of Category III habitat as well as 0.4 miles of riparian habitat in Browns Canyon by emphasizing wildlife habitat management in this area. See Table 4-5 for comparisons of tortoise and riparian habitats protected in ACECs and WHAs by alternative.

Alternative C

Impacts to biological resources would be similar to those described for *Alternative B*, except as described below.

The allocation in Agua Fria National Monument of the Pronghorn Fawning Habitat WHA (16,810 acres) and the Pronghorn Movement Corridor WHA (22,520 acres) would do the following:

- limit or mitigate vehicular access to achieve DFCs,
- prohibit developing new recreational facilities,
- require in all fences meet BLM standards, and
- emphasize management of wildlife habitat, thereby reducing pronghorn habitat fragmentation and movement restrictions

In these managed areas, prescribed burns would improve pronghorn forage quality and reduce the abundance and spread of invasive species.

Allocating the Belmont/Big Horn Mountains WHA (77,730 acres) and Date Creek Mountains WHA (2,850 acres) would require the closure, limitation, or mitigation of motorized vehicle routes to reduce impacts to wildlife populations and habitat fragmentation. In the Belmont/Big

Horn Mountains, this allocation would also protect bighorn sheep and desert tortoise populations from habitat fragmentation and allow unrestricted movement and greater use of this habitat, maintaining genetic diversity and population health of bighorn sheep. Other management actions for these areas include (1) acquiring State and private lands and (2) prohibiting the building of new fences. These actions would protect and maintain Sonoran desertscrub vegetation communities by restricting land disturbance.

Allocating the Harquahala/Belmont/Big Horn WHA (140,790 acres) would have impacts on biological resources similar to those described for the Belmont/Big Horn Mountains WHA and would also ensure that the needs of bighorn sheep are given priority consideration during evaluation of any future road improvements.

Allocating the Upper Agua Fria River Basin Habitat Corridor WHA (9,907 acres) would benefit biological resources (1) by eliminating conflicts with vehicle routes that degrade wildlife habitat value and (2) by allowing pronghorn and mule deer to move between BLM lands and national forest lands by eliminating the building of new fences.

The designation of the WHAs would add additional protection to 6,520 acres of Category I desert tortoise habitat, 129,590 acres of Category II habitat and 7,840 acres of Category III habitat as well as 14.7 miles of riparian habitat by emphasizing wildlife habitat management in these areas. See Table 4-5 for comparisons of tortoise and riparian habitats protected in ACECs and WHAs by alternative.

Alternative D

Impacts to biological resources would be similar to those described for *Alternative B*, except as described below.

In Agua Fria National Monument impacts of allocating the Pronghorn Movement Corridor and the Pronghorn Fawning Habitat WHAs would be similar to those described for *Alternative C*, except that all fences would be removed in the absence of livestock grazing and substantial obstacles to movement would be eliminated.

Impacts of allocating Date Creek Mountains WHA would be similar to those described for *Alternative C*, except that all existing fences would be removed and mineral material and vegetation sales would be prohibited. These management actions would allow big game to move throughout the areas and would eliminate potential tortoise habitat destruction from mineral material sales.

Impacts of allocating the Upper Agua Fria River Basin Habitat Corridor WHA (21,443 acres) would be similar to those described for *Alternative C*, except that the management would be applied to a larger area and all fences would be removed, facilitating big game movement.

The designation of the WHAs would add additional protection to 2,850 acres of Category II habitat and 3,630 acres of Category III habitat as well as five miles of riparian habitat by emphasizing wildlife habitat management in these areas. See Table 4-5 for comparisons of tortoise and riparian habitats protected in ACECs and WHAs by alternative.

***Alternative E* (Preferred Alternative)**

Impacts to biological resources would be similar to those described for *Alternative B* except as described below.

Impacts of allocating the Pronghorn Movement Corridor WHA and the Pronghorn Fawning Habitat WHA would be similar to those described for *Alternative C*. *Alternative E* would prevent impacts to pronghorn during the fawning season from human activity resulting from special recreation use permits.

Impacts of allocating the Belmont/Big Horn Mountains WHA would be similar to those described for *Alternative C* for allocating Belmont/Big Horn Mountains WHA and the

Harquahala/Belmont/Big Horn Wildlife Corridor WHA.

The designation of the WHAs would add additional protection to 3,610 acres of Category I desert tortoise habitat, 129,340 acres of Category II habitat and 4,040 acres of Category III habitat as well as 14.7 miles of riparian habitat by emphasizing wildlife habitat management in these areas. See Table 4-5 for comparisons of tortoise and riparian habitats protected in ACECs and WHAs by alternative.

4.11.5 From Cultural Resource Management

***Alternative A* (No Action)**

Management actions for cultural resources that prohibit surface disturbance near known archaeological sites would protect vegetation and wildlife habitat in those areas.

Alternative B

In Agua Fria National Monument biological resources could be degraded by implementing High public use at four sites, if developed. However, if these site developments include visitor facilities with gravel parking areas, restrooms, and picnic facilities; vegetation loss and increased human activity could alter wildlife use of the area and lead to habitat loss and fragmentation. Any potential impacts to pronghorn or other biological resources in the national monument would be tempered by the requirement that management actions be consistent with the national monument proclamation (Appendix A). A portion of Black Mesa, along with the Badger Springs Wash area, is located in a pronghorn migration corridor. Public use of the sites could disturb the movements of the pronghorn. Impacts of developing four cultural sites to Moderate public use, including such improvements as hardened trails and signs, would be lower than developing them to High public use. No impacts are expected from Low public use developments.

In the Bradshaw-Harquahala Planning Area impacts would be similar to those described for the monument, but wildlife resources affected would depend on the site location, size, and surrounding habitat. Impacts would be reduced by the decision to manage desert tortoise habitat for no net loss in amount or quality. Descriptions of cultural use categories are included in Appendix E.

Alternative C

In Agua Fria National Monument biological resources could be degraded by implementing High public use at two sites, if developed. Impacts would be similar to those described for *Alternative B* but at fewer sites. Impacts from developing the eight Moderate public use sites described would be similar to those described for *Alternative B* but at more sites. Overall, development of public use sites is expected to have lower impacts than in *Alternative B*.

In the Bradshaw-Harquahala Planning Area impacts would be similar to those described for *Alternative B*, but in fewer locations.

Alternative D

Impacts from developing the two Moderate public use sites described would be similar to those described for *Alternative B* but at fewer sites. There would be no conflicts with pronghorn migration corridors.

In the Bradshaw-Harquahala Planning Area impacts would be similar to those described for *Alternative B*, but in fewer locations than in *Alternative C*.

***Alternative E* (Preferred Alternative)**

In Agua Fria National Monument biological resources could be degraded by implementing High public use at three sites, if developed. Impacts would be similar to those described for

Alternative B. Impacts from developing the four Moderate public use sites would be similar to those described for *Alternative B*. Excluding the two Black Mesa pueblos from public use would remove conflicts with pronghorn migration corridors. However, interpretive use of the Rollie site could constrain migration between the southern and northern portions of Black Mesa.

In the Bradshaw-Harquahala Planning Area impacts would be similar to those described for *Alternative B*.

4.11.6 From Paleontological Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts to biological resources expected under any Alternative.

4.11.7 From Recreation Management

***Alternative A* (No Action)**

In the Agua Fria National Monument recreation uses would be allowed to the extent that they are consistent with the primary purpose of the monument to protect the objects identified in the proclamation.

In the Bradshaw-Harquahala Planning Area current levels of recreation management would inadequately protect biological resources. Informal concentrated recreational use areas would continue to develop and grow causing increasing levels of habitat loss and disturbance. The location and use of these areas would continue to be unplanned and may conflict with sensitive biological resources, priority species or priority habitats, including riparian areas and desert tortoise habitat.

Alternative B

In Agua Fria National Monument the allocation of 57,900 acres of Front Country and 300 acres of Passage RMZs would emphasize public recreation use. This use could encourage ground disturbance in and near recreation use areas and access roads, degrading vegetation and wildlife habitat. Additionally, both campgrounds proposed by *Alternative B* would be in pronghorn movement corridors. Human activity in these campgrounds could affect pronghorn behavior, reducing the value of fawning areas on Black Mesa and modifying pronghorn movement in the Bloody Basin Road area.

Allocating 12,700 acres of Back Country RMZ would emphasize natural primitive landscapes, resulting in limited access and less ground disturbance to vegetation and wildlife habitat.

In the Bradshaw-Harquahala Planning Area seasonally restricting motorized speed or timed events in Category I and II desert tortoise habitat would avoid impacts to desert tortoises from these types of activities.

Limiting designation of rock crawling areas to areas where biological values do not exist or could be mitigated would protect biological resources.

In the Table Mesa SRMA 20 acres allotted for OHV staging areas would destroy any remaining vegetation in these areas. In the Hieroglyphic Mountains SRMA, 30 acres allotted for OHV staging areas would destroy any remaining vegetation in these areas. In the Wickenburg SRMA, allotting 20 acres for OHV staging areas would destroy any remaining vegetation in these areas. In the San Domingo SRMA, allotting 10 acres for OHV staging areas would destroy any remaining vegetation in these areas.

Alternative C

Impacts to biological resources in Agua Fria National Monument would be similar to those under *Alternative B* except that visitor use impacts on the Front Country RMZ could affect 42,410 acres. The developed campground in the Badger Springs area would be in a narrow

portion of the pronghorn movement corridor, where human activity could affect pronghorn behavior, reducing the value of fawning areas on Black Mesa.

Impacts to biological resources in the Back Country RMZ would be similar to those described for *Alternative B*, except that the Back Country RMZ would be expanded to 28,420 acres.

Impacts to biological resources from allocating a Passage RMZ would be similar to those described for *Alternative B*, except that the Passage RMZ would occupy just 70 acres.

Within the Bradshaw-Harquahala, impacts from staging areas and route designations would be similar to those described for *Alternative B*, except the size of the disturbance and vegetation loss would be less.

Alternative D

Impacts to biological resources in Agua Fria National Monument would be similar to those under *Alternative B*, except that visitor use impacts of the Front Country RMZ would affect 1,530 acres. The national monument would have no developed campgrounds, decreasing possible impacts to pronghorn behavior in the pronghorn movement corridor.

Impacts to biological resources in the Back Country RMZ would be similar to those described for *Alternative B* except that the Back Country RMZ would be expanded to 68,380 acres.

Impacts to biological resources from allocating a Passage RMZ would be similar to those described for *Alternative B*, except that the Passage RMZ would consist of 990 acres.

Within the Bradshaw-Harquahala, impacts from staging areas and route designations would be similar to those described for *Alternative C*, except that the size of the disturbance and vegetation loss would be greater, especially in Castle Hot Springs SRMA.

Shifting uses in the Hieroglyphic Mountains SRMA from motorized to nonmotorized over the life of the plan would reduce habitat fragmentation and disturbance and the displacing of wildlife.

***Alternative E* (Preferred Alternative)**

Impacts to biological resources in Agua Fria National Monument would be similar to those under *Alternative B*, except that visitor use impacts of the Front Country RMZ would affect 12,440 acres. As in *Alternative D*, the national monument would have no developed campgrounds.

Impacts to biological resources in the Back Country RMZ would be similar to those described for *Alternative B* except that the Back Country RMZ would be 57,200 acres. Impacts to biological resources from allocating a Passage RMZ under *Alternative E* would be similar to those described for *Alternative B* except that the Passage RMZ would consist of 1,300 acres.

Within the Bradshaw-Harquahala, impacts from staging areas and route designations would be similar to those described for *Alternative C*.

4.11.8 From Visual Resource Management

***Alternative A* (No Action)**

In the Lower Gila North MFP (BLM 1983) area, impacts to biological resources from designating areas as VRM Class I will influence the design and location of wildlife management developments, including water facilities, by requiring that the level of change from the characteristic landscape be very low and not attract attention from key observation points. Some types of habitat developments may be precluded at some locations depending on design and site characteristics. This allocation may also limit or preclude some types of developments that could destroy habitat or adversely affect wildlife populations. VRM

Class I for the entire planning area is allocated only within designated wilderness areas and equals 96,820 acres. The Phoenix RMP (BLM 1988a) area has no VRM classification except where designated wilderness is VRM Class I.

In the absence of VRM allocations, implementation actions use VRM Class III standards. VRM Class III would allow wildlife related developments to attract the attention but not dominate the view of the casual observer. Though efforts would be made to minimize the visual impacts of wildlife related developments, few limitations would be likely imposed on placement or design.

Alternative B

Impacts to biological resources would be similar to those under *Alternative A*, except that the area in VRM Class I would be 96,820 acres and VRM Class II would be allocated to 486,800 acres.

Similar to the VRM Class I description in *Alternative A*, VRM Class II will influence the design and location of wildlife management developments, except that they should not attract the attention of the casual observer from key observation points.

Alternative C

Impacts to biological resources would be similar to those under *Alternative B*, except that the area in VRM Class I would increase to 109,570 acres and the area in VRM Class II would increase to 502,610 acres.

Alternative D

Impacts to biological resources would be similar to those under *Alternative B*, except that the area in VRM Class I would decrease to 298,310 acres and the area in VRM Class II would decrease to 340,880 acres.

***Alternative E* (Preferred Alternative)**

Impacts would be similar to those described for *Alternative B*, except that the area in VRM Class I would increase to 98,820 acres and the area in VRM Class II would increase to 488,250 acres.

4.11.9 From Rangeland Management

***Alternative A* (No Action)**

Prohibiting livestock grazing in Larry Canyon ACEC in Agua Fria National Monument would not affect biological resources because the ACEC is inaccessible to cattle. Adhering to the *Rangeland Health Standards* would benefit biological resources by doing the following:

- reducing soil erosion,
- restoring and maintaining the functional condition of riparian habitats, and
- ensuring that progress is made toward desired plant communities in both riparian and upland areas, including reducing the presence of invasive species.

Implementing these standards would prioritize the habitat needs of special status species, where wildlife and other land uses conflict. Implementing changes in grazing practices and management systems as a result of the *Rangeland Health Standards* would also increase vegetation density and cover, which provide forage and cover for wildlife.

Modifying all fences to facilitate big game movement would benefit biological resources by allowing unimpeded movement of pronghorn and other game between seasonal use areas.

Developing new range water sources might benefit biological resources by making usable some habitat that would not otherwise be suitable because of a lack of water. Some wildlife might expand or increase as a result of the increased water availability. However, the presence of range waters might alter the behavior of some wildlife species, populations, or individuals. Wildlife might become

dependent on these water sources and be adversely affected if the water source is not maintained. While designed to be wildlife friendly, range water sources can result in mortality to some small mammals and birds, which can become trapped in troughs and storage tanks not designed or maintained to BLM's standards.

Range waters might also be a potential source of disease transmission to some game species. These waters tend to concentrate livestock use and result in over-utilization of vegetation and soil alterations in the area of influence, generally within a half mile of the water source.

Habitat alteration resulting from concentrated use can reduce forage availability for some wildlife, including desert tortoise and mule deer. Range waters and their resulting concentrations of livestock can attract cowbirds, which are nest parasites on many native songbirds, including the endangered southwestern willow flycatcher.

Alternative B

Impacts from adhering to the *Rangeland Health Standards* would be the same as in *Alternative A.*

Implementing ephemeral allotment designations when warranted would eliminate year-long livestock use of perennial shrubs and trees in Sonoran desertscrub vegetation communities, where precipitation and vegetation production are low. The absence of perennial use would likely increase native grass production, shrub and tree cover, and habitat complexity essential for many small mammals and birds.

Allowing the consideration of allotment retirement when lands are devoted to other public purposes could increase plant species diversity and wildlife habitat complexity in areas of implementation.

In Agua Fria National Monument limiting livestock grazing in riparian areas to winter only (November 1 to March 1), implemented through the allotment evaluation process, would do the following:

- ensure recruitment and survival of cottonwood, willow, ash, and sycamore trees;
- reduce livestock loafing along creek bottoms, which degrades streambanks and alters channel morphology, thereby increasing the channel width-depth ratio and creating a deeper channel with more pools;
- allow the accumulation of vegetation in the herbaceous layer that protects the natural function of streams.

These effects would increase the diversity and abundance of plant species and the complexity of the wildlife habitat, benefiting a number of wildlife species, including endangered fishes and migratory birds.

In the Bradshaw-Harquahala Planning Area, implementing riparian management through the allotment evaluation process would have effects on biological resources similar to those described for Agua Fria National Monument, except that impacts would occur more slowly and management techniques could vary.

Impacts from water developments and fences would be the same as those described in *Alternative A.*

Alternative C

In Agua Fria National Monument impacts to biological resources from closing all riparian pastures to livestock grazing would be similar to those described for *Alternative B* for the winter season of use, except that the vegetation and stream channel response would likely be more pronounced and occur more quickly due to the lack of vegetation utilization and trampling. Upland areas in riparian pastures would likely respond to the absence of livestock grazing by increasing vegetation ground cover and litter. Wildlife forage would increase because livestock would remove no annual production. Individual plants would not be hedged. Most

plants would produce more seeds and accumulate decadent material and litter in the absence of livestock utilization. This accumulation of vegetation material would increase wildlife habitat diversity and abundance, which in turn would result in increases in populations of wildlife depending upon vegetation cover.

In the Bradshaw-Harquahala Planning Area impacts to biological resources would be similar to those described for Agua Fria National Monument.

Closing the Harquahala Mountains ONA ACEC to livestock grazing during bighorn sheep lambing season (January 1 – April 1) would increase wildlife forage quality and availability and eliminate competition between bighorn sheep and livestock for forage during the critical lambing season. These benefits should increase lamb fitness and survival.

Prohibiting the developing of facilities that would increase livestock use in Browns Canyon and the Inner Basin would eliminate concentrated livestock use from sensitive riparian and upland habitat areas.

Impacts from water developments and fences would be the same as those described in *Alternative A.*

Alternative D

The affects of removing all livestock from Federal lands in both planning areas would be similar to those described for riparian and upland areas under *Alternative C*. However, *Alternative D* would affect a much larger area.

Eliminating all range improvements that serve no purpose in the absence of livestock grazing would remove many fences and corrals that hinder natural movement of pronghorn, mule deer, and bighorn sheep.

Impacts from water developments would be greatly reduced due to the limitations and restrictions on grazing. Facilities that are not needed for other management purposes or are creating negative impacts would be removed.

***Alternative E* (Preferred Alternative)**

Alternative E would have impacts similar to those described for *Alternative B*.

4.11.10 From Minerals Management

***Alternative A* (No Action)**

Agua Fria National Monument is closed to new mineral entry. This closure removes the threat of vegetation clearing, habitat loss, and exotic plant introduction that could occur as a result of mining.

In the Bradshaw-Harquahala Planning Area minerals actions would be evaluated on a case-by-case basis and impacts to biological resources would be mitigated and avoided to the extent allowable by regulation. Some residual loss of desert tortoise habitat is likely as a result of mining conducted under the 3809 regulations. This unmitigated loss is expected to be relatively small.

Alternative B

In Agua Fria National Monument impacts to biological resources would be similar to those described for *Alternative A*.

Closing Tule Creek ACEC to mineral entry, mineral leasing, geothermal leasing, and mineral material disposal would reduce ground disturbances and impacts to vegetation and wildlife habitat, including habitat for the endangered Gila topminnow and desert tortoise.

Closing the Hassayampa “Box” area to mineral entry would reduce ground disturbance and impacts to vegetation and wildlife habitat, including priority riparian habitat.

Opening reconveyed lands to mineral entry could result in mining and mineral material sales in areas now closed. Mining could disturb priority habitats, including riparian areas and desert tortoise habitat, and could degrade the value of these habitats to wildlife.

Alternative C

In Agua Fria National Monument impacts to biological resources would be similar to those described for *Alternative A*.

Impacts to biological resources in Tule Creek ACEC would be similar to those described for *Alternative B*.

Closing Sheep Mountain RNA ACEC to mineral entry would reduce the potential for ground disturbance and mining-related impacts to vegetation and wildlife habitat, including desert tortoise habitat.

Closing the Harquahala Mountains ONA ACEC to mineral entry would reduce the potential for ground disturbance and mining-related impacts to vegetation, spring sources, and wildlife habitat, including desert tortoise and bighorn sheep habitat.

Opening reconveyed lands with high mineral potential to mineral entry could result in mining and mineral material sales in areas now closed to those activities. Mining could disturb priority habitat, including that of desert tortoises. Priority riparian habitat on reconveyed lands would be protected from mining disturbances.

Alternative D

In Agua Fria National Monument impacts to biological resources would be similar to those described for *Alternative A*.

Keeping reconveyed lands closed to mineral entry would protect from mining disturbances priority wildlife habitats, including riparian areas and desert tortoise habitat.

Impacts to biological resources in Tule Creek ACEC would be similar to those described for *Alternative B*.

Impacts to biological resources from closing the Harquahala Mountains ONA ACEC, Baldy Mountain ONA ACEC, and Sheep Mountain RNA ACEC to mineral entry would be similar to those described for *Alternative C*.

Impacts to biological resources from closing the Belmont-Big Horn ACEC to mineral material disposal and leasing would be similar to those described for *Alternative B* for the lands allocated to maintain or enhance wilderness characteristics.

***Alternative E* (Preferred Alternative)**

In Agua Fria National Monument impacts to biological resources would be similar to those described for *Alternative A*.

Impacts to biological resources in Tule Creek ACEC and other areas closed to mineral development would be similar to those described for *Alternative B*.

Impacts to biological resources from management of reconveyed lands would be similar to those described for *Alternative C*.

4.11.11 From Fire Management

***Alternative A* (No Action)**

The use of prescribed fire in Agua Fria National Monument would particularly affect pronghorn habitats by doing the following:

- removing old, woody vegetation,
- promoting the growth of healthy new plants for forage,
- eliminating shrubs that allow predators to ambush pronghorn,
- increasing the quality of fawn hiding cover, and

- helping control or potentially eliminate invasive species and restore the natural fire cycle.

Full wildland fire suppression of naturally set fires in the national monument could interrupt the natural fire cycle required for proper successional development of plant communities. Suppression of natural fires can promote the growth of invasive or exotic species and allow a buildup of the existing fuel load.

Full suppression of all fires in the Bradshaw-Harquahala Planning Area would have the same impacts to fire-adapted communities (grassland and chaparral) as those shown above.

Full suppression of fires in Sonoran desertscrub habitat in the Bradshaw-Harquahala Planning Area would affect vegetation and wildlife by decreasing mortality to species not adapted to fire.

***Alternatives B, C, D,* and *E* (No Action)**

Vegetation and wildlife (particularly pronghorn antelope) would benefit from prescribed burning and mechanical treatment of the vegetation in the planning areas. Impacts would include a temporary reduction in the availability of forage. Over the long term these treatments would do the following:

- eliminate invasive species,
- reduce the fuel load, and
- improve and maintain the species diversity of perennial grasses and forbs.

The treatments would also reduce the population size of invasive species in fire-adapted environments throughout the planning areas, reducing competition between invasive species and native vegetation for available space, nutrients, and water.

Allowing natural fire starts to burn when conditions are suitable would allow the natural fire cycle to occur in fire-adapted grassland and chaparral plant communities. These fires would create a natural mosaic of vegetation of different successional stages as well as improve forage and reduce hazardous fuels.

Full suppression of fires in Sonoran desertscrub habitat in the Bradshaw-Harquahala Planning Area would have the same impacts as described in *Alternative A.*

4.11.12 From Wild Horse and Burro Management

***Alternative A* (No Action)**

No impacts are expected in Agua Fria National Monument.

In the Harquahala Herd Area (HA), concentrated burro use of sensitive habitats, especially in Browns Canyon in the Harquahala Mountains, would continue to cause degradation of those habitats and increase competition between wildlife species and burros for limited forage and water resources. Maintaining the burro herd within the 80,800-acre Lake Pleasant Herd Management Area (HMA) at the Appropriate Management Level (AML) determined in the Lake Pleasant Herd Management Plan will minimize competition between burros, wildlife, and livestock.

Alternative B

Impacts are the same as in *Alternative A.*

Alternatives C* and *D

By eliminating the burro population in the Harquahala HA, sensitive habitats where burros now concentrate will begin to recover and mule deer and bighorn sheep would not compete with burros for forage, water, or other habitat.

Impacts in the Lake Pleasant HMA are the same as in *Alternative A.*

***Alternative E* (Preferred Alternative)**

Removing nuisance burros and burros impairing sensitive habitats would result in impacts similar to those described for *Alternatives C* and *D*.

Impacts in the Lake Pleasant HMA are the same as in *Alternative A*.

4.11.13 From Management of Transportation and Public Access

***Alternative A* (No Action)**

In Agua Fria National Monument, biological resources would benefit from prohibiting cross-country OHV use, which would prevent the destruction of vegetation and priority wildlife habitats and habitats for priority species.

In the Bradshaw-Harquahala, prohibiting cross-country OHV use in the management area covered by the Phoenix Resource Management Plan (BLM 1988a) would provide some protection for sensitive desert tortoise habitat but plan language makes enforcement difficult due to the lack of route designation or signing. Vehicle use of routes that degrade the value of sensitive riparian and tortoise habitat would likely continue and increase. Allowing cross-country OHV use in the area covered by the existing Lower Gila North Management Framework Plan (BLM 1983) would harm vegetation and wildlife by increasing the incidence of habitat destruction and by degrading cover and forage. Open OHV use could cause the loss of priority habitat and habitat for priority species, including desert tortoise.

Route proliferation would likely continue as a result of not designating open routes. Habitat loss and fragmentation would likely continue to increase with time. Human disturbance to wildlife populations in more remote areas would likely increase as more vehicle routes are established.

Alternative B

Designating 140 miles of road as open and closing 38 miles in the Agua Fria National Monument would reduce habitat fragmentation and human disturbance to priority habitat and priority species, including riparian and pronghorn habitats. Closed roads would reclaim and restore habitat.

In the Bradshaw-Harquahala Planning Area, designating vehicle routes and closing undesignated routes and cross-country travel would benefit biological resources by reducing (1) habitat fragmentation, (2) vegetation destruction, and (3) human disturbance of wildlife.

Alternative C

Impacts in Agua Fria National Monument would be similar to those described for *Alternative B* except that 129 miles of roads would remain open, providing less habitat fragmentation.

Alternative D

Impacts in Agua Fria National Monument would be similar to those described for *Alternative B*, except that 47 miles of roads would remain open, fragmenting even less habitat than under *Alternative C*.

***Alternative E* (Preferred Alternative)**

Impacts in Agua Fria National Monument would be similar to those described for *Alternative B* except that 101 miles of roads under *Alternative E* would fragment fewer habitats than would *Alternative C* but more than would *Alternative D*.

4.11.14 From Management of Wilderness Characteristics

***Alternative A* (No Action)**

There would be no impacts to biological resources because there are no areas managed for wilderness characteristics in this Alternative.

Alternative B

In both management areas, allocations to maintain or enhance wilderness characteristics would recognize wildlife populations and habitat as important aspects of naturalness and actively manage them. Such management would minimize impacts to wildlife. Allocating 56,040 acres to maintain or enhance wilderness characteristics in the Harquahala Management Unit, along with restrictions to roads and vehicles, would reduce disturbances to priority wildlife habitats.

Closing lands allocated to maintain or enhance wilderness characteristics to mineral material disposal would reduce ground disturbance and impacts to vegetation and wildlife habitat.

Alternative C

Impacts would be similar to *Alternative B*, except that allocating 107,510 acres to maintain or enhance wilderness characteristics in 3 management units, along with restrictions to roads and vehicles, would further reduce disturbances to priority wildlife habitats.

Alternative D

Impacts would be similar to *Alternative C*, except 91,480 acres would be allocated to maintain or enhance wilderness characteristics.

***Alternative E* (Preferred Alternative)**

Impacts would be similar to *Alternative C*, except 96,420 acres would be allocated to maintain or enhance wilderness characteristics.

4.12 Impacts on Cultural Resources

The projected impacts on cultural resources relate to three main issues:

- resource protection
- scientific research, and
- public education and interpretation.

These issues reflect the informational, heritage, and educational values that are attributed to archaeological sites and places of traditional cultural importance. These values are correlated with allocations to scientific, traditional, and public uses.

Protecting significant cultural resources is an overarching goal of all of the Alternatives, as well as a directive that is accorded special emphasis in Agua Fria National Monument. In addition, because the significance of an archaeological or historical site may be closely related to its scientific research potential, the consequences of implementing the Alternatives on current and future research opportunities need to be determined. Finally, even though no stipulations were made in the Agua Fria National Monument Proclamation (Appendix A) for public use, some degree of onsite public education and interpretation is considered desirable, though not to the detriment of the cultural resources that Agua Fria National Monument was created to protect. In the Bradshaw-Harquahala Planning Area, demand is also increasing for opportunities for cultural heritage tourism.

The Alternatives discussed in Chapter 2 differ mainly in the proposed number of sites and priority management areas that would be allocated to public use. The No-Action Alternative (*Alternative A*) corresponds to the current management plans for both of the planning areas. The action Alternatives

represent differing intensities of public use, ranging from relatively High (*Alternative B*) to Moderate (*Alternative C*) to Low (*Alternative D*). Selected archaeological sites would be made available for increased public visitation and interpretation under *Alternatives B* and *C*. Most cultural resources would be excluded from public use under *Alternative D*. Generally, the greater the public use is expected to be, the greater the potential for cultural resource damage. However, increased use also provides greater opportunities for public education and promotion of responsible stewardship.

4.12.1 From Special Area Designations

***Alternative A* (No Action)**

Cultural resource inventories, such as those described in section 3.6, would continue throughout the planning areas in each Alternative. These studies are nonintrusive and have no noticeable affect on the locations in which they are conducted.

Cultural resources represent one of the outstanding values for which the Agua Fria River was recommended as suitable for wild and scenic river designation. BLM guidance mandates the protection of these values. Actions implemented to protect wildlife habitat and scenic values, which are also regarded as outstanding, are also likely help to preserve the integrity of cultural resources in the river corridor. For example, the closure of Badger Springs Wash to vehicles has helped to protect the integrity of the Badger Springs petroglyph site.

Within designated Wilderness Areas, prohibitions of motorized and mechanized use, as well as restrictions on development will continue to preserve cultural resources in their current condition.

Alternative B

No impacts are expected from removing the Perry Mesa and Larry Canyon ACEC designations because the monument proclamation (Appendix A) provides a higher level of protection for cultural resources across a more extensive landscape.

An increased number of users resulting from Back Country byway designations would likely affect cultural resources along Bloody Basin and Constellation Mine Roads. Potential impacts include the possibility of increased vandalism and accelerated erosion at roadside sites. Increases in traffic could create a need for more frequent maintenance or stabilization to preserve the historical masonry features of Constellation Road. Other effects include greater opportunities for public education and cultural heritage tourism.

Designating Tule Creek ACEC would help protect cultural resources by restricting motorized access and eliminating grazing from fenced areas. These actions would limit surface disturbances that could damage archaeological features.

Alternative C

Impacts from designating Bloody Basin and Constellation Mine Roads as Back Country byways would be similar to those discussed for *Alternative B*.

Among the special designation areas described for *Alternative C*, the Black Mesa, Tule Creek, Black Butte, and Harquahala Mountains ACECs are known to contain significant cultural resources. These and other proposed ACEC designations would include restrictions on transportation routes, rights-of-way, livestock grazing, and minerals actions. Such restrictions would help protect cultural resources by limiting public access and ground-disturbing activities. The management prescriptions for the Black Butte ACEC allow for restricting activities that might threaten the integrity of the Vulture obsidian source, an important cultural resource.

Alternative D

Because *Alternative D* proposes no Back Country byways, no impacts to cultural resources are expected.

ACEC designations would have similar impacts to those discussed for *Alternative C*. Designating more ACECs would further restrict motorized access and other land uses, thereby better protecting cultural resources.

Alternative E (*Preferred Alternative*)

Impacts from designating Bloody Basin and Constellation Mine Roads as Back Country byways would be similar to those discussed for *Alternative B*.

ACEC designations would have impacts similar to those discussed for *Alternative C*. Rather than being designated as an ACEC, the Black Mesa area would be nominated to the National Register of Historic Places as the Black Mesa Rim Archaeological District. Cultural resources would be protected by management actions identified as common to all Alternatives for the Black Mesa/Bumble Bee priority area in section 2.7.3.6. These actions include road closures, fencing to exclude livestock from sites, signing, and frequent monitoring.

This area would also be excluded from public use except for a current special recreation permit that focuses on approved site recording and educational activities. ACEC status would provide limited added protection to the area. A National Register listing would underscore the cultural importance of the area in support of BLM's efforts to protect it through a partnership. The Black Mesa Rim Archaeological District would be next to, as well as complementary to the Perry Mesa National Register District.

4.12.2 From Lands and Realty Management

***Alternative A* (No Action)**

Land acquisitions allowed under current management guidelines could approve acquiring significant archaeological sites in and around Agua Fria National Monument, thereby enhancing values that the national monument was created to protect. Added protection afforded to cultural resources under BLM's management, such as applying the Archaeological Resources Protection Act (ARPA), would also help ensure that sites are available for future scientific or public uses. Land acquisitions could also secure places of traditional cultural importance that could be managed to protect traditional uses or heritage values.

Installing new above-ground utilities in the existing right-of-way corridor would degrade the physical integrity and visual setting of Agua Fria National Monument's natural and cultural landscape.

Disposal of lands in the Upper Agua Fria River basin might remove significant cultural resources from Federal protection**.** Conversely, acquiring lands in the Black Canyon and Lake Pleasant RCAs would likely increase the level of protection now given cultural resources on non-Federal lands.

The disposal of 54,370 acres of BLM-managed land in the Bradshaw-Harquahala Planning Area could potentially place cultural sites at risk, though individual parcels would be evaluated on a case-by-case basis. However, most parcels are small, isolated, and near current or future urban growth areas where the potential for cultural vandalism is increasing. However, before parcels are disposed of, cultural survey is conducted and the significance of cultural resources found can be a reason to halt the disposal. Therefore, acquiring State and private lands would likely increase the level of protection for cultural resources on those lands.

Alternative B

Non-Federal land acquisitions in and next to Agua Fria National Monument would have

similar impacts to those discussed for *Alternative A*.

Restrictions on new utility or transportation corridors or telecommunication site areas in Agua Fria National Monument would eliminate any ground disturbance or visual intrusions that could damage the physical integrity or visual setting of cultural resources.

Acquiring or disposing of lands in the Bradshaw-Harquahala Planning Area might add or remove significant cultural resources from Federal protection. Impacts would be assessed on a case-by-case basis once specific parcels have been selected. Disposal impacts would be similar to *Alternative A*, except 58,400 acres would be available for disposal.

Widening the Black Canyon utility corridor, and creating new electric and gas corridors in the Bradshaw-Harquahala Planning Area could disturb cultural resources in designated areas. Construction activities and access requirements might threaten disturbance of archaeological sites in new right-of-way corridors or along new access roads. Installing above-ground utilities might detract from the visual integrity of site settings.

On the other hand, establishing specific corridors encourages project applicants to place utility lines in certain confined areas, which helps to confine cultural resource impacts. In these corridors, BLM would work with applicants to develop route and project design Alternatives that emphasize avoidance of impacts to cultural resources. Treatment plans would specify avoidance requirements or other actions such as scientific data recovery or aerial installation of power lines to mitigate adverse impacts should avoidance be infeasible.

Alternative C

Non-Federal land acquisitions in and next to Agua Fria National Monument would have similar impacts to those discussed for *Alternative A*.

Eliminating the Black Canyon utility corridor from Agua Fria National Monument would reduce the likelihood that cultural resources would be affected by ground disturbance or visual intrusions from future utility development.

Widening the Black Canyon utility corridor to the west and creating new electric and gas corridors in the Bradshaw-Harquahala Planning Area could have impacts to cultural resources similar to those discussed for *Alternative B*.

Impacts of land disposal and acquisition in the Bradshaw-Harquahala Planning Area would be similar to *Alternative A*, except the disposal of 600 acres, as identified under method one, is not likely to significantly affect cultural resources. The disposal of 49,100 acres, as delineated through method two, could potentially place cultural sites at risk as in *Alternative A*.

Alternative D

Non-Federal land acquisitions in and next to Agua Fria National Monument would have similar impacts to those discussed for *Alternative A*.

Eliminating the Black Canyon utility corridor from Agua Fria National Monument would have impacts similar to those discussed for *Alternative C*.

Acquiring State and Federal lands in the Bradshaw-Harquahala Planning Area would likely increase the level of protection for cultural resources on those lands, similar to *Alternative C*. Under this Alternative, no lands would be available for disposal and so no impacts would be expected.

***Alternative E* (Preferred Alternative)**

Non-Federal land acquisitions in and next to Agua Fria National Monument would have similar impacts to those discussed for *Alternative A*.

Projected impacts to cultural resources in Agua Fria National Monument would be similar to those described for *Alternative C*.

Projected impacts to cultural resources in the Bradshaw-Harquahala Planning Area would be similar to those described for *Alternative B*. Lands available for disposal would total 38,755 acres.

4.12.3 From Management of Soil, Air, and Water Resources

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Where BLM implements measures that improve soil stability and vegetation cover, cultural resources are expected to be better protected from soil erosion.

4.12.4 From Biological Resource Management

***Alternative A* (No Action)**

Modifying existing fences in Agua Fria National Monument to allow wildlife movement would have little effect on cultural resources. New fences could disturb sites or detract from the visual setting of the primitive landscape.

Restricting public access in sensitive wildlife habitats would likely help protect cultural resources in those areas (e.g. Harquahala Mountains, Vulture Mountains).

Alternative B

There are no impacts expected from removing Larry Canyon ACEC (designated mainly to protect biological resources) because the monument proclamation (Appendix A) provides a higher level of protection for cultural resources across a more extensive landscape.

In general, actions implemented to protect wildlife habitats would support the protection of cultural resources by restricting ground-disturbing activities. Building new water sources could disturb surface artifacts and features, as well as subsurface archaeological deposits. Surveys would be conducted to find and avoid archaeological sites or mitigate disturbance to them from new water sources.

Ensuring connectivity of habitats for wildlife, through such actions as seasonal restrictions on travel and other activities in wildlife migration corridors, could limit access to cultural resources and restrict opportunities for archaeological research and cultural heritage tourism.

***Alternatives C, D,* and *E* (Preferred Alternative)**

Limiting vehicle routes in pronghorn corridors might restrict access to cultural resources, which would protect sites from human intrusions, but limit opportunities for scientific research, site monitoring, and interpretive development.

Impacts of modifying fences in Agua Fria National Monument would be similar to *Alternative A*.

Closing or limiting vehicle routes in sensitive wildlife habitats in the Bradshaw-Harquahala Planning Area should help protect cultural resources by restricting public access that could contribute to intentional or inadvertent damage. Each Alternative varies the number of vehicle routes limited or closed, as described in Appendix N. Generally, the more routes closed or limited would result in more protection of cultural resources.

4.12.5 From Cultural Resource Management

***Alternative A* (No Action)**

Restrictions on surface disturbances in Agua Fria National Monument following current interim guidelines would help protect cultural

resources but could limit archaeological research opportunities, as well as the compiling of related information useful for public education and interpretive development.

BLM would continue to implement actions to monitor, document, and protect significant cultural resources in both planning areas. Existing management guidance for the Bradshaw-Harquahala Planning Area emphasizes compliance with Section 106 of the National Historic Preservation Act (NHPA) as described in section 2.7.1.5. Proposed authorizations or actions that may impact cultural resources would be required to implement treatment plans for avoiding or mitigating adverse effects. Such actions are generally funded by the project applicants or by the BLM's programs that initiate them, rather than by the cultural heritage program. Impacts from management of cultural resources would be minimal.

Alternative B

Under all action Alternatives, BLM's Phoenix Field Office (PFO) would continue to implement the highest Section 106 workload among all BLM's offices in Arizona. Each action Alternative places a greater degree of emphasis on proactive management actions carried out in accordance with Section 110 of the NHPA, which mandates identifying and protecting archaeological, historical, and cultural values; whether or not they might be affected by proposed undertakings. Inventory, protection, documentation, and monitoring projects would be described for annual work and strategic plans. This proactive approach would result in an increase in the knowledge collected from and about cultural resources in the area. Long term preservation of cultural resources and the information they can contribute depends on knowing what kinds of sites there are and where they are located. In addition, the proactive approach contained in the Alternatives will improve public enjoyment of the cultural resources in the planning areas, leading to improved recreational experiences and a heightened awareness of the sensitivity of these resources.

In the Bradshaw-Harquahala Planning Area proactive management actions would be directed mainly toward eight sites in Special Cultural Resource Management Areas. These areas contain particularly important sites that are most at risk of damage from human activities or natural processes. However, this management focus would not exclude implementing necessary protective actions at sites outside the Special Cultural Resource Management Areas.

Archaeological inventories (surveys), a proposed ethno-historic study of Native American values in Agua Fria National Monument, and ongoing tribal consultations would identify significant resources and provide information critical for implementing protection and monitoring. This information would also support allocations of sites to use categories, allowing for traditional uses, access needs, or protective measures that might be important to tribes.

Physical and administrative measures implemented to protect cultural resources would help to stop, limit, or repair damage from vandalism, erosion, and other disturbances. Signs placed to inform the public about prohibitions under the ARPA and other laws would help protect threatened sites by providing relevant information and an alert that the sites are being monitored. If vandals damage a signed site, they would be less likely to claim ignorance of the prohibitions on illegal activities and to use this argument in legal defense of their actions. Signs would be installed so as not to draw undue attention to sites.

Threats to cultural resources would be reduced by frequent and systematic monitoring of sites by BLM's staff and volunteers; in addition, to restricting information about the locations of archaeological sites that are not allocated for public use.

In the Bradshaw-Harquahala Planning Area greater emphasis would be placed on regular monitoring of compliance, with stipulations

developed to protect cultural resources in R&PP Act leases and patents.

Archaeological and historical research projects would be consistent with scientific use allocations. Scientific research would contribute significantly to local and regional knowledge of human prehistory and history. Research would also allow for training students and volunteers who need to enhance their field and analytical skills. Research would offer opportunities for developing new techniques in rock art recording and other areas. The information gained through research projects would be useful, not only for scientists and students, but also for public education and interpretive planning.

Noninvasive methods of research and site documentation, such as surveying, mapping, photography, and remote sensing, would have little effect on cultural resources beyond a temporary increase in foot traffic and footprints. Collecting samples of artifacts from the site surface would affect site integrity by removing a small portion of the site. At sites that receive a relatively high number of visitors, well-documented collections would preserve rare or important artifacts (i.e. painted pottery or projectile points) that are particularly vulnerable to loss through casual collection.

Scientific excavations would disturb cultural deposits and could disturb buried human remains and associated items. Excavations could provide important data as no other means could. To limit undue disturbances, the highest priority for research projects would be assigned to sites threatened by vandalism or other types of disturbance, as well as sites determined to be suitable for interpretive development. BLM would require proper research designs and permits. In Agua Fria National Monument research plans would be required to ensure that most architectural features and cultural deposits would remain intact at habitation sites with multiple rooms.

Scientific research would be limited to noninvasive methods at sites allocated to "conservation for future use" in the Agua Fria National Monument backcountry, south of Perry Tank Canyon. These remote sites would be protected from surface disturbances resulting from investigations.

Scientific uses (research) could conflict with traditional uses (cultural heritage values). Many Native Americans might object to research at sites that are not threatened by imminent damage. In approving research designs, BLM would seek to avoid the disturbance or removal of Native American human remains and associated items and would include stipulations to that effect. Tribes would be allowed to participate in research projects, which would benefit from their cultural perspectives. Other benefits could include enhanced knowledge of tribal history and the opportunity to include Native American perspectives in interpretive planning.

Public education, whether through onsite interpretive development or offsite programs, would increase public understanding of the multiple values and irreplaceable nature of cultural resources. Benefits would be derived through public enjoyment and enhanced knowledge, as well as greater support for the protection and responsible stewardship of these resources. Such efforts would fulfill public education mandates under the NHPA and the ARPA.

Establishing partnerships with universities, museums, nonprofit archaeological and historic preservation organizations, government agencies, tribes, and community groups would enhance opportunities for cost sharing and public participation in monitoring, protection, research, and education.

Under all Alternatives for both planning areas, specific sites would be allocated to public use to allow visitors to enjoy, appreciate, and learn about cultural resources. Interpretive efforts would be coordinated with the recreation program staff and, where suitable, with cultural heritage tourism programs managed by local communities and Government agencies. Efforts would be made to develop public use

opportunities at accessible sites near such recreational facilities as public parks, back country byways, and hiking trails.

Public use of archaeological sites entails potential problems as well as benefits. Prehistoric and historic sites hold great fascination for many people, and there is a high public demand for opportunities to visit and learn about these sites. Cultural heritage tourism is one of the fastest growing sectors of Arizona's tourism industry, which is the second largest industry in the State. Opportunities to visit cultural sites allow people to enjoy these resources and to learn about prehistoric people, archaeology, history, Native American cultures, cultural values, scientific methods, and the interrelationships between people and the natural environments in which they lived. Agua Fria National Monument offers particularly compelling opportunities to view ancient sites in an undisturbed setting that strongly evokes a feeling of traveling back in time. Public use also provides an excellent opportunity to convey a sense of common heritage with the shared responsibility of stewardship.

Public use and interpretive development of cultural resources also can economically benefit local communities. For Arizona's BLM as a whole, the magnitude of this economic contribution can roughly be estimated by multiplying the overall daily spending average for cultural heritage tourists of $118 per day by the number of visitor days recorded in BLM's Recreation Management Information System (RMIS). RMIS contains visitor use data for 31 cultural heritage sites and areas administered by BLM in Arizona. In Fiscal Year 1999, site records show a total of 9,616 visitor days. Multiplying the total visitor days by the average daily spending rate results in an estimated annual economic contribution of $1,134,688. Cultural heritage tourism at BLM's sites in both planning areas could contribute several hundred thousand dollars annually to the economies of Maricopa and Yavapai Counties.

Sites that are developed and publicized for public use are undoubtedly exposed to visitor-caused damage from surface disturbance and erosion, destabilization of standing walls, other damage to structures and features, trash dumping, multiple trailing, and theft of artifacts. Additionally, visitors tend to alter the spatial distributions of artifacts by picking them up and depositing them into piles. Rock art could be damaged by climbing, which dislodges boulders; touching or applying foreign substances, such as chalk; painted or pecked graffiti; or theft. The presence of responsible visitors would likely discourage major incidents of vandalism or theft by others, but it would be difficult to halt the cumulative effects of small-scale removal of a few artifacts at a time.

BLM would use site-selection criteria and protective measures to mitigate the impacts of public use. Most sites that are allocated to public use would be accessible sites that are already well known and visited by the public. Without BLM's authorization many of these sites have been publicized in newspapers, magazines, books, and websites. Remote, undisturbed sites would not be allocated to public use. Sites considered for public use would be evaluated as to the feasibility of treating or stabilizing selected areas to withstand visitation, for example, by building foot trails to confine and direct traffic through sites.

Site mapping and documentation would be implemented to obtain scientific data and the information needed to develop protective measures and an interpretive plan. For example, architectural mapping and rock art documentation would preserve information that could be lost through damage. Documentation would also provide a baseline condition assessment for monitoring and managing changes resulting from visitor use over time. All public use sites would be systematically monitored to evaluate any changes resulting from visitation. Ongoing damage could lead to use restrictions, new protective measures, or suspension of the site's public use status.

Not all public use sites would be open to commercial tours. Applications for special recreation permits would be evaluated on a case-

by-case basis. Commercial tour operators would be required to adhere to site-specific stipulations, for example, that could restrict access to certain areas or limit the sizes of tour groups. They would be required to help monitor damage to the sites. In developing stipulations for commercial tours, BLM would consider adopting measures implemented by Coconino National Forest to manage tour operators to archaeological sites in the Sedona area.

Sizes of tour groups, whether led by commercial operators, nonprofit organizations, or BLM, would be limited to 25 people at a time on a single site. Larger groups are difficult to monitor and manage and thus pose a greater threat of damage.

Requiring that holders of special recreation permits provide site visitors with educational information on archaeological site preservation would help disseminate information on the nature and values of cultural resources and the need to preserve them.

Under *Alternative B*, five sites in the national monument would be allocated to public use within a High use SCRMA, and four sites would be allocated to public use within a Moderate use SCRMA. Levels of public use are described in the Cultural Resources section. Except for the Pueblo la Plata group of sites, which is accessible from Bloody Basin Roadon Perry Mesa, the four other sites in the High use area are in the Badger Springs and Black Mesa areas that are relatively accessible from Interstate 17.

There are inherent conflicts of the proposed public use of the Badger Springs and Richinbar pueblos on Black Mesa, the Rollie site, and to a lesser extent, the Badger Springs petroglyph site. Although their accessibility would enhance their value as interpretive sites, there is now no access to the mesa top sites from the Interstate 17. A locked gate restricts access to the few jeep trails on the mesa, and it is dangerous to exit and enter the busy highway from that point.

With the largest number of sites allocated to High public use, *Alternative B* entails the greatest potential for damage to cultural resources from interpretive development and public visitation. Conversely, opportunities for public education and enjoyment of cultural sites would also be more numerous under *Alternative B*.

In the Bradshaw-Harquahala Planning Area, sites could be selected for public use in all eight of the Special Cultural Resource Management Areas (Appendix F). As in the monument, *Alternative B* entails the greatest potential for damage to sites from public use, as well as the greatest potential benefit of public education and the recreational opportunities and economic returns of cultural heritage tourism.

Alternative C

In Agua Fria National Monument, only the Pueblo la Plata group of sites would be allocated to a High public use SCRMA and eight sites would be allocated to a Moderate public use SCRMA. *Alternative C* would switch four sites from High use prescriptions to less-intensive management actions. Although they would be developed at a less-intensive level, there are inherent conflicts in the proposed public use of the Badger Springs and Richinbar pueblos on Black Mesa, the Rollie site, and to a lesser extent, the Badger Springs petroglyph site as stated in *Alternative B*.

With fewer sites allocated to High public use, *Alternative C* entails less potential for damage to cultural resources from interpretive development and public visitation. Conversely, opportunities for public education and enjoyment of cultural sites would be more restricted due to more primitive facilities and fewer tours under this Alternative.

In the Bradshaw-Harquahala Planning Area, sites that are described for the plan, as well as sites that meet the guidelines for public use allocations, could be selected for public use in four of the Special Cultural Resource Management Areas (Appendix F) (Black Canyon corridor, Lake Pleasant/Agua Fria, Wickenburg/Vulture, and Harquahala

Mountains). The other four Special Cultural Resource Management Areas would be excluded from public use allocations. *Alternative C* entails a moderate potential for damage to sites from public use, as well as a moderate potential benefit in public education and the recreational opportunities and economic returns of cultural heritage tourism.

Alternative D

Alternative D would allocate no sites in Agua Fria National Monument to High public use and only the Pueblo la Plata site group to Moderate public use and associated management actions. All areas outside the Pueblo la Plata group of sites would be characterized by Low public use, with no interpretive development or commercial tours.

With only one site area allocated to public use, *Alternative D* entails the least potential for damage to cultural resources from interpretive development and public visitation. Conversely, opportunities for public education and enjoyment of cultural sites would be the most limited.

In the Bradshaw-Harquahala area, sites described for the plan and sites that meet the guidelines for public use allocations would be identified for public use in two of the Special Cultural Resource Management Areas (Black Canyon corridor and Harquahala Mountains). The other six Special Cultural Resource Management Areas would be excluded from public use allocations. *Alternative D* entails the least potential for damage to sites from public use, as well as the least potential benefit for public education and the recreational opportunities and economic returns of cultural heritage tourism.

***Alternative E* (Preferred Alternative)**

In the Agua Fria National Monument three accessible sites would be allocated to a High public use SCRMA under High use prescriptions:

- the Pueblo la Plata group on Perry Mesa,
- the Rollie site on Black Mesa, and
- the Teskey homestead site near Cordes Lakes.

All sites are within the Front Country RMZ. The Rollie site is easily accessible from the Sunset Point exit of Interstate 17. The other two sites are also accessible from well-established roads. Five sites would be allocated to a Moderate public use SCRMA under management actions defined for this level of use. The Badger Springs and Richinbar pueblos would be excluded from public use with no interpretive development. A site at the southern end of Black Mesa, accessible by hiking trails, would be added to those allocated to Moderate public use.

At least 60,570 acres (85 percent of Agua Fria National Monument) would be excluded from public use allocations. In these remote areas, visitors could encounter and observe archaeological sites under conditions of solitude in pristine settings. In the public use SCRMA's, interpretive uses would be site-specific and confined to the eight site areas and their Passage RMZs.

Alternative E balances the potential for damage and the availability of opportunities for public education and enjoyment of cultural sites. Interpretive plans with monitoring and protection measures would be implemented to mitigate adverse impacts from visitation. This Alternative satisfies the public's desire to visit Agua Fria National Monument's archaeological sites, by including sites allocated to High and Moderate public use levels on both Perry Mesa and Black Mesa. Opportunities would be open to those who wish to take advantage of tours of more developed facilities at accessible sites, as well as those who would like to hike to less accessible sites that have fewer visitors but offer interesting interpretive information.

In the Bradshaw-Harquahala Planning Area, sites that are described for the plan and those that meet the guidelines for public use

allocations would be selected for public use in six of the eight Special Cultural Resource Management Areas. The Black Mesa/Bumble Bee and Harcuvar Mountains Special Cultural Resource Management Areas would be excluded from public use allocations to protect fragile and significant sites from damage. In the other six Special Cultural Resource Management Areas, selected prehistoric and historic sites would be managed for interpretive development, educational uses, and public visitation. *Alternative E* entails a moderate potential for damage to sites from public use, as well as a relatively high potential benefit for public education and the recreational opportunities and economic returns of cultural heritage tourism.

4.12.6 From Paleontological Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected.

4.12.7 From Recreation Management

***Alternative A* (No Action)**

Limiting the use of motorized vehicles to designated routes would help protect cultural resources, while continued use of roads leading to large archaeological sites might increase the potential for vandalism and damage.

Continued protection and interpretation of the historic Harquahala Peak Observatory would enhance opportunities for public education and cultural heritage tourism.

No limits would be established for the number of permitted commercial guided tours and special events; however, SRPs would include stipulations designed to protect cultural resources and archaeological sites allowed for such use. However, the potential for damage to cultural resources could continue as public awareness and subsequent casual use of these areas is increased.

Alternative B

Prohibiting the placing of geocaches on archaeological sites would help protect sites in Agua Fria National Monument and in the Bradshaw-Harquahala Planning Area.

Restricting campfires and camping near archaeological sites would reduce damage from the following:

- disturbing the ground's surface,
- collecting wood components from prehistoric or historic structures,
- dismantling features to create fire rings, and
- contaminating archaeological deposits.

Where camping is not confined to previously disturbed areas, such activities could disturb subtle features that are near sites or places not easily recognized as archaeological sites.

SRPs would include stipulations developed to monitor and protect archaeological sites that have been allocated to public use. In addition to an overall limit of 25 people per tour group visiting a site at any one time, these provisions would help protect cultural resources from the disturbance of increased visitation.

Public outreach and environmental education programs would help protect cultural resources by making the public more aware of their values, fragile nature, and need for protection. Conversely, the message of responsible recreation and resource stewardship would benefit cultural resources by discouraging activities that damage both cultural and natural resources.

BLM would consider converting some reclaimed routes to hiking trails. Limiting vehicle traffic to and on fragile sites would help protect the surface of these sites and could deter illegal pothunting by increasing the difficulty of

hauling equipment and illegally-collected items to and from sites.

Alternative B would allocate a relatively large area of Agua Fria National Monument (57,900 acres) to the Front Country RMZ. Among the Alternatives, it would allow for the most extensive network of travel routes and a higher number of special recreation permits. Additionally, it would allow for potentially higher numbers of visitors with a larger number of trails and other recreational facilities. Relatively high levels of visitor traffic could increase the potential for cultural resources damage. Impacts to archaeological sites from recreation could include the following:

- surface disturbance,
- artifact theft and breakage,
- artifact piling,
- wall destabilization,
- rock art graffiti, and
- casual digging.

Conversely, the relatively large Front Country RMZ would also allow for more interpretation, which could enhance the public's understanding and stewardship of cultural resources. Limiting access and recreational facilities in the Back Country RMZ would result in fewer visitors with a lower level of impacts on cultural resources.

Impacts in the Bradshaw-Harquahala Planning Area would be the same as those described for the monument.

Casual, unmonitored activities would likely be the greatest threat, as visitors travel further into remote areas that have previously received few visitors. BLM would be better able to manage the impacts of special events because these events would not be placed in zones of high cultural resource density. Locations for proposed courses and staging areas would be evaluated through cultural resource inventories, and, if approved, courses would be designed to avoid or mitigate damage to archaeological sites. Ultimately, special events could contribute to an increase in public awareness and casual use of these areas.

Alternative B would provide the most extensive opportunities for cooperative efforts in site interpretation and cultural heritage tourism projects. Potential partners could include many agencies, parks, and communities in the Phoenix, Black Canyon City, Prescott, Dewey, Yarnell, Wickenburg, and Lake Pleasant areas. Such partnerships could promote the following:

- expanded recreational opportunities,
- enhanced public education and understanding of cultural resources, and
- increased revenues from cultural heritage tourism.

Alternative C

Alternative C would allocate a smaller proportion of Agua Fria National Monument (42,410 acres) to the Front Country RMZ with an expected reduction in levels of recreational facilities and visitation. Impacts to archaeological sites from visitor use are expected to be less extensive in the areas allocated to the Back Country RMZ than in the areas allocated to the Front Country RMZ. Site visitation and educational opportunities from the interpretive development of archaeological sites would also decline.

In the Bradshaw-Harquahala Planning Area reductions in travel routes are expected to contribute to lower levels of unintentional and intentional damage to cultural resources. Opportunities for cultural heritage tourism partnerships would slightly decrease. However, communities and agencies in the Phoenix, Lake Pleasant, Black Canyon City, and Wickenburg areas could still take advantage of interpretive opportunities, particularly those developed in conjunction with parks and recreational trails.

Alternative D

Alternative D would allocate a small area of Agua Fria National Monument (1,530 acres) to the Front Country RMZ and result in a decline in

levels of visitation to interpreted sites and recreational facilities, which would be limited to the Pueblo la Plata area and zones near major roads. *Alternative D* would also close the largest number of routes and would allow only limited motorized use in the extensive Back Country RMZ.

Emphasizing primitive recreation would reduce the levels of damage to archaeological sites from interpretive development, vehicle use, and public visitation. Conversely, this would limit the regular monitoring of archaeological sites in remote areas, which could leave some sites more vulnerable to vandalism. *Alternative D* would also restrict campground development and target shooting, which would help protect sites. There would be fewer opportunities for public education through site interpretation. Restrictions on access for permitted scientific studies would limit the scientific use of sites and the gathering of information useful for research and site management.

Alternative D would place more emphasis on non-motorized recreation in the Bradshaw-Harquahala Planning Area. Additional travel routes would be closed further reducing potential damage to cultural resources. As in Agua Fria National Monument, an emphasis on primitive recreation would reduce the levels of damage to archaeological sites. Site visitation, educational opportunities, and community partnerships for cultural heritage tourism would decline. Cooperative efforts between the cultural heritage and recreation programs would focus on the existing interpretive facilities on Harquahala Peak and the Black Canyon recreational trail.

***Alternative E* (Preferred Alternative)**

Alternative E would allocate 12,440 acres of Agua Fria National Monument to the Front Country RMZ. Developed interpretive and recreational facilities would focus on a small number of areas, such as Badger Springs and Pueblo la Plata. The relatively large area allocated to the Back Country RMZ, along with a number of route closures, would contribute to protecting cultural resources, while still allowing for unobtrusive interpretive uses and access for scientific research and monitoring. Restrictions on camping and target shooting would also help protect cultural resources.

In the Bradshaw-Harquahala Planning Area *Alternative E* would involve an intermediate level of recreational facilities, and route closures. Impacts to cultural resources would be similar to those described for *Alternative C*. Recreational activities would continue to threaten damage to cultural resources, particularly in areas most accessible from urban zones and major roads. *Alternative E* emphasizes developing community partnerships to enhance interpretive opportunities, environmental education, and the promotion of responsible stewardship. Such activities would enhance the long-term effectiveness of public education, stewardship, and cultural resource protection by enlisting citizens as partners in these efforts.

4.12.8 From Visual Resource Management

***Alternative A* (No Action)**

No VRM classes have been established under this Alternative, which could result in the steady degradation of visual landscapes that contribute to both prehistoric and historic cultural sites.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

VRM classes and actions could affect qualities that contribute to the eligibility of cultural resource sites for nomination to the National Register of Historic Places. These qualities include integrity of setting (which refers to an undisturbed physical environment surrounding a site), and integrity of feeling (which refers to a site's expression of the aesthetic or historic sense of a particular period of time). For example, integrity of setting and feeling are important aspects of archaeological sites in Agua Fria National Monument. As a result, a

large portion of the area can be regarded as a cultural landscape preserved through time.

4.12.9 From Rangeland Management

***Alternative A* (No Action)**

Grazing impacts in Agua Fria National Monument can be considered from a historical perspective. The greatest livestock damage to archaeological sites most likely occurred before the implementing of the Taylor Grazing Act (TGA) in the 1930s. From about 1915 to 1926, the Coburn Brothers Cattle Company operated the Horseshoe Ranch and ran at least 12,000 head of cattle on Perry Mesa and in Tonto National Forest (Cordes 2002:22). The Horseshoe Ranch today maintains fewer than 400 cattle, which are dispersed over the mesas during much of the year.

Continued livestock grazing could affect cultural resources in both planning areas. Cattle trampling can crush, break, and relocate surface artifacts. Standing walls can collapse or become destabilized as a result of cattle rubbing up against them and cattle trails can accelerate site erosion. The continued presence of cattle in Agua Fria National Monument might also detract from the primitive experience for visitors.

Soil erosion caused by the loss of stabilizing vegetation or the trampling of streambanks in riparian areas could damage sites. Damage is expected to be greatest in sensitive sites where livestock tend to concentrate, such as at corrals, water sources, and the livestock trails that lead to them. Fewer impacts are expected from dispersed use.

In both planning areas, implementing the guidelines adopted in Arizona Standards for Rangeland Health and Guidelines for Grazing Administration (Land Health Standards) would maintain or improve ground cover and soil stability and reduce destructive impacts to cultural resources from soil erosion.

Installing and maintaining fences, cattle guards, cattle tanks, and other range management facilities might damage the physical or visual integrity of cultural resources. The proposed locations of new facilities would be surveyed in advance to determine archaeological site impacts and to avoid or mitigate them.

Alternative B

In Agua Fria National Monument impacts to cultural resources from rangeland and grazing management in upland areas would be similar to those described for *Alternative A*. Grazing in riparian areas would be limited to winter, which would reduce the incidence of impacts to archaeological sites in those areas.

Continued grazing in the Front Country RMZ would likely increase the potential for conflict between public use of the monument and grazing use, especially near archaeological sites (e.g. Pueblo la Plata) that are slated to be developed for public interpretation. To mitigate such conflicts, cattle could be excluded from areas on and near interpretive sites.

In the Bradshaw-Harquahala Planning Area impacts would also be similar to those described for *Alternative A*. Seasonal use of riparian areas would be limited to the winter, where practical. This could reduce impacts to cultural resources from soil erosion resulting from grazing.

Grazing could be limited if needed to protect natural or cultural resources. Such limits could include seasonal restrictions or excluding grazing in affected areas. Allotment boundaries could be adjusted to preclude grazing on lands devoted to a public purpose, such as an interpretive site. This provision would reduce conflicts between visitor use and the presence of cattle. BLM could also exclude livestock through fencing or other measures from sites that are suffering a loss of physical integrity from grazing and that need to be protected from further impacts. Installing and maintaining fences, cattle guards, cattle tanks, and other range management facilities would have the same impacts as those described for *Alternative*

A, as would implementing the guidelines adopted in *Arizona Standards for Rangeland Health and Guidelines for Grazing Administration* (Land Health Standards).

Alternative C

In both planning areas reductions in upland grazing and the removal of livestock from riparian habitats would reduce damage to cultural resources in nearby areas. Other impacts are expected to be similar to those discussed for *Alternative B*.

Alternative D

Eliminating grazing on public lands in Agua Fria National Monument and in the Bradshaw-Harquahala Planning Area would eliminate grazing-related damage to cultural resources. In Agua Fria National Monument this action would remove the potential for conflict between the interpretive use of Pueblo la Plata and ranching, as well as enhance the overall primitive experience for visitors.

***Alternative E* (Preferred Alternative)**

In both planning areas, grazing impacts would be similar to those described for *Alternative B*.

4.12.10 From Minerals Management

***Alternative A* (No Action)**

Any surface disturbance resulting from minerals actions could degrade cultural resources. All authorized mineral-related activities beyond casual use require a survey to determine if cultural resources are present. Hence, in all cases impacts are mitigated. During the surveys some cultural resources might be overlooked because they are buried and not visible on the surface. Therefore, in these cases mineral development might expose them and cause inadvertent damage.

The monument's proclamation (Appendix A) prohibits new mining claims, mineral material sales, and leasing of mineral or geothermal resources, as well as protects cultural resources from any mining disturbances. Two active mining claims, held by prospecting clubs for casual mining use, existed before the national monument designation. Because only casual use is allowed without a formal determination of valid existing rights, should the claimant decide to develop these claims beyond such use, a mining plan of operation would be required for BLM's review. This process involves lengthy and complicated validity studies to determine if a mineral discovery warrants development. Should the claim be found valid, the claimant is still required to comply with laws regulating mining and not create any undue and unnecessary degradation of the environment.

In the Bradshaw-Harquahala Planning Area developing leasable, saleable, and locatable minerals can damage cultural resources through surface and subsurface disturbance or removal of archaeological deposits. Furthermore, there is the potential for the removal, whether intentional or not, of boulders containing petroglyphs or other rock art. The visual impacts of mining can degrade the visual setting and related aspects of integrity of archaeological sites.

Archaeological surveys are completed to find and evaluate cultural resources that could be affected by proposed mining. BLM has the discretion to deny approval of proposed mineral material sales that would damage cultural resources. Approved mining plans contain provisions to avoid or mitigate damage to cultural resources, if such resources would be affected. Since it is often difficult to implement avoidance, scientific data recovery is typically implemented as a mitigation measure. However, casual mining in areas smaller than 5 acres typically does not require mining plans. As such, it is difficult to monitor and mitigate the effects of casual mining on cultural resources or the effects of related activities such as camping.

Alternative B

Minerals management would not affect cultural resources under any Alternatives in Agua Fria National Monument because of prohibitions against mining.

In the Bradshaw-Harquahala Planning Area cultural resources would be protected by closing areas to mineral leasing, mineral material sales, and mineral entry. Where cultural resources are present, such closures would reduce damage to their physical and visual integrity. ACECs, lands allocated to maintain or enhance wilderness characteristics, and lands that are reconveyed to the Federal Government could be closed.

Alternative B would close the fewest number of areas to mining-related activities. The potential impacts of mineral development on cultural resources would be greatest under this Alternative.

Alternative C

Impacts would be less than *Alternative B*, because *Alternative C* includes a number of ACECs and lands allocated to maintain or enhance wilderness characteristics that have provisions for restricting mining.

Alternative D

Impacts would be similar to *Alternative C*, except *Alternative D* also restricts activities on lands that are reconveyed to the Federal Government. Therefore, the potential impacts of mineral development on cultural resources would be the least under *Alternative D*.

Alternative E (*Preferred Alternative*)

In the Bradshaw-Harquahala Planning Area the impacts of minerals management on cultural resources would be similar to those described for *Alternative B*.

Tule Creek ACEC would be withdrawn from mineral entry, closed to leasing and mineral material disposals. In the Black Canyon MU, riparian areas on reconveyed lands would be closed to mineral material sales, which could include sand and gravel mining. These restrictions would help protect cultural resources in Tule Creek ACEC and in riparian zones of the Black Canyon area.

4.12.11 From Fire Management

***Alternative A* (No Action)**

Wildfires and prescribed burns can affect cultural resources through direct exposure to fire and disturbances from the methods used to suppress and manage fires, as well as natural fuels. Flammable structures and features, such as wooden buildings and mining headframes, are particularly vulnerable to damage and destruction by fire. Damage to historical structures is a particular management concern for sites in the Bradshaw and Weaver Mountains.

The prehistoric residents of Agua Fria National Monument were likely to be well acquainted with fire as a natural process in this fire-adapted grassland ecosystem. The remains of their villages have likely been burned many times over the past centuries. Evidence reveals that the relatively low intensity of the grassland fires has spared major damage to archaeological sites. The Baby Canyon Ruin in Agua Fria National Monument and the Squaw Creek Ruin in the Tonto National Forest have been burned over in the past decade. Neither site has suffered damage to walls, artifacts, or rock art. The loss of vegetation from fire could increase the potential for soil erosion in susceptible areas, although this problem has not been observed at these two sites.

Prescribed burns would temporarily affect the visual setting of cultural resources for visitors to Agua Fria National Monument. In some cases, prescribed burns have benefited scientific studies by exposing previously obscure archaeological features in the national

monument, such as agricultural terraces (North 2002).

Fire suppression and fuels management techniques could cause surface disturbance to cultural resources. Surface disturbance could result from staging activities, vehicle tracks, the use of earth-moving equipment, or applying mechanical treatments to manage vegetation. The use of heavy equipment and mechanical thinning of trees also could temporarily disturb soils and increase the potential for erosion.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

Archaeological surveys in both planning areas, including inventories of 10 percent of areas above 3,500 feet in elevation in the Bradshaw-Harquahala Planning Area would help to find sensitive cultural resources that need to be avoided by fire and fuels management, or that require special attention during wildfire suppression.

BLM would implement measures to protect cultural resources, such as the use of minimum impact suppression tactics to reduce damage to archaeological sites as well as to natural resources. Other protection measures could include the following:

- using foam or retardant to protect historic structures;
- removing fuels around vulnerable sites;
- creating fire breaks that would protect sites while avoiding damage to them; and
- covering rock art in fire retardant fabric.

The impacts of fire management under these Alternatives would be similar to those discussed for *Alternative A*.

4.12.12 From Wild Horse and Burro Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts to cultural resources expected.

4.12.13 From Management of Transportation and Public Access

***Alternative A* (No Action)**

Continued restrictions that limit the use of motorized vehicles to designated routes in Agua Fria National Monument would help protect cultural resources.

Continued use of existing roads leading to large archaeological sites in Agua Fria National Monument might increase the potential for vandalism and damage to these sites as more people visit the monument.

Alternative B

All Alternatives include closures of selected routes that lead directly to archaeological sites that have been damaged or are threatened by vandalism. In many cases, there is no other obvious purpose for these routes. Where such routes are being reclaimed by natural processes, as at Pueblo Pato in Agua Fria National Monument, or where they exist at other sites that have been allocated to public use, BLM would consider converting them to hiking trails. Limiting vehicle traffic to and on fragile sites would help protect the surface of the sites and could deter illegal digging and collecting activities by complicating the task of hauling equipment and collected items to and from sites.

Alternative B would allow for a more extensive network of transportation routes, which could increase the potential for cultural resources damage. Direct impacts could include disturbance to surface features such as walls, soils, and artifacts from vehicle traffic resulting in damage, breakage, or displacement. A more extensive road network would facilitate public access to a larger number of archaeological sites,

increasing their vulnerability to vandalism and artifact theft.

Conversely, increased access would also allow for more interpretation, which could enhance the public's understanding and stewardship of cultural resources. Limiting access in the Back Country RMZ would result in fewer visitors with a lower level of impacts on cultural resources.

A more extensive network of transportation routes would also be supported in the Bradshaw-Harquahala Planning Area. In general, relatively higher levels of public access would pose greater threats to the integrity of cultural resources, as described above for Agua Fria National Monument.

Alternative C

Impacts would be similar to *Alternative B*, except *Alternative C* would allocate fewer transportation routes. More limited public access would be expected to reduce the impacts to archaeological sites from vehicle and visitor traffic in both planning areas.

Alternative D

Alternative D would close the largest number of transportation routes in both planning areas. In the monument, only limited motorized use would be allowed in the extensive Back Country zone. While this would reduce the levels of damage to archaeological sites from interpretive development, vehicle use, and public visitation, fewer areas would be available for site visitation and cultural heritage tourism projects.

Restricted access would also limit the regular monitoring of archaeological sites in remote areas, which could make some sites more vulnerable to vandalism. Restrictions on access for permitted scientific studies would limit the scientific use of sites and the gathering of information useful for research and resource management.

Alternative E (*Preferred Alternative*)

Impacts from transportation and public access would be similar to those described under *Alternative C* for Agua Fria National Monument. The number of route closures under this Alternative would contribute to protecting cultural resources, while still allowing for unobtrusive interpretive uses and access for scientific research and monitoring.

In the Bradshaw-Harquahala Planning Area *Alternative E* would involve an intermediate level of route closures. Impacts to cultural resources would likely be similar to those described for *Alternative C*.

4.12.14 From Management of Wilderness Characteristics

***Alternative A* (No Action)**

Under current resource management plans, no areas have been specifically identified for management of wilderness characteristics. Therefore, there are no associated impacts on cultural resources.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

Management of wilderness characteristics would maintain natural landscapes and remoteness, with an emphasis on primitive and non-motorized recreation. Limits on public access and motorized travel would reduce damage to remote archaeological sites from vehicle traffic and visitor use. Maintenance of wilderness characteristics would also help to preserve the visual integrity and natural settings of archaeological sites and cultural landscapes.

4.13 Impacts on Paleontological Resources

Impacts to paleontological resources include effects on resources such as petrified wood and other fossils. Paleontological resources are a nonrenewable resource that provides scientific value and clues to geologic history. Although only a minimal amount of paleontological research has been conducted in the region, 11 paleontological sites are known to occur in or close to the planning areas. None of the known paleontological sites are on BLM-managed land in either of the planning areas.

No known paleontological resources have been documented in either planning area. The geology of the planning areas is not conducive to paleontological resources. The potential for paleontological resources does; however, exist, and could be affected by surface disturbance. However, the potential for such impacts is very low.

4.13.1 From Special Area Designations

***Alternative A* (No Action)**

In Agua Fria National Monument, no significant paleontological resources are known to exist. As such, impacts to paleontological resources from special area designations are expected to be minimal. In areas of the monument where paleontological resources may be discovered, management for reduced public use would diminish potential impacts to these resources.

Paleontological resources in existing wilderness areas in the Bradshaw-Harquahala Planning Area would continue to be at low risk of inadvertent damage. Since these areas are closed to roads and are rarely visited, the impacts to paleontological resources are expected to be minimal.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

Impacts to paleontological resources in Agua Fria National Monument are expected to be the same as described for *Alternative A*.

In the Bradshaw-Harquahala Planning Area, fencing Tule Creek ACEC would prevent damage to paleontological resources caused by OHV traffic and livestock. Paleontological resources in other special area designations would be protected more than under *Alternative A* as restrictions to surface-disturbing activities are implemented.

4.13.2 From Lands and Realty Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Activities allowed under valid existing rights in Agua Fria National Monument could affect paleontological resources if resources are discovered near land clearing and construction.

Under the current management of the Bradshaw-Harquahala Planning Area paleontological resources could be affected if land clearing and construction disturb the soil near paleontological sites. Additionally, construction in existing corridors and at telecommunication sites could inadvertently damage paleontological sites. Building of new utility lines could disturb paleontological resources by developing service roads and by other digging.

Building or maintaining utility and transportation corridors and telecommunication sites in Agua Fria National Monument is not expected to affect paleontological resources.

4.13.3 From Management of Soil, Air, and Water Resources

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

In Agua Fria National Monument, current management prescriptions to improve soil stability, increase vegetation cover, and reduce erosion might help preserve potential paleontological sites.

Under the current management of the Bradshaw-Harquahala Planning Area no impacts to paleontological resources are expected from management of soil, water, and air resources.

4.13.4 From Biological Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Throughout the planning area, no impacts to paleontological resources are expected from biological resource management.

4.13.5 From Cultural Resource Management

***Alternatives A (*No Action*), B, C, D,* and *E* (Preferred Alternative)**

Actions taken to protect cultural resources in Agua Fria National Monument would likely help preserve paleontological sites as well. Unknown paleontological resources could be unearthed or otherwise disturbed by ground disturbance in developing public access to cultural sites.

In the Bradshaw-Harquahala Planning Area no impacts are expected to paleontological resources from CRM.

4.13.6 From Paleontological Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected.

BLM's PFO would classify areas because of their potential to contain vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils. The classification process would result in a sensitivity map that would enable BLM to direct protection measures or research projects toward the most significant or threatened areas. The sensitivity map would also help BLM screen proposed actions to determine effects on paleontological resources.

4.13.7 From Recreation Management

***Alternative A* (No Action)**

Under the current management of Agua Fria National Monument concentrated recreation in certain areas could inadvertently damage potential paleontological resources.

In the Bradshaw-Harquahala Planning Area illegal OHV use of four-wheel-drive vehicles, all-terrain vehicles, and motorcycles might damage paleontological resources on or near the surface. Paleontological resources might be destroyed as vehicles drive over them. Some people might also use these types of vehicles to drive to remote areas, where they could illegally collect paleontological resources. Under the current management of the Bradshaw-Harquahala Planning Area, limiting OHV travel and posting directional signing reduces the likelihood of inadvertent damage to paleontological resources. Yet the presence of roads open to the public can inadvertently encourage travel to remote areas.

Alternative B

In the Front Country and Passage RMZs in Agua Fria National Monument certain areas open to OHV use could continue to cause inadvertent damage to paleontological resources on 58,200 acres.

In the Bradshaw-Harquahala Planning Area recreation management common to all Alternatives could damage paleontological resources through ground disturbance resulting from developing recreational facilities.

169 miles of routes would be closed in the Bradshaw-Harquahala Planning Area. Reduction in miles of routes could reduce the potential impacts of motorized recreation to paleo resources.

Alternative C

Impacts to Agua Fria National Monument would be the same as described in *Alternative B,* except to a lesser degree due to the reduced amount of Front Country and Passage RMZs (42,480 acres).

In the Bradshaw-Harquahala Planning Area impacts would be similar to *Alternative B*, except the closure of more routes (382 miles would provide increased protection to paleontological over the previous alternative.

Alternative D

Impacts to Agua Fria National Monument would be the same as described in *Alternative C*, except to a lesser degree due to the smallest amount of Front Country and Passage RMZs (2,520 acres).

In the Bradshaw-Harquahala Planning Area impacts would be the least under this Alternative due to the largest amount of routes being closed (723 miles)

Alternative E (*Preferred Alternative*)

Impacts to Agua Fria National Monument would be the similar to previous Alternatives, except that more area would allocated to Front Country and Passage RMZs (13,740) than *Alternative D*, and less area than *Alternatives B and C.*

In the Bradshaw-Harquahala Planning Area impacts would be less than *Alternative B,* but more than *Alternatives C and D.*

4.13.8 From Visual Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected.

4.13.9 From Rangeland Management

***Alternative A* (No Action)**

Under the current management of Agua Fria National Monument, grazing might affect paleontological resources by reducing vegetation and increasing erosion, leading to potential exposure and degradation of fossils.

Under the current management of the Bradshaw-Harquahala Planning Area, despite improved rangeland management practices from implementing the Arizona Standards for Rangeland Health and Guidelines for Grazing Administration (Land Health Standards), continued grazing might decrease vegetation growth, increase soil erosion rates, and disturb paleontological sites.

The Land Health Standards seek to maintain or promote ground cover that would provide for infiltration, permeability, soil moisture storage, and soil stability, thereby reducing the following:

- erosion rates,
- potential for exposure, and
- the degradation of paleontological sites.

Alternatives B* and *C

Impacts would be similar to those under *Alternative A.*

Alternative D

Elimination of grazing, as in *Alternative D*, could increase soil stabilization by increasing vegetation cover, reducing loss of paleontological resources to soil erosion.

***Alternative E* (Preferred Alternative)**

Impacts would be similar to those under *Alternative A.*

4.13.10 From Minerals Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Under the current management of Agua Fria National Monument minerals management is not expected to affect paleontological resources. In the Bradshaw-Harquahala, any mining might disturb such resources, but if fossils are found during mining, potential damage would be mitigated as suitable and practical.

4.13.11 From Fire Management

***Alternative A* (No Action)**

Where prescribed burning is conducted in Agua Fria National Monument, the use of heavy equipment and mechanical thinning of trees could temporarily promote an increase in soil disturbance and affect potential paleontological sites.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

In both planning areas, fire-related activities that disturb the surface, such as the use of heavy equipment to build fuel breaks, could inadvertently affect paleontological resources.

4.13.12 From Wild Horse and Burro Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected under any Alternative.

4.13.13 From Management of Transportation and Public Access

***Alternative A* (No Action)**

In the Agua Fria National Monument, areas open to vehicular access could continue to cause inadvertent damage to paleontological resources.

In the Bradshaw-Harquahala Planning Area unmanaged or illegal vehicle use could destroy or degrade potential paleontological resources. Under the current management of the Bradshaw-Harquahala Planning Area, limiting OHV travel and posting directional signing reduces the likelihood of inadvertent damage to paleontological resources.

***Alternatives B, C, D* and *E* (Preferred Alternative)**

Impacts in the monument would be similar to *Alternative A*, except more restrictions on routes may help preserve potential sites.

In the Bradshaw-Harquahala Planning Area limiting vehicular travel to existing routes could help preserve paleontological resources by reducing the opportunity for inadvertent disturbance through OHV travel. Further restrictions on routes as dictated by each

alternative could further reduce potential damage.

4.13.14 From Management of Wilderness Characteristics

***Alternative A* (No Action)**

Currently no areas are allocated for the management of wilderness characteristics. As a result, no impacts are expected.

***Alternatives B, C, D* and *E* (Preferred Alternative)**

In areas allocated to maintain or enhance wilderness characteristics, impacts to potential paleontological resources would be reduced due to restrictions on vehicular access and the desire to retain primitive and natural characteristics.

4.14 Impacts on Recreation

This section compares the impacts of the Alternatives on outdoor recreation through changes in the recreation opportunities, settings, and access. Changes in the settings would result in a corresponding change in the opportunity to achieve a desired recreation experience in the preferred setting.

The escalating population of the Phoenix metropolitan area, coupled with the growth of other communities in the region will continue to increase recreation use of public lands. Visits to public lands are expected to grow at an annual percentage at least equal to the population growth of the region whether or not BLM provides more opportunities, facilities, or management presence.

One of the key issues affecting recreation activities is the fast growth of recreational OHV use area. The projected increase of more than two million people in Maricopa and Yavapai Counties is expected to substantially increase recreation use, especially OHV use, in the planning areas.

Agua Fria National Monument was not created for purposes of recreation, and recreation should be considered a secondary use that is permitted as long as the monument Purpose and Significance are protected.

Cultural resources in the monument would be managed according to three levels of public use for different recreation experiences (different levels described in detail in the Cultural Resources section).

Specific areas and sites for each level are described for the Alternatives.

4.14.1 From Special Area Designations

***Alternative A* (No Action)**

Existing recreation opportunities and experiences in the eligible WSR corridors and wilderness areas would be retained. Increasing motorized and non-motorized recreation on public lands surrounding existing wilderness could contribute to increased wilderness visitation. Potentially growing numbers of non-motorized users could impair solitude opportunities and contribute to trailing and campsite use impacts along the edge and in the interior of the wilderness areas.

Alternative B

Designating Bloody Basin Road as a back country byway could affect the recreation setting along the byway by increasing traffic and interaction among visitors. Opportunities for more primitive recreational experiences in the eligible WSR corridor near the river crossing could be diminished. The interpretive elements of the byway would increase visitor awareness, appreciation, and enjoyment of the national monument's natural and cultural resources.

Designating a back country byway along Constellation Mine Road would have impacts similar to the same designation on Bloody Basin Road, although the Constellation Mine Road does not cross an eligible wild and scenic river. The Constellation Mine Back Country Byway crosses an area of high OHV use with many miles of trails. Conflicts with OHV users could increase because of the increased traffic on the byway. Conflicts between byway users and large OHV groups could diminish the scenic drive experience. Moreover, there could be an increased potential for accidents at OHV trails and byway intersections because drivers might not expect multiple trail crossings in the area. The interpretive components would increase visitor awareness, appreciation, and enjoyment of the mining history of the Wickenburg area.

Designating Tule Creek ACEC would reduce opportunities for vehicular recreation by closing the fenced area to motor vehicles. The total route closure would amount to 1.1 miles. The route closure would reduce conflicts among user types and enhance the opportunity for non-motorized activities in a more natural setting. Eliminating grazing would also help retain a more natural setting for recreation and reduce conflicts with livestock. Interpretive elements would increase appreciation of the natural and cultural resources under protection in the ACEC.

In wilderness areas, establishing criteria to manage larger group activities will protect wilderness values, most notably enhancing opportunities for solitude sought by wilderness visitors. Future opportunities for commercial and vending operations in wilderness areas will be forgone as these permits will be prohibited.

Alternative C

Designating the back country byways would have impacts similar to those under *Alternative B.*

ACEC designation would have little to no impacts within Agua Fria National Monument due to the coverage of the national monument proclamation.

The effects from ACEC designations on recreation within Agua Fria National Monument are described in the national monument proclamation. Route closures could limit access for some visitors in the Silver Creek area and diminish vehicular recreation opportunities. To protect the resources in the Silver Creek area, routes can be closed without ACEC designation and these impacts could be realized anyway.

Designating Tule Creek ACEC would have impacts similar to those under *Alternative B*.

Designating ACECs in the Bradshaw-Harquahala Planning Area, comprising 87,310 acres, would improve opportunities for primitive recreation experiences like hiking, hunting, wildlife observation, camping, and sightseeing in natural settings. Non-motorized trail systems could be enhanced in some areas, and conflicts among different user types would be reduced. Selected motorized routes in the ACECs would be closed to protect resources. These closures would lessen opportunities for motorized activities. About 112 miles, or 90 percent, of the routes in ACECs would be closed; the selection of routes to remain open would be based on maintenance of connectivity of touring routes that do not affect the ACEC's resources.

Although the resources protected by ACECs are generally located in areas without many routes, connectivity in the immediate local route network could be reduced. In the Harquahala Mountains ONA the ACEC designation would prevent the future development of recreation sites and decrease opportunities to experience the area in a more developed setting. The lack of facilities for parking, staging, and interpretation would disperse motorized activities.

Impacts to wilderness areas due to group size and permit restrictions would be the same as in *Alternative B.*

Alternative D

Alternative D proposes no back country byways, and no impacts are expected.

Designating ACECs would have impacts similar to those described for *Alternative C*, except that the ACECs would encompass 354,690 acres and all 413 miles of routes in the proposed ACEC boundaries would be closed. The added management restrictions on motorized routes would increase limitations on certain recreation and would eliminate them in some areas. The route closures under *Alternative D* would reduce the connectivity of the route network more than they would under *Alternative C* and could disrupt cross-country touring routes. Motorized recreationists would be displaced and would potentially travel to nearby areas and routes with available motorized opportunities. Additional camping and off-road driving impacts would accrue along these periphery areas and routes, impacting vegetation and scenery. Increased crowding of routes would reduce the quality of dispersed recreational experiences for some users.

Impacts to wilderness areas due to group size and permit restrictions would be the same as in *Alternative B.*

***Alternative E* (Preferred Alternative)**

Designating Bloody Basin Road and the Constellation Mine Road/Buckhorn Road as back country byways would have the same impacts as described for *Alternative B*, except that Buckhorn Road would be included as part of the Constellation Mine Road Back Country Byway. This inclusion would enhance opportunities for loop trips and longer touring on these byways.

Designating Tule Creek ACEC would be the same as *Alternative B*.

Designating Black Butte and Harquahala Mountains ONAs, comprising 89,260 acres, would affect recreation by assuring opportunities for primitive recreation and solitude in natural and non-motorized settings. Non-motorized trail systems and opportunities would be enhanced, and conflicts among different user types would be reduced.

Impacts of closing selected routes in the ACECs (22.5 miles, or 14 percent) would be less than those described under *Alternatives C* and *D*, but more than *Alternative B.*

The route closures in ACECs would reduce the connectivity of the route network more than would *Alternative B* and *C*, and cross-country touring routes could be disrupted. Although the resources to be protected in ACECs are generally in areas without many routes, connectivity in the immediate local route network could be reduced.

ACEC designations would create the same impacts as in *Alternative C.*

Outstanding opportunities for backpacking, hiking, camping, hunting, and nature study would be maintained in the five designated wilderness areas.

Impacts to wilderness areas due to group size and permit restrictions would be the same as in *Alternative B*.

4.14.2 From Lands and Realty Management

***Alternative A* (No Action)**

In the Bradshaw Harquahala Planning Area, disposal of lands in the Upper Agua Fria River basin, the Table Mesa area, and Skull Valley north of Highway 89 would reduce or eliminate opportunities for recreation and could affect the Black Canyon Trail. The lands in the Table Mesa area and in Skull Valley generally experience moderate to high OHV use. Those uses could potentially relocate to other areas. The higher concentration of activities in those areas could diminish the recreation experience for some users because of the higher numbers of people encountered. The Upper Agua Fria River

basin lands support multiple recreation activities and provide some valuable linkages to Forest Service land to the east and west.

Utility and transportation corridors are not expected to impact recreation, unless potential projects are preformed. Environmental analysis of projects would determine possible impacts to opportunities for recreation, such as limits to route access and the creation of new routes for maintaining facilities.

Alternative B

Non-Federal lands in Agua Fria National Monument would be considered for acquisition if they become available from a willing seller. BLM would also consider acquiring adjacent non-Federal lands that enhance Agua Fria National Monument's values, if these lands become available from a willing seller. These two actions would affect recreation opportunities by improving access.

Impacts to the utility corridor in Agua Fria National Monument would be similar to *Alternative A,* except that the corridor would be narrowed.

Impacts in the Bradshaw-Harquahala Planning Area would be similar to those under *Alternative A,* except that lands in the Table Mesa area would be retained and recreation on those lands could continue. Acquiring lands that meet the criteria described for Chapter 2 could enhance opportunities for recreation by increasing connectivity and manageability of public lands. No impacts are expected until specific parcels are selected for acquisition.

Alternative C

Lands-related impacts to Agua Fria National Monument would be similar to those described for *Alternative B,* except that eliminating the utility corridor would remove any potential impacts from future utility proposals.

Due to the two methods that have been developed for determining which lands are potentially suitable for disposal through sale or exchange (2.4.2.1.1) differing impacts are expected under each.

No impacts are expected to result from disposing of lands selected under the first set of disposal criteria because parcels are small and generally in the Phoenix urban area. Because recreation on these parcels should be minimal, relocating the activities should not affect the relocation areas.

The 49,100 acres selected for disposal by the second set of criteria mainly consist of scattered lands disconnected from other BLM lands. Disposal of some parcels might disrupt the connectivity of the route network if the new owner closes routes across the property. Because the lands are isolated from other BLM lands, BLM could not develop new routes to mitigate the losses. Camping, target shooting, rock hounding, and other site-specific recreation could be affected for some users if such sites are on the disposed lands and are later closed. Loss of these lands would not appear to affect other recreation activities (e.g. wildlife viewing, most other motorized and non-motorized activities).

Impacts from utility and transportation corridors would be similar to those under *Alternative A.*

Alternative D

Lands-related impacts to Agua Fria National Monument would be similar to those described for *Alternative C*. Because no lands would be disposed in the Bradshaw-Harquahala Planning Area, no impacts are expected. Impacts from corridors would be similar to those under *Alternative A*.

***Alternative E* (Preferred Alternative)**

Lands-related impacts to Agua Fria National Monument would be similar to those described for *Alternative B.*

No impacts are expected to result from disposing of lands in the Bradshaw-Harquahala Planning Area because parcels are small, isolated, or

generally in the Phoenix urban area. Because recreation on these parcels is generally minimal, relocating the activities to other BLM lands is not expected to have noticeable impacts.

Impacts from other lands actions on recreation would be similar to those described for *Alternative B.*

4.14.3 From Management of Soil, Water, and Air Resources

***Alternatives A (*No Action*), B, C, D,* and *E* (Preferred Alternative)**

Maintaining or improving water quality and providing for surface and subsurface flows in Agua Fria National Monument would benefit recreation. Water is a magnet to wildlife and to recreation pursuits. Both wildlife viewing and water-related recreation, such as relaxing along a stream, provide for sustaining social, psychological, physical, and spiritual renewals.

Managing air quality could affect recreation through restrictions to protect Agua Fria National Monument's values. The potential for excessive dust might result in rescheduling or redirecting recreation events authorized through SRPs.

Managing air quality could affect certain recreational activities, such as large OHV events and motorized competitive races, by restricting or rescheduling events so that they comply with county air quality rules. Failure to meet fugitive dust and PM_{10} emission standards could cause public lands to be closed for OHV riding, permitted events, and staging for OHV and equestrian or organized group activities. Facilities and developments would have to be designed and installed with dust abatement features.

4.14.4 From Biological Resource Management

***Alternative A* (No Action)**

Modifying fencing to allow wildlife movement would improve wildlife viewing opportunities by enhancing the ability of wildlife to move throughout Agua Fria National Monument. Developing new water sources could also enhance viewing opportunities by strengthening wildlife populations and providing areas where wildlife would congregate.

Use of prescribed burns could temporarily impair recreational experiences by disturbing the visual setting and by closing burn areas to recreation. Habitat improvements could enhance wildlife populations and viewing opportunities.

Managing Arizona night lizard and Sonoran mountain king snake habitat by closing mining roads to recreational use could limit opportunities for recreation in habitat areas.

Developing wildlife waters and protecting big horn sheep habitat as described for the Lower Gila North MFP (BLM 1983) would continue to sustain wildlife populations for wildlife viewing and hunting.

The Lower Gila North MFP (BLM 1983) limits motorized vehicles in desert tortoise, Arizona night lizard, and Sonoran mountain king snake habitat to existing routes only. This management has not been implemented. The MFP planning area is considered open to cross-country travel, and current OHV recreation would continue to be allowed.

Alternative B

Impacts in the Agua Fria National Monument would be the same as *Alternative A.*

Managing desert tortoise habitat could reduce opportunities for motorized recreation by limiting the development of new routes. Limiting motorized special events to the period from October 15 to March 31 in Category I and II desert tortoise habitat would limit the potential number of events in some locations. Evaluating

permits for impacts on desert tortoise habitat (Map 2-58) could affect opportunities for events in otherwise desirable settings if impacts on desert tortoise occur in the proposed event location. Events might have to be postponed, cancelled, or relocated to a less desirable location.

Ensuring connectivity of habitat for wildlife could affect motorized recreation by closing routes that cross sensitive areas or movement corridors. Opportunities for wildlife viewing could be enhanced because wildlife would be able to move through their traditional corridors.

Designation of Harquahala Mountains Wildlife Habitat Area (WHA) would Protect sensitive wildlife habitat through route closures would diminish opportunities for motorized recreation. Enhancing wildlife habitat could affect opportunities for wildlife viewing by strengthening populations.

Ensuring connectivity of habitat for wildlife could affect motorized recreation by closing routes that cross sensitive areas or movement corridors. Opportunities for wildlife viewing could be enhanced because wildlife would be able to move through their traditional corridors.

Alternative C

Limiting routes in pronghorn corridors in Agua Fria National Monument could reduce the connectivity of the route network and diminish the motorized recreation experience of some users. Prohibiting the development of recreational sites in pronghorn corridors could affect recreation opportunities by eliminating the possibility of such facilities as restrooms, parking areas, or ramadas, which could enhance the recreation experience for some users.

Alternative C would, however, provide more areas for visitors to enjoy viewing wildlife and experiencing solitude. Wildlife corridor concerns were considered as part of the evaluation process for designating the route network for *Alternative C*.

Agua Fria National Monument has no developed recreational sites except for minimal improvements at Badger Springs and in the Cordes Lakes area. Prohibiting the development of recreational sites in pronghorn corridors would eliminate the possibility of such facilities as restrooms, parking areas, or ramadas, which could enhance the recreation experience of some users. Modifying fences to allow wildlife to move more freely could enhance wildlife viewing opportunities in the national monument.

Prohibiting new fences in the Belmont/Big Horn Mountains and Date Creek Mountains WHA areas, and the Upper Agua Fria River Wildlife Habitat Corridor would maintain the current connectivity of the route network.

In the Bradshaw-Harquahala Planning Area, closing or limiting vehicle routes in WHA areas to protect wildlife habitat would have the same impact on recreation as described in *Alternative B.* Prohibiting construction of new routes in the Date Creek Mountains WHA area and the Upper Agua Fria River Habitat Corridor could lessen motorized recreation opportunities by preventing maintenance of route connections when other routes are closed for resource protection. Fragmented route systems could diminish the recreational experience for some users and possibly lead to an increase in unauthorized cross-country travel to connect routes.

Impacts from desert tortoise restrictions would be the same as those identified in *Alternative B.*

Alternative D

Impacts from route limitations and development of sites for recreation in the pronghorn corridors in Agua Fria National Monument would be similar to those under *Alternative C.*

Removing all fences and prohibiting new ones in Agua Fria National Monument would maintain connectivity in the motorized route system developed for *Alternative D* and enhance the natural appearance of the landscape. Wildlife viewing could be enhanced because wildlife

could move throughout most of the national monument.

In the Bradshaw-Harquahala Planning Area most wildlife management would be accomplished through ACEC and WHA designation and management. Impacts would be the same as those discussed in *Alternative B* and in section 4.14.1.

Management restrictions for desert tortoises and in the Harquahala/Belmont/Big Horn Wildlife Corridor could limit recreation developments and restrict or preclude some recreation activities, diminishing the recreation experience of some users. Impacts from other desert tortoise restrictions would be the same as those identified in *Alternative B.*

***Alternative E* (Preferred Alternative)**

Designation of specified pronghorn corridors in the monument would have the same impacts as described under *Alternative C.*

Prohibiting the developing of recreational sites in pronghorn corridors could affect recreation opportunities by eliminating the possibility of such facilities as restrooms, parking areas, or ramadas, which could enhance the recreation experience for some users.

Prohibiting new fences in the Belmont/Big Horn Mountains WHA would help maintain the current connectivity of the route network.

Closing or limiting vehicle routes in the Belmont/Big Horn Mountains WHA area, the Harquahala/Belmont/Big Horn Wildlife Corridor, and the Harquahala Mountains and Black Butte ONAs would have the same impacts as *Alternative C*.

Prohibiting the building of new routes in WHA areas and ACECs would have the same impacts as described in *Alternative B.*

Impacts from desert tortoise restrictions would be the same as those identified in *Alternative B.*

4.14.5 From Cultural Resource Management

***Alternative A* (No Action)**

Current conditions would be maintained with no significant change in interpretive opportunities. Two permittees now offer cultural resource tours and activities in Agua Fria National Monument, but BLM has devised no management procedure for controlling the number of permits. More permits could lead to allocation and protection problems if larger numbers of tours and activities visit the same sites. Increased group use could also diminish the recreation experience of the general user.

The Lower Gila North MFP (BLM 1983) called for study plots and inventories to reduce land use impacts on cultural resources and to allocate sites for scientific use and preservation for future use. The study plots have not been established and should not restrict recreation at cultural sites. Allocation to scientific use or preservation would limit certain sites for commercial or general recreation use.

Alternative B

Potential closures of routes as protective measures for sites would affect certain recreational activities, especially where such activities are influenced by the interconnectedness of the route network. However, conflicts among user types could decline, and opportunities could increase for an enhanced sense of solitude and enjoyment of cultural resources in a natural setting.

Maintaining signs and developing interpretive programs would lead to a better understanding and appreciation of the sites selected to be open to the public. Increased visitation to sites resulting from promoting public access could affect the interpretive recreational experience by (1) increasing interaction with other visitors and (2) diminishing the sense of site discovery that visitors experience before sites are allocated for public access.

Also affecting opportunities for recreation would be stipulations on SRPs to limit damage such as artifact removal or displacement, and requirements for SRP holders to implement customer education programs. The recreational experience for visitors would be enhanced by learning the value of the cultural resources and the importance of retaining their integrity and of protecting sites for future recreational opportunities.

Limiting group visits to cultural sites to 25 persons at a time, could limit opportunities for some groups to experience the cultural resources at popular sites. Such limitation could maintain an enjoyable experience for the public by reducing possible overcrowding caused by large groups at sites and preserving a more natural experience.

Developing public use areas according to the various levels of development and use described in Cultural Resources in Chapter 2, would maintain opportunities for a variety of recreational experiences relating to the cultural resources in the national monument. Specifically, sites would have interpretive and educational components. Access for multiple users (including the disabled) would be improved, and sites would be stabilized and preserved for future recreational opportunities.

Improving routes and trails would open sites to a wider variety of users. Limiting motorized access to at least a quarter mile to a half mile from sites would limit the opportunities for recreation of some users but would also reduce conflicts among user types and maintain a non-motorized setting at the resources.

Educational programs and interpretive signs would raise visitor awareness and sensitivity.

Developing areas for Moderate and Low public use would enhance the experience of the general user by limiting commercial tours and allowing increased opportunities for experiencing the cultural resources in a natural setting.

Developing five sites for High public use and four sites for Moderate public use in the national monument would affect recreational opportunities involving cultural resources by increasing access and education programs on 16,000 acres. Limiting motorized access would reduce some user conflicts at the sites. A potential increase in commercial permit use for the sites could increase interaction with large groups at Low public use sites and diminish the recreational experience of some users. Public use on 49,100 acres would remain limited, with no improvements in access or interpretive elements. This lack of improvements would allow users to experience the cultural resources through discovery.

In the Bradshaw-Harquahala Planning Area developing sites for public use in all eight cultural priority areas would increase awareness and recreational opportunities for experiencing the cultural resources on 316,000 acres throughout the planning area. Some user conflicts would be reduced through controlling access of motorized vehicles. The recreation experience of some casual users could be lessened by increased interaction with large groups at sites authorized for group tours.

Alternative C

In Agua Fria National Monument, impacts under *Alternative C* would be similar to those under *Alternative B*, except that one site would be allocated to High public use and eight sites would be allocated to Moderate public use. The total area of public use would be the same. However, developing fewer sites to High public use would decrease the publicity and awareness of cultural resources and limit opportunities for recreation for some users, especially those with mobility challenges. Allocating more sites to Moderate public use would increase opportunities to experience cultural resources in a less developed setting and reduce the potential for interaction with large groups.

In the Bradshaw-Harquahala Planning Area four priority areas, comprising 276,500 acres would be allocated for public use. In these areas

impacts to recreational opportunities would be similar to those under *Alternative B.* The opportunity to experience cultural resources through self-discovery would still exist in the priority areas not allocated for public use. For those areas *Alternative C* would not provide the educational and interpretive opportunities provided by *Alternative B.*

Closing routes that lead to archeological sites in the Black Mesa ACEC would affect the ability of motorized users to access those areas and could lead to fragmentation of the route network. Restricting SRPs to educational tours involving site recording or protection could reduce recreational and educational opportunities for casual users but could lead to better protection and stewardship of sites for long-term preservation.

Alternative D

In Agua Fria National Monument no areas or sites would be developed for High public use. Only one site would be developed for Moderate public use. Awareness of cultural resources would be less under *Alternative D* than under *Alternatives B* and *C.* Opportunities for educational programs, along with the ability to experience the resources in a developed setting, would be eliminated. Lack of facilities could restrict access by certain visitors, especially those with mobility challenges. With limits on tours and group visits in Moderate public use areas, the potential for interaction with large groups would be reduced from that under *Alternatives B* and *C.* The entire national monument would be open for experiencing cultural resources through self-discovery. Opportunities for user conflicts would increase, especially at popular known sites such as Pueblo la Plata and Pueblo Pato, which would not be managed for public use.

In the Bradshaw-Harquahala Planning Area two priority areas, comprising 134,500 acres, would include sites developed for public use. Impacts would be similar to those under *Alternative B.* Educational and interpretive recreational opportunities would be reduced from those under Alternative C because fewer sites would be allocated to public use. Opportunities for self-discovery experiences would increase, as would potential conflict among user types.

***Alternative E* (Preferred Alternative)**

Impacts on recreation resources from cultural resource management would be similar to those described for *Alternative B* except for the following. Potential closing of routes in the planning areas as a protective measure for sites would affect recreational activities, especially where such activities are influenced by the interconnectedness of the route network. Visitor awareness of the cultural resources and of recreational opportunities to experience the resources through improved access and education programs would increase as a result of managing cultural resources in the following areas in the Bradshaw-Harquahala Planning Area:

- Black Mesa/Bumble Bee Cultural Resource Priority Area
- Black Canyon corridor, Lake Pleasant/Agua Fria, Wickenburg/Vulture, Weaver/Octave, Harquahala, and Galena Gulch SCRMAs.

Varying levels of public use development, similar to the levels used in Agua Fria National Monument would limit opportunities and access for some users. However, the levels would also reduce conflicts among user types. Future opportunities for recreation would be maintained by protecting the resources.

In the monument, impacts under *Alternative E* would be similar to *Alternative B* except that two sites would be developed for High public use and six sites for Moderate public use. The total area of public use would be less than *Alternative B* (12,440 acres). Public use limitations on 57,200 acres would increase the impacts over what is described in *Alternative B*.

In the Bradshaw-Harquahala Planning Area developing sites for public use in each cultural

priority area would increase awareness and recreational opportunities for experiencing cultural resources. Although some user conflicts would be reduced by controlling access of motorized vehicles, the recreation experience of some casual users could be impaired by increased interaction with large groups at sites authorized for group tours.

4.14.6 From Paleontological Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected. Although including paleontological resources in the Cultural Resource Program could increase awareness recreation opportunities, no paleontological sites are known to exist on BLM's land in the planning areas.

4.14.7 From Recreation Management

***Alternative A* (No Action)**

The increasing use and intensity of non-permitted/dispersed general recreation, and permitted commercial/organized activities, could diminish the recreation experience of some users. Furthermore, it could alter the recreation setting for many activities. The changes in settings could reduce opportunities for certain types of activities, such as hiking, backpacking, non-motorized camping, hunting, and wildlife viewing; especially those in primitive or semi-primitive settings.

Current management is reactive; therefore, prescriptive actions are implemented to solve problems or reduce conflicts as they occur. Moreover, a lack of proactive management for recreation could lead to an overall decline in the quality of recreation as measured by recreation settings, opportunities, and experiences on public lands.

Recreational shooters, equestrians, hikers, bicyclists, campers, hunters, OHV users, mining clubs, and other recreation users would not be directed to areas suitable or compatible for their use. The following problems could increase in all areas, especially near expanding communities:

- heavy uses in sensitive areas,
- overcrowding,
- user conflicts,
- adverse effects on adjacent State and private lands, and
- resource conflicts.

Visitor dispersal seeks to minimize visitor impacts and social conflicts by distributing visitor use to such a large number of sites that no site develops any obvious signs of wear. Sites that are convenient or easy to access might show such signs. Pre-existing sites are more convenient, more comfortable, and require less work to use. The lack of limiting established group sizes could possible affect users because they might have forfeit a natural experience so large groups can settle in close together; which in turn, creates noise, other disturbances, or distractions.

Campfires are now allowed at dispersed campsites in the monument. Some proliferation of fire rings has occurred, though the impact is now low. Collection of dead, down, and detached woody material is allowed for campfire use. Although such fuel is generally scarce, no noticeable impact to woody vegetation has yet occurred.

Recreational target shooting would be allowed throughout Agua Fria National Monument. Many areas which have experienced high levels of such use in the past have been notorious for trash accumulation, including large amounts of spent shell casings. In addition, as visitation has increased, visitors' complaints have escalated along with conflicts between shooters and other visitors. Under the No Action Alternative these conflicts are expected to increase.

Special Recreation Management Areas/Recreation Management Zones

The No-Action Alternative would designate no Special Recreation Management Areas (SRMAs) or Recreation Management Zones (RMZs). Recreational mining clubs, OHV users, campers and other intensive users would not be directed to areas suitable or compatible for their use.

Off-Highway Vehicle Use

Agua Fria National Monument is closed to cross-country motorized travel to protect the monument objects; however, existing routes are open. Specifically, no impacts are likely to occur unless resources are found to be damaged. Closing OHV routes or activity areas to protect resources could limit recreation in some areas, but resources would be protected for future activities.

In the Bradshaw-Harquahala Planning Area 2,240 miles of vehicle routes would remain open, and recreation would not be affected. However, in the western part of the planning area that is covered by the Lower Gila North Management Framework Plan (MFP) (BLM 1983), cross-country travel by some users could affect others, by disrupting recreational and disturbing recreation settings. Additionally, recreation settings would shift over time to more motorized settings and opportunities.

Special Recreation Permits

Current conditions would continue. BLM would continue to issue SRPs on request in both planning areas. Growth in the number of permits requested is expected to meet the increased demand but could lead to overcrowded use areas and conflicts between the public and permit holders. In the Agua Fria National Monument, this increase could quickly result in visitor dissatisfaction as the anticipated impacts from the increased use could negatively impact the recreational experience expected in a national monument. In the Bradshaw-Harquahala planning area, the unlimited growth in the number of permits and the subsequent increased number of users and related impacts would eventually result in unacceptable social encounters and impede the quality of recreational experience for most users if left unmanaged. In some locales such as the Vulture Mountains, San Domingo Wash, Hieroglyphic Mountains, and Black Canyon corridor, requests for permitted commercial and competitive events could encumber all or most weekends during the peak cool-weather visitor season. Visitors not engaged in these permitted activities could be displaced to other areas or have their recreation experiences and expectations diminished. With no limits on the number of motorized competitive races the number of permits could increase to a point where the races would overshadow the casual use and organized group opportunities in the intensive OHV use areas. Consequently, this would result in decreasing recreational opportunities and quality of experience for the average motorized user. In addition, by not confining the use within appropriate use areas, visitors who prefer less intensive OHV uses and more casual rural settings could be displaced as this use moves into areas where they do not currently occur.

Alternative B

Under *Alternative B* Agua Fria National Monument's Front Country RMZ would comprise 57,900 acres and the Back Country RMZ 12,700 acres. Managing Agua Fria National Monument's Back Country RMZ for more primitive recreational opportunities would retain the semi-primitive setting and benefit visitors seeking non-motorized challenge and discovery. Activities such as camping would remain dispersed, and opportunities for solitude would be enhanced because intrusion by vehicles would be minimized. Opportunities for more primitive recreational experiences could be lost, fragmented or decline in some areas of the Bradshaw-Harquahala Planning Area due to increased development and recreation access. More remote areas could retain good to high quality non-motorized or primitive recreation opportunities and experiences.

Managing the Front Country RMZ for more visitor uses would affect opportunities for recreation by concentrating popular and more intensive uses in areas that can tolerate the higher level of use. Concentrating visitors could change the recreation setting to one offering a less primitive experience because of (1) the increased social contact and (2) the required management for more visitors. Impacts from increased noise, litter, and vehicular use would increase in the Front Country RMZ. Access for multiple types of activities would be enhanced and interpretive and educational opportunities would be open to a broad range of visitors.

Impacts to Agua Fria National Monument from dispersed camping would be similar to those under *Alternative A*. However, dispersed camping would be restricted near some facilities such as developed campgrounds, archaeological sites, and water sources. This restriction might slightly reduce the number of sites for dispersed camping and lead to other sites being established by the public. Motorized vehicles might pull off the designated road up to 25 feet. However, this might disturb the campers' solitude if parked along Bloody Basin in a camper unit. Additionally, other vehicles passing might create dust and impair visual clarity.

In contrast to *Alternative A,* campfires would be allowed at dispersed campsites in the national monument with some limitations; for example, only in built fire rings in developed campgrounds. Collecting dead, down, and detached woody material would be allowed for campfires at dispersed campsites.

Two 20-unit campgrounds would be developed at or near the two major access roads into the national monument. The ease of pulling into an established campsite with amenities offers convenience and security. Being close to other campers would enhance security and might also affect the social setting. The developed campgrounds would create a permanent disturbance at the development; however, careful site design would reduce the impacts of the disturbance to soil, vegetation, and visual resources. Developed campgrounds could also attract more visitors to the monument, creating intensified disturbance to wildlife habitat and other resources near the developed campgrounds. Camping opportunities in a developed campground would increase by 40 planned sites.

The impacts of recreational target shooting in the monument under *Alternative B* would be similar to those under *Alternative A*, except that some areas would be closed for the safety of other visitors. Some of the most popular shooting sites are within a half mile of now popular trailheads. Shooters who use these sites (such as the area near the Badger Springs trailhead) would be displaced and would have to move their use to another location. Whether that location might be within the monument is unknown.

Prohibiting material collection and paintball activities in the monument would affect visitors who have traditionally engaged in these activities. Nevertheless, this approach would maintain the landscape in a natural setting for other visitors, especially for cultural resource interpretive and educational programs.

Developing connecting route networks for hikers, bicycles, OHVs, and equestrians would affect recreation opportunities because all types of users could enjoy activities consistently, in more areas, and with fewer user conflicts.

Alternative B would significantly reduce the overall availability of public lands for competitive OHV events. Only the Hieroglyphic Mountains, San Domingo Wash, Vulture Mountains, Table Mesa, and Stanton SRMAs would allow such events, and the number of events would be limited to 16 annually. Management actions applied to the entire Bradshaw-Harquahala Planning Area address a variety of recreation concerns, including public access, target shooting, special recreation permits, organized group activities, and firewood collection. These management actions would do the following:

- reduce impacts on recreation users,

- reduce conflicts between users,
- maintain recreation opportunities and settings, and
- attempt to maintain high-quality dispersed recreation opportunities over the long term.

Special Recreation Management Areas/Recreation Management Zones

Managing 149,760 acres of public land in SRMAs for OHV and intensive recreation would focus BLM's management efforts, as well as allocate some intensive recreation uses to the Hieroglyphic Mountain, Table Mesa, Stanton, San Domingo Wash, Yarnell, Wickenburg, and Vulture Mine SRMAs. BLM would manage SRMAs to ensure that specified recreation opportunities are maintained over the long term and to reduce conflicts between users and other resources. Development of staging areas and facilities would enhance the recreational experience for some users by providing a more developed setting.

Alternative B would significantly reduce the overall availability of public lands for competitive races in comparison to the current situation. Only the Hieroglyphic Mountains, San Domingo Wash, Vulture Mountains, Table Mesa, and Stanton SRMAs would allow races; however, the number would be limited to 14 per year.

Users interested in intensive motorized and group activities would be directed to the Hieroglyphic Mountains, Table Mesa, Stanton, San Domingo, and Vulture Mine SRMAs. Developing staging areas and facilities would enhance the recreational experience for these permitted uses by providing a compatible area for these activities.

Allocating and managing the Yarnell SRMA would affect the hang gliding community by preserving take-off and landing areas for long-term use. Potential hazards would be prevented whenever possible, thereby enhancing the safety and overall experience of users.

Managing the North Black Canyon Trail SRMA would enhance the non-motorized recreation experience in the northern portion of the planning area by providing the facilities for trail use and assuring long-term access to the trail as well as connections to public land to the south and Forest Service land to the north and east.

Off-Highway Vehicle Use

The impacts of OHV management and route closures in ACECs and lands allocated to maintain or enhance wilderness characteristics would slightly reduce the amount of lands open to vehicle-based and motorized recreation opportunities in these areas due to prescribed route closures to achieve recreation settings. The overall effect of route management under *Alternative B* would be to maintain the existing recreation settings and opportunities and avoid greatly changing or diminishing motorized recreation experiences and opportunities throughout the Bradshaw-Harquahala Planning Area.

Special Recreation Permits

In Agua Fria National Monument issuing up to 12 SRPs would represent a four-fold increase from the current condition and could affect the ability of more visitors to access the monument under guided circumstances. The increase could also degrade the recreational experience of other users by (1) increasing their interaction with large groups during many activities and (2) diminishing their opportunity to enjoy experiences in desired settings.

In the Bradshaw-Harquahala Planning Area impacts regarding the number of SRPs issued would be the similar to those described in *Alternative A*. However, in *Alternative B* the number of motorized competitive races would be limited to 14 per year. Although this amount is nearly five times the amount of races currently held in the planning area, annual limits would be set for each SRMA which would spread the potential number of races throughout the five SRMAs allocated for such use. This would minimize potential user conflicts in those

SRMAs and allow diverse OHV opportunities in these areas.

However, the allowable limits in this Alternative could still potentially double the number of competitive races in those management areas where races are currently held. Also, it will keep other areas open and available for races where currently none are held. In these areas, casual users could be affected by a diminished recreational experience in areas near events. The contributing factors include; the noise, the dust, the limitations and closures of routes, the possibility of large numbers of spectators, as well as other factors which could further limit normal use of area resources which increases during the during weekends. Casual users might also be displaced from popular areas because these areas would be inaccessible or unattractive to them during scheduled events. On the other hand, the recreation experience of some visitors might be enhanced by the unexpected opportunity to observe competitive events and interact with other visitors.

Limiting competitive, commercial, and organized group events to allocated VRM standards and recreation settings in the planning areas could limit the total area open to existing events and prevent designating locations for some new events.

Alternative C

In Agua Fria National Monument impacts would be similar those described for *Alternative B.* The Front Country RMZ would occupy 42,410 acres, and the Back Country RMZ would occupy 28,420 acres.

Impacts of dispersed camping in Agua Fria National Monument would be similar to those under *Alternative B,* except in the Front Country RMZ camping would be allowed only at designated dispersed sites. Camping on established designated sites offers visitors less flexibility in choosing a location and encourages the repeated use of a limited number of sites. Designating dispersed sites would ensure that campsite location minimizes impacts to soil, visual, and biological resources. Sites for designation could be selected for their characteristics of minimizing disturbance, while offering the visitor a quality camping experience. Dispersed campsites would no longer proliferate in the Front Country RMZ.

Campfires would be allowed at dispersed campsites in the monument with some limitations; for example, only in built fire rings in the developed campground. Collecting dead, down, and detached woody material would be allowed for campfires at dispersed campsites. The impacts are expected to be the same as under *Alternative A.*

The impacts of one campground development would be similar to those described for *Alternative B*, except there would be 20 fewer sites, and visitors would be concentrated in one place instead of two.

The impacts of recreational target shooting in the national monument would be similar to those under *Alternative B,* except that the entire Front Country RMZ would be closed to shooting. Some of the most popular shooting sites are in the Front Country RMZ as delineated by *Alternative C*. Shooters who use these sites (such as the area near the Badger Springs trailhead) would be displaced and would have to move their use to another location. Whether that location might be within the monument is unknown; however, this use is expected to shift off the monument.

Managing the Agua Fria National Monument's 42,410-acre Back Country RMZ and the Bradshaw-Harquahala lands managed for wilderness characteristics together, would offer visitors primitive recreational opportunities by retaining semi-primitive landscapes and experiences. Impact on users would be the same as described under *Alternative B*, with the exception that larger amounts of land are enclosed by these land use allocations.

Developing connecting route networks for hikers, bicycles, OHVs, and equestrians would benefit recreational opportunities by allowing all types of users to enjoy activities consistently, in more areas, and with fewer conflicts.

Management actions applied to the entire Bradshaw-Harquahala Planning Area would address a variety of recreation concerns, including public access, target shooting, SRPs, organized group activities, and firewood collecting. These actions would do the following:

- reduce impacts on natural and cultural resources,
- resolve conflicts among recreation users,
- maintain recreation opportunities and settings,
- increase public safety, and
- attempt to maintain dispersed high-quality recreation opportunities over the long term.

Special Recreation Management Areas/Recreation Management Zones

The impacts of managing SRMAs would be similar to those under *Alternative B*. Providing staging and trail areas for multiple recreation activities and creating new trails would enhance the recreation experience by increasing opportunities and reducing user conflicts.

Alternative C would significantly reduce the overall availability of public lands for motorized competitive races. Only the Hieroglyphic Mountains, San Domingo, Vulture Mountains and Stanton SRMAs would allow races, and the number would be limited to six per year.

Off-Highway Vehicle Use

The impacts of OHV management and route closures in ACECs and lands allocated to maintain or enhance wilderness characteristics would be similar to *Alternative B*, except more area would be designated as ACECs and WHAs resulting in increased limitations on areas available for motorized recreation.

Special Recreation Permits

Impacts in Agua Fria National Monument would be similar to those under *Alternative B*, except no more than six SRPs would be issued. This figure represents double the number of current permits and could diminish recreational opportunities for some users.

In the Bradshaw-Harquahala Planning Area impacts regarding the number of SRPs issued would be the same as in *Alternative A*, except the number of motorized competitive races would be limited to six per year. The number of races is still twice as many as the number currently held in the planning area which is expected to meet the future demands of users seeking these competitive speed opportunities. As in *Alternative B,* it will keep other areas open and available for races where currently none are held, with the exception of no races being allowed in the Table Mesa SRMA. However, since there has not been a demand for this activity in this SRMA to date, no current use would be displaced. The annual limits set for the Hieroglyphic and Vulture Mountains SRMAs would not increase over current conditions perhaps not meeting the needs for the future increase in races in these areas. This will require additional future races to be moved to less desirable locations and possibly much further away from the Phoenix area. The remaining allowable races would be available in SRMAs that have been allocated for such use; however, these areas may not meet user preferences. In contrast, these limits in each SRMA would minimize potential user conflicts in those areas and allow for more diverse OHV opportunities.

Alternative D

In Agua Fria National Monument, impacts would be similar to those described for *Alternative B,* except the Front Country RMZ would occupy 1,530 acres and the Back Country RMZ would occupy 68,380 acres.

Impacts of dispersed camping in Agua Fria National Monument would be similar to those

under *Alternative C,* except all dispersed camping would be limited to designated dispersed sites. Camping on established designated sites would (1) give visitors less flexibility in choosing a location and (2) would encourage the repeated use of a limited number of sites. Designating dispersed sites would ensure that campsite location minimized impacts to soil, visual, biological, cultural, and other resources. Sites designated available for dispersed camping could be selected for their characteristics of minimizing disturbance while offering recreation visitors a quality camping experience. Proliferating of dispersed campsites would be halted throughout the monument. Vehicles would be allowed to pull off designated roads no more than 15 feet to park for day use. Designated campsites would have designated routes leading to them, thus reducing the disturbance of vehicle pull-offs.

Campfires would be allowed at dispersed campsites in the monument. Visitors; however, could not collect dead, down, and detached woody material for campfires. Wood for campfires would need to be brought in from outside the monument. Denying use of local material for campfires would reduce the disturbance to woody species near the dispersed camping areas. The scarcity of these species and the desire to return the national monument to desert grassland (thereby making woody species even scarcer) makes the impact of this action slight.

Alternative D would prohibit target shooting throughout the monument. Shooters who use sites within the monument would be displaced to sites outside the monument.

Most of the Agua Fria National Monument would be managed under Back Country RMZ prescriptions. About 211,840 acres in the Bradshaw-Harquahala Planning Area would be managed to maintain natural and non-motorized recreational settings to assure the continued availability of areas offering mainly outstanding primitive recreation and solitude opportunities. Limiting and reducing current levels of motorized access would impede the ability of motorized recreational users to travel some secondary routes, washes, single-track cattle paths, and little-used tertiary routes in these nine localities.

Special Recreation Management Areas/Recreation Management Zones

The total area of SRMAs and RMZs in this Alternative is 56,240 acres, of which would be managed for motorized activities. *Alternative D* would phase out motorized uses in Hieroglyphic Mountain SRMA over the planning period. Eventually, *Alternative D* would gradually manage public lands in the southern part of the Castle Hot Spring MU to non-motorized uses to be more compatible with the expected urban growth in the unit. Reducing the area open to motorized activities, especially competitive and organized events, would force the activities to move to other areas. Because most visitors are from the two adjacent counties, new locations in the planning area are likely to be established. Motorized activities at these new locations could increase user conflicts with other recreation and alter the recreation setting for some activities. Moreover, *Alternative D* will only allow two competitive races; both races would be confined to the Vulture Mountains SRMA.

The impacts of managing SRMAs would be similar to those under *Alternative B*. Prohibiting races will slightly lower the number of permits in the SRMAs/RMZs where races are allowed in other alternatives, subsequently requiring less intensive management and monitoring in these SRMAs/RMZs. Providing staging and trail areas for multiple recreational activities and creating new trails would enhance the recreational experience through increased opportunities and reduced user conflicts.

Off-Highway Vehicle Use

The impacts of OHV management and route closures in ACECs and lands allocated to maintain or enhance wilderness characteristics would be the highest under this Alternative.

Alternative D dedicates the most land to non-motorized recreation through designation.

Special Recreation Permits

Issuing no SRPs in Agua Fria National Monument would affect the availability of certain recreational experiences for some users and could reduce the ability of disabled visitors to experience the monument's resources and activities. Eliminating SRPs for conducting guided tours would affect visitors who rely on this conveyance to experience the national monument and interact with others. Eliminating commercial activities would affect recreational opportunities of other users by eliminating the potential for interaction with large groups, especially in highly popular areas.

In the Bradshaw-Harquahala Planning Area impacts regarding the number of SRPs issued would be the same as in the *Alternative A,* except limiting the number of allowable races in this Alternative to two, is less than the current situation of three races per year. However, the most critical impact would be that no races will be allowed in the Hieroglyphic Mountains SRMA which has accommodated this use since the mid 1990's. This would be a severe negative impact to motorized racing enthusiasts by not only moving the only remaining race location much further away from Phoenix, but limiting the racing experience to one SRMA that has less diverse routes available for such use. Racing opportunities and diverse challenges offered these enthusiasts will be lost, and this demand will no longer be met.

***Alternative E* (Preferred Alternative)**

Dispersed camping in Agua Fria National Monument under *Alternative E* would be the same as for under *Alternative B*. Impacts from vehicles engaged in dispersed camping are expected to be similar to those under *Alternative D*.

Campfires would be allowed at dispersed campsites in the monument with some limitations. Collecting dead, down, and detached woody material would be allowed for campfires at dispersed campsites. The impacts are expected to be the same as under *Alternative A*.

Under *Alternative E* target shooting not involving hunting would be prohibited throughout the monument. Impacts would be the same as described under *Alternative D*.

Management actions apply to the entire Bradshaw-Harquahala Planning Area

Special Recreation Management Areas/Recreation Management Zones

Managing 384,510 acres of public land in SRMAs/RMZs would focus BLM's management and also allocate intensive recreation uses to the following SRMA and associated RMZs:

- Black Canyon SRMA,
- Castle Hot Springs SRMA,
- Hassayampa SRMA,
- Hieroglyphic Mountains RMZ,
- Table Mesa RMZ,
- Stanton RMZ,
- San Domingo Wash RMZ,
- Yarnell RMZ,
- Wickenburg Community RMZ, and
- Vulture Mine RMZ.

BLM would manage these areas to ensure that specified recreation opportunities are maintained over the long term and to resolve conflicts between users and other resources. Developing staging areas and facilities would enhance the recreational experience for some users by providing a more developed setting.

Recreationists interested in intensive motorized and group activities would be directed to the Hieroglyphic Mountains, Table Mesa, Stanton, San Domingo, and Vulture Mine RMZs. Motorized events and commercial activities would be entertained at all levels up to potential carrying capacities. These carrying capacities would be determined by Adaptive Management principles through site-specific analysis. Developing staging areas and facilities would

enhance the recreational experience for these permitted uses by providing compatible areas for these activities.

The overall availability of public lands for motorized competitive races would be reduced from the current management situation. Only the Hieroglyphic Mountains, San Domingo, Vulture Mountains and Stanton SRMAs would allow motorized races, and the number would be limited to eight per year.

The allocation and management of the Yarnell SRMA would have the same impacts as those described under *Alternative B.*

Managing the North Black Canyon Trail RMZ would have the same impacts as those described under *Alternative B.*

Off-Highway Vehicle Use

OHV management and route closures in ACECs and lands allocated to maintain or enhance wilderness characteristics to achieve recreation settings would somewhat reduce the amount of lands open to vehicle-based and motorized recreation. Most closures would occur in the lands allocated to maintain or enhance wilderness characteristics in the vicinities of Black Butte, the Belmont Mountains, the Harquahala Mountain, and the Black Butte ONAs.

Special Recreation Permits

Impacts in the national monument would be the same as described in *Alternative A.*

Impacts for the Preferred Alternative are nearly the same as those identified in *Alternative C.* It will keep other areas open and available for races where currently none are held. In these areas the only difference is the limit for the Vulture Mountains RMZ would be increased to four per year. This would double the number of races currently held in the RMZ and is expected to meet the future demand for the area. However, the recreational experience for casual users, most notably the casual use miners, could be affected due to the temporary unavailability of routes and the increased crowds during the race events. Users might also be displaced from the main camping areas because these areas would be either inaccessible or unattractive to them during these events. On the other hand, the recreation experience of some visitors and OHV enthusiasts might be enhanced by the unexpected opportunity to observe competitive events and interact with other visitors.

4.14.8 From Visual Resource Management

***Alternative A* (No Action)**

No impacts are expected.

Alternative B

In the monument, managing the 12,700 acres of Back Country RMZ and 300 acres of Passage RMZ as VRM Class II is consistent with preserving the primitive recreational opportunities intended for the zones. Managing the Front Country RMZ as Class III would allow recreational activities such as OHV use and improvements such as interpretive facilities and parking areas on 57,900 acres but might create visual impacts that could detract from recreational experiences.

In the Bradshaw-Harquahala Planning Area managing the lands allocated to maintain or enhance wilderness characteristics as VRM Class II would affect recreation by retaining the current physical setting of 96,150 acres and enhancing the primitive recreational experience. The improvements at the proposed trailhead in lands allocated to maintain or enhance wilderness characteristics at the staging areas in the Harquahala Mountains would be required to meet design criteria to integrate the color, line, form, and texture of the facilities with the surrounding landscape.

Alternative C

Impacts in Agua Fria National Monument would be similar to those under *Alternative B* except that the Front Country RMZ managed as VRM Class III would be reduced to 42,410 acres and the Back Country and Passage RMZs managed for VRM Class II would increase to 28,490 acres.

In the Bradshaw-Harquahala Planning Area 134,920 acres of lands allocated to maintain or enhance wilderness characteristcs would be managed as VRM Class II and would affect recreational opportunities similarly to *Alternative B*.

Managing Sheep Mountain ONA ACEC as VRM Class I would enhance the visual setting by maintaining 14,500 acres with minimal visual impacts from any proposed projects.

Alternative D

Impacts in Agua Fria National Monument would be similar to those under *Alternative B*, except that the Front Country RMZ managed for VRM Class III would be reduced to 1,530 acres and the Back Country and Passage RMZs managed for VRM Class II would be increased to 69,370 acres.

In the Bradshaw-Harquahala Planning Area impacts would be similar to those under *Alternative B*, except that 226,400 acres of lands allocated to maintain or enhance wilderness characteristics and 142,700 acres in ONA ACECs would be managed as Class I. Such management would enhance the visual landscape by maintaining the areas with minimal to no visual impacts from any proposed developments.

***Alternative E* (Preferred Alternative)**

Impacts in Agua Fria National Monument would be similar to those under *Alternative B*, except that VRM Class III in the Front Country RMZ would be 12,440 acres, 37,560 acres of VRM Class II would be managed in the Back Country and Passage RMZs, and 20,900 acres of VRM Class I would be managed in the area allocated to maintain or enhance wilderness characteristics. These allocations will maintain the natural appearance of the monument landscapes while meeting other resource management objectives.

In the Bradshaw-Harquahala Planning Area impacts would be similar to those under *Alternative B* except that 55,480 acres of lands allocated to maintain or enhance wilderness characteristics would be managed as VRM Class II and 104,690 acres in ONA ACECs would be managed as VRM Class I. This management would benefit recreation by maintaining the areas with little to no visual impacts from proposed developments, which would maintain or enhance the landscape's natural appearance and open space value, while meeting other resource management objectives.

4.14.9 From Rangeland Management

***Alternative A* (No Action)**

As recreation use increases, conflicts with livestock grazing and operators would likely increase. Impacts to recreation could include lack of access for recreation activities as livestock operators close their private lands to reduce conflicts and vandalism. This lack of access would contribute to (1) a loss of recreation areas on public land due to a lack of access and (2) a reduction in route network connectivity. Some visitors would be bothered by waste, cattle trailing, trampled vegetation, and denuded areas near fences and facilities.

Alternative B

Limiting grazing in Agua Fria National Monument riparian areas to the winter season (November 1 to March 1) would degrade the recreational experience, especially in the Back Country RMZ. The primitive recreational experience would be enhanced for the summer season because of reduced interaction with

livestock. However, because of high summer temperatures, winter is the season when most people visit the monument. Encounters between visitors and livestock during winter would increase in riparian areas. Fencing and physical control measures required to keep livestock out of the riparian areas could detract from the visual setting of primitive landscapes and diminish the recreational experience.

Fewer potential conflicts with livestock could also occur in the Front Country RMZ during summer, but the fencing and physical control improvements could disrupt the vehicular route network, restrict accessibility for people with disabilities, and diminish the recreation experience for those users. Improved riparian conditions would enhance the recreation setting for hunting, nature study, and wildlife and bird watching.

In the Bradshaw-Harquahala Planning Area riparian impacts would be similar to those in Agua Fria National Monument. Improved vegetation conditions would improve the recreation setting for hunting, nature study, and wildlife and bird watching. Some visitors would be bothered by waste, cattle trailing, denuded areas, livestock facilities, and trampled vegetation in riparian and upland areas. Others visitors would not notice.

Alternative C

In Agua Fria National Monument the permanent removal of livestock from the riparian area would eliminate potential conflicts with cattle and enhance the primitive and nonprimitive recreational experience in those areas. Fencing and physical controls of livestock would have impacts similar to those under *Alternative B*. Impacts in the Bradshaw-Harquahala Planning Area would be similar to those under *Alternative B*.

Alternative D

Opportunities for recreation on public lands in both planning areas would benefit from the end of grazing. The potential for conflicts with livestock would be eliminated. Both motorized and primitive recreation experiences could improve as recreation settings become free of livestock facilities, cow waste, denuded areas, trampled vegetation, and the evidence of trailing. Access to some public lands could be lost if ranchers sell their private property. The number of areas where ranchers have traditionally permitted public access across private land could decline, making some public land inaccessible, particularity around Castle Hot Springs and Hieroglyphic Mountain, areas notable for interspersed private ranch and BLM lands.

***Alternative E* (Preferred Alternative)**

Impacts are expected to be the same as those described for *Alternative B*.

4.14.10 From Minerals Management

***Alternative A* (No Action)**

Expected increases in visitor use in the Bradshaw-Harquahala Planning Area could lead to increased conflicts with mining. Mining in popular, high-use recreational areas would diminish opportunities for recreation and increase recreation in other areas as users seek new locations for activities. Mining in previously undisturbed areas would reduce opportunities for primitive recreation and change the setting to a more developed landscape.

The Lower Gila North MFP (BLM 1983) prevents “segregation” of minerals for withdrawal and keeps the planning area covered by the plan open to all mineral resource development. Because the potential for leasable and locatable minerals is very low, most impacts would result from developing saleable minerals. Designated wilderness areas and Agua Fria National Monumentaan area of 172,510 cres--are closed to mineral material disposal.

Alternative B

Closing lands allocated to maintain or enhance wilderness characteristics and ACECs to mineral material disposal would improve recreational opportunities and settings on 268,260 acres. The critical physical setting would be retained, and opportunities for more primitive recreation would be enhanced. Because of very low potential, there would be no impacts from leasable minerals management and few impacts from locatable minerals management. Managing lands open to minerals to VRM Class III or IV could affect recreational experiences in adjacent areas. Mineral development would be more visible in the landscape and could alter the recreational experience of some visitors by introducing human-caused elements to the landscape.

Alternative C

Impacts would be similar to those under *Alternative B* except that closures to mineral material disposal would include 325,970 acres. Minerals projects would be managed to the VRM class for which they were inventoried. Visual settings would be better maintained because mining projects would be consistent with viewshed management objectives.

Alternative D

Impacts would be similar to those under *Alternative B* except that 469,680 acres would be closed to mineral material disposal. Closures would ensure the retaining of recreation opportunities in undisturbed natural settings over the largest area under any of the alternatives.

***Alternative E* (Preferred Alternative)**

Impacts would be similar to those under *Alternative B*, except that 172,780 acres would be closed to mineral material disposal. Closures would ensure the retaining of high-quality primitive recreation opportunities in undisturbed natural settings.

4.14.11 From Fire Management

***Alternative A* (No Action)**

Under *Alternative A* current conditions would be maintained. Prescribed burns would affect the availability of recreation activities in Agua Fria National Monument because some areas would be closed during planned burning. The enhanced habitat and general landscape setting gained through the burns would benefit recreational experiences by improving visual settings and possibly increasing wildlife abundance for viewing and hunting.

Visitors generally do not view burned areas--caused either by prescribed or natural ignition--as attractive settings for recreation. These users would be displaced for varying lengths of time from burned landscapes and would probably go to other nearby unburned areas. The burned localities would provide transient opportunities to interpret the role of natural and prescribed fires in the landscape.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

Impacts would be similar to those under *Alternative A*, except that natural fire starts would be allowed to burn in the prescribed burn areas. This practice could increase opportunities for fires to start during each season because only planned, human-set fires are now allowed to burn. More fire starts could increase disruptions to recreation by increasing the instances of area closures.

4.14.12 From Wild Horse and Burro Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected.

4.14.13 From Management of Transportation and Public Access

***Alternative A* (No Action)**

OHV and other mechanized users would not be directed to routes or areas suitable or compatible for their use. Heavy OHV uses in sensitive areas, overcrowding, user conflicts, adverse effects on adjacent State and private lands, and resource conflicts could increase in all areas, especially near expanding communities:

Motorized route-based recreation opportunities currently available would be generally unchanged. Most existing routes would remain open within the Agua Fria National Monument, but the monument would remain closed to cross-country motorized travel. No closures would be anticipated unless resources are found to be damaged. Closing OHV routes or activity areas to protect monument resources could limit motorized recreation in some areas.

In the Bradshaw-Harquahala Planning Area 2,240 miles of vehicle routes would remain open, and recreation would not be affected. In the western part of the planning area that is covered by the Lower Gila North Management Framework Plan (MFP) (BLM 1983), cross-country travel by some users could affect others by disrupting recreational and disturbing recreation settings. Recreation settings would shift over time to more motorized settings and opportunities.

Alternative B

140 miles, or 76.5 percent, of routes would remain open to vehicular travel in Agua Fria National Monument. The route system would enhance opportunities for motorized recreation by creating loop trails, which would allow connected touring, provide for an increase in access, and offer extended recreational opportunities. About five miles of new routes would be developed to bypass private property and maintain the connectivity of the route system. The route system would close 38 miles of existing routes and could diminish opportunities for motorized recreation in some areas. Users of these routes would be displaced to other areas within and outside the monument.

Up to 48 miles of route in the Bradshaw-Harquahala Planning Area would be closed in ACECs and lands allocated to maintain or enhance wilderness characteristics. The closures would affect and displace motorized recreational opportunities for traditional users of those routes. The recreational experience of non-motorized users would be enhanced through more opportunities to experience solitude and to participate in recreational activities in a natural and non-motorized setting.

In the remainder of the planning area 2,086 miles, or 98 percent, of routes would remain open. A total of 168 miles of routes would be closed elsewhere to (1) protect resources, (2) reduce redundancy, and (3) limit routes for administrative use. And 14 miles of new routes would be established to mitigate losses from the closures and to achieve better route connectivity. The total distance of open routes would be 2,100 miles. The closures represent 7.4 percent of the routes in the planning area.

Limiting all mechanized vehicles to inventoried routes before completing the route designation process (i.e. within 5 years of plan approval) would eliminate cross-country OHV travel throughout the planning area. According to the AGFD *Off-Highway Vehicle Strategic Plan* (AGFD 1998), cross-country travel accounts for five percent of OHV activities. Accordingly, this limitation would not affect most OHV users. Cross-country travel would also be prohibited for game retrieval, potentially diminishing or eliminating hunting opportunities.

Restricting all motorized and non-motorized vehicles to existing routes would not affect current activities but would prevent developing new routes to expand the recreational experience. Allowing cross-country travel only

for non-motorized, wheeled game carriers (small two-wheeled carts for transporting game) could affect the recreational experience for some hunters by limiting their opportunities to hunt in areas where retrieval of game would require travel over long distances.

Enacting specific route, wash, or area closures in lands allocated to maintain or enhance wilderness characteristics and Tule Creek ACEC would affect the recreational experience and opportunities of motorized users. Route closures would diminish opportunities for traditional users. Area closures could disconnect multiple routes in the network. Protecting biological and cultural resources through the closures would maintain resources and preserve the natural setting for future recreational opportunities.

Connecting route networks would be developed for hikers, bicycles, OHVs, and equestrians enhance recreation experiences and opportunities with fewer user conflicts. Developing connecting route networks for hikers, bicycles, OHVs, and equestrians would affect recreation opportunities because all types of users could enjoy activities consistently, in more areas, and with fewer user conflicts.

Users interested in intensive motorized trail activities would be directed to the Hieroglyphic Mountains, Table Mesa, Stanton, San Domingo, and Vulture Mine SRMAs.

Managing the North Black Canyon Trail SRMA would enhance the non-motorized recreation experience in the northern portion of the planning area.

The closure of routes crossing sensitive wildlife areas or movement corridors would diminish motorized recreation opportunities. Opportunities for wildlife viewing could be enhanced because wildlife would be able to move through their traditional corridors.

Opportunities for trail-based individual, organized group and special motorized recreation uses could be lessened by restricting use or limiting development of new routes in areas managed for desert tortoise habitat, especially for motorized uses from October 15 to March 31 in Category I and II desert tortoise habitats.

Alternative C

In Agua Fria National Monument 129 miles, or 69.7 percent, of routes would remain open to vehicular travel. The route system developed under *Alternative C* would create loop trails for motorized touring and add new routes to bypass private property. About six miles of new routes would be developed and would affect recreation opportunities by maintaining route connectivity in the event of closures across private land. The route system would close 50 miles of existing routes and could diminish opportunities for motorized recreation in some areas.

The impacts on opportunities for recreation in the Bradshaw-Harquahala Planning Area would be similar to those under *Alternative B*, except the model route system for *Alternative C* would close 382 miles of routes, mainly in ACECs and lands allocated to maintain or enhance wilderness characteristics. In the rest of the planning area 1,889 miles of routes would remain open, and 382 miles of potential closures would be mitigated by up to 26 miles of new routes. The total distance of open routes would be 1,915 miles or 15 percent less than the existing routes and nine percent less than in *Alternative B*.

The recreational experience and opportunities of motorized users would be affected by imposing potential restrictions in eight ACECs and by enacting specific route, wash, or area closures in lands allocated to maintain or enhance wilderness characteristics. Route closures would diminish opportunities for traditional users, and area closures could result in the disconnection of multiple routes in the network. Protecting biological and cultural resources through the closures would maintain resources and preserve the natural setting for future recreation opportunities.

Under *Alternative C* vehicles would be allowed to pull off designated roads no more than 15 feet to park for day use or for dispersed camping. This requirement would reduce the disturbance of vehicle pulloffs. However, it might require visitors (1) to camp closer to vehicle routes in less desirable areas or (2) to carry their camping gear to more desirable locations further from designated vehicle routes.

Developing connecting route networks would have the same impacts as *Alternative B.*

Limiting routes in pronghorn corridors in Agua Fria National Monument could reduce the connectivity of the route network and diminish the motorized recreation experience of some users.

Prohibiting new fences in the Belmont/Big Horn Mountains and Date Creek Mountains WHA areas, and the Upper Agua Fria River Wildlife Habitat Corridor would maintain the current connectivity of the route network.

Closing or limiting vehicle routes in the Belmont/Big Horn Mountains WHA area and in the Harquahala/Belmont/Big Horn Wildlife Corridor could affect the connectivity of the route network and diminish the recreational experience and opportunities for motorized users. Prohibiting the building of new routes in the Date Creek Mountains WHA area and the Upper Agua Fria River Habitat Corridor could lessen motorized recreation opportunities by preventing maintenance of route connections when other routes are closed for resource protection. Fragmented route systems could diminish the recreational experience for some users and possibly lead to an increase in unauthorized cross-country travel to connect routes.

Impacts from desert tortoise restrictions would be the same as those identified in *Alternative B.*

Alternative D

In Agua Fria National Monument 47 miles, or 27.8 percent, of routes would remain open to vehicular travel. The route system under *Alternative D* was developed mainly for resource protection and would not add new routes. Opportunities for motorized recreation would be limited, and loop trails would not be developed. The route system would close 122 miles of existing routes and could diminish opportunities for motorized recreation and public access in some areas. Opportunities for non-motorized recreation would be enhanced throughout the monument. There would be more opportunity to experience solitude and natural landscape settings.

The impacts of route designations on recreational opportunities in the Bradshaw-Harquahala Planning Area would be similar to those under *Alternative B*. The model route system for *Alternative D*, however, would close 412 miles of routes in ACECs and lands allocated to maintain or enhance wilderness characteristics. In addition, routes might be closed in other allocations to meet resource management objectives and settings. In the rest of the planning area 1,645 miles of routes would remain open, and 723 miles of potential closures would be mitigated by developing 62 miles of new routes. The total distance of open routes would be 1,707 miles, representing a loss of 24 percent of the existing routes.

Impacts from route limitations and development of sites for recreation in the pronghorn corridors in Agua Fria National Monument to those under *Alternative C*.

Removing all fences and prohibiting new ones in Agua Fria National Monument would maintain connectivity in the motorized route system developed for *Alternative D*.

ACEC designations could limit motorized recreation developments and restrict activities, diminishing the recreation experience of some users.

Impacts from desert tortoise restrictions would be the same as those identified in *Alternative B*.

***Alternative E* (Preferred Alternative)**

The route network in the monument under the preferred alternative would retain 101 miles of existing route and construct one mile of new route to enhance connectivity.

About 12 miles of primary roadways exist in Agua Fria National Monument. These include Bloody Basin Road, which leads visitors through the national monument's heart, and the Badger Springs exit of Interstate 17, a road that leads visitors to a trailhead. Beyond the primary road network, 88 miles of secondary and tertiary roads would be designated as open. Closing 70 miles of route in pronghorn corridors and other habitat in the national monument could affect the connectivity of the route network and diminish the motorized recreation experience of some users. The closure would also increase the area in which visitors could have a semi-primitive non-motorized recreation experience. Pronghorn habitat concerns were considered as part of the evaluation process for designating the route network as developed for this alternative. About 41 percent of routes in Agua Fria National Monument would be closed, limiting vehicle-based hunting; camping; and cultural, scenic, and wildlife viewing opportunities.

Under the model route system for the Bradshaw-Harquahala Planning Area 114 miles of routes in ACECs and lands allocated to maintain or enhance wilderness characteristics would be closed. The closures would affect and displace motorized recreational opportunities for traditional users of those routes. The recreational experience of non-motorized users would be enhanced through more opportunities to experience solitude and to participate in recreational activities in natural and non-motorized settings. Within ACECs and lands allocated to maintain or enhance wilderness characteristics 179 miles, or 61.3 percent, of routes would remain open.

A total of 211 miles of routes would be closed to protect resources, to reduce redundancy, and to limit routes for administrative use.
And 39 miles of new routes would be established to mitigate losses from the closures and to achieve better route connectivity. The total length of open routes would be 2,028 miles. The closures represent nine percent of the routes in the planning area.

OHV management and route closures in ACECs and lands allocated to maintain or enhance wilderness characteristics to achieve recreation settings would somewhat reduce the amount of lands open to vehicle-based and motorized recreation. Most closures would occur in the lands allocated to maintain or enhance wilderness characteristics in the vicinity of Black Butte and within the Belmont Mountains and in the Harquahala Mountain and Black Butte ONAs.

Limiting all mechanized vehicles to inventoried routes before completion of the route designation process (i.e. within five years of plan approval) would eliminate cross-country OHV travel throughout the planning area. According to the AGFD *Off-Highway Vehicle Strategic Plan* (AGFD 1998), cross-country travel accounts for five percent of activities. Accordingly, this limitation would not affect most OHV users. Cross-country travel would also be prohibited for game retrieval, potentially diminishing or eliminating hunting opportunities for some hunters.

Prohibiting new fences in the Belmont/Big Horn Mountains WHA would help maintain the current connectivity of the route network and enhance the unencumbered travel of motorized visitors.

Closing or limiting vehicle routes in the Belmont/Big Horn Mountains WHA area, the Harquahala/Belmont/Big Horn Wildlife Corridor, and the Harquahala Mountains and Black Butte ONAs could affect the connectivity of the route network and diminish the recreational experience and opportunities for motorized users. Motorized users could be displaced or could permanently lose these opportunities.

Prohibiting the building of new routes in WHA areas and ACECs could affect motorized recreation opportunities by preventing maintenance of route connections when other routes are closed for resource protection. Moreover, new routes could not be built to satisfy the public demand for more interesting, challenging, and long-distance route systems and loops. Fragmented route systems could diminish the recreational experience for some users and possibly lead to an increase in unauthorized cross-country travel to connect routes.

Developing connecting route networks for hikers, bicycles, OHVs, and equestrians would benefit recreational opportunities because all types of users could enjoy activities consistently, in more areas, and with fewer interruptions. Once completed, the Black Canyon Trail from the Carefree Highway to north of Highway 69 would become a major trail of regional significance for mountain bikers, equestrians, and hikers. Moreover, the trail would link the communities of the Black Canyon corridor and the north boundary of the Phoenix-Peoria metropolis.

Recreationists interested in intensive motorized and group activities would be directed to the Hieroglyphic Mountains, Table Mesa, Stanton, San Domingo, and Vulture Mine RMZs.

Managing the North Black Canyon Trail RMZ would enhance the non-motorized recreation experience in the northern portion of the planning area by providing the facilities for trail use and assuring long-term access to the trail as well as connections to public land to the south and Forest Service land to the north and east.

Impacts from desert tortoise restrictions would be the same as those identified in *Alternative B*.

4.14.14 From Management of Wilderness Characteristics

***Alternative A* (No Action)**

Under *Alternative A* no areas would be managed specifically to maintain or enhance wilderness characteristics. Existing primitive recreation opportunities would probably be maintained in Agua Fria National Monument due to the management guidelines defined by the proclamation (Appendix A).

In some areas of the Bradshaw-Harquahala Planning Area opportunities for primitive and non-motorized types of recreation would likely decline or become more fragmented over the life of the plan due to increasing motorized recreation and land use authorizations. Lands with semi-primitive non-motorized recreation settings and opportunities could decline in number and area. Wilderness characteristics would not greatly change over the life of the plan in the more remote parts of the Bradshaw-Harquahala Planning Area.

Alternative B

In the Agua Fria National Monument, no impacts are expected.

In the Bradshaw-Harquahala Planning Area 56,040 acres of land would be managed to maintain or enhance wilderness characteristics. Designation of these areas would impede the ability of motorized recreational users to access washes, single-track cattle paths, and little-used tertiary routes in these areas. Motorized recreationists would be displaced and forced to travel to nearby areas and routes offering motorized opportunities. Additional camping and off-road driving impacts on soils and vegetation would accrue along these periphery areas and routes, impacting scenery. More crowded motorized routes would make the driving experience less solitary and more interactive with more encounters with other motorized users. The number of social contacts between motorized users would reduce the quality of dispersed recreational experiences for some visitors.

Non-motorized users would benefit from the limitation on vehicles in areas designated to manage or enhance wilderness characteristics by being able to recreate in a more natural setting. This would assure the maintenance and availability of areas offering mainly outstanding primitive recreational and solitude opportunities.

Alternative C

In Agua Fria National Monument no impacts are expected.

In the Bradshaw-Harquahala Planning impacts would be the same as *Alternative B* except that 107,510 acres of land would be managed to maintain or enhance wilderness characteristics. This increased number of acres could create more displacement of motorized recreationists than *Alternative B*.

Designation of a larger amount of area to manage for wilderness characteristics would provide non-motorized users more recreational opportunities than *Alternative B*.

Alternative D

In Agua Fria National Monument, no impacts are expected.

The impacts of managing lands in the Bradshaw-Harquahala Planning Area allocated to maintain or enhance wilderness characteristics would be similar to those under *Alternative B* and *C*, except that the total area of public lands affected would be 91,480 acres. *Alternative D* would designate some of the lands identified to maintain or enhance wilderness characteristics described in *Alternatives B* and *C* as ONA ACECs. Impacts for ACECs are described in the *Special Area Designations* section 4.6.

***Alternative E* (Preferred Alternative)**

In Agua Fria National Monument no impacts are expected.

In the Bradshaw-Harquahala Planning Area impacts would be the same as *Alternative B* except that 96,420 acres of land would be managed to maintain or enhance wilderness characteristics. This increased number of acres could create more displacement of motorized recreationists than *Alternative B*.

Designation of a larger amount of area to manage for wilderness characteristics would provide non-motorized users more recreational opportunities than *Alternative B* but not as much as *Alternative C*.

4.15 Impacts on Visual Resource Management

Analytical Assumptions/Data Summary

BLM evaluates impacts on visual and scenic resources on a case-by-case basis when considering land use authorizations. The RMP would establish VRM classes from the inventory developed during the planning process. The basic descriptions of the class objectives are outlined below; the results of the inventory are shown in Map 3-7.

- VRM Class I Objective: The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes, but it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
    - Generally, the impact of implementing VRM Class I is that the scenic character of those lands are preserved as viewed from the key observation points selected when any management activity is proposed. In the long term, the aesthetics of VRM

Class I landscapes are maintained as natural views.

- VRM Class II Objective: The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities might be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
    - VRM Class II does not provide quite the level of protection to visual landscapes as Class I. The usual affect of Class II is to maintain visual landscapes in a natural appearance. But, since management activities can be seen in this standard - although they would not be allowed to attract attention - the character of visual landscapes could degrade over time.
- VRM Class III Objective: The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities might attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
    - VRM Class III allows management activities to be visible and they could attract attention of casual observers, though they shouldn't dominate the view from the selected key observation points. This Class allows continuation of existing and development of new needed activities, such as utility lines, mineral material sales, and other activities with visible surface disturbance. The long term affect on the visual landscape is generally a degradation of its natural appearance.
- VRM Class IV Objectives: The objective of this class is to provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities might dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.
    - VRM Class IV is designed to allow management activities that can result in major modifications of the visual landscape. The effect of VRM Class IV can be a rapid and quite large modification to the visual landscape from as few as one proposal. An example could be development of a major open pit mine. Yet, even within VRM Class IV allocations, BLM will negotiate with project proponents to try to minimize the visual intrusion of any project proposal.

Table 4-6 shows the area of each VRM class in the planning areas as found during the inventory and the area of each class for each alternative. The total area of each class is reported as the acres of that class on BLM. The VRM inventory process assesses the visual character of the entire landscape, but management to meet VRM class objectives would apply only to BLM lands. When VRM classes are in place, visual resource evaluations are addressed in the environmental reports prepared for each proposed project. These evaluations would employ the contrast rating process as described by BLM Manual 8430.

4-6. VRM Classes by Alternative (BLM acres)

Class	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Preferred)
I	96,820	96,820	109,570	298,310	98,820
II	0	486,800	502,610	340,880	488,250
III	870,180	284,720	260,020	220,790	278,540
IV	0	98,660	94,800	107,020	103,390

4.15.1 From Special Area Designations

***Alternative A* (No Action)**

Under current management present conditions would be maintained, and no visual resource classes would be in place. BLM would evaluate future projects for visual impacts, but would give no guidance as to whether projects are consistent with area values. As such, no impacts on VRM are expected from special area designations.

Though no VRM classes were allocated in past plans, the nonimpairment standard for the eligible Wild and Scenic river segments within the national monument would be managed to maintain the current visual character. Proposed activities within these corridors would be restricted from degrading the character of the river corridor from the conditions that made it eligible for wild designation. Some management activities may be precluded. In the Larry Canyon and Perry Mesa ACECs, no VRM standards were set by previous plans and they have been managed to VRM Class III standards. Continued management in this VRM Class could result in a steady decline of visual character as activities could be seen in the landscape, though they couldn't dominate views from key observation points. Eventually, the character of the currently intact cultural landscapes within the Perry Mesa ACEC could be lost because there is no prescription or standard to preserve it.

In the Bradshaw-Harquahala Planning Area, five wilderness areas (totaling 96,820 acres) would be managed by policy to VRM Class I standards. VRM Class I would allow preservation of the scenic landscapes within the wilderness areas consistent with management to preserve naturalness and areas with few human intrusions. The Harquahala Mountain Summit Road Back Country Byway has not been allocated to a VRM Class and has no prescription or standards defining management of the visual landscape. As a result, it would be managed at VRM Class III standard, which could allow an eventual degradation of the visual character by allowing visual intrusions into the landscape.

Alternative B

In Agua Fria National Monument, management of WSR corridors generally prohibits or minimizes uses and activities that could affect visual resources. Management to protect the values for WSR would thus preserve visual quality along the river. Designating the Bloody Basin Road as a Back Country Byway would include the possibility of facilities such as vehicle pull outs and information kiosks for visitor enjoyment. These would be designed to conform to the local visual landscape and to be visually pleasing. Impacts from Back Country Byway designation are expected to be very low. The Larry Canyon and Perry Mesa ACEC designations would be dropped. Removing these designations should not affect visual resources because the national monument's current management provides for a higher level

of protection than ACEC designation, thereby preserving the existing scenic quality.

In the Bradshaw-Harquahala Planning Area retaining the Harquahala Mountain Summit Road would not affect the existing scenic quality. Retaining the visual character of the surrounding landscape would be important to maintain the current recreation experience offered by the scenic route. Wilderness areas would remain VRM Class I areas.

Designating Tule Creek ACEC (640 acres) in the Bradshaw-Harquahala Planning Area could also affect visual resources. In the ACEC more fences built to restrict livestock grazing and motor vehicles could alter the visual landscape. Withdrawing the ACEC from mineral entry would benefit visual resources by limiting the opportunity for mines and improvements to alter the visual landscape. Developing interpretive sites and implementing protective measures, such as installing fences or barriers, could lower the scenic quality of these areas.

Alternative C

In Agua Fria National Monument, impacts of managing WSR corridors would be the same as for *Alternative B*.

Four ACECs (totaling 810 acres) would also be designated in Agua Fria National Monument. These designations could result in actions degrading visual resources by altering the landscape with fences to eliminate livestock grazing. Impacts would also result from closing, limiting, or mitigating motorized vehicle routes. Such actions could improve visual quality by minimizing disruptive recreation and restoring the natural landscape in some areas.

In the Bradshaw-Harquahala Planning Area, impacts of retaining the Harquahala Mountain Summit Road would be the same as for *Alternative B*. The five designated wilderness areas would not be affected.

Seven ACECs, totaling 55,710 acres, would be designated in the Bradshaw-Harquahala Planning Area. These designations could result in minor management actions. The actions, in turn, would slightly affect visual resources by altering the landscape with fences (1) to exclude livestock and motorized vehicles and (2) to protect cultural sites. The following actions would help maintain scenic quality by minimizing opportunities for disturbances to the natural landscape:

- prohibiting mineral development (all forms of mineral entry or mineral material disposal);
- closing, limiting, or mitigating motorized vehicle routes that conflict with maintenance of wildlife habitat and cultural resources;
- not allowing the building of new recreational sites; and
- prohibiting construction of grazing improvements in certain areas.

Alternative D

In Agua Fria National Monument, impacts of managing WSR corridors would be the same as for *Alternative B*.

Alternative D would designate the Agua Fria River Riparian Corridor ACEC in the monument. The ACEC would encompass 13,070 acres and would represent a large increase in special area designation over *Alternatives B* and *C*. Impacts from the ACEC management could result from closing, limiting, or mitigating motorized vehicle routes that conflict with maintenance of riparian and wildlife values. These actions could improve visual quality by minimizing opportunities for disruption, although general management for protecting the Purpose and Significance of the monument already affords a similar level of protection. Acquiring lands along Indian Creek could enhance scenic quality by enabling BLM to manage newly acquired parcels in accordance with proposed VRM standards.

Alternative D would designate the Agua Fria River Riparian Corridor ACEC in Agua Fria National Monument. The ACEC would encompass 13,070 acres and would represent a large increase in special area designation over *Alternatives B* and *C*. Impacts from the ACEC management could result from closing, limiting, or mitigating motorized vehicle routes that conflict with maintenance of riparian and wildlife values. These actions could improve visual quality by minimizing opportunities for disruption. But general management for protecting the Purpose and Significance of the Agua Fria National Monument would afford a similar level of protection for the area and would limit disruptive activities. Acquiring lands along Indian Creek could enhance scenic quality by enabling BLM to manage newly acquired parcels in accordance with proposed VRM standards.

In the Bradshaw-Harquahala Planning Area, impacts of retaining the Harquahala Mountain Summit Road would be the same as for *Alternative B*.

Eight ACECs (totaling 314,580 acres) would be designated. Impacts on visual resources from these ACECs would be similar to those described for *Alternative C*, except that the protected area would represent more than a threefold increase over the area protected under *Alternative C*. Other impacts to visual resources could result from closing an entire ACEC to motor vehicles, thereby allowing existing vehicle routes to reclaim and disappear into the landscape. The Wilderness areas would remain under VRM Class I.

***Alternative E* (Preferred Alternative)**

In Agua Fria National Monument the WSR eligibility would be retained. Impacts would be the same as described for *Alternative B*.

In the Bradshaw-Harquahala Planning Area retaining the Harquahala Mountain Summit Road Back Country Byway and designating the Constellation Mine Road/Buckhorn Road as a back country byway would have impacts similar to those described under *Alternative B*.

In the Bradshaw-Harquahala Planning Area four ACECs (totaling 89,970 acres) would be designated. Impacts on visual resources from these ACECs would be similar to impacts described for *Alternative C*.

4.15.2 From Lands and Realty Management

***Alternative A* (No Action)**

Under the current management of Agua Fria National Monument some potential impacts to visual resources are expected from lands and realty management. Land acquisitions would be evaluated for visual resource management under a project-specific environmental review. Land disposal is prohibited by the national monument proclamation (Appendix A). New utility proposals such as power lines or pipelines could affect the visual character of the landscape by the adding facilities and ground-disturbing activities. New towers would be built for power lines, and pipeline construction would disturb the ground along the pipeline route. The impacts would generally be limited to the western area of the monument where there are existing visual impacts from previous utility projects developed before the national monument's designation.

Under the current management of the Bradshaw-Harquahala Planning Area no impacts to visual resources are expected from land acquisition. Acquisitions would be evaluated for visual resource management under a project-specific environmental review. Land disposals of up to 54,370 acres could affect visual resources by eliminating BLM's management control over the parcels. Future utility, mining, or development projects would no longer be required to conform to existing or "default" VRM class standards. Developing disposed parcels for residential, commercial, or recreational uses would diminish the open space setting of the remaining adjacent public lands.

Aesthetically incompatible or obtrusive projects could be introduced onto the public lands by the following:

- land use authorizations,
- easements,
- supporting access to or use of valid existing rights, and
- meeting access and utility needs.

These projects and authorizations could degrade or mar the recreation settings, viewsheds, and open space qualities of public lands.

Alternative B

In both planning areas visual resources would benefit from land acquisitions because newly acquired parcels would be inventoried and managed according to BLM's VRM system. Land disposal could impair visual resources by eliminating BLM's management control over the disposed parcels.

Adding designated utility corridors could affect visual resources by increasing the potential installation of utility poles and power lines, as well as ground disturbance along pipeline routes. Before construction; however, future corridor projects would undergo an environmental review that would analyze visual resources. Narrowing the existing utility corridor in Agua Fria National Monument could also affect visual resources by confining new utilities to areas already visually affected by existing utilities, thereby retaining undisturbed visual landscapes. A corresponding expansion of the corridor one mile west would potentially extend utility impacts into the Bumble Bee area and to sites visible from the Sunset Point Scenic Overlook.

Adding communication infrastructure could impair visual resources by altering the visual landscape. Before construction; however, future telecommunication infrastructure projects would undergo environmental review that would analyze impacts on visual resources. Requiring projects to be designed in keeping with the VRM class in which they occur would minimize impacts on the visual landscape.

Impacts of land disposal in the Bradshaw-Harquahala Planning Area would be similar to *Alternative A*, except 58,400 acres have been determined to be suitable for disposal.

In response to projected regional transportation demand, all highway system routes (interstates, U.S. routes, and Arizona State routes) and the proposed corridor southwest of Wickenburg are designated as transportation corridors in the Bradshaw-Harquahala Planning Area. The proposed Wickenburg Bypass corridor, which would mainly cross lands managed for VRM Class II level management, would be inconsistent with VRM objectives for the area and would interfere with BLM's ability to manage this area's visual resources.

Alternative C

Impacts to visual resources from land and realty management would be similar to those discussed for *Alternative B* except as described below.

Eliminating the existing utility corridor in Agua Fria National Monument could affect visual resources by eliminating the possibility of installing new utilities. This constraint would preserve the existing visual landscape and preclude future impacts on the viewshed. Expansion of the corridor two miles west could extend impacts of utility development even further into the Bumble Bee area and into the line of sight from the Sunset Point Scenic Overlook, but may also give enough room within the corridor to site any utility so its impact was either screened from view or minimized.

Impacts of land disposal in the Bradshaw-Harquahala Planning Area would be similar to *Alternative A*, except *Alternative C* would decrease the lands found suitable for disposal to 49,100 acres, 9,300 acres less than proposed under *Alternative B*.

Impacts to visual resources from transportation corridors would be similar to those described for *Alternative B*.

Alternative D

Impacts to visual resources from land and realty management actions would be similar to those discussed for *Alternative B* except as described below.

Impacts in Agua Fria National Monument from utility corridors would be similar to those under *Alternative C*.

In the Bradshaw-Harquahala Planning Area no acreage has been found to be suitable for disposal. BLM would retain management of all public lands, and projects would be subject to design review to ensure compliance and consistency with the VRM class objectives allocated in A*lternative D*. BLM would not approve inconsistent land use authorizations or rights-of-way.

***Alternative E* (Preferred Alternative)**

Impacts to visual resources from land and realty management actions would be similar to those discussed for *Alternative B* except as described below.

Impacts from utility corridors would be similar to A*lternative B* for the monument and to a combination of *Alternative B* and *C* for lands west of Interstate 17. Expanding the Black Canyon Utility Corridor one mile west from Bumble Bee south and two miles west from Bumble Bee north will allow future utility development to meet demand in the Phoenix area, while allowing the flexibility to adjust facility sighting to minimize visual impacts as viewed from scenic overlooks along Interstate 17.

4.15.3 From Management of Soil, Air, and Water Resources

Alternatives A (*No Action*), B, C, D,* and *E (*Preferred Alternative*)

Under current management preventing or reducing impacts on air quality by developing mitigation measures (e.g. dust control and the use of best management practices) during project planning could benefit visual resources by maintaining the local clarity of the visual landscape. Managing soil and water resources is not expected to affect visual resources.

4.15.4 From Biological Resource Management

***Alternative A* (No Action)**

Under current management, wildlife habitat improvements are designed to minimize visual impacts, but outside of Wilderness areas, projects are designed to comply with VRM Class III standards. Though few projects are constructed, compliance with VRM Class III could result in steady degradation of visual landscapes. The contribution to that from biological resources management would be negligible.

Alternative B

Impacts on visual resources from the general management of biological resources would be similar to those described for *Alternative A*, except wildlife related projects would be designed to comply with VRM Class I or II standards in many places, which would minimize visual impacts from those projects. Closing routes and prohibiting new fences in the Harquahala Mountains WHAs (64,220 acres) could benefit visual resources by reducing existing visual disruption and minimizing future disturbances to the visual landscape.

Alternative C

Impacts on visual resources from biological resources would be similar to those described for *Alternative B* except that in Agua Fria National

Monument 39,330 acres of WHAs for pronghorn antelope would be allocated. Potential closure or mitigation of routes in the WHAs could enhance the visual landscape by removing existing disturbances.

In the Bradshaw-Harquahala Planning Area impacts would be similar to those under *Alternative B* except that the total area of WHAs would increase to 157,180 acres.

Alternative D

Impacts to VRM from Biological resource management in the monument are the same as described for *Alternative C*.

Impacts on visual resources from biological resources would be similar to those described for *Alternative C* except that the Date Creek Mountains and Upper Agua Fria River Basin WHAs, encompassing 24,290 acres, would also be included. Other management for biological resources is prescribed in ACECs.

***Alternative E* (Preferred Alternative)**

Impacts to visual resources from biological resources would be similar to those described for *Alternative C*.

4.15.5 From Cultural Resource Management

***Alternative A* (No Action)**

No impacts are expected.

Alternative B

Implementing physical and administrative protection measures to stop, limit, or repair damage and vandalism to sites could affect visual resources. Building fences or other barriers could impair visual resources. Closing routes and restricting grazing could increase vegetation cover, creating a more natural-appearing landscape.

Additionally, the following potential management actions could affect visual resources by altering the visual landscape:

- building new visitor facilities (including gravel parking areas, restrooms, picnic tables, trash receptacle, or benches), and
- route improvements with the addition of signs.

Authorizing commercial and other group tours could degrade visual resources because of disturbances caused by overuse.

In Agua Fria National Monument levels of public use determine the level of intensities and interpretive development permitted for archaeological sites. High public use could disturb visual resources by the following:

- adding visitor facilities,
- improving routes including sign additions, and
- developing a motorized and non-motorized loop trail system.

In Agua Fria National Monument 4,438 acres would be allocated to High public use for cultural resources, and five sites could have impacts described under Cultural Resources section of Management Common to Both Planning Areas: Pueblo la Plata complex, Badger Springs Pueblo, the Arrastre site, Badger Springs rock art, and the Rollie site.

In the Bradshaw-Harquahala Planning Area the allocation of eight SCRMAs, totaling 316,103 acres, could affect visual resources. Impacts could result from building visitor facilities (parking areas, restrooms, tables, benches, signs) in addition to completing actions to stabilize, repair, and maintain sites in good condition (including fencing and barriers). Impacts on visual resources could also result from concentrating visitors in a specific area. Such concentrations could cause more ground disturbance (e.g. new trails and vehicular routes) and lead to increased litter.

Alternative C

Impacts to visual resources from cultural resources would be similar to those under the Visual Resources section of Management Common to Both Planning Areas.

In Agua Fria National Monument 11,600 acres would be allocated to High public use, and two sites could experience impacts similar to those described under the Cultural Resources section of Management Common to Both Planning Areas: Fort Silver and the Pueblo la Plata complex.

In the Bradshaw-Harquahala Planning Area the allocation of four SCRMAs could result in actions affecting visual resources. Impacts would be the same as those described for SCRMAs under *Alternative B*.

Alternative D

Impacts to visual resources from cultural resources would be similar to those discussed in the Visual Resources section of Management Common to Both Planning Areas. In Agua Fria National Monument no sites would be allocated to High public use. Without development to support visitation and site interpretation, management of cultural resources would have no impact on Visual Resources.

In the Bradshaw-Harquahala Planning Area the allocation of two SCRMAs could result in actions affecting visual resources. Impacts would be the same as those described for *Alternative B*.

***Alternative E* (Preferred Alternative)**

Impacts in Agua Fria National Monument would be would be similar to those in *Alternative C*.

Impacts in the Bradshaw-Harquahala Planning Area would be similar to those in *Alternative B*.

4.15.6 From Paleontological Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected.

4.15.7 From Recreation Management

***Alternative A* (No Action)**

Under current management of Agua Fria National Monument visual resources could be impacted by installing signs at national monument boundaries and posting other relevant information, in addition to disturbances and potential damage caused by target shooting.

Under current management of the Bradshaw-Harquahala Planning Area installing more signs could degrade visual resources. Such signage could lead to localized reductions in visual quality, especially in remote and undeveloped areas.

Large public land areas west of Highway 93 remaining open to cross-country and unstructured OHV activity would continue to affect visual resources. Allowing a proliferation of new routes disturbs the soil and results in a loss of vegetation. As visitation increases over the life of the plan, visual qualities could be further degraded by landscape damage and increasing levels of dust.

Alternative B

In Agua Fria National Monument recreational activities would be divided into three resource management zones: Front Country (57,900 acres), Back Country (12,700 acres), and Passage (300 acres). In the Front Country RMZ maintaining or enhancing both non-motorized and motorized visitor travel could affect visual resources by the following actions:

- introducing human facilities into the viewshed,
- developing cultural sites, and

- building visitor amenities such as developed campgrounds.

In the Back Country RMZ current conditions would be maintained, and no impacts are expected.

The Passage RMZ would contain the major vehicle routes or traverse across the Back Country RMZ. VRM objectives would allow maintaining the current visual character while providing limited management activities. Some visitor related development could occur, but it would not create impact the surrounding landscapes that would attract attention from observers.

In the Bradshaw-Harquahala Planning Area all lands in MUs would be allocated as Extensive Recreation Management Areas (ERMAs) unless superseded by management actions for SRMAs or RMZs. Visual resources could be affected by management prescriptions for ERMAs. The following actions could impact visual opportunities by altering visual landscape:

- installing recreation management facilities for resource protection, and
- adding visitor facilities such as water, toilets, scenic turnouts, interpretive sites, kiosks, signage, parking areas, staging areas, and trailheads.

Besides the physical changes from the developments themselves, the improvements could promote activities and increase disturbance in concentrated areas. The developments could thus increase visual impacts in those areas while leaving other areas less disturbed and reducing visual impacts.

In the Bradshaw-Harquahala Planning Area, management prescriptions for nine SRMAs (149,760 acres of BLM lands) could affect visual resources. SRMAs managed to develop designated staging/camping areas and visitor facilities (parking areas, horse facilities, and signs), could affect visual opportunities by altering the visual landscape. Commercial and motorized competitive events could alter the visual landscape by doing the following:

- increasing litter,
- disturbing the natural landscape, and
- reducing local visual clarity with concentrated dust and vehicle emissions.

Impacts to visual resources from managing two locations where lands are allocated to maintain or enhance wilderness characteristics (96,150 acres of BLM lands) would be minimized by emphasizing semi-primitive non-motorized with semi-primitive motorized recreational settings along boundaries and along retained routes within that allocation. Closing more routes and reclaiming routes, washes, and single-track vehicle routes would enhance scenic quality and preserve the visual landscape. Motorized commercial and competitive events in the lands allocated to maintain or enhance wilderness characteristcs within the Harquahala Mountains could alter the visual landscape by reducing local visual clarity. Impacts, however, would be minimized by the restrictive timeframe for holding events.

Alternative C

Impacts to visual resources from recreation management would be similar to those discussed for *Alternative B*, except in Agua Fria National Monument, Front Country RMZ would decrease to 42,410 acres, Back Country RMZ would increase to 28,420 acres and Passage RMZ would decrease to 70 acres.

In the Bradshaw-Harquahala Planning Area, impacts would be similar to *Alternative B*, except *Alternative C* would increase the allocation of nine SRMAs to 164,780 acres, and increase areas allocated to maintain or enhance wilderness characteristics to four, totaling 98,430 acres.

Alternative D

Impacts to visual resources from recreation management would be similar to those under *Alternative B*, except in Agua Fria National

Monument where Front Country RMZ would be further decreased to 1,530 acres, Back Country RMZ would be increased to 68,380 acres, and Passage to 990 acres.

Impacts to visual resources in the Bradshaw-Harquahala Planning Area would be similar to *Alternative B*, except BLM would decrease the allocation of SRMAs to seven, totaling 56,240 acres. Areas allocated to maintain or enhance wilderness characteristcs would increase to six, but decrease in total acreage to 91,480.

***Alternative E* (Preferred Alternative)**

Impacts to visual resources in Agua Fria National Monument would be similar to *Alternative B*, except Front Country RMZ would increase to 12,440 acres, Back Country RMZ would decrease to 57,200 acres, and Passage would increase to 1300 acres.

Impacts in the Bradshaw-Harquahala Planning Area would be similar to *Alternative B*, except BLM would allocate seven SRMAs, increasing the acreage to 384,510, and six areas allocated to maintain or enhance wilderness characteristcs, increasing the acreage to 109,910.

4.15.8 From Visual Resource Management

***Alternative A* (No Action)**

Alternative A would maintain current conditions, and since no VRM management classes were established through prior planning, the visual landscape is expected to gradually decline. The policy to treat the whole area as VRM Class III could allow visual intrusions that are inconsistent with public interests. In addition, a lack of clear management direction for current planning has lead to visual resource management being inconsistently applied in the analysis of proposed projects, accelerating the potential degrading of the aesthetic landscape.

Alternative B

VRM allocations for both areas can be viewed on Map 2-15.

Impacts on visual resources from visual resource management would occur as VRM class standards are implemented and future projects are subject to conformance with design standards to meet class objectives.

In Agua Fria National Monument all Front Country RMZs (57,900 acres) would be managed as VRM Class III. All Back Country and Passage RMZs (13,000 acres) would be managed as VRM Class II.

In the Bradshaw-Harquahala Planning Area VRM Classes would be allocated as described below:

- The area of Class I lands would be 96,820 acres.
- The area of Class II lands would increase to 486,800 acres.
- The area of Class III lands would increase to 284,720 acres.
- The area of Class IV lands would decrease to 98,660 acres.

Establishing VRM management classes described above would allow management consistent with resource objectives described for *Alternative B* while protecting the aesthetic landscape. Proposed projects over the life of the plan are expected to create some visual intrusions in places where they now don't exist. Any change to the visual landscape is expected to be minimized by the following:

- developing VRM management classes,
- applying a consistent approach to analyzing new projects, and
- using visually sensitive design techniques.

Alternative C

VRM allocations for both areas can be viewed on Map 2-36.

In Agua Fria National Monument visual resource impacts would be the same as those discussed for *Alternative B*, except that 42,410 acres of Front Country RMZ would be managed as VRM Class III and 28,490 acres of Back Country and Passage RMZs would be managed as VRM Class II.

In the Bradshaw-Harquahala Planning VRM Classes would be allocated as described below:

- The area of Class I would be 109,570 acres.
- The area of Class II would be 502,610 acres.
- The area of Class III would be 260,020 acres.
- The area of Class IV would be 94,800 acres.

Impacts under *Alternative C* would be similar to those described for *Alternative B*, except that more land would be included in VRM Class II. This increase in Class II land is expected to preserve the existing open, natural landscapes in a larger area for the life of the plan.

Alternative D

VRM allocations for both areas can be viewed on Map 2-59.

In Agua Fria National Monument visual resource impacts would be the same as those described for *Alternative B*, except that 1,530 acres of Front Country RMZ would be managed as VRM Class II and 69,370 acres of Back Country and Passage RMZ would be managed as VRM Class II.

In the Bradshaw-Harquahala Planning Area VRM Classes would be allocated as described below:

- The area of Class I would be 298,310 acres.
- The area of Class II would be 340,880 acres.
- The area of Class III would be 220,790 acres.
- The area of Class IV would be 107,020 acres.

The impacts of *Alternative D* would be similar to those described for *Alternative C*, except that the increase of land in VRM Class I would place a higher standard for managing potential visual intrusions across a larger landscape. Under *Alternative D* preserving broad natural-appearing landscapes is a high priority. The extent of the landscape preserved under *Alternative D* would be greater than under *Alternative C*, and the potential for a gradual decline of the aesthetic landscape would greatly decrease.

***Alternative E* (Preferred Alternative)**

VRM allocations for both areas can be viewed on Map 2-75.

In Agua Fria National Monument visual resource impacts would be similar to those described under *Alternative D*, except that 12,440 acres of Front Country RMZ would be managed as VRM Class III, 37,560 acres of Back Country and Passage RMZ would be managed as VRM Class II, and 20,900 acres would be allocated to maintain or enhance wilderness characteristics and would be managed as VRM Class I. The VRM Class I area would include the scenic vistas and cultural landscapes of Perry Mesa and Joes Hill, as well as views in and along the dramatic Agua Fria River Canyon. VRM Class I will help to preserve the scenic quality of these areas as described in the Appendix A.

In the Bradshaw-Harquahala Planning Area VRM Classes would be allocated as described below:

- The area of Class I would be 98,820 acres.
- The area of Class II would be 488,250 acres.
- The area of Class III would be 278,540 acres.
- The area of Class IV would be 103,390 acres.

The impacts of *Alternative E* would be similar to those described for *Alternative D*.

4.15.9 From Rangeland Management

***Alternative A* (No Action)**

Installing more fences or livestock improvements (cattle guards, water developments, and roads needed to access improvement sites) on BLM-administered lands or adjacent State and private lands could contribute to the steady decline of visual quality throughout the planning area.

Alternative B

Impacts to visual resources from rangeland management would be similar to those discussed for *Alternative A*, except:

Additional fencing requirements to meet seasonal riparian area restrictions and fencing modifications to facilitate wildlife movement could increase the total number of proposed livestock control projects. Conformance with VRM Classes established in this plan would result in project designs that are less visually intrusive, reducing the visual impact of new projects. Restricting access to riparian areas could improve the visual setting in those areas by increasing vegetation health and density.

Alternative C

Impacts to visual resources from rangeland management would be similar to those described under *Alternative B*. Prohibiting grazing in riparian areas could further enhance the visual setting by accelerating increases in the health and density of vegetation.

Alternative D

Closing all livestock grazing allotments and canceling livestock authorizations in the planning areas could affect visual resources. Unnecessary livestock facilities could be removed as funds and workforce allow, reducing the visual intrusions of fences, corrals, water tanks, and other livestock related facilities. Prohibiting grazing could also modify the visual landscape through increased vegetation health and density in higher desert and grassland communities as utilization of forage decreases.

Conversely, the elimination of grazing on BLM-administered lands could affect the visual landscape through fencing developed on adjacent non-Federal lands to control livestock from trespassing onto BLM lands and through other grazing improvements to meet livestock needs that may have been lost from BLM lands. In addition, since the closure of BLM lands to grazing may force ranchers out of business, they may be forced to convert their adjacent properties to residential or other development, further degrading the visual landscapes in the region.

***Alternative E* (Preferred Alternative)**

Impacts to visual resources from rangeland management would be the same as those discussed under *Alternative B*.

4.15.10 From Minerals Management

***Alternative A* (No Action)**

Under current management in Agua Fria National Monument only lands encumbered by mining claims are open to mining. No activity beyond casual use as defined in 43 CFR 3809 would be allowed without determinations of valid existing rights. Therefore, mineral development on existing claims would have minimal impacts on visual resources because of the typical scale of these operations.

In the Bradshaw-Harquahala Planning Area BLM administers mining on a case-by-case basis, but most of the planning area would remain open to mineral location and development. Mining would alter the existing visual landscape by adding mining scars,

facilities for operations, and routes. Localized degradation of air quality and visual clarity could result from mine emissions and increased dust emissions.

The five designated Wilderness areas (96,820 acres) would continue to be closed to any mineral development. In *Alternative A*, visual impacts from the different types of mining would be eliminated on the following lands (including Wilderness acres):

- 172,510 acres would be closed to development of saleable minerals
- 171,680 acres would be closed to development of locatable minerals
- 171,680 acres would be closed to development of leasable minerals

Alternative B

In Agua Fria National Monument impacts to visual resources from minerals management would be the same as those discussed for *Alternative A*. In the Bradshaw-Harquahala Planning Area minerals management could affect visual resources over most of the planning area. BLM would attempt to make the mining or eventual reclamation requirements consistent with the affected VRM class. Overall, *Alternative B* would allow more visual intrusion into the landscape than would *Alternatives C, D,* or *E*. *Alternative B* would protect the visual landscape more than would *Alternative A*.

In the Bradshaw foothills, the area surrounding Wickenburg, and south of White Tank Mountain Regional Park, a conflict could result from areas being managed at a VRM Class II level but being largely open to mineral development. Visual resources could be affected by developing new mines and by such improvements as roads.

In *Alternative B*, visual impacts from the different types of mining would be eliminated on the following lands (including Wilderness acres):

- 268,260 acres would be closed to development of saleable minerals
- 171,680 acres would be closed to development of locatable minerals
- 171,680 acres would be closed to development of leasable minerals

Alternative C

Impacts on visual resource management from minerals management would be similar to those under *Alternative B*, except visual impacts from the different types of mining would be eliminated on the following lands (including Wilderness acres):

- 325,970 acres would be closed to development of saleable minerals
- 188,450 acres would be closed to development of locatable minerals
- 188,190 acres would be closed to development of leasable minerals

Alternative D

Impacts to visual resource management from minerals management would be similar to those under *Alternative B*, except visual impacts from the different types of mining would be eliminated on the following lands (including Wilderness acres):

- 469,680 acres would be closed to development of saleable minerals
- 446,440 acres would be closed to development of locatable minerals
- 453,550 acres would be closed to development of leasable minerals

***Alternative E* (Preferred Alternative)**

Impacts to VRM from minerals management would be similar to those under *Alternative B*, except visual impacts from the different types of mining would be eliminated on the following lands (including Wilderness acres):

- 172,780 acres would be closed to development of saleable minerals

- 171,940 acres would be closed to development of locatable minerals
- 171,680 acres would be closed to development of leasable minerals

4.15.11 From Fire Management

***Alternative A* (No Action)**

Prescribed burning would remove existing vegetation and leave blackened woody material that would degrade the visual landscape in the short term. In addition, any mechanical treatment to establish fuel breaks or pretreat fuels would also create short term disturbances that could degrade visual quality. Plant communities in areas where prescribed fire is used are fire-adapted. Periodic fires enhance habitat health and can slow or prevent the invasion of undesired vegetation. Any scars from mechanical treatments are reclaimed as well as possible to minimize their visual impact. Long-term improvement of visual resources would result from healthier vegetation communities.

Wildfires have similar affects to the visual landscape as prescribed fires, except the area affected is less predictable. In some years fires occur in non fire adapted plant communities. In those places, the visual disturbance from fires lasts longer, potentially affecting the character of plant communities for decades.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

Impacts to visual resources from fire management would be similar to those described for *Alternative A* except that in the monument some natural start fires may be allowed to burn where they are currently suppressed. In this case, the size and frequency of fire related impacts may increase for awhile. It would be the goal to reestablish natural fire cycles as much as possible, resulting in long term fire frequency approximately the same as current prescribed burn frequency.

4.15.12 From Wild Horse and Burro Management

Alternatives A* (No Action) and *B

No impacts are expected.

***Alternatives C, D* and *E* (Preferred Alternative)**

Removing all burros from the Harquahala HA could affect visual resources by increasing vegetation cover, thereby altering the visual landscape of their range as competition for forage decreases and the burros are removed. Scenery would change as evidence of trailing and vegetation damage and trampling diminish and more natural conditions are restored.

4.15.13 From Management of Transportation and Public Access

***Alternative A* (No Action)**

Lands in the Bradshaw-Harquahala Planning Area would remain undesignated per VRM Classes. Accordingly, visual impacts from authorizations and uses would be less carefully managed. New roads and routes authorized or pioneered in the Bradshaw-Harquahala Planning Area could eventually create varying levels of visual disturbances in the planning area. Roads up hillsides, through riparian zones, and long-term soil and vegetation damage would impact visual resources over both the short and long-term. Impacts would be most significant on lands proposed for consideration as major highway corridors, especially in the Vulture Mine area, Hassayampa Plains, and the Hieroglyphic Mountains. There would be no significant impacts within the Agua Fria National Monument since the lands are under special protection provided by the proclamation (Appendix A).

Alternative B

A wide range of impacts from none to adverse are anticipated from management of travel, transportation and public access. Small transportation projects would be mitigated and consistent to the appropriate VRM classes. Impacts would be most significant on lands proposed for consideration as major highway corridors, especially in the Vulture Mine area, Hassayampa Plains, and the Hieroglyphic Mountains. There would be no significant impacts within the Agua Fria National Monument. Visual impacts to the public lands, overall, would be less than presented under *Alternative A*.

There would be visual impacts from proposed developments, but overall the alternative would mostly maintain or enhance the appearance of the public land landscapes and its open space values. Visual resources would degrade over time in some areas from reasonably projected levels of road, highway and utility development. The most significant visual impacts projected would accrue from county, State and Federal highway projects, including the Wickenburg Bypass, the NAFTA Highway, Highway 74, and other realignments of county and State roads.

Alternative C

The impacts are similar to those in *Alternative B*.

Alternative D

Far less adverse impacts are anticipated from management of transportation and public access under *Alternative D* due to the lands allocated as Class I and Class II areas. All visual impacts would be mitigated and consistent to the appropriate VRM classes. VRM allocations will maintain the natural appearance of the monument landscapes while meeting other resource management objectives. In the Bradshaw-Harquahala Planning Area impacts would be greatly reduced than those considered under *Alternatives B* and *C*. There would be little to no visual impacts from small scale transportation and travel developments. As described in *Alternative B*, there could be significant visual impacts from major county, State and Federal highway projects. Overall, Allocated VRM classes would maintain or enhance the appearance of the public land landscapes and open space value, while meeting other resource management objectives.

***Alternative E* (Preferred Alternative)**

In the Bradshaw-Harquahala Planning Area, impacts would be similar to those under *Alternative B* and projects would be installed mostly consistent with VRM objectives.

4.15.14 From Management of Wilderness Characteristics

***Alternative A* (No Action)**

No areas are under consideration for management of wilderness characteristics. Therefore, there are no impacts on visual resources.

***Alternatives B, C, D* and *E* (Preferred Alternative)**

Visual and scenic resource conditions would be maintained, enhanced, and additionally protected within landscapes allocated to maintain or enhance wilderness characteristics. Light pollution could be less, and dark skies would be effectively maintained.

4.16 Impacts on Rangeland Management

4.16.1 From Special Area Designations

***Alternative A* (No Action)**

Grazing is prohibited in Larry Canyon ACEC, which is located entirely in a steep canyon that is inaccessible to cattle. Livestock exclusion on the small acreage of the ACEC has a negligible effect on the total amount of Animal Unit Months (AUMs) of forage available for livestock grazing in Agua Fria National Monument.

If the eligible WSR segments of the Agua Fria River are designated, management actions would include seasonally restricting livestock grazing to winter use only (November 1 to March 1). On riparian segments, where grazing would be seasonally restricted, riparian vegetation and vegetation cover would increase from present levels, but a decreased amount of forage would be available to livestock. This decrease could adversely affect upland livestock distribution and increase the utilization of forage surrounding livestock waters. Range improvements, such as pumping stations to fill storage tanks, would continue and would be crucial to provide water to upland areas while livestock are excluded from the riparian areas. Without these water sources, forage utilization by livestock could increase around improvements such as dirt tanks or springs.

There is a minor risk of livestock-vehicle collisions increasing along the Harquahala Mountain Summit Scenic Road.

Alternative B

In Agua Fria National Monument designating Bloody Basin Road as a back country byway would likely increase traffic and recreation uses of the area. Potential for animal-vehicle collisions would increase with increased use.

In the Bradshaw-Harquahala Planning Area, the 640-acre Tule Creek ACEC would exclude livestock grazing from fenced areas. This exclusion would increase riparian vegetation and vegetation cover. The small size of the enclosure would negligibly decrease AUMs for the grazing allotment, and permitted numbers of livestock would be unaffected.

Impacts of designating Constellation Mine Road as a back country byway would be similar to the impacts described for the Harquahala Summit Scenic Road in *Alternative A*.

Alternative C

In Agua Fria National Monument, designating four new ACECs would prohibit grazing on 810 acres of riparian habitat. This area represents one percent of the 72,305 acres allotted to grazing in the monument. Though the AUMs lost have not been calculated, riparian areas generally produce more forage per acre than uplands; therefore, forage lost to grazing would likely exceed one percent of total available AUMs. Riparian areas are also critical livestock water sources. Riparian vegetation and vegetation cover would increase with the exclusion of livestock grazing in these areas.

In the Bradshaw-Harquahala Planning Area seven ACECs are proposed for designation. These designations would protect 87,310 acres from surface disturbance due to mining or materials extraction, which would reduce damage to range vegetation and lessen mining traffic on the access roads. The possibility of livestock injury and mortality from vehicle collisions would be lowered.

Impacts on designating the Constellation Mine Road as a back country byway would be the same as *Alternative B.*

Alternative D

In Agua Fria National Monument, designation of the 13,070-acre Agua Fria River Riparian Corridor ACEC would reduce traffic volume, damage to range vegetation, and penetration of recreational users into more remote areas. These actions would reduce stress to wildlife and potential vectoring of noxious weeds.

In the Bradshaw-Harquahala Planning Area, eight ACECs comprising 314,580 acres are proposed for designation. Vehicle restrictions would reduce damage to range vegetation, stress to wildlife, and vectoring of noxious weeds.

Restrictions on mining and mineral material extraction would result in less damage to of range vegetation and reduced volumes of mining traffic.

***Alternative E* (Preferred Alternative)**

In the national monument, there are no ACEC proposals under this Alternative. The ACEC acreage in the Bradshaw-Harquahala would then be 89,970 acres.

In the Bradshaw-Harquahala, impacts from ACECs would be similar to *Alternative C,* except there are more acres proposed in ACECs.

4.16.2 From Lands and Realty Management

***Alternative A* (No Action)**

Any future land acquisition in Agua Fria National Monument could increase the forage available for livestock grazing. Private land amounting to 1,444 acres makes up less than two percent of the land in the monument. Any increase in AUMs would be negligible, and grazing authorizations would not be increased to reflect the change in ownership. Therefore, no impacts are expected from management of lands and realty.

New utility construction and maintenance of existing utilities within the monument might have short-term vegetation impacts, although maintenance and construction projects have not typically impacted the amount of forage for livestock use.

Acquiring privately owned and State-held lands would create large blocks of federally managed lands in the following areas:

- Black Canyon and Lake Pleasant RCAs,
- Cordes Junction, Bumble Bee, and Williams Mesa MRMAs, and
- the 4-mile reach of State land along the Hassayampa River.

These blocks would consolidate management and help develop healthy native plant communities in upland and riparian communities. These additions to the BLM's land base might increase the total AUMs that can be offered through grazing authorizations. The acreage of the area that might be added is unknown since acquisition is generally on a willing seller or willing buyer basis and it is impossible to predict future opportunities.

Lands available for disposal (54,370 acres) through sale, conveyance, or R&PP actions might have infrastructure construction of various types. These activities typically have a slight effect on the total AUMs for livestock grazing. Any land tenure adjustment could decrease the amount of forage or range improvements for livestock. Depending on the size of the area disposed of, or number of range improvements involved, authorized AUMs might need to be adjusted or whole allotments may be closed.

Alternative B

In Agua Fria National Monument narrowing the utility corridor to existing rights-of-way would restrict impacts to vegetation from new utility construction. Other lands and realty related impacts would be the same as under *Alternative A.*

Construction and maintenance of facilities in planned transportation and utility corridors and communication sites would have similar impacts to those described for Alternative A.

Impacts of land acquisitions would be the same as under *Alternative A.*

The proposed disposal through sale, conveyance, or R&PP actions of as much as 58,400 acres would reduce the acreage contributing to AUMs for allocation under BLM's grazing permits. Depending on the size of the action in a grazing allotment, authorized AUMs might need to be adjusted. The total acreage from these actions would represent a potential loss of less than six percent of the lands available for livestock

grazing in the Bradshaw-Harquahala Planning Area.

Alternative C

Eliminating the Black Canyon utility corridor would remove the following potential impacts from new utility development:

- short-term vegetation disturbance,
- stress to livestock and wildlife,
- animal-vehicle collisions, and
- vectoring of invasive weeds.

In the Bradshaw-Harquahala Planning Area, the impacts on grazing use from acquiring non-Federal lands would be similar to those described under *Alternative A*. Impacts of the land tenure adjustment of 49,100 acres of BLM-managed Federal lands would be similar to those described under *Alternative B*, except that the total acreage from these actions would represent a potential loss of five percent of the lands available for livestock grazing in the Bradshaw-Harquahala Planning Area.

Alternative D

In Agua Fria National Monument eliminating the Black Canyon utility corridor would have impacts similar to those described for *Alternative C*, except that impacts to grazing and livestock would end with cessation of grazing.

In the Bradshaw-Harquahala Planning Area, impacts to grazing and livestock would end with the cessation of grazing.

***Alternative E* (Preferred Alternative)**

In Agua Fria National Monument, narrowing of the utility corridor would have impacts similar to *Alternative B.*

Future land acquisition in Agua Fria National Monument would have impacts similar to *Alternative A.*

Impacts of proposed land tenure adjustment through sale, conveyance, or R&PP actions of as much as 38,755 acres of land outside the MUs, would be similar to *Alternative A*. The total acreage from these actions would represent a potential loss of four percent of the lands available for livestock grazing in the Bradshaw-Harquahala Planning Area.

New utility construction and maintenance of existing utilities would have similar impacts to *Alternative A.*

4.16.3 From Management of Soil, Air, and Water Resources

Alternatives A (*No Action*), B, C, D,* and *E (*Preferred Alternative*)

Implementing activity plans to address soil and water issues might require mitigation that would affect livestock grazing authorizations. If reducing or eliminating livestock grazing is a management action used to reach desired conditions, the rate of improvement to vegetation would be accelerated. These actions could result in reduced authorized livestock numbers for grazing permits. Promoting increased vegetation cover and reduced soil erosion should decrease localized emissions of naturally occurring windblown fugitive dust.

4.16.4 From Biological Resource Management

***Alternative A* (No Action)**

In Agua Fria National Monument the use of fire as a treatment to improve vegetation composition would have short-term impacts to vegetation from burning. Fire use would affect grazing authorizations by requiring a pasture to be rested before and after treatment. Grazing use could increase on other nontreated pastures, or authorized grazing use could be reduced. The fire treatment could result in improved vegetation quality, quantity, and increased vegetation cover. Limits on mechanical

vegetation treatment methods could increase the potential for invasive species to encroach. Water sources accessible to livestock and wildlife would improve animal distribution and localized vegetation impacts from grazing. Modifying fencing to allow for wildlife movement could improve across pastures and allotments. These livestock movements would increase the time and work for grazing permittees/lessees to control livestock. To prevent disruption to native fish transplants, livestock would be restricted or excluded in these areas.

In the Bradshaw-Harquahala Planning Area mitigation for spring and seep development could require livestock exclusion. Closing of waters could lead to increased livestock use in other areas and result in potentially poor livestock distribution across the landscape. Watering points outside the protected zone would need to be developed to maintain proper livestock distribution. Added costs would be incurred to make the infrastructure improvements.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

In the national monument, impacts would be similar to those described under *Alternative A.*

In the Bradshaw-Harquahala Planning Area, prohibiting the building of rangeland improvements in Browns Canyon and the Inner Basin would limit the potential to improve current livestock distribution on the Aguila allotment. Upland vegetation could improve with the lack of livestock grazing in the area. Closing, limiting, or mitigating motorized vehicle routes in the 64,220-acre Harquahala Mountain WHA could reduce access to range improvements, which would increase costs for maintenance. Reduced vehicle access could limit the risk of animal collisions, and vegetation damage.

Prohibiting domestic sheep and goat grazing within 9 miles of occupied desert bighorn sheep habitat would affect the Garcia Grazing Allotment (3905), where sheep are currently authorized as a class of livestock. In order to implement the above decision, the class of livestock on the grazing permit would be changed to reflect cattle only, for the affected portion of the allotment. The Garcia allotment consists of two discrete parcels. The southern portion of the Garcia allotment, approximately 25,600 acres, would continue to be authorized to stock cattle year-long. The northern parcel could stock cattle year-long and/or sheep by ephemeral permit. Implementing the change in class of livestock may adversely affect the livestock operation on the Garcia allotment as sheep have been stock ephemerally in recent years. The economic affect of the change would depend on market prices, operating costs, and availability of alternate replacement pastures.

4.16.5 From Cultural Resource Management

***Alternative A* (No Action)**

Implementing protective measures and excluding livestock grazing would reduce AUMs of forage, which is directly proportional to the protected surface area. If the protected area contains existing livestock water sources, locations, or facilities, they would need to be developed outside of these areas to maintain a proper distribution of livestock. Impacts are expected to be negligible.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

For both planning areas, High public use development would damage vegetation in the immediate area of the site construction. Depending on the level of public use, surrounding vegetation could also be damaged by increased vehicular use and visitor trampling. In addition, High public use development might require excluding livestock from large areas in the vicinity of developed sites. Though some AUMs might be removed from the available forage, the size of the areas would be negligible, and livestock

numbers should not need to be adjusted. If the protected areas contain existing livestock water sources, more watering locations or facilities would need to be developed outside of these areas.

Moderate public use impacts to vegetation would be minimal, and Low public use impacts would even be smaller. Impacts to grazing use would be similar to those under *Alternative A.*

4.16.6 From Paleontological Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected.

4.16.7 From Recreation Management

***Alternative A* (No Action)**

Confining vehicles to designated routes in the Multiple Use Resource Areas would reduce the potential for vegetation damage by unauthorized cross-country OHV travel. Within the boundaries of the Phoenix RMP, limiting vehicles to existing roads and trails has lead to a proliferation of vehicle routes being created by users. Use on these routes increases as recreational users increase, disturbing more vegetation, increasing vandalism of private property and range improvements, and increasing vehicle-animal encounters. Within the boundaries of the Lower Gila North Management Framework Plan, open use for vehicles will lead to faster proliferation of routes as OHV users are pushed further into the few remaining remote areas. As routes proliferate and use increases, vegetation disturbance and animal-vehicle encounters will increase, as will vandalism of range improvements.

Activities authorized through Special Recreation Permits (SRPs) are expected to have impacts similar to those from use by the general public. Growth in the number of special use permits issued for motorized events and races could increase the risk of potential mortality from collisions with vehicles. The permit process allows BLM to control where the permittees will go and places stipulations on how they will conduct their events or businesses. These factors help to reduce the potential affects on disturbance of livestock and range resources.

Alternative B

In Agua Fria National Monument, 57,900 acres would be allocated as Front Country RMZ, and 12,700 acres would be allocated as the Back Country RMZ. Increased visitation within the Front Country could bring increased vehicle numbers, which will increase the potential for animal-vehicle collisions.

Increased visitation would bring increased vehicle numbers. The potential for animal-vehicle collisions would increase with rising recreation use. Increased OHV use could increase the vectoring of invasive weeds, which could displace native vegetation.

Limiting vehicle use to designated routes will allow route location and network design to address impacts to range resources. This could help reduce the affects of increasing recreation use on vegetation, livestock, and range improvements, reducing the potential for upland vegetation damage by cross-country OHV travel. The OHV travel restriction would decrease the potential for animal-vehicle collisions. Other recreation impacts in the Bradshaw-Harquahala Planning Area would include:

- Recreational target shooting would be prohibited on 27,570 acres and restricted near High public use areas, resulting in a decreased risk of animal stress and mortality.
- Depending on the size of the campground/staging areas to be developed in support of motorized use, authorized livestock grazing might need to be adjusted.

- New trails established for pedestrian, non-motorized, and motorized use could increase the risk of animal stress and potential mortality from collisions with vehicles.

Alternative C

Impacts in Agua Fria National Monument would be similar to those described for *Alternative B.* The area of Front Country would decrease and Back Country would increase, reducing the potential for encounters between people and livestock. Reductions in route miles may make some areas difficult to access, increasing operating costs of grazing permittees.

In the Bradshaw-Harquahala Planning Area recreation impacts would be similar to those described for the monument and described for *Alternative B* with these additions:

- Restricting target shooting near high-use areas would decrease the risk of animal stress and mortality.
- Reduced special use permits issued motorized race events could reduce the risk of disturbance to livestock and mortality from collisions with vehicles.

Activities authorized through Special Recreation Permits (SRPs) are expected to have impacts similar to those in *Alternative B.*

Alternative D

Impacts to rangeland resources, including developments that remain and range land vegetation would be similar to those described under *Alternative A.*

Impacts to livestock operations would not be applicable because grazing ceases in this Alternative.

Activities authorized through Special Recreation Permits (SRPs) are expected to have impacts similar to those in *Alternative B.*

***Alternative E* (Preferred Alternative)**

Impacts in Agua Fria National Monument would be the same as *Alternative B*, except that the Front Country RMZ would decrease to 12,440 acres, the Back Country RMZ would increase to 57,200 acres, and the Passage RMZ would increase to 1,300 acres.

For both planning areas, impacts of confining vehicles to designated routes are expected to be similar to *Alternative C*.

Activities authorized through Special Recreation Permits (SRPs) are expected to have impacts similar to those in *Alternative B.*

4.16.8 From Visual Resource Management

***Alternative A* (No Action)**

Because VRM standards are not managed under *Alternative A,* no impacts are expected.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

Alternative D eliminates grazing from the planning area, so no impacts are expected from VRM management.

Under *Alternatives B, C,* and *E,* impacts to rangeland resources, particularly grazing management, resulting from VRM management classes, would include the following:

- increased cost of range project development to conform to VRM class objectives,
- location of some projects in less desirable places, or
- possible denial of some projects that cannot conform to VRM class objectives.

These impacts are expected to be small.

4.16.9 From Rangeland Management

***Alternative A* (No Action)**

There are no impacts expected for either planning area.

Alternative B

In both planning areas, allowing winter-only grazing in riparian areas would increase riparian vegetation. Areas where livestock are preventing attainment of Proper Functioning Condition (PFC) are expected to recover. With the seasonal restriction of use, upland vegetation utilization could increase, and authorized livestock use could be reduced. The need for livestock number adjustments would involve a number of factors, including the size of pastures affected, period of use, and current livestock numbers.

Implementation of Land Health Standards and Guidelines for Grazing Administration would impose an allotment evaluation process as a step to permit or lease renewal. These evaluations would determine where the Land Health standards are not being met and livestock management actions that may be needed to achieve them. It is possible stocking rates could be adjusted, pastures may be rested, or some pastures or allotments may be converted to ephemeral use only based on the Special Ephemeral Rule. (See Chapter 2, section 2.7.3.10 for a discussion of the Special Ephemeral Rule.)

Alternative C

Impacts would be similar to those described in *Alternative B*, except:

Prohibiting grazing in riparian areas in Agua Fria National Monument would close 25,989 acres to livestock grazing. This acreage would represent a loss of 36 percent of the lands available for livestock grazing in the national monument. Prohibiting grazing in riparian areas in the Bradshaw-Harquahala Planning Area would potentially close 249,400 acres to livestock grazing. This acreage would represent a loss of 26 percent of the lands available for livestock grazing in this planning area, mainly in the Black Canyon, Castle Hot Springs, and Hassayampa MUs.

For both planning areas a reduction in authorized livestock use could be proportional to the land removed from livestock grazing in allotments. Riparian areas are also critical livestock water sources, and the potential loss in availability to livestock grazing from riparian closure would be greater than for closing upland areas. The loss of water sources in some instances could preclude any grazing on upland pastures, effectively resulting in no grazing on public lands. Riparian vegetation and vegetation cover would increase with the excluding of livestock grazing in these areas more rapidly than under *Alternative B*.

Alternative D

Closing all grazing allotments and canceling all permits/leases would result in the loss of forage to livestock grazing of 13,492 AUMs from Agua Fria National Monument and 69,568 AUMs, along with any authorized ephemeral livestock use, from the Bradshaw-Harquahala Planning Area. Should alternative forage locations not be found on State, private, or other lands; grazing operators on 11 allotments on the national monument and 93 allotments in the Bradshaw-Harquahala Planning Area would be out of business. Removing unnecessary range improvements would increase BLM's administrative costs until the improvements are removed. BLM would bear the cost for long-term maintenance of the remaining improvements.

With the cessation of livestock grazing, both upland and riparian vegetation would increase in amount and quality until it reaches stability with environmental factors.

***Alternative E* (Preferred Alternative)**

Impacts would be similar to those in *Alternative B.*

4.16.10 From Minerals Management

***Alternative A* (No Action)**

Agua Fria National Monument is closed to new mineral entry. This action eliminates the potential for heavy hauling equipment for mining, and with it, the risk of increased livestock-vehicle collisions. The loss of productive rangeland vegetation to the surface disturbance of mining would also be avoided.

Impacts to rangeland resources from mining include the potential disruption of livestock movement and distribution of use from hauling material, from fencing mines, and in the case of very large mines, closure of large portions of grazing allotments. Mining has been of small consequence in the planning area in the last 10 to 20 years and is expected to continue to have negligible impacts to rangeland resources.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

Impacts in Agua Fria National Monument would be similar to those described under *Alternative A.*

In the Bradshaw-Harquahala Planning Area closure to different types of mining would vary by Alternative. Even though the area over which the mining could occur is large, the actual area of impact is expected to be relatively small. Only negligible impacts are expected.

4.16.11 From Fire Management

***Alternative A* (No Action)**

In both planning areas the use of fire as a treatment to improve vegetation composition and cover would have short-term impacts to vegetation from burning. Prescribed fire would also affect grazing authorizations by the requiring pastures to be rested before and after the treatment. Grazing use could reduce or increase on other nontreated pastures. The fire treatment could improve vegetation quality and quantity and increased vegetation cover.

Alternatives B, C, D,* and *E (*Preferred Alternative*)

In Agua Fria National Monument some naturally ignited fires would be allowed to burn if defined prescriptive conditions are being met. Regardless, impacts would be similar to those described for *Alternative A.*

4.16.12 From Wild Horse and Burro Management

***Alternative A* (No Action)**

There are no impacts expected in Agua Fria National Monument because no burros inhabit the area.

Current conditions for burros would be maintained in the 80,800-acre Lake Pleasant HMA. Burros, wildlife, and livestock would continue to compete for forage and water at an expected constant level due to environmental constraints and management control of burro numbers (e.g. herd gathers).

If all animals in the Harquahala herd are gathered and permanently removed, upland vegetation would slightly increase, and the riparian area would slightly improve in Browns Canyon. Competition with livestock and wildlife for water would also decline. Because burros use this area only seasonally, impacts from their use would vary on a yearly basis.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

Continued management actions in the Lake Pleasant HMA and the Harquahala HA over a combined area of 237,055 acres would not significantly change present use patterns or affect rangeland resources or livestock use.

4.17 Impacts on Minerals and Energy Resources

This analysis discusses the impacts of the Alternatives on developing valuable minerals on public lands. In addition to the land surface in Federal ownership, this plan addresses lands where BLM retains subsurface (mineral) rights—an area of 346,300 acres within the planning area's boundaries and 181,200 acres to the north and east of the planning areas.

BLM manages three categories of minerals:

- leasable minerals: which include oil, natural gas, coal, sodium, and geothermal resources;
- saleable minerals: also known as mineral materials, which include sand and gravel, decorative rock, and other common minerals; and
- locatable minerals: which include precious metals such as gold, silver, copper, and some industrial minerals such as gypsum and clay.

Several approaches to mineral leasing are available under 43 CFR 3100 to 3500, the regulations for issuing mineral leases. The options include opening areas to leasing, subject to the following:

- the terms and conditions of a standard lease,
- minor constraints such as seasonal restrictions, or
- major constraints such as denying surface occupancy.

For locatable minerals, governed by the regulations in 43 CFR 3802, 3715, and 3809, and for saleable minerals, according to the regulations in 43 CFR 3600, the Alternatives determine which areas are to be open to the operation of the mineral leasing laws, mining laws, and mineral material disposal. In open areas, the Alternatives define any area-wide terms, conditions, or other special considerations needed to protect resources.

LEASABLE MINERALS

Oil and Gas

Background Information and Assumptions

Although the potential for oil and gas leasing is low to medium throughout the minerals planning area, the potential for leasing is low. The potential is somewhat higher in the areas north of 35 degrees north latitude.

Oil and gas exploration was active in the Bradshaw-Harquahala Planning Area from 1913 to the 1980s. No oil and gas development has occurred on public lands, and no proven reserves have been documented. There is now no leasing interest. However, areas of moderate oil and gas potential do exist (Map 3-17).

The price of crude oil was a significant driving force for increased oil and gas exploration in the 1970s. The 1980s saw active exploration in the Basin and Range Physiographic Province of Arizona to test the Laramide Overthrust Trend. There has been no drilling since the 1980s. A trend toward increasing exploration is occurring throughout the United States as the active rig count increases with rising crude oil prices. Thus, there is potential for domestic crude demand to stimulate oil and gas exploration in the mineral planning area.

The following assumptions were considered when evaluating the Reasonable Foreseeable

Development (RFD) for oil and gas in the decision area:

- Oil and gas drilling would increase in the next 20 years in response to increasing crude oil and gas prices, domestic demand, and decreasing domestic production.
- Advances in three-dimensional seismic acquisition and processing technology would improve the resolution of subsurface structural and/or stratigraphic traps and delineate potential reservoir targets.

Reasonable Foreseeable Development

The RFD for oil and gas in the Bradshaw-Harquahala Planning Area estimates that ten exploratory wells would be drilled on BLM-administered land in the decision area.

Disturbance to the Bradshaw-Harquahala Planning Area

The extent of land disturbance from exploration drilling is estimated from the mean generalized impact values presented by the Rocky Mountain Federal Leadership Forum (RMFLF 2002). Those assumptions are as follows:

- The exploration well site would occupy 10 acres, and each development or production well site would occupy 5 acres, including roads.
- Pad reclamation would reclaim 50 percent of the exploration well drill pads for the long term.

Coal Potential

No coal deposits have been reported in the minerals planning area.

Geothermal Resources

Background Information and Assumptions

Five low-temperature geothermal resource regions are recognized in the Bradshaw-Harquahala Planning Area. These regions are shown as moderate potential areas on Map 3-17. There has been no significant development of geothermal resources. These low-temperature resources might be used for small-scale space heating and for resort spas.

The Bradshaw-Harquahala Planning Area has no geothermal energy leases and no indications for future leasing. The absence of geothermal leasing probably results from the limited uses for low-temperature resources and the great expense to explore and develop them.

The following assumptions were considered when evaluating the RFD for geothermal energy in the Bradshaw-Harquahala Planning Area:

- There would be no leasing interest in the next 20 years.
- Drilling costs to explore and develop subsurface geothermal energy would be comparable to costs for oil and gas exploration and would probably be too high for the limited revenue that a low-temperature geothermal energy would generate.

Reasonable Foreseeable Development

The RFD for geothermal energy in the decision area expects that no leasing, exploration, or development would occur in the next 20 years. Costs to develop low-temperature geothermal energy are prohibitive compared to the potential revenue generation and limited uses of those resources.

Disturbance to the Bradshaw-Harquahala Planning Area

No disturbance to public lands from geothermal development is foreseeable in the decision area during the next 20 years.

Sodium

Five areas of potential sodium exist in the planning area's subsurface. There has been no significant development of those resources and

no indications for future leasing and development. The absence of sodium leasing in the planning area (except in the Luke Basin) is probably due to the limited demand for sodium and the great expense of exploring and developing it. Morton Salt is solution mining salt for industrial purposes from the Luke salt deposit. BLM has one lease with Morton for solution mining on the Luke deposit.

Reasonable Foreseeable Development

The RFD for sodium expects that no more leasing, exploration, or development would occur in the planning area in the next 20 years. Costs to explore and extract by drilling are considerable compared to the local demand and limited uses of sodium in Arizona.

Disturbance to the Bradshaw-Harquahala Planning Area

No disturbance to public lands is foreseeable from sodium development in the decision area in the next 20 years.

LOCATABLE MINERALS

Background Information and Assumptions

Mineral districts in the Bradshaw-Harquahala Planning Area are regions of known occurrences of and high potential for locatable metallic and non-metallic minerals (Map 3-15). Most of the mines have been inactive for many years because the cost to mine the commodity exceeds the commodity's market value. Several small-scale locatable mines now operate in the planning area. These mines generally operate on a sporadic base, depending on market conditions and financial support. These operations focus on placer gold, lode gold, and some industrial minerals.

The following assumptions were considered when evaluating the RFD for locatable minerals in the Bradshaw-Harquahala Planning Area:

- There would be three to five new small mines per year for the next 20 years and one to two large operations over the next 20 years. There would be 10 or fewer exploration-level operations per year.
- Each new small locatable mineral discovery would occupy less than 20 surface acres, including access. Exploration would disturb an average of 1 to 3 acres. The large mines are expected to be gold heap leach, which might disturb between 200 and 300 acres.
- Most mining would be on the surface, from recent trends in new mine permit applications to BLM.
- The commodity ore would be transported by surface road.
- Most of the surface would not be reclaimed during the life of the mine.

Reasonable Foreseeable Development

There would be three to five new small mines per year for the next 20 years and one to three large mines over the next 20 years. There would be 10 or fewer exploration-level operations per year.

Disturbance to the Decision Area

Each new small locatable mineral discovery would occupy less than 20 surface acres, including access. Exploration on an average would disturb 1 to 3 acres. The large mines are expected to be gold heap leach, which might disturb between 200 and 300 acres.

SALESABLE MINERALS

Background Information and Assumptions

The Bradshaw-Harquahala Planning Area has many locations for saleable mineral resources. Known occurrences (quarries and pits), prospects, and potential locations for saleable material on BLM-administered lands are shown on Map 3-20. Those locations have high potential for saleable mineral resources because they are known to occur. Most of the locations

are actively used for dimension stone, decorative rock, or local construction.

The following assumptions were considered when evaluating the RFD for saleable minerals in the decision area:

- The demand for saleable minerals would increase during the next 20 years as population increases stimulate the building of new roads, structures, and infrastructure.
- An estimated 20 new saleable mineral pits would be permitted in the next 20 years.
- New quarry or pit access would require new road building because those locations are usually sited some distance from existing paved roads.

Reasonable Foreseeable Development

An estimated 20 new saleable mineral pits or quarries would be permitted or reactivated in the next 20 years. The type and volume of saleable minerals disposed are uncertain and would depend on the increase in community development and construction. The Bradshaw-Harquahala Planning Area now has seven decorative rock operations, three sand and gravel operations, and three free use permits. The average disposal tonnages for three types of saleable mineral pits are as follows:

- Decorative rock – an average of 33,000 cubic yards/year/pit for seven active pits that average 40 acres per contract/permit.
- Sand and gravel – 50,000 cubic yards/year/pit from three active pits that average 40 acres per contract/permit.
- The free use permits operate sporadically, producing borrow sand and gravel, averaging less that 10,000 cubic yards/year.

The average annual current sales volume from those active BLM's saleable mineral pits in the Bradshaw-Harquahala Planning Area is 380,000 cubic yards. From the estimated average disposal of 38,000 cubic yards/year/pit from each of 20 new pits during the next 20 years, the disposal of 8 to 10 million cubic yards of saleable mineral materials is projected.

Disturbance to the Decision Area

Each saleable mineral pit would occupy 40 acres, which is the average area for the 10 saleable mineral pits that have active sales records. About 400 total acres would be disturbed by 20 new pits. Disturbance of the land surface would require reclamation at the end of the life of the pits.

4.17.1 From Special Area Designations

***Alternative A* (No Action)**

Under current management in Agua Fria National Monument, in designated Wilderness Areas, and in other areas closed to mineral entry, any potential mineral or energy resource that might have been opened to development would not be developed. Impacts would be long term, but minor. The affected areas are closed to mineral development; therefore, no exploration would occur, and any undiscovered mineral resources would remain undiscovered. In these areas, the potential is low for leasable minerals, moderate for saleable minerals, and varied for locatable minerals. No withdrawn areas have a high potential for locatable minerals and demand for saleable minerals could be met from other sources.

Maintaining the acres now withdrawn from locatable mineral entry and closed to leasable and saleable mineral development would continue to preclude mineral development. Current needs and future demands of public users would be affected. Table 4-4 shows how many acres are closed to the various mining types in each Alternative and Table 4-7 shows the mineral potential closed by mineral type for each alternative.

Alternative B

For Agua Fria National Monument, impacts would be similar to those described for *Alternative A.*

Because Tule Creek ACEC in the Bradshaw-Harquahala Planning Area would be closed to mineral leasing, mineral material disposal, and recommended for closure under the mining laws, any potential minerals or energy resources that might have been available for development would not be developed. Impacts would be long term but are expected to be negligible because of the ACEC's small size. Valid existing rights would be maintained.

If minerals were to be discovered here, they would not be developed, resulting in a loss of economic contribution to local communities, missed opportunity for jobs, missed opportunity for adding revenue to the national fund from the sale of mineral materials, and missed opportunity for extraction of energy resources. Based on current mineral production and demand in the area, the magnitude of impacts would be small.

Withdrawals and closures of this area from mineral activities would prohibit future mineral development and could inhibit the expansion of adjacent mining. Management decisions could lead to effects on developing mineral and energy resources. These effects would affect the local economy. The current needs and expected future demands of public users and county, State, and Federal agencies could be adversely affected under this Alternative, although impacts are expected to be small.

Alternative C

Impacts in Agua Fria National Monument would be the same as those described for *Alternative A* despite potential additions to the existing Wild and Scenic River designation or proposed ACECs.

Impacts would be similar to those described in *Alternative B*, except more area would be closed to mining. Any potential mineral or energy resources would not be developed in the following places in the Bradshaw-Harquahala Planning Area because of (1) their withdrawal from location under the mining laws and (2) closure to leasing and mineral material disposal:

- Tule Creek ACEC and
- Sheep Mountain RNA ACEC.

The prohibition against mineral materials disposal would prevent sale of sand, gravel and decorative rock in:

- Vulture Mountains Raptor Area ACEC, and
- Black Butte ONA ACEC.

Alternative D

Impacts under *Alternative D* would be similar to those described for *Alternative C* in Agua Fria National Monument.

In addition to impacts similar to those described for *Alternative C* in the Bradshaw-Harquahala Planning Area, except that this Alternative has the largest acreage of special area designations. Any potential mineral or energy resources that might have been open to development would not be developed in the following areas:

- Black Butte ONA ACEC,
- Harquahala Mountains ONA ACEC,
- Vulture Mountains ACEC, and
- Sheep Mountain RNA ACEC.

Also, any potential mineral leasing and mineral material sales that might have occurred would not occur in the Belmont-Big Horn Mountains ACEC.

***Alternative E* (Preferred Alternative)**

In the Agua Fria National Monument, impacts under *Alternative E* would be similar to those described under *Alternative A*.

In the Bradshaw-Harquahala Planning Area, acreages closed to various mineral activities is

similar to those for *Alternative A*. However, DFCs for the four ACECs will make many types of mining difficult or cost prohibitive to do. Impacts from this alternative are more similar to *Alternative C.*

4.17.2 From Lands and Realty Management

***Alternative A* (No Action)**

Because the Agua Fria National Monument is closed to mineral entry, no impact is expected.

Under the current management of the Bradshaw-Harquahala Planning Area acquiring non-Federal mineral estate underlying Federal surface holdings in the two RCAs would constitute a net gain of potentially developable mineral resources.

Reconveyed lands in the Black Canyon Corridor are closed to leasing, location, and mineral material disposal. These areas have moderate to high potential for production of small quantities of precious minerals, sand, and gravel. Keeping them closed precludes opportunities for mineral development and a potential stimulus to the economies of Black Canyon City and Cordes Lakes.

Small tract lands are also closed to location. Most are of low potential, but some opportunities to develop locatable minerals may be forgone. Small tract lands are private surface/Federal mineral; therefore, any development could cause conflicts with the surface owner.

Alternative B

Impacts in the national monument are the same as under *Alternative A.*

Under management of the Bradshaw-Harquahala Planning Area, issuance of rights-of-ways, leases, and patents would establish superior rights to later mineral development. These rights-of-way, leases, and patents could also cause temporal or spatial access restrictions. Segregations and withdraws for leases/patents could inhibit mineral development. Authorization of rights-of-way for facilities such as roads, highways, and power lines would benefit locatable mineral operations by providing access and infrastructure.

Land ownership adjustments could result in BLM acquiring or disposing of lands with mineral value and could either increase or decrease opportunities for development. Acquiring more legal access across private or other lands would increase opportunities to explore and develop areas that might not be accessible by other routes.

The opening of reconveyed lands to leasing, location, and mineral material disposal could provide opportunities for mineral development.

The opening of small tract lands to location could provide opportunities to develop locatable minerals. Because small tract lands are private surface/Federal mineral, any development could cause conflicts with the surface owner.

Alternative C

Impacts would be similar to those described under *Alternative B,* except:

Within the Bradshaw-Harquahala Planning Area, the opening to leasing, location, and mineral material disposal of only those reconveyed lands with high potential for minerals could provide fewer opportunities for developing mineral resources than under *Alternative B.*

The opening to location of only those small tract lands with high locatable mineral potential would provide fewer opportunities for developing locatable minerals than would *Alternative B*. There would also be less conflict with surface owners.

Alternative D

Impacts would be similar to those described in *Alternative B*, except impacts of keeping all reconveyed lands and small tract lands closed to minerals development would be the same as *Alternative A*.

***Alternative E* (Preferred Alternative)**

Impacts would be similar to *Alternative B*, except small tract lands would remain closed to mineral entry, denying opportunities for locatable mineral development on those parcels, like in *Alternative A*.

In addition, reconveyed lands would be opened to mineral development as in *Alternative B*, except riparian areas would be closed to mineral material sales. No impacts are expected from this closure.

4.17.3 From Management of Soil, Air, and Water Resources

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

No impacts are expected in the Agua Fria National Monument, since the monument is closed to mineral entry.

In the Bradshaw-Harquahala Planning Area, managing soil resources requires mitigating impacts to topsoil by removing, stockpiling, and replacing soil and/or reclamation requirements to develop suitable substitutes. This mitigation would increase the cost of mining and in some cases might make mining uneconomical. Management objectives seeking to enhance soil stability would limit mining in areas with highly erodible soils and steep slopes.

Other requirements can be placed on mineral operations to protect ground and surface waters and to limit impacts on riparian areas. These requirements would increase exploration and mining costs, potentially making some locations uneconomical.

Managing air quality imposes limits on the impacts of mining by requiring reduced particulates, dust, and emission of hazardous air pollutants. As with soil and water requirements, air quality requirements would increase the cost of mineral exploration and development and might make some locations uneconomical.

4.17.4 From Biological Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected in the Agua Fria National Monument, since the monument is closed to mineral entry.

In the Bradshaw-Harquahala Planning Area, tortoise habitat restrictions decrease opportunities for developing mineral material resources, especially boulder sales. Required mitigation to eliminate or reduce impacts from mining could result in more expenses and longer permitting times for developers.

Wildlife stipulations and mitigation would increase operating costs and permitting timeframes and; to a lesser extent, might require relocation of discretionary mineral actions. Development locations near important wildlife habitat might be constrained by the following:

- seasonal use restrictions,
- buffer zones, and
- noise controls.

Mineral development is restricted in areas known to contain Threatened and Endangered (T&E) species. The discovery of T&E species on a site might interrupt operations.

4.17.5 From Cultural Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected in the Agua Fria National Monument, since the monument is closed to mineral entry.

In the Bradshaw-Harquahala Planning Area, increased costs of mineral development and delays in the evaluation and approval of proposed activities could result from the following requirements:

- to survey for cultural resources before any surface disturbance and
- to mitigate impacts on cultural resources found before or during surface disturbance.

4.17.6 From Paleontological Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Paleontological resource management is not expected to affect minerals and energy resources. The discovery of paleontological resources during development could increase the costs of mineral extraction.

4.17.7 From Recreation Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected in the Agua Fria National Monument, since the monument is closed to mineral entry.

Protecting important recreational areas through recreation resource allocations such as SRMAs might minimize potential surface disturbances from mineral development. They also limit the area where development can occur. Though most of these allocations do not close areas to mining, compliance with management prescriptions would increase development costs, making some locations uneconomical to develop.

4.17.8 From Visual Resource Management

***Alternative A* (No Action)**

Under *Alternative A* no VRM classes have been established. For the most part, visual resources have been managed to Class III. Visual resource management is not expected to affect minerals and energy resources.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

While the impacts of VRM Class III and Class IV to mining would be similar and comparable to what is already required in current reclamation standards, Class IV management provides added flexibility. VRM Class I or II objectives and mandatory compliance with them would increase the costs of any potential mineral development. In many cases, discretionary mineral development and related infrastructure would not be compatible with VRM objectives, which would result in excluding those forms of mineral development. Table 4-6 shows the VRM Classes that would be allocated in each Alternative.

4.17.9 From Rangeland Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Rangeland management is not expected to affect mineral and energy's resources.

4.17.10 From Minerals Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Impacts to mineral exploration and development result from prescriptions intended to manage and protect other resources; therefore, no impacts are expected.

4.17.11 From Fire Management

Alternatives A (*No Action*), B, C, D,* and *E* (Preferred Alternative*)

Current conditions would be maintained. Prescribed burns would affect access and operations in Agua Fria National Monument because some areas would be closed during prescribed burning. Fire management would be a benefit for mining by providing more protection against devastating wildfires. Such impacts would generally be short-term and would not affect the long-term development potential for minerals and energy.

4.17.12 From Wild Horse and Burro Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Wild horse and burro management under any Alternative is not expected to affect minerals and energy resources.

4.17.13 From Land Health Standards

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Compliance with Land Health Standards would require more stringent reclamation standards, resulting in higher reclamation and bonding costs and a greater delay in bond release.

4.17.14 From Management of Transportation and Public Access

***Alternatives A* (No Action), *B, C, D* and *E* (Preferred Alternative)**

Transportation management requirements impose more limits on the number and location of roads and require mitigation to reduce impacts. Travel management provisions under all Alternatives would require authorization to drive off-road to access mining claims or conduct exploration. Fewer access roads would inhibit access for prospecting. Improved road conditions leading to improved access would facilitate operating existing and potential mines.

4.17.15 From Management of Wilderness Characteristics

***Alternative A* (No Action)**

There are no expected impacts.

Alternatives B* and *C

Lands allocated to maintain or enhance wilderness characteristics would be closed to mineral material disposal. This would help preserve the natural and primitive characteristics of these areas.

Alternative D

Impacts would be the same as *Alternative B* except that in addition to closing mineral material disposal, lands allocated for management of wilderness characteristics would also be closed to mineral and geothermal

leasing. Under this Alternative lands allocated to manage wilderness characteristics would be withdrawn from mining laws. Closing these areas to mining activities would prevent the exploitation of potential resources, but would ensure preservation of natural and primitive characteristics more than other Alternatives.

***Alternative E* (Preferred Alternative)**

All public lands within the planning area would be open to mining activities except for legislatively withdrawn areas and other withdrawn and segregated areas. As a result areas allocated to manage wilderness characteristics would have no impact.

4.18 Impacts on Fire and Fuel Resources

4.18.1 From Special Area Designations

***Alternative A* (No Action)**

Two ACECs under current management limit motorized vehicles. This management is not expected to affect wildfire response, suppression, or fuel management, because traffic restrictions would not apply to either emergency or administrative needs.

The one RCA and two MRMAs, within Agua Fria National Monument, would be replaced by Agua Fria National Monument management. The area of limited development and access would increase. These limitations would affect fire by decreasing opportunities for accidental human-caused ignition. Also, fewer improvements and structures would affect suppression.

Wilderness designations restrict the amount and type of fire suppression. A total of 11 percent (96,820 acres) of the Bradshaw-Harquahala Planning Area is wilderness, where suppression and access are limited. Additionally, no mechanized equipment can be used in designated wilderness areas.

Alternative B

In Agua Fria National Monument designating the Bloody Basin Road Back Country Byway would likely increase recreation use of the area and would proportionally increase opportunities for human-caused ignitions.

In the Bradshaw-Harquahala Planning Area designating the Constellation Mine Road Back Country Byway could increase recreation use of the area and would proportionally increase opportunities for human-caused ignitions.

Alternative C

In Agua Fria National Monument designating four new ACECs would limit vehicular travel and vehicular access to all or portions of the ACECs. *Alternative C* is not expected to have any short-term impacts on wildfire response suppression or fuel management because the traffic restrictions would not apply either to emergency or administrative needs.

The Harquahala Mountains ACEC prohibits grazing and prohibiting grazing could increase fine fuels on the surface. This buildup could result in easier ignition and create a more continuous fuel bed that could increase the spread of fire.

The Vulture Mountains, Black Butte, and Sheep Mountain RNA ACECs would increase the area of limited development and access. These limitations could affect fire by decreasing opportunities for accidental human-caused ignition. They would also decrease improvements and structures that would affect suppression.

Alternative D

Impacts to fire under *Alternative D* would be similar to those described under *Alternative C.*

***Alternative E* (Preferred Alternative)**

The impacts to fire management from Special Area Designations would be similar to those described for *Alternative C.*

4.18.2 From Lands and Realty Management

***Alternative A* (No Action)**

Continued use of the existing utility rights-of-way is expected to temporarily affect fuels and fire because of ground disturbance and increased opportunities for ignition during operation and maintenance.

Building more utilities, transportation corridors, and communications sites would affect fire by increasing opportunities for accidental human-caused ignition. More improvements and structures would do the following:

- affect suppression and costs by placing on the ground more features that could require protection from a wildfire,
- present more hazards, such as flight hazards from overhead power lines or explosion hazards of buried gas pipelines, and
- create restrictions to prescribed burning or fire suppression operations.

Historically, maintaining and building new utility projects have had minor impacts to the Fire Management Program. Impacts to vegetation and increases in fine fuels due to ground disturbance would be minimal and short term. Increased opportunities for ignition during operation and maintenance are expected to have negligible effects.

Impacts from disposal of as much as 54,370 acres of Federal land outside the MUs could include redistributing the overall Federal land ownership and consolidating Federal lands into more contiguous management blocks. This disposal could reduce fire suppression and management responsibilities and increase their effectiveness. Suppression costs could decrease. Management would be more contiguous across the landscape (not broken by parcels of non-BLM ownership) with a resultant increase in the efficiency of operations. Depending on post-disposal land use, land disposal could affect both fire suppression and fuels conditions. Continued wildland uses and management would probably have negligible impacts. However, conversion to development uses would increase human populations and change ignition potential, fire behavior, and risk decisions. Additionally, visitor use on adjacent public lands could increase which could increase the potential for accidental human-caused fire starts. Developing these parcels would also do the following:

- expand the WUI,
- potentially increase fire suppression complexity, and
- costs increase the risk of public loss of life or property in the event of a wildfire.

Alternative B

Impacts would be similar to *Alternative A,* except potential disposal acres would be 58,400.

Alternative C

Impacts would be similar to *Alternative A*, except potential disposal acres would be 49,100.

Alternative D

Impacts would be similar to *Alternative A,* except no acres would be selected for disposal, so there would be no impacts related to land disposal.

***Alternative E* (Preferred Alternative)**

Impacts would be similar to *Alternative A*, except potential disposal acres would be 38,755.

4.18.3 From Management of Soil, Air, and Water Resources

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Management objectives include meeting air quality standards. Meeting air quality standards limits the amount of prescribed burning in both planning areas. Every prescribed fire requires an approved prescribed burn plan that lists predetermined prescription criteria for weather and fuel conditions. The plan also includes smoke management criteria, which are important to determining the complexity of the prescribed fire. These criteria define measures that would be taken to reduce smoke impacts on sensitive receptors from prescribed fire. All prescribed fires must be approved by the ADEQ before being implemented. State air quality regulations enforced by ADEQ meet or exceed Federal standards.

Implementing prescribed fire in fire-adapted environments and fuel treatments in other high-risk locations would improve watershed conditions, increase soil cover, and promote proper water flows.

4.18.4 From Biological Resource Management

***Alternative A* (No Action)**

In Agua Fria National Monument, fire management is affected by the area where endangered fish exist. The size of prescribed fires is limited by a restriction in the biological opinion that not more than half of a watershed can be burned during prescribed fires. Also, canyon areas cannot be burned. These restrictions affect fire by limiting the areas where prescribed fires can occur. After a burn, fish habitat must be monitored for erosion and soil movement into streams, which might affect water quality.

The impacts of biological resource management on fire suppression would consist of restrictions imposed on suppression strategies to protect priority habitat and species from disturbance from heavy equipment. Examples of these restrictions would be (1) prohibiting heavy equipment such as dozers in building firelines and (2) restricting fire vehicles to existing roads.

In both planning areas, sensitive and T&E species might limit actions on fuel treatments (such as what vegetation types can be treated in specific areas or at specific times), surface disturbances, and fuel treatment methods allowed. Seasonal restrictions to protect sensitive and T&E species affect fire management by not allowing for prescribed burning and fire suppression during certain times of the year or in some areas such as in fawning habitat during pronghorn fawning season.

The allocation of WHAs also affects Fire Management. They would do the following:

- limit or mitigate vehicular access;
- prohibit development of new recreational facilities, improvements, and structures; and
- reduce public visitation in these managed areas.

These actions are expected to affect fire by decreasing the occurrence of human-caused fire ignitions and overall suppression costs

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

Impacts under *Alternative B* would be the same as under *Alternative A,* except that some closures of vehicle routes that conflict with biological resource management might affect fire management by (1) reducing visitor use to the area and (2) decreasing the opportunity for human-caused fire ignitions.

4.18.5 From Cultural Resource Management

***Alternative A* (No Action)**

Protecting cultural resources, results in the use of Minimum Impact Suppression Tactics (MIST) during suppression. When implementing MIST, fire managers use the fewest fire suppression resources, and least-impacting tools and equipment to effectively manage and suppress fire, while (1) meeting fire management protection and resource objectives and (2) minimizing the impact to cultural resources and the landscape. Examples of MIST used by fire managers include the following:

- limiting fire vehicles to established road rights-of-way;
- burning out from existing roads, trails, and natural breaks; and
- placing firelines and retardant lines away from known cultural sites.

MIST applies indirect attack strategies more often than direct attack strategies. Where areas are not surveyed, cultural sites could be unintentionally damaged, especially flammable structures. Mitigation measures taken by fire managers to protect cultural sites in suppression and prescribed fire would reduce the known and unknown impacts to cultural resources. The expected results include more area burned by wildfires and increased suppression costs.

In prescribed fires, protecting cultural resources results in the following measures:

- relocating planned firelines,
- adjusting the size of burnblocks,
- mitigating adverse effects by removing vegetation around cultural sites to protect them, and
- determining where prescribed fires might or might not be planned from known cultural resources.

Such measures would have the following results:

- increasing project costs to protect cultural sites;
- spending more time and cost in planning, and
- excluding some areas from burning because of the presence of cultural resources.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

In Agua Fria National Monument developing High and Moderate public use cultural site interpretation would affect fire and fuel management because of increased recreation use of the area and the developing of visitor services, including structures. This outcome would affect fire management by increasing the risk of accidental human-caused ignition. This increased risk would be minimal during the peak fire season (summer) because most visitor use would occur during the late fall, winter, and early spring. Increased visitor use is expected to only slightly affect opportunities for fire use or prescribed fire.

The number of improvements and structures could also increase, which could lead to changes in suppression decisions and commitments of suppression resources. *Alternative B* would have the most sites and facilities open to visitation and public use. *Alternative B* is also expected to have the most public visitation of all Alternatives.

In the Bradshaw-Harquahala Planning Area, allocating SCRMAs and developing sites for interpretation would increase the risk of accidental human-caused ignition. These measures would also increase the number of improvements and structures, which could change suppression decisions and commitments of suppression resources. The relative size of impacts would be as follows:

- greatest under *Alternative B* (316,103 acres of SCRMA, representing 35 percent of the planning area)

- intermediate under *Alternative C* (276,527 acres of SCRMA, representing 31 percent of the planning area)
- least under *Alternative D* (125,292 acres of SCRMA, representing 14 percent of the planning area)

See Tables 2-3, 2-4, and 2-5 to view the different areas allocated to different use levels under each Alternative.

4.18.6 From Paleontological Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected from paleontological resource management.

4.18.7 From Recreation Management

***Alternative A* (No Action)**

Allowing continued open areas within the boundaries of the Lower Gila North Management Framework Plan (BLM 1983) will increase the risk of human-caused fire ignitions as recreation use increases. In addition, allowing target shooting anywhere would increase the potential for accidental human-caused ignitions. Shooting is a common cause of wildfire in some areas.

Alternative B

It is expected that increases in recreation visitation will result in increased occurrences of human-caused ignition. Allowing dispersed camping with few limitations could also increase the risk of human-caused ignitions.

In both planning areas allocations of Front Country RMZs, Back Country RMZs, and SRMAs would result in allocating roads and trails for commercial and motorized competitive events as well as motorized recreation. In addition, staging and camping areas would be developed to meet the high demand for recreation. These measures would affect fire by increasing the risk of accidental human-caused ignition. The potential for human-caused fire starts would increase as a result of increases in the following:

- visitor use,
- target and recreational shooting,
- motorized recreation use confined to designated routes, and
- unauthorized off-road use.

The potential for accidental human-caused fire starts would increase as a result of dispersed non-motorized non-commercial individuals, group activities, and public camping not under SRPs. The presence of improvements and increased visitor use could change suppression decisions, prioritization of resources, and resulting costs.

Alternative C

Impacts in planning areas, Front/Back Country RMZs and SRMAs, would be similar to those described for *Alternative B.* In SRMAs where vehicles use is restricted potential human-caused ignitions would decline.

Alternative D

Impacts in planning areas, Front/Back Country RMZs and SRMAs would be similar to those described for *Alternatives B*, except there would be more restrictions on vehicle use and risk of human-caused ignitions would decline.

***Alternative E* (Preferred Alternative)**

Impacts for *Alternative E* are the same as those described for *Alternative B*.

4.18.8 From Visual Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected.

4.18.9 From Rangeland Management

***Alternative A* (No Action)**

Current grazing practices affect fire management in many ways. Improvements designed for managing livestock, such as water facilities, fences, corrals, and other structures, present a risk of property loss in the event of a wildfire, as well as potential hazards to fire fighters and fire operations. On the other hand, many wildfire suppression actions depend on water from range improvements.

Livestock removing forage, especially light fuels in the form of grasses and forbs, can reduce the potential of a site to carry fire and result in fewer fires of lower intensity or lower rates of spread. A history of grazing, especially improper grazing, can convert ecological types. Conversion of grasslands or ecological types with naturally high grass components to types with higher woody species can result in lower fire frequencies but higher fire intensities when these converted types do burn. In these cases, wildfires might not burn as often, but the likelihood of a catastrophic fire increases.

Livestock grazing in the Sonoran and other western desert ecosystems has led to rapid invasion of Mediterranean annual grasses and forbs, most notably red brome (*bromus rubens*) and downy brome (*bromus tectorum*), which have increased the fire frequency in ecosystems where the natural vegetation is not fire adapted. The potential outcome of this invasion is the possibility of creating a fire-dependent plant community consisting mainly of non-native invasive annual plants, and the eventual loss of native desert vegetation in those places.

Woody species have encroached on the natural desert grasslands, reducing natural fire frequency and reducing light fuels to carry natural fires. As a consequence, a prescribed burning program has been developed to reduce woody species and encourage recovery of natural grasses. Many factors affect the success of the prescribed fire program, not the least of which is the assurance of adequate amounts of fuel to carry a fire. Livestock grazing in areas planned for burning can remove enough fuel to reduce or eliminate the opportunity to successfully burn. Rest from livestock of a season or more in those same pastures can also increase the opportunity for natural fire starts from lightning or from unplanned human ignition.

In Sonoran desert vegetation communities, prescribed burning is confined to the fire adapted Arizona Interior Chaparral vegetation communities, mainly in the foothills of the Bradshaw Mountains. Livestock grazing in those areas would have little effect on prescribed or wildland fire operations. In desertscrub and other desert communities, wildfires depend on large volumes of ephemeral annual grass and forb production, generally after winters with above-average precipitation. Livestock operators commonly apply for increased livestock numbers to take advantage of abundant forage. In years where the amount of ephemeral production is marginal, high livestock numbers can reduce the potential of large fires. In years with extraordinary ephemeral production, perhaps 1 year in 10, livestock would not affect fire potential.

Riparian areas are not typically in a prescribed burn treatment area, but specific vegetation objectives might allow for prescribed fire use.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

In Agua Fria National Monument *Alternative B* would allow some naturally ignited fires to burn

if defined prescriptive conditions are being met. This could reduce the cost of prescribed burning, but may increase the risk of escaped wildfires. Nevertheless, impacts would be similar to those under *Alternative A.*

4.18.10 From Minerals Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

The Bradshaw-Harquahala Planning Area allows new mineral entry as well as development of existing mineral rights. The result is an increase in human activity and in the probability of human-caused fire ignitions. Development associated with mining also increases the risk and complexity of wildland fire suppression operations. Since the Agua Fria National Monument is closed to new mineral entry, there are no fire impacts related to mineral development.

4.18.11 From Fire Management

***Alternative A* (No Action)**

In both planning areas current fire management practices require full suppression using suitable management response on all wildfire starts (both human and natural ignition caused). Fire suppression on small-fire starts can prevent fires from becoming large and harming resources but does not allow for wildland fire use under a predetermined fire prescription. However, current management practices allow only for implementing management-ignited prescribed fire.

In the Bradshaw-Harquahala Planning Area, 14,000 acres have been selected for prescribed fire treatments in the Weaver Mountains. Prescribed fire objectives are to conduct multiple prescribed fire treatments over 5 to 10 years to treat hazardous fuel accumulations in interior chaparral vegetation. The treatments would create a diverse mixed-aged stand of interior chaparral. Creating a mosaic pattern of burned and unburned areas in the treatment area would reduce the threat of large catastrophic wildfires and maximize benefits to wildlife and livestock grazing.

Existing roads and disturbed areas would be used in fire suppression and prescribed fire to avoid impacts to other resources, especially cultural resources.

The encroachment of urban development on adjacent private lands could affect wildland fire suppression strategies and tactics, depending on the time of year and intensity of wildfires. Wildland Urban Interface areas (WUI) would not allow the option of using wildland fire. WUI would also affect the following aspects of prescribed fire operations on public lands:

- limiting the location of burnblocks,
- altering firing operations,
- increasing the sensitivity to smoke and smoke management,
- impairing visibility and public health, and
- increasing prescribed fire cost because of the added work to protect WUI areas, such as building new firelines and adding fire resources (engines, firefighters, helicopters).

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

In both planning units some wildland fire would be allowed if defined prescriptive conditions are being met. Wildland fire use would allow for fire to play its natural role, especially in the Agua Fria National Monument tobosa grasslands. Wildland fire use would do the following:

- help to maintain and enhance this grassland ecosystem,
- encourage perennial grass species, and
- reduce the encroachment of woody species.

Wildland fire use would be beneficial in both planning areas except in the Sonoran Desert vegetation communities, which constitute the majority of vegetation communities in the Bradshaw-Harquahala Planning Area.

Suppression impacts would be similar to those described for *Alternative A.*

4.18.12 From Wild Horse and Burro Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Wild horse and burro management would not affect fire management under any of the Alternatives.

4.18.13 From Management of Transportation and Public Access

***Alternative A* (No Action)**

Restricting vehicles to existing roads and trails in the Phoenix Resource Management Plan (BLM 1988a), would reduce the potential for accidental human-caused ignitions. The limits on motorized vehicles could reduce the potential for human-caused wildfire ignitions. This restriction affects fire suppression strategies as well as options for fuel treatment. Limits on vehicle access also affect the number and type (OHV versus pedestrian) of visitors to these areas, thus reducing the probability of human-caused ignitions.

The probability of human-caused fire continues to increase as a result of an expanding human population. Initially, no major impacts to the Fire Management Program are expected, but as increases in vehicle travel on designated routes continue, the potential for human-caused fire will also increase.

Alternative B

Impacts to fire under *Alternative B* would be similar to those described for *Alternative A*. Road closures would affect fire management by reducing access to fires by ground initial attack resources. This reduction would have the following impacts:

- increased initial attack response time,
- limited access to fires,
- fewer roads to use as firelines,
- larger fires (more acres burned), and
- increased fire suppression costs

In both planning areas confining vehicles to designated routes would reduce the potential for accidental human-caused ignitions. This restriction is especially important in grassland fuel types. In SRMAs where vehicle use is restricted potential human-caused ignitions would be reduced.

Closing roads would have a long-term impact on prescribed fire by reducing the number of roads that could be used as firelines (fuel breaks) in prescribed burning. Road closures might result in the need to build more firelines to safely implement prescribed fires and would increase the cost of prescribed burning.

Alternative C

The impacts under *Alternative C* would be the same as under *Alternative B*, except that Alternative C would close and add limitations to more vehicle routes than *Alternative B* would.

Alternative D

The impacts under *Alternative D* would be the same as under *Alternative* B, except that more closures of vehicle routes are expected under *Alternative D* than under *Alternative C.*

***Alternative E* (Preferred Alternative)**

The impacts under *Alternative E* would be the same as under *Alternative B*.

4.18.14 From Management of Wilderness Characteristics

***Alternative A* (No Action)**

There are no areas under consideration for management of wilderness characteristics; therefore, there are no impacts on fire management.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

For both planning areas, management of wilderness characteristics may impact fire suppression by preventing the construction of new firelines using heavy equipment. Implementation of appropriate management response for values at risk will offset the impacts from the potential loss of heavy equipment. Management of wilderness characteristics is not anticipated to have a negative impact on either fire suppression or fuels treatment within the designated areas.

4.19 Impacts on Wild Horses and Burros

4.19.1 From Special Area Designations

***Alternative A* (No Action)**

No impacts are expected to the animals present or their habitat elements as a result of continuing to implement the Hells Canyon or Hummingbird Springs Wilderness Areas. In the event of a gather in these areas, a site-specific analysis would be completed for the use of motorized equipment. The Harquahala burro herd is small. According to the manageability analysis in Appendix G, the herd is probably too small to contain enough genetic diversity to be a viable population. Removing any burros would reduce the herd's genetic diversity even further.

Alternative B

Tule Creek ACEC would be fenced to deny burro and livestock access. The area of the ACEC and the loss of forage within it would be so small that the effect on burros would be negligible. No adjustment in the Appropriate Management Level (AML) of burros would be required as a result of this action.

No special area designations would be created under *Alternative B* in the Harquahala HA.

Alternative C

Under *Alternative C*, Tule Creek and Sheep Mountain RNA ACECs would be designated in or near the Lake Pleasant HMA. Excluding livestock from Tule Creek ACEC would have the same impacts as described for *Alternative B*.

Designating the Harquahala Mountains ONA ACEC would not affect the burro herd.

Alternative D

Impacts to the Lake Pleasant HMA would be the same as described for *Alternative C*.

Alternative D would designate two ACECs in the Harquahala HA: the Harquahala Mountains ONA ACEC and the Bellmont-Big Horn Mountains ACEC. Despite the larger area in ACEC designations, impacts to burros would be the same as described for *Alternative C.*

***Alternative E* (Preferred Alternative)**

Impacts to the Lake Pleasant HMA would be the same as described for *Alternative C.*

Designating the Harquahala Mountains ONA ACEC would not affect the burro herd.

4.19.2 From Lands and Realty Management

***Alternatives A* (No Action), *B, C, D, and E* (Preferred Alternative)**

There are no impacts expected.

4.19.3 From Management of Soil, Air, and Water Resources

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

No impacts to burros are expected from the management of soil, water, or air resources.

4.19.4 From Biological Resource Management

***Alternative A* (No Action)**

Under No Action wild burros would continue to compete with native wildlife for forage and water. Developing water resources such as springs and seeps, which are designed to protect ecological functions, could affect wild burros by improving the habitat in the Lake Pleasant HMA and Harquahala HA. Projects that encourage developing a more reliable water source could increase the forage production in the vicinity. Improvements, however, could include the installing of fences to prohibit cattle and wild burros from using the water sources, leading to a decrease in available water supply and less available habitat.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

In the Lake Pleasant HMA impacts would be the same as described for *Alternative A*.

In the Harquahala HA allocation of the Harquahala Mountain WHA would not affect burros.

4.19.5 From Cultural Resource Management

***Alternative A* (No Action)**

Reducing or eliminating impacts of land uses on cultural resources as identified through study plots could require installing fences, which could affect the wild burros by limiting their available range. The potential fenced areas would be small, only negligibly affecting available burro forage or habitat.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

Wild burros could be affected by allocating the following:

- Lake Pleasant/Agua Fria SCRMA in the Castle Hot Springs MU, which includes 21,342 acres of the Lake Pleasant HMA, and
- Harquahala Mountains SCRMA in the Harquahala Mountains MU, which includes 24,299 acres of the Harquahala HA.

Any installing of fences to protect areas could limit the available range of wild burros. Any fence is expected to be small and to negligibly affect burros. Increasing visitor facilities could pressure wild burros to migrate to less developed areas, possibly increasing human–burro interactions. Wild burros that become accustomed to human interactions are more likely to congregate around public areas, increasing the likelihood of injury to both wild burros and people. Additionally, with the increase in travel routes, recreational trails, and above-ground features (restrooms, picnic tables, benches, trash receptacles, interpretive signs), wild burros would be affected by the quality and quantity of diminishing wild burro habitat.

4.19.6 From Paleontological Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected.

4.19.7 From Recreation Management

***Alternative A* (No Action)**

Increasing OHV use could affect wild burros by increasing the possibility of vehicle-burro conflicts. Also, increases in recreation use could slightly reduce the amount of available forage from disturbance caused by camping, cross-country vehicular travel, and other recreation activities. The incidence of burro-human encounters could also increase, increasing the risk of injury to both people and burros.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

Recreational use on designated motorized vehicle routes, in organized competitive events, and in developed staging/camping areas could decrease the amount of available habitat for wild burros and increase the risk of bodily injury to the wild burros during these events.

Closing vehicle routes could decrease the number of vehicle-burro conflicts. Areas allocated to non-motorized settings could help minimize impacts to vegetation from motorized recreation, increasing available forage.

4.19.8 From Visual Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected.

4.19.9 From Rangeland Management

***Alternative A* (No Action)**

Implementing Rangeland Health Standards (Land Health Standards) *and Guidelines for Grazing Management* (Rangeland Management) could improve overall vegetation, soil, and water conditions in Lake Pleasant HMA and Harquahala HA.

Maintaining existing authorized grazing allotments could give burros more water sources. Grazing practices, however, increase competition for available forage and water.

Alternative B

Impacts are expected to be the same as *Alternative A*, except building fences or implementing other barrier restrictions to riparian grazing during winter (November 1 to March 1) could affect wild burros. Areas excluded from livestock use would restrict wild burro access as well. These restrictions could affect the availability of forage and water for wild burros by increasing competition and decreasing available range size.

Alternative C

Expected impacts would be similar to those under *Alternative B.*

Alternative D

Eliminating all livestock grazing in the Bradshaw-Harquahala Planning Area would eliminate burro-cattle competition for forage and water. Unneeded grazing improvements would also be eliminated, which could lead to a decrease in available water sources for wild burros. Fences and cattleguards would likely be removed, which could expand the wild burros' available range.

***Alternative E* (Preferred Alternative)**

Impacts would be similar to those under *Alternative B.*

4.19.10 From Minerals Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected.

4.19.11 From Fire Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected.

4.19.12 From Wild Horse and Burro Management

***Alternative A* (No Action)**

Retaining the current Lake Pleasant HMA and managing the wild burros on BLM-administered public lands consistent with the Wild Horse and Burro Act of 1971 (WHBA) would potentially enhance the genetic viability of this herd by maintaining a thriving ecological balance. The social structures of the herd could be disrupted by removing nuisance animals when they are reported and by gathering excess burros from the Lake Pleasant HMA to achieve the AML. Current plans prescribe removing all burros from the Harquahala HA.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

Impacts to wild burros in the Lake Pleasant HMA would be similar to those described under *Alternative A.*

According to the herd manageability analysis in Appendix G, the Harquahala HA is not manageable. The herd area would not become a HMA. Nuisance burros and burros damaging sensitive habitats can be removed as funds are available. The impact of this action could be eventual removal of all burros in this HA.

4.19.13 From Management of Transportation and Public Access

***Alternative A* (No Action)**

Increasing OHV use on existing and undesignated route networks, and increasing levels of crosscountry OHV use in the western part of the Bradshaw-Harquahala Planning Area, could affect wild burros by increasing the possibility of vehicle-burro conflicts and cause a loss of habitat. Also, increases in motorized recreation use could slightly reduce the amount of available forage from disturbance caused by cross-country vehicular travel. Moreover, the incidence of burro-human encounters could also increase, elevating the risk of injury to both people and burros.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

Wild burros and their movement and behavior are influenced by the presence of motorized and non-motorized trail users. Recreational use on designated motorized vehicle routes and route systems could decrease the amount of available habitat for wild burros and increase the risk of bodily injury to the wild burros during these events. Increasing levels of use by visitors on designated non-motorized trails would further fragment burro habitat and cause burro to move to other areas. Burros would also be harassed by both motorized and non-motorized visitors.

Closing vehicle routes as presented in the range of Alternatives could decrease the number of vehicle-burro conflicts. Areas allocated to non-motorized settings could help minimize impacts

to vegetation from motorized recreation, increasing available forage.

4.19.14 From Management of Wilderness Characteristics

***Alternative A* (No Action)**

There are no impacts to wild burros, because no lands are allocated to the management of wilderness characteristics.

***Alternatives B, C, D* and *E* (Preferred Alternative)**

The maintenance and enhancement of lands with wilderness characteristics would reduce the number of motorized vehicle routes, end cross-country vehicle travel, and maintain ecological conditions. Overall, this allocation would have minimal impacts on the number or location of wild burros. However, closing specific vehicle routes could decrease the number of vehicle-burro conflicts. Areas allocated to non-motorized settings could help minimize impacts to vegetation from motorized recreation, which would increase the available forage. The level of harassment of wild burros would be less in areas managed for wilderness characteristics since most of the areas have few trails and overall lower levels of visitation than motorized settings. Increased levels of primitive recreation into burro use areas could lead to the harassment of burros and their movements away from hikers, equestrians, and campers. This would be significant only if the visitors occupy critical burro watering areas during periods of heat stress.

4.20 Impacts on Transportation and Public Access

A route network for access and recreation would be designated for Agua Fria National Monument as part of the RMP. For the Bradshaw-Harquahala Planning Area, designating routes is to be completed in 5 years after the plan is approved. To understand the impacts of routes and access in the Bradshaw-Harquahala Planning Area for the RMP Alternatives, a model route system was developed. The model system is partially based on the inventory and the evaluation process that was performed to develop the alternative route networks for Agua Fria National Monument. The preliminary route model and general approach to the route designation process are in Appendix N. The general assumptions for developing the model route system are outlined below

- The routes total 2,240 miles, excluding highways.
- The route total is based on the new route inventory where it has been completed and on Arizona Land Resource Information System (ALRIS) and county data where the inventory is not complete.

The approximate miles of routes in management zones are shown in the route distribution on Table 4-8.

4.20.1 From Special Area Designations

***Alternative A* (No Action)**

The Agua Fria National Monument would be closed to cross-country motorized travel to protect the monument's objects. Existing routes would remain open. No impacts are likely to occur unless monument resources are found to

be damaged. Closing OHV routes or activity areas to protect monument resources could limit recreation in some areas, but resources would be protected for future activities.

The five designated wilderness areas encompassing 96,820 acres within the Bradshaw-Harquahala Planning Area would remain closed to motorized vehicle use. Motorized uses associated with the Harquahala Mountain Backcountry Byway would continue with no impacts on current opportunities.

The Harquahala Mountain Summit Backcountry Byway would remain as currently administered. Transportation and Public Access uses would continue to be positively impacted due to the interpretation, staging areas, amenities, route markings and periodic maintenance.

Alternative B

Most motorized routes would remain open to vehicular travel in Agua Fria National Monument (see section 2.3.1.8), but monument lands would remain closed to cross-country motorized travel to protect the monument's objects. All travel by motorized and mechanized vehicles would be restricted to designated routes as in *Alternative A.*

Table 4-8. Route Distribution (in miles)

Management Area	Alt A	Alt B	Alt C	Alt D	Alt E
ACECs	0	0.2	19	0	143
Areas alloc to maintain/ enhance wilderness characteristics	0	47	9	0	35
ERMA and SRMA	2,240	2,038	1,861	1,645	1,850

The route system, developed though an interdisciplinary evaluation process, would enhance travel and access opportunities for motorized recreation by creating loop trails, allowing increased touring and greater public access. No other Special Area Designations are proposed within the monument, so there are no additional effects.

Designated wilderness areas in the Bradshaw-Harquahala Planning Area and the Harquahala Mountain Summit Backcountry Byway would have the same impacts as *Alternative A.*

The Constellation Mine Road Backcountry Byway would have a positive effect on the travel and transportation network. Increased management would result in more positive visitor experiences. Use would likely increase on the road area which may negatively impact local residents since additional litter, trespass and dust are likely. Improved management by signing, mapping and volunteers could lessen the impacts to local residents.

Alternative C

Impacts in Agua Fria National Monument would be similar to *Alternative B,* except more routes would be closed. 129 miles, or 69.7 percent, of routes would remain open to vehicular travel. Within the monument's Silver Creek ACEC, 0.45 miles of route would be closed to vehicle use to maximize protection of the Gila Chub.

The Bloody Basin Road Backcountry Byway would improve the opportunity for touring the main use corridor in the monument, thus allowing more visitors to experience the monument. Additional use could increase noise, and litter/dust could negatively affect some visitors' experiences. Impacts to the monument would be minimal if mitigation of these effects were engaged.

Impacts on the suitability of the Agua Fria River and additional tributaries for Wild and Scenic River eligibility are similar to those in *Alternatives A and B.*

The Black Mesa ACEC would restrict travel on routes traveling directly to or through cultural sites. The Tule Creek ACEC would have impacts similar to *Alternative A.* The Vulture Mountains ACEC would have the effect of preventing any new vehicle routes from being

constructed. Also, existing routes could be closed if they conflict with raptor habitat. The Harquahala Mountains ONA ACEC would retain most of the existing routes while preventing any new vehicle routes from being constructed. Impacts to the route network for development of a long distance trail system would be small. The Black Butte ACEC would have a minimal effect on travel and transportation since routes inside the ACEC boundary are little traveled. Travel in Jackrabbit wash would likely be closed as result of the route evaluation process described in Appendix D. This would be noteworthy for some users in the area as this sandy wash route is used by OHV and ATVs as a through travel route.

The five designated wilderness areas within the Bradshaw-Harquahala Planning Area and the Harquahala Mountain Summit Backcountry Byway would have impacts similar to those described under *Alternative A.*

Alternative D

Impacts in the Agua Fria National Monument would be similar to *Alternative B*, except 47 miles, or 27.8 percent of routes would remain open to vehicular travel. The route system under *Alternative D* would not add new routes. Opportunities for motorized recreation would be limited, and loop trails would not be developed. The route system would close 122 miles of existing routes and could greatly diminish opportunities for motorized recreation and public access in some areas. The Bloody Basin Road Backcountry Byway would not be established and current conditions would be maintained.

Designation of the Agua Fria River Riparian Corridor ACEC within the monument would have impacts similar to the Wild and Scenic River eligibility study and suitability determination as described in *Alternative C*.

The model route system for *Alternative D* would close 412 miles of routes in ACECs within the Bradshaw-Harquahala Planning Area. The quality and quantity of motorized recreational experiences and opportunities would diminish significantly by imposing potential restrictions in ACECs. These ACEC route closures would diminish opportunities for traditional motorized users, and lead to the disruption and disconnection of multiple routes in the travel network. These impacts are described in detail below.

Designation of the Black Mesa ACEC would have effects similar to ones described in *Alternative C.* The Tule Creek ACEC would have similar effects as described in *Alternative B*. The Baldy Mountain ONA ACEC would have the effect of closing all routes within the ONA boundary, resulting in the vehicle route closures. The Sheep Mountain RNA ACEC would have the effect of closing all the vehicle routes within the boundary, but all inventoried routes are in a reclaiming state. New vehicle routes would be prohibited, but would be of little effect since land ownership around Sheep Mountain is private or State land. The Vulture Mountains ACEC would have similar effect to impacts described in *Alternative C* with the exception that an additional 3,320 acres would be encompassed by the ACEC. The Belmont-Big Horn Mountains ACEC would have effect of prohibiting any new vehicle routes, thus limiting the ability of BLM and user groups from planning and installing a vehicle-based long distance route network. The Harquahala Mountains ACEC would have similar impacts as those described in *Alternative C* except the ACEC encompasses an additional 10,780acres. Additional route closures could potentially be implemented in this area if ACEC resources are impaired by motorized vehicle travel.

The five designated wilderness areas within the Bradshaw-Harquahala Planning Area and the Harquahala Mountain Backcountry Byway would have impacts as described under *Alternative A.*

Nominating the Black Canyon Trail as National Recreation Trail would have a positive impact to non-motorized trail users. Motorized and non-motorized users will be separated along many parts of the trail. This separation will improve

the experience of both motorized and non-motorized trail users in the Black Canyon Trail area.

***Alternative E* (Preferred Alternative)**

The designated route and motorized travel network within the AFNM would be reduced 41 percent under this Alternative. About 100 miles or route would remain open and 70 miles of vehicular routes would be closed (see Map 2-57). Monument lands would remain closed and unavailable for cross-country motorized travel. The route system under *Alternative E* would add only 1 mile of new route. There would be a noticeable loss of motorized touring, driving and vehicle-based activities. Travel networks, loops, and connectivity would be disrupted or diminished in some areas. Designating and establishing the Bloody Basin Road Backcountry Byway would have impacts similar to those presented under *Alternative B.*

Under the model route system for the Bradshaw-Harquahala Planning Area 114 miles of vehicle routes within ACECs would be closed. Most ACEC closures would occur in the lands allocated to the Harquahala Mountain ONA and the Black Butte ONA. Other closures would be done within the Tule Creek ACEC and the Vulture Peak ACEC. Impacts of route closures in ACECs would be similar to those described in *Alternative C.*

Nominating the Black Canyon Trail as National Recreation Trail would have similar impacts as those described in *Alternative D.*

The five designated wilderness areas within the Bradshaw-Harquahala Planning Area and the Harquahala Mountain Backcountry Byway would have similar impacts as those described in *Alternative A.*

4.20.2 From Lands and Realty Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

The new, expanded lands and realty authorizations would gradually and potentially expand the route and travel network. This will happen over the life of the plan as new rights of ways for private and State land access, and installation of new utilities, continues. These lands and realty actions and associated route construction would increase the motorized route network less than 1 percent annually over the life of the plan. These actions would directly and indirectly increase route connectivity and links with other route networks for motorized recreationists. On the other hand, subsequent development of these State and private lands could lead to the disruption or loss of public access across these non-Federal lands. Historically, much of the public access to BLM-lands has been through private and State lands available for motorized and non-motorized user access to public lands. Development of State and private lands usually results in the loss or restriction of this traditional access.

4.20.3 From Management of Soil, Air, and Water Resources

***Alternative A* (No Action)**

Vehicle route and OHV area closures on BLM-administered lands, required for protecting, mitigating damage; or adverse effects to soil, water and air resources, could diminish the motorized route network over the life of the plan. Especially near private property, residential and commercial land developments and State lands. Moreover, these actions would occur on a case-by-case basis as complaints are filed or problems identified.

County, State and private owners will apply existing law or legal measures to curtail damage to their property from the effects of damaged BLM-administered soil, air and water resources. Examples of potential resources issues affecting private and State lands include fugitive dust and PM_{10} emissions from public roads and OHV travel, soil erosion from hill climbs and cross country OHV travel; and changes in water

courses or water quality due to OHV travel and the public use of non-engineered or poorly engineered travel routes. Route and area closures would impact the amount of motorized recreation activity and could diminish the overall route network's linkage and connectivity to other travel route systems.

***Alternatives B, C, D* and *E* (Preferred Alternative)**

Impacts on Transportation and Access management from localized case-by-case responses to soil, air and water damage or complaints would be the same as described under *Alternative A.*

On most public lands under all action Alternatives, BLM would take direct action during and upon designation of the Travel and Access network to lessen, eliminate or avoid impacts on both public and private soil, water and air resources. The designation of travel and access networks, the application of dust suppression technology, the rerouting and specific closure of problem routes, the application of buffer zones, the application of SRMA prescriptions, and improving the engineering of the existing and new routes would reduce impacts to soil, water and air resources. Potentially, the existing route networks would be slightly reduced over time in order to protect air, water and soil resources; however, this reduction would not be significant except under *Alternative D. Alternative D* would close routes and route networks within sizeable areas of the Hieroglyphic Mountains SRMA and associated locales.

4.20.4 From Biological Resource Management

***Alternative A* (No Action)**

There are no impacts expected.

Alternative B

Management for biological resources would reduce transportation routes and public access more than under *Alternative A.*

Areas designated as ACECs would contribute to a decline or loss in travel and transportation access opportunities but would increase the preservation of biological resources. ACECs and their resulting impacts on transportation are discussed in section 4.20.1.

In the Bradshaw-Harquahala Planning Area 64,220 acres would be managed as wildlife habitat. Managing a WHA would limit transportation access and vehicle routes that interfere with the preservation of the wildlife habitat. This limitation on access could shift transportation to other areas and concentrate vehicle usage on routes that remain open.

Alternative C

This Alternative would provide more management of biological resources than *Alternatives A* or *B*. As a result, management of biological resources under *Alternative C* would have a greater impact on transportation and public access by restricting more area to motorized transportation.

Impacts of WHAs would be the same as *Alternative B except* that *Alternative C* would provide management of more WHAs than *Alternative B*. The 157,180 acres in the Bradshaw Harquahala Planning Area would be managed as WHAs. In the monument, 39,330 acres would be managed as WHAs, reducing access more than previous Alternatives.

Alternative D

This Alternative would close the most area to motorized access due to biological resource management and ACEC designation.

Impacts of managing WHAs would be the same as *Alternative C* except that in the Bradshaw Harquahala Planning Area 18,020 acres would be managed as WHAs.

***Alternative E* (Preferred Alternative)**

Management of biological resources under this Alternative would restrict less motorized access than *Alternative D*, but more than *Alternative C.*

Impacts of managing WHAs would be the same as *Alternative C* except that in the Bradshaw Harquahala Planning Area 140,310 acres would be managed as WHAs.

4.20.5 From Cultural Resource Management

***Alternative A* (No Action)**

Cultural resource management would have little impact on the existing Transportation and Access network. A few specific vehicle travel routes could be closed in the Agua Fria National Monument and within the Bradshaw-Harquahala Planning Area to protect cultural sites or mitigate existing resource damage, but the extent of such closures would have little overall impact on motorized recreation opportunities and the current state of route connectivity.

Alternative B

Vehicle travel networks could be adversely influenced in some areas of the Agua Fria National Monument and the Bradshaw-Harquahala Planning Area as some routes would be closed (as discussed in section 4.20.1) for cultural site protection. Route connectivity could be diminished and the quality of vehicle-based recreation pursuits would decline in the involved areas as the closures are implemented.

Alternative C

Other than limitations on routes from the Black Mesa ACEC described previously, management for Cultural Resources would reduce route availability if conflicts were determined.

Alternative D

Impacts would be similar to those described in *Alternative C.*

***Alternative E* (Preferred Alternative)**

Impacts on the Transportation network and public access would be similar to those described under *Alternative B*. The potential closing of routes in the planning areas as protective measures for cultural sites would diminish or displace motorized recreation activities in affected areas and possibly reduce the connectivity of the involved route networks. Opportunities for access to some cultural sites would be reduced or eliminated for motorized users, especially in parts of the Agua Fria National Monument, the Black Mesa/Bumble Bee Cultural Resource Priority Area, and the Black Canyon Corridor, the Lake Pleasant/Agua Fria, Wickenburg/Vulture, Weaver/Octave, Harquahala and Galena Gulch SCRMAs.

4.20.6 From Paleontological Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected because no paleontological sites are known to exist in the planning areas.

4.20.7 From Recreation Resource Management

***Alternative A* (No Action)**

The Agua Fria National Monument is closed to cross-country motorized travel to protect monument resources; however, most existing routes would remain open. Closing OHV routes or activity areas to protect resources could limit motorized-recreation opportunities and experiences in some areas, especially along the wild and scenic river suitability corridor.

In the Bradshaw-Harquahala Planning Area, nearly 100 percent of the 2,240 miles of vehicle

routes would remain open. Existing types of motorized and vehicle-based recreation opportunities would continue unchanged. In the Vulture Mountains, Belmont Mountains, Big Horn Mountains, Harquahala Mountains, and Harcuvar Mountains; route networks and route mileage would increase over the long-term from current levels as there is no limitation or prohibition of motorized cross-country travel. These new route networks and route miles would also expand into presently unroaded areas over the same time period.

Alternative B

As in *Alternative A*, most routes would remain open to vehicular travel in Agua Fria National Monument.

The proposed route system, developed though an interdisciplinary evaluation process would enhance recreational opportunities for motorized users by creating loop trails, which would allow connected touring, provide for greater access, and offer more extended and dispersed recreational opportunities. Developing connecting route networks for hikers, bicycles, OHVs, and equestrians would affect recreation opportunities because all types of users could enjoy activities consistently, in more areas, and with fewer user conflicts. Recreation opportunities and general access for motorized users would be improved by the development of about 5 miles of new routes needed to bypass private property and maintain route system connectivity. The proposed route system would close 38 miles of existing routes and could diminish opportunities for motorized recreation in some areas. Users of these routes would be displaced to other areas within and outside the monument.

Under the model route system for the Bradshaw-Harquahala Planning Area, up to 48 miles would be closed in designated ACECs. In the remainder of the planning area, about 98 percent of existing routes would remain open.

A total of 168 miles of routes within both planning areas would be closed elsewhere to (1) protect resources, (2) reduce redundancy, and (3) limit routes for administrative use. The closures represent 7.4 percent of the routes in the planning area. Current motorized users would be displaced to other State and public lands. Up to 14 miles of new routes would be established to mitigate losses from the closures and to achieve better route connectivity. The total distance of open routes would eventually reach 2,100 miles. The overall effect of route management under *Alternative B* would be to maintain the existing recreation settings and opportunities and avoid greatly changing or diminishing motorized recreation opportunities and public access throughout the Bradshaw-Harquahala Planning Area.

Limiting all mechanized vehicles to inventoried routes before completing the route designation process (i.e. within 5 years of plan approval) would eliminate cross-country OHV travel throughout the planning area. According to the AGFD Off-Highway Vehicle Strategic Plan (AGFD 1998), cross-country travel accounts for five percent of activities. Accordingly, this limitation would not affect most OHV users. Restricting all motorized and non-motorized *vehicles to existing routes would not affect current activities or public access, but would prevent developing new routes to expand the recreational experience.*

Alternative C

In Agua Fria National Monument, 129 miles, or 69.7 percent, of routes would remain open to vehicular travel. The route system developed under *Alternative C* would create loop trails for motorized touring and add new routes to bypass private property. About 6 miles of new routes would be developed and would affect motorized recreation opportunities and public access by maintaining route connectivity in the event of private land closures.

The impacts on opportunities for motorized recreation in the Bradshaw-Harquahala Planning Area would be similar to those under *Alternative B*, but the model route system for *Alternative C* would close 382 miles of routes (mainly in

ACECs and lands allocated to maintain or enhance wilderness characteristics). In the rest of the planning area, 1,889 miles of routes would remain open, and 382 miles of potential closures would be mitigated by up to 26 miles of new routes. The total distance of open routes would be 1,915 miles or 15 percent less than the existing routes and 9 percent less than in *Alternative B.*

The impacts on opportunities for motorized recreation in the Bradshaw-Harquahala Planning Area would be similar to those under *Alternative B,* but the total distance of open routes would be 1,915 miles or 15 percent less than the existing routes under *Alternative A* and 9 less than in *Alternative B*. As a result, traditional users could be displaced and recreation opportunities diminished.

Alternative D

In Agua Fria National Monument, 47 miles, or 27.8 percent, of routes would remain open to vehicular travel. The route system under *Alternative D* was developed mainly for resource protection and would not add new routes. Opportunities for motorized recreation would be limited or foregone, as loop trails would not be developed. The route system would close 101 miles of existing routes and this action would displace or eliminate opportunities for motorized recreation and public access to some areas.

The impacts of route designations on the Transportation and Public Access network within the Bradshaw-Harquahala Planning Area would be similar to those under *Alternative B*, except *Alternative D* would close 412 miles of routes in ACECs and lands allocated to maintain or enhance wilderness characteristics. The motorized recreational experience and opportunities of vehicle users would be lessened or eliminated in some areas by enacting specific route, wash, or area closures. Route closures would diminish or displace opportunities for traditional users, and route and area closures could result in the disconnection of multiple routes in the network. Some motorized use and public access would be foregone all together.

In the rest of the planning area 1,645 miles of routes would remain open, and 723 miles of potential closures would be mitigated by developing 62 miles of new routes. The total distance of open routes would be 1,706 miles, representing a loss of 24 percent of the existing routes.

***Alternative E* (Preferred Alternative)**

The route network within the Agua Fria National Monument under the preferred Alternative would retain 101 miles of existing route and construct 1 mile of new route to enhance connectivity. About 70 miles of route would be closed. Impacts to recreation from the preferred route network would be similar to *Alternative C.*

A total of 211 miles of routes would be closed to protect resources, to reduce redundancy, and to limit routes for administrative use. Thirty-nine miles of new routes would be established to mitigate losses from the closures and to achieve better route connectivity. The total length of open routes would be 2,028 miles. The closures represent nine percent of the routes in the planning area. OHV management and route closures in ACECs and lands allocated to maintain or enhance wilderness characteristics to achieve recreation settings would somewhat reduce the amount of lands open to vehicle-based motorized recreation and public access. Most closures would occur in lands allocated to maintain or enhance wilderness characteristics in the vicinity of Black Butte, and within the Belmont Mountains and in the Harquahala Mountain and Black Butte ONAs.

Developing connecting route networks and public access for hikers, bicycles, OHVs, and equestrians would benefit recreational opportunities because all types of users could enjoy activities consistently, in more areas, and with fewer interruptions. Once completed, the Black Canyon Trail from the Carefree Highway to north of Highway 69 would become a major trail of regional significance for mountain

bikers, equestrians, and hikers. Moreover, the trail would link the communities of the Black Canyon corridor and the north boundary of the Phoenix-Peoria metropolis.

Limiting and reducing current levels of motorized access on 216,900 acres in nine areas would impede the ability of motorized recreational users to access and travel some secondary and tertiary routes, washes, and single-track cattle paths in these areas.

Managing the North Black Canyon Trail RMZ would enhance the non-motorized recreation access by assuring long-term access to the trail as well as connections to public land to the south and Forest Service land to the north and east.

Impacts of limiting all mechanized vehicles to inventoried routes before completion of the route designation process would be similar to *Alternative B.*

4.20.8 From Visual Resource Management

***Alternative A* (No Action)**

Visual resource management would have no effect on the current Transportation and Public Access network. New motorized and non-motorized routes would be developed on a case-by-case basis and could probably be developed across most of the Bradshaw-Harquahala planning area. VRM would have little effect on the AFNM, as the proclamation already significantly restricts development of new travel routes incompatible with monument objects.

***Alternatives B, C, D* and *E* (Preferred Alternative)**

Designation of VRM I and II classes across assorted landscape allocations and areas within the Bradshaw-Harquahala Planning Area could restrict or modify the construction of new travel routes or the realignment of existing travel routes if such routes were inconsistent with VRM management objectives. Management would be strict in designated wilderness with Class I VRM designation and with few major motorized travel routes authorized. Non-motorized travel routes would be easier to install due to their smaller scope and effect.

Some travel routes could be developed in ACECs with Class I and II VRM designations, but could be considerably restricted in ONAs with recognized scenic values and landscapes. Installation of new travel routes within Class III and IV VRM class areas would usually be consistent with visual management objectives for these areas, and enable the development of reasonable levels of Transportation and Public Access to and through such areas.

4.20.9 From Rangeland Management

***Alternatives A (No Action), B, C, D,* and *E* (Preferred Alternative)**

Rangeland Management would have little to no effect on the Transportation and Public Access network under any Alternative. Installation of new rangeland developments might slightly increase motorized public access if the routes are made available for public use. On the other hand, the closure or abandonment of rangeland developments could eventually contribute to the loss of public access, as livestock facilities are removed and access routes reclaimed. Vandalism to livestock facilities from public land visitors could potentially lead to the closure of public access routes. Over the long term, closure of travel routes in order to avoid conflicts or protect facilities from vandalism could have the greatest influence on reducing public access

4.20.10 From Minerals Management

***Alternative A* (No Action)**

Mining operations would have no impact on wilderness characteristics within the Agua Fria National Monument as mining is not allowed and the area is closed to mineral entry, mineral sales, and leasing. Wilderness characteristics would probably decline, be impaired, or be foregone over the long-term on Bradshaw-Harquahala Planning Area lands allocated to less protective resource management. Wilderness characteristics could be impaired, decline, or be foregone within the Bradshaw-Harquahala Planning Area in areas not afforded protection of their wilderness characteristics. Over a period of 10 to 20 years, reasonable levels of mining, leasing and sale of mineral materials could adversely affect the wilderness characteristics of naturalness and opportunities for solitude and primitive and unconfined recreation experiences. Without specific management actions in place to maintain and enhance areas with wilderness characteristics, degradation of those characteristics could occur from mineral management actions. In more remote and non-mineralized areas, wilderness characteristics would probably remain unchanged over the life of the plan.

Alternatives B* and *C

Closing the allocation to maintain or enhance wilderness characteristics to mineral material disposal would reduce the potential area for ground disturbance and maintain primitive open space. Long-term impacts on scenery and landscapes would be kept away from areas with wilderness characteristic.

Alternative D

Lands allocated to maintain or enhance wilderness characteristics would be closed to mineral sales, geothermal leasing and mineral entry. There would be little to no impact on wilderness characteristics from future mineral exploration and development as such actions would probably not occur. Natural and primitive conditions would be maintained over the long-term.

***Alternative E* (Preferred Alternative)**

Closing the allocation to maintain or enhance wilderness characteristics to mineral material disposal and sales would reduce the potential for landscapes to be marred by mining and exploration activities. Natural areas and open space would be maintained and conserved.

4.20.11 From Fire Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

No impacts on wilderness characteristics are likely from fire management and suppression operations on public lands within the Agua Fria National Monument and the Bradshaw-Harquahala Planning area.

4.20.12 From Wild Horse and Burro Management

***Alternatives A* (No Action), *B, C, D* and *E* (Preferred Alternative)**

Wilderness characteristics will not be affected by management of wild burro populations or herd areas within the Bradshaw-Harquahala Planning area. There are no wild burro populations within the Agua Fria National Monument, consequently there are no effects.

4.20.13 From Management of Transportation and Public Access

***Alternative A* (No Action)**

No areas are allocated for maintaining or enhancing the management of wilderness characteristics under this Alternative. No impacts on wilderness characteristics would be anticipated within the Agua Fria National Monument. Wilderness characteristics could be impaired, decline, or be foregone on up to 107,510 acres within the Bradshaw-Harquahala Planning Area. Over a period of 20 years, reasonable levels of road and route development, access rights-of-way and other developments requiring roads, along with a general expansion of motorized route systems, could adversely affect the wilderness characteristics of naturalness and opportunities for solitude and primitive and unconfined recreation experiences. In more remote areas, wilderness characteristics might remain unchanged over the life of the plan due to an absence or travel and transportation activities.

Alternative B

The impacts of existing or new travel and transportation activities on lands allocated to maintain or enhance wilderness characteristics would be minimal. Travel and transportation plans and affiliated roads, routes and trails would be compatible to the wilderness character allocation. Development of new non-motorized trails and routes could enhance primitive recreation activities. Wilderness characteristics could be impaired, decline or be foregone due to travel and transportation activities on lands not allocated to maintain or enhance wilderness characteristics, as described under *Alternative A*. These potentially adverse impacts on wilderness characteristics would be of a lesser scale than described under *Alternative A*.

Alternative C

Impacts are similar to those described under *Alternative B* for lands allocated and not allocated to maintain or enhance wilderness characteristics. Potentially adverse impacts on wilderness characteristics; however, would be of a lesser degree than described under *Alternatives A* or *B*.

Alternative D

Impacts are similar to those described under *Alternative B* for lands allocated and not allocated to maintain or enhance wilderness characteristics. Potentially adverse impacts on wilderness characteristics would be considerably less than estimated under *Alternatives A, B* or *C*.

***Alternative E* (Preferred Alternative)**

Impacts are similar to those described under *Alternative C* for lands allocated and not allocated to maintain or enhance wilderness characteristics. The magnitude of impacts on wilderness characteristics would be comparable to the environmental effects described under *Alternative C*.

4.20.14 From Management of Wilderness Characteristics

***Alternative A* (No Action)**

No areas are specifically managed to maintain or enhance wilderness characteristics in the Agua Fria National Monument. However, primitive or semi-primitive non-motorized settings would likely be maintained due to the management guidelines set forth in the monument proclamation (Appendix A), by limiting development of new vehicle routes and roads, and by employing interim protective management prescriptions for suitable WSR segments along the Agua Fria River. For that reason, few adverse impacts to wilderness characteristics are anticipated. There is a lack of short and long-term management actions in the

monument that would directly impact wilderness characteristics.

Wilderness characteristics could be impaired, decline, or be foregone on up to 107,510 acres within the Bradshaw-Harquahala Planning Area. Over a period of 10 to 20 years, reasonable levels of resource use and development, and expansion of motorized route systems, could adversely affect the wilderness characteristics of naturalness and opportunities for solitude and primitive and unconfined recreation experiences. Without specific management actions in place to maintain and enhance areas with wilderness characteristics, degradation of those characteristics could occur from motorized vehicle activities, grazing developments, lands and realty actions, utility development and mining. In more remote areas, wilderness characteristics might remain unchanged over the life of the plan due to a lack of motorized access.

Alternative B

Impacts in the Agua Fria National Monument would be the same as under *Alternative A*, with the exception those wilderness characteristics would by and large be maintained in the monument's backcountry management zones. In the Bradshaw-Harquahala Planning Area, wilderness characteristics would be maintained on 65,120 acres. Non-motorized and natural conditions free of human influences would be conserved. Existing opportunities for solitude and primitive and unconfined recreation experiences would be maintained or enhanced. Overall, the allocation of wilderness characteristics would reduce the access of motorized users. On the other hand, non-motorized visitor uses would increase in these areas as hikers, campers, hunters and sightseers are attracted to protected and non-motorized locales. These non-motorized individuals would be able to recreate in a more natural and remote setting.

Wilderness characteristics would probably be maintained or enhanced over the long-term for lands allocated as proposed WSR suitable segments, ACECs and ONA ACECs. Wilderness characteristics would probably decline, be impaired or be foregone over the long term on lands allocated to less protective resource management. Wilderness characteristics could be impaired, decline or be foregone on over 42,000 acres within the Bradshaw-Harquahala Planning Area in areas not afforded protection of their wilderness characteristics. Over a period of 10 to 20 years, reasonable levels of resource use and development, and expansion of motorized route systems, could adversely affect the wilderness characteristics of naturalness and opportunities for solitude and primitive and unconfined recreation experiences. Without specific management actions in place to maintain and enhance areas with wilderness characteristics, degradation of those characteristics could occur from motorized vehicle activities, grazing developments, lands and realty actions and mining. In more remote areas, wilderness characteristics would probably remain unchanged over the life of the plan due to a lack of access coupled with effective OHV route designations, increased OHV education and signing, and strict OHV law enforcement practices.

Alternative C

Impacts would be similar to *Alternative B*, except 107,510 acres of land would be managed to maintain or enhance wilderness characteristics. Non-motorized users would benefit more than under *Alternative B* as additional lands are allocated to maintaining or enhancing wilderness characteristics. Loss of wilderness characteristics would be minimal under *Alternative C*.

Alternative D

Impacts would be similar to *Alternative C*, except 91,480 acres would be managed to maintain or enhance wilderness characteristics. This Alternative would designate some of the areas described under *Alternatives B* and *C* as ONA ACECs. Wilderness characteristics would also be afforded long-term protection in those

ONA ACECs through the application of protective prescriptions. Impacts on special area designations are described in section 4.21.1. Wilderness values present in over could be degraded or lost about 16,000 acres, and more thoroughly described under *Alternative A*.

***Alternative E* (Preferred Alternative)**

Impacts would be similar to *Alternative B*, except 96,420 acres would be managed to maintain or enhance wilderness characteristics. Non-motorized users would benefit more than under *Alternative B*, but less than under *Alternatives C* and *D*. Wilderness values could be degraded or lost on about 11,000 acres as more comprehensively described under *Alternative A*.

4.21 Impacts on Wilderness Characteristics

4.21.1 From Special Area Designations

***Alternative A* (No Action)**

There would be minimal impacts on wilderness characteristics under this Alternative in the Agua Fria National Monument. Wilderness characteristics would probably be maintained over the long term for lands allocated as proposed Agua Fria River WSR suitable segments. The wilderness characteristics on 9,660 acres within the Larry Canyon and Perry Mesa ACECs would remain unchanged. In the remainder of the monument, few adverse impacts to wilderness character are anticipated. No identified short and long-term management actions are anticipated that would directly impact wilderness characteristics. Special Area Designations would have no effect on wilderness characteristics within the Bradshaw-Harquahala Planning Area.

Alternative B

The absence of the Larry Canyon and Perry Mesa ACECs would little affect wilderness characteristics as both areas are protected within the Aqua Fria National Monument. No identified short and long-term monument management actions that directly or indirectly impact wilderness characteristics are anticipated. Special Area Designations would have no effect on wilderness characteristics within the Bradshaw-Harquahala Planning Area.

Alternative C

No areas would be specifically managed to maintain or enhance wilderness characteristics in the Agua Fria National Monument. Wilderness characteristics would probably be maintained over the long term for lands allocated as proposed Agua Fria River WSR suitable segments. Wilderness characteristics on 460 acres encompassed by the Larry Canyon, Indian Creek, and Lousy Canyon ACECs would be conserved. Elsewhere, no short and long-term monument management actions are anticipated that would directly or indirectly impact wilderness characteristics. Wilderness characteristics extant within the Black Butte Raptor and the Harquahala Mountain ACECs/ONAs would remain relatively unchanged from current circumstances. Other Special Management Designations would not affect identified wilderness characteristics.

Alternative D

No areas would be specifically managed to maintain or enhance wilderness characteristics in the Agua Fria National Monument. Wilderness characteristics would probably be maintained over the long term for lands allocated as proposed Agua Fria River WSR suitable segments. Wilderness characteristics within the 13,070 acre Agua Fria Riparian Corridor ACEC, an ACEC overlapping the proposed Agua Fria River suitable segments, would also be maintained over the long-term. Elsewhere, no short and long-term monument management actions are anticipated that would directly or

indirectly impact wilderness characteristics. Wilderness characteristics within the Baldy Mountain ONA, the Belmont-Big Horn Mountains ACEC, the Black Butte Raptor ACEC, and the Harquahala Mountains ONA would remain relatively unchanged from current conditions and in all probability would be conserved over the long-term. Other Special Management Designations would not affect identified wilderness characteristics.

Alternative E **(Preferred Alternative)**

There would be minimal impacts on wilderness characteristics within the Agua Fria National Monument, since no areas are specifically managed to maintain or enhance wilderness characteristics. Wilderness characteristics would almost certainly be maintained over the long term for lands allocated as proposed suitable segments of the Agua Fria River WSR proposal. In other parts of the monument with identified wilderness character, no short and long-term management actions are anticipated that would directly or indirectly impact wilderness characteristics. Within the Bradshaw-Harquahala Planning Area, wilderness characteristics within the 104,690 acres comprising the Black Butte Raptor and the Harquahala Mountains ACECs/ONAs would remain relatively unchanged from current conditions and be conserved over the long-term. Other Special Management Designations would not affect identified wilderness characteristics.

4.21.2 From Lands and Realty Management

Alternative A **(No Action)**

Lands and Realty management actions would have no effect on wilderness characteristics under *Alternative A*. No areas are identified to specifically manage, maintain, or enhance wilderness characteristics.

Alternative B

Lands and Realty management actions could have a minor effect on wilderness characteristics within the Harquahala Mountain range under *Alternative B*. Under this Alternative 56,040 acres would be allocated to managing or enhancing wilderness characteristics. Providing rights-of-way for access to State lands, utility lines, or communication sites might impact the natural conditions and solitude opportunities within the area. Overall, such impacts would be considered minor since new lands and realty actions must be consistent with VRM objectives and desired future conditions. It is likely that some discretionary lands and realty actions, deemed incompatible with maintaining or enhancing wilderness characteristics, would not be allowed. In view of that, disallowed lands and realty actions would have no effect on wilderness characteristics.

Alternative C

Impacts are the same as described under *Alternative B*, with the exception that five areas totaling 107,510 acres are under consideration for managing or enhancing wilderness characteristics.

Alternative D

Impacts are the same as described under *Alternative B*, with the exception that seven landscape areas totaling 91,480 acres are to be allocated for managing or enhancing wilderness characteristics.

Alternative E **(Preferred Alternative)**

Impacts on Wilderness Characteristics from Lands and Realty Actions are similar to those described under *Alternative B*, with the exception that 96,420 acres are allocated for managing or enhancing wilderness characteristics.

4.21.3 From Management of Soil, Air, and Water Resources

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Management actions undertaken to protect or conserve water and soil resources, or satisfy air quality standards, would, in turn, indirectly maintain wilderness characteristics and providing healthy open space areas near communities, offer a more natural-appearing landscape, and improve primitive recreation experiences for visitors by reducing human intrusions.

4.21.4 From Biological Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

Habitat improvement actions could have a minor effect on areas encompassing wilderness characteristics. Installation of habitat improvements might impact naturalness and impair existing opportunities for solitude and primitive and unconfined recreation. Such outcomes, however, would be considered minor since new biological resource management actions would be consistent with VRM objectives and desired future conditions for lands with wilderness characteristics.

4.21.5 From Cultural Resource Management

***Alternative A* (No Action)**

There are no impacts expected from current cultural resource management or related management actions.

***Alternatives B, C, D,* and *E* (Preferred Alternative)**

Lands with wilderness characteristics could benefit from potential route closures prescribed to protect cultural sites, primarily sites located in or next to lands allocated to maintain or enhance wilderness characteristics. The lands with wilderness characteristics could benefit from reductions in motorized public access, by affording increased opportunities for solitude, and offering expanded non-motorized recreation settings, all direct consequences of route closures. Limiting group size to 25 visitors at some cultural sites could reduce overcrowding and maintain a more natural experience. Development of sites for public use would allow concentrations of users in certain areas. Limiting development in other areas would preserve the natural setting of places with wilderness characteristics.

4.21.6 From Paleontological Resource Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

There are no impacts expected because no paleontological sites are known to exist in the planning areas.

4.21.7 From Recreation Resource Management

***Alternative A* (No Action)**

Increasing use and intensity of recreation next to lands allocated to maintain or enhance wilderness characteristics could result in a loss of some of those characteristics. This effect would be most pronounced on the fringes of areas with wilderness characteristics. The solitude and quality of primitive recreation experiences could decline for some users.

Additionally, potentially growing numbers of non-motorized users could impair solitude

opportunities and contribute to trailing and campsite use impacts along the edge, as well as the interior, of these wilderness characteristics areas. No SRMAs or RMZs would be allocated. As a result, intensive recreation uses would not be directed to areas suitable or compatible for such use. Visitor use would be primarily self-directed and not allocated to appropriate use areas. Both intensive and disperse recreation uses could cause the impairment or loss of wilderness characteristics along the periphery of the wilderness character areas. It is likely that recreation settings would gradually shift over time to more motorized settings and opportunities.

Current management would result in SRPs being issued upon request in both planning areas. Permit requests are expected to grow as the population grows, which could lead to increased numbers of users and conflicts between them; further deteriorating opportunities to experience solitude and wilderness characteristics.

Alternative B

Designating Front Country and Back Country RMZs within the Agua Fria National Monument could benefit wilderness characteristics through management of more intensive recreation uses. Opportunities for solitude would be enhanced in the Back Country RMZ because vehicle intrusions and visitor use numbers would in all probability be constrained.

The restriction of motorized access on lands allocated to maintain or enhance wilderness characteristics in the Bradshaw-Harquahala Planning Area could benefit non-motorized users by allowing them to recreate in a more natural setting. This would assure the availability of these areas for offering outstanding primitive recreational and solitude opportunities.

The reduction in lands available for competitive OHV events and competitive races could help maintain high-quality opportunities to experience more natural settings over the long-term. Establishing criteria to manage larger group activities would help protect wilderness values, enhancing opportunities for solitude. Therefore, permits for commercial and vending operations would be prohibited. The number of SRPs would be limited, though this limitation would still allow for a significant increase over current conditions.

Alternative C

Impacts would be similar to *Alternative B*, except that *Alternative C* proposes further restrictions on motorized use within the planning areas, a larger Back Country RMZ within the Agua Fria National Monument, and fewer SRPs overall. These management actions would offer more solitude opportunities and retain more wilderness characteristics for visitors seeking primitive and unconfined recreation.

Alternative D

Impacts would be similar to *Alternatives B* and *C*, except that *Alternative D* proposes further restrictions on motorized recreational use in the planning areas, more Back Country RMZ acreage within the Agua Fria National Monument, and fewer SRPs overall.

***Alternative E* (Preferred Alternative)**

Impacts would be similar to *Alternative B*, although motorized access would be somewhat reduced and restrictions on SRPs would more closely resemble *Alternative C*.

4.21.8 From Visual Resource Management

***Alternative A* (No Action)**

No VRM standards were applied in the Phoenix RMP (BLM 1988a) or the Lower Gila North MFP. As a result, VRM Class III standards would be applied throughout the planning area outside of designated wilderness (which would be VRM Class I). The application of VRM Class III may eventually lead to some intrusions in to the visual landscape in or around lands

allocated to maintain or enhance wilderness characteristics.

Alternative B

Management of lands allocated to maintain or enhance wilderness characteristics to VRM Class II would retain the current physical setting of 96,150 acres and enhance primitive recreational experiences. Improvements or developments in these areas would be required to meet design criteria to integrate the color, line, form, and texture of the facilities with the surrounding landscape. This would maintain the area with little to no visual impacts from proposed developments and maintain or enhance the landscape's natural appearance and open space values, while meeting other resource management objectives.

Alternative C

Impacts would be similar to *Alternative B*, except 134,920 acres of lands allocated to maintain or enhance wilderness characteristics would be managed to VRM Class II.

Alternative D

Impacts would be similar to *Alternative B*, except 226,400 acres of lands allocated to maintain or enhance wilderness characteristics would be managed to VRM Class I, which would require more stringent design criteria.

***Alternative E* (Preferred Alternative)**

Impacts would be similar to *Alternative B*, except that 55,480 acres of lands allocated to maintain or enhance wilderness characteristics would be managed to VRM Class II.

4.21.9 From Rangeland Management

***Alternative A* (No Action)**

Wilderness characteristics would not be greatly influenced by rangeland management operations practiced within the Bradshaw-Harquahala Planning area or the Agua Fria National Monument. Site specific water projects, fencing, or vegetation projects may impact small areas and associated local recreational users. Any proposed rangeland projects will, however, be developed and installed consistent with the desired future conditions for the project area's biological conditions, recreation settings, and visual resources. Accordingly, potential visual resource impacts will be mitigated and consistent with the management and enhancement of wilderness characteristics.

Alternative B

Impacts on Wilderness Characteristics from Rangeland Management actions would be similar to those presented under *Alternative A*.

Alternative C

Impacts on Wilderness Characteristics from Rangeland Management actions would be similar to those presented under *Alternative A*.

Alternative D

There would be no cattle grazing on public lands under *Alternative D*. Thus, there would be no potential impacts on wilderness characteristics accruing from rangeland management practices.

***Alternative E* (Preferred Alternative)**

Impacts would be the same as presented for *Alternative A*.

4.21.10 From Minerals Management

***Alternative A* (No Action)**

Mining operations would have no impact on wilderness characteristics within the Agua Fria National Monument as mining is not allowed

and the area is closed to mineral entry, mineral sales, and leasing. Wilderness characteristics would probably decline, be impaired, or be foregone over the long-term on Bradshaw-Harquahala Planning Area lands allocated to less protective resource management. Wilderness characteristics could be impaired, decline, or be foregone within the Bradshaw-Harquahala Planning Area in areas not afforded protection of their wilderness characteristics. Over a period of 10 to 20 years, reasonable levels of mining, leasing and sale of mineral materials could adversely affect the wilderness characteristics of naturalness and opportunities for solitude and primitive and unconfined recreation experiences. Without specific management actions in place to maintain and enhance areas with wilderness characteristics, degradation of those characteristics could occur from mineral management actions. In more remote and non-mineralized areas, wilderness characteristics would probably remain unchanged over the life of the plan.

Alternatives B* and *C

Closing the allocation to maintain or enhance wilderness characteristics to mineral material disposal would reduce the potential area for ground disturbance and maintain primitive open space. Long-term impacts on scenery and landscapes would be kept away from areas with wilderness characteristic.

Alternative D

Lands allocated to maintain or enhance wilderness characteristics would be closed to mineral sales, geothermal leasing and mineral entry. There would be little to no impact on wilderness characteristics from future mineral exploration and development as such actions would probably not occur. Natural and primitive conditions would be maintained over the long-term.

***Alternative E* (Preferred Alternative)**

Closing the allocation to maintain or enhance wilderness characteristics to mineral material disposal and sales would reduce the potential for landscapes to be marred by mining and exploration activities. Natural areas and open space would be maintained and conserved.

4.21.11 From Fire Management

***Alternatives A* (No Action), *B, C, D,* and *E* (Preferred Alternative)**

No impacts on wilderness characteristics are likely from fire management and suppression operations on public lands within the Agua Fria National Monument and the Bradshaw-Harquahala Planning area.

4.21.12 From Wild Horse and Burro Management

***Alternatives A* (No Action), *B, C, D* and *E* (Preferred Alternative)**

Wilderness characteristics will not be affected by management of wild burro populations or herd areas within the Bradshaw-Harquahala Planning area. There are no wild burro populations within the Agua Fria National Monument, consequently there are no effects.

4.21.13 From Management of Transportation and Public Access

***Alternative A* (No Action)**

No areas are allocated for maintaining or enhancing the management of wilderness characteristics under this Alternative. No impacts on wilderness characteristics would be anticipated within the Agua Fria National Monument. Wilderness characteristics could be impaired, decline, or be foregone on up to 107,510 acres within the Bradshaw-Harquahala Planning Area. Over a period of 20 years, reasonable levels of road and route development,

access rights-of-way and other developments requiring roads, along with a general expansion of motorized route systems, could adversely affect the wilderness characteristics of naturalness and opportunities for solitude and primitive and unconfined recreation experiences. In more remote areas, wilderness characteristics might remain unchanged over the life of the plan due to an absence or travel and transportation activities.

Alternative B

The impacts of existing or new travel and transportation activities on lands allocated to maintain or enhance wilderness characteristics would be minimal. Travel and transportation plans and affiliated roads, routes and trails would be compatible to the wilderness character allocation. Development of new non-motorized trails and routes could enhance primitive recreation activities. Wilderness characteristics could be impaired, decline or be foregone due to travel and transportation activities on lands not allocated to maintain or enhance wilderness characteristics, as described under *Alternative A.* These potentially adverse impacts on wilderness characteristics would be of a lesser scale than described under *Alternative A.*

Alternative C

Impacts are similar to those described under *Alternative B* for lands allocated and not allocated to maintain or enhance wilderness characteristics. Potentially adverse impacts on wilderness characteristics; however, would be of a lesser degree than described under *Alternatives A* or *B.*

Alternative D

Impacts are similar to those described under *Alternative B* for lands allocated and not allocated to maintain or enhance wilderness characteristics. Potentially adverse impacts on wilderness characteristics would be considerably less than estimated under *Alternatives A, B* or *C.*

***Alternative E* (Preferred Alternative)**

Impacts are similar to those described under *Alternative C* for lands allocated and not allocated to maintain or enhance wilderness characteristics. The magnitude of impacts on wilderness characteristics would be comparable to the environmental effects described under *Alternative C.*

4.21.14 From Management of Wilderness Characteristics

***Alternative A* (No Action)**

No areas are specifically managed to maintain or enhance wilderness characteristics in the Agua Fria National Monument. However, primitive or semi-primitive non-motorized settings would likely be maintained due to the management guidelines set forth in the monument proclamation (Appendix A), by limiting development of new vehicle routes and roads, and by employing interim protective management prescriptions for suitable WSR segments along the Agua Fria River. For that reason, few adverse impacts to wilderness characteristics are anticipated. There is a lack of short and long-term management actions in the monument that would directly impact wilderness characteristics.

Wilderness characteristics could be impaired, decline, or be foregone on up to 107,510 acres within the Bradshaw-Harquahala Planning Area. Over a period of 10 to 20 years, reasonable levels of resource use and development, and expansion of motorized route systems, could adversely affect the wilderness characteristics of naturalness and opportunities for solitude and primitive and unconfined recreation experiences. Without specific management actions in place to maintain and enhance areas with wilderness characteristics, degradation of those characteristics could occur from motorized vehicle activities, grazing developments, lands and realty actions, utility development and mining. In more remote areas, wilderness characteristics might remain

unchanged over the life of the plan due to a lack of motorized access.

Alternative B

Impacts in the Agua Fria National Monument would be the same as under *Alternative A*, with the exception those wilderness characteristics would by and large be maintained in the monument's backcountry management zones. In the Bradshaw-Harquahala Planning Area, wilderness characteristics would be maintained on 65,120 acres. Non-motorized and natural conditions free of human influences would be conserved. Existing opportunities for solitude and primitive and unconfined recreation experiences would be maintained or enhanced. Overall, the allocation of wilderness characteristics would reduce the access of motorized users. On the other hand, non-motorized visitor uses would increase in these areas as hikers, campers, hunters and sightseers are attracted to protected and non-motorized locales. These non-motorized individuals would be able to recreate in a more natural and remote setting.

Wilderness characteristics would probably be maintained or enhanced over the long-term for lands allocated as proposed WSR suitable segments, ACECs and ONA ACECs. Wilderness characteristics would probably decline, be impaired or be foregone over the long term on lands allocated to less protective resource management. Wilderness characteristics could be impaired, decline or be foregone on over 42,000 acres within the Bradshaw-Harquahala Planning Area in areas not afforded protection of their wilderness characteristics. Over a period of 10 to 20 years, reasonable levels of resource use and development, and expansion of motorized route systems, could adversely affect the wilderness characteristics of naturalness and opportunities for solitude and primitive and unconfined recreation experiences. Without specific management actions in place to maintain and enhance areas with wilderness characteristics, degradation of those characteristics could occur from motorized vehicle activities, grazing developments, lands and realty actions and mining. In more remote areas, wilderness characteristics would probably remain unchanged over the life of the plan due to a lack of access coupled with effective OHV route designations, increased OHV education and signing, and strict OHV law enforcement practices.

Alternative C

Impacts would be similar to *Alternative B*, except 107,510 acres of land would be managed to maintain or enhance wilderness characteristics. Non-motorized users would benefit more than under *Alternative B* as additional lands are allocated to maintaining or enhancing wilderness characteristics. Loss of wilderness characteristics would be minimal under *Alternative C*.

Alternative D

Impacts would be similar to *Alternative C*, except 91,480 acres would be managed to maintain or enhance wilderness characteristics. This Alternative would designate some of the areas described under *Alternatives B* and *C* as ONA ACECs. Wilderness characteristics would also be afforded long-term protection in those ONA ACECs through the application of protective prescriptions. Impacts on special area designations are described in section 4.21.1. Wilderness values present in over could be degraded or lost about 16,000 acres, and more thoroughly described under *Alternative A*.

***Alternative E* (Preferred Alternative)**

Impacts would be similar to *Alternative B*, except 96,420 acres would be managed to maintain or enhance wilderness characteristics. Non-motorized users would benefit more than under *Alternative B*, but less than under *Alternatives C* and *D*. Wilderness values could be degraded or lost on about 11,000 acres as more comprehensively described under *Alternative A*.

4.22 Impacts on Social and Economic Conditions

The management actions for the resources that are described for each of the Alternatives would result in both social and economic impacts to people and businesses in and next to the planning areas. In many instances social and economic effects considerably overlap. In general, the greatest effect would be economic, since in most cases the actions described for the Alternatives would not have major social effects in the planning area. The economic base profile completed for this analysis considers socio-economic impacts to be most critical in recreation, livestock grazing, minerals, and lands and corridors.

BLM has collaborated with the public and local communities in developing Alternatives and a number of management actions have been incorporated into the Alternatives to address public concerns. For this reason, substantial adverse social or economic impacts are not expected.

4.22.1 Planning Area Growth and Development

The analysis of social and economic impacts is partially based on land use modeling completed for BLM for the planning areas (Blueline Consulting Group 2004). The model uses one set of assumptions to determine which land would likely have residential growth between the years 2000 and 2025. While limited to one set of assumptions, four modeling analyses varied the vacant land base available to receive the growth according to the BLM's land disposition Alternatives. The detailed methodology, including assumptions, appears in Appendix M.

Growth in and next to the planning areas would continue to affect the resources on BLM's land. Much of the development is likely to occur on lands that the Arizona State Land Department (ASLD) might sell for private development. However, this analysis assumed (for purposes of this RMP) that no ASLD land in the planning areas would be developed. This assumption was made because the future legislative framework governing State land transactions is uncertain (including the potential for the exchange of land between the ASLD and the Federal Government).

According to Blueline Consulting Group GIS models, future development in 2005–2025 would occur on lands that are closer to BLM's lands, compared to the time period 1985–2005, when residential land was developed around and to the east of the Interstate 17 corridor. Both Maricopa and Yavapai Counties would experience continued rapid growth. A small portion of eastern La Paz County is included in the Bradshaw-Harquahala Planning Area, but that part of the county is relatively undeveloped and is expected to experience limited growth through 2025.

In Maricopa County a large proportion of development in the Bradshaw-Harquahala Planning Area would occur on both sides of U.S. Route 60, north and east of the White Tank Mountains, extending to State Route 74 on the north. In Yavapai County, a large proportion of development would be along State Route 69.

Yavapai County would grow at a more rapid rate (70 percent) than Maricopa County (54 percent) during the planning period but would add fewer persons (140,000) than Maricopa County (1,954,000) through 2025. Although Yavapai County has a large amount of land available for development, development on BLM's land to be disposed of under the Alternatives would occur on the lands that are nearer to Yavapai County's current population centers (as described for the growth projection model prepared for this analysis).

Under *Alternatives A, B*, and *C*, BLM would dispose of large tracts of land, which would be available for development. Each of these tracts

of BLM's land is next to large tracts of State land, which this analysis assumed would not be developed. Analysis of land disposal also assumed the following:

- the land would be disposed of within the life of the plan,
- the land would be developed mainly for residential use, and
- other uses such as commercial and light industrial development could also occur.

Population changes could result from increased or decreased economic activity and from changes in amenity values, including mining, ranching, and recreational opportunities, which might increase employment in the managed areas. The changes in population, if any, would have the most impact on the smaller unincorporated places in the planning area, such as Salome-Wenden, Dewey-Humboldt-Mayer, and Black Canyon City.

Potential effects from growth and development might be seen in the loss of ranching and the related western lifestyle. Potential effects might occur in:

- the change in social leadership structure resulting from increases in urban values and
- reduced ranching resulting from changes in allowable grazing.

This effect could be viewed as both social and economic.

The most likely economic effects from management would result from the following:

- changes in recreation visitation levels in both planning areas,
- mining in the Bradshaw-Harquahala Planning Area, and
- ranching activities near communities.

***Alternative A* (No Action)**

Recreation-Related Impacts

Recreation visitation levels are expected to increase from any action that enhances the quality of recreation experiences or creates more facilities or improved access. Increased visitation would be reflected in greater expenditures for goods and services in the local and regional economies. Greater expenditures, in turn, would tend to encourage added business activity and population growth. Growth in business would, in turn, stimulate construction.

Designating Agua Fria National Monument will most likely result in some increased visitor use to the monument and to surrounding areas, particularly given the monument's closeness to the Phoenix metropolitan area. This effect might also increase demand for use of BLM's land next to and near the monument as activities that might be less available in the monument place greater demands on surrounding BLM's lands.

In general, use of BLM's land in the planning areas for a variety of purposes would continue to increase as the population of Maricopa and Yavapai Counties, and Arizona as a whole, continues to increase. This analysis assumes that 70 percent of visitors to the planning areas would come from these counties and that this percentage would remain constant throughout the life of the plan. Additionally, visitation to the planning areas is expected to increase by the rate of the population growth in these counties, which is 55 percent by 2025 (Andereck and others 2002).

In addition to a continued overall increased interest in recreation, growth would also economically affect local communities. A continuation of current access and availability of trails for a variety of recreational purposes would yield continued economic benefit to the communities that provide services compatible with recreation. These services include eating and drinking places, OHV sales and repair businesses, horse boarding and tack businesses, campgrounds, and RV parks. These businesses are part of the services and trade industries, which in earnings and employment continue to be two of the dominant industries in the

planning areas. Continued support of growth trends for these sectors of the economy would benefit communities such as Black Canyon City, the Salome/Wenden area, Prescott, Wickenburg, and Cordes Junction.

OHV use is a significant form of recreation on BLM's lands, as discussed in section 3.15.5. Access for these users would continue to impact the OHV industry, especially in Yavapai and Maricopa Counties. OHV recreation currently accounts for more than $2 billion per year in economic impact in these counties.

Continued use of BLM's lands by equestrian users would also benefit local economies that cater to this group, as discussed in section 3.15.5. For example, the impact from the horse industry on the broader Wickenburg area economy is about $14 million (Beattie and others 2001).

In the long term, as recreation continues to increase through a variety of uses in the planning areas, resource conditions could deteriorate to some extent. As a result, the need for management of the area to monitor and protect the resources would increase.

Ranching, Agriculture, and Livestock Production-Related Impacts

Farming and ranching have historically been significant contributors to the Arizona economy. In recent years, extensive increases in population and urbanization in and near the planning areas have resulted in loss of agricultural land and increased conflicts with farm and ranch operations.

Livestock production resulting from grazing leases on BLM's land is an economic contributor to the local economy in the planning areas. The planning areas have 104 allotments with 932,907 acres of BLM's land that would continue to be open to grazing under current management. About 8,100 cattle, 2,470 sheep, 75 goats, and 87 horses are now grazing on BLM's allotments.

Changes in allowable grazing could affect ranchers in the planning areas. The magnitude of this effect is related to the economic viability and scale of existing ranches. An in-depth study of local ranching economics was not a part of the planning process. Because census data aggregates employment data for ranching with that for all agriculture, forestry, and fisheries, effects to this sector cannot be analyzed using employment data.

However, factors such as livestock production on BLM's land can be evaluated. The following impacts were based on this evaluation. Prohibiting grazing in the Larry Canyon ACEC (which is currently inaccessible to cattle) and in areas suitable or eligible for Wild and Scenic River areas in Agua Fria National Monument has minimal impact on livestock production. The number of livestock in the remainder of the planning areas would remain unchanged. Therefore, under current management the economic impacts of livestock production would not change.

Minerals-Related Impacts

A “RFD scenario,” as required by BLM's Instruction Memorandum 2004-089, has been prepared to describe potential mineral resource development. This scenario forecasts the type of mineral development that might reasonably occur under No Action. It also provides a means of evaluating the impacts of management actions under the other Alternatives.

Actions that increase mining would tend to stimulate the local and regional economies through (1) increased employment and (2) increased demand for goods and services for the mine itself. The duration of this effect would depend upon the size of the mineral deposits and market demand for the products. Conversely, actions that either eliminate or discourage mining; or preclude new mining would tend to decrease, or at least not increase local and regional activity.

Agua Fria National Monument is closed to all forms of mineral entry. Minerals development

in the Bradshaw-Harquahala Planning Area involves mainly saleable materials.

Locatable Minerals

In this Alternative, the Bradshaw-Harquahala Planning Area would generally be left open to mineral location and development. BLM would continue to administer mining of locatable minerals on a case-by-case basis. Unless otherwise allocated, scattered lands and other Federal minerals outside the planning area are open to mineral location and development. Should prices of locatable minerals reach a level that makes it feasible to begin exploration or reopen mines in this area, there would be a positive economic impact in mining employment and earnings. The extent of that impact would not be known until the scope of the activity is determined in the future.

A social element has emerged in the last few years associated with the recreational aspects of prospecting for gold. Numerous prospecting clubs have formed with thousands of members dedicated to weekend casual exploration for gold. These clubs hold many mining claims within the planning area and have regular club events dedicated to finding nuggets of gold and having fun. Though the contribution to local economies from these clubs and events are relatively small, businesses have begun to cater to their needs and support their social structures. Continuation of motorized access in this Alternative will allow continued use by these groups, and the possibility of expansion to new areas.

Saleable Minerals

Continued public sales of mineral materials in the Bradshaw-Harquahala Planning Area on a case-by-case basis would have some economic impact. Unless otherwise allocated, scattered lands and other Federal minerals outside the planning area are open to mineral material disposal on a case-by-case basis, with determinations based on consistency with BLM's management policies and objectives. Generally, BLM sells saleable minerals at market prices. BLM would continue to issue free use permits to the State and to local communities as the need arises. The result would be the continued availability of materials that are in demand for construction throughout Arizona, and particularly in the Phoenix metropolitan area.

Private sales for landscape or decorative rock are expected from within the Bradshaw-Harquahala Planning Area. Sources of comparable sand and gravel are also available on private land throughout the planning area. Many of the private land sources are closer to markets than the BLM's sources. Therefore, the impact of mineral material sales is expected to be slight. The No-Action Alternative would not affect saleable mineral extraction and the use of these commodities.

Leasable Minerals

There are no known viable sources of leasable minerals in the Bradshaw-Harquahala Planning Area; however, all land in the area is now open to mineral leasing, except surface occupancy for oil/gas development is prohibited under current management in riparian areas of the Bumble Bee and Williams Mesa MRMAs, and the Hassayampa River RMA. This analysis assumes that over the 20-year term of the RMP up to two holes would be drilled for producing commercial amounts of gas and oil. Since the planning area has limited identified opportunities for mineral leasing, no measurable economic impacts are expected to result from exploration or development of leasable minerals except for potential areas that might be explored north of the planning area but within the PFO's boundary.

Should exploration or development of leasable resources be pursued, the economic impact of the production of new wells for oil and gas would be determined once the scale of the operation could be more specifically established. Special stipulations would be incorporated into the lease agreement after the results of site-specific environmental assessments for each action are known.

Economic benefits would be seen from the production of new wells, which could potentially result in jobs and revenue for the area in which the wells are drilled.

Lands and Corridors-Related Impacts

Under current management nearly 54,370 acres would be available for disposal.

Until a disposal or exchange occurs, social or economic impacts of the action cannot be easily determined. Generally, increased development on the lands proposed for development would affect the rural lifestyle that many in the area moved there to enjoy. Increased traffic, the need for more public services such as roads and additional utilities, and a loss of rural lifestyle would likely result. Areas that typically have large lots and open spaces would likely be developed at higher densities. Potential increased development would provide added economic opportunities, including an increased tax base for the community and employment from new businesses. However, the disposition of BLM's land would not be a significant growth-inducing action since much of the planning area is growing rapidly and would continue to grow, independent of any BLM's land disposal actions in the future.

Based on the modeling conducted by Blueline Consulting Group, any land proposed for disposal along the Interstate 17 corridor in both Maricopa and Yavapai Counties would likely be developed into residential neighborhoods during the life of the plan. The residential development would lie next to or within 10 miles of Agua Fria National Monument and/or the management units along the interstate corridor. The areas that would be most affected by the land disposal and potential growth are the Dewey-Humboldt-Mayer area and the area south of Agua Fria National Monument near Black Canyon City.

Residents of these two areas are likely to intensively and frequently use nearby BLM's lands. For example, the demand for resources such as decorative rock would come from such areas and resources available near the Interstate 17 corridor are more likely to be used. However, until a known parcel is proposed for disposal or exchange, it is difficult to determine the specific social or economic impact of the action and possible subsequent development.

Continued growth and development, along with opportunities for locating future infrastructure needed for this development, would be supported by retaining the multi-use utility and transportation corridor that includes the Interstate 17 right-of-way and other utility lines. The corridor also includes the eight multiple-use corridors along existing rights-of-way designated in the *Lower Gila North Management Framework Plan* (BLM 1983).

Opportunities to provide ample corridors would support the region's increased growth. The availability of corridors would present the opportunity for construction jobs should transmission lines, pipelines, or other facilities be built in the corridors. These jobs might benefit smaller communities close to the proposed corridors.

Alternative B

Recreation-Related Impacts

Alternative B would offer and encourage developed and primitive recreation in both planning areas. Protecting biological and cultural resources would enhance the quality of the recreation experience and increase visitation. Increased access to cultural resource areas and developing of interpretive media would also increase public interest and visitation. More active management of visitation is intended to enhance the quality of the recreation experience and; therefore, is expected to increase visitation. Trail building and developing facilities for horses and pack animals are expected to increase demand. *Alternative B* would meet the needs of both motorized and non-motorized recreation and would tend to increase overall recreation demand more than the other Alternatives.

Route modeling for *Alternative B* found that this Alternative would designate 2,100 miles of routes. As under *Alternative A*, a continuation of current access and availability of trails for a variety of recreational purposes would economically benefit businesses that provide services compatible with recreation and support the services and trade industries of the economy.

Alternative B proposes eight SCRMAs and nine SRMAs which would increase visitor use in the planning area where they are allocated and developed for public use. This would further benefit businesses that serve visitors.

Alternative B proposes two areas where lands are allocated to maintain or enhance wilderness characteristics and one WHA. These areas are designed to protect the area's primitive nature and allow for more non-motorized types of recreation on a more limited basis, than more active types of uses allowed under SRMAs. Nonetheless, these areas are open to recreation use and would attract visitors to the area, again benefiting economic sectors that support recreation.

Communities such as Black Canyon City, the Salome/Wenden area, Prescott, Wickenburg, and Cordes Junction provide local services to recreationists and would continue to benefit under *Alternative B.*

Alternative B proposes Bloody Basin Road, in Agua Fria National Monument and Constellation Mine Road near Wickenburg as Back Country byways. These designations would have an effect on recreation and visitor uses similar to the designation of Agua Fria National Monument; identifying them as "special" and attracting a certain population for that reason.

Long term impacts of recreation use would be the same as those listed under *Alternative A.*

Ranching, Agriculture, and Livestock Production-Related Impacts

The number of allotments and livestock grazing on BLM's land under *Alternative B* would be the same as under *Alternative A.* Since grazing in riparian areas would be limited to winter (November 1 to March 1), grazing would likely decline but socio-economic impacts would not measurably differ from current management. Impacts from allocating eight SCRMAs cannot be determined until the areas are defined and specific actions are selected. Should areas be restricted from grazing or fenced for protection, livestock production may decrease.

Minerals-Related Impacts

Management actions under *Alternative B* would be more encouraging to mineral exploration and mining than *Alternatives C, D,* or *E* for the Bradshaw-Harquahala Planning Area. Thus, *Alternative B* would tend to generate more mining and greater stimulate local and regional economies than would the other action Alternatives, assuming that mining does not conflict with recreational opportunities or visitation demand.

In the Bradshaw-Harquahala Planning Area, VRM standards would be established, with potential ramifications to mining. The increased cost of compliance with VRM standards might move the impacts from public lands to nearby State or private lands. Overall, the impact to local economies would be low and mining would be expected to remain at current levels.

The evaluation of proposed mining would consider mining's effect on biological and cultural resources. This Alternative is not expected to degrade the quality of the visitor's experience, to impact casual use miners, or prospecting club activities.

<u>Locatable Minerals</u>

Impacts would be similar to *Alternative A,* except the 640 acre Tule Creek ACEC would be closed to mineral location and development. As under *Alternative A,* an increase in prices of locatable minerals would possibly make it

feasible to begin exploration or to reopen mines in the planning area, economically benefiting mining employment and earnings. The extent of that impact would not be known until the scope of the activity is determined. These activities would most likely occur in the northern part of the planning area, affecting communities such as Wickenburg, Yarnell, and Black Canyon City.

The greatest impact to mining would potentially come from VRM. For locatable minerals, allowing mining is a nondiscretionary action outside of areas closed to mining. However, compliance with VRM standards would be imposed through rehabilitation standards. Higher costs of mine closure might be borne by mining companies, and in some cases the portion of bonds returned might be lower. Labor and material cost of increased rehabilitation could extend the economic benefits of mining to local communities if the labor and materials are purchased there.

Saleable Minerals

Impacts would be similar to *Alternative A,* except *Alternative B* would close to mineral material disposal Tule Creek ACEC and two areas allocated to maintain or enhance wilderness characteristics in the Bradshaw-Harquahala Planning Area. This would somewhat limit the potential sites for mining saleable minerals. However, since locations for this mining are unknown, the potential economic impact is also unknown but it is expected to be negligible.

Leasable Minerals

Impacts would be similar to *Alternative A*, except Tule Creek ACEC would be closed to mineral leasing. This would have a negligible impact since the planning area has limited identified opportunities for mineral leasing.

Lands and Corridors-Related Impacts

Impacts and assumptions of analysis would be similar to *Alternative A*, except that 58,400 acres would open to disposal. The 58,400 acres are scattered throughout the planning area and would mainly affect the communities of Dewey, Humboldt, Mayer, and Goodyear for future potential development.

Impacts of utility and transportation corridors would also be similar to *Alternative A*.

Alternative C

Recreation-Related Impacts

Alternative C would favor primitive over developed recreation in Agua Fria National Monument, where visitor access would be more limited than under *Alternatives A* or *B*. The number of commercial and guide/outfitter permits in the monument would possibly be half of those issued under *Alternative B*. Public access to cultural resources would also be more limited than under *Alternatives A* or *B*.

Public access in the Bradshaw-Harquahala Planning Area would be more restrictive than would the *Alternatives A* or *B*, and so would tend to reduce visitation and visitor spending. Biological and cultural resources would be better protected than under *Alternatives A* and *B*, thus somewhat raising the quality of the recreation experience. However, limiting visitor access would reduce the number of people able to enjoy the experience.

The number of SRMAs--which allow more active recreation--would increase visitor use and would benefit businesses that serve visitors. The planning area would be better protected for non-motorized uses by the following actions:

- reducing SCRMAs to four,
- increasing lands allocated to maintain or enhance wilderness characteristics, and
- applying restrictions that would result from designating 11 ACECs.

Overall the restrictions would reduce visitor use in the planning areas and economic benefits of

recreation and visitation would be lower than under *Alternatives A* or *B*, but greater than under *Alternative D*.

Alternative C would designate 1,915 miles of routes. Access and availability of trails for a variety of recreational purposes would result in continued economic benefits to the communities that provide services compatible with recreation. Communities such as Black Canyon City, the Salome/Wenden area, Prescott, Wickenburg, and Cordes Junction provide local services to recreationists and would continue to benefit.

Impacts of proposing Bloody Basin Road in Agua Fria National Monument and Constellation Mine Road near Wickenburg as Back Country byways would be similar to those described for *Alternative B*.

Long term impacts of recreation use would be the same as *Alternative A*.

Ranching, Agriculture, and Livestock Production-Related Impacts

Alternative C would prohibit grazing in riparian areas, reducing the number of allotments to 43, and allowing for more than 4,300 cattle to continue grazing on BLM's land. This would affect local areas and ranchers whose grazing allotments would be eliminated or reduced to the point that their businesses would no longer be viable. The difference between the impacts of *Alternatives A* and *C* on the regional economy would be minimal.

Minerals-Related Impacts

Mining would still be open in most areas but with substantial restrictions in lands allocated to maintain or enhance wilderness characteristics and ACECs. Impacts from this management action would be similar to *Alternative A*. Impacts would be less than *Alternative B* and greater than *Alternative D.*

Locatable Minerals

Impacts would be similar to *Alternative A* except for the closure to mineral location and development in three ACECs and riparian areas. As a result, there could be some economic limitations should suitable areas for mining be found where mining is prohibited.

Casual use miners and prospecting clubs could continue conducting their activities; however, route closures or limitations could make it more difficult, or potentially more expensive, if clubs are required to be responsible for maintaining access to their claims. Road work and reclamation bonds may be required.

Impacts from VRM would increase compared to those under *Alternative B,* but be less than impacts under *Alternative D*.

Saleable Minerals

Impacts would be similar to *Alternative A,* except ACECs and lands allocated to maintain or enhance wilderness characteristics in the Bradshaw-Harquahala Planning Area would be closed to mineral material disposal. As in *Alternative B*, this would somewhat limit the availability of potential sites for mining saleable minerals. Since locations for this mining are unknown, the potential economic impact is also unknown but expected to be negligible.

Leasable Minerals

Impacts would be similar to *Alternative A*, except mineral leasing would be prohibited in four ACECs in the Bradshaw-Harquahala Planning Area and on scattered lands outside the planning area. Since the planning area has a low potential for leasable mineral production, no measurable economic impacts are expected.

Lands and Corridors-Related Impacts

Alternative C considers two options for land disposal:

Under Option One, a total of 600 acres of land would be available for disposal. This analysis assumed that these acres would be developed for

residential use within the life of the plan. Since there is limited disposal or exchange under Option One, the impacts would be similar to those under *Alternative D* for land disposal.

Under Option Two, a total of 49,100 acres would be disposed of or exchanged. The lands are scattered throughout the planning area, mainly in the unincorporated areas of Yavapai and Maricopa Counties. A number of acres are located in the Yarnell area, which would provide a potential opportunity for low-density residential use if the lands were acquired for private purposes. Impacts would be similar to *Alternative A.*

Impacts of retaining the multi-use utility and transportation corridor that includes the Interstate 17 right-of-way would be similar to *Alternative A*, except that the corridor would be narrowed to move it out of Agua Fria National Monument. The opportunities provided by the corridors would continue to support increased growth in the region.

Alternative D

Recreation-Related Impacts

Alternative D is intended to put more emphasis on non-motorized recreation than the other Alternatives, by devoting the greatest area to non-motorized recreation and closing the most area to vehicular access. This Alternative would place stricter limitations on public access to cultural resources than any other. No motorized competitive races would be authorized. Visitation and OHV uses would decline in the planning area, resulting in somewhat lower visitor spending in the local and regional economies.

To the degree that this loss is not offset by an increase in non-motorized use, visitation for recreation would be lower than under the other Alternatives. The economic stimulus to the local and regional economies would also be lower. To the degree that the decline is offset by increased non-motorized recreation, the difference between the impacts of *Alternative D* and the other Alternatives would not be so great.

Alternative D would designate 1,707 miles of routes in the planning areas, the fewest miles under any of the Alternatives. Access to BLM's lands would continue to exist, and trails could be used for a variety of recreational purposes. However, trails would be more limited than under the other Alternatives. *Alternative D* could result in fewer economic benefits to the communities which provide services compatible with recreation.

The reduced number of SRMAs, which allow more active recreation, would affect visitor use and have a smaller impact on businesses that serve recreationists. *Alternative D* would create more protection for other non-motorized recreation uses in the planning area through the following actions:

- reducing the number of SCRMAs to two,
- increasing the number of areas allocated to maintain or enhance wilderness characteristics to six, and
- restricting access by designating eight ACECs.

Overall, these measures would reduce visitor use in the planning area.

Communities such as Black Canyon City, the Salome/Wenden area, Prescott, Wickenburg, and Cordes Junction provide local services to recreationists and would continue to benefit. However, benefits could possibly be less than under *Alternative C.*

Ranching, Agriculture, and Livestock Production-Related Impacts

Alternative D would prohibit grazing on BLM's lands. This prohibition would significantly affect holders of grazing leases and local economies, reducing livestock production in the State. In 2002 a total of 36,000 head of cattle were raised in Maricopa and Yavapai Counties. A reduction of 8,000 head would reduce

livestock production in the two counties by 20 percent.

Minerals-Related Impacts

Alternative D, with its emphasis on natural landscapes and primitive recreation opportunities, would be the most restrictive to mining. Both exploration and development would be strictly limited. This Alternative would tend to more or less eliminate mining via attrition over the duration of the plan. It would also reduce mining-related additions to the local and regional economies. No one knows whether this effect on local and regional economies would be offset by additions caused by visitation.

Locatable Minerals

Impacts would be similar to *Alternative C*, except that the areas closed to mineral location and development would be the greatest under this Alternative. As a result, economic opportunity would be limited to a greater extent than under other Alternatives, especially if suitable sites were identified for areas where no mining would be allowed.

Impacts from VRM would increase under this Alternative as compared with *Alternative B* because more acreage would be classified as VRM I and II.

Saleable Minerals

Impacts would be similar to *Alternative C,* except the closure to mineral material disposal of a number of ACECs and lands allocated to maintain or enhance wilderness characteristics would limit the availability of potential sites for mining saleable minerals more than any of the other Alternatives. However, locations for this mining are unknown, so the potential economic impact is also unknown. It is estimated that short term demand would continue to be met with production on both Federal and non-Federal lands. As the population continues to grow and demand increases, future demand may not be met and increased costs of importing building material will result in increased building costs in all parts of the economy.

Leasable Minerals

Impacts would be similar to *Alternative A*, except mineral leasing would be prohibited in a number of ACECs and lands allocated to maintain or enhance wilderness characteristics. Since the planning area has a low potential for leasable mineral production, measurable economic impacts are not expected.

Lands and Corridors-Related Impacts

Under *Alternative D*, no BLM land would be available for disposal. As stated previously, the disposition of BLM's land would not be a significant growth-inducing action, and so *Alternative D* would have no measurable impacts.

The unavailability of land as a result of no disposal does present a potentially positive social impact on the planning area, in that it would contribute to preserving the current rural lifestyle throughout much of the planning area.

The proposed reduction in the level of corridors under *Alternative D* would support continued economic development and growth in the region. *Alternative D* would somewhat constrain the citing of potential utilities in the corridors in the future, but their allocated corridors should be sufficient to meet local demand.

***Alternative E* (Preferred Alternative)**

Recreation-Related Impacts

Alternative E would favor primitive recreation opportunities over developed opportunities in the Agua Fria National Monument. Visitor access would be more limited than under *Alternatives A, B*, or *C*. However, visitor services and opportunities for structured or developed recreation would be greater than under *Alternative D.* The RMP would not set the number of commercial permits and

guide/outfitter permits in the monument. This number would be determined by monitoring resource conditions. Users could thus determine the limits for SRPs because resource conditions depend on social behaviors. If visitors use existing disturbances and take care not to expand them or degrade the quality of the surroundings, the capacity to support SRPs of many kinds would be higher than if visitors are inconsiderate of the land.

Public access to cultural resources in the Agua Fria National Monument area would also be more limited than under *Alternatives A, B,* and *C* because more routes would be closed; nevertheless, more routes would be designated as open than under *Alternative D*. Visitation is expected to shift from people desiring a motorized experience to people desiring a non-motorized experience. This shift is expected to reduce total visitation to the monument and result in somewhat lower visitation-related spending in the local and regional economies.

Public access would be restricted in the Bradshaw-Harquahala Planning Area more than *Alternative B, but less than Alternatives C* and D. Visitation and visitor spending are likely to be lower for this Alternative than for *Alternatives A* and *B*, but higher than for *Alternatives C* and *D*. The effect of this restriction would be most pronounced in the Harquahala MU, where most ACECs and lands allocated to maintain or enhance wilderness characteristics are located, although this MU now receives relatively low visitation.

Vehicle routes that would be designated as open are expected to accommodate use at current levels. Increased opportunities for non-motorized experiences in natural primitive landscapes might increase overall visitation, but the types of new users attracted to the area are not expected to greatly increase visitor spending in the local and regional economies.

In the Bradshaw-Harquahala Planning Area outside of the Harquahala MU, *Alternative E* would be similar to *Alternative C*. Allocating SRMAs to develop facilities and manage more intensive recreation, especially for motorized uses, would somewhat concentrate those activities. The improved facilities could attract more users to areas managed for more intensive recreation but might also cause people looking for a less-structured location to move to new areas. Overall, use is expected to increase where motorized users are managed and access is maintained. User satisfaction would also improve, along with opportunities for citizen stewardship. The Black Canyon, Castle Hot Springs, and Hassayampa MUs would experience most of the change resulting from these management actions. Overall, the economic benefits of recreation under *Alternative E* are expected to be lower than under *Alternatives A, B*, and *C*, but greater than under *Alternative D*.

Route modeling for the Preferred Alternative indicates 2,067 miles of route might be designated. The route network is expected to be similar to that modeled under *Alternative B*. A continuation of current access and availability of trails for a variety of recreational purposes would result in continued economic benefits to the communities that provide services compatible with recreation.

Under *Alternative E* six SCRMAs would contain sites allocated to public use, which would have impacts similar to *Alternative B*. The increase in areas allocated to maintain or enhance wilderness characteristics and the restrictions that would result from designating four ACECs would better protect the planning area for other non-motorized uses. These restrictions might reduce, or at least cap at current levels, visitor use in the vicinity of the allocations and designations.

Communities such as Black Canyon City, the Salome/Wenden area, Prescott, Wickenburg, and Cordes Junction provide local services to recreationists and would continue to benefit from recreation under *Alternative E*.

Consideration of Bloody Basin Road in Agua Fria National Monument and Constellation Mine

Road near Wickenburg for allocation as back Country byways would have impacts similar to those under *Alternative B.*

In the long term, as recreation continues to increase through a variety of uses in the planning area, resource conditions would deteriorate somewhat. Through the mix of (1) allocations to protect primitive landscapes and (2) development to manage and support motorized and other more intensive recreation, resource conditions are expected be maintained at current levels and to be sustainable throughout the life of the plans.

Ranching, Agriculture, and Livestock Production-Related Impacts

Impacts would be similar to *Alternative B*, except six SCRMAs would be allocated, which might result in areas being fenced for protection. The number of allotments and livestock grazing on BLM's land would be the same as under *Alternative A*. Since grazing in riparian areas would be limited to winter (November 1 to March 1), livestock production would likely decline but would not measurably differ from current management. Effects are expected to be negligible.

Minerals-Related Impacts

Management actions under Alternative E would be similar to those described for *Alternative A*, except that in the Bradshaw-Harquahala Planning Area the establishment of VRM standards would have impacts similar to those described for *Alternative B*. Overall, the impact to local economies would be low.

Impacts to casual miners and prospecting clubs are expected to be similar to *Alternative B*.

Locatable Minerals

Impacts would be similar to *Alternative B*, except that riparian areas in reconveyed lands, mainly in the Black Canyon area between Black Canyon City and Bumblebee, would be closed to mineral location and development along with Tule Creek ACEC.

Impacts to mining from VRM would be similar to *Alternative B,* except that fewer acres (11,830) would be allocated to VRM Class II and Class IV (7,930), and more acres (19,760) would be allocated to VRM Class III.

Impacts to casual miners and prospecting clubs are expected to be the same as for *Alternative B.*

Saleable Minerals

Impacts would be similar to *Alternative A,* except Tule Creek ACEC and riparian areas in the planning area would be closed to mineral material disposal, limiting slightly the potential sites for mining of saleable minerals. Data on the potential for this material show that this material is generally not in the areas that would be closed, so impacts are expected to be minimal.

As with locatable mining, VRM standards might affect mineral material and decorative rock mining. Permitting of saleable minerals is a discretionary action and the inability of a proposal to comply with VRM standards could be a reason to deny it. If VRM standards prove to be an unacceptable economic burden on the industry, demand is expected to be met from State or private sources. The environmental impacts (and revenues) would then shift off of public lands, but there would be no net change to the economies of local communities.

Leasable Minerals

Impacts would be the same as for *Alternative B.*

Lands and Corridors-Related Impacts

Impacts would be similar to *Alternative A*, except a total of 38,755 acres would be available for disposal by sale or exchange. The lands are scattered throughout the planning area and would mainly affect the future potential development of the communities of Buckeye,

Goodyear, Wickenburg, and the greater Phoenix area.

Impacts of utility and transportation corridors would be similar to *Alternative A*.

4.23 Environmental Justice

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority and Low-Income Populations," was issued in 1994. The objective of this order was to preclude Federal actions from creating disproportionate impacts to minority and low-income populations.

Table 4-9. Hispanic Populations within Human Resource Units

Hispanic Populations within Human Resource Units		
HRU/CRU	**% of Hispanics in Population**	**% Points Exceeding County % of Hispanics**
Yavapai County (10% Hispanic)		
Wickenburg HRU	11	1
Aguila CRU	16	6
Maricopa County (25% Hispanic)		
Phoenix HRU	27	2
Tolleson HRU	78	53
Buckeye HRU	26	1
Buckeye CRU	28	3
West Tonapah CRU	32	7
% People Living Below Federally Mandated Poverty Level		
HRU/CRU	**% Below Poverty Level in Population**	**% Points Exceeding County % Below Poverty Level**
Yavapai County (12% Below Federally Mandated Poverty Level)		
Wickenburg HRU	14	2
Aguila CRU	20	8
Yarnell CRU	16	4
Agua Fria CRU	15	3
Maricopa County (12% Below Federally Mandated Poverty Level)		
Phoenix HRU	13	1
Buckeye HRU	17	5

The relevant data needed to evaluate possible environmental justice effects (i.e. total and changes in minority populations and income levels) were presented in section 3.16. Table 4-9 shows HRUs and CRUs whose percentage of Hispanic populations and percentage of populations living below the federally mandated poverty level exceed those of their counties.

Analysis of the data presented in Chapter 3 did not find that implementing any of the proposed Alternatives would result in disproportionate adverse plan-related effects on minority or low-income groups. Nothing inherent in the proposed Alternatives would cause any statistically significant changes to ethnic composition of the resident populations. There is no indication that any of the Alternatives would have substantial adverse economic effects on any particular ethnic group or any particular income group as compared to others.

4.24 Cumulative Impacts

Cumulative impacts are the combination of the effects of past, present, and future foreseeable actions; in combination with the effects of each Alternative. With a large-scale regional plan such as this, many of the impacts discussed under each topical resource area are, in essence, cumulative impacts. Nevertheless, NEPA requires that the impacts occurring in the entire planning area be separately and specifically addressed.

The future foreseeable actions would include the following:

- population growth in and next to the planning area that would increase residential and commercial development on private lands in both Yavapai and Maricopa Counties,
- continued grazing,
- potential minerals development,
- increased recreational uses on BLM's lands,

- activities on lands under the jurisdiction of other Federal and State agencies.

The Alternatives could affect several resources and resource uses, including soils, air quality, water resources, and social and economic conditions.

Urbanization, mineral development, and increased outdoor recreational use of private and State lands in central Arizona are likely to continue throughout the life of the RMP. Cumulative impacts on wildlife might include the loss of wildlife habitat, including Sonoran desert tortoise and pronghorn antelope habitat; and migration corridors in the planning areas and on adjacent Federal, State, and private lands.

This section provides information relevant to the cumulative impacts for each Alternative, including a discussion about cumulative impacts as they relate to Population Growth and Development, Recreation/Visitation, Air Quality, Soils, Water Resources, and Wild Horse and Burro Management.

***Alternative A* (No Action)**

Population Growth and Development

As stated in section 4.22.1, potential cumulative effects of growth and development many include (1) the loss of ranching and the related western lifestyle and (2) change in social leadership structure resulting from increases in urban values and reduced ranching. In general, the greatest effects would be related to economics, since the actions proposed in the Alternatives would not, in most cases, have major social impacts in the planning areas.

Under current management 54,370 acres of BLM's land would be available for disposal by sale or exchange. The disposition of BLM's land is not expected to be a significant growth-inducing action, since much of the planning area is growing rapidly and would continue to grow independent of any BLM's land disposal in the future.

Therefore, *Alternative A* would have no measurable cumulative impact on growth and development in the State, growth in and next to the planning areas would continue to cumulatively impact resources on BLM's land.

Recreation/Visitation

The most likely cumulative effects would be related to changes in visitation levels in both planning areas. Cumulative impacts would include intensified use in certain areas, especially for motorized activities, as recreation increases and growth and development occur near recreation areas. General plans for the counties and area communities include provisions for open space, which is usually for parks or non-motorized recreation, further concentrating motorized activities on BLM's land.

Increased visitation is expected to result in increased spending for recreational goods and services. Communities such as Black Canyon City, the Salome/Wenden area, Prescott, Wickenburg, and Cordes Junction provide local services to recreationists and would continue to benefit from recreation under the current management.

Air Quality

The main air quality issue affecting the planning area is also related to forecast population growth in the planning area, especially the rapid growth in the Phoenix nonattainment areas. A secondary air quality issue is increased emissions from additional OHV use in the planning areas. A third cumulative impact issue is population increase in rural areas.

Cumulative air quality impacts in the planning areas have been adequately addressed by the air quality nonattainment plans and air quality maintenance plans that MAG and ADEQ have been required to prepare for approval by the EPA as described in section 3.4.2 Air Resources. These plans are required because the Phoenix area is already a nonattainment area for

several air pollutants and these plans are, in reality, quantitative cumulative air quality impact assessments.

Emissions from OHVs would likely begin to decrease in 2006 and might offset the expected future increase in OHV numbers (EPA 2003). In that case, increased OHV use would cause increased fugitive dust impacts immediately near the roads and trails on which they are driven and future cumulative OHV tailpipe emissions would probably contribute a proportionately smaller fraction of future regional air pollutant emissions.

Soils

The cumulative effects for soils would be generally limited to a particular site. Management practices in the planning areas and activities on private lands have led to some detrimental soil conditions, some of which persist. Additionally, as private lands continue to be rapidly developed, especially near the Phoenix metropolitan area, soil becomes compact and displaced. As a result, loss of vegetation and impacts to watershed conditions may occur. Soil productivity in these areas is lost for all practical purposes.

Water Resources

The cumulative effects for water resources would be similar under all Alternatives. Watersheds integrate the effects of all activities within their boundaries. Therefore, activities on private *and* public lands affect water resources. The impacts of development on soil cumulatively affect watershed conditions. As a result, many watercourses in central Arizona have been degraded by increased sediment load due to urbanization, livestock grazing, and recreation. Furthermore, leachate from mining has historically degraded water quality in the region. Under *Alternative A*, these activities would continue and so affect water resources.

Wild Horse and Burro Management

The Lake Pleasant HMA, containing 80,800 acres, and the Harquahala HA, containing 156,255 acres, are both entirely within the Bradshaw-Harquahala Planning Area.

The only source of cumulative affects would be the ability of horses and burros to move from one location to another in response to management actions or natural conditions.

The Taylor Grazing Act, WHBA, and FLPMA require the following:

- that wild horses and burros be managed in a multiple use context,
- that wild horses and burros be afforded equal allocation of available AUMs of forage on a per-animal basis,
- that the number of livestock present be consistent with grazing permit levels;
- that number of horses or burros present consistent with the AML; and
- that wildlife requirements be estimated.

The Arizona Standards for Rangeland Health and Guidelines for Grazing Administration establish cumulative effects considerations for the threshold of significance. The total utilization of a rangeland must create conditions that meet these standards. If combined wild horse, burrow and livestock grazing reduce rangeland condition below the standard levels, then cumulative effects have occurred. By definition, cumulative effects cannot occur where AUM allocations are proportional. Cumulative effects might occur on private, State, or other Federal lands where AUM allocations are not proportional, i.e., where horses and burros have not been part of the allocation formula. If horses and burros move onto these lands and add their grazing pressure to the existing levels, then the cumulative effect might result in a rangeland condition that is below standard.

Animal numbers are carefully managed in the Lake Pleasant HMA and the small herd sizes in the Harquahala HA make that herd unsustainable. In addition, gathered animals are generally moved out of the area. Therefore,

burro management is not expected to result in noticeable cumulative impacts.

Alternative B

Population Growth and Development

Growth and development in and next to the planning areas would continue to have a cumulative impact on the resources. BLM's resources would also be impacted in the same manner as under *Alterative A*, except that 58,400 acres of land would be available for disposal by sale or exchange.

Recreation/Visitation

Cumulative impacts from recreation and visitation would increase over those in *Alternative A*. *Alternative B* is expected to increase visitation more than under the other Alternatives because:

- Developed and primitive recreation opportunities would be available and encouraged in both planning areas.
- Increased access to cultural resources and developing interpretive media would increase public interest and visitation.
- More active visitor management would enhance the recreation experience.

Visitor use in the planning areas would also increase in response to:

- allocating more SRMAs,
- designating the Bloody Basin and Constellation Mine Roads as back country byways, and
- allocating more SCRMAs.

The trend toward non-motorized recreation in areas of urban development would be similar to that under *Alternative A*.

Air Quality

The cumulative impacts to air quality under *Alternative B* are expected to be similar to those under *Alternative A*. The impacts to air quality from construction and mineral exploration or development would continue at essentially the same magnitude as described for *Alternative A*, and would be similarly addressed by MAG in their air quality maintenance plans.

Recreation that would create OHV emissions and particulates generated in the rural areas would not vary significantly from those under *Alternative A*. *Alternative B* would reduce the miles of trails open to recreation by three percent from that under *Alternative A*. Areas open to OHV use and potential mining would be greater than under the other Alternatives, but the air quality impacts on the region would be minimal.

Soils

The cumulative effects to soils under *Alternative B* are expected to be similar those under *Alternative A*.

Water Resources

The cumulative effects to water resources under *Alternative B* are expected to be similar as those under *Alternative A*.

Wild Horse and Burro Management

Cumulative impacts would be similar to those described for *Alternative A*, except that burros in the Harquahala HA would not be a managed herd, and nuisance animals and burros harming sensitive habitats would be removed.

Alternative C

Population Growth and Development

Growth and development in and next to the planning areas would continue to have a cumulative impact on the resources on BLM resources in the same manner as under *Alterative A*, except that under *Alternative C* 49,100 acres of land would be available for disposal by sale or exchange instead of 54,370 acres.

Recreation/Visitation

Cumulative impacts of recreation and visitation would decrease under *Alternative C* as compared to *Alternatives A* and *B*. This Alternative would favor primitive recreation opportunities over developed opportunities, and visitor access for motorized activities would be more limited. Such restricted use is expected to reduce visitation because motorized use accounts for three of the five most popular activities in the planning area. This reduction; therefore, would somewhat lower visitation spending in the local and regional economies. Overall, the beneficial economic effects of recreation and visitation would be lower than under *Alternatives A* and *B*, but greater than under *Alternative D*.

Alternative C would better protect the planning areas for non-motorized used by:

- reducing the number of SCRMAs,
- increasing areas allocated to maintain or enhance wilderness characteristics , and
- imposing motorized access restrictions by designating 11 ACECs.

Air Quality

The cumulative impacts to air quality are expected to be similar to those under *Alternative A*.

Recreation that would generate OHV emissions and particulates in rural areas would not vary significantly from that under *Alternative A* and air quality impacts in the region would be minimal. *Alternative C* would reduce the miles of trails open to recreation as compared to *Alternatives A* and *B*. The area opened to potential mining would be less than *Alternative B*, but greater than under *Alternative D*.

Soils

The cumulative effects to soils are expected to be similar to those under *Alternative A*.

Water Resources

The cumulative effects to water resources are expected to be similar to those under *Alternative A*.

Wild Horse and Burro Management

Cumulative impacts would be the same as those for *Alternative B*.

Alternative D

Population Growth and Development

Under *Alternative D,* BLM would not dispose of any land. Because the disposition of BLM's land would not be a significant growth-inducing action, cumulative impacts would be the same as under *Alternative A*.

Recreation/Visitation

Impacts from recreation would be reduced the most under this Alternative. *Alternative D* would devote more area to non-motorized recreation and close more areas to vehicular access than would the other alternatives. The gradual phase-out of motorized uses in the Hieroglyphic Mountain and Bradshaw Foothills areas would change the general recreation setting to more non-motorized uses. Overall, the number of visitors to the planning area would be reduced, along with visitor spending.

The planning area would be better protected for non-motorized uses by the following actions:

- reducing the number of SRMAs and SCRMAs,
- increasing areas allocated to maintain or enhance wilderness characteristics, and
- restricting motorized access by designating eight ACECs.

Air Quality

The cumulative impacts to air quality are expected to be similar to those under *Alternative A*.

Recreation generating OHV emissions and particulates in rural areas would possibly be less than under *Alternative A*, given more restrictions on areas open to OHV use and competitive events. *Alternative D* would reduce the miles of trails open to recreation use from that under *Alternative A*, but the air quality impact on the region would be minimal.

Soils

The cumulative effects to soil are expected to be less than those under any other Alternative, given that recreation and mining would be more restricted and grazing would be prohibited.

Water Resources

The cumulative effects on water resources are expected to be less than those under any other Alternative, given that recreation and mining would be more restricted and grazing would be prohibited.

Wild Horse and Burro Management

Cumulative impacts would be the same as under *Alternative B.*

***Alternative E* (Preferred Alternative)**

Population Growth and Development

Growth and development in and next to the planning areas would continue to have a cumulative impact on BLM's resources in the same manner as under *Alternative A*, except that 38,755 acres would be available for disposal by sale or exchange.

Recreation/Visitation

Alternative E would favor primitive over developed recreation in the Agua Fria National Monument area. Visitor access would be more limited than under *Alternatives A*, *B*, and *C*, but visitor services and opportunities for structured or developed recreation would be greater than under *Alternative D*.

Alternative E would also restrict public access in the Bradshaw-Harquahala Planning Area more than *Alternative B,* but less than *Alternative C;* and would tend to reduce visitation. *Alternative E* would result in somewhat less visitor spending in the local and regional economies than *Alternatives A* and *B*, but more than *C* and *D*. The effect of the management actions might be offset over time by the shear growth in recreation demand from population growth in the region.

The planning area would be better protected for non-motorized uses by the following actions:

- reducing the number of SCRMAs,
- increasing areas allocated to maintain or enhance wilderness characteristics, and
- restricting motorized access by designating four ACECs.

Air Quality

The cumulative impacts to air quality under *Alternative E* are expected to be similar to those under *Alternative A.*

Recreation that would generate OHV emissions and particulates in rural areas would not vary significantly from that under *Alternative A*. The miles of trails open to recreation would decline from those under *Alternative A* and areas with routes open to OHV use would be similar to those under *Alternative B*. Areas open to mining would be similar to those under *Alternative A*. The air quality impact on the region would be minimal.

Soils

The cumulative effects to soils under are expected to be less than those under *Alternatives A* and *B* because motorized recreation would be more restricted and fewer acres would be available for disposal and eventual development. Impacts would be more than those under *Alternatives C* and *D.*

Water Resources

The cumulative effects to water resources are expected to be less than those under *Alternatives A* and *B* because motorized recreation would be more restricted and fewer acres would be available for disposal and eventual development. Impacts would be more than those under *Alternatives C* and *D.*

Wild Horse and Burro Management

Cumulative impacts would be the same as under *Alternative B.*

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Indian Nations, Tribes and Councils

Ak-Chin Indian Community
Gila River Indian Community
Hopi Tribal Council
Salt River Pima-Maricopa Community Council
Yavapai-Prescott Tribe

Federal Agencies

Department of Agriculture
- Forest Service
  - Prescott National Forest
  - Tonto National Forest
- Natural Resource Conservation Service

Department of Defense
- Air Force
- Army Corps of Engineers

Department of Energy
- Western Area Power Administration

Department of the Interior
- Bureau of Indian Affairs
- Bureau of Reclamation
- Fish and Wildlife Service
- National Park Service Department of Justice
- Citizenship and Immigration and Naturalization Service Environmental Protection Agency

Arizona State Agencies

Arizona Department of Agriculture
Arizona Department of Environmental Quality
Arizona Department of Mines and Mineral Resources
Arizona Department of Transportation
Arizona Department of Water Resources
Arizona Game and Fish Department
Arizona Geological Survey
Arizona State Clearinghouse
Arizona State Historic Preservation Office
Arizona State Land Department
Arizona State Mine Inspector
Arizona State Parks

Local Agencies

City of El Mirage
City of Goodyear
City of Surprise
La Paz County Board of Supervisors
Maricopa County Board of Supervisors
Maricopa County Environmental Services
Maricopa County Flood Control District
Maricopa County Parks and Recreation Department
Maricopa County Planning and Development Department
Maricopa County Department of Transportation
Phoenix Parks, Recreation and Library Department
Pinal County Board of Supervisors
Town of Buckeye
Town of Wickenburg
Town of Youngtown
Yavapai County Board of Supervisors
Yavapai County Planning and Zoning Department

Interest Groups

Arizona Archaeological Society
Arizona Cattle Growers Association
Arizona Desert Bighorn Sheep Society
Arizona Mining Association
Arizona Mining and Prospecting Association
Arizona Parks and Recreation Association
Arizona Public Service Company
Arizona Roamers
Arizona State Association of Four-Wheel-Drive Clubs, Inc.
Arizona State Horsemen's Association
Arizona Wilderness Coalition
Arizona Wool Producers Association
Blue Ribbon Coalition, Inc.
Cyprus Bagdad Copper Company
Defenders of Wildlife
Desert Tortoise Council
El Paso Natural Gas Company
Gila Bend Natural Resource Conservation District
Greater Arizona Bicycling Association-Phoenix Metro Chapter
Greater Arizona Bicycling Association-West Valley Chapter
Greater Arizona Bicycling Association-Prescott Chapter
International Society for the Protection of Mustangs and Burros
International Sonoran Desert Alliance
National Wildlife Federation
The Nature Conservancy, Arizona Chapter
People for the West
Phelps Dodge Corporation

Salt River Project
Sierra Club-Palo Verde and Southwest Regions,
Sierra Club-Rincon Groups
Center for Biological Diversity
Southwest Minerals Explorers Association
Tonopah Area Coalition
Tonopah Valley Association
Western Pima County Community Council
Wickenburg Natural Resource Conservation District
Wild Horse Organized Assistance
The Wilderness Society, Four Corners
Yavapai Cattle Growers

Elected Representatives

Federal

Senator Jon Kyl
Senator John McCain
Representative Ed Pastor
Representative Rick Renzi
Representative John Shadegg
Representative Jim Kolbe
Representative J.D. Hayworth

State

Governor Janet Napolitano
Secretary of State Janice Brewer
Senator Marilyn Jarrett (District 19)
Senator Jake Flake (District 5)
Senator Marsha Arzberger (District 25)
Senator Ken Bennett (District 1)
Senator Albert Hale (District 2)
Representative Manuel V. "Manny" Alvarez (District 25)
Representative Jennifer J. Burns (District 25)
Representative Albert Tom (District 2)
Representative Ann Kirkpatrick (District 2)
Representative Lucy Mason (District 1)
Representative Tom O'Halleran (District 1)
Representative Jack A. Brown (District 5)
Representative Bill Konopnicki (District 5)
Representative Gary L. Pierce (District 19)
Representative Chuck Gray (District 19)

Abbreviations and Acronyms

ACECs: Areas of Critical Environmental Concern
ADA: Americans with Disabilities Act
ADEQ: Arizona Department of Environmental Quality
ADES: Arizona Department of Economic Security
ADOT: Arizona Department of Transportation
ADR: Arizona Department of Revenue
ADWR: Arizona Department of Water Resources
AFNM: Agua Fria National Monument
AGFD: Arizona Game and Fish Department
ALHS: Arizona Land Health Standards
ALRIS: Arizona Land Resource Information System
AMA: Active Management Area
AML: Appropriate Management Level (Abandoned Mine Land)
AMP: Allotment Management Plan
AMS: Analysis of the Management Situation
APHIS: Animal and Plant Health Inspection Service
AQCR: Air Quality Control Regulations
ARPA: Archaeological Resources Protection Act
ARS: Arizona Revised Statute
ASLD: Arizona State Land Department
ASM: Arizona State Museum
ASU: Arizona State University
ATV: All-Terrain Vehicle
AUM: Animal Unit Month
BAT: Best Available Technology
BE: Biological Evaluation
BEA: Bureau of Economic Analysis
BLM: Bureau of Land Management
CAA; Clean Air Act
CAP: Central Arizona Project
CEQ: U.S. Council on Environmental Quality
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act
CFR: U.S. Code of Federal Regulations
CFS: Cubic feet per second
CHAMP: AGFD Challenged Hunter Access/Mobility Permit
CO: Carbon-monoxide
CRM: Cultural Resource Management
CRMA: Cooperative Recreation Management Area (Alternative A only)
CRPUA: Cultural Resource Public Use Area
CRU: Community Resource Unit
CWA: Clean Water Act
CYL: Cattle Year-Long
CZMA: Coastal Zone Management Act
DEIS: Draft Environmental Impact Statement
DES: Department of Economic Security
DFC: Desired Future Condition
DHS: Department of Homeland Security

DNA: Documentation of land use plan conformance and NEPA Adequacy
DOI: Department of the Interior
DPC: Desired Plant Community
DRMP: Draft Resource Management Plan
EA: Environmental Assessment
EIS: Environmental Impact Statement
EJ: Environmental Justice
EPA: Environmental Protection Agency
EPCRA: Emergency Planning and Community Right to Know Act
EQIA: Environmental Quality Improvement Act
ERMA: Extensive Recreation Management Area
ESA: Endangered Species Act
EO: Executive Order
FCC: Federal Communications Commission
FIL: Fire Intensity Level
FIRE: Finance, Insurance, and Real Estate
FLPMA: Federal Land Policy Management Act
FLTFA: Federal Land Transaction Facilitation Act
FMP: Fire Management Plan
FMZ: Fire Management Zone
FONSI: Finding of No Significant Impact
FR: Federal Register
FWS: U.S. Fish and Wildlife Service
FY: Fiscal Year
GMU: Game Management Unit
GUI: Graphical User Interface
HA: Herd Area
HAZMAT: Hazardous Materials
HMA: Herd Management Area
HMP: Habitat Management Plan
HRU: Human Resource Unit
HSWA: Hazardous and Solid Waste Amendments
I-17: Interstate 17
IM: Instruction Memorandum
JKA: James Kent Associates
LAC: Limits of Acceptable Change
LUA: Land Use Allocation
LUP: Land Use Plan
MA: Management Action
MAG: Maricopa Association of Governments
MCAA: Management Common to Action Alternatives
MCL: Maximum Contaminant Levels
MCLG: Maximum Contaminant Level Goals
MFP: Management Framework Plan
MIST: Minimum Impact Suppression Tactics
MLRA: Major Land Resource Area
MOU: Memorandum of Understanding
MPA: Municipal Planning Area
MPO: Mining Plan of Operation
MRMA: Multiple Resource Management Areas (Alternative A only)
MSA: Management Situation Analysis

MU: Management Unit
NAAQS: National Ambient Air Quality Standards
NAGPRA: Native American Graves Protection and Repatriation Act
NCA: National Conservation Areas
NEPA: National Environmental Policy Act
NFDRS: National Fire Danger Rating System
NFP: National Fire Plan
NHPA: National Historic Preservation Act
NIFC: National Interagency Fire Center
NOI: Notice of Intent
NO(x): Nitrogen Oxides
NPDES: National Pollutant Discharge Elimination System
NRCS: Natural Resource Conservation Service
NRHP: National Register of Historic Places
OHV: Off-Highway Vehicle
ONA: Outstanding Natural Area
ORV: Off-Road Vehicle
PCB: Polychlorinated Bi-phenyls
PILT: Payments in Lieu of Taxes
PFC: Proper Functioning Condition
PFO: BLM Phoenix Field Office
PM_{10}: Particulate Matter 10 microns in diameter or smaller
PNC: Potential Natural Community
PPA: Pollution Prevention Act
PSD: Prevention of Significant Deterioration
R&PP: Recreation and Public Purposes
RAC: Resource Advisory Council
RAZ: Regional Analysis Zone
RCA: Resource Conservation Area
RCRA: Resource Conservation and Recovery Act
RL: Representative Location
RMA: Riparian Management Area
RMIS: Recreation Management Information System
RMP: Resource Management Plan
RMZs: Recreation Management Zones
RNA: Research Natural Area
ROD: Record of Decision
ROS: Recreation Opportunity Spectrum
ROW: Right of Way
SARA: Superfund Amendments and Reauthorization Act
SCRMA: Special Cultural Resource Management Area
SDWA: Safe Drinking Water Act
SGM: Spatial Growth Model
SHPO: State Historic Preservation Officer
SIP: Arizona State Implementation Plan
SLUP: Special Land Use Permit
SMA: Special Management Areas
SRMA: Special Recreation Management Area
SRP: Salt River Project
SRP: Special Recreation Permits
SWCG: Southwest Area Coordinating Group

T&E: Threatened and Endangered
TGA: Taylor Grazing Act
TSCA: Toxic Substance Control Act
USACE: United States Army Corp of Engineers
USC: United States Code
USDA: United States Department of Agriculture
USGS: United States Geological Survey
VOC: Volatile Organic Compounds
VRM: Visual Resource Management
WA: Wilderness Areas
WFIP: Wildland Fire Implementation Plan
WFMP: Wildland Fire Management Policy
WHBA: Wild Free Roaming Horse and Burro Act
WMAs: Wildlife Management Areas
WSA: Wilderness Study Areas (Alternative A only)
WSR: National Wild and Scenic Rivers System
WUI: Wildland-Urban Interface

References

American Recreation Coalition. 2001. *Outdoor Recreation in America 2001*. Available: www.funoutdoors.com/research.html.

Arizona Game and Fish Department. 2001. *Wildlife 2006: Wildlife Management Program Strategic Plan for the Years 2001–2006*. Phoenix, AZ. January 22.

_____. 1998. *Off-Highway Vehicle Strategic Plan 1999-2004.* Phoenix, AZ.

Arizona State Mine Inspector. 2001. *Abandoned Mine Safety Fund Annual Report.* Arizona State Mine Inspector. Available at: www.asmi.state.az.us/safety2001.pdf.

_____.2002b. *Abandoned Mine Safety Fund Annual Report*. Available at: www.asmi.state.az.us/safety2001.pdf.

Barnett, Loyd O., Richard H. Hawkins, and D. Phillip Guertin. 2002. *Reconnaissance Watershed and Hydrologic Analysis on the Upper Agua Fria Watershed*. Prepared in cooperation with the Upper Agua Fria Watershed Partnership, funded by the Arizona Rural Watershed Initiative, and administered by Arizona Department of Water Resources. Tucson: University of Arizona, School of Renewable Natural Resources.

Buckeye, Town of. 2001. *Town of Buckeye General Development Plan*. Buckeye, AZ. Adopted September 18.

Bureau of Land Management. 1983. *Lower Gila North Management Framework Plan.* Phoenix District Office, Phoenix, AZ. March.

_____. 1988. *Desert Tortoise Habitat Management on Public Lands: A Rangewide Plan*. Washington, DC.

_____. 1988a. *Phoenix Resource Management Plan and Final Environmental Impact Statement.* Phoenix District Office, Phoenix, AZ. December.

_____. 1990. *Strategy for Desert Tortoise Habitat Management on Public Lands in Arizona*. Instruction Memorandum No. AZ-91-16). Arizona State Office, Phoenix, AZ.

_____. 1990. *Use of Biological Control Agents of Pests on Public Lands.* (BLM Manual 9014). Washington, DC. October 30.

_____. 1991. *Environmental Impact Statement for Vegetation Treatments, Watersheds and Wildlife Habitats on Public Lands Administered by the BLM in the Western United States, Including Alaska*. Nevada State Office, Reno, NV. May.

_____. 1992. *Strategy for Desert Tortoise Habitat Management on Public Lands in Arizona: New Guidance on Compensation for the Desert Tortoise*. (Instruction Memorandum No. AZ-92-46). Arizona State Office, Phoenix, AZ.

_____. 1993. *Black Canyon Habitat Management Plan* (revised). Phoenix Field Office, Phoenix, AZ.

_____. 1993. *Kingman Resource Area Resource Management Plan and Final Environmental Impact Statement.* Kingman Resource Area Office, Kingman, AZ. September.

_____. 1993. *Black Canyon Tobosa Grassland Prescribed Burn Environmental Analysis*. Phoenix Field Office, Phoenix, AZ.

_____. 1993**.** *Process for Assessing Proper Functioning Condition*. Technical Reference 1737-9 1993. Denver, CO: BLM Service Center.

_____. 1994. *Agua Fria Wild and Scenic River Study Area*. Phoenix, AZ: BLM Phoenix District.

_____. 1994. *Arizona Statewide Wild and Scenic Rivers Legislative Environmental Impact Statement*. Arizona State Office, Phoenix, AZ. December.

_____. 1994. *Process for Assessing Proper Functioning Condition for Lentic Riparian-Wetland Areas*. Technical Reference 1737-11 1994. Denver, CO: BLM Service Center.

_____. 1995. *Final Rule for Grazing Administration*. Federal Register, Vol ??, issue ??, month? 1995

_____. 1997. *Arizona Standards for Rangeland Health and Guidelines for Grazing Administration*. Arizona State Office, Phoenix, AZ. April.

_____. 1997. *Statewide Plan Amendment of Land Use Plans in Arizona for Implementation of Arizona Standards for Rangeland Health and Guidelines for Grazing Administration*. Arizona State Office, Phoenix, AZ.

_____. 1997. *Bureau of Land Management Strategic Plan*. Washington, DC. September 30.

_____. 1998. *Coordinated Resource Management Plan for the Horseshoe Ranch Grazing Allotment*. Phoenix Field Office, Phoenix, AZ.

_____. 1999. *Supplemental Guidance for Desert Tortoise Compensation*. (Instruction Memorandum No. AZ-99-008). Arizona State Office, Phoenix, AZ.

_____. 2000. *Land Use Plan Evaluation*. Phoenix, AZ: BLM Phoenix District.

_____. 2000. *Planning Guidance for National Monuments and National Conservation Areas*. Instruction Memorandum No. 2001-022. Washington, DC. October 31.

_____. 2002. *Agua Fria National Monument Current Management Guidance*. May.

_____. 2003. *Arizona Statewide Land Use Plan Amendment for Fire, Fuels and Air Quality Management: Environmental Assessment*. Prepared by Dynamac Corporation, Idaho Falls, ID. September.

_____. 2003. *BLM Implementation of the Settlement of Utah v. Norton Regarding Wilderness Study***.** Instruction Memorandum 2003-274. Washington, DC.

Jones & Stokes. 2003. *Scoping Report for the AFNM/Bradshaw-Harquahala Planning Areas***.** Phoenix, AZ.

_____. 2004. *Policy for Reasonably Foreseeable Development (RFD) Scenario for Oil and Gas***.** Instruction Memorandum 2004-089. Washington, DC.

Bureau of Land Management and U.S. Fish and Wildlife Service, Arizona and New Mexico. 1999. *Guidance Criteria for Determinations of Effects of Grazing Permit Issuance and Renewal on Threatened and Endangered Species*.

Bureau of Land Management, U.S. Fish and Wildlife Service, and U.S. Forest Service. 2002. *Interagency Standards for Fire and Aviation Operations*. National Interagency Fire Center, Boise, ID. April.

Cabe, L., and R. Coupal. 2001. *Final Report: Employment and Income in the Western U.S. Attributable to BLM Recreation*. Available: http://www.blm.gov/nhp/efoia/wo/fy01/im2001-131.html.

CH2M HILL, in association with Logan, Simpson & Dye and EcoPlan Associates. 1997. *Salt-Gila River Baseline Ecological Characterization*. Prepared for City of Phoenix, Phoenix, AZ.

Fleming, John B. 2004. *Hydrologic Characteristics of the Agua Fria National Monument, Arizona, Determined from the Phase 1 Reconnaissance Study*. U. S. Geological Survey Scientific Investigations Report 2004 (draft). Prepared in cooperation with the Bureau of Land Management. Tucson: U.S. Geological Survey.

James Kent Associates. 2003. *A Social-Economic Community Assessment Related to Bureau of Land Management Activities in the Phoenix Field Office*. Ashland, OR. January 15.

Maricopa Association of Governments. 2000. *Desert Spaces: Environmentally Sensitive Development Areas* (*ESDA*) *Policies and Design Guidelines*. Phoenix, AZ. June.

_____. 2002. *Long Range Transportation Plan 2002 Update*. Phoenix, AZ. May.

Maricopa County. 1991. *Maricopa County: Mobile Planning Area Land Use Plan*. Phoenix, AZ. Adopted August 12.

_____. 2002. *Long Range Transportation Plan 2002 Update.* Maricopa Association of Governments. Maricopa County, Arizona.

_____. 2002. Maricopa County 2020, Eye to the Future: The Maricopa County Comprehensive Plan. Phoenix, AZ. Adopted October 20,1997; revised August 7, 2002.

_____. In prep. MAG Northwest Area Transportation Study.

Marshall, R.M., S. Anderson, M. Batcher, P. Comer, S. Cornelius, R. Cox, A. Gondor, D. Gori, J. Humke, R. Paredes Aguilar, I.E. Parra, S. Schwartz. 2000. *An Ecological Analysis of Conservation Priorities in the Sonoran Desert Ecoregion*. Prepared by The Nature Conservancy Arizona Chapter, Sonoran Institute, and Instituto del Medio Ambiente y el Desarrollo Sustentable del Estado de Sonora with support from Department of Defense Legacy Program, Agency and Institutional partners. 146 pp.

Peoria, City of. 2002. Peoria General Plan. Prepared by BRW, Inc. Phoenix, AZ. December.

Phoenix, City of. 2001. General Plan of Phoenix. Adopted November 7.

Prescott Valley, Town of. 2002. *Prescott Valley General Plan 2020*. Adopted January 17.

Silberman, J. 2003. *The Economic Importance of Off-Highway Vehicle Recreation: Economic Data on Off-Highway Vehicle Recreation for the State of Arizona and Each Arizona County*. Prepared for Arizona State University West School of Management, Phoenix, AZ.

Sonoran Institute. 2003. *Population, Employment, Earnings and Personal Income Trends: Yavapai County, AZ*. Bozeman, MT. October 31.

U.S. Department of Agriculture, National Agricultural Statistics Service. Arizona Agricultural Statistics Service Annual Bulletins, 1999–2002. Available: www.nass.usda.gov/az.

U.S. Department of Interior. 2002. *Interim Management Policy for Bureau of Land Management National Monuments and National Conservation Areas* (Instruction Memorandum No. 2002-008). October 4.

U.S. Forest Service, Prescott National Forest. 2001. *Proposed Action: Forest Plan Amendment*. Prescott, AZ. November.

Wickenburg, Town of. 1988. Wickenburg General Plan.

Yavapai County. 2003. Yavapai County General Plan. Adopted April 7.

Glossary

ABIOTIC - The nonliving, material (as opposed to conceptual) components of the environment, such as air, rocks, soil, water, coal, peat, and plant litter. See **BIOTIC**.

ACCELERATED SOIL EROSION - Soil loss above natural levels resulting directly from human activities. Because of the slow rate of soil formation, accelerated erosion can permanently reduce plant productivity.

ACQUIRED PUBLIC LANDS - Lands in Federal ownership that the Government obtained as a gift or by purchase, exchange, or condemnation. See **PUBLIC LANDS**.

ACRE-FOOT - A volume that covers an area of 1 acre to a depth of 1 foot (43,560 ft^3).

ACTIVE MANAGEMENT AREAS - Five areas in Arizona (i.e. Prescott, Phoenix, Pinal, Santa Cruz, and Tucson) where the Arizona Department of Water Resources regulates groundwater use. Groundwater regulations stem from the 1980 Arizona Groundwater Management Code, which provides the management framework to ensure dependable water supplies for Arizona well into the future. Ensuring dependable supplies, the code places conservation requirements on municipal and agricultural water use and promotes the use of renewable supplies, such as Colorado River water delivered by the Central Arizona Project.

ACTIVE MINING CLAIM - A parcel of Federal land, valuable for a mineral deposit or deposits. A claim is a parcel for which one has asserted a right of possession. The right is restricted to extracting and developing a mineral deposit. The rights granted by a mining claim are valid against a challenge by the United States and other claimants only after the discovery of a valuable mineral deposit. There are two types of mining claims: lode and placer. Since October 5, 1992, only claimants who have a legal interest in ten or fewer mining claims nationwide and who also meet other requirements, may perform assessment work and file evidence of assessment. All other claimants must pay an annual fee of $125 per claim to BLM or file for a waiver from payment by August 31. Failure to file by August 31 requires BLM to declare the claim or site null and void by operation of law.

ACTIVITY PLAN - A detailed and specific plan for managing a single resource program or plan element undertaken, as needed, to implement the more general resource management plan (RMP) decisions. BLM prepares activity plans for specific areas to reach specific resource management objectives within stated timeframes.

ADMINISTRATIVE USE OF MINERAL MATERIALS - BLM's use of mineral materials from public land for land management projects.

ADVANCED ECOLOGICAL STATUS - A condition that is considered to be achieved when the vegetation community at a defined ecological site has a high correlation to the potential natural community for that site (i.e. ecological site rating > 50). These conditions are determined from ecological site inventories using the Natural Resource Conservation Service ecological site guides to compare the existing vegetation communities on each ecological site to the potential plant community for that site. Achieving an advanced ecological status is assumed to be an expression of the physical and biological condition or degree of function needed to sustain a healthy rangeland ecosystem.

AGGREGATE- Any combination of sand, gravel, and crushed stone in its natural or processed state.

AIR QUALITY RATING - See **CLASS I AIR QUALITY RATING** and **CLASS II AIR QUALITY RATING**.

AIRSHED - An area that shares the same air because of topography, meteorology, and climate; the atmospheric zone potentially influenced by air pollutants from various sources.

ALLOTMENT - An area of one or more pastures where one or more operators graze their livestock. An allotment generally consists of Federal rangelands, but may include intermingled parcels of private, State, or Federal lands. BLM stipulates the number of livestock and season of use for each allotment.

ALLOTMENT MANAGEMENT PLAN (AMP) - A livestock grazing management plan for a specific unit of rangeland and based on multiple use resource management objectives. The AMP considers livestock grazing in relation to other uses of rangelands and to renewable resources--watershed, vegetation, and wildlife. An AMP establishes the seasons of use, number of livestock to be permitted on rangelands, and the range improvements needed.

ALLUVIAL FAN - A low, outspread, relatively flat to gently sloping mass of sediment, shaped like an open fan and deposited by a stream where it flows from a narrow mountain valley onto a plain or broad valley.

ALLUVIUM - Any sediment deposited by flowing water as in a riverbed, floodplain, or delta.

ANALYSIS OF THE MANAGEMENT SITUATION (AMS) - Step 4 in BLM's resource management planning process. An MSA describes a planning area's current public land management and suggests opportunities to better manage this land.

ANIMAL UNIT- One mature (1,000 pound) cow or the equivalent based upon an average daily forage consumption of 26 pounds of dry matter per day.

ANIMAL UNIT MONTH (AUM) - The amount of forage needed to sustain one cow, five sheep, or five goats for a month.

ANNUAL PLANT - A plant that completes its life cycle and dies in 1 year or less. Also see **PERENNIAL PLANT**.

APPROPRIATE MANAGEMENT LEVEL (AML) - In wild horse and burro management, a single number that is the high point of an established population range to maintain a thriving natural ecological balance, based on available forage, water, and other resource needs or conflicts.

AQUATIC HABITATS - Habitats confined to streams, rivers, springs, lakes, ponds, reservoirs, and other water bodies.

AQUIFER - A water-bearing bed or layer of permeable rock, sand, or gravel capable of yielding large amounts of water.

AQUIFER RECHARGE - Adding water to an aquifer, a process that occurs naturally from the infiltration of rainfall and from water flowing over earth materials that allow it to infiltrate below the land surface.

ARCHAEOLOGICAL FEATURE - A nonportable object, not recoverable from its matrix (usually in an archeological site) without destroying its integrity. Examples are rock paintings, hearths, post holes, floors, and walls.

AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC) - A designated area on public lands where special management attention is required- (1) to protect and prevent irreparable damage to fish and wildlife; (2) to protect important historic, cultural, or scenic values, or other natural systems or processes; or (3) to protect life and safety from natural hazards.

ARIZONA STANDARDS FOR RANGELAND HEALTH AND GUIDELINES FOR GRAZING ADMINISTRATION - Standards and guidelines developed collaboratively by BLM and the Arizona Resource Advisory Council (RAC) to address the minimum requirements of the Department of the Interior's final rule for Grazing Administration, effective Aug. 21, 1995.

ASPECT- See **VISUAL ASPECT**.

AZSITE DATABASE - A computer database containing cultural site information managed by the State Historic Preservation Office and maintained by Northern Arizona University and Arizona State University.

BACK COUNTRY BYWAY - A component of the national scenic byway system which focuses primarily on corridors along back country roads which have high scenic, historic, archeological, or other public interest values. The road may vary from a single track bike trail to a low speed, paved road that traverses back country areas. (BLM Handbook H-8357-1, B 2)

BACK COUNTRY ZONE - Areas with undeveloped, primitive, and self-directed visitor experience without provisions for motorized or mechanized access, except for designated routes. Also see **FRONT COUNTRY ZONE** and **PASSAGE ZONE**.

BAJADA - A broad continuous slope extending along and from the base of a mountain range and formed by coalescing alluvial fans.

BAR - A ridge-like accumulation of sand, gravel, or other alluvial material formed in the channel, along the banks, or at the mouth of a stream where a decrease in velocity induces deposition. Also see **WATER BAR**.

BASAL DIAMETER - Diameter of a tree stem as measured 0.5 feet above the ground.

BASE FLOW (DISCHARGE) - The portion of stream discharge derived from such natural storage sources as groundwater, large lakes, and swamps but not derived from direct runoff or flow from stream regulation, water diversion, or other human activities.

BASE HERD - The constant livestock herd size that is continually licensed but may not be the same as the grazing (carrying) capacity. Also see **GRAZING CAPACITY**.

BASE LEVEL - The lowest level to which a land surface can be reduced by the action of running water.

BASE METAL- A metal inferior in value to gold and silver; a term generally applied to the commercial metals such as copper and lead.

BASIN (INTERMONTANE BASIN) - A broad structural lowland between mountain ranges, commonly elongated and many miles across.

BIOLOGICAL ASSESSMENT- Information prepared by or under the direction of a Federal agency to determine whether a proposed action is likely to (1) harm threatened or endangered species or designated critical habitat, (2) jeopardize the existence of species that are proposed for listing, or (3) adversely modify proposed critical habitat. Biological assessments must be prepared for major construction activities. The outcome of a biological assessment determines whether formal Section 7 consultation or a conference is needed. Also see **BIOLOGICAL EVALUATION**.

BIOLOGICAL DIVERSITY (BIODIVERSITY) - The full range of variability within and among living organisms and the ecological complexes in which they occur. Biological diversity encompasses ecosystem or community diversity, species diversity, and genetic diversity.

BIOLOGICAL EVALUATION - The gathering and evaluation of information on proposed endangered and threatened species and critical and proposed critical habitat for actions that do not require a biological assessment. Also see **BIOLOGICAL ASSESSMENT**.

BIOLOGICAL OPINION - A document that includes the following- (1) the opinion of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service as to whether a Federal action is likely to jeopardize the existence of a species listed as threatened or endangered or destroy or adversely modify designated critical habitat, (2) a summary of the information on which the opinion is based, and (3) a detailed discussion of the effects of the action on listed species or designated critical habitat.

BIOLOGICAL VEGETATION TREATMENT - Methods of vegetation treatment that employ living organisms to selectively suppress, inhibit, or control herbaceous and woody vegetation. Examples of such methods include insects; pathogens; and grazing by cattle, sheep, or goats.

BIOMASS - The total amount of living matter in a given unit of the environment.

BIOTIC - Pertaining to life or living; the living components of the environment. Also see **ABIOTIC**.

BIRDS OF CONSERVATION CONCERN - As listed by the U.S. Fish and Wildlife Service, birds (other than threatened or endangered species) that are in greatest need of conservation action and without such action might become listed as threatened or endangered.

BLM SENSITIVE SPECIES - See **SENSITIVE SPECIES**.

BOSQUE - A woodland dominated by trees more than 15 feet tall.

BRAIDING - A pattern of an interlacing or tangled network of several branching and reuniting stream channels separated by branch islands or channel bars.

BROWSE - The part of leaf and twig growth of shrubs, woody vines, and trees available for animal consumption.

BURNBLOCK - In prescribed burning, an area having uniform enough conditions of stand and fuel to be treated uniformly under a given burning prescription. The size of burnblocks ranges from the smallest that allows an economically acceptable cost per acre, up to the largest that can conveniently be treated in one burning period.

BURN OUT - Setting fire inside a control line to widen it or consume fuel between the edge of the fire and the control line.

CANDIDATE SPECIES - Species not protected under the Endangered Species Act, but being considered by the U.S. Fish and Wildlife Service for inclusion on the list of federally threatened and endangered species.

CANOPY - The cover or leaves of branches formed by the tops or crowns of plants as viewed from above the cover measured by the vertical projection downward of the extent of the cover and expressed as a percentage of the ground so covered.

CARBON-14 DATING - A method of estimating the age of an artifact containing carbon by measuring the radioactivity of its carbon-14 content to determine how long ago the specimen was separated from equilibrium with the atmosphere/plant/animal cycle. Continuously produced in the atmosphere by cosmic ray bombardment, carbon-14 decays with a half-life typically described as 5,568 years. An object is dated by comparing its carbon-14 activity per unit mass with that in a contemporary sample.

CARRYING CAPACITY (RECREATION) - The amount of recreation use a given resource can sustain before the resource's quality begins to irreversibly deteriorate.

CARRYING CAPACITY (WILDLIFE) - The most animals a specific habitat or area can support without causing deterioration or degradation of that habitat. Also see **GRAZING CAPACITY**.

CASUAL USE (MINING) - Mining that only negligibly disturbs Federal lands and resources and does not include the use of mechanized earth moving equipment or explosives or motorized equipment in areas closed to off-highway vehicles. Casual use generally includes panning, non-motorized sluicing, and collecting mineral specimens using hand tools.

CASUAL USE (RECREATION) - Noncommercial or nonorganized group or individual activities on public land. Casual use does the following:

- complies with land use decisions and designations, i.e. special area designations,
- does not award cash prizes,
- is not publicly advertised,
- poses minimal risk for damage to public land or related water resources, and
- generally requires no monitoring.

If the use goes beyond those conditions, the activity should be treated as any other organized recreational group or competitive activity or event for which BLM would require the event organizer to obtain a special recreation permit (SRP).

CASUAL USE OF MINERAL MATERIALS - Extracting mineral materials for limited personal (noncommercial) uses.

CATEGORICAL EXCLUSION - A category of Federal actions that do not individually or cumulatively have a significant effect on the human environment and for which an environmental impact statement or an environment assessment is required.

CATTLE GUARD - A device placed in a road, usually a grate or series of metal bars placed perpendicular to the flow of traffic, which allows free passage of vehicles but which livestock will not cross.

CATTLE YEAR-LONG (CYL) - The amount of forage needed to sustain one cow for a 1-year period. One CYL equals 12 animal unit months (AUMs). Also see **ANIMAL UNIT MONTH**.

CHANNEL - A natural or artificial watercourse with a definite bed and banks to confine and conduct continuously or periodically flowing water.

CHANNELIZATION - The process of rebuilding the natural course of a stream to make it flow into a restricted path.

CHANNEL MORPHOLOGY- The structure and form of a stream channel.

CHEMICAL VEGETATION TREATMENTS - The applying of chemicals to control unwanted vegetation.

CLASS I AIR QUALITY RATING - Under the Clean Air Act, the rating given areas of the country selected to receive the most stringent degree of air quality protection. Also see **CLASS II AIR QUALITY RATING**.

CLASS II AIR QUALITY RATING - Under the Clean Air Act, the rating given areas of the country selected for somewhat less stringent protection from air pollution damage than Class I areas, except in specified cases. Also see **CLASS I AIR QUALITY RATING**.

CLIMAX - A plant community's final and highest ecological development, which emerges after a series of successive vegetational stages. The climax community perpetuates itself indefinitely unless disturbed by outside forces. Also see **DISCLIMAX**.

COLLUVIUM - Any loose, heterogeneous and incoherent mass of soil and/or rock fragments moved downslope by gravity-driven processes (like creep or sheet wash) and deposited at the base of the slope or hillside.

COLONIZATION - Occupation of an area by a group of organisms that previously did not occupy the area.

COMMUNITY - A collective term used to describe an assemblage of organisms living together; an association of living organisms having mutual relationships among themselves and with their environment and thus functioning at least to some degree as an ecological unit.

COMPETITIVE RACES - For purposes of this plan, all competitive events that have an element of speed as a component, including, motorcycle enduros, OHV desert racing, and equestrian endurance rides.

CONSERVATION EASEMENT - An easement to assure the permanent preservation of land in its natural state or in whatever degree of naturalness the land has when the easement is granted. Also see **EASEMENT**.

COMMUNITY RESOURCE UNIT (CRU) - In social ecology, a subdivision of a human resource unit that shows the "catchment area" of a community, or its zone of influence, beyond which people relate to another community. Geographic features or settlement patterns often determine these boundaries. People in CRUs experience great face-to-face knowledge, and the caretaking systems through informal networks are the strongest. Also see **HUMAN RESOURCE UNIT (HRU)**.

CONSERVATION EASEMENT- An easement to assure the permanent preservation of land in its natural state or in whatever degree of naturalness the land has when the easement is granted. Also see **EASEMENT**.

COOL-SEASON PLANTS - Plants whose major growth occurs during the late fall, winter, and early spring. Also see **WARM-SEASON PLANTS**.

COOPERATIVE MANAGEMENT AGREEMENT - A document that describes agreements made between BLM and the public on adjusting grazing use. This document also defines the specific adjustments and the schedule of adjustments (usually over a 5-year period).

COOPERATIVE RECREATION MANAGEMENT AREA (CRMA) - An area for which BLM enters into a cooperative management agreement with a local government to manage recreation land.

CORRIDOR- See **DESIGNATED CORRIDOR**.

COVER - (1) Plants or plant parts, living or dead, on the surface of the ground; (2) plants or objects used by wild animals for nesting, rearing of young, escape from predators, or protection from harmful environmental conditions.

COW-CALF LIVESTOCK OPERATION - A livestock operation that maintains a base breeding herd of mother cows and bulls. The cows produce a calf crop each year, and the operation keeps some heifer calves from each calf crop for breeding replacements. Between the ages of 6 and 12 months, the operation sells the rest of the calf crop along with old and nonproductive cows and bulls.

CREEPING PLANT - A plant that spreads over the ground or other surface.

CRETACEOUS - In geologic history the third and final period of the Mesozoic era, from 144 million to 65 million years ago, during which extensive marine chalk beds formed.

CRITERIA AIR POLLUTANTS - Air pollutants for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set. Examples of such pollutants are ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and PM_{10} and PM_{25}.

CRITERIA POLLUTANTS - See **CRITERIA AIR POLLUTANTS**.

CRITICAL HABITAT, DESIGNATED - Specific parts of an area (1) that are occupied by a federally listed threatened or endangered plant or animal at the time it is listed and (2) that contain physical or biological features essential to the conservation of the species or that may require special management or protection. Critical habitat may also include specific areas outside an area occupied by a federally listed species if the Secretary of the Interior determines that these areas are essential for conserving the species.

CROSSING LANE - A fenced corridor that allows livestock to cross a stream without spreading out into the water.

CULTURAL HERITAGE VALUES - The irreplaceable qualities that are embodied in cultural resources, such as scientific information about prehistory and history, cultural significance to Native Americans and other groups, and the potential to enhance public education and enjoyment of the Nation's rich cultural heritage. Section 1 of the National Historic Preservation Act states that "the preservation of this irreplaceable heritage is in the public interest so that its vital legacy of cultural, educational, aesthetic, inspirational, economic and energy benefits will be maintained and enriched for future generations of Americans."

CULTURAL RESOURCE - A location of human activity, occupation, or use identifiable through field inventory, historical documentation, or oral evidence. Cultural resources include archaeological and historical sites, structures, buildings, objects, artifacts, works of art, architecture, and natural features that were important in past human events. They may consist of physical remains or areas where significant human events occurred, even though evidence of the events no longer remains. And they may include definite locations of traditional, cultural, or religious importance to specified social or cultural groups.

CULTURAL RESOURCE DATA - Cultural resource information embodied in material remains such as artifacts, features, organic materials, and other remnants of past activities. An important aspect of data is context, a concept that refers to the relationships among these types of materials and the situations in which they are found.

CULTURAL RESOURCE DATA RECOVERY - The professional application of scientific techniques of controlled observation, collection, excavation, and/or removal of physical remains, including analysis, interpretation, explanation, and preservation of recovered remains and associated records in an appropriate curatorial facility used as a means of protection. Data recovery may sometimes employ professional collection of such data as oral histories, genealogies, folklore, and related information to portray the social significance of the affected resources. Such data recovery is sometimes used as a measure to mitigate the adverse impacts of a ground-disturbing project or activity.

CULTURAL RESOURCE INTEGRITY - The condition of a cultural property, its capacity to yield scientific data, and its ability to convey its historical significance. Integrity may reflect the authenticity of a property's historic identity, evidenced by the survival or physical characteristics that existed during its historic or

prehistoric period, or its expression of the aesthetic or historic sense of a particular period of time.

CULTURAL RESOURCE INVENTORY (SURVEY) - A descriptive listing and documentation, including photographs and maps of cultural resources. Included in an inventory are the processes of locating, identifying, and recording sites, structures, buildings, objects, and districts through library and archival research, information from persons knowledgeable about cultural resources, and on-the-ground surveys of varying intensity.

Class I: A professionally prepared study that compiles, analyzes, and synthesizes all available data on an area's cultural resources. Information sources for this study include published and unpublished documents, BLM inventory records, institutional site files, and state and National Register files. Class I inventories may have prehistoric, historic, and ethnological and sociological elements. These inventories are periodically updated to include new data from other studies and Class II and III inventories.

Class II: A professionally conducted, statistically based sample survey designed to describe the probable density, diversity, and distribution of cultural properties in a large area. This survey is achieved by projecting the results of an intensive survey carried out over limited parts of the target area. Within individual sample units, survey aims, methods, and intensities are the same as those applied in Class III inventories. To improve statistical reliability, Class II inventories may be conducted in several phases with different sample designs.

Class III: A professionally conducted intensive survey of an entire target area aimed at locating and recording all visible cultural properties. In a Class III survey, trained observers commonly conduct systematic inspections by walking a series of close-interval parallel transects until they have thoroughly examined an area.

CULTURAL RESOURCE PROJECT PLAN - For cultural resource projects, a detailed design plan that defines the procedures, budget, and schedule for such activities as structure stabilization, recordation, interpretive development, and construction of facilities such as trails. These plans include estimates on workforce, equipment, and supply needs.

CULTURAL SITE- A physical location of past human activities or events, more commonly referred to as an archaeological site or a historic property. Such sites vary greatly in size and range from the location of a single cultural resource object to a cluster of cultural resource structures with associated objects and features.

CUMULATIVE IMPACTS - (40 CFR 1508.8) "...is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

DATA RECOVERY - See **CULTURAL RESOURCE DATA RECOVERY**.

DECISION RECORD - A manager's decision on a categorical exclusion review or an environmental assessment. Comparable to the record of decision for an environmental impact statement, the decision record includes- (1) a finding of no significant impact, (2) a decision to prepare an environmental impact statement, or (3) a decision not to proceed with a proposal. Also see **RECORD OF DECISION**.

DEFERRED ROTATION GRAZING - Moving grazing animals to various parts of a range in succeeding years or seasons to provide for seed production, plant vigor, and seedling growth.

DESERT TORTOISE HABITAT CLASSIFICATIONS - Three categories of desert tortoise habitat based on population, viability, size, density, and manageability and

derived from BLM inventories of desert tortoise habitat throughout the planning areas between 1989 and 1999. The categories are as follows-

Category I: Medium to high tortoise density. Habitat area essential for maintaining large, viable populations.

Category II: Low to moderate tortoise density. Habitat is manageable.

Category III: Isolated patches of good habitat exist but are difficult to manage. Most management conflicts are not resolvable.

DESIGNATED CORRIDOR - BLM's preferred route for placing rights-of-way for utilities (i.e. pipelines and powerlines) and transportation (i.e. highways and railroads).

DESIRED PLANT COMMUNITY - The plant community that has been determined through a land use or management plan to best meets the plan's objectives for a site. A real, documented plant community that embodies the resource attributes needed for the present or potential use of an area, the desired plant community is consistent with the site's capability to produce the required resource attributes through natural succession, management intervention, or a combination of both.

DETRITAL COVER - Cover that consists of dead organic matter.

DETRITUS - Disintegrated matter, such as rock fragments or organic debris accumulated in pond water, mud, or soil.

DIKE - An upright or steeply dipping sheet of igneous rock that has solidified in a crack or fissure in the earth's crust; a human-made structure used to control stream flow.

DISCLIMAX - An enduring climax community altered by human or livestock disturbance, such as grassland that has replaced a deciduous forest. Also see **CLIMAX**.

DISPERSED RECREATION- Recreation that does not require developed sites or facilities.

DISTURBANCE REGIME- The regular pattern of occurrence or characteristic behavior of disturbance that includes type, intensity, frequency, and spatial extent.

DIVISION FENCE - A fence that separates pastures or allotments.

DRAW - A natural drainage basin or gully.

EASEMENT- The right to use land in a certain way granted by a landowner to a second party. Also see **CONSERVATION EASEMENT**.

ECOLOGICAL CONDITION - See **ECOLOGICAL SITE RATING**.

ECOLOGICAL INTEGRITY- The quality of a natural unmanaged or managed ecosystem in which the natural ecological processes are sustained, with genetic, species, and ecosystem diversity assured for the future.

ECOLOGICAL NICHE- See **NICHE**.

ECOLOGICAL SITE (RANGE SITE) - A distinctive kind of land that has specific physical characteristics and that differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation.

ECOLOGICAL SITE DESCRIPTIONS (RANGE SITE GUIDE) - Descriptions of the following characteristics of an ecological site- soils, physical features, climatic features, associated hydrologic features, plant communities possible on the site, plant community dynamics, annual production estimates and distribution of production throughout the year, associated animal communities, associated and similar sites, and interpretations for management.

ECOLOGICAL SITE INVENTORY - The basic inventory of present and potential vegetation on BLM rangeland.

ECOLOGICAL SITE RATING (ECOLOGICAL CONDITION/ ECOLOGICAL STATUS) - The present state of vegetation of an ecological site in relation to the potential natural community for the site. Independent of the site's use, the ecological site rating is an expression of the relative degree to which the kinds, proportions, and amounts of plants in a community resemble those of the potential natural community. The four ecological status classes correspond to 0-25 percent, 25-50 percent, 51-75 percent, or 76-100 percent similarity to the potential natural community and are called early-seral, mid-seral, late-seral, and potential natural community, respectively.

ECOSYSTEM - Organisms, together with their abiotic environment, forming an interacting system and inhabiting an identifiable space.

ECOTOURISM - Tourism that essentially focuses on natural rather than developed attractions with the goal of enhancing the visitor's understanding and appreciation of nature and natural features. Such tourism often attempts to be environmentally sound and to contribute economically to the local community.

ELIGIBLE RIVER SEGMENT- Qualification of a river for inclusion in the National Wild and Scenic Rivers System by determining that it is free flowing and, with its adjacent land area, has at least one river-related value considered to be outstandingly remarkable.

EMERGENT VEGETATION - Aquatic plant species that are rooted in wetlands but extend above the water's surface. Also see **SUBMERGENT VEGETATION**.

ENDANGERED SPECIES - Any animal or plant species in danger of extinction throughout all or a significant portion of its range as designated by the U.S. Fish and Wildlife Service under the Endangered Species Act. Also see **THREATENED SPECIES**.

ENDURO - An off-road competition against the clock and usually over long distances.

ENERGY FLOW - The intake, conversion, and passage of energy through organisms or through an ecosystem.

ENTRENCHMENT - The process by which a stream erodes downward (incision) creating vertical, often eroding banks and abandoning its floodplain. Entrenched streams are often referred to as gullies.

ENVIRONMENTAL ASSESSMENT (EA - (40 CFR 1508.9)

"(a) Means a concise public document for which a Federal agency is responsible that serves to-

1. Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact.
2. Aid an agency's compliance with the Act when no environmental impact statement is necessary.
3. Facilitate preparation of a statement when one is necessary.

(b) Shall include brief discussions of the need for the proposal, of alternatives as required by section 102 (2) (E), of the environmental impacts of the proposed action and Alternatives, and a listing of agencies and persons consulted." Also see **ENVIRONMENTAL IMPACT STATEMENT**.

ENVIRONMENTAL IMPACT STATEMENT (EIS) - (40 CFR 1508.11) "...means a detailed written statement as required by section 102 (2) (C) of the Act"

(referring to the National Environmental Policy Act.) Also see **ENVIRONMENTAL ASSESSMENT**.

ENVIRONMENTAL JUSTICE (EJ) - Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," directs Federal agencies to assess whether their actions have disproportionately high and adverse human health or environmental effects on minority or low-income populations.

EPHEMERAL FORAGE - Part-time or seasonal forage; forage produced by annual forage species.

EPHEMERAL STREAM - A stream or portion of a stream that (1) flows only in direct response to precipitation, (2) receives little or no water from springs or no long continued supply from snow or other sources, and (3) has a channel that is always above the water table.

ETHNOECOLOGY- The study of the relationship between a society and its natural environment, including the spatio-temporal organization of human activities and how nature and natural resources are used (i.e. hunting, fishing, collecting, farming, preparing food); the study of how people perceive and manipulate their environments.

EVAPORITES - Sedimentary rocks formed by the precipitation of salts in hot dry regions from shallow seas or lakes.

EXCAVATION - The scientific examination of an archaeological site through layer-by-layer removal and study of the contents within prescribed surface units, e.g. square meters.

EXCLOSURE - An area fenced to exclude animals.

EXOTIC - An organism or species that is not native to the region in which it is found.

EXTENSIVE RECREATION MANAGEMENT AREA (ERMA) - A blanket RMP allocation for recreation use made in a resource management plan for all BLM's land covered by the plan but not otherwise allocated in special recreation management areas or recreation management zones.

EXTIRPATED SPECIES - A locally extinct species; a species that is no longer found in a locality but exists elsewhere.

EXTIRPATION - See **EXTIRPATED SPECIES**.

FACILITY FOOTPRINT - The area on the ground defining or delineating the extent of the facility. For a building, it could be the outside edge of the foundation. For a parking lot, staging area, or trail head, it could be a barrier fence or artificial boundary that defines the limits of the particular use.

FAULT BLOCK MOUNTAINS (BLOCK MOUNTAINS) - Mountains formed by block faulting which divides the earth's crust into fault blocks of different elevations and orientations.

FEDERAL LAND POLICY AND MANAGEMENT ACT (FLPMA) - The act that- (1) set out, for the Bureau of Land Management, standards for managing the public lands including land use planning, sales, withdrawals, acquisitions, and exchanges; (2) authorized the setting up of local advisory councils representing major citizens groups interested in land use planning and management, (3) established criteria for reviewing proposed wilderness areas, and (4) provided guidelines for other aspects of public land management such as grazing.

FEE SIMPLE TITLE - Unrestricted ownership of real property (i.e. land and whatever is erected or growing on it).

FINDING OF NO SIGNIFICANT IMPACT (FONSI) - A document that is prepared by a federal agency and that briefly explains why an action not otherwise excluded from the requirement to prepare an environmental impact statement (EIS) would not significantly affect the human environment and not require an EIS.

FINE PARTICULATE MATTER ($PM_{2.5}$) - Particulate matter that is less than 2.5 microns in diameter. Also see **PARTICULATE MATTER** and **INHALABLE PARTICULATE MATTER**.

FIRE INTENSITY - The rate of heat release for an entire fire at a specific time.

FIRE MANAGEMENT - The integration of fire protection, prescribed burning, and fire ecology knowledge into multiple use planning, decision making, and land management.

FIRE MANAGEMENT PLAN - A plan that defines a program to manage wildland and prescribed fires and documents the fire management program in the approved land use plan.

FIRE SUPPRESSION - All the work of extinguishing or confining a fire, beginning with its discovery.

FIRE SUPPRESSION RESOURCES - People, equipment, services, and supplies available or potentially available for assignment to incidents.

FIXED STOCKING RATE - A stocking rate that is fixed and cannot vary from season to season or year to year. Also see **STOCKING RATE** and **VARIABLE STOCKING RATE**.

FLOODPLAIN - Nearly level land on either or both sides of a channel that is subject to overflow flooding.

FORAGE - All browse and herbage that is available and acceptable to grazing animals or that may be harvested for feed.

FORB - An herbaceous plant that is not a grass, sedge, or rush.

FREE USE PERMIT - A permit that allows the removal of timber or other resources from the public lands free of charge.

FRONT COUNTRY ZONE - Focal areas for motorized and non-motorized visitation, concentrating use along major access routes. Also see **BACK COUNTRY ZONE** and **PASSAGE ZONE**.

FUEL BED (IN FIRE SUPPRESSION) - The fuel composition in natural settings.

FUEL LOAD (IN FIRE SUPPRESSION) - The ovendry weight of fuel per unit area usually expressed in tons/acre.

FUEL LOADING - The amount of fuel present expressed by weight of fuel per unit area.

FUEL MOISTURE CONTENT (FUEL MOISTURE) (IN FIRE SUPPRESSION) - The water content of a fuel expressed as a percentage of the fuel's ovendry weight. For dead fuels, which have no living tissue, moisture content is determined almost entirely by relative humidity, precipitation, dry-bulb temperature, and solar radiation. The moisture content of live fuels is physiologically controlled within the living plant.

FUGITIVE DUST - Dust particles that are introduced into the air through certain actions such as soil cultivation or vehicles crossing open fields or driving on dirt roads or trails.

FUNCTIONING WATERS (WILDLIFE) - A well, catchment, spring, reservoir, or other feature (human made or natural) that provides a reliable source of potable water on a year-long basis. For such a source of water to be considered functional, the quality and quantity of water must be sufficient to sustain native wildlife populations in the local area. For example, a reservoir that fills up during monsoon rains but goes dry in a few weeks is not functional from a wildlife standpoint.

FUNDAMENTALS OF RANGELAND HEALTH - As Described in 43 CFR 4180, the conditions in which (1) rangelands are in proper functioning physical condition, (2) ecological process are supporting healthy biotic populations and communities, (3) water quality is meeting state standards and BLM objectives, and (4) special status species habitat is being restored or maintained.

GENERALIST - An organism that can survive under a wide variety of conditions and does not specialize to live under any particular set of circumstances.

GENETIC DIVERSITY - The variation in genes in a population pool that contributes to the ability of organisms to evolve and adapt to new conditions.

GRAZING CAPACITY (CARRYING CAPACITY) - The highest livestock stocking rate possible without damaging vegetation or related resources. Grazing capacity may vary from year to year or in the same area because of fluctuating forage production.

GRAZING CYCLE - The amount of time required for livestock to rotate completely through all the pastures under an allotment management plan.

GRAZING PERMIT/LICENSE/LEASE - Official written permission to graze a specific number, kind, and class of livestock for a specified period on a defined rangeland.

GRAZING PRIVILEGES - The use of public land for livestock grazing under permits or leases.

GRAZING REST - Any period during which no livestock grazing is allowed within an area.

GRAZING SEASON - An established period for which grazing permits are issued.

GRAZING SYSTEM - A systematic sequence of grazing use and nonuse of an allotment to meet multiple use goals by improving the quality and amount of vegetation.

GROUND COVER - See **COVER**.

GROUND LITTER - See **LITTER**.

GROUNDWATER - Subsurface water and underground streams that supply wells and springs. Use of groundwater in Arizona does not require a water right, but must only be "reasonable." Groundwater is separated from surface water by the type of alluvium in which the water is found. Water in the younger, floodplain alluvium is considered surface water. Water in the older, basin-fill alluvium is considered groundwater.

HABITAT - An area that provides an animal or plant with adequate food, water, shelter, and living space.

HABITAT FRAGMENTATION - Process by which habitats are increasingly subdivided into smaller units resulting in their increased insularity and losses of total habitat area.

HABITAT MANAGEMENT PLAN - A site-specific wildlife habitat plan.

HALF-SHRUB - A perennial plant with a woody base whose annually produced stems die each year.

HAZARDOUS MATERIALS (HAZMAT) - An all-encompassing term that includes hazardous substances; hazardous waste; hazardous chemical substances; toxic substances; pollutants and contaminants; and imminently hazardous chemical substances and mixtures that can pose an unreasonable risk to human health, safety, and property.

HEAP LEACHING - A low-cost technique for extracting metals from ore by percolating leaching solutions through heaps of ore placed on impervious pads. This method is generally used on low-grade ores.

HERBACEOUS - Of, relating to, or having the characteristics of a vascular plant that does not develop woody tissue.

HERD AREA (HA) - A geographic area occupied by a wild horse or burro herd and its habitat in 1971.

HERD MANAGEMENT AREA (HMA) - An area established for maintaining wild horse and burro herds.

HISTORICAL SITE - A location that was used or occupied after the arrival of Europeans in North America (ca. A.D. 1492). Such sites may consist of physical remains at archaeological sites or areas where significant human events occurred, even though evidence of the events no longer remains. They may have been used by people of either European or Native American descent.

HOHOKAM - A group of North American Indians who lived between perhaps 300 BC and AD 1400 in central and southern Arizona, largely along the Gila and Salt Rivers.

HOLDING AREA (HOLDING GROUND) - An area where livestock are often held during roundups.

HOME RANGE - The area in which an animal travels in the scope of natural activities.

HUMAN RESOURCE UNIT (HRU) - An area that is roughly equivalent in size to a county but seldom corresponds to county boundaries. HRU boundaries are derived from the cultural descriptors listed below and by self-reporting by residents living in these areas.

- HRUs are characterized by frequent and customary interaction.
- HRUs reveal face-to-face human society where people could be expected to have personal knowledge of each other and where informal caretaking systems are the strongest.
- People's daily activities occur mainly within their HRU, including work, school, shopping, social activities, and recreation.
- Health, education, welfare, and other public services are highly organized at this level, with a town or community almost always as its focal point.
- An HRU is characterized by a sense of place, a sense of identity with the land and the people, a sense of a common understanding of how the resources of their HRU should be managed, and a common understanding of how things are normally done at this territorial level.
- The regularity of interaction within an HRU reinforces a recognition and identification by the residents of natural and human-made features as "home."
- Because of this familiarity, boundaries between HRUs are clearly defined in the minds of those living within them.

Also see **COMMUNITY RESOURCE UNIT (CRU)**.

HYDRIC- Characterized by, relating to, or requiring an abundance of moisture.

HYDROLOGIC CYCLE - The circuit of water movement from the atmosphere to the earth and its return to the atmosphere through various stages or processes, such as precipitation, interception, runoff, infiltration, percolation, storage, evaporation, and transpiration.

IGNEOUS ROCK - Rock, such as granite and basalt, which has solidified from a molten or partially molten state.

INCIDENT - A human-caused or natural occurrence, such as wildland fire, that requires emergency action to prevent or reduce the loss of life or damage to property or natural resources.

INCIDENT COMMANDER - The person responsible for managing all operations in response to incidents (i.e. wildfires and other events requiring emergency action).

INDICATORS - Elements of the human environment affected, or potentially affected, by a change agent. An indicator can be a structural component, a functional process or an index. A key indicator integrates several system elements in such a way as to indicate the general health of that system.

INDUSTRIAL MINERALS - All minerals that humans extract from the earth's crust except for fuels, metallic ores, water and gemstones.

INFILTRATION - The downward entry of water into the soil or other material.

INFRASTRUCTURE- The set of systems and facilities that support a region or community's social and economic structures. Examples of such systems include energy, transportation, communication, education, medical service, and fire and police protection.

INHALABLE PARTICULATE MATTER (PM_{10}) - Particulate matter in ambient air exceeding 10 microns in diameter. Also see **PARTICULATE MATTER** and **FINE PARTICULATE MATTER**.

INHOLDING - Parcels of land owned or managed by someone other than BLM but surrounded in part or entirely by BLM-administered land.

INITIAL ATTACK - The actions taken by the first resources to arrive at a wildland fire to protect lives and property and prevent further extension of the fire.

INSTREAM WATER USE - Water use within a stream channel for such purposes as navigation, recreation, fish and wildlife preservation, water quality improvement, and hydroelectric power generation.

INSTREAM WATER RIGHT (INSTREAM FLOW WATER RIGHT) - A water right that reserves water for and protects such specific instream water uses as fish spawning and recreation. The instream water right allows water needed for these activities to be set aside and keeps later water users from appropriating water that may affect the instream activity. Also see **INSTREAM WATER USE.**

INTERMITTENT STREAM - A stream that generally flows during wet seasons, but is dry during dry seasons.

INVASIVE SPECIES (INVADERS) - Plant species that were either absent or present only in small amounts in undisturbed portions of a specific range site's original vegetation and invade following disturbance or continued overuse.

KEY FORAGE SPECIES - Forage species whose use serves as an indicator of the degree of use of associated species.

KEYSTONE SPECIES - Species that create a special habitat on which other species depend and without which some wildlife would become severely depleted. Two examples of key stone

species are beavers, which create ponds, and prairie dogs, which create burrows.

LAND USE AUTHORIZATION - BLM's authorizing through leases, permits, and easements of uses of the public land. Land use authorizations may allow occupancy, recreational residences and cabin sites, farming, manufacturing, outdoor recreation concessions, National Guard maneuvers, and many other uses.

LARAMIDE OROGENY- A series of mountain building events that affected much of western North America in Late Cretaceous and Early Tertiary periods. (The Cretaceous period ended 65 million years ago and was followed by the Tertiary period.)

LEACHATE - The liquid that has percolated through and dissolved minerals out of ore.

LEASABLE MINERALS - Minerals whose extraction from federally managed land requires a lease and the payment of royalties. Leasable minerals include coal, oil and gas, oil shale and tar sands, potash, phosphate, sodium, and geothermal steam.

LEAVE NO TRACE - A nationwide (and international) program to help visitors with their decisions when they travel and camp on America's public lands. The program strives to educate visitors about the nature of their recreational impacts as well as techniques to prevent and minimize such impacts.

LITTER - The uppermost layer of organic debris on the soil surface, essentially freshly fallen or slightly decomposed vegetal material.

LIVE FUEL MOISTURE- See **FUEL MOISTURE**.

LIVESTOCK TRESPASS- The unauthorized grazing of livestock.

LOAM - A soil texture class for soil material that contains 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand.

LOCATABLE MINERALS - Minerals that may be acquired under the Mining Law of 1872, as amended.

LOCATION - The act of taking or appropriating a parcel of mineral land, including the posting of notices, the recording thereof when required, and marking the boundaries so they can be readily traced.

MAINTENANCE (ROAD) - (From BLM 9100 Manual) The work required keeping a facility in such a condition that it may be continuously utilized at its original or designed capacity and efficiency, and for its intended purposes. Road or trail maintenance actions include (a) signage, (b) minor repairs, e.g. correction of drainage, erosion, or vegetation interference problems. Upon performance of condition assessment, maintenance could also be construed as (c) allowing road or trail to remain in present state for regular and continuous use.

MANAGE FOR WILDERNESS CHARACTERISTICS (MWC) AREAS - Areas that contain values such as outstanding opportunities for primitive and unconfined recreation or outstanding opportunities for solitude and a few human intrusions, where preservation of these values represents a major management focus.

MAJOR LAND RESOURCE AREAS (MLRAs) - Broad geographic areas that have a particular pattern of soils, climate, water resources, vegetation, and land use. Each MLRA in which range and forest land occur is further broken into range sites.

MAJOR RIGHTS-OF-WAY- Rights-of-way along which pass transmission lines (consisting of 115kV or higher) used to transmit large blocks of energy to load centers for distribution.

MANAGEMENT SITUATION ANALYSIS (MSA) - See **ANALYSIS OF THE MANAGEMENT SITUATION (AMS)**.

MANUAL VEGETATION TREATMENTS - The use of hand-operated power tools and hand tools to cut, clear, or prune herbaceous and woody plants. In manual treatments, workers cut plants above ground level; pull, grub, or dig out plant root systems to prevent later sprouting and regrowth; scalp at ground level or remove competing plants around desired vegetation; or place mulch around desired vegetation to limit the growth of competing vegetation. Manual vegetation treatments cause less ground disturbance and generally remove less vegetation than prescribed fire or mechanical treatments.

MECHANICAL VEGETATION TREATMENTS - The use of mechanical equipment to suppress, inhibit, or control herbaceous and woody vegetation. BLM uses wheeled tractors, crawler-type tractors, mowers, or specially designed vehicles with attached implements for such treatments.

MESOZOIC ERA - One of the great eras of geologic time (248 million to 65 million years ago), following the Paleozoic era, preceding the Cenozoic era, and including the Triassic, Jurassic, and Cretaceous periods.

MICROHABITAT- The smallest unit of a habitat, like a clump of grass or a space between rocks.

MINERAL ENTRY- The filing of a claim on public land to obtain the right to any minerals it may contain.

MINERALIZATION - Evidence of the presence of minerals.

MINERAL MATERIAL DISPOSAL- The disposal through sale or free use permit of sand, gravel, decorative rock, or other materials defined in 43 CFR 3600.

MINERAL MATERIALS - Materials such as common varieties of sand, stone, gravel, pumice, pumicite, and clay that are not obtainable under the mining or leasing laws but that can be acquired under the Mineral Materials Act of 1947, as amended.

MINERALS PLANNING AREA - The area with federally administered minerals, where (1) the surface rights are held by BLM, the State of Arizona, or private parties, and located within the administrative boundaries of BLM's Phoenix Field Office but (2) are not being planned for in the Sonoran Desert National Monument RMP and Phoenix South RMP Revision.

MINING DISTRICT- An area, usually designated by name, with described or understood boundaries, where minerals are found and mined under rules prescribed by the miners, consistent with the Mining Law of 1872.

MINING PLAN OF OPERATIONS - A plan for mineral exploration and development that a mining operator must submit to BLM for approval for all mining, milling, and bulk sampling of more than 1,000 tons and for exploration disturbing more than 5 acres or on special status lands, including wilderness, areas of critical environmental concern, national monuments, national conservation areas, and lands containing proposed or listed threatened or endangered species or their critical habitat. A plan of operations must document in detail all actions that the operator plans to take from exploration through reclamation.

MONITORING- The collection of information to determine the effects of resource management and detect changing resource trends, needs, and conditions.

MOSAIC- A pattern of vegetation in which two or more kinds of communities are interspersed in patches.

MOTORIZED TRAIL- A designated route that allows for the use of small-wheel-based motorized vehicles such as all-terrain vehicles and motorcycles.

MULTIPLE USE- A combination of balanced and diverse resource uses that considers long-term needs for renewable and nonrenewable resources including recreation, wildlife, rangeland, timber, minerals, and watershed protection, along with scenic, scientific, and cultural values.

NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) - The allowable concentrations of air pollutants in the ambient (public outdoor) air specified in 40 CFR 50. National ambient air quality standards are based on the air quality criteria and divided into primary standards (allowing an adequate margin of safety to protect the public health including the health of "sensitive" populations such as asthmatics, children, and the elderly) and secondary standards (allowing an adequate margin of safety to protect the public welfare). Welfare is defined as including effects on soils, water, crops, vegetation, human-made materials, animals, wildlife, weather, visibility, climate, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) - The Federal law, effective January 1, 1970, that established a national policy for the environment and requires federal agencies- (1) to become aware of the environmental ramifications of their proposed actions, (2) to fully disclose to the public proposed Federal actions and provide a mechanism for public input to Federal decision-making, and (3) to prepare environmental impact statements for every major action that would significantly affect the quality of the human environment.

NATIONAL HISTORIC PRESERVATION ACT OF 1966, AS AMENDED (NHPA) - A Federal statute that established a Federal program to further the efforts of private agencies and individuals in preserving the Nation's historic and cultural foundations. The National Historic Preservation Act- (1) authorized the National Register of Historic Places, (2) established the Advisory Council on Historic Preservation and a National Trust Fund to administer grants for historic preservation, and (3) authorized the development of regulations to require Federal agencies to consider the effects of federally assisted activities on properties included on or eligible for the National Register of Historic Places. Also see **NATIONAL REGISTER OF HISTORIC PLACES**.

NATIONAL HISTORIC TRAIL - One of the three categories of national trails defined in the National Trails System Act of 1968 that can only be established by act of Congress and are administered by Federal agencies, although part or all of their land base may be owned and managed by others. National historic trails are generally more than 100 miles long and follow as closely as possible and practicable the original trails or routes of travel of national historic significance. Their purpose is identifying and protecting the historic route and its remnants and artifacts for public use and enjoyment.

NATIONAL MONUMENT- An area designated to protect objects of scientific and historic interest by public proclamation of the President under the Antiquities Act of 1906, or by Congress for historic landmarks, historic and prehistoric structures, or other objects of historic or scientific interest on public lands. Designation also provides for the management of these features and values.

NATIONAL RECREATION TRAIL- One of the three categories of national trails defined in the National Trails System Act of 1968 that can only be established by act of Congress and are administered by federal

agencies, although part or all of their land base may be owned and managed by others. National recreational trails are existing regional and local trails recognized by either the Secretary of Agriculture or the Secretary of the Interior upon application.

NATIONAL REGISTER DISTRICT- A group of significant archaeological, historical, or architectural sites, within a defined geographic area, that is listed on the National Register of Historic Places. See **NATIONAL REGISTER OF HISTORIC PLACES**.

NATIONAL REGISTER OF HISTORIC PLACES - The official list, established by the National Historic Preservation Act, of the Nation's cultural resources worthy of preservation. The National Register lists archeological, historic, and architectural properties (i.e. districts, sites, buildings, structures, and objects) nominated for their local, state, or national significance by state and federal agencies and approved by the National Register Staff. The National Park Service maintains the National Register. Also see **NATIONAL HISTORIC PRESERVATION ACT**.

NATIONAL REGISTER ELIGIBLE PROPERTIES - Cultural resource properties that meet the National Register criteria and have been determined eligible for nomination to the National Register of Historic Places because of their local, state, or national significance. Eligible properties generally are older than 50 years and have retained their integrity. They meet one or more of four criteria- (a) associated with events that have made a significant contribution to the broad patterns of our history; (b) associated with the lives of persons significant in our past; (c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master; and (d) have yielded, or may be likely to yield, information important in prehistory or history.

NATIONAL WILD AND SCENIC RIVERS SYSTEM- A system of nationally designated rivers and their immediate environments that have outstanding scenic, recreational, geologic, fish and wildlife, historical, cultural, and other similar values and are preserved in a free-flowing condition. The system consists of three types of streams- (1) recreation—rivers or sections of rivers that are readily accessible by road or railroad and that may have some development along their shorelines and may have undergone some impoundments or diversion in the past, (2) scenic—rivers or sections of rivers free of impoundments with shorelines or watersheds still largely undeveloped but accessible in places by roads, and (3) wild—rivers or sections of rivers free of impoundments and generally inaccessible except by trails with watersheds or shorelines essentially primitive and waters unpolluted.

NATIVE DIVERSITY- The diversity of species that have evolved in a given place without human influence.

NATIVE SPECIES- A species that is part of an area's original flora and fauna.

NEOTROPICAL MIGRATORY BIRDS - Birds that travel to Central America, South America, the Caribbean, and Mexico during the fall to spend the winter and then return to the United States and Canada during the spring to breed. These birds include almost half of the bird species that breed in the United States and Canada.

NEST PARASITISM (BROOD PARASITISM) - The exploitation by one bird species of the parental behavior of another species. A nest parasite lays eggs in the nest of another bird species to be cared for by a host. The parasite benefits from saving time, energy, and survival prospects, whereas the host may suffer partial or complete loss of its own current reproduction.

NICHE- The role of an organism in the environment, its activities and relationships to the biotic and abiotic environment.

NITROGEN OXIDES (OXIDES OF NITROGEN, NO_x) - A general term for compounds of nitric oxide (NO), nitrogen dioxide (NO_2), and other oxides of nitrogen. Nitrogen oxides are typically created during combustion and are major contributors to smog formation and acid deposition. NO_2 is a criteria air pollutant and may have many adverse health effects.

NONATTAINMENT AREA- An area in which the level of a criteria air pollutant is higher than the level allowed by the federal standards. A single area may have acceptable levels of one criteria air pollutant but unacceptable levels of one or more other criteria air pollutants. Therefore, an area can be both attainment and nonattainment at the same time.

NONPOINT SOURCE POLLUTION (WATER) - Pollution sources that are diffuse and do not have a single point of origin or are not introduced into a receiving water body from a specific outlet. These pollutants are generally carried off the land by storm water runoff from such sources as farming, forestry, mining, urban land uses, construction, and land disposal.

NOXIOUS WEED - the Federal Noxious Weed Act, 1974 (PL 930629) defines a noxious weed as, "any living stage (including seeds and reproductive parts) of a parasitic or other plant of a kind which is of foreign origin, is new to or not widely prevalent in the U.S., and can directly or indirectly injure crops, other useful plants, livestock, poultry or other interests of agriculture, including irrigation, navigation, fish and wildlife resources, or the public health."

NUTRIENT CYCLE- A general term for the movement of any particular life essential substance through the physical and biological environment. Essential nutrient cycles include those of carbon, nitrogen, oxygen, and water.

OBLIGATE- Essential, necessary, unable to exist in any other state, mode, or relationship.

OFF-HIGHWAY VEHICLE (OHV)- Any vehicle capable of or designed for travel on or immediately over land, water, or other natural terrain (deriving motive power from any source other than muscle.) OHVs exclude (1) any nonamphibious registered motorboat; (2) any fire, emergency, or law enforcement vehicle while being used for official or emergency purposes; and (3) any vehicle whose use is expressly authorized by a permit, lease, license, agreement, or contract issued by an authorized officer or otherwise approved. (43 CFR 8340.0-5)

OFF-ROAD VEHICLE (ORV) - See **OFF-HIGHWAY VEHICLE (OHV)**.

OFFSET - A method used in the 1990 Clean Air Act to give companies that own or operate large sources in nonattainment areas flexibility in meeting overall pollution reduction requirements when changing production processes. If the operator or owner of the source wants to increase the release of a criteria air pollutant, an offset (reduction of a somewhat greater amount of the same pollutant) must be obtained either at the same plant or by buying offsets from another company.

OUTSTANDING NATURAL AREA (ONA) - ACECs which contain unusual natural characteristics and are managed primarily for educational and recreational purposes.

OVERBURDEN- All the earth and other materials that overlie a natural mineral deposit.

OVERSTORY- The portion of the trees in a forest stand forming the upper crown cover. Also see **UNDERSTORY.**

PALEONTOLOGICAL RESOURCES- The remains of plants and animals preserved in soils and sedimentary rock. Paleontological resources are important for understanding past

environments, environmental change, and the evolution of life.

PALEOZOIC ERA- An era of geologic time (600 million to 280 million years ago) between the Late Precambrian and the Mesozoic eras and comprising the Cambrian, Ordovician, Silurian, Devonian, Missippian, Pennsylvanian, and Permian periods.

PANICULATE AGAVE- Certain agave species such as Palmer's agave (*Agave palmeri*) and Parry's agave (*Agave parryi*), whose flowers are arranged on the stalk in a pyramidal, loosely branched cluster (panicle). The nectar and pollen of paniculate agaves are consumed by the lesser long-nosed bat, a federally listed endangered species.

PASSAGE ZONE- Lands along secondary travel routes where visitor or other uses would not be directed or encouraged, but could be accommodated. Also see **BACK COUNTRY ZONE** and **FRONT COUNTRY ZONE**.

PATENT- The instrument by which the Federal Government conveys title to the public lands.

PAYMENTS IN LIEU OF TAXES (PILT) - Payments made to counties by BLM to mitigate losses because public lands cannot be taxed. BLM calculates the amount of payments using a formula based on population and the amount of Federal land in a particular local jurisdiction. These payments are in addition to Federal revenues transferred to local governments under other programs, such as income generated from timber harvests, mineral receipts, and the use of federal land for livestock grazing.

PARTICULATE MATTER- Fine liquid or solid particles suspended in the air and consisting of dust, smoke, mist, fumes, and compounds containing sulfur, nitrogen, and metals. Also see **FINE PARTICULATE MATTER** and **INHALABLE PARTICULATE MATTER**.

PASTURE- A grazing area that is separated from other areas by fencing or natural barriers.

PEDESTALLING- The removal of soil from the base of a plant, exposing the roots. Pedestalling is often a result of wind and streambank erosion.

PERFORMANCE- See **LIVESTOCK PERFORMANCE**.

PERENNIAL PLANT- A plant that has a life cycle of 3 or more years. Also see **ANNUAL PLANT**.

PERENNIAL STREAM- A stream that flows continuously during all seasons of the year.

PERMEABILITY, SOIL- The ease with which gases, liquids, or plant roots penetrate or pass through a bulk mass of soil or a layer of soil.

PERMITTEE- A person or company permitted to graze livestock on public land.

PERMIT TYPES AND DEFINITIONS-

Commercial Use- The activity, service, or use is commercial if-

- Any person, group, or organization makes or attempts to make a profit, receive money, amortize equipment, or obtain goods or services, as compensation from participants in recreational activities occurring on public lands led, sponsored, or organized by that person, group, or organization;
- Anyone collects a fee or receives other compensation that is not strictly a sharing of actual expenses, or exceeds actual expenses, incurred for the purposes of the activity, service, or use;

- There is paid public advertising to seek participants; or
- Participants pay for a duty of care or an expectation of safety.

Competitive Use- Any organized, sanctioned, or structured use, event, or activity on public land in which two or more contestants compete and either or both of the following elements apply-

- Participants register, enter, or complete an application for the event;
- A predetermined course or area is designated;

Or, one or more individuals contesting an established record such as for speed or endurance.

Organized Group Activity and Event Use- A structured, ordered, consolidated, or scheduled event on, or occupation of, public lands for the purpose of recreational use that is not commercial or competitive.

Vending- The sale of goods or services, not from a permanent structure, associated with recreation on the public lands or related waters, such as food, beverages, clothing, firewood, souvenirs, filming or photographs (video or still), or equipment repairs.

PERSONAL INCOME- The sum of wage and salary payments, other labor income, proprietors' income, rental income of persons, personal dividend and interest income, and transfer payments to persons, less personal contributions for social insurance.

PETROGLYPH - Pictures, symbols, or other art work pecked, carved, or incised on natural rock surfaces.

PILT- See **PAYMENTS IN LIEU OF TAXES**.

PIPING- See **SOIL PIPING**.

PITHOUSE- A type of house built partly underground by prehistoric people.

PLACER CLAIM- A mining claim located on surficial or bedded deposits, particularly for gold located in stream gravels.

PLAN OF OPERATIONS- See **MINING PLAN OF OPERATIONS**.

PLANT SUCCESSION- The process of vegetational development by which an area becomes successively occupied by different plant communities of higher ecological order.

PLANT VIGOR- The relative wellbeing and health of a plant as reflected by its ability to manufacture enough food for growth and maintenance.

PLEISTOCENE (ICE AGE)- An epoch in the Quarternary period of geologic history lasting from 1.8 million to 10,000 years ago. The Pleistocene was an epoch of multiple glaciation, during which continental glaciers covered nearly one fifth of the earth's land.

$PM_{2.5}$ PARTICULATES- Tiny particles with an aerodynamic diameter of 2.5 microns or less. These particles penetrate most deeply into the lungs.

PM_{10} PARTICULATES- A criteria air pollutant consisting of small particles with an aerodynamic diameter of 10 microns or less. Their size allows them to enter the air sacs deep within the lungs where they may be deposited in have adverse health effects. These particles include dust, soot, and other tiny bits of solid materials in the air.

POKER RUN- A noncompetitive off-highway vehicle ride where riders have a choice of two or more clearly marked loop courses and pass several checkpoints to the finish line. After finishing the course, participants will draw poker hands for cash or other prizes.

POOL- A portion of a stream that has reduced current velocity and often water deeper than surrounding areas and that is frequently usable by fish for resting and cover.

POPULATION- A group of interbreeding organisms of the same kind occupying a particular space; a group of individuals of a species living in a certain area.

PORPHYRY COPPER- A disseminated replacement deposit in which copper minerals occur as discrete grains and veinlets throughout a large volume of rock; a large-tonnage, low-grade copper deposit.

POTENTIAL NATURAL COMMUNITY (PNC)- The stable biotic community that would become established on an ecological site if all successional stages were completed without human interference under present environmental conditions. The PNC is the vegetation community best adapted to fully use the resources of an ecological site.

PRESCRIBED FIRE (BURNING) - The planned applying of fire to rangeland vegetation and fuels under specified conditions of fuels, weather, and other variables to allow the fire to remain in a predetermined area to achieve such site-specific objectives as controlling certain plant species; enhancing growth, reproduction, or vigor of plant species; managing fuel loads; and managing vegetation community types.

PRIMARY ROAD- See **ROAD AND ROUTE TYPES**.

PRIME FARMLAND- As defined by the Farmland Protection Policy Act of 1981, land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion, as determined by the Secretary of Agriculture. Prime farmland includes land with the above characteristics, but is being used to produce livestock and timber. It does not include land already in or committed to urban development or water storage. Also see **UNIQUE FARMLAND**.

PRIMITIVE RECREATION- Recreation that provides opportunities for isolation from the evidence of humans, a vastness of scale, feeling a part of the natural environment, having a high degree of challenge and risk, and using outdoor skills. Primitive recreation is characterized by meeting nature on its own terms, without comfort or convenience of facilities.

PROPER FUNCTIONING CONDITION (RIPARIAN-WETLAND AREAS) - The condition where- (1) enough vegetation, landform, or large woody debris is present to dissipate the stream energy of high water flows, thereby reducing erosion and improving water quality; (2) sediments are filtered, bedload is captured, and floodplains develop; (3) flood water retention and ground water recharge are improved, root masses that stabilize streambanks against cutting action develop, and diverse ponding and channel characteristics are created to provide the habitat and the water depth, duration, and temperature needed for fish production, waterfowl breeding, and other uses; and (4) greater biodiversity is supported.

PROSPECTIVELY VALUABLE FOR OIL AND GAS- Known or believed to contain oil and gas deposits that have, or at some time in the future, proven economic value.

PUBLIC DOMAIN LANDS- Lands that are part of the original public domain and have never left federal ownership and lands in federal ownership that were acquired in exchange for public domain lands or for timber on public domain lands.

PUBLIC LAND ORDER - An order effecting, modifying, or canceling a withdrawal or reservation. Such an order is issued by the Secretary of the Interior pursuant to powers of the President delegated to the Secretary by Executive Order No.9146 of April 24, 1943.

PUBLIC LANDS - As defined by Public Law 94-579 (Federal Land Policy and Management Act of 1976), lands and interest in land owned by the United States and administered by the Secretary of the Interior through BLM, regardless of how the United States acquired possession. In common usage, public lands may refer to all federal land no matter what agency manages it. Also see **ACQUIRED PUBLIC LANDS**.

PUBLIC USE LEVELS- Three sets of proposed management actions for the interpretive use of archaeological sites in the Agua Fria National Monument, varying in the intensity of development and number of facilities. Example actions for each of these levels can be found in the Cultural Resources discussion of the Management Common to the AFNM section of Chapter 2.

PUEBLO- A Spanish word meaning "town" or "village" and used to describe an Indian village of apartment-type building with one or more stories. Pueblos are built of adobe or stone and have flat roofs.

QUARTERNARY PERIOD- The current period of geologic history and second period of the Cenozoic era, which is believed to have covered the last 2 million to 3 million years.

RANGE IMPROVEMENT- Any activity or program on or relating to the public lands designed to improve forage production, change vegetation composition, control use patterns, provide water, stabilize soil and water conditions, or provide habitat for livestock and wildlife. Range improvements may be structural or nonstructural. A structural improvement requires placement or construction to facilitate the management or control the distribution and movement of animals. Such improvements may include fences, wells, troughs, reservoirs, pipelines, and cattleguards. Nonstructural improvements consist of practices or treatments that improve resource conditions. Such improvements include seedings; chemical, mechanical, and biological plant control; prescribed burning; water spreaders; pitting; chiseling; and contour furrowing.

RANGELAND - A kind of land on which the native vegetation, climax, or natural potential consists predominately of grasses, grasslike plants, forbs, or shrubs. Rangeland includes lands revegetated naturally or artificially to provide a plant cover that is managed like native vegetation. Rangelands may consist of natural grasslands, savannas, shrublands, moist deserts, tundra, alpine communities, coastal marshes, and wet meadows.

RANGELAND ECOLOGICAL SITE- A distinctive kind of land that has specific physical characteristics and that differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation.

RANGE SITE- See **ECOLOGICAL SITE**.

RANGE SITE GUIDE- See **ECOLOGICAL SITE DESCRIPTIONS**.

RAPTORS- Birds of prey.

REACH- A relatively homogeneous section of a stream having a repetitious sequence of physical characteristics and habitat types.

RECHARGE- See **AQUIFER RECHARGE**.

RECLAIMING OR RECLAIMED (ROUTE) - See **ROAD AND ROUTE TYPES**.

RECORD OF DECISION - A document signed by a responsible official recording a decision that was preceded by the preparing of an environmental impact statement. Also see **DECISION RECORD**.

RECREATION AND PUBLIC PURPOSES ACT of 1926 (44 Stat. 741, as amended; 43 U.S.C. 869 et seq.) - An act of Congress that allows lease or acquisition of public land to be used for recreation or public purposes by local government entities (county or city governments) and nonprofit organizations.

RECREATION MANAGEMENT ZONES (RMZs) - Areas within special recreation management areas (SRMAs) with a particular recreation management focus or resource challenges. See **SPECIAL RECREATION MANAGEMENT AREAS**.

RECREATION OPPORTUNITY SPECTRUM (ROS) - A planning process that provides a framework for defining classes of outdoor recreation environments, activities, and experience opportunities. In ROS, the setting, activities, and opportunities for experiences are arranged along a spectrum of six classes: primitive; semi-primitive non-motorized; semi-primitive motorized; roaded natural; rural; and urban. The resulting ROS analysis defines specific geographic areas on the ground, each of which encompasses one of the six classes.

RECREATION SETTINGS- Settings described in the recreation opportunity spectrum (ROS) inventory method. Descriptions of the settings follow-

Primitive:

Remoteness: An area designated by a line generally 3 miles from all open roads, railroads, and motorized trails

Evidence of Humans: Setting is essentially an unmodified natural environment. Evidence of humans would be unnoticed by an observer wandering through the area.

Evidence of trails is acceptable but should not exceed standard to carry expected use.

Structures are extremely rare.

Social: Usually less than six parties per day encountered on trails and less than three parties visible at campsites.

Managerial: Onsite regimentation is low with controls primarily offsite.

Semi-primitive Non-motorized:

Remoteness: An area designated by a line generally 1/2 mile from any road, railroad, or trail open to public motorized use. (The guideline for applying the 1/2 mile criterion is to use 1/2 mile except where topographic or physical features closer than 1/2 miles adequately screen out the sights and sounds of humans and make access more difficult and slower. For example, if a ridge is 1/4 mile from the road, use the ridge instead of the 1/2 mile.)

Any roads, railroads, or trails within the semi-primitive non-motorized areas will have the following characteristics:

- Closed to public motorized use, and
- Are reclaimed, or in the process of reclaiming (when reclaiming will harmonize with the natural appearing environment). Some examples are old logging roads, old railroad beds, old access routes to abandoned campsites, temporary roads, and gated roads that are used for occasional administrative access.

Evidence of Humans: Natural setting may have subtle modifications that would be noticed but not draw the attention of an observer wandering through the area.

Little or no evidence of primitive roads and the motorized use of trails and primitive roads.

Structures are rare and isolated.

Social: Usually 6-15 parties per day encountered on trails and six or fewer parties visible from campsite.

Managerial: Onsite regimentation and controls present but subtle.

Semi-Primitive Motorized:

Remoteness: An area designed by a line generally 1/2 mile from open better than primitive roads. (The guideline for applying the 1/2 mile criterion is to consistently use 1/2 mile where topographic or physical features closer than 1/2 mile adequately screen out the sights and sounds of humans, e.g. a ridge 1/4 mile from the road).

Contains open primitive roads that are not maintained for the use of standard passenger-type vehicles, normally OHVs and high-clearance vehicles, e.g. an old pickup with high clearance. These open roads are generally tracks, ruts, or rocky-rough surface and upgraded and not drained. The roadbeds and cuts are mostly vegetated with grass or native material unless they are too rocky for vegetation. The roads harmonize with the natural environment. Examples include old logging roads from before specified road years, old revegetated railroad beds, old access roads to abandoned home-sites, temporary logging roads that are revegetated, and low standard administrative roads (normally used for access to wildlife openings).

Evidence of Humans: Natural setting may have moderately dominant alterations but would not draw the attention of motorized observers on trails and primitive roads within the area. Any closed improved roads must be managed to revegetate and harmonize with the natural environment.

Strong evidence of primitive roads and the motorized use of trails and primitive roads.

Structures are rare and isolated.

Social: Low to moderate contact frequency.

Managerial: Onsite regimentation and controls present but subtle.

Roaded Natural:

Remoteness: No criteria.

Evidence of Humans: Natural setting may have modifications, which range from being easily noticed to strongly dominant to observers within the area. But from sensitive travel routes and use areas these alterations would remain unnoticed or visually subordinate.

There is strong evidence of designed roads, highways, or both.

Structures are generally scattered, remaining visually subordinate or unnoticed to the sensitive travel route observer. Structures may include utility corridors or microwave installations.

Social: Frequency of contact is- Moderate to high on roads; Low to Moderate on trails and away from roads.

Managerial: Onsite regimentation and controls are noticeable but harmonize with the natural environment.

Rural:

Remoteness: No criteria.

Evidence of Humans: Natural setting is culturally modified to the point that it is dominant to the sensitive travel route observer. This setting may include pastoral, agricultural, intensively managed wildland resource landscapes, or utility corridors. Pedestrian or other slow-moving observers are constantly within view of culturally changed landscape.

There is strong evidence of designed roads, highways, or both.

Structures are readily apparent and may range from scattered to small dominant clusters,

including utility corridors, farm buildings, microwave installations, and recreation sites.

Social: Frequency of contact is: Moderate to High developed sites, on roads and trails, and water surfaces; Moderate away from developed sites.

Managerial: Regimentation and controls obvious and numerous, largely in harmony with the human-made environment.

Urban:

Remoteness: No criteria.

Evidence of Humans: Setting is strongly structure dominated. Natural or natural appearing elements may play an important role but be visually subordinate. Pedestrian and other slow moving observers are constantly within view of artificial enclosure of spaces.

There is strong evidence of designed roads and/or highways and streets.

Structures and structure complexes are dominant.

Social: Large numbers of users onsite and in nearby areas.

Managerial: Regimentation and controls obvious and numerous

RECREATION ZONE- A planned and delineated area with designated recreation opportunities, settings, and activities.

RECRUITMENT- The increase in population caused by natural reproduction or immigration.

REFUGIUM- An area that has remained unaffected by adverse environmental changes to the surrounding area, allowing a population to survive where others have perished.

REPLACEMENT DEPOSIT- A mineral deposit formed by a new mineral of partly or wholly differing chemical composition growing in the body of an old mineral or aggregate.

RESEARCH NATURAL AREA (RNA) - An area of critical environmental concern that is a physical or biological unit in which current natural conditions are maintained insofar as possible. In RNAs activities such as grazing and vegetation manipulation are prohibited unless they replace natural processes and contribute to protecting and preserving an area. Moreover, such recreation as camping and gathering plants is discouraged.

RESEARCH DESIGN - A statement of proposed identification, documentation, evaluation, investigation, or other research that identifies the project's goals, methods and techniques, expected results, and the relationship of the expected results to other proposed activities or treatments.

RESISTANCE TO CONTROL (WILDFIRE) - The relative difficulty of building and holding a fire control line as affected by fire behavior, fuel, topography, and soil.

RESOURCE ADVISORY COUNCILS (RACs) - Advisory councils appointed by the Secretary of the Interior and consisting of representatives of major public land interest groups (e.g. commodity industries, recreation, environmental, and local area interests) in a state or smaller area. RACs advise BLM, focusing on a full array of multiple uses public land issues. RACs also help develop fundamentals for rangeland health and guidelines for livestock grazing.

RESOURCE CONSERVATION AREA (RCA) - A land management designation that provides management consideration to areas that have special resources but don’t need the protection conferred by an area of critical environmental concern.

RESOURCE MANAGEMENT PLAN (RMP) - (43 CFR 1601.0-5 (k))"...a land use plan as described by the Federal Land Policy and Management Act. The resource management plan generally establishes in a written document-

1. Land areas for limited, restricted or exclusive use; designation, including ACEC designation; and transfer from Bureau of Land Management Administration;
2. Allowable resource uses (either singly or in combination) and related levels of production or use to be maintained;
3. Resource condition goals and objectives to be attained;
4. Program constraints and general management practices needed to achieve the above items;
5. Need for an area to be covered by more detailed and specific plans;
6. Support action, including such measures as resource protection, access development, realty action, cadastral survey, etc., as necessary to achieve the above;
7. General implementation sequences, where carrying out a planned action is dependent upon prior accomplishment of another planned action; and
8. Intervals and standards for monitoring and evaluating the plan to determine the effectiveness of the plan and the need for amendment or revision.

It is not a final implementation decision on actions which require further specific plans, process steps, or decisions under specific provisions of law and regulations."

REST- See **GRAZING REST**.

RESTORATION (CULTURAL RESOURCE) - The process of accurately reestablishing the form and details of a property or portion of a property together with its setting, as it appeared in a particular period of time. Restoration may involve removing later work that is not in itself significant and replacing missing original work. Also see **STABILIZATION (CULTURAL RESOURCE)**.

REST-ROTATION GRAZING - A grazing system in which one part of the range is ungrazed for an entire grazing year or longer while other parts are grazed for a portion or all of a growing season.

RIGHT-OF-WAY- A permit or easement that authorizes the use of lands for certain specified purposes, commonly for pipelines, roads, telephone lines, or powerlines.

RILL- A narrow, very shallow (a few centimeters deep), intermittent water course having steep sides and formed as a result of erosion.

RIPARIAN - Pertaining to or situated on or along the bank of streams, lakes, and reservoirs.

RIPARIAN AREA - A form of wetland transition between permanently saturated wetlands and upland areas. Riparian areas exhibit vegetation or physical characteristics that reflect the influence of permanent surface or subsurface water. Typical riparian areas include lands along, adjacent to, or contiguous with perennially and intermittently flowing rivers and streams, glacial potholes, and the shores of lakes and reservoirs with stable water levels. Excluded are ephemeral streams or washes that lack vegetation and depend on free water in the soil.

ROAD - (From BLM 9100 manual) …a transportation facility used primarily by vehicles having four or more wheels, documented as such by the owner, and maintained for regular and continuous use.

ROADSIDE - a general term denoting the area adjoining the outer edge of the road.

ROAD AND ROUTE TYPES-

Primary Road - A regularly maintained route, paved or unpaved, wide enough for at least two vehicles to pass. Provides access between two major points. Serves a large area with many routes of lesser quality branching from it.

Secondary Road - Paved or unpaved, a regularly maintained one- to two-lane route with routes of lesser quality branching from it. Connects primary roads and major points.

Tertiary Road - Generally a two-track route that may or may not be usable by a two-wheel drive vehicle. Does not receive formal maintenance.

Single-Track Route - A route up to 1/2 meter wide upon which all-terrain vehicles or trucks are not allowed.

Way - A road-like feature used by vehicles having four or more wheels but not declared a road by the owner. A way receives no maintenance to guarantee regular and continuous use.

Spur - A route that exists for a specific purpose, such as access to a specific use or feature. Uses can be recreational or commercial. Features include campsites, mines, or range developments. A spur route is connected to another road or route type.

Reclaiming or Reclaimed (route) - A route that has had very little or no use, so that there is woody vegetation growing in the route that would be damaged by the passage of a vehicle. Erosion or vegetation may block the route and could damage a vehicle or cause it to get stuck.

ROCK CRAWLING - The use of specialized motor vehicles for crossing difficult terrain. Also known as extreme technical trail driving.

ROOT ZONE- The part of the soil that is or can be penetrated by plant roots.

ROUTE- Any motorized, non-motorized, or mechanized transportation corridor. Corridor may either be terrestrial or waterway. “Roads” and “Trails” are considered routes.

RUN - An area of swiftly flowing water that lacks surface agitation or waves and approximates uniform flow, and whose water surface is roughly parallel to the overall gradient of the stream reach.

RUNOFF - The portion of a drainage area’s precipitation that flows from the area.

SAFE YIELD- The rate at which water can be withdrawn from a groundwater basin (aquifer) without depleting the supply so as to cause undesirable effects.

SALABLE MINERALS - Common variety minerals on public lands, such as sand and gravel, which are used mainly for construction and are disposed of by sales or special permits to local governments.

SCARIFICATION - A method of seedbed preparation that consists of exposing patches of mineral soil through mechanical action; the act or process of breaking up the ground in preparation for regeneration.

SCIENTIFIC DATA RECOVERY- See **CULTURAL RESOURCE DATA RECOVERY**.

SCOPING- An early and open process for determining the scope of issues to be addressed in an environmental impact statement and the significant issues related to a proposed action.

SEASONAL GRAZING - Grazing restricted to a specific season.

SECONDARY ROAD - See **ROAD AND ROUTE TYPES**.

SECTION - 640 acres, 1 mile square.

SECTION 404 PERMIT- A permit required by the Clean Water Act, under specified circumstances, when dredge or fill material is placed in the waters of the United States, including wetlands.

SECTION 7 CONSULTATION - The requirement of Section 7 of the Endangered Species Act that all federal agencies consult with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service if a proposed action might affect a federally listed species or its critical habitat.

SEDIMENT - Solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water. Sediment includes chemical and biochemical precipitates and decomposed organic material such as humus.

SEDIMENTARY ROCKS- Rocks, such as sandstone, limestone, and shale, that are formed from sediments or transported fragments deposited in water.

SEDIMENTATION - The process or action of depositing sediment.

SEDIMENT LOAD (SEDIMENT DISCHARGE) - The amount of sediment, measured in dry weight or by volume, which is transported through a stream cross-section in a given time. Sediment load consists of sediment suspended in water and sediment that moves by sliding, rolling, or bounding on or near the streambed.

SEDIMENT TRANSPORT - The movement of mineral and organic solid materials in a stream.

SEDIMENT YIELD - The amount of sediment removed from a watershed over a specified period, usually expressed as tons, acre-feet, or cubic yards of sediment per unit of drainage area per year.

SEGREGATION- The removal for a limited period, subject to valid existing rights, of a specified area of the public lands from the operation of the public land laws, including the mining laws, pursuant to the exercise by the Secretary of the Interior of regulatory authority to allow for the orderly administration of the public lands. See **WITHDRAWAL**.

SENSITIVE SPECIES- All species that are under status review, have small or declining populations, live in unique habitats, or need special management. Sensitive species include threatened, endangered, and proposed species as classified by the U.S. Fish and Wildlife Service.

SHARED USE TRAIL- A trail shared for a variety of uses such as motorized and non-motorized uses; a combination of non-motorized uses such as hiking, horseback riding, and bicycling; or a combination of motorized uses such as dirt bikes and small and large four-wheel-drive vehicles.

SHRINK-SWELL POTENTIAL- The susceptibility of soil to volume change due to loss or gain in moisture content.

SHOULDER - The portion of the roadway contiguous to the travelway for accommodation of stopped vehicles.

SIKES ACT OF 1974 - A Federal law that promoted federal-state cooperation in managing wildlife habitats on both BLM and Forest Service lands. The act requires BLM to work with State wildlife agencies to plan the development and maintenance of wildlife habitats and has as its main tool the habitat management plan.

SMALL TRACT LANDS - Parcels of public lands of 5 acres or less that have been found to be chiefly valuable for sale or lease as home, cabin, camp, recreational, convalescent, or business sites under the Act of June 1, 1938.

SMOKE PERMIT - In Arizona, a permit that an agency must obtain from the Arizona Department of Environmental Quality in order to conduct a prescribed burn. Also see **PRESCRIBED FIRE**.

SINGLE TRACK ROUTE- See **ROAD AND ROUTE TYPES.**

SOCIAL TRAIL- An unplanned random trail made by first visitors and then followed by others.

SOIL ERODIBILITY- The predisposition of a particular soil to be transported by wind or water if it is disturbed and exposed to the elements.

SOIL INFILTRATION - The ability of soil to absorb moisture that falls on it as precipitation.

SOIL MOISTURE - The water content stored in a soil.

SOIL PIPING - The removal of soil material through subsurface flow channels or "pipes" formed by seepage water.

SOIL PRODUCTIVITY- The capacity of a soil in its normal environment to produce a specified plant or sequence of plants under a specified system of management.

SOIL STABILITY - A qualitative term used to describe a soil's resistance to change. Soil stability is determined by intrinsic properties such as aspect, depth, elevation, organic matter content, parent material, slope, structure, texture, and vegetation.

SOIL STRUCTURE - The physical constitution of soil material as expressed by size, shape, and the degree of development of primary soil particles and voids into naturally or artificially formed structural units.

SOLUTION MINING - A mining method by which salt and sulfur are extracted by injecting water (for salt) or superheated water (for sulfur) into deposits in the ground. The water dissolves the salt, and the resulting brine is pumped to the surface. Or the superheated water melts the solid sulfur, and the liquid sulfur is pumped to the surface.

SPECIAL CULTURAL RESOURCE MANAGEMENT AREA (SCRMA) - An area containing cultural resources that are of special importance for public use, scientific use, traditional use or other uses as defined in BLM Manual 8110.4.

SPECIAL LAND USE PERMIT (SLUP)- A permit granted for purposes neither authorized nor forbidden by law.

SPECIAL RECREATION MANAGEMENT AREAS (SRMAs) - Areas of intensive recreation use that will be managed to retain recreation opportunities while protecting other resources and reducing user conflicts. See **RECREATION MANAGEMENT ZONES**.

SPECIAL RECREATION PERMIT (SRP) - An authorization that allows for specific nonexclusive permitted recreational uses of the public lands and related waters. SRPs are issued to control visitor use, protect recreational and natural resources, provide for the health and safety of visitors, and accommodate commercial recreational uses.

SPECIAL STATUS SPECIES- Plant or animal species listed as threatened, endangered, candidate, or sensitive by the Federal Government or State governments.

SPLIT-ESTATE - Land whose surface rights and mineral rights are owned by different entities.

STABILIZATION (CULTURAL RESOURCE) - Protective techniques usually applied to structures and ruins to keep them in their existing condition, prevent further deterioration, and provide structural safety without significant rebuilding. Capping mud-mortared masonry walls with concrete mortar is an example of a stabilization technique. Also see **RESTORATION (CULTURAL RESOURCE).**

STABILIZATION (SOIL) - Chemical or mechanical treatment to increase or maintain the stability of a mass of soil or otherwise improve its engineering properties.

STANDARDS AND GUIDELINES FOR RANGELAND HEALTH - See **ARIZONA STANDARDS FOR RANGELAND HEALTH AND GUIDELINES FOR GRAZING ADMINISTRATION**.

STAGING AREA - An area where participants in an activity gather and make final preparations for the activity.

STAMP - A machine for crushing ore, used particularly in gold milling.

STATE HISTORIC PRESERVATION OFFICER (SHPO) - The official within and authorized by each state at the request of the Secretary of the Interior to act as liaison for the National Historic Preservation Act. Also see **NATIONAL HISTORIC PRESERVATION ACT**.

STATE IMPLEMENTATION PLAN (SIP) - A detailed description of the programs a state will use to carry out its responsibilities under the Clean Air Act. SIPs are collections of the regulations used by a state to reduce air pollution. The Clean Air Act requires that the Environmental Protection Agency approve each SIP.

STATE LANDS - See **STATE TRUST LANDS**.

STATE TRUST LANDS - Lands granted to Arizona by the Federal Government at territorial establishment and at statehood. Totaling 9.4 million acres, these lands are managed by the Arizona State Land Department to yield revenue over the long term for the 14 trust beneficiaries. The chief beneficiary consists of the public schools. Whenever Arizona sells or leases these lands and their natural resources, it must pay the beneficiaries. Revenues from land sales are maintained in a permanent fund managed by the State Treasurer, and interest from this fund is paid to the beneficiaries.

STOCKING RATE - The number of specific kinds and classes of animals grazing or using a unit of land for a specific time period. Stocking rates may be expressed as a ratio, such as of animal units/section, acres/animal unit, or acres/animal unit month.

STOCK TANK (POND) - A water impoundment created by building a dam, digging a depression, or both, to provide water for livestock or wildlife.

STREAMBANK- The portion of a stream channel that restricts the sideward movement of water at normal water levels. The streambank's gradient often exceeds 45 ° and exhibits a distinct break in slope from the stream bottom.

STREAMBANK STABILITY - A streambank's relative resistance to erosion, which is measured as a percentage of alteration to streambanks.

SUBMERGENT VEGETATION - Aquatic plants that grow only within water and do not break the water's surface. Also see **EMERGENT VEGETATION**.

SUBSTRATE - (1) Mineral and organic material forming the bottom of a waterway or water body; (2) The base or substance upon which an organism is growing.

SUBSURFACE - Of or pertaining to rock or mineral deposits which generally are found below the ground surface.

SUBWATERSHED - A watershed subdivision of unspecified size that forms a convenient natural unit.

SUCCESSION - See **PLANT SUCCESSION**.

SUCCULENTS - Plants such as cacti that have fleshy tissues designed to conserve moisture.

SUPPLEMENTAL FEED - Concentrates or harvested feed that is fed to livestock to correct the deficiencies of a range diet.

SUPPLEMENTAL WILDERNESS VALUES- Resources not required for an area to be designated a wilderness but that are considered in assessing an area's wilderness potential. Such values include ecological, geologic, and other features of scientific, educational, scenic, or historical value.

SUSTAINED YIELD - Achieving and maintaining a permanently high level, annual or regular period production of renewable land resources without impairing the productivity of the land and its environmental values.

SWALE - A commonly wet or moist low-lying or depressed land area.

TAILINGS - The waste matter from ore after the extraction of economically recoverable metals and minerals.

TAKE - As defined by the Endangered Species Act, "...to harass, harm, pursue, hunt, shoot, wound, kill, capture, or collect, or attempt to engage in any such conduct..."

TARGET SPECIES - Plant species to be reduced or eliminated by a vegetation treatment. Also see **VEGETATION TREATMENTS**.

TERRESTRIAL SPECIES - Ground-dwelling plants and animals.

TERTIARY PERIOD - The earlier (65 million to 1.8 million years ago) of the two geologic periods in the Cenozoic era of geologic time.

TERTIARY ROAD - See **ROAD AND ROUTE TYPES**.

THREATENED SPECIES - Any plant or animal species likely to become endangered within the foreseeable future throughout all or a part of its range and designated by the U.S. Fish and Wildlife Service under the Endangered Species Act. Also see **ENDANGERED SPECIES**.

TRAIL- (Interagency definition) Linear route managed for human powered, stock, or off highway vehicle forms of recreation or for historic or heritage values. Trails are not generally managed for use by four wheel drive or high clearance vehicles.

TRAILHEAD - The terminus of a hiking, horse, or bicycle trail accessible by motor vehicle and sometimes having parking, signs, a visitor register, and camping and sanitary facilities.

TRANSFER PAYMENT - A government grant to an individual of money that represents a gift without anything being received or required in return. Examples of transfer payments include student scholarship grants, welfare checks, and social security benefits.

TRANSITIONAL PATHWAYS - The processes that cause a shift from one vegetation state to another.

TRAVERTINE - A mineral consisting of calcium carbonate deposited by spring waters.

TREAD LIGHTLY- A not-for-profit organization whose mission is to increase awareness of ways to enjoy the great outdoors while minimizing human impacts.

TRIALS - Off-road competitions in which the rider has to surmount obstacles. Points are deducted if the rider puts his feet on the ground, goes outside the marked course, or fails to clear an obstacle.

TURBIDITY- Cloudiness of water measured by how deeply light can penetrate it from the surface. Highly turbid water is often called "muddy" although all kinds of suspended particles contribute to turbidity.

UNAUTHORIZED USE - Any use of the public lands not authorized or permitted.

UNDERSTORY - Plants growing under the canopy of other plants. Understory usually refers to grasses, forbs, and low shrubs under a tree or brush canopy. Also see **OVERSTORY**.

USABLE FORAGE- That portion of the forage that can be grazed without damage to the basic resources; may vary with season of use, species, and associated species.

UNGULATES - Hoofed animals including ruminants but also horses, tapirs, elephants, rhinoceroses, and swine.

UNIQUE FARMLAND - As defined by the Farmland Protection Policy Act of 1981, land other than prime farmland that is used for producing specific high-value food and fiber crops, as determined by the Secretary of Agriculture. Unique farmland has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality or high yields of specific crops when treated and managed according to acceptable farming methods. Examples of such crops include citrus, tree nuts, olives, cranberries, fruits, and vegetables. Also see **PRIME FARMLAND**.

UNIQUE WATER - A water body determined by the Arizona Department of Environmental Quality as an outstanding water resource of the state because of exceptional recreational or ecological significance, such as important geology, flora, fauna, water quality, aesthetic values, or wilderness characteristics.

UPLANDS - Lands at higher elevations than the alluvial plain or low stream terrace; all lands outside the riparian-wetland and aquatic zones.

URBAN INTERFACE (WILDLAND-URBAN INTERFACE) - The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetation. This interface creates conflicts and complicates fighting wildfires and conducting prescribed burns, as well as all other natural resource management activities.

UTILIZATION (FORAGE) - The proportion of the current year's forage consumed or destroyed by grazing animals. Utilization is usually expressed as a percentage.

VALID EXISTING RIGHTS - Locatable mineral development rights that existed when the Federal Land Policy and Management Act (FLPMA) was enacted on October 21, 1976. Some areas are segregated from entry and location under the Mining Law to protect certain values or allow certain uses. Mining claims that existed as of the effective date of the segregation may still be valid if they can meet the test of discovery of a valuable mineral required under the Mining Law. Determining the validity of mining claims located on segregated lands requires BLM to conduct a valid existing rights determination.

VANDALISM (CULTURAL RESOURCE) - Malicious damage or the unauthorized collecting, excavating, or defacing of cultural resources. Section 6 of the Archaeological Resources Protection Act states that "no person may excavate, remove, damage, or otherwise alter or deface any archaeological resource located on public lands or Indian lands…unless such activity is pursuant to a permit issued under section 4 of this Act."

VASCULAR PLANT- A plant in the phylum Tracheophyta, which includes spermatophytes (seed plants) and pteridophytes (ferns and related plants).

VEGETATION STATES- The different plant communities produced by an ecological site.

VEGETATION STRUCTURE - The composition of an area's vegetation--plant species, growth forms, abundance, vegetation types, and spatial arrangement.

VEGETATION TREATMENTS- Treatments that improve vegetation condition or production. Such treatments may include seedings; prescribed burning; or chemical, mechanical, and biological plant control.

VEGETATION TYPE - A plant community with distinguishable characteristics.

VIABILITY- The capability of living, developing, growing, or germinating under favorable conditions.

VIEWSHED - The entire area visible from a viewpoint.

VISITOR DAY- 12 visitor hours, which may be aggregated continuously, intermittently, or simultaneously by one or more people.

VISUAL ASPECT- The visual first impression of vegetation at a particular time or seen from a specific point.

VISUAL RESOURCE MANAGEMENT (VRM) - The planning, design, and implementing of management objectives to provide acceptable levels of visual impacts for all BLM resource management activities.

VISUAL RESOURCE MANAGEMENT (VRM) CLASSES - Classes with specific objectives for maintaining or enhancing scenic quality including the kinds landscape modifications that are acceptable to meet the objectives.

Class I: (Preservation) provides for natural, ecological changes only. This class includes wilderness areas, some natural areas, some wild and scenic rivers, and other similar sites where landscape modification should be restricted.

Class II: (Retention of the landscape character) includes areas where changes in any of the basic elements (form, line, color, or texture) caused by management activities should not be evident in the characteristic landscape.

Class III: (Partial retention of the landscape character) includes areas where changes in the basic elements caused by management activities may be evident in the characteristic landscape. But the changes should remain subordinate to the existing landscape character.

Class IV: (Modification of the landscape character) includes areas where changes may subordinate the original composition and character. But the changes should reflect what could be a natural occurrence in the characteristic landscape.

VOLATILE ORGANIC COMPOUNDS (VOCs) - Carbon-containing compounds that with few exceptions evaporate into the air. Often having odors, VOCs contribute to the forming of smog and may themselves be toxic. Some

examples of VOCs are gasoline, alcohol, and solvents used in paints.

WARM-SEASON PLANTS - Plants whose major growth occurs during the spring, summer, or fall and that are usually dormant in winter. Also see **COOL-SEASON PLANTS.**

WATER BAR - A low ridge of dirt, rock, or other material placed across a trail or dirt road on a hill to divert flowing water and protect the trail or road from erosion.

WATER DEVELOPMENTS - Construction of artificial, or modification of natural water sources to provide reliable, accessible water for livestock, wildlife, or people.

WATERSHED (CATCHMENT) - A topographically delineated area that is drained by a stream system, that is, the total land area above some point on a stream or river that drains water past that point. The watershed is a hydrologic unit often used as a physical-biological unit and a socioeconomic-political unit for planning and managing natural resources.

WATERSHED CONDITION (WATERSHED HEALTH) - The comparison of watershed processes to normal or expected measurements of properties such as soil cover, erosion rate, runoff rate, and groundwater table elevation; an assessment or categorization of an area by erosion conditions, erosion hazards, and the soil moisture/temperature regime.

WATERSHED FUNCTION - The combination of processes attributed to watersheds as part of the hydrologic cycle, including interception of rain by plants, rocks, and litter; surface storage by the soil; groundwater storage; stream channel storage; soil evaporation; plant transpiration; and runoff. These processes affect the following properties of the watershed: runoff rate, water infiltration rate, soil building rate, soil erosion rate, groundwater recharge rate, groundwater discharge rate, water table elevation, and surface water discharge. These properties in turn affect plant communities through soil attributes, including soil parent material, soil moisture, and nutrients; stream and rivers through flooding duration and magnitude, as well as sediment load, which structures the dimension, pattern, and profile of channels; and lakes and reservoirs through sedimentation and nutrient input.

WAY- See **ROAD AND ROUTE TYPES**.

WEED - Any plant that interferes with management objectives. A weed may be native or non-native, invasive or passive, or non-noxious.

WETLAND - An area that is inundated or saturated by surface or ground water often and long enough to support and that under normal circumstances supports a prevalence of vegetation typically adapted for life in saturated soil. Wetlands include marshes, shallows, swamps, lake shores, bogs, muskegs, wet meadows, estuaries, cienegas, and riparian areas.

WILD AND SCENIC RIVER CORRIDOR - See **NATIONAL WILD AND SCENIC RIVER SYSTEM**.

WILDERNESS CHARACTERISTICS - BLM Instruction Memorandum 2003-275 Change 1 defines Wilderness Characteristics as, "Features of the land associated with the concept of wilderness that may be considered in land use planning when BLM determines that those characteristics are reasonably present, of sufficient value (condition, uniqueness, relevance, importance) and need (trend, risk), and are practical to manage.

Naturalness - Lands and resources exhibit a high degree of naturalness when affected primarily by the forces of nature and where the imprint of human activity is substantially unnoticeable. BLM has authority to inventory, assess, and/or monitor the attributes of the lands and resources on public lands, which, taken

together, are an indication of an area's naturalness. These attributes may include the presence or absence of roads and trails, fences and other improvements; the nature and extent of landscape modifications; the presence of native vegetation communities; and the connectivity of habitats.

Solitude and Primitive/Unconfined Recreation - Visitors may have outstanding opportunities for solitude, or primitive and unconfined types of recreation when the sights, sounds, and evidence of other people are rare or infrequent, where visitors can be isolated, alone or secluded from others, where the use of the area is through non-motorized, non-mechanical means, and where no or minimal developed recreation facilities are encountered."

WILDCAT ROAD - A nonpermitted road on federally managed land.

WILDFIRE - Any wildland fire that is not meeting management objectives and therefore requires a suppression response.

WILDLAND FIRE - Any nonstructure fire, other than prescribed fire, that occurs in the wildland.

WILDLAND-URBAN INTERFACE (WUI) - Areas where urban fuels directly meet natural fuels. This interface occurs mainly within 66 to 200 feet of houses, where fire most directly threatens houses and where a defensible zone can be developed.

WILDLIFE - A broad term that includes birds, reptiles, amphibians, and nondomesticated mammals.

WILDLIFE MANAGEMENT AREAS (WMAs) - General areas that are managed to enhance the habitat of one or more wildlife species.

WING FENCE - Fencing extending out from a corral and serving to help funnel livestock into the corral.

WITHDRAWAL- Withholding an area of federal land from settlement, sale, location, or entry under some or all of the general land laws, for the purpose of limiting activities under those laws in order to maintain other public values in the area or reserving the area for a particular public purpose or program; or transferring jurisdiction over an area of federal land, other than *property* governed by the Federal Property and Administrative Services Act, from one department, bureau, or agency to another department, bureau, or agency. Also see **SEGREGATION**.

XERO-RIPARIAN - An area in a drainage that supports plant species more characteristic of uplands than wetlands, but that is more densely vegetated than areas removed from the drainage. Any flows in these channels are characteristically ephemeral but water may also be subsurface and the drainage may not flow.

Additional Tables

From Chapter Two:

Table 2-7. Desired Future Conditions and Land Use Allocations for Vegetation Communities in Arizona

Vegetation Community Type	Desired Future Conditions (DFC)	Land Use Allocation
Upland Sonoran Desert Scrub	**DFC are for an adequate cover and mix of natural plant species that have good vigor. For fire management and fire ecology, DFC are for fire to control or reduce the exotic annual weeds such as red brome and limit woody vegetation to nonhazardous levels.**	**2**
Lower Sonoran Desert Scrub	**DFC are for an adequate cover and a mix of natural plant species that have good vigor. For fire management and fire ecology, DFC are for fire to control or reduce the exotic annual weeds such as red brome and to limit woody vegetation to nonhazardous levels.**	**2**
Great Basin Pinyon-Juniper Woodland	**DFC are for annual weeds such as cheatgrass to be controlled; ladder fuels and downed woody debris to be limited or not present; and juniper and piñon pine tree densities and cover to occur at their historic range of variation.**	**1**
Great Basin Desert Scrub	**DFC are for fire to naturally reduce annual weed densities and cover, limit, or reduce the invasion of juniper. Densities of shrubs, such as big sagebrush, are to be maintained within their historic range of variability.**	**1**
Plains and Great Basin Grasslands	**DFC are for a predominance of perennial grass cover and a reduced cover of annual grasses. DFC are for fire to naturally inhibit the invasion of woody shrubs such as rabbitbrush, snakeweed, and big sagebrush.**	**1**
Semi-desert Grassland	**DFC are for perennial grass to cover its historic range of variability and annual grass cover to be reduced. DFC are for fire to naturally inhibit the invasion of woody plants such as juniper, tarbush, whitethorn, and creosotebush.**	**1**
Interior Chaparral	**DFC are for fire to naturally maintain shrub cover while reducing annual grass cover, control the invasion of wood plants such as juniper and piñon pine, and reduce the average age of chaparral stands through controlled fire or mechanical treatment.**	**1**
Riparian	**DFC are for annual weed cover and density to be controlled and ladder fuels and downed woody debris to be limited or not present. Disturbances such as livestock grazing, mining, and OHV travel, which can potentially reduce natural vegetation cover and vigor, are managed to maintain adequate cover and mix of natural plant species.**	**2**

Land Use Allocation 1:	**Wildland Fire Use**	**Areas suitable for wildland fire use for resource management benefit.**	
Land Use Allocation 2:	**Non-Wildland Fire Use**	**Areas not suitable for wildland fire use for resource management benefit.**	

From Chapter Three:

Table 3-5. Population and Household Characteristics

	State	County		Human Resource Unit (HRU)				
	Arizona	Maricopa	Yavapai	Wickenbur	Prescott	Lake Pleasant	Phoenix	Buckeye
Total Population								
1990 Census	3,665,228	2,122,101	107,714	8,363	59,515	117,996	1,952,531	21,794
2000 Census	5,130,632	3,072,149	167,517	10,744	92,826	292,540	2,677,213	40,918
% Change	40	45	56	28	56	148	37	88
Total Households								
1990 Census	1,368,843	807,560	44,778	3,711	24,655	54,220	735,648	6,877
2000 Census	1,901,327	1,132,886	70,171	4,972	38,901	123,327	973,292	12,114
% Change	39	40	57	34	58	127	32	76

Note: HRUs represent distinct areas and do not necessarily coincide with jurisdictional boundaries.
Source: U.S. Census Bureau and JKA.

Table 3-6. Comparison of Total Housing Units and Average Value of Homes

	State	County		Human Resource Unit				
	Arizona	**Maricopa**	**Yavapai**	**Wickenburg**	**Prescott**	**Lake Pleasant**	**Phoenix**	**Buckeye**
Total Housing Units								
1990 Census	**1,659,430**	**952,041**	**54,805**	**5,067**	**59,515**	**67,391**	**864,337**	**9,015**
2000 Census	**2,189,189**	**1,250,231**	**81,730**	**6,414**	**92,826**	**142,337**	**1,068,075**	**13,536**
% Change	**32**	**31**	**49**	**27**	**56**	**111**	**24**	**50**
1990 Avg. Val., Owned Home	**$80,100**	**$102,650**	**$101,911**	**$88,711**	**$104,881**	**$102,131**	**$101,553**	**$75,185**
2000 Avg. Val., Owned Home	**$121,300**	**$166,098**	**$170,962**	**$151,261**	**$168,944**	**$197,433**	**$158,426**	**$143,723**
% Change	**51**	**62**	**68**	**71**	**61**	**93**	**56**	**91**

***Note*: HRUs represent distinct areas and do not necessarily coincide with jurisdictional boundaries.**
Source: U.S. Census Bureau and JKA.

Table 3-10. 2002 Primary Property Tax Levies

County	Net Assessed Valuation	State	County	Cities & Towns	Community Colleges	Schools	All Other	Total	Primary Rate
Maricopa	$24,457,047,282	$0	$31,721,521	$175,207,012	$36,526,312	$603,369,737	$113,194,334	$960,018,916	3.93
Yavapai	$1,450,497,580	$0	$3,072,096	$1,667,615	$5,735,780	$12,506,662	$18,727,476	$41,709,629	2.88

Source: Arizona Department of Revenue, 2002 Annual Report

Table 3-12. Ethnic Population Characteristics

	County		Human Resource Unit				
% of Total Population (by Race)	Maricopa	Yavapai	Wickenburg	Prescott	Lake Pleasant	Phoenix	Buckeye
White							
1990 Census	85	96	95	96	92	85	72
2000 Census*	80	94	94	95	93	78	75
% Change	6	-2	1	1	1	9	3
Black or African American							
1990 Census	4	0	0	0	1	4	2
2000 Census*	4	0	0	0	2	4	4
% Change	0	0	0	0	100	0	100
American Indian/Alaska Native							
1990 Census	2	2	1	1	0	2	13
2000 Census*	2	2	1	1	0	2	8
% Change	0	0	0	0	0	0	-38
Asian/Hawaiian/Pac. Island							
1990 Census	2	1	1	0	0	2	1
2000 Census*	2	1	0	1	2	3	1
% Change in Asian Population	0	0	0	100	200	50	0
Hispanic/Latino							
1990 Census	16	6	8	6	10	17	22
2000 Census	25	10	11	8	9	27	26
% Change	56	67	38	33	-10	59	18

Notes:

*Race counts exclude those who indicated that they are of two or more races. That is, 2000 race variables only include those who said they are of one race.

HRUs represent distinct areas and do not necessarily coincide with jurisdictional boundaries.

Source: U.S. Census Bureau and JKA.

From Chapter Four:

Table 4-2. Population Growth and Emissions Generated by Land Disposal Parcels Inside Air Quality Nonattainment Areas

Alternative	Emission Factors		Parcels Within Ozone Nonattainment Area			Parcels Within PM_{10} Nonattainment Area		
	NO_x(1) (Tons/year per capita)	PM_{10}(2) (Tons/year per acre of developed land)	Land Disposal Acres	2025 Population	NO_x Emissions (tons/yr)	Land Disposal Acres	2025 Population	PM_{10} Emissions (tons/yr)
A	0.027	0.0487	980	3,390	92	1,060	4,060	51
B	0.027	0.0487	990	3,415	92	10,870	18,755	529
C (160 acre parcels)	0.027	0.0487	325	1,785	48	405	1,910	20
C (5000 acres or less)	0.027	0.0487	1,925	4,535	122	3,640	5,515	177
D	0.027	0.0487	0	0	0	0	0	0
E	0.027	0.0487	1,290	3,020	82	2,170	4,450	106
			Total Regional NO_x Emissions from All Existing Sources Within Ozone Nonattainment Area (Year 1999)		81,000(1)	Total Regional PM_{10} Emissions from All Existing Sources Within PM_{10} Nonattainment Area (Year 2001)		79,500(3)

(1) Based on emission and population data from 1999 Periodic Ozone Emission Inventory (MAG, 2002)
(2) Based on regional PM_{10} modeling data from MAG (Chiou personal communication)
(3) Regional PM_{10} emission estimate from MAG, 2000.

Example calculation (NO_x Emissions, Alternative A)
NO_x emission factor = 0.027 tpy/capita
Alternative A population increase = 6,100 persons
Annual NO_x emissions = (0.027 tpy/capita) x (6,100 persons) = 165 tons/yr of NO_x

Example calculation (PM10 Emissions, Alternative A)
PM_{10} emission factor = 0.0487 tpy/acre of developed land
Alternative A land disposal acreage = 1,355 acres converted to developed land
Annual NO_x emissions = (0.0487 tpy/acre) x (1,355 acres) = 66 tons/yr of PM_{10}

Table 4-4. Acres Closed to Mining by Alternative

Alternative A	
Closed to Saleable Minerals	172,510
Closed to Locatable Minerals	171,680
Closed to Leasable Minerals	171,680
Alternative B	
Closed to Saleable Minerals	268,260
Closed to Locatable Minerals	171,680
Closed to Leasable Minerals	171,680
Alternative C	
Closed to Saleable Minerals	325,970
Closed to Locatable Minerals	188,450
Closed to Leasable Minerals	188,190
Alternative D	
Closed to Saleable Minerals	469,680
Closed to Locatable Minerals	446,440
Closed to Leasable Minerals	453,550
Alternative E	
Closed to Saleable Minerals	172,780
Closed to Locatable Minerals	171,940
Closed to Leasable Minerals	171,680

Table 4-7 - Acres of Inventoried Mineral Potential that would be Closed by Alternative.

Alternative	Mineral Type	Mineral Potential	Federal Acres	Federal Acres Closed	% closed
A – No Action	Saleable	Volcanic and Intrusive Rock	278,890	32,750	11.7
		Marble	6,170	0	0.0
		Sand and Gravel	7,060	450	6.4
	Leasable	Geothermal	45,830	370	0.8
		Oil and Gas	790	6	0.8
		Salt Deposit	45,480	1,620	3.6
	Locatable	High Potential	94,100	3,170	3.4
		Moderate Potential	737,400	60,820	8.2
B	Saleable	Volcanic and Intrusive Rock	278,890	48,910	17.5
		Marble	6,170	6,090	98.7
		Sand and Gravel	7,060	350	5.0
	Leasable	Geothermal	45,830	360	0.8
		Oil and Gas	790	0	0.0
		Salt Deposit	45,480	1,670	3.7
	Locatable	High Potential	94,100	3,950	4.2
		Moderate Potential	737,400	120,430	16.3
C	Saleable	Volcanic and Intrusive Rock	278,890	65,220	23.4
		Marble	6,170	5,620	91.1
		Sand and Gravel	7,060	350	5.0
	Leasable	Geothermal	45,830	0	0.0
		Oil and Gas	790	0	0.0
		Salt Deposit	45,480	1,670	3.7
	Locatable	High Potential	94,100	12,920	13.7
		Moderate Potential	737,400	152,510	20.7
D	Saleable	Volcanic and Intrusive Rock	278,890	93,870	33.7
		Marble	6,170	5,620	91.1
		Sand and Gravel	7,060	450	6.4
	Leasable	Geothermal	45,830	2,030	4.4
		Oil and Gas	790	0	0.0
		Salt Deposit	45,480	14,410	31.7
	Locatable	High Potential	94,100	47,000	49.9
		Moderate Potential	737,400	314,990	42.7
E – Agency Preferred Alternative	Saleable	Volcanic and Intrusive Rock	278,890	48,250	17.3
		Marble	6,170	300	4.9
		Sand and Gravel	7,060	630	8.9

	Leasable	Geothermal	45,830	370	0.8
		Oil and Gas	790	6	0.8
		Salt Deposit	45,480	1,690	3.7
	Locatable	High Potential	94,100	3,950	4.2
		Moderate Potential	737,400	112,070	15.2

Appendix A

Agua Fria National Monument Proclamation

THE WHITE HOUSE

Office of the Press Secretary (Grand Canyon, Arizona)

For Immediate Release, January 11, 2000

ESTABLISHMENT OF THE AGUA FRIA NATIONAL MONUMENT
BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

The windswept, grassy mesas and formidable canyons of Agua Fria National Monument embrace an extraordinary array of scientific and historic resources. The ancient ruins within the monument, with their breathtaking vistas and spectacular petroglyphs, provide a link to the past, offering insights into the lives of the peoples who once inhabited this part of the desert Southwest. The area's architectural features and artifacts are tangible objects that can help researchers reconstruct the human past. Such objects and, more importantly, the spatial relationships among them, provide outstanding opportunities for archeologists to study the way humans interacted with one another, neighboring groups, and with the environment that sustained them in prehistoric times.

The monument contains one of the most significant systems of late prehistoric sites in the American Southwest. Between A.D. 1250 and 1450, its pueblo communities were populated by up to several thousand people. During this time, many dwelling locations in the Southwest were abandoned and groups became aggregated in a relatively small number of densely populated areas. The monument encompasses one of the best examples of these areas, containing important archeological evidence that is crucial to understanding the cultural, social, and economic processes that accompanied this period of significant change.

At least 450 prehistoric sites are known to exist within the monument and there are likely many more. There are at least four major settlements within the area, including Pueblo La Plata, Pueblo Pato, the Baby Canyon Ruin group, and the Lousy Canyon group. These consist of clusters of stone-masonry pueblos, some containing at least 100 rooms. These settlements are typically situated at the edges of steep canyons, and offer a panorama of ruins, distinctive rock art panels, and visually spectacular settings.

Many intact petroglyph sites within the monument contain rock art symbols pecked into the surfaces of boulders and cliff faces. The sites range from single designs on boulders to cliffs covered with hundreds of geometric and abstract symbols. Some of the most impressive sites are associated with major pueblos, such as Pueblo Pato.

The monument holds an extraordinary record of prehistoric agricultural features, including extensive terraces bounded by lines of rocks and other types of landscape modifications. The agricultural areas, as well as other sites, reflect the skills of ancient residents at producing and obtaining food supplies sufficient to sustain a population of several thousand people.

The monument also contains historic sites representing early Anglo-American history through the 19th century, including remnants of Basque sheep camps, historic mining features, and military activities.

In addition to its rich record of human history, the monument contains other objects of scientific interest. This expansive mosaic of semi-desert grassland, cut by ribbons of valuable riparian forest, is an outstanding biological resource. The diversity of vegetative communities, topographical features, and relative availability of water provide habitat for a wide array of sensitive wildlife species, including the lowland leopard frog, the Mexican garter snake, the common black hawk, and the desert tortoise. Other wildlife is abundant and diverse, including pronghorn, mule deer, and white-tail deer. Javelina, mountain lions, small mammals, reptiles, amphibians, fish, and neotropical migratory birds also inhabit the area. Elk and black bear are present, but less abundant. Four species of native fish, including the longfin dace, the Gila mountain sucker, the Gila chub, and the speckled dace, exist in the Agua Fria River and its tributaries.

Section 2 of the Act of June 8, 1906 (34 Stat. 225, 16 U.S.C. 431) authorizes the President, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments, and to reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected.

WHEREAS it appears that it would be in the public interest to reserve such lands as a national monument to be known as the Agua Fria National Monument:

NOW, THEREFORE, I, WILLIAM J. CLINTON, President of the United States of America, by the authority vested in me by section 2 of the Act of June 8, 1906 (34 Stat. 225, 16 U.S.C. 431), do proclaim that there are hereby set apart and reserved as the Agua Fria National Monument, for the purpose of protecting the objects identified above, all lands and interests in lands owned or controlled by the United States within the boundaries of the area described on the map entitled "Agua Fria National Monument" attached to and forming a part of this proclamation. The Federal land and interests in land reserved consist of approximately 71,100 acres, which is the smallest area compatible with the proper care and management of the objects to be protected.

For the purpose of protecting the objects identified above, all motorized and mechanized vehicle use off road will be prohibited, except for emergency or authorized administrative purposes.

Nothing in this proclamation shall be deemed to enlarge or diminish the jurisdiction of the State of Arizona with respect to fish and wildlife management.

The establishment of this monument is subject to valid existing rights.

All Federal lands and interests in lands within the boundaries of this monument are hereby appropriated and withdrawn from all forms of entry, location, selection, sale, leasing, or other disposition under the public land laws, including but not limited to withdrawal from location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing, other than by exchange that furthers the protective purposes of the monument. Lands and interests in lands within the proposed monument not owned by the United States shall be reserved as a part of the monument upon acquisition of title thereto by the United States.

There is hereby reserved, as of the date of this proclamation and subject to valid existing rights, a quantity of water sufficient to fulfill the purposes for which this monument is established. Nothing in this reservation shall be construed as a relinquishment or reduction of any water use or rights reserved or appropriated by the United States on or before the date of this proclamation.

The Secretary of the Interior shall manage the monument through the Bureau of Land Management, pursuant to applicable legal authorities, to implement the purposes of this proclamation.

Laws, regulations, and policies followed by the Bureau of Land Management in issuing and administering grazing leases on all lands under its jurisdiction shall continue to apply with regard to the lands in the monument.

Nothing in this proclamation shall be deemed to revoke any existing withdrawal, reservation, or appropriation; however, the national monument shall be the dominant reservation.

Warning is hereby given to all unauthorized persons not to appropriate, injure, destroy, or remove any feature of this monument and not to locate or settle upon any of the lands thereof.

IN WITNESS WHEREOF, I have hereunto set my hand this eleventh day of January, in the year of our Lord two thousand, and of the Independence of the United States of America the two hundred and twenty-fourth.

WILLIAM J. CLINTON

Appendix B- Scoping Results

Scoping Process

The formal scoping process began on April 24, 2002 with the publication of a Notice of Intent (NOI) in the *Federal Register*. The NOI initiated solicitation for public comment. A total of 10 public scoping meetings were held during the scoping period.

Public meetings were advertised by a variety of methods. Volume 1 of the "Arizona Planning Bulletin for the Agua Fria National Monument Plan and Bradshaw-Harquahala Management Plan Revision," available in both English and Spanish, was distributed to a mailing list of more than 1,700 individuals and organizations. The bulletin included a statement of the purpose and need for the project, a description of the public scoping process, information about upcoming meeting times and locations, and stamped, pre-addressed "planning worksheets" for each planning area. Interested parties were encouraged to complete these questionnaires and submit them to BLM to make their concerns known. The public was also invited to submit comments via e-mail or to visit the PFO in person to review comments received to date.

Legal notices of the public scoping meetings were published, as required, in six newspapers in the geographic area of the planning efforts. Flyers were prepared in both English and Spanish versions and distributed throughout the planning areas, and a press release was prepared and distributed to hundreds of media outlets throughout Arizona.

The scoping meetings provided an opportunity for the public to receive information, ask questions, and provide input into BLM's planning effort for the two planning areas. Informative brochures and fact sheets were available to meeting attendees, and planning area maps delineating current land uses were displayed at each meeting. Discussions covered plan development and environmental review processes, in addition to relevant timelines. All comments were transcribed onto a flip chart during the meeting and were recorded via tape recorder.

Collaborative Planning Process

BLM PFO contracted with James Kent Associates (JKA) to work with residents and community groups in the planning areas regarding their issues and concerns. JKA staff visited the communities of Wickenburg, Yarnell, Buckeye, Tonopah, Castle Hot Springs, New River, Black Canyon City, Cordes Junction, Mayer, Dewey, Humboldt, and Prescott Valley. They have also been in Phoenix, Flagstaff and Prescott, talking with environmental and recreation groups. Citizens have discussed their concerns with BLM land use management in their areas, as well as suggested ideas for improving current land management practices. Residents in some areas have even conducted community surveys in order to provide input and guidance to BLM in the planning process.

BLM has also focused on internally identifying management concerns and on reviewing their own policies and goals, and contracted with the consulting firm of Jones & Stokes to collect data, conduct meetings, and facilitate the planning process as required by the National Environmental Policy Act.

In the coming months, BLM will conduct workshops in a number of communities to develop alternatives for analysis in the EIS process. Alternatives must reflect citizen interests as well as agency concerns to

evaluate how land use decisions will be made in the future. Citizens are encouraged to participate throughout this process.

Cooperating Agencies and Agency Coordination

The PFO held a cooperating agency workshop on October 30, 2002 to enable potential cooperators to meet each other, discuss BLM's planning process and the meaning of cooperating agency status, and begin developing the Memoranda of Understanding (MOUs) that are required for entities to become formal cooperators in BLM's planning process.

BLM is currently working with the Arizona State Land Department, Arizona Department of Transportation, Arizona Game and Fish Department, Maricopa County, Yavapai County, City of Phoenix, City of Peoria, and Town of Wickenburg to establish cooperating agency status agreements. Additionally, Tonto National Forest and Prescott National Forest are working together to develop a joint MOU. A cooperating agency status agreement template has been sent to some agencies that have not yet replied.

Agencies were given the opportunity to comment as part of the scoping process. On December 19, 2002, a meeting was held in Phoenix to review the planning process and answer questions of agencies. Representatives from a total of 14 coordinating agencies were present. All agencies were encouraged to provide written comments by the December 30, 2002 deadline. The concerns of responding agencies were then entered into the administrative record and incorporated into the scoping report.

Tribal Consultations

The PFO sent letters on May 10, 2002, to initiate the tribal consultation process with tribes who have oral traditions or cultural concerns relating to the planning areas, or who are documented to have occupied or used them during historic times. These tribes include: the Fort McDowell Yavapai Nation, the Yavapai-Prescott Tribe, the Yavapai-Apache Indian Community (Camp Verde), the Hopi Tribe, the Gila River Indian Community, the Colorado River Indian Tribes, the Salt River Pima-Maricopa Indian Community, the Ak-Chin Indian Community, the Tohono O'odham Nation, and the Fort Mojave Indian Tribe. Several interactions with tribal members have been made to solicit comments with regards to the BLM's planning effort. BLM will continue to consult with Indian tribes throughout the planning process.

Collection of Comments

All scoping comments for the two planning areas were received or postmarked by November 15, 2002. BLM received 364 comments recorded from the public meetings and more than 900 written submissions of comments containing a total of 2,712 individual written comments. Of the total 3,076 comments received throughout the scoping process, 38% came in the form of completed planning worksheets, 15% as letters, 12% as oral comments recorded on meeting flip charts, 20% as emails, and 15% that were recorded as "other." The "other" category included signed petitions as well as formatted template letters from organized stakeholder groups.

Results of Comments

All comments received for this scoping effort were assigned, based on content, to one of 12 designated issue categories. Comments were further divided into various sub-issues within each category. All comments were read, evaluated, and manually entered into an analytic database. Figures ES-1 and ES-2 below depict the most frequently mentioned issues for each planning area.

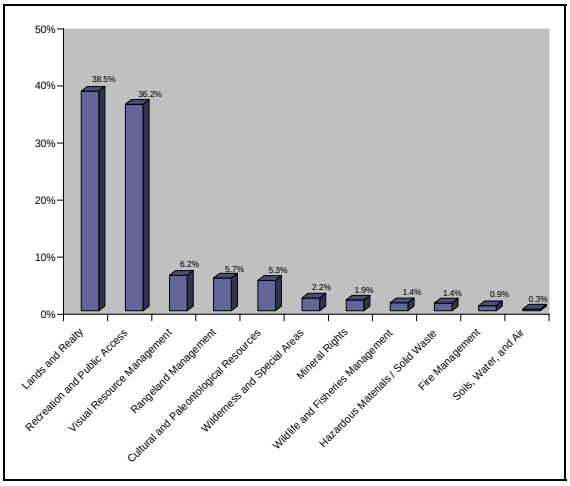


Figure ES-1. Public Response by Issue – Bradshaw-Harquahala Planning Area

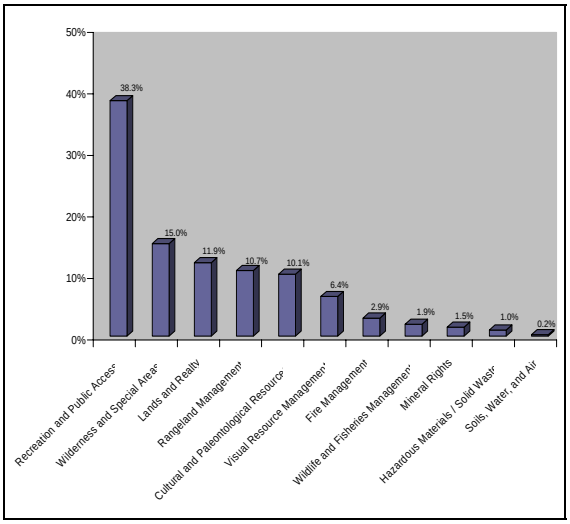


Figure ES-2. Public Response by Issue – Agua Fria National Monument Planning Area

In an effort to relate the analysis and discussion of issues to the community level, the planning areas were divided into six community areas: Phoenix, Buckeye, Wickenburg–Yarnell–Castle Hot Springs, Prescott–Prescott Valley–Chino Valley, Black Canyon City–New River, and Dewey–Humboldt–Spring Valley.

Analysis by specific community area of the comments received led to identification and ranking of the issues of primary concern for each area. These results are presented in tabular form in the scoping report.

Issues Considered but Not Further Addressed

As noted under "Results of Comments" above, all comments received for this scoping effort were assigned, based on content, to one of 12 issue categories. Comments were further divided into various sub-issues within each category. After lengthy consideration, BLM then assigned each sub-issue to a specific planning classification as follows:

A—will be addressed in the current Resource Management Plan,
B—will be resolved through policy or administrative actions,
C-is already being addressed or will be addressed independent of the current planning effort, or
D—determined to be beyond the scope of current planning.

Table B-1 lists each sub-issue that was assigned to planning classifications B, C, or D.

Table B-1 - Scoping. Classification of Issues Considered but Not Further Addressed

Table 1. Classification of Issues Considered but Not Further Addressed

Issue	Sub-Issue		
	Planning Classification B	Planning Classification C	Planning Classification D
General Recreation		Designated open space and trails should be marked/posted as such	
General Recreation		Establish educational programs for all users of public lands	
General Recreation		Trails should be better maintained to encourage users to stay on trails	
Law Enforcement		Increase law enforcement efforts	
Law Enforcement		Increase preventative measures for vandalism	
Off-Highway Vehicle		Use volunteer help from OHV-affiliated groups	
Off-Highway Vehicle		Establish rules (and enforce where appropriate) for use of OHVs	
Grazing		Evaluate grazing	

Issue	Sub-Issue		
	Planning Classification B	Planning Classification C	Planning Classification D
		impacts	
Grazing		Maintain waters for livestock	
Grazing			Reduce grazing fees
Cultural Resources		Increase protection of existing sites and cultural artifacts	
Cultural Resources		Conduct cultural resource inventories	
Cultural Resources		Remedy archeological looting	
Cultural Resources		Establish/increase programs to educate public on cultural resource issues	
Wilderness Characteristics			Expand wilderness designations
Wilderness Characteristics			Expand Agua Fria to include New River and Tonto National Forest (A/F)
Wilderness Characteristics			Reduce amount of wilderness designation
Wild and Scenic Rivers		Manage Agua Fria River as Wild and Scenic (A/F)	
General Wildlife and Fisheries Management		Maintain waters for wildlife	
Hazardous Materials/Solid Waste		Increase preventative measures for litter/dumping	
Fire Management		Debris and brush clearing programs need to be expanded	
Land Tenure			Stop urban sprawl/No new development (A/F)
Land Tenure			Restrict development to prevent depletion of groundwater (A/F)
Land Tenure	Adjacent landowners should be better informed by BLM of pending changes		
Minerals		Expand mining activities (A/F)	
Minerals		Continue existing mining leases (A/F)	

Tabulations of Comments Received

Additional **Tables B-2** and **B-3**, show the numeric distributions of comments received for the Bradshaw-Harquahala and Agua Fria National Monument planning areas, respectively. Comment tabulations are grouped by issue and sub-issue category.

Tabulation of Comments Received

Table B-2 - Scoping. Bradshaw-Harquahala Planning Area

Tabulation of Comments Received

Tables 2 and 3, below, show the numeric distributions of comments received for the Bradshaw-Harquahala and Agua Fria National Monument planning areas, respectively. Comment tabulations are grouped by issue and sub-issue category.

Table 2. Bradshaw-Harquahala Planning Area

Issue	Sub-Issue/Comment	Total Count
Land Tenure	Remove land from the disposal list	496
	Stop urban sprawl/No new development	133
	Restrict development to prevent depletion of groundwater	62
	Lands should be managed to preserve cultural and biological resources	38
General Recreation	Allow for recreational use	62
	Designated open space and trails should be marked/posted as such	17
	Establish educational programs for all users of public lands	17
	Develop multiple use areas	13
	Trails should be better maintained to encourage users to stay on trails	12
Off-Highway Vehicles	Maintain and allow OHV usage on existing trails	66
	Restrict and limit OHV usage on BLM lands	52
	Establish (or enforce where appropriate) rules for use of OHVs	44
	Establish educational program for OHV users	38
	Use volunteer help from OHV-affiliated groups	32
Transportation Network	Maintain public access	72
	Designations should also be made for primitive areas & motorized areas	49
	Close and rehabilitate all vehicle routes that threaten cultural and biological resources	27
	Create environmentally sensitive transportation system	21
	Allow public access for nonmotorized modes only	16
Law Enforcement	Increase law enforcement efforts	40
	Increase preventative measures for vandalism	10
Visual Resource Management	Land should be preserved and remain untouched	85
	Preserve natural beauty	34
Grazing	Continue leases for grazing	35
	Limit grazing	28
	Evaluate grazing impacts	27
Riparian Resources	Restrict access by livestock	12
	Maintain waters for livestock	3
	Protect the instream flow of the Agua Fria River	4
Cultural and Paleontological Resources	Increase protection of existing sites and cultural artifacts	78
	Prevent grazing in areas having significant cultural resources	7
	Conduct cultural resource inventories	5
	Remedy archeological looting	5
	Allow only limited access to existing sites, such as through guided	4

Issue	Sub-Issue/Comment	Total Count
	tours	
Wilderness Study Areas	Expand wilderness designations	28
	Conduct wilderness inventories	8
	Reduce amount of wilderness designation	2
Mineral	Reduce and limit mining activities	17
	Continue existing mining leases	14
	Expand mining activities	5
General Wildlife and Fisheries General Wildlife and Fisheries	Preserve habitat for birdwatching/wildlife viewing	18
	Maintain waters for wildlife	7
	Reintroduce native fish species to aquatic systems in the area	2
Hazardous Materials / Solid Waste	Increase preventative measures for litter/dumping	26
Fire Management	Return natural fire cycles	9
	Debris and brush clearing programs need to be expanded	5
	Return natural fire regime to mesa tops	3
Soils, Water, and Air	Conduct hydrological studies of watershed	3
	Restrict access to surface water from OHV users	2
	Restrict access to surface water from miners	1

Tabulation of Comments Received

Table B-3 - Scoping. Agua Fria National Monument

Table 3. Agua Fria National Monument

Issue	Sub-Issue/Comment	Total Count
General Recreation	Allow for recreational use	23
	Establish educational programs for all users of public lands	17
	Restrict shooting	11
	Trails should be better maintained to encourage users to stay on trails	11
	Build visitor center	9
	Joint BLM/community land stewardship programs should be enacted	8
Off-Highway Vehicles	Restrict and limit use	68
	Establish rules (and enforce where appropriate) for use of OHVs	35
	Establish educational program for OHV users	35
	Maintain and allow usage on existing trails	32
	Develop additional trails	28
Transportation Network	Create environmentally sensitive transportation system	76
	Close and rehabilitate all vehicle routes that threaten cultural and biological resources	56
	Designations should also be made for primitive areas & motorized areas	34
	Maintain public access	29
	Limit access to discourage extensive use	27
	Allow public access for nonmotorized modes only	20
Law Enforcement	Increase law enforcement efforts	34
	Increase preventative measures for vandalism	7
Wilderness Study Areas	Expand wilderness designations	99
	Expand Agua Fria to include New River and Tonto National Forest	41
	Conduct wilderness inventories	22
ACECs	Agua Fria River should be designated Area of Critical Environmental Concern (ACEC)	4

Issue	Sub-Issue/Comment	Total Count
Wild and Scenic Rivers	Manage Agua Fria River as Wild & Scenic	90
Land Tenure	Stop urban sprawl/No new development	85
	Lands should be managed to preserve cultural and biological resources	55
	Restrict development to prevent depletion of groundwater	19
	Adjacent landowners should be better informed by BLM of pending changes	5
Grazing	Evaluate grazing impacts	44
	Limit grazing	39
	Continue leases for grazing	16
	Reduce grazing fees	1
Riparian Resources	Protect the instream flow of the Agua Fria River	55
	Restrict access by livestock	27
Cultural and Paleontological Resources	Increase protection of existing sites and cultural artifacts	105
	Prevent grazing in areas having significant cultural resources	22
	Conduct cultural resource inventories	14
	Allow only limited access to existing sites, such as through guided tours	12
	Establish/increase programs to educate public on cultural resource issues	7
Visual Resource Management	Land should be preserved and remain untouched	86
	Preserve natural beauty	24
Fire Management	Return natural fire regime to mesa tops	27
	Return natural fire cycles	21
	Debris and brush clearing programs need to be expanded	2
General Wildlife and Fisheries Management	Preserve habitat for birdwatching/wildlife viewing	16
	Maintain waters for wildlife	14
	Reintroduce native fish species to aquatic systems in the area	3
Mineral Rights	Reduce and limit mining activities	17
	Continue existing mining leases	4
	Expand mining activities	4
Hazardous Materials / Solid Waste	Increase preventative measures for litter/dumping	17
Soils, Water, and Air	Conduct hydrological studies of watershed	2
	Restrict access to surface water from miners	1
	Restrict access to surface water from OHV users	1

Appendix C – Applicable Laws, Regulations, Policies and Planning Criteria

When considering the affected environment, physical, biological, economic, and social environmental factors must be considered. In addition to NEPA there are other environmental laws as well as Executive Orders (EOs) to be considered when preparing EAs and EISs. These laws are summarized below.

Clean Air Act (CAA) of 1970 and Amendments of 1977 and 1990

The CAA recognizes that increases in air pollution result in danger to public health and welfare. To protect and enhance the quality of the Nation's air resources, the CAA authorizes the Environmental Protection Agency (EPA) to set six National Ambient Air Quality Standards (NAAQSs) which regulate carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and particulate matter pollution emissions. The CAA seeks to reduce or eliminate the creation of pollutants at their source, and designates this responsibility to State and local governments. States are directed to utilize financial and technical assistance as well as leadership from the Federal government to develop implementation plans to achieve NAAQS. Geographic areas are officially designated by the EPA as being in attainment or nonattainment to pollutants in relation to their compliance with NAAQS. Geographic regions established for air quality planning purposes are designated as Air Quality Control Regions (AQCR). Pollutant concentration levels are measured at designated monitoring stations within the AQCR. An area is designated as unclassifiable where insufficient monitoring data exists. Section 309 of the CAA authorizes the EPA to review and comment on impact statements prepared by other agencies.

An agency should consider what effect an action may have on NAAQS due to short-term increases in air pollution during construction as well as long-term increases resulting from changes in traffic patterns. For actions in attainment areas, a Federal agency may also be subject to EPA's Prevention of Significant Deterioration (PSD) regulations. These regulations apply to new major stationary sources and modifications to such sources. Although few agency facilities will actually emit pollutants, increases in pollution can result from a change in traffic patterns or volume. Section 118 of the CAA waives Federal immunity from complying with the CAA and states all Federal agencies will comply with all Federal and State approved requirements.

Clean Water Act (CWA) of 1977

The CWA, a 1977 amendment to the Federal Water Pollution Control Act of 1972, is administered by the EPA and sets the basic structure for regulating discharges of pollutants into U.S. waters. The CWA requires the EPA to establish water quality standards for specified contaminants in surface waters and

forbids the discharge of pollutants from a point source into navigable waters without a National Pollutant Discharge Elimination System (NPDES) permit. NPDES permits are issued by EPA or the appropriate State if it has assumed responsibility. Section 404 of the CWA establishes a Federal program to regulate the discharge of dredged and fills material into waters of the United States. Section 404 permits are issued by the US Army Corps of Engineers (USACE). Waters of the United States include interstate and intrastate lakes, rivers, streams, and wetlands which are used for commerce, recreation, industry, sources of fish, and other purposes. The objective of the Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Each agency should consider the impact on water quality from actions such as the discharge of dredge or fill material into U.S. waters from construction, or the discharge of pollutants as a result of facility occupation.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 and the Superfund Amendments and Reauthorization Act of 1986 (SARA)

CERCLA authorizes the EPA to respond to spills and other releases of hazardous substances to the environment, and authorizes the National Oil and Hazardous Substances Pollution Contingency Plan. CERCLA also provides a Federal "Superfund" to respond to emergencies immediately. Although the "Superfund" provides funds for clean up of sites where potentially responsible parties (PRPs) cannot be identified, the EPA is authorized to recover funds through damages collected from responsible parties. This funding process places the economic burden for cleanup on polluters. SARA mandates strong cleanup standards, and authorizes the EPA to use a variety of incentives to encourage settlements. Title III of SARA authorizes the Emergency Planning and Community Right to Know Act (EPCRA), which requires facility operators with "hazardous substances" or "extremely hazardous substances" to prepare comprehensive emergency plans and to report accidental releases. EO 12856, "Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements," requires Federal agencies to comply with the provisions EPCRA. If a Federal agency acquires a contaminated site it can be held liable for clean up as the property owner/operator. A Federal agency can also incur liability if it leases a property, as the courts have found lessees liable as "owners." However, if the agency exercises due diligence by conducting a Phase I Environmental Site Assessment, it may claim the "innocent purchaser" defense under CERCLA. According to Title 42 United States Code (USC) 9601(35), the current owner/operator must show it undertook "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" before buying the property to use this defense.

Resource Conservation and Recovery Act (RCRA) of 1976

RCRA, an amendment to the Solid Waste Disposal Act, authorizes the EPA to provide for "cradle-to-grave" management of hazardous waste, and sets a framework for the management of non-hazardous municipal solid waste. Under RCRA, hazardous waste is controlled from generation to disposal through tracking and permitting systems, and restrictions and controls on the placement of waste on or into the land. Under RCRA, a waste is defined as hazardous if it is ignitable, corrosive, reactive, toxic or listed by the EPA as being hazardous. With the 1984 Hazardous and Solid Waste Amendments (HSWA), Congress targeted stricter standards for waste disposal and encouraged pollution prevention by prohibiting the land disposal of particular wastes. The HSWA amendments strengthen control of both hazardous and nonhazardous waste and emphasize the prevention of pollution of groundwater.

Safe Drinking Water Act (SDWA) of 1974

The SDWA establishes a Federal program to monitor and increase the safety of all commercially and publicly supplied drinking water. Congress amended the SDWA in 1986, mandating dramatic changes in nationwide safeguards for drinking water and establishing new Federal enforcement responsibility on the part of the EPA. The 1986 amendments to the SDWA require the EPA to establish Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs) and Best Available Technology (BAT) treatment techniques for organic, inorganic, radioactive, and microbial contaminants, and turbidity. MCLGs are maximum concentrations below which no negative human health effects are known to exist. The 1996 amendments set current Federal MCLs, MCLGs, and BATs for organic, inorganic, microbiological, and radiological contaminants in public drinking water supplies.

Federal Land Policy and Management Act (FLPMA) of 1976

FLPMA and the regulations contained in 43 CFR Part 1600 govern the Bureau of Land Management planning process. Land Use Plans ensure that public lands are managed in accordance with the intent of Congress as stated in FLPMA, under the principles of multiple use and sustained yield. As required by FLPMA, the public lands must be managed in a manner that protects the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition, that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use by encouraging collaboration and public participation throughout the planning process. In addition, the public lands must be managed in a manner that recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber from the public lands.

Taylor Grazing Act of 1934, as amended and supplemented

The Taylor Grazing Act was the Federal government's first effort to regulate grazing on federal public lands. The act established grazing districts of vacant, unappropriated and unreserved land from any parts of the public domain, excluding Alaska, which are not national forests, parks, and monuments, Indian reservations, railroad grant lands, or revested Coos Bay Wagon Road grant lands, and which are valuable chiefly for grazing and raising forage crops. Residents and stock owners pay an annual fee to obtain a grazing permit which is used to manage livestock grazing in established districts. Grazing Administration Regulations (43 CFR 4100) provide for the development of state Standards for Rangeland Health and Guidelines for Grazing Management. The Standards and Guidelines are approved through Bureau of Land Management planning and NEPA processes.

Public Rangelands Improvement Act of 1978

The Public Rangelands Improvement Act was instituted to improve the conditions on public rangelands. Rangelands are defined as lands administered by the Secretary of the Interior through the Bureau of Land Management or the Secretary of Agriculture through the Forest Service in 16 contiguous western states, including Arizona, on which there is domestic livestock grazing or which the appropriate Secretary determines may be suitable for domestic livestock grazing. Rangeland quality is determined by soil quality, forage values, wildlife habitat, watershed and plant communities, the current state of vegetation in a site in relation to its potential, and the relative degree to which the kinds, proportions, and amounts of vegetation in a plant

community resemble the desired plant community. The act requires a national rangelands inventory and consistent federal management policies. In addition, the act provides funding for range improvement projects.

Coastal Zone Management Act (CZMA) of 1972

The CZMA is concerned with the effective management, beneficial use, protection, and development of the Nation's coastal zone. The coastal zone refers to the coastal waters and the adjacent shorelines including islands, transitional and intertidal areas, salt marshes, wetlands, and beaches, and includes the Great Lakes. The CZMA declares a National policy to preserve, protect and develop, and where possible restore or enhance the resources of the Nation's coastal zone. The CZMA encourages states to exercise their full authority over the coastal zone, through the development of land and water use programs in cooperation with Federal and local governments. States may apply for grants to help develop and implement management programs to achieve wise use of the land and water resources of the coastal zone. Development projects affecting land or water use or natural resources of a coastal zone, must ensure the project is, to the maximum extent practicable, consistent with the state's coastal zone management program.

Toxic Substance Control Act (TSCA) of 1976

Title I of the Toxic Substance Control Act established requirements and authorities to identify and control toxic chemical hazards to human health and the environment. TSCA authorized the EPA to gather information on chemical risks, require companies to test chemicals for toxic effects, and regulate chemicals with unreasonable risk. TSCA also singled out polychlorinated bi-phenyls (PCBs) for regulation and as a result are being phased out. TSCA and its regulations govern the manufacture, processing, distribution, use, marking, storage, disposal, clean-up, and release reporting requirements for numerous chemicals like PCBs. PCBs are persistent when released into the environment and accumulate in the tissues of living organisms. They have been shown to cause adverse health effects on laboratory animals and may cause adverse health effects in humans. TSCA Title II provides statutory framework for "Asbestos Hazard Emergency Response," which applies only to schools. TSCA Title III, "Indoor Radon Abatement," states indoor air in buildings of the United States should be as free of radon as the outside ambient air. Federal agencies are required to conduct studies on the extent of radon contamination in buildings they own. TSCA Title IV, "Lead Exposure Reduction," directs Federal agencies to "conduct a comprehensive program to promote safe, effective, and affordable monitoring, detection, and abatement of lead-based paint and other lead exposure hazards." Further, any Federal agency having jurisdiction over a property or facility must comply with all Federal, State, interstate, and local requirements concerning lead-based paint.

Wild and Scenic Rivers Act (WSRA) of 1968

By recognizing the remarkable values of specific rivers of the Nation, the WSRA provides for a wild and scenic river system. These selected rivers and their immediate environment are preserved in a free-flowing condition, without dams or other construction. The policy not only protects the water quality of the selected rivers but also provides for the enjoyment of present and future generations. Any river in a free-flowing condition is eligible for inclusion, and can be authorized as such by an Act of Congress, an act of State legislature, or by the Secretary of Interior upon the recommendation of the Governor of the State(s) through which the river flows.

EO 11988, "Floodplain Management," May 24, 1977

EO 11988 directs agencies to consider alternatives to avoid adverse effects and incompatible development in floodplains. An agency may locate a facility in a floodplain if the head of the agency finds there is no practicable alternative. If it is found there is no practicable alternative, the agency must minimize potential harm to the floodplain, and circulate a notice explaining why the action is to be located in the floodplain prior to taking action. Finally, new construction in a floodplain must apply accepted floodproofing and flood protection to include elevating structures above the base flood level rather than filling in land.

EO 11990, "Protection of Wetlands," May 24, 1977

EO 11990 directs agencies to consider alternatives to avoid adverse effects and incompatible development in wetlands. Federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland, and the proposed construction incorporates all possible measures to limit harm to the wetland. Agencies should use economic and environmental data, agency mission statements, and any other pertinent information when deciding whether or not to build in wetlands. EO 11990 directs each agency to provide for early public review of plans for construction in wetlands.

Pollution Prevention Act (PPA) of 1990

The PPA encourages manufacturers to avoid the generation of pollution by modifying equipment and processes, redesigning products, substituting raw materials, and making improvements in management techniques, training, and inventory control. EO 12856, "Federal Compliance with Right-to Know Laws and Pollution Prevention Requirements," requires Federal agencies to comply with the provisions of the PPA, and also requires Federal agencies to ensure all necessary actions are taken to prevent pollution. In addition, in Federal Register Volume 58 Number 18 (January 29, 1993), the Council on Environmental Quality provides guidance to Federal agencies on how to "incorporate pollution prevention principles, techniques, and mechanisms into their planning and decision making processes and to evaluate and report those efforts, as appropriate, in documents pursuant to NEPA."

Biological Factors

Endangered Species Act (ESA) of 1973

The ESA establishes a Federal program to conserve, protect and restore threatened and endangered plants and animals and their habitats. The ESA specifically charges Federal agencies with the responsibility of using their authority to conserve threatened and endangered species. All Federal agencies must insure any action they authorize, fund or carry out is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction of critical habitat for these species, unless the agency has been granted an exemption. The Secretary of the Interior, using the best available scientific data, determines which species are officially endangered or threatened, and the U.S. Fish and Wildlife Service (FWS) maintains the list. A list of Federal endangered species may be obtained from the Endangered Species Division, U.S. Fish and Wildlife Service (703-358-2171). States may also have their own lists of threatened and endangered species which may be obtained by calling the appropriate State

Fish and Wildlife office. Some species, such as the bald eagle, also have laws specifically for their protection (e.g., Bald Eagle Protection Act).

Migratory Bird Treaty Act of 1918, amended in 1936, 1960, 1968, 1969, 1974, 1978, 1986, and 1989

The Migratory Bird Treaty Act implements treaties and conventions between the United States, Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless otherwise permitted by regulations, the Act makes it unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. The Act also make it unlawful to ship, transport or carry from one state, territory or district to another, or through a foreign country, any bird, part, nest or egg that was captured, killed, taken, shipped, transported or carried contrary to the laws from where it was obtained; and import from Canada any bird, part, nest or egg obtained contrary to the laws of the province from which it was obtained. The U.S. Department of the Interior has authority to arrest, with or without a warrant, a person violating the Act.

EO 13186, “Conservation of Migratory Birds”, January 10, 2001

EO 13186 creates a more comprehensive strategy for the conservation of migratory birds by the Federal Government. The Order provides a specific framework for the Federal government’s compliance with its treaty obligations to Canada, Mexico, Russia, and Japan. The Order provides broad guidelines on conservation responsibilities and requires the development of more detailed guidance in Memoranda of Understanding (MOU) within 2 years of its implementation. The Order will be coordinated and implemented by the Fish and Wildlife Service. The MOU will outline how Federal agencies will promote conservation of migratory birds. The Order will requires the support of various conservation planning efforts already in progress; incorporation of bird conservation considerations into agency planning, including NEPA analyses; and reporting annually on the level of take of migratory birds.

EO 11514, "Protection and Enhancement of Environmental Quality," March 5, 1970

EO 11514 states the President, with assistance from the CEQ, will lead a national effort to provide leadership in protecting and enhancing the environment for the purpose of sustaining and enriching human life. Federal agencies are directed to meet national environmental goals through their policies, programs, and plans. Agencies should also continually monitor and evaluate their activities to protect and enhance the quality of the environment. Consistent with NEPA, agencies are directed to share information about existing or potential environmental problems with all interested parties, including the public, in order to obtain their views.

Economic and Social Factors

Environmental Quality Improvement Act (EQIA) of 1970

The EQIA ensures each Federal agency conducting or supporting public works activities affecting the environment implements policies established under existing law. The EQIA also created the Office Environmental Quality to provide professional and administrative staff for the Council on Environmental Quality (CEQ). The Director of the Office of Environmental Quality assists and advises the President on Federal policies and programs affecting environmental quality. The Office of Environmental Quality reviews the adequacy of existing environmental monitoring and predicting systems, and assists Federal agencies in appraising the effectiveness of existing and proposed facilities which affect environmental quality.

National Historic Preservation Act (NHPA) of 1966

The NHPA sets forth national policy to identify and preserve properties of state, local, and national significance. The act establishes the Advisory Council on Historic Preservation (Council), State Historic Preservation Officers, and the National Register of Historic Places (NRHP). The Council advises the President, Congress and Federal agencies on historic preservation issues. Section 106 of the act directs Federal agencies to take into account effects of their undertakings (actions and authorizations) on properties included in or eligible for NRHP. Section 110 sets inventory, nomination, protection and preservation responsibilities for federally owned cultural properties. Section 106 of the act is implemented by regulations of the Council, 36 CFR Part 800. The Bureau of Land Management in Arizona complies with Section 106 according to a national Programmatic Agreement dated March 26, 1997, supplemented by a Protocol between the BLM Arizona State Director and the Arizona State Historic Preservation Officer.

The agency should coordinate studies and documents prepared under Section 106 with NEPA where appropriate. However, NEPA and NHPA are separate statutes and compliance with one does not constitute compliance with the other. For example, actions which qualify for a categorical exclusion under NEPA may still require Section 106 review under NHPA. It is the responsibility of the agency official to identify properties in the area of potential effects, and whether they are included or eligible for inclusion in the National Register of Historic Places. Section 110 of the NHPA requires Federal agencies to identify, evaluate, and nominate historic property under agency control to the National Register of Historic Places.

Archaeological Resource Protection Act (ARPA) of 1979

ARPA protects archaeological resources on public and Indian lands. It provides felony-level penalties for the unauthorized excavation, removal, damage, alteration or defacement of any archaeological resource, defined as material remains of past human life or activities which are at least 100 years old. Before archaeological resources are excavated or removed from public lands, the Federal land manager must issue a permit detailing the time, scope, location and specific purpose of the proposed work. ARPA also fosters the exchange of information about archaeological resources between governmental agencies, the professional archaeological community, and private individuals. ARPA is implemented by regulations found in 43 CFR Part 7.

American Indian Religious Freedom Act of 1978 and Amendments of 1994

The American Indian Religious Freedom Act of 1978 recognizes that freedom of religion for all people is an inherent right, and traditional American Indian religions are an indispensable and irreplaceable part of Indian life. It also recognized the lack of Federal policy on this issue and made it the policy of the United States to protect and preserve the inherent right of religious freedom for Native Americans. The 1994 Amendments provide clear legal protection for the religious use of peyote cactus as a religious sacrament. Federal agencies are responsible for evaluating their actions and policies to determine if changes should be made to protect and preserve the religious cultural rights and practices of Native Americans. These evaluations must be made in consultation with native traditional religious leaders.

Native American Graves Protection and Repatriation Act (NAGPRA) of 1990

NAGPRA establishes rights of Indian tribes to claim ownership of certain “cultural items”, defined as Native American human remains, funerary objects, sacred objects and objects of cultural patrimony, held or controlled by Federal agencies. Cultural items discovered on Federal or tribal lands are, in order of primacy, the property of lineal descendants, if these can be determined, the tribe owning the land where the items were discovered, of the tribe with the closest cultural affiliation with the items. Discoveries of cultural items on Federal or tribal land must be reported to the appropriate Indian tribe and the Federal agency with jurisdiction over the land. If the discovery is made as a result of a land use, activity in the area must stop and the items must be protected pending the outcome of consultation with the affiliated tribe.

EO 11593, "Protection and Enhancement of the Cultural Environment," May 13, 1971

EO 11593 directs the Federal Government to provide leadership in the preservation, restoration, and maintenance of the historic and cultural environment. Federal agencies are required to locate and evaluate all Federal sites under their jurisdiction or control which may qualify for listing on the National Register of Historic Places. Agencies must allow the Advisory Council on Historic Preservation to comment on the alteration, demolition, sale, or transfer of property which is likely to meet the criteria for listing as determined by the Secretary of the Interior in consultation with the State Historic Preservation Officer. Agencies must also initiate procedures to maintain federally owned sites listed on the National Register.

EO 12898, "Federal Actions to Address Environmental Justice in MinorityPopulations and Low-Income Populations," February 11, 1994

EO 12898 directs Federal agencies to make achieving environmental justice part of their mission. Agencies must identify and address adverse human health and/or environmental effects its activities have on minority and low-income populations, and develop agency-wide environmental justice strategies. The strategy must list "programs, policies, planning and public participation processes, enforcement, and/or rulemakings related to human health or the environment that should be revised to promote enforcement of

all health and environmental statutes in areas with minority populations and low-income populations, ensure greater public participation, improve research and data collection relating to the health of and environment of minority populations and low-income populations, and identify differential patterns of consumption of natural resources among minority populations and low-income populations." A copy of the strategy and progress reports must be provided to the Federal Working Group on Environmental Justice. Responsibility for compliance with this EO lies with each Federal agency.

EO 13007, "Indian Sacred Sites", May 24, 1996

EO 13007 provides that agencies managing Federal lands, to the extent practicable, permitted by law, and not inconsistent with agency functions, shall accommodate Indian religious practitioners' access to and ceremonial use of Indian sacred sites, shall avoid adversely affecting the physical integrity of such sites, and shall maintain the confidentiality of such sites. Federal agencies are responsible for informing tribes of proposed actions that could restrict future access to or ceremonial use of, or adversely affect the physical integrity of, sacred sites.

EO 13287, "Preserve America", March 3, 2003

EO 13287 orders the Federal Government to take a leadership role in protection, enhancement, and contemporary use of historic properties owned by the Federal Government, and promote intergovernmental cooperation and partnerships for preservation and use of historic properties. The order established new accountability for agencies with regard to inventories and stewardship.

Planning Criteria

During preparation of the plan, the BLM with input from the public develops planning criteria that serves to:

- constrain and guide the development of the Plan,
- determine how the planning team approaches the development of Alternatives, and
- determine how the planning team approaches selection of the Preferred Alternative.

Additional planning criteria can be added at any point in the planning process. The following are the Draft Planning Criteria as of the printing of this document.

1. The Plans will be completed in compliance with the Federal Land Management and Policy Act, The Endangered Species Act, the National Environmental Policy Act, and all other relevant Federal laws and executive orders (including wilderness legislation), and management policies of the BLM. The National Monument Plan will meet the requirements of the Agua Fria National Monument Proclamation to protect the objects of geological, paleontological, archaeological, historic, and biological value within the monument.
2. Fire Management prescriptions will be consistent with the 2001 Federal Wildland Fire Policy and the National Fire Plan.
3. The planning team will work collaboratively with the State of Arizona, Maricopa and Yavapai Counties, tribal governments, municipal governments, other Federal agencies; and all other interested groups, agencies and individuals.

4. The National Monument Plan will establish the guidance upon which the BLM will manage the Agua Fria National Monument. BLM will rely on the Bradshaw Foothills Resource Management Plan Amendment Plan for management guidance for BLM's lands not covered by the Lower Gila Resource Management Plan Amendment. The Bradshaw Foothills and Agua Fria National Monument Resource Management Plans will replace and supersede all other BLM land use plans for the lands covered by them.
5. The National Monument Plan will determine what quantity of water will be needed for Monument purposes and will work within Arizona appropriative procedures to acquire those water rights.
6. Where planning decisions have previously been made that still apply, those decisions will be carried forward into these Plans.
7. The planning process will include an Environmental Impact Statement which will comply with the National Environmental Policy Act standards. Two Records of Decision will be issued, one for the Agua Fria National Monument and one for the lands in the Bradshaw Harquahala planning area.
8. Due to the desire to maintain the existing natural and cultural landscapes of the Agua Fria National Monument, any visitor facilities will be located near the Monument boundary or in neighboring communities. Facilities may be located within the Monument, but they will be placed in an unobtrusive location near the Monument boundary.
9. The Plans will set forth a framework for managing recreational activities in order to maintain existing natural landscapes and to provide for the enjoyment and safety of the visiting public.
10. The management of grazing is regulated by laws and regulations other than the monument proclamation. The Plans will incorporate the statewide standards and guidelines established by the Arizona Bureau of Land Management State Director and approved by the Secretary of the Interior. It will lay out a strategy for ensuring that proper grazing practices are followed while preserving habitats for sensitive plant and wildlife species. Livestock Grazing is permitted, pursuant to the terms and conditions of existing permits and leases. Appropriate best management practices will be followed to protect rangeland resources, and where necessary, to mitigate any conflicts with other uses and values. Administrative actions to assure compliance with existing permit/lease requirements, to modify permits and leases, to monitor and supervise grazing use, and to remedy unauthorized grazing use will continue.
11. Native American tribal consultations will be conducted in accordance with policy and tribal concerns will be given due consideration. The planning process will include the consideration of any impacts on Indian trust assets.
12. Coordination with the Arizona State Historic Preservation Office (SHPO) will be conducted throughout the Plan.
13. The Plans will identify opportunities for using cultural properties for scientific, educational, recreational, or experimental purposes.
14. The lifestyles of area residents, including activities of grazing, hunting, and back country motorized use and recreation, will be recognized in the Plan.
15. The Agua Fria National Monument Plan will not address monument boundary adjustments or proposals to change the proclamation.
16. The Plans will recognize the State's authority to manage wildlife, including hunting and fishing, within the planning area in accordance with the current Memorandum of Understanding (MOU).

17. The Plans will address transportation, route management, and access; and identify which routes/roads should remain open to accommodate resource users, recreationist, protection of resource values and administrative needs.
18. The existing BLM wilderness inventory and vehicle route inventory will provide a basis for consideration of any new wilderness proposals.
19. Lands which will be open to mineral leasing will be identified in the Plan. Lands within the Agua Fria National Monument are closed to mineral development (subject to valid existing right) by the proclamation. Where the plan identifies lands as open to mineral leasing, it will also define any constraints to surface use.
20. Ecological Site Inventory will be conducted consistent with current rangeland management policy.
21. Visual Resource Management classification will be conducted to address the public's concerns about open space and natural vistas.
22. The Plans will designate which acquired lands currently not segregated from mining by overriding actions (i.e., national monument, wilderness) should be opened to mining location.
23. The Bradshaw Foothills Plan Amendment will determine if any lands should be closed to operations under the Mining Laws.
24. Consultations with the Fish and Wildlife Service will take place throughout the Plan process in accordance with the Memorandum of Agreement on Section 7 Programmatic Consultations and Coordination among the Fish and Wildlife Service, Forest Service, Bureau of Land Management, and National Marine Fisheries, August 2000.
25. Minerals management will be consistent with FLPMA and existing policy and regulation including the Mining and Minerals Policy Act of 1970, Section 102 (a) (12) of FLPMA, the National Materials and Minerals Policy, Research and Development Act of 1980, and current BLM Mineral Resources policy.
26. National, State, and local policy on management of noxious weeds will be considered in the plans. Where possible, management practices that control invasive plant species will be emphasized.
27. Management of the wild burros within the Lake Pleasant Herd Management Area will continue to be guided by the existing Herd Management Plan. Appropriate management levels for burros were set based on monitoring studies and are within the limits set by the Arizona Rangeland Health Standards. Monitoring will continue to assure those standards are maintained.
28. Sensitive or special resources in planning and designating utility corridors will be avoided.
29. In February 2003, the Department of Homeland Security (DHS) issued the National Strategy for the Physical Protection of Critical Infrastructures and Key Assets (DHS 2003). This strategy summarized the initial assessment of and plans for protection against vulnerabilities to terrorist threat. BLM must ensure the designation of utility and transportation corridor locations and the planning and maintenance of utilities, railroads, and highways crossing its lands conform to DHS directives, policies, and procedures.
30. In accordance with Executive Order No. 13212, the Energy Project Streamlining Process (signed May 18, 2001), Federal energy-related planning must expedite producing, transmitting, or conserving energy.

Appendix D - Route Evaluation/Designation Decision Tree Process

The route designation process for the Phoenix Field Office is the sum of route and resource inventories, the BLM specialists' input, and the public's input. The process of designating routes is part of a larger effort to use the best management techniques in an ever-changing environment. As the population of Arizona grows, management of the land must reflect trends and in some cases, provide guidance to meet desired goals. Designating and managing a route system is a key component.

Evaluating routes on the merits of their uses, values, and impacts is a difficult task. The method used by Phoenix Field Office for evaluating each route is the Route Evaluation/Designation Decision Tree Process. This process uses a flow chart (See below) that systematically guides the evaluator through a series of questions that help assess the relationship of routes to sensitive resources and public access both individually route by route, as well as collectively or cumulatively as a network. Background data from state and federal agency inventories and specialists, as well as the public provides the basis for evaluation. As specified by 43CFR8342.1, this process considers as part of its evaluation, impacts to a number of sensitive resources including but not limited to threatened, endangered and sensitive species, and their habitat, as well as cultural and historic resources. These impacts are jointly evaluated in the context of providing reasonable commercial and recreational public access as provided for by several State and Federal acts. When the questions are answered by taking into account the best information available and RMP objectives, a route designation code is established and recorded. Routes are determined to be Open, Closed, or Limited.

As the evaluation/designation process progresses, specific reasoning on route designation is documented. Mitigation where necessary will be incorporated into an adaptive management plan. Route designation is considered an implementation action rather than a RMP decision. Changes can be made to the designated route network land use plan, monument proclamation, NEPA and FLPMA and 43 CFR 8342.1, and any other laws or regulations that may apply.

Route Evaluation/Designation Decision Tree

Main Features Include:

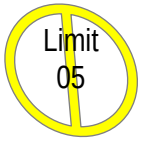
1. Logical, standardized, balanced and repeatable approach to route designation.
2. Systematic questions to assess compliance with a variety of pertinent statutory requirements including:
   - Valid existing rights and other vested rights or permitted uses
   - Degree of potential impact or degradation to specially protected resources, such as species protected by the Federal Endangered Species Act (ESA), cultural, historic and scientific objects protected by the Historic Preservation and Antiquities Acts (e.g. Monument Proclamations, Section 106) and wilderness values as protected by the Wilderness Act.
   - Implementation of the Federal Land Policy & Management Act (FLPMA) and its charge to balance the public's need/desire for access to Federal lands with resource protection through a philosophy of management for "multiple use". Such consideration includes recognizing the value of providing a range of recreational opportunities and treating those opportunities in accordance with FLPMA as a resource worthy of protection.
3. Systematic consideration of access opportunities and resource protection needs on both a narrowly focused route by route assessment, as well as a broad-based cumulative assessment of the total network's effect.
4. Systematic consideration of mitigation and/or limited designation as a means by which to ameliorate resource impacts. Designation options include a range from open to closed, and a number of intermediate actions as a means by which to balance access needs and resource protection.
5. Systematic recordation of data allowing for future retrieval and review/updating of decision information as needed (i.e. "decision pathways" are numerically coded).
6. Systematic ability to assess a route's final recommended designation status based upon the management goals of each individual alternative.

How does the Tree Work?

1. The region or management area in which the route is located is thoroughly evaluated. Resource protection, recreation and commercial access concerns pertinent to route designation are identified. The patterns of these identified uses and concerns, as well as their trends are also noted. Other related issues such as law enforcement, route maintenance and user conflicts are further identified.
2. The desired future condition and management goals of each proposed alternative are identified and reviewed.
3. Each route is systematically numbered. This both allows for tracking the designation process and enables the public to make comment on specific routes.

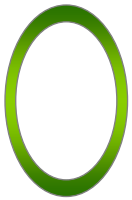
Close 01: A route that is recommended for permanent closure to all use. Physical closure includes restoring the travelway to the degree possible to blend with surrounding landscape, as well as installation of physical barriers and signing at the original departure point, if necessary.

Mitigate/Limit 09: A route that is recommended for limited use by certain parties or entities with valid, vested, or implied rights of access, or to certain vehicle types, seasons of use, etc., following mitigation action(s) aimed at reducing/eliminating certain estimated impacts identified during the route designation process.

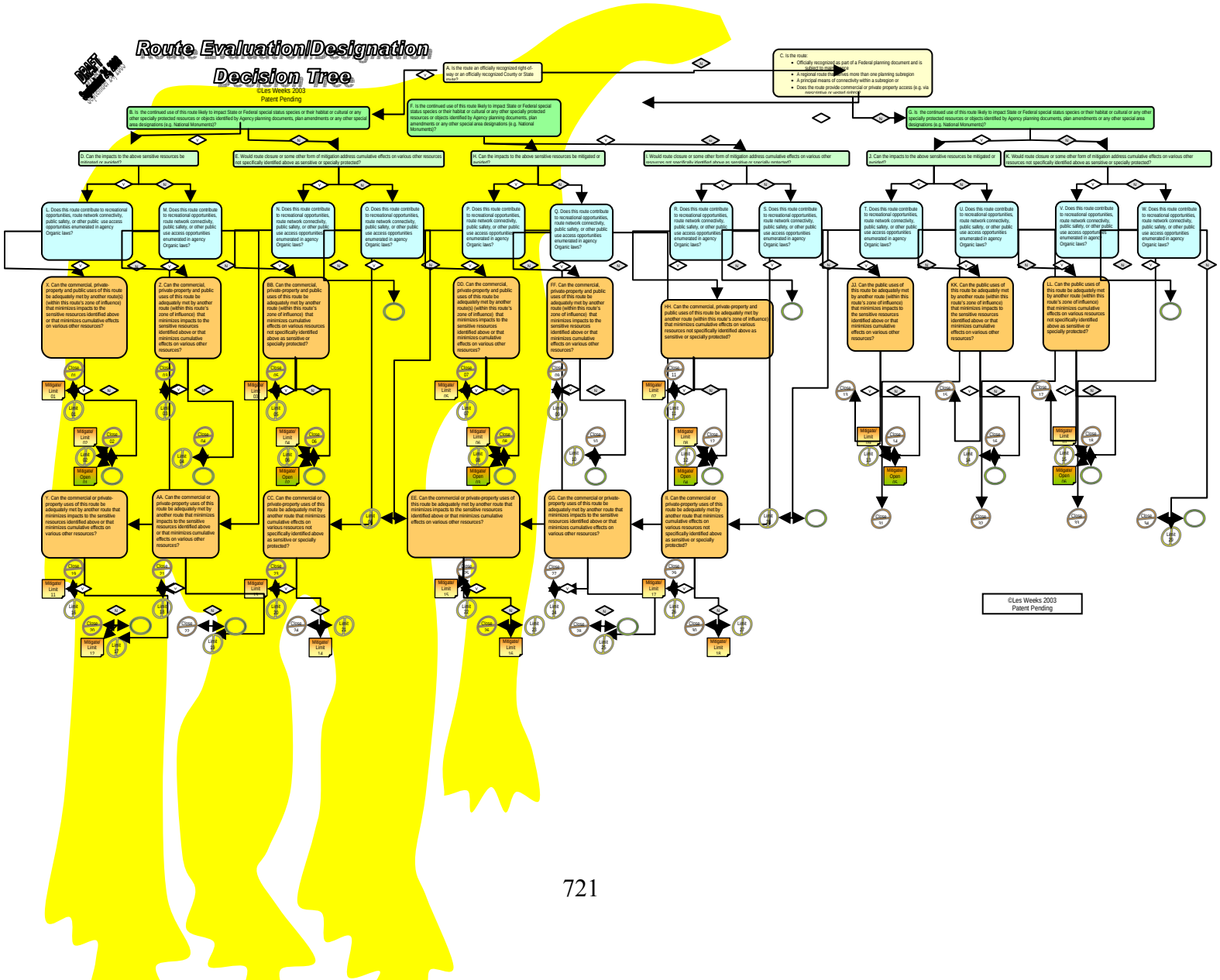


Limit 05: A route that is recommended for limited use by certain parties or entities with valid, vested, or implied rights of access, or to certain vehicle types, seasons of use, etc.

Mitigate/Open 05: A route that is recommended open for all uses, following mitigation action(s) aimed at reducing/eliminating certain estimated impacts identified during the route designation process.



Open 02: A route that is recommended open for all uses.


Route Evaluation/Designation
Decision Tree
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Patent Pending
A. Is the route an officially recognized right-of-way or an officially recognized County or State route?
B. Is the continued use of this route likely to impact State or Federal special status species or their habitat or cultural or any other specially protected resources or objects identified by Agency planning documents, plan amendments or any other special area designations (e.g. National Monuments)?
C. Is the route:
Officially recognized as part of a Federal planning document and is subject to plan amendment
A regional route that spans more than one planning subregion
A principal means of connectivity within a subregion or
Does the route provide commercial or private property access (e.g. via easement or permit rights)
D. Can the impacts to the above sensitive resources be mitigated or avoided?
E. Would route closure or some other form of mitigation address cumulative effects on various other resources not specifically identified above as sensitive or specially protected?
F. Is the continued use of this route likely to impact State or Federal special status species or their habitat or cultural or any other specially protected resources or objects identified by Agency planning documents, plan amendments or any other special area designations (e.g. National Monuments)?
G. Is the continued use of this route likely to impact State or Federal special status species or their habitat or cultural or any other specially protected resources or objects identified by Agency planning documents, plan amendments or any other special area designations (e.g. National Monuments)?
H. Can the impacts to the above sensitive resources be mitigated or avoided?
I. Would route closure or some other form of mitigation address cumulative effects on various other resources not specifically identified above as sensitive or specially protected?
J. Can the impacts to the above sensitive resources be mitigated or avoided?
K. Would route closure or some other form of mitigation address cumulative effects on various other resources not specifically identified above as sensitive or specially protected?
L. Does this route contribute to recreational opportunities, route network connectivity, public safety, or other public use access opportunities enumerated in agency Organic laws?
M. Does this route contribute to recreational opportunities, route network connectivity, public safety, or other public use access opportunities enumerated in agency Organic laws?
N. Does this route contribute to recreational opportunities, route network connectivity, public safety, or other public use access opportunities enumerated in agency Organic laws?
O. Does this route contribute to recreational opportunities, route network connectivity, public safety, or other public use access opportunities enumerated in agency Organic laws?
P. Does this route contribute to recreational opportunities, route network connectivity, public safety, or other public use access opportunities enumerated in agency Organic laws?
Q. Does this route contribute to recreational opportunities, route network connectivity, public safety, or other public use access opportunities enumerated in agency Organic laws?
R. Does this route contribute to recreational opportunities, route network connectivity, public safety, or other public use access opportunities enumerated in agency Organic laws?
S. Does this route contribute to recreational opportunities, route network connectivity, public safety, or other public use access opportunities enumerated in agency Organic laws?
T. Does this route contribute to recreational opportunities, route network connectivity, public safety, or other public use access opportunities enumerated in agency Organic laws?
U. Does this route contribute to recreational opportunities, route network connectivity, public safety, or other public use access opportunities enumerated in agency Organic laws?
V. Does this route contribute to recreational opportunities, route network connectivity, public safety, or other public use access opportunities enumerated in agency Organic laws?
W. Does this route contribute to recreational opportunities, route network connectivity, public safety, or other public use access opportunities enumerated in agency Organic laws?
X. Can the commercial, private-property and public uses of this route be adequately met by another route(s) (within this route's zone of influence) that minimizes impacts to the sensitive resources identified above or that minimizes cumulative effects on various other resources?
Z. Can the commercial, private-property and public uses of this route be adequately met by another route (within this route's zone of influence) that minimizes impacts to the sensitive resources identified above or that minimizes cumulative effects on various other resources?
BB. Can the commercial, private-property and public uses of this route be adequately met by another route (within this route's zone of influence) that minimizes cumulative effects on various resources not specifically identified above as sensitive or specially protected?
DD. Can the commercial, private-property and public uses of this route be adequately met by another route(s) (within this route's zone of influence) that minimizes impacts to the sensitive resources identified above or that minimizes cumulative effects on various other resources?
FF. Can the commercial, private-property and public uses of this route be adequately met by another route (within this route's zone of influence) that minimizes impacts to the sensitive resources identified above or that minimizes cumulative effects on various other resources?
HH. Can the commercial, private-property and public uses of this route be adequately met by another route (within this route's zone of influence) that minimizes cumulative effects on various resources not specifically identified above as sensitive or specially protected?
JJ. Can the public uses of this route be adequately met by another route (within this route's zone of influence) that minimizes impacts to the sensitive resources identified above or that minimizes cumulative effects on various other resources?
KK. Can the public uses of this route be adequately met by another route (within this route's zone of influence) that minimizes impacts to the sensitive resources identified above or that minimizes cumulative effects on various other resources?
LL. Can the public uses of this route be adequately met by another route (within this route's zone of influence) that minimizes cumulative effects on various resources not specifically identified above as sensitive or specially protected?
Y. Can the commercial or private-property uses of this route be adequately met by another route that minimizes impacts to the sensitive resources identified above or that minimizes cumulative effects on various other resources?
AA. Can the commercial or private-property uses of this route be adequately met by another route that minimizes impacts to the sensitive resources identified above or that minimizes cumulative effects on various other resources?
CC. Can the commercial or private-property uses of this route be adequately met by another route that minimizes cumulative effects on various resources not specifically identified above as sensitive or specially protected?
EE. Can the commercial or private-property uses of this route be adequately met by another route that minimizes impacts to the sensitive resources identified above or that minimizes cumulative effects on various other resources?
GG. Can the commercial or private-property uses of this route be adequately met by another route that minimizes impacts to the sensitive resources identified above or that minimizes cumulative effects on various other resources?
II. Can the commercial or private-property uses of this route be adequately met by another route that minimizes cumulative effects on various resources not specifically identified above as sensitive or specially protected?
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APPENDIX E: CULTURAL RESOURCES USE CATEGORIES

EXCERPT FROM BLM MANUAL 8110

8110 - IDENTIFYING AND EVALUATING CULTURAL RESOURCES

.4 Categorizing According to Uses. Categorizing cultural resources according to their potential uses is the culmination of the identification process and the bridge to protection and utilization decisions. Use categories establish what needs to be protected, and when or how use should be authorized. All cultural resources have uses, but not all should be used in the same way. Cultural resources can be allocated to the various recognized use categories even before they are individually identified. The clear advantage in doing this is that it allows Field Office managers to know in advance how to respond to conflicts that arise between specific cultural resources and other land uses. Relative to the national Programmatic Agreement, categorizing resources to uses provides a mechanism for the Field Office manager and the SHPO to confer and concur on how to handle most routine cases of conflict in advance, enabling the Field Office manager to put decisions into effect in the most appropriate and most timely manner.

.41 Allocations to Use Categories.

A. Field Office managers shall allocate to appropriate use categories all cultural properties known and projected to occur in a plan area. Allocations are made in land use plans (RMP), and may be applied both to individual properties and to classes of similar properties. Appropriately qualified staff professionals recommend suitable uses for each cultural property or class of properties, considering the properties' characteristics, condition, setting, location, and accessibility, and especially their perceived values and potential uses. A cultural property may be allocated to more than one use category or it may pass from one category to another (e.g., from Scientific Use to Public Use, as when an archaeological property becomes appropriate for in-place interpretation and conservation for future scientific use, upon completion of scientific investigation). During the compliance process for proposed land uses, allocations allow Field Office managers to analyze needs and develop appropriate mitigation and treatment options. Allocations should be consistent with historic context documents and State Historic Preservation Plans.

B. Allocations shall be reevaluated and revised, as appropriate, when circumstances change or new data become available. Conditions and/or criteria for revising allocations must be included in the RMP, or else revisions may require a plan amendment.

C. A Field Office more than 1 year from an RMP start may assign cultural resources to use categories through an implementation plan (e.g., integrated or interdisciplinary plan, coordinated resource management plan, landscape management plan) that implements any commitment in an existing land use plan to manage cultural resources appropriately (even if only a commitment to comply with the National Historic Preservation Act; see next to last sentence in A. above). Assignments made in implementation plans do not become full allocation decisions until incorporated in an approved RMP.

.42

8110 - IDENTIFYING AND EVALUATING CULTURAL RESOURCES

.42 Use Categories

A. Scientific Use. This category applies to any cultural property determined to be available for consideration as the subject of scientific or historical study at the present time, using currently available research techniques. Study includes methods that would result in the property's physical alteration or destruction. This category applies almost entirely to prehistoric and historic archaeological properties, where the method of use is generally archaeological excavation, controlled surface collection, and/or controlled recordation (data recovery). Recommendations to allocate individual properties to this use must be based on documentation of the kinds of data the property is thought to contain and the data's importance for pursuing specified research topics. Properties in this category need not be conserved in the face of a research or data recovery (mitigation) proposal that would make adequate and appropriate use of the property's research importance.

B. Conservation for Future Use. This category is reserved for any unusual cultural property which, because of scarcity, a research potential that surpasses the current state of the art, singular historic importance, cultural importance, architectural interest, or comparable reasons, is not currently available for consideration as the subject of scientific or historical study that would result in its physical alteration. A cultural property included in this category is deemed worthy of segregation from all other land or resource uses, including cultural resource uses, that would threaten the maintenance of its present condition or setting, as pertinent, and will remain in this use category until specified provisions are met in the future.

C. Traditional Use. This category is to be applied to any cultural resource known to be perceived by a specified social and/or cultural group as important in maintaining the cultural identity, heritage, or well being of the group. Cultural properties assigned to this category are to be managed in ways that recognize the importance ascribed to them and seek to accommodate their continuing traditional use.

D. Public use. This category may be applied to any cultural property found to be appropriate for use as an interpretive exhibit in place, or for related educational and recreational uses by members of the general public. The category may also be applied to buildings suitable for continued use or adaptive use, for example as staff housing or administrative facilities at a visitor contact or interpretive site, or as shelter along a cross-country ski trail.

E. Experimental Use. This category may be applied to a cultural property judged well-suited for controlled experimental study, to be conducted by BLM or others concerned with the techniques of managing cultural properties, which would result in the property's alteration, possibly including loss of integrity and destruction of physical elements. Committing cultural properties or the data they contain to loss must be justified in terms of specific information that would be gained and how it would aid in the management of other cultural properties. Experimental study should aim toward understanding the kinds and rates of natural or human-caused deterioration, testing the effectiveness of protection measures, or developing new research or interpretation methods and similar kinds of practical management information. It should not be applied to cultural properties with strong research potential, traditional cultural importance, or good public use potential, if it would significantly diminish those uses.

F. Discharged from Management. This category is assigned to cultural properties that have no remaining identifiable use. Most often these are prehistoric and historic archaeological properties, such as small surface scatters of artifacts or debris, whose limited research potential is effectively exhausted as soon as they have been documented. Also, more complex archaeological properties that have had their salient information collected and preserved through mitigation or research may be discharged from management, as should cultural properties destroyed by any natural event or human activity. Properties discharged from management remain in the inventory, but they are removed from further management attention and do not constrain other land uses. Particular classes of unrecorded cultural properties may be named and described in advance as dischargeable upon documentation, but specific cultural properties must be inspected in the field and recorded before they may be discharged from management.

Appendix F: Special Cultural Resource Management Areas

These eight areas, described below from east to west, are defined as Priority Areas for Cultural Resource Management and are common to all plan alternatives. These areas contain significant resources that, in many cases, are at risk of damage. Management actions within priority areas will be incorporated into annual work planning for the Phoenix Field Office cultural heritage program.

Black Mesa/Bumble Bee

This area, west of the Agua Fria National Monument, contains significant prehistoric and historic sites including pueblos, rock art, an Archaic artifact scatter, and historic mining and ranching camps. Many of the prehistoric sites were used during the period immediately prior to the Perry Mesa Tradition (A.D. 1250-1450), which represents the major occupational period on the monument. The sites are threatened by impacts from looting, livestock grazing, off-highway vehicle use, and recreational activities.

Galena Gulch

This area, adjacent to State Route 69 near Humboldt, contains an unusual variety of significant prehistoric and historic sites including pueblo structures, rock art, mines, cabins, cemeteries, and the remnants of an early transmission line. Many of the sites are known to the public and accessible from the highway. They are vulnerable to damage associated with recreational activities and nearby development.

Black Canyon Corridor

This area incorporates the proposed route of the Black Canyon Hiking and Equestrian Trail, which follows the path of the historic Black Canyon Livestock Driveway and other historic routes. The area features a number of significant prehistoric and historic sites, which offer opportunities for interpretive development and public education along the recreational trail. As this area receives a high level of recreational traffic, the sites also need to be documented and protected. .

Lake Pleasant/Agua Fria

This area in the foothills of the Bradshaw Mountains, directly north of Lake Pleasant, also incorporates a segment of the Agua Fria River. The area contains significant sites including prehistoric hilltop structures, rock art, and Humbug and other sites associated with historic mining. There are documented occurrences of *Agave murpheyi*, a type of agave that was cultivated in prehistoric times and is frequently associated with Hohokam sites. The integrity of these sites is threatened by the high volume of recreational traffic associated with the proximity of Lake Pleasant. Some sites have been publicized in book, magazine, and newspaper articles.

Wickenburg/Vulture

The area surrounding Wickenburg contains a number of historic sites and roads, associated primarily with the history of mining and settlement. The area also incorporates the Vulture source of obsidian, used for stone tools and traded widely by prehistoric people. Urban expansion and development, as well as recreational and mining activities, represent potential threats to cultural resources. Tourism is a local tradition, and residents have expressed an interest in visiting historical sites and incorporating interpreted sites into trail systems.

Weaver/Octave

This area surrounds Rich Hill, one of the most productive gold mining areas in Arizona's history. The historic settlement of Weaver (AZ N:14:3 (BLM)), other historic sites, roads, mines, and cemeteries offer opportunities to interpret selected sites for public use.

Harcuvar Mountains

This mountain range and surrounding areas contain a variety of significant prehistoric sites, including habitation camps, stone tool manufacturing areas, milling areas, rockshelters, and rock art (petroglyphs and pictographs). The area is near a major historic transportation route and may contain sites associated with mining, transportation, commerce, and military activities during the 1800s. The sites are threatened by off-highway travel and recreational activities associated with the growth of seasonal retirement communities.

Harquahala Mountains

This mountain range includes the Harquahala Mountain Observatory Historic District, which encompasses the Harquahala Smithsonian Observatory, the historic Harquahala Pack Trail, Ellison's Camp, and associated historical features. The Harquahala Mountains also contain significant prehistoric sites including habitation camps, milling areas, and rock art. In 2002, the BLM completed a stabilization project at the historic Harquahala Peak Smithsonian Observatory, which was used by solar researchers during the 1920s. This historic building is a mountaintop destination for both the historic pack trail and the Harquahala Mountain Back Country Byway. The remoteness and wilderness character of the range offer some protection for cultural resources, but sites may be vulnerable to impacts from mining and recreational activities.

Appendix G – Harquahala Herd Area Manageability Analysis

The Harquahala Herd Area is located approximately 18 miles north and 72 miles west of Phoenix, and is 59,405 acres in size. The herd area encompasses 150,561 acres of public land (94.5 percent), 8,060 acres of Arizona State Lands (5 percent), and 782 acres of private land (0.5 percent).

Portions of three wilderness areas, including the Harquahala Mountain Wilderness Area on the north, along with Humming Bird Springs and the Big Horn Mountains Wilderness Areas on the south, are located within the herd area boundaries. Wilderness acres include 20.7 percent, or 33,151 acres of the herd area.

The area, which was first identified as a herd area in the Draft Lower Gila North Grazing Environmental Impact Statement (EIS) in 1982, was based on inventories conducted in 1976 and 1980, utilizing the Lincoln Index Inventory Method. The area was designated as a herd area in the Final Lower Gila North Grazing EIS in September 1982.

In 1999, inventories were jointly conducted by the Arizona Game and Fish Department and the Bureau of Land Management (BLM) utilizing the Simultaneous Double Count Method. The analysis of that data indicates a total herd of less than 50 animals. These were found in two separate groups. One group, representing approximately two-thirds of the current population, was located on the south side of the Harquahala Mountains, and the other one-third was found on the southern end of the Big Horn Mountains. The mountainous areas provide a more dependable source of forage, whereas the areas between these mountains produce only a limited amount of perennial forage. Burros within this herd area are often dependant on forage produced on the privately owned agricultural fields, which are located at the west end of the Harquahala Mountains, especially during periods of drought.

Access to natural occurring water is restricted to two sources of dependable water (except during drought), they're two springs located in Browns Canyon on the south side of the Harquahalas, and Humming Bird Springs in the southern portion of the herd area. Both of these areas are critical to native wildlife species. A proposal to fence Browns Canyon to protect the riparian area from excessive grazing is being considered, and will forwarded as a project as soon as the area has been evaluated via the Arizona Standards for Rangeland Health process. Other water sources in the area are those developed for livestock, including wells, troughs and earthen tanks. The wells and troughs are generally located within livestock handling facilities, such as corrals and traps that are often closed to facilitate livestock management; therefore, not always accessible to wild burros. Also, these wells are only operational during periods of active livestock use, and are not a dependable source of water throughout the year. Earthen tanks are generally accessible, but only contain water during periods of plentiful precipitation.

Field observations confirm that the burros in this area often range far outside the herd area boundary, which indicates the necessity for these animals to seek sustenance (forage and water) in areas other than within the designated herd area.

Although existing research regarding minimum population size varies, it is generally accepted that a population of less than 50 animals is not sufficient to maintain a genetically viable and healthy population over a long-term period.

Therefore, considering all factors, including limited water sources, sparse-foraged vegetation, which resulted in the necessity for the burros to forage outside the herd area and on privately owned farm lands, and grazing damage to riparian areas by a small number of animals - it is recommended that the Harquahala Herd Area not be designated as a Herd Management Area.

Table H-1 – Priority Species List

Priority wildlife species, their status, and occurrence in the planning area are described in the following table:

Common Name	Scientific Name	Status			
		Federal	State	Other	Planning Area Occurrence
Mammals					
Allen's (Mexican) Big-Eared Bat	Idionycteris phyllotis	BS	-	-	p
American Pronghorn	Antilocapra americana americana	-	G	-	x
Big Free-tail Bat	Nyctinomops macrotis	BS	-	-	p
Black Bear	Ursus americana	-	G	-	x
California Leaf-nosed Bat	Macrotus californicus	-	S	-	x
Cave Myotis	Myotis velifer	BS	-	-	x
Desert Bighorn Sheep	Ovis canadensis mexicana	-	G	-	x
Elk	Cervus elophus	-	G	-	x
Fringed Myotis	Myotis thysanodes	BS	-	-	x
Javelina (Collared Peccary)	Pecari tajacu	-	G	-	x
Long-eared Myotis	Myotis evotis	BS	-	-	p
Long-legged Myotis	Myotis volans	BS	-	-	p
Mountain Lion	Felis concolor	-	G	-	x
Mule Deer	Odocoileus hemionus	-	G	-	x
Occult Little Brown Bat	Myotis lucifugus occultus	BS	-	-	p
Pocketed Free-tailed Bat	Nyctinomops femorosaccus	BS	-	-	p
Red Bat	Lasiurs borealis	-	S	-	p
Small-footed Myotis	Myotis cilliolabrum	BS	-	-	p
Southern Yellow Bat	Lasiurus ega	-	S	-	p
Spotted Bat	Euderma maculatum	-	S	-	x
White-tailed Deer	Odocoileus virginiatus	-	G	-	x
Birds					
American Kestrel	Falco sparverius	-	-	R	x
Bald Eagle	Haliaeetus leucocephalus	T	S	-	x
Banded-tailed Pigeon	Columba fasciata	-	G	-	p
Barn Owl	Tyto alba	-	-	R	x
Bell's Vireo	Vireo bellii	-	-	BCC	x
Belted Kingfisher	Ceryle alcyon	-	S	-	x
Bendire's Thrasher	Toxostoma bendirei	-	-	BCC	x
Black-chinned Sparrow	Spizella atrogularis	-	-	BCC	x
Black-throated Gray Warbler	Dendroica nigrescens	-	-	BCC	p
Broad-billed Hummingbird	Cynanthus latirostris	-	-	BCC	p
Burrowing Owl	Athene cunicularia	BS	-	BCC	x
Cactus Ferruginous Pygmy Owl	Glaucidium brasilianum cactorum	E	S	-	h
Chestnut-collared Longspur	Calcarius ornatus	-	-	BCC	p
Common Black-hawk	Buteogallus anthracinus	-	S	BCC	x

Common Name	Scientific Name	Status			
		Federal	State	Other	Planning Area Occurrence
Cooper's Hawk	Accipiter cooperii	-	-	R	x
Costa's Hummingbird	Calypte costae	-	-	BCC	x
Crissal Thrasher	Toxostoma crissale	-	-	BCC	x
Elf Owl	Micrathene whitneyi	-	-	BCC	x
Ferruginous Hawk	Buteo regalis	-	S	BCC	x
Gambel's Quail	Callipepla gambelii	-	G	-	x
Gila Woodpecker	Melanerpes uropygialis	-	-	BCC	x
Gilded Flicker	Colaptes chrysoides	-	-	BCC	x
Golden Eagle	Aquila chrysaetos	-	-	R	x
Grace's Warbler	Dendroica graciae	-	-	BCC	p
Grasshopper Sparrow	Ammodramus savannarum	-	-	BCC	p
Gray Vireo	Vireo vicinior	-	-	BCC	x
Great Egret	Ardea alba	-	S	-	x
Greater Pewee	Contopus pertinax	-	-	BCC	x
Great-horned Owl	Bubo virginianus	-	-	R	x
Harris' Hawk	Parabuteo unicinctus	-	-	R	x
Lark Bunting	Calamospiza melanocorys	-	-	BCC	x
Lawrence's Goldfinch	Carduelis lawrencei	-	-	BCC	x
LeConte's Thrasher	Toxostoma lecontei	-	-	BCC	x
Loggerhead Shrike	Lanius ludovicianus	BS	-	BCC	x
Long-billed Curlew	Numenius americanus	-	-	BCC	x
Long-eared Owl	Asio otus	-	-	R	x
Merlin	Falco columbarius	-	-	R	x
Mourning Dove	Zenaida macroura	-	G	-	x
Northern Goshawk	Accipiter gentilis	-	S	BCC	p
Northern Harrier	Circus cyaneus	-	-	R	x
Osprey	Pandion haliaetus	-	S	-	x
Peregrine Falcon	Falco peregrinus	-	S	BCC	x
Prairie Falcon	Falco mexicanus	-	-	R	x
Red-tailed Hawk	Buteo jamaicensis calurus	-	-	R	x
Sage Sparrow	Amphispiza belli	-	-	BCC	p
Sharp-shinned Hawk	Accipiter striatus	-	-	R	x
Short-eared Owl	Asio flammeus	-	-	R	x
Snowy Egret	Egretta thula	-	S	-	x
Southwestern Willow Flycatcher	Empidonax traillii extimus	E	S	-	x
Swainson's Hawk	Buteo swainsoni	-	-	R	x
Turkey Vulture	Cathartes aura	-	-	R	x
Western Screech Owl	Otus kennicottii	-	-	R	x
White-tailed Kite	Elanus leucurus	-	-	R	x
White-winged Dove	Zenaida asiatica	-	G	-	x
Yellow-billed Cuckoo	Coccyzus americanus	C	S	BCC	x
Yellow Warbler	Dendroica petechia	-	-	BCC	x
Zone-tailed Hawk	Buteo albonotatus	-	-	R	x

Common Name	Scientific Name	Status			
		Federal	State	Other	Planning Area Occurrence
Amphibians and Reptiles					
Arizona Skink	Eumeces gilberti arizonensis	-	S	-	x
Chuckwalla	Sauromalus obesus	BS	-	-	x
Sonoran Desert Tortoise	Gopherus = (Xerobates) agassizii	-	S	-	x
Lowland Leopard Frog	Rana yavapaiensis	-	S	-	x
Mexican Garter Snake	Thamnophis eques	-	S	-	x
Rosy Boa	Charina trivirgata	BS	-	-	x
Fishes					
Desert Pupfish	Cyprinodon macularius macularius	E	S	-	x
Desert Sucker	Catostomus clarki	BS	-	-	x
Gila Chub	Gila intermedia	PE	S	-	x
Gila Topminnow	Poeciliopsis occidentalis occidentalis	E	S	-	x
Longfin Dace	Agosia chrysogaster	BS	-	-	x
Speckled Dace	Rhinichthys osculus	BS	-	-	x
Spikedace	Meda fulgida	T	S	-	h
Invertebrates					
Maricopa Tiger Beetle	Cicindela oregona maricopa	BS			p
MacNeil Sootywing Skipper	Hesperopsis gracielae	BS			p
Plants					
Arizona Giant Sedge	Carex spissa *var.* ultra	BS	-	-	x
California Flannelbush	Fremontodendron californica	BS	-	-	x
Murphey (Hohokam) Agave	Agave murpheyi	BS	-	-	x

Federal Status
E- Endangered
T-Threatened
PE-Proposed Endangered
PT-Proposed Threatened
C-Candidate

Other Classifications
BS- BLM Sensitive, Updated BLM Sensitive Species List for Arizona (Instruction Memorandum No. AZ-2000-018, Change 1)
BCC - Birds of Conservation Concern 2002, U.S. Fish and Wildlife Service
S - State Sensitive, Wildlife of Special Concern in Arizona (AGFD, Draft 1996)
R – Raptors
G - Game Species

Occurrence in the Planning Areas
x – occur
p – possible
h - historic

Appendix I: Consideration of Wilderness Characteristics

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

October 23, 2003

In Reply Refer To:
1610 (210) P
Ref. IM No. 2003-195
IM No. 2003-274
IM No. 2003-275

EMS TRANSMISSION 10/23/2003
Instruction Memorandum No. 2003-275 – Change 1
Expires: 09/30/2004

To: All State Directors

From: Assistant Director, Renewable Resources and Planning

Subject: Consideration of Wilderness Characteristics in Land Use Plans (Excluding Alaska)

Program Area: Land Use Planning

Purpose: This Instruction Memorandum corrects the reference to the Code of Federal Regulations (CFR) used twice in the "Reviewing New Information" section of Instruction Memorandum No. 2003-275. No other changes to Instruction Memorandum No. 2003-275 have been made.

This Instruction Memorandum (IM) provides guidance regarding the consideration of wilderness characteristics in the land use planning process. In addition the IM sets forth policy to comply with the settlement in *Utah v. Norton* and the decision to apply the terms of the settlement Bureau-wide, excluding Alaska. The IM applies to all other public lands, except approximately 6.5 million acres of public land designated by Congress as wilderness, 15.5 million acres of wilderness study areas (WSAs) already established by the Bureau of Land Management (BLM) or Congress, and any other lands not designated by Congress but subject to specific provisions of law that direct BLM to manage those lands as if they were congressionally designated wilderness or WSAs. The IM also modifies the Land Use Planning Handbook (H-1601-1) to delete a statement that land use plan decisions include designation of WSAs.

Background: The BLM submitted wilderness suitability recommendations to Congress pursuant to Section 603 of the Federal Land Policy and Management Act (FLPMA) by October 21, 1993. BLM, however, continued to inventory for wilderness characteristics under the authority of Section 201 of FLPMA and made formal determinations regarding

wilderness character consistent with the definition of wilderness as described in Section 2 (c) of the Wilderness Act of 1964. The BLM assumed that Section 202 of FLPMA authorized designation, through the land use planning process, of additional WSAs. These Section 202 WSAs, according to the BLM's Interim Management Policy (IMP), as
modified in 1995, would be managed to retain their suitability as wilderness (non-impairment provision) until Congress designated them as wilderness or they were made
available for other land uses by the decisions resulting from a new land use planning process.

In *Utah v Norton*, the State of Utah, Utah School and Institutional Trust Land Administration, and the Utah Association of Counties filed suit challenging the authority of the BLM to conduct wilderness inventories after completion of the Section 603 identification, study, and recommendation processes. The Department of the Interior and the plaintiffs agreed to a settlement in April 2003.

The settlement acknowledges: (1) that the BLM's authority to conduct wilderness reviews, including the establishment of new WSAs, expired no later than October 21, 1993, with the submission of the wilderness suitability recommendations to Congress pursuant to Section 603 of the FLPMA; and (2) that the BLM is without authority to establish new WSAs. The settlement did not, however, diminish the BLM's authority under Section 201 of the FLPMA to inventory public land resources and other values, including characteristics associated with the concept of wilderness, and to consider such information during land use planning.

Consistent with the settlement, the BLM rescinded the Wilderness Inventory and Study Procedures Handbook (H-1630-1). See IM-2003-195, dated June 20, 2003. It is, therefore, no longer BLM policy to continue to make formal determinations regarding wilderness character, designate new WSAs through the land use planning process, or manage any lands – except WSAs established under Section 603 of the FLPMA and other existing WSAs – in accordance with the non-impairment standard prescribed in the IMP.

Refer to IM 2003- 274 for general guidance regarding interpretation of the *Utah v. Norton* wilderness lawsuit settlement.

Policy/Action:

Nothing in this guidance changes current policy on the management of designated wilderness and existing WSAs. The BLM will continue to protect and manage congressionally designated wilderness and existing WSAs according to the provisions of applicable laws and the BLM's wilderness program policies. Those lands designated as WSAs in the BLM's land use plans after October 21, 1993, may continue to be managed consistent with the decisions contained in the approved land use plan.

The BLM will not designate new WSAs through the land use planning process. In addition, the BLM will not allocate any additional lands to be managed under the non-impairment standard prescribed in the IMP. Instead, the BLM may consider information

on wilderness characteristics, along with information on other uses and values, when preparing land use plans. Wilderness characteristics are features associated with the concept of wilderness that may be considered in land use planning (see Attachment #1).

The BLM will involve the public in the planning process to determine the best mix of resource use and protection consistent with the multiple-use and other criteria established in the FLPMA and other

applicable laws, regulations and policies. Lands with wilderness characteristics may be managed to protect and/or preserve some or all of those characteristics. This may include protecting certain lands in their natural condition and/or providing opportunities for solitude, or primitive and unconfined types of recreation.

The BLM can make a variety of land use plan decisions to protect wilderness characteristics, such as establishing Visual Resource Management (VRM) class objectives to guide the placement of roads, trails, and other facilities; establishing conditions of use to be attached to permits, leases, and other authorizations to achieve the desired level of resource protection; and designating lands as open, closed, or limited to Off Highway Vehicles (OHV) to achieve a desired visitor experience.

The BLM also has authority to designate Areas of Critical Environmental Concern (ACEC) where special management attention is required to protect and prevent irreparable damage to important cultural, historic, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards. To qualify for consideration of the ACEC designation, such values must have substantial significance and value, with qualities of more than local significance and special worth, consequence, meaning, distinctiveness, or cause for concern. Where ACEC values and wilderness characteristics coincide, the special management associated with an ACEC, if designated, may also protect wilderness characteristics. See BLM Manual 1613, Areas of Critical Environmental Concern, for more information.

See the Land Use Planning Handbook, H-1601-1, Section II, Land Use Plan Decisions and Attachment #1 of this IM for more information about making land use plan decisions to accomplish goals and objectives for resource management.

Considering wilderness characteristics in the land use planning process may result in several outcomes, including, but not limited to: 1) emphasizing other multiple uses as a priority over protecting wilderness characteristics; 2) emphasizing other multiple uses while applying management restrictions (conditions of use, mitigation measures) to reduce impacts to some or all of the wilderness characteristics; 3) emphasizing the protection of some or all of the wilderness characteristics as a priority over other multiple uses (though the area will not be designated a WSA).

The BLM is authorized to implement current land use plans until those plans are revised or amended (if appropriate), provided the implementation actions conform to the approved plans and are supported by adequate National Environmental Policy Act (NEPA) documentation, usually an environmental assessment (EA), environmental impact statement (EIS), or Categorical Exclusion (CE).

If the BLM determines that an area has wilderness characteristics that warrant consideration in the land use planning process, the BLM may initiate a plan amendment (or revision) with an accompanying NEPA document (EIS or EA) to consider changes to the current land use plan decisions. A decision regarding the timing of the plan

amendment (or revision) is at the discretion of the State Director, and depends on the level of public interest, the position of State and local governments and cooperators, the adequacy of available information, funding, and other factors.

BLM Wilderness Inventories and Public Wilderness Proposals

Typically, the resource information contained in the BLM wilderness inventories was collected to support a land use planning process. Public wilderness proposals represent a land use proposal. In either case, the BLM is authorized to consider such information during preparation of a land use plan amendment or revision. For example, information contained in BLM wilderness inventories and public wilderness proposals may be considered when developing the affected environment section of the NEPA document that accompanies the land use plan. The information may also be used to develop the range of alternatives or to analyze the environmental impacts to the various natural, biological, and cultural resources – such as air, soil, water, vegetation, cultural, paleontologial, visual, special status species, fish and wildlife – as well as resource uses – such as forestry, livestock grazing, recreation, lands and realty, coal, and fluid minerals. Refer to the Land Use Planning Handbook, H-1601-1, Appendix C, for guidance concerning the resources and resource uses to be considered in land use plans.

Alternatives are developed to reflect a reasonable range of management options considering all applicable information sources, such as the results of scoping, coordination with cooperating agencies, and practicality of management. The boundary of an area being considered in the land use plan for management of wilderness characteristics, therefore, is dependent on many factors and may or may not exactly follow the boundary of previous inventory areas.

Reviewing New Information

When implementing land use plans, the BLM must, as with any new information, determine if the BLM wilderness inventories or public wilderness proposals contain significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or impacts that have not previously been analyzed. Since every land use plan and supporting NEPA document is different, this determination will need to be done on a case-by-case basis. New information or changed circumstances alone, however, or the failure to consider a factor or matter of little consequence, is not a sufficient basis to require additional NEPA consideration prior to implementing a previously approved decision.

If the new information is sufficient to show that the action will affect the quality of the human environment in a significant manner or to a significant extent not already considered, then a supplemental NEPA document shall be prepared (40 CFR 1502.9).

To help determine whether the new information or circumstances is significant, the BLM should look at the definition of "significantly" at 40 CFR 1508.27, which requires consideration of both context and intensity. See Attachment #2 for more information regarding the review of new wilderness information during plan implementation.

The analysis of new information and the BLM's determination regarding its significance should be documented, using, as an example, the Documentation of Land Use Plan Conformance and NEPA Adequacy (DNA) worksheet.

It is important to note that the BLM must review the new information only when it is relevant to a pending decision or its environmental effects. When no action is being considered, the BLM may defer the reviews until a more appropriate time, such as when preparing a land use plan amendment or revision. *:*

Using New Information on Lands with Wilderness Characteristics to Implement Approved Land Use Plans

The BLM wilderness inventories and public wilderness proposals may contain new information on land and resource conditions that can be used in a variety of day-to-day operations. Examples of using the new information in day-to-day operations include applying new mitigation measures to on-the-ground projects; establishing reclamation standards; updating the BLM's resource databases; refining previously approved plan decisions (plan maintenance) to correct data, typographical, or mapping errors in the planning records; or implementing the decisions of the land use plan, such as when selecting routes in areas designated as limited to OHV travel.

When preparing NEPA documents for actions that implement the approved plan, the BLM may also use the information on lands and resources contained in BLM wilderness inventories and public wilderness proposals to describe the affected environment, and environmental impacts to the various natural, biological, and cultural resources. For example, information on naturalness may help describe the condition and trend of important wildlife habitat and could be included in the affected environment discussion if applicable. Similarly, information on the presence of roads and other facilities may be used to describe the current status of visual resources as well as the potential for the proposed action to affect those resources. Provided relevant new information is considered in the NEPA document in this fashion, it is not necessary to analyze impacts to the area identified by BLM wilderness inventories or public wilderness proposals as having wilderness characteristics.

If a NEPA document is being prepared for an action affecting lands with wilderness characteristics, and those characteristics are currently being considered in an on-going land use planning process, the BLM may acknowledge the status of the planning process and describe how the proposed action might affect future management considerations.

This may be accomplished in the discussion of the no action alternative or in the section of the NEPA document on plan conformance. The fact that the BLM is considering alternative management goals for the affected lands in a pending land use plan revision or amendment, however, does not change the management or use of those lands during the interim. The BLM is authorized to implement current land use plans until those plans are revised or amended, if appropriate, and may acknowledge on-going planning efforts to
ensure that the decision-maker and the public are fully informed of the consequences of the proposed action.

Effect on On-going plans

This policy may require some BLM Field Offices to modify current Resource Management Plan (RMP) efforts. For RMPs where a Draft RMP/EIS has not been issued, Field Offices must ensure that the Draft RMP/EIS is consistent with this IM. If the BLM has already discussed or identified possible WSA designations with the public, BLM must explain the change in policy. There is no requirement, however, to reinitiate scoping or provide an additional comment period before releasing the Draft RMP/EIS since the public will be provided an opportunity to comment on the draft, including the range of alternatives and proposed management prescriptions.

For Draft RMP/EISs already issued that include designation of new WSAs in an alternative, it will be necessary to modify the Proposed RMP/Final EIS. If the effects of an alternative modified to comply with this policy are within the range of alternatives already analyzed in the Draft RMP/EIS, preparing a

supplement to the Draft RMP/EIS is not necessary. Each affected Field Office must determine the need for a supplement in consultation with WO-210.

After receiving this guidance, State and Field Offices have 45 days to consider the implications of this IM in coordination with WO-210. In addition, within 45 days, State Directors will review and update their existing State and field office policies and other guidance and make necessary modifications to comply with the terms of this IM.

Timeframes: This policy is in effect immediately.

Budget Impact: This policy is expected to increase slightly the costs of ongoing planning efforts as modifications are made to planning documents to comply with this IM. For all other land use plans the policy should result in diminished costs.

Manual/Handbook Sections Affected: That sentence in the Land Use Planning Handbook (H-1601-1, Appendix C, Part III.B.1.a, Page 18) that directs BLM to "Designate WSAs to be managed under the interim management policy (H-8550-1)," is hereby deleted. No other portions of H-1601-1 are affected.

The Wilderness Inventory and Study Procedures Handbook (H-6310-1) was rescinded in "Rescission of National Level Policy Guidance on Wilderness Review and Land Use Planning" (IM-2003-195).

Coordination: This guidance was coordinated with WO-170, WO-200 and WO-300.

Contact: For further information, contact Mike Mottice at (202) 452-0362 or Geoff Middaugh at (202) 785-6592

Signed by:
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2 Attachments
1- Definitions of Wilderness Characteristics for the Purpose of Land Use Planning and Management Considerations to Accomplish Plan Goals and Objectives (1 p)
2- Review of New Wilderness Information During Plan Implementation (2 pp)

Attachment 1

Definitions of Wilderness Characteristics for the Purpose of Land Use Planning and Management Considerations to Accomplish Plan Goals and Objectives

Definitions:

Wilderness Characteristics. Features of the land associated with the concept of wilderness that may be considered in land use planning when BLM determines that those characteristics are reasonably present, of sufficient value (condition, uniqueness, relevance, importance) and need (trend, risk), and are practical to manage.

Naturalness. Lands and resources exhibit a high degree of naturalness when affected primarily by the forces of nature and where the imprint of human activity is substantially unnoticeable. BLM has authority to inventory, assess, and/or monitor the attributes of the lands and resources on public lands, which, taken together, are an indication of an area's naturalness. These attributes may include the presence or absence of roads and trails, fences and other improvements; the nature and extent of landscape modifications; the presence of native vegetation communities; and the connectivity of habitats.

Solitude and Primitive/Unconfined Recreation. Visitors may have outstanding opportunities for solitude, or primitive and unconfined types of recreation when the sights, sounds, and evidence of other people are rare or infrequent, where visitors can be isolated, alone or secluded from others, where the use of the area is through non-motorized, non-mechanical means, and where no or minimal developed recreation facilities are encountered.

Management Considerations:

A decision to protect or preserve certain lands in their natural condition, if appropriate, or provide outstanding opportunities for solitude, or primitive and unconfined types of recreation may be made at the conclusion of the land use planning process. Land use plan decisions may include establishing goals and objectives that describe the desired future condition of the land and resources, desired outcome of the recreation experience, and allowable uses. BLM may also identify the management actions necessary to achieve the intended goals and objectives, including the conditions of use that would be attached to permits, leases, and other authorizations to avoid or minimize impacts to the affected natural, biological, and cultural resources and other land uses. In some cases, when BLM determines that certain uses of the land could be incompatible with the achievement of other desired goals and objectives, those uses could be conditioned to the extent necessary to reach the necessary level of resource protection.

Attachment 2

Review of New Wilderness Information During Plan Implementation

The Land Use Planning Handbook (H-1601-1) provides some criteria to use when reviewing new information. Other factors to consider when reviewing new information contained in BLM wilderness inventories or public wilderness proposals that may be relevant to an implementation action are:

1. Was the information on land and resource conditions available to the BLM and adequately considered within the range, scope and analysis of the alternatives in the plan/EIS or other NEPA document, and is there adequate documentation to that affect?
2. Does the new information suggest significant changes in land and resource conditions have occurred since the plan/EIS or other NEPA document was completed?
3. Though BLM may not have formally disclosed in existing NEPA documents the impacts to the wilderness characteristics that have been identified in new inventories or public wilderness proposals, did BLM reasonably consider the environmental effects to the lands and resources that contribute to the wilderness characteristics in relevant NEPA documents?
4. Does the new information suggest that the impacts to those lands, if analyzed today, would be significantly different than the impacts already disclosed in the plan EIS or other NEPA document(s)?
5. Can BLM condition use of the lands for which new information exists in such a way that the effects of the action would not be significantly different from the effects already described?
6. Is the information at such a scale that BLM would ordinarily use the new information to make land use plan level decisions or is it more appropriate to consider for implementation level decisions?

New information or changed circumstances alone, however, or the failure to consider a factor or matter of little consequence, may not be sufficient basis to require additional NEPA consideration prior to implementing a previously approved decision. For example, the fact that roads and trails have become overgrown since previous inventories were completed represents a changed circumstance. Such change is most likely the result of natural environmental processes and, alone, may not be sufficient to require the preparation of additional NEPA documentation. The fact that BLM did not specifically analyze impacts of the proposed action on wilderness characteristics identified since the current land use plan or NEPA document was prepared is not an omission that, alone, would indicate that additional NEPA consideration is required. In all cases then, BLM should evaluate: 1) the extent to which the new information presents potential significant environmental consequences associated with the proposed action that were not analyzed in the previous NEPA analysis; and 2) whether those consequences are of significant gravity in context or intensity.

Case Law on Supplementation of NEPA

The lead case from the United States Supreme Court on supplementation is Marsh v Oregon Natural Resources Council, 490 U.S. 360 (1989). It provides that "an agency need not supplement an EIS every time new information comes to light after the EIS is finalized. To require otherwise would render agency decision-making intractable, always awaiting updated information only to find the new information outdated by the time the decision is made." Id. at 373.

Rather, to trigger supplementation obligations, the new information must be sufficient to show that the proposed action will affect the quality of the human environment "in a significant manner or to a significant extent not already considered." Id. at 374.

The following is Arizona guidance issued in and excerpted from IM AZ-2005-007, Attachment 1:

State Director Guidance Specific to Wilderness Characteristics Land Use Allocations

Consistent with policy, the BLM has the authority to address wilderness characteristics and prescribe goals, objectives, and management actions in land use plans. Given the flexibility in how to consider wilderness characteristics in land use plans that is provided in Instruction Memorandum No. 2003-275 - Change 1 and recognizing the controversial nature of this topic, both in public and agency eyes, a consistent approach to addressing wilderness characteristics in Arizona land use plans is provided below. Key elements of the planning process are identified and the approach to be applied is addressed within each of these basic components of the plan.

Terminology – Use the term "wilderness characteristics" appropriately in the plan, including for plan section headings. Wilderness characteristics are features of the land and are specifically identified in Instruction Memorandum (IM) No. 2003-275 – Change 1 as naturalness, solitude and primitive/unconfined recreation. Definitions are provided in IM No. 2003-275 – Change 1, Attachment 1. The IM guidance makes consistent reference to the term wilderness characteristics. Wilderness characteristics are the resource that the citizen groups have identified, as validated by BLM, and where present on any additional lands, that the BLM is recognizing in the planning process. In the short term of completing the plan, this clarifies to the public that wilderness characteristics are being considered and proposed for management in the plan. Over the long term of implementing the plan, the wilderness resource remains recognizable for management and maintenance of the characteristics as intended when the plan was completed.

Desired Future Conditions – Describe Desired Future Conditions for wilderness characteristics using the verbs "maintain, enhance or manage." The FLPMA Section 603 "non-impairment standard" (Interim Management Policy for Wilderness Study Areas) **will not** be applied to management of wilderness characteristics. Additionally, wilderness characteristics **will not** be managed as designated wilderness under the Wilderness Act of 1964.

Land Use Allocation – The land use plan will make an allocation for maintaining wilderness characteristics on certain lands where they exist. The term "Manage for Wilderness Characteristics" as a title for such an allocation **will not** be used. Instead, more general references to these allocations, such as lands with wilderness characteristics or areas having wilderness characteristics, will be used. Do not develop or use acronyms.

Management Actions – List one set of management prescriptions for all wilderness characteristics allocated lands in an alternative as a whole as uniformly as possible. In uncommon circumstances, a grouping of units or an individual area may have described management that differs from other lands in the alternative to recognize specific management situations.

Identification – Wilderness characteristics will be a GIS theme depicted on maps in Chapters 2 (Alternatives) and 3 (Affected Environment) of the plan. Maps may have a descriptive phrase to distinguish Chapter 2 maps ("Lands managed to maintain or enhance wilderness characteristics") from Chapter 3 maps ("Lands identified as having wilderness characteristics"). Polygons depicting areas of wilderness characteristics will be shown on the maps. Individual place names for identified lands and allocated areas **will not** be listed in the land use plan. Total acreage of lands allocated to maintaining wilderness characteristics will be presented by alternative rather than listing the separate acreages of individual areas.

Summary – Use of this approach shows the BLM's intent to clearly address citizen proposals and allows citizen groups to track whether their individually proposed areas are included within the lands that would be allocated by alternative. Wilderness characteristics and the management direction to maintain them would be apparent in the plan contributing to the long-term maintenance of the resource.

Appendix J - Vegetation Communities Related to Fire

Related to Fire

The following vegetative communities are present in the Agua Fria National Monument and the Bradshaw-Harquahala planning areas. The vegetative communities' descriptions are found in the Arizona Statewide land Use Plan Amendment for Fire, Fuels and Air Quality Management, Appendix C.

Each vegetation community is fully described by Brown (1982a, 1994). The Brown classification for the American Southwest is based on biogeography delineators such as climate, vegetation physiognomy, and plant dominants.

Upland Sonoran Desert Scrub

The Upland Sonoran Desert Scrub vegetation is at times referred to as the Arizona Desert or Paloverde-Cacti Desert. This vegetation is mainly associated with the Lower Sonoran Desert Scrub. It occurs on BLM land in the western part of the state and is the largest vegetation community at 3,280,602 acres. Cacti plants are characteristic of this desert scrub and include buckhorn cholla, cane cholla, chain fruit cholla, teddy bear cholla, desert Christmas cactus, pencil cholla, Klein cholla, Devil's club ground cholla, fishhook pincushion, Thornber pincushion, fish-horn barrel cactus, compass barrel cactus, and saguaro. Non-cactus dominant woody plants are blue palo verde, foothill palo verde, ironwood, creosotebush, white bursage, whitethorn acacia, limber bush, ocotillo, jojoba, little-leaved ratany, crucifixion thorn, and bush buckwheat. Fire is not common in this vegetation community. The Desired Future Conditions are for an adequate cover and mix of natural plant species that have good vigor. In terms of fire management and fire ecology, the Desired Future Conditions are for fire to control or reduce the exotic annual weeds such as red brome and to limit woody vegetation to non-hazardous levels.

A great majority of this vegetation occurs on slopes and broken ground giving it the name of Upland Sonoran Desert Scrub. Elevations range between 984-3,280 ft. Average annual precipitation is unreliable and bi-seasonal which averages 12-16 inches with approximately 30–60% occurring during summer months. Temperatures are warm and characteristic of subtropical deserts with a winter temperature range of 9–19 ºC and summer range of 22–27 ºC. Soils are variable but predominately sand characteristically covered with desert pavement. Historic fire had a return interval of decades to hundreds of years and was probably not common in this vegetation community (Rogers and Steele 1980). However, today the risk of wildfire may increase after abnormally high annual precipitation which encourages abundant growth of red brome and buffelgrass (McAuliffe 1995).

Numerous mammals occupy this prevalent vegetation community, including mule deer (*Odocoileus* hemionus), desert bighorn sheep (*Ovis* Canadensis), javelina (*Tayassu* tajacu), mountain lion (*Felis* concolor), ringtail cat (*Bassariscus* astutes), bobcat (*Felis* rufus), California leaf-nosed bat (M*acrotus californicus*), California myotis (*Myotis californicus*), black-tailed jack-rabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), spotted skunk (*Spilogale gracilis*), striped skunk (*Mephitis* mephitis), Arizona pocket mouse (*Perognathus amplus*), Bailey's pocket mouse (*Chaetodipus baileyi*), cactus

mouse (*Peromyscus eremicus*), white-throated wood rat (*Neotoma albigula*), gray fox (*Urocyon cinereoargenteus*), the endemic Harris antelope squirrel (*Ammospermophilus harrisii*), and mesquite mouse (*Peromuscus merriami*). This paloverde-cacti-mixed scrub series supports diverse bird communities, including many species associated with other vegetation communities that extend into suitable habitats in the Arizona Upland Sonoran Desert Scrub. These species include typical thornscrub species such as Harris' hawk (*Parabuteo unicinctus*), white-winged dove (*Zenaida asiatica*), elf owl (*Micrathene whitneyi*), pyrrhuloxia (*Cardinalis sinuatus*), the "cactus" woodpeckers (gila woodpecker (***Melanerpes uropygialis***), northern flicker (*Colaptes auratus*), and ladder-backed woodpecker (*Picoides scalaris*), curve-billed thrasher (*Toxostoma curvirostre*), cactus wren (*Campylorhynchus brunneicapilus*), lack-throated sparrow (*Amphisipiza bilineata*), red-tailed hawk (*Buteo jamaicensis*), Gambel's quail (*Lophortyx gambelii*), gilded flicker (*Colaptes chrysoides*), ash-throated flycatcher (*Myiarchus cinerascens*), house finch (*Carpodaucus mexicanus*), and black-tailed gnatcher (*Polioptila melanura*). Many Sonoran and other desert reptiles also add to the wildlife diversity of this vegetation community, including species with more limited ranges such as western whiptail (*Cnemidophorus tigris*), gila monster (*Heloderma suspectum*), Arizona Sonoran coral snake (*Micruroides euryxanthus*), tiger rattlesnake (*Crotalus tigris*), desert tortoise (*Gopherus agassizii*), Mojave green rattlesnake (*Crotalus scutulatus scutulatus*), western rattlesnake (*Crotalus viridis*), western diamondback rattlesnake (*Crolatus atrox*), regal horned lizard (*Phrynosoma solare*), desert horned lizard (*Phrynosoma platyrhinos*), and ornate tree lizard (*Urosaurus ornatus*) (Brown 1994).

Lower Sonoran Desert Scrub

The Lower Sonoran Desert Scrub vegetation on BLM land occurs mainly in western Arizona. It is the second most common vegetation type on BLM land as it occupies 2,727,540 acres. This vegetation type is relatively species rich in comparison with the Great Basin Desert Scrub as there is a mixture of different shrub species throughout this type. The Sonoran Desert Scrub vegetation is associated with Mohave Desert Scrub and Upland Sonoran Desert Scrub. Characteristic shrubs are creosotebush, whitebursage, octillo, brittlebrush, foothill palo verde, fourwing saltbush, and Ironwood. Saguaro is a characteristic cactus. Western honey mesquite, ironwood, catclaw acacia, blue palo verde, desert willow, and smoketree are usually associated with washes. Big galleta grass is an important grass species. Invasive weedy species include exotic species such as buffelgrass, red brome, filaree, prickley lettuce, Russian thistle, and London rocket. Fire is not common in this vegetation community. The Desired Future Conditions are for an adequate cover and mix of natural plant species that have good vigor. In terms of fire management and fire ecology, the Desired Future Conditions are for fire to control or reduce the exotic annual weeds such as red brome and buffelgrass, and to limit woody vegetation to non-hazardous levels.

As a result of high temperatures and low precipitation, plant growth is typically opened and simple reflecting intense competition for soil water among individuals. Annual precipitation varies between 2 and 9 inches. Winter temperatures are mild but summer months are hot, and desert pavement is common. Vegetation tends to occur along washes and small drainages. Sand dunes are common in some areas. Historic fire had a return interval of decades to hundreds of years and was probably not common in this vegetation community (Rogers and Steele 1980). However, today the risk of wildfire may increase after abnormally high annual precipitation which encourages abundant growth of red brome and buffelgrass (McAuliffe 1995).

Mammals typical to this arid region are generally small burrowing mammals, such as mule deer (*Odocoileus* hemionus), desert bighorn sheep (*Ovis* Canadensis), javelina (*Tayassu* tajacu), mountain lion (*Felis concolor*), ringrtail cat (*Bassariscus* astutes), bobcat (*Felis* rufu), grey fox (*Urocyon* cinereoargenteus), kit fox (*Vulpes velox*), white-tailed antelope squirrel (*Ammospermophilus leucurus*), black-tailed jack rabbit (*Lepus* californicus), desert pocket mouse *(Chaetodipus penicillatus*), and desert

and Merriam Kangaroo rats (*Dipodomys deserti and D. merriami*), as well as the ubiquitous coyote (*Canis latrans*). This vegetation community is the poorest of the Sonoran Desert for birds, because of its sparsely vegetated and structurally shorter habitats. Typical bird species include lesser numbers of arid-adapted species, such as the LeConte's thrasher (*Toxostoma lecontei*), white-winged dove (*Zenaida asiatica*), elf owl (*Micrathene whitneyi*), black-throated sparrow (*Amphisipiza bilineata*), loggerhead shrike (*Lanius ludovicianus*), cactus wren (*Campylorhynchus brunneicapilus*), red-tailed hawk (*Buteo jamaicensis*), ash-throated flycatcher (*Myiarchus cinerascens*), gilded flicker (*Colaptes chysoides*), mourning dove (*Zenaida macroura*), Gambel's quail (*Lophortyx gambelii*), and verdin (*Auriparus flaviceps*). Amphibians include Couch's spadefoot toad (*Scaphiopus* cochii), western green toad (*Bufo debilis* insidior), and Woodhouse's toad (*Bufo* woodhousii). This vegetation community supports a diverse and productive community of reptiles. The sandy plains and dunes of the Lower Colorado River Sonoran Desert Scrub support a number of unique sand-adapted lizards and snakes, such as fringe-toed lizards (*Uma inornata*), banded sand snake (*Chilomeniscus cinctus*), and sidewinder (*Crotalus cerastes*). Rocky outcrops, bajadas, talus slopes, washes, and gravel plains each support varied and often different herpetofauna communities – chuckwalla (*Sauromalus ater*), desert spiny lizard (*Sceloporus magister*), western whiptail (*Cnemidophorus tigris*), desert glossy snake (*Arizona elegans eburnata*), western rattlesnake (*Crotalus viridis*), regal horned lizard (*Phrynosoma solare*), desert horned lizard (*Phrynosoma platyrhinos*), gopher snake (*Pituophis catenifer*), and desert tortoise (*Gopherus agassizii*) (Brown 1994).

Great Basin Pinyon-Juniper Woodland

Great Basin Pinyon-Juniper Woodland vegetation is wide spread throughout Arizona and grows on 1,533,012 acres of BLM land. It is associated with Upland Sonoran Desert Scrub and Great Basin Pinyon-Juniper Woodland vegetation. The Great Basin Conifer community is a cold-desert, evergreen woodland that is characterized by juniper and pinyon pine trees. Juniper trees tend to dominate at elevations below 6,560 ft, while pinyon pine dominates at the higher elevations. These trees are short-growing and rarely exceed 12 m in height. The canopy cover is mostly opened except on higher elevations or mesic sites where tree limbs may interlock. Understory shrubs, forbs, and grasses are usually sparse due to aridity and intense competition for soil water from the juniper and pinyon pine trees. Important juniper species are Rocky Mountain juniper and Great Basin juniper. The Rocky Mountain pinyon pine dominates in Arizona. Associated grasses may include blue gramma, galleta grass, Indian ricegrass, western wheatgrass, Junegrass, and several muhleys or dropseeds. Dominant shrubs are big sagebrush, snakeweed, rabbitbrush, winterfat, black sagebrush, blackbrush, cliffrose, Apache plume, Mormon-tea, fourwing saltbrush, antelope bitterbrush, and yucca. Forbs include several gilia, buckwheat, penstemon, lupine, and globemallow species. The mixtures of grasses, shrubs, and forbs depend on soil, precipitation, temperature, and disturbance. Cacti include several different species of hedgehog, prickleypear, and cholla.

The Great Basin Pinyon-Juniper Woodland is cold-temperate woodland characterized by cold winter temperatures with freezing temperatures occurring approximately 150 days per year. Summer temperatures are warm. Annual precipitation ranges between 10 and 22 inches, is distributed evenly throughout the year, and mainly occurs as snow in winter months. Soils are characteristically shallow and rocky. Juniper trees have invaded large areas of former grasslands and sagebrush dominated rangelands. Several factors, including fire suppression, climate change, and livestock grazing, may be responsible for the juniper invasion. Efforts to remove the invading trees have not been successful. Historic wildfire was not common. The sparse understory and openness of the pinyon–juniper woodlands did not support the spread of fire expect on mesic areas where fuel was sufficient (Paysen et al. 2000). However, in modern times, many of these woodlands have sufficient fuel loads to support fire because of increased tree densities and the establishment of cheatgrass, red brome, buffelgrass and other annual weeds. The Desired Future Conditions are that annual weeds such as cheatgrass are controlled, ladder fuels and

downed woody debris are limited or not present, and juniper and piñon pine tree densities and cover occur at their historic range of variation.

Only a few vertebrate species are closely tied to or centered within this vegetation community, such as mountain lion (*Felis concolor*), coyote (*Canis latrans*), grey fox (*Urocyon cinereoargenteus*), ringtrail cat (*Bassariscus astutus*), mule deer (*Odocoileus hemionus*), pinyon mouse (*Peromyscus truei*), bushy-tailed woodrat (*Neotoma cinerea*), Hualapai Mexican vole (*Microtus mexicanus hualpaiensis*), pinyon jay (*Gymnorhinus cyanocephalus*), gray flycatcher (*Empidonax wrightii*) Gray vireo (*Vireo vicinior*), black-throated gray warbler (*Dendroica nigrescens*), Scott's oriole (*Icterus parisorum*), wild turkey (*Meleagris gallopavo*), long-eared owl (*Asio otus*), Cassin's kingbird (*Tyrannus vociferans*), chipping sparrow (*Spizella passerina*), juniper titmouse (*Baeolophus ridgwayi*), ash-throated flycatcher (*Myiarchus cinerascens*), Bewick's wren (*Thryomanes bewickii*), bushtit (*Psaltriparus minimus*), western scrub-jay (*Aphelocoma californica*), common raven (*Corvus corax*), gray vireo (*Vireo vicinior*), mountain bluebird (*Sialia currucoides*),Woodhouse's toad (*Bufo woodhousii*), Great Basin spadefoot toad (*Spea intermontana*), and the Striped whiptail (*Cnemidophorus velox*). A somewhat larger number of the more adaptable, and therefore, more widely distributed species also may be found in these habitats year-round or seasonally (Brown 1994).

Great Basin Desert Scrub

Great Basin Desert Scrub vegetation occurs on 1,058,401 acres of BLM land in the Arizona Strip, Phoenix, Kingman, and Safford Field Offices. The Painted Desert is predominately Great Basin Desert Scrub vegetation. It is associated with Upland Sonoran Desert Scrub and Great Basin Pinyon-Juniper Woodland vegetation. Species diversity is low with dominant shrubs occupying vast tracts of land. Characteristic vegetation is low–growing, widely space hemispherical, non-sprouting shrubs with widely spaced bunchgrasses. Dominant shrubs include big sagebrush, black sagebrush, Bigelow sagebrush, shadscale, fourwing saltbush, rabbitbrush, winterfat, hopsage, horsebrush, blackbrush, and greasewood. Associated grasses may include blue gramma, galleta grass, Indian ricegrass, western wheatgrass, Junegrass, and several muhleys or dropseeds. Forbs include several gilia, buckwheat, penstemon, lupine, and globemallow species. Cacti number and species in Great Basin Desertscub are relatively few in comparison to those found in warm deserts. Cactus plants are small in stature or prostrate and include several species of prickly pear, hedge hog, and cholla. The mixtures of the different plants depend on soil, precipitation, temperature, and disturbance. Introduced weeds such as cheatgrass, medusahead, red brome, Russian thistle, halogeton, filaree, tumble mustard occur on disturbed sites. The introduced woody plants, Russian olive and saltcedar are commonly found present in riparian corridors. Historic fire intervals range between 5−100 years depending on the shrub community type and fuel build-up (Paysen et al. 2000). Annual weeds such as cheatgrass and red brome have caused an increase in fire re-occurrence and fuel flammability. The Desired Future Conditions are for fire to naturally reduce annual weed densities and cover, limit or reduce the invasion of juniper, and for the densities of shrubs, such as big sagebrush, to be maintained within their historic range of variability.

The Great Basin Desert Scrub is part of the Great Basin Desert which is a cold desert characterized by cold, harsh winters, hot summers, and low precipitation. Elevation ranges between 3,930 and 7,220 ft. Average annual precipitation is approximately less than 10 inches with the majority occurring during the winter months as snow. Maximum daily temperature values may remain below freezing during many days of December, January and February—the three coldest months of the year. For much of the area, increasing spring and summer temperatures coincide with decreasing soil water supplies which limits plant growth.

A distinct fauna is centered in this vegetation community. Mule deer (*Odocoileus* hemionus), bighorn sheep (*Ovis canadensisi),* Townsend's ground squirrel (*Spermophilus townsendi*), badger (*Taxidea* taxus),

long-tailed pocket mouse (*Perognathus* formosus), and northern grasshopper mouse (*Onychomys* leucogaster) are associated with sagebrush communities of the Great Basin Desert Scrub. Large ungulates are poorly represented here, however several birds such as the golden eagle (*Aquila* chrysaeos), burrowing owl (*Athene* cunicularia), Sage thrasher (*Oreoscoptes montanus*), Sage sparrow (*Amphispiza belli*, Vesper sparrow (*Pooecetes gramineus*), common raven (*Corvus corax*), rock wren (*Salpinctes obsoletus*), horned lark (*Erempphila alpestris*), Say's phoebe (*Sayornis saya*), western meadowlark (*Sturnella neglecta*), and Brewer's sparrow (*Spizella breweri*) are characteristic of sagebrush communities. The Sagebrush lizard (*Sceloporus graciosus*) and Great Basin spadefoot toad (S*cophiopus intermontanus*) are common representative species. A number of reptilian subspecies such as Desert horned lizard (*Phrynosomo platyrhihnos platyrhinos*), and Great Basin and Plateau tiger whiptails (*Cnemidophorus tigris tigris and C. Tigris septentrionalis*) are indicative of Great Basin Desert Scrub and a history of evolutionary separation (Brown 1994**).**

Semidesert Grassland

The Semidesert Grassland is located on 757,668 acres of BLM land mainly in east-central and southeast Arizona. This vegetation type is associated with Plains and Great Basin grassland, Madrean Evergreen Woodland, and Chihuahuan Desert Scrub. Originally the grasses were perennial bunchgrasses but grazing has encouraged the increased growth of sod grasses on areas with deep soil and heavy to moderate rainfall. The bunchgrasses have been replaced by annual grasses in areas with low precipitation. In some areas with deep soils and well protected from erosion bunchgrasses still cover large areas in association with a few shrubs and cacti. However, there are areas where grass cover has been reduced as a result of woody plant and cacti colonization. Fire with moderate return intervals was important in the ecology of these grasslands (Paysen et al. 2000). However, grazing and fire suppression has altered the historic natural fire regime. The Desired Future Conditions are for perennial grasses to cover its historic range of variability, annual grass cover is reduced, and fire naturally inhibits the invasion of woody plants such as juniper, tarbush, whitethorn, and creosotebush.

Tobosa grass and black grama are the most dominant species in the Semidesert Grassland. Tobosa grass is generally found growing on heavy soils that are subject to flooding. Black grama is usually found of gravelly, upland soils. The other grasses are numerous and include black grama, sideoats grama, black grama, slender grama, chino grama, bush muhly, threeawn species, Arizona cottontop, vine grass, plains bristlegrass, plains lovegrass, wolftail, and little bluestem. Lehmann lovegrass was introduced for its forage value but has expanded at the expense of more palatable grass species. The assorted shrubs that are intermixed among the grasses include mesquite, one-seed juniper, lotebush, all-thorn, Mormon tea, false mesquite, catclaw acacia, desert hackberry, barberry, and ocotillo. Tarbush, whitethorn, and creosotebush have invaded extensive areas. Cacti and other succulents are important in this vegetation type and they include several yucca species, sotols, beargrass, several agrave species, barrel cactus, Turk's head, cane cholla, desert Christmas cholla, rainbow cactus, and several prickleypear and hedgehog species. The important forbs include mallow, lupine, buckwheat, filaree, spiderling, white-mat, amaranth, and devils claw. Invasive grasses include red brome, bristlegrass, foxtail barley, and wild oats which are increasing as a result of past grazing practices.

The Semidesert grassland is a warm temperate grassland ranging in elevation from 2,300-4,920 ft. Most of this grassland receives an annual precipitation between 8-12 inches with the majority coming during the spring and summer. Winters are mild and freezing temperatures occur generally less than 100 days during the year. Summers are warm with several days over 38 ºC.

The Pronghorn antelope (*Antilocapra americana*) and White-tailed deer (*Odocoileus virginianus*) are the primary large grazing mammals associated with the Semidesert Grassland. The Javelina (*Dicotyles*

tajacu), also known as the Collared peccary, can be found in the Semidesert Grassland. Small burrowing mammals are primarily represented by the Black-tailed jackrabbit (*Lepus californicus*) and various burrowing rodents, including the Spotted ground sqirrel (*Spermophilus spilosoma*), Hispid pocket mouse (*Perognathus hispidus*), antelope jack rabbit (*Lepus alleni*), and northern grasshopper mouse (*Onychomys leucogaster*). Numerous bird species include Swainson's hawk (*Buteo swainsoni*), Mourning dove (*Zenaido mocroura*), greater roadrunner (*Geococcyc californianus*), Say's phoebe (*Sayornis saya*) Cactus wren (*Campylorhynchus brunneicapillus*), Gambel's quail (*Lophortyx gambelii*), Black-throated sparrow (*Amphispiza bilineata*), Cassin's sparrow (*Aimophila cassinii*), Botteri's sparrow (*Aimophila botterri*), brown-headed cowbird (*Molothrus ater*), Chihushuan raven (*Corvus cryptoleucus*), scaled quail (*Callipepla squamata*), and burrowing owl (*Athene cunicularia*). The amphibian Woodhouse's toad (*Bufo woodhousii*) is found within this vegetation community. Reptiles include the Desert box turtle (*Terrapene ornate luteola*), Mexican (western) hognose snake (*Heterodon nasicus kennerlyi*), the all-female Desert-grassland whiptail (*Cnemidophorus uniparens*), and common earless lizard (*Holbrookia texana scitula*) (Brown 1994).

Interior Chaparral

Interior Chaparral vegetation represents 425,287 acres of BLM land mainly in western Arizona. It is associated with Upland Sonoran Desert Scrub, Lower Sonoran Desert Scrub, Mohave Desert Scrub, and Great Basin Pinyon-Juniper Woodland vegetation. The vegetation is dominated by shrubs with small, thick, evergreen leaves and wide-spreading, deep root systems. Historic fire was an important component of the ecosystem (Pase and Brown 1982a). As such, the shrubs are well adapted to fire and reproduce readily from heat-scarified seed that is stored in soil for decades. Some species readily sprout from root crowns after fire. The dense compacted leafy growth of the shrubs are naturally flammable which leads to a high fire hazard. The dominant plant is shrub live oak. Other shrubs are birchleaf mountain mahogany, skunkbush sumac, silktassel, desert ceanothus, hollyleaf buckthorn, cliffrose, desert olive, sophora, and Arizona rosewood. Shrub cover is approximately 60–70% which allows grasses such as sideoats grama, hairy grama, cane bluestem, plains lovegrass, wolftail, and threeawn to grow in the inter-shrub spaces. Forbs are not common except after fire and include penstemon species, Wright's verbena, goldenrod, purple nightshade, hoarhound, and scarlet morning glory. Occasionally, one-seed juniper, emory oak, or pinyon pine may occur. Weedy species include filaree and red brome which are increasing because of disturbances such as grazing and fire. The Desired Future Conditions are that fire naturally maintains shrub cover while reducing annual grass cover, the invasion of woody plants such as juniper and piñon pine are controlled, and the average age of chaparral stands is reduced through controlled fire or mechanical treatment.

Interior Chaparral vegetation is considered a warm-temperate scrubland with elevations mainly between 3,445-6,070 ft but higher sites occur on drier and warmer slopes. The climate is characterized by cool, moist winters and hot, dry summers. The majority of precipitation occurs during winter months when plants are dormant or nearly so.

Small mammals associated with the Interior Chaparral include the Cliff chipmunk (*Eutamias dorsalis*), White-footed mouse (*Peromyscus leucopus*), White-throated woodrat (*Neotoma albiguld*), and eastern cottontail (*Sylviligus floridanus*). Nesting birds include the Spotted towhee (*Pipilo maculatus*), Virginia's warbler (*Vermivora virginiae*), western scrub jay (*Aphelocoma californica*), Crissal thrasher (*Toxostoma dorsale*), black-chinned sparrow (*Spizella atrogularis*), rufous-crowned sparrow (*Aimophila ruficeps*), bushtit (*Psaltriparus minimus*), blue-gray gnatcatcher (*Polioptila caerulea*), Scott's oriole (*Icterus parisorum*), rock wren (*Salpinctes obsoletus*), and canyon wren (*Catherpes mexicanus*). Amphibians common to this vegetation community include Woodhouse's toad (*Bufo* woodhousii) and Arizona toad (*Bufo microscaphus*). Reptiles common to the Interior Chaparral include the Western threadsnake

(*Leptotyphlops humilis*), Glossy snake (*Arizona elegans*), Smith's black-headed snake (*Tantilla hobartsmithi*), Western rattlesnake (*Crotalus viridis*), Western fance lizard (*S. occidentialis*), Arizona alligator lizard (*Gerrhonorus kingi*), and Sonora mountain kingsnake (*Lampropeltis pyromelana*) (Brown 1994).

Riparian

Riparian vegetation is found on 176,927 acres of BLM land in association with streams and rivers. The area occupied by riparian vegetation is relatively small in relationship with other vegetation types but their biological and ecological importance is larger than their limited geographic occurrence. Riparian vegetation is important to wildlife as forage, cover, breeding, and migration corridors. Riparian corridors have been greatly disturbed by a variety of activity such as grazing, mining, tree harvesting, and stream flow alteration. The Desired Future Conditions are that annual weed cover and density is controlled and ladder fuels and downed woody debris are limited or not present. Disturbances such as livestock grazing, mining, and off road vehicle travel, that can potentially reduce natural vegetation cover and vigor, are managed to maintain adequate cover and mix of natural plant species.

The nature and species composition of the riparian vegetation changes depending on elevation and associated upland vegetation community. For example, at high elevation stream gradients are steep with relatively high precipitation and cool temperatures, while at low elevations stream gradients are gentle, low precipitation, and warm temperatures. At the higher elevations Pacific willow, bigtooth maple, narrowleaf cottonwood, box elder, black cherry, sycamore, Arizona walnut, velvet ash and western soapberry and red willow are the woody plants. At lower elevations mesquite, Gooddings willow, netleaf hackberry, western soapberry, velvet ash, Wright's Sycamore, and black cherry characterize riparian vegetation. Russian olive and saltcedar are two invasive woody plants that have colonized large expanses of low- to mid-elevation riparian corridors.

Large mammals characteristic of riparian woodlands include White-tailed deer and Black bear (*Ursus americanus*). Small rodents include Arizona gray squirrel (*Sciurus arizonesis*). The River otter (*Lutra canadensis*) is a rare species found in woodlands adjacent to streams. Small carinovres such as Ringtailed cat (*Bassaricus astutus*) and Skunk (*Mephitus spp, spilogale putorius*) are also found in woodlands containing streams. Red bats (*Lasiurus borealis*) are found in riparian woodlands. Riparian habitats typically host the greatest variety, and often numbers, of birds in Arizona, with many being riparian-obligate species. Examples of bird species inhabiting riparian woodlands include the Zone-tailed hawk (*buteo albonotatus*), Northern (Bullock's) oriole (*Icterus galbula*), Yellow-billed cuckoo (*Coccyzus americanus*), Black phoebe (*Sayornix nigricans*), the Federally endangered Southwestern willow flycatcher (*Empidonax traillii extimus*), brown-crested flycatcher (*Myiarchus tyrannulus*), yellow warbler (*Dendroica petechia*), Bell's vireo (*Vireo bellii*), Lucy's warbler (*Vermivora luciae*), black-chinned hummingbird (*Archilochus alexandri*), summer tanager (*Piranga rubrai), lesser goldfinch (*Carduelis psaltria*), yellow-breasted chat (*Icteria virensi), hooded oriole (*Icterus curullatus*), Abert's towhee (*Pipilo aberti*), western screech-owl (*Otus asio*), ash-throated flycatcher (*Myiarchus cinerascnes*), Gambel's quail (*Lophortyx gambellii*), Costa's hummingbird (*Calypte costae*), and Pyrrhuloxia (*Cardinalis sinuatus*). Arizona treefrog (*H. Wringtorum*), canyon treefrog (*Hyla arenicolor*), Woodhouse's toad (*Bufo woodhousii*), tiger salamander (*Ambystoma tigrinumi),* and leopard frogs (*Rana* spp.) are found more in interior forest. Ringnecked snake (*Diadophis punctatus*), black-necked gartersanke (*Thamnophis cyrtopsis cyrtopsis*), Mexican gartersnake (*Thamnophis eques megalops*), Checkered gartersnake (*Thamnophis marcianus marcianus*), narrow-headed gartersnake (*Thamnophis rufipunctatus*), Arizona mud turtle (*Kinosternon*), yellow mud turtle (*Kinosternon*),and Sonora mud turtle (*Kinosternon sonoriensei*) are often found in riparian woodlands.

Cotton rat (*Sigmodon hispidis*), White-footed mouse (*peromyscus leucopus*), Desert pocket mouse (*Perognathus penicillatus*), and Arizona shrew (*Sorix arizonae*) are commonly found in the Riparian Scrub, as well as in other communities. Phainopepla (*Phainopepla* nitens), Crissal thrasher (*Toxostoma dorsale*), Verdin (*Auriparus flaviceps*) and Black-tailed gnatcatcher (*Polioptila melanura*) are representative of nesting birds. Red-spotted toad (*Bufo punctatus*), though found in various communities, is quite common to the Riparian Scrub.

Appendix K – Special Stipulations for Special Recreation Permits

In addition to the conditions and stipulations listed on the Special Recreation Application and Permit form, the Arizona and Phoenix Field Office BLM have established the following additional stipulations designed to protect the lands and resources involved, reduce user conflicts, and/or minimize health and safety hazards. The stipulations will be made part of the permit. Failure to comply with these stipulations may result in the loss of permit privileges.

General Administrative:

1. Estimated fee payments, or the minimum non-refundable annual fee, whichever is applicable, will be submitted in advance to the BLM authorized officer prior to issuance or validation of the permit. Any additional use fees will be due at the end of the six month reporting period in which the fees were accrued. Overpayment of fees will be applied to the following year=s estimated use fees. Use fees for commercial permits are 3% of gross revenue or the minimum annual fee of $80, whichever is greater.

2. Post-use reports and estimated fee payments for annual and multi-year permits will be submitted to the BLM on a fiscal year semi-annual basis. They are due within 15 days after the six month use period (April 15 and October 15).

3. The permittee is required to contact private landowners and other governmental agencies whose property is affected by the use associated with the permit (this includes the Arizona State Land Department for state trust lands). Evidence that authorization has been obtained must be available to the BLM authorized officer upon request.

4. Any changes to the approved Plan of Operations must first be approved by the BLM authorized officer. This includes the use of subcontractors.

5. The permit does not authorize exclusive use and shall not be construed in any way so as to prevent public use or access on any public lands except as expressly allowed under the permit.

6. The permittee is required to provide the BLM authorized officer with a copy of a valid Certificate of Insurance covering the periods of use. The U.S. Government must be named as a co-insured party on the policy. Minimum general liability limits are: $300,000 per occurrence and $500,000 annual aggregate for bodily injury, and $30,000 property damage per occurrence and $50,000 annual aggregate, if the policy specifies aggregate limits.

7. It is the responsibility of the permittee to ensure valid insurance coverage, including general public liability, with the limits listed above, is provided for all equipment and services supplied by subcontractors. A copy of the valid insurance coverage must be made available to the BLM authorized officer upon request.

8. A copy of this permit and the stipulations must be carried by guides during all tours conducted on BLM administered lands, and must be made available to any BLM employee or client upon request.

9. Any violation of the permit terms, conditions and stipulations may be subject to penalties prescribed in 43 CFR 8372.0-7, which may include fines up to $1,000 and/or imprisonment up to 12 months. Additionally, any such violation may result in permit probation, suspension or revocation. Examples which can lead to permit violations include, but are not limited to; delinquent post use reports and/or payments, deviations to operating plan not approved by authorized official, violation of laws and regulations, significant resource damage and public endangerment.

10. All signs on public lands must be authorized by the BLM in writing.

11. The permittee is responsible for ensuring the safety of all clients and support personnel, assuring that all permit actions are in conformance with local, state and federal health and safety standards and providing for appropriate emergency attention.

12. All injuries requiring emergency hospital care will be reported to the BLM authorized officer within two days of the occurrence and a Death and Injury Report submitted to the BLM authorized officer within 10 days of the occurrence.

13. The BLM reserves the right to alter the terms, conditions or stipulations of a permit at any time for reasons such as significant policy, administrative procedure or stipulation change.

14. Annual permits remain valid if the permittee is in good standing by complying with all terms, conditions and stipulations including timely submission of post use reports, and applicable use fee payments. For multi-year permits, an annual review is done at the beginning of each fiscal year (October 1) and permits are validated for the upcoming fiscal year. For a permit to be validated, the permittee must be in good standing by complying with all terms, conditions and stipulations including timely submission of post use reports, and applicable use fee payments. In addition, certificates of insurance shall be current, and operating plans must be reviewed and updated with any changes before a permit will be validated for the upcoming fiscal year.

Resource Protection:

1. All activities are to remain on the approved roads, trails, washes and/or staging areas. No deviation to these routes is permitted without prior approval from the BLM authorized officer. Motorized vehicles are not permitted in riparian areas or in running washes except at road crossings.

2. Employees and clients will be instructed that it is unlawful to disturb, deface, excavate or remove any archaeological or paleontological objects or structures. Simply, look but don=t touch! Rock art may be photographed but not touched. Collection of prehistoric or historic artifacts is not allowed. Any prehistoric or historic cultural site or human remains discovered by the permittee, employees or clients will be left undisturbed and reported as soon as possible to the BLM authorized officer.

3. Permittee must notify the BLM authorized officer of any specific archaeological sites proposed for inclusion on tours. Tours to sites are subject to BLM approval and protective stipulations.

4. Historical mine sites should not be disturbed. Collecting artifacts from these sites is strictly prohibited.

5. All persons operating under this SRP, including subcontractors, are prohibited from entering abandoned mines.

6. Proposed activities will be conducted in a manner that will not interfere with mining or exploration operations. No minerals are to be collected from areas encumbered by active mining claims unless authorized by the claimant(s).

7. Harassment of livestock, wildlife, wild horses or burros, or destruction of private and public improvements such as fences and gates is prohibited. All gates and fences shall be left as found. The taking of any threatened or endangered plant or animal is prohibited.

8. Collection, harassment and disturbance of desert tortoises and Gila monsters is prohibited by Arizona State Law. If encountered on roads or trails they should be avoided. If a desert tortoise is encountered and cannot be avoided, it should be carefully moved to safety by carrying it horizontal to the ground, not tilted, and placed in the shade the minimum distance needed to remove it from harm's way. Gila monsters should be avoided and not handled. They are venomous and can inflict a serious and painful bite.

9. Vegetation clearing, trimming or removal is not permitted without prior approval from the BLM authorized official.

10. If the volume of use is determined to be adversely impacting soils or riparian condition through erosion, bank alteration or other means, the BLM may restrict use of affected areas or routes to allow restoration and recovery of degraded areas. During wet periods, certain road and trail segments may be closed to all traffic. The BLM will consider the applicant=s needs when designing and implementing restrictions or watershed restoration efforts that could influence the operation.

11. In order to minimize the importation or spread of noxious weeds, before entering public land, all vehicles are to be washed thoroughly (including the undercarriage and engine compartment) to remove all soil and vegetation debris (including seeds and seed heads) acquired from previous use. This washing should occur at the home base of operations of the permittee before traveling to public lands. All vehicles used for activities approved by this permit are subject to inspection by the BLM.

12. The permittee will be committed to preserving and protecting the public lands by learning, practicing and promoting the *Leave No Trace* principles listed below:
    - < Plan ahead and prepare.
    - < Travel and camp on durable surfaces.
    - < Dispose of waste properly.
    - < Leave what you find.
    - < Minimize campfire impacts.
    - < Respect wildlife.
    - < Be considerate of other visitors.

Motorized Vehicle Use:

1. No motorized vehicles are permitted in riparian areas or in running washes except at road crossings. Substantiated reports of unauthorized use in these areas will result in immediate probation and possible suspension or revocation of permit privileges.

2. All motor vehicle use will comply with existing BLM and state motorized vehicle laws and regulations on public lands relating to use, standards, registration, operation and inspection. These regulations include, but are not limited to, the following:
    - No person shall operate an off-road vehicle on public lands:
        - In a reckless, careless or negligent manner;
        - In excess of established speed limits;
        - While under the influence of alcohol, narcotics or drugs;
        - In a manner causing, or likely to cause, significant undue damage to or disturbance of the soil, wildlife, wildlife habitat, improvements, cultural, or vegetative resources.
    - Drivers shall yield the right-of-way to pedestrians, saddle horses, pack trains, and animal drawn vehicles.
    - Drivers are prohibited from operating a motor vehicle, unless the driver and each front seat passenger are restrained by a properly fastened safety belt.

Permittee will be committed to preserving and protecting the public lands by learning, practicing and promoting the *Tread Lightly!* principles listed below.

< Travel and recreate with minimal impact,
< Respect the environment and the rights of others,
< Educate yourself, plan and prepare before you go,
< Allow for future use of the outdoors, leave it *better* than you found it, and
< Discover the rewards of responsible recreation.

Appendix L – Fire Management Units

Description of Wildland Fire Management Strategies by Fire Management Unit

The Phoenix/Kingman Fire Management Zone field offices will provide an appropriate management response (AMR) on all wildland fires, with emphasis on fire fighter and public safety, minimizing suppression costs, considering benefits and values to be protected consistent with resource objectives, standards and guidelines. Responses to each wildland will be initiated in a timely manner with a force mix, that is based upon established fire management direction as documented in the approved RMPs. The use of appropriate management response will allow land managers to tailor preplanned wildland fire responses to meet objectives established in resource management plans and their associated implementation plans.

The appropriate management response concept will be applied for all public lands. Responses range from full fire suppression to managing fires for resource benefits (fire use). Management responses applied to a fire will be based on objectives derived from the land use allocations; relative risk to resources, the public and firefighters; potential complexity; and the ability to defend management boundaries. Any wildland fire can be aggressively suppressed and any fire that occurs in an area designated for fire use can be managed for resource benefits, when it meets the prescribed criteria identified in the approved fire management plan and fire use plan.

All fire management actions will adhere to the standards outline in the "Interagency Standards for Fire and Aviation Operations."
The Arizona Statewide Land Use Plan Amendment for Fire, Fuels and Air Quality Management assigned all BLM-administered lands in Arizona one of the two following land use allocations. The best science available was used to determine the allocations and response to fire.

Identification of fire management units/zones and strategies within the units/zones is the cornerstone for planning the management of the wildland fire program. This section must tie directly to the decisions made in the land and resource management planning process by management area, aggregated into FMUs. This section identifies objectives, standards, guidelines, and/or future desired conditions within the FMU and the wildland fire management strategies that will be used to accomplish them. The first priority in all Wildland Fire Management Strategies is firefighter and public safety.

An FMU is any land management area definable by objectives, management constraints, topographic features, access, values to be protected, political boundaries, fuel types, major fire regime groups, and so on, that set it apart from the management characteristics of an adjacent FMU. The FMUs may have dominant management objectives and pre-selected strategies assigned to accomplish these objectives. The development of FMUs should avoid redundancy. Each FMU should be unique as evidenced by management strategies, objectives and attributes.
Refer to appendix B for a map deplicting FMUs.

The Fire Management Unit (FMU) designation was used instead of Fire Management Zone (FMZ). FMZ development is a key step in the Interagency Initial Attack Analysis (IIAA) that describes protection and suppression capabilities within the context of historical fire occurrence as it relates to land use planning. FMU development focuses on key multi-resource management objectives as outlined in land use planning.

Suppression Criteria.

Fire suppression actions taken will be appropriate management response which is defined as those fire suppression strategies and tactics that provide for firefighter and public safety first, result in the least impact and disturbances to the landscape, least acreage burned and least suppression cost. Fires that escape initial attack will have a Wildland Fire Situation Analysis completed that will document the selected preferred suppression alternative and guide the management of the fire.

Under the Proposed Action, identified in the Arizona Statewide Land Use Plan Amendment for Fire, Fuels and Air Quality Management (Section 2.0 Description of Alternatives), BLM–administered public lands would be assigned to one of the following two land use allocations for fire management. Refer to Appendix C for a map depicting the two land use allocations for fire.

Allocation 1 – Wildland Fire Use: Areas suitable for wildland fire use for resource management benefit.

This allocation includes areas where wildland fire is desired, and there are few or no constraints for its use. Where conditions are suitable, unplanned and planned wildfire may be used to achieve desired objectives, such as to improve vegetation, wildlife habitat or watershed conditions, maintain non-hazardous levels of fuels, reduce the hazardous effects of unplanned wildland fires and meet resource objectives. Where fuel loading is high but conditions are not initially suitable for wildland fire, fuel loads are reduced by mechanical, chemical or biological means to reduce hazardous fuels levels and meet resource objectives (includes WUI areas).

Allocation 2 – Non Wildland Fire Use: Areas not suitable for wildland fire use for resource benefit.

This allocation includes areas where mitigation and suppression are required to prevent direct threats life or property. It includes areas where fire never played a large role, historically, in the development and maintenance of the ecosystem, and some areas where fire return intervals were very long. It also includes areas (including some WUI areas) where unplanned ignition could have negative effects to ecosystem unless some form of mitigation takes place. Mitigation may include mechanical, biological, chemical, or prescribed fire means to maintain non-hazardous levels of fuels, reduce the hazardous effects of unplanned wildland fires and meet resource objectives. The allocation of lands is based on the desired future condition of vegetation communities, ecological conditions and ecological risks. The allocation of lands is determined by contrasting current and historical conditions and ecological risks associated with any changes (Figure 2.1). The condition class concept helps describe alterations in key ecosystem components such as species composition, structural stage, stand age, canopy closure, and fuel loadings. BLM Fire Management Plans, will include the two allocations and identify areas for including fire use, mechanical, biological or chemical means to maintain non-hazardous levels of fuels, reduce the hazardous effects of unplanned wildland fires and meet resource objectives. They will also identify areas for exclusion from fire (through fire suppression), chemical, mechanical, and/or biological treatments.

Fire Management Objectives Common to All FMUs

Specific suppression actions will be common to all FMUs and will be hereafter referenced as such in the following FMU descriptions. The full range of responses are available to implement protection objectives for unplanned ignitions:

Fires will be contained at the minimal acres possible. Washes, roads, natural breaks will be utilized when possible for fire lines. Burn out operations will be conducted that burn the least acreage possible and what is necessary to establish a safe containment/control line. Unburned islands will not be intentional burned unless they pose a risk to the fire line.

Heavy equipment will only be used in consultation with the field office manager or designated resource advisor. Fire engines and support vehicles will minimize off road travel and remain on existing roads when possible depending on the fire situation.

Utilize Minimum Impact Suppression Tactics "MIST" where applicable (ACECs, wilderness areas, fragile desert ecosystems etc). "MIST" Guidelines are found in the 2004 "Interagency Standards for Fire and Fire Aviation Operations," Chapter 11, Incident Management, Appendix 11-5 on page 11-31.

In established waterways, stock ponds, creeks, etc. the use of fire retardants (slurry, foam, etc.) is to be minimized as they may harm this sensitive environment. Avoid aerial or ground application of retardant or foam within 300 feet of waterways. Guidance on the use of retardants and foam can be found in the 2004 "Interagency Standards for Fire and Fire Aviation Operations," Chapter 12, Suppression Chemicals & Delivery Systems, Section E, Environmental Guidelines for Delivery of Retardant or Foam near Waterways.

Surface disturbing fire/fuels suppression activities should be minimized for archaeological sites.

Camps, staging areas etc will be located in areas that will provide for the least disturbance of the landscape.

A resource advisor will be assigned to coordinate resource concerns with the incident commander. Management strategies and action points will be based on fire activity and location. Normally, specific actions or combinations of actions will be determined on site by the incident commander or fire use manager. These actions could include:

- Monitoring and holding actions to check or confine spread
- Monitoring with pre-planned contingency actions
- Monitoring actions
- Control and extinguishment

Criteria to use for developing a management response:

Risk to firefighters and public health and safety
Land and Resource Management Objectives
Weather
Fuel Conditions
Threats and values to be protected
Cost efficiencies

A map showing the location of the FMUs can be found in Appendix D. A statewide natural fire regime map can be found in Appendix E. A statewide fire condition class map can be found in Appendix F. These maps can be referenced for questions on fire regimes or condition class for the specific FMU.

FMU #2 Description- PFO Desert North of Interstate 10

Characteristics

This FMU consists of approximately 718,229 acres of public lands; the landscapes are typical of Sonoran Desert section of the Basin and Range Physiographic Province. The area is characterized by flood plains, basin floors, stream terraces, alluvial fans, fan terraces and steep, rocky mountains that rise abruptly from the fans. Elevation ranges from 420 feet to more than 4000 feet on the higher mountains.

Winters are mild and summers are hot and dry, the two main periods of rainfall are during the last half of summer and in early winter. Most of the area is desert rangeland, and farming is an important industry on the private lands found in the area, the main crops are cotton, alfalfa and vegetables and grains.

Vegetation is typical of the Sonoran Desert with a great diversity of plants including creosote bush, palo verde, ironwood and a variety of cacti. Grasses and forbs do not constitute a large volume of the plant community but there are many species that may be present, including, threeawn, galleta, bush muhly. Many of the drainages associated with the Gila River are dominated or are invaded by tamarisk or commonly known as salt cedar.

Prehistoric and historic aboriginal groups generally used desert mountains for wild food procurement, and there is evidence of archaeological sites.

Many species of wildlife inhabit the area including mule deer, bighorn sheep, javelina, cottontail and jack rabbits, and a variety of songbirds and raptors.

b) Fire History

Historical fire frequency is greater than 250-year return interval. Between 1980 and 2003, 255 fires started on BLM-administered public lands. These fires burned an estimated 17,876 acres. Most of the area burned was Sonoran Desert ecosystem. The largest fire burned 6200 acres. Average fire size was 71.5 acres. There have been 27 large fires (100-plus acres) during this time period.

c) Fire Regime/Condition Class

This unit is vegetated with Sonoran Desert scrub and is classified in Fire Regime III (35-100+ year frequency, mixed severity). Low elevation (below 2000') areas within this unit are primarily in condition class 1. Most areas above 2000' in elevation are now in condition class 2 due to the presence of exotic annual grasses in upland areas and saltcedar/tamarisk along riparian corridors.

Values at Risk

Air Quality – The metropolitan area of Phoenix is a PM-10, Carbon Monoxide, and Ozone non-attainment area. Smoke from wildfire and prescribed fire within a sixty mile radius can contribute to the degradation of this air shed.

ACECs – Tule Creek.

T&E, Sensitive,Wildlife/Plant Species – includes Gila topminnow (Tule Creek), yellow-billed cuckoo, lowland leopard frog, BLM Sensitive species (Native fishes), Category 2 & 3 Sonoran desert tortoise habitat, desert bighorn sheep.
Recreation – Important recreation sites in this FMU include: the Harquahala Mountain Summit Road National Backcountry Byway and Staging Area; the Smithsonian Harquahala Peak Smithsonian Solar Observation Interpretative Area; the Harquahala Peak Pack Trail (a state and national historic trail); the Vulture Peak trail and two trailheads; the Hassayampa River Riparian Area (on ADOT property), OHV in Vulture Mountains, Hieroglyphic Mountains and Black Canyon areas; and, the Black Canyon Trail and Emery Henderson Trailhead. Dispersed and unstructured recreation resource opportunities dependent on natural resources such as hunting, OHV driving, sightseeing, hiking, camping, etc. Outstanding primitive recreation and solitude opportunities within the Harquahala Mountains, Big Horn Mountains, Hummingbird Springs, Hassayampa River Canyon and Hells Canyon Wilderness Areas.

Cultural Resources – Sites include the historic Harquahala Peak Observatory; the Monte Cristo Mine north of Wickenburg; the historic Vulture City cemetery; the historic cemetery and stone structures (with wooden components) at Weaver; other historic mines in the various mountain ranges; homesteads and ranching features (i.e., line shacks); prehistoric trails and artifact scatters; prehistoric stone quarries; rock rings and alignments; and rock art, including painted designs in canyons of the Harcuvar Mountains.

Standard mitigation measures:

- Use Minimum Impact Suppression Tactics.
- Utilize resource advisor and use extreme caution around historic mines. prehistoric pueblos, and other structures.
- Heavy equipment use is to be coordinated with the resource advisor.
- Use of retardant on wooden and stone structures is discouraged, but is permissible under extreme conditions.
- Fire engines should be used on established roads only.

Specific FMU mitigation measures:

- Protect interpretive facilities at Harquahala Peak.
- Prior to suppression actions, identify and avoid vulnerable rock art and other sites in canyons of the Harcuvar and Harquahala mountain ranges.
- Avoid driving over rock rings and rock alignments.

Wild Horse and Burro – Within the Lake Pleasant Herd Management Area, burros are present.

Riparian – Aqua Fria River, Hassayampa River and tributaries.

Forage production – Livestock grazing is authorized for public lands within this FMU with the exception of Tule Creek ACEC.

e) Communities at Risk

FMU #2 has several communities within the unit boundaries. Some of the communities are located in the Phoenix metropolitan area, while others are located in remote isolated areas. There are multiple areas with subdivided, residential properties that are not associated with a specific community. There are also recreation sites, range improvements, railways, roadways, utility lines, substations and communication sites within the FMU that may be at risk. Prevention, education and mitigation efforts for most of the subdivided areas can be made through local fire departments but many will require outreach by direct contact. The risk level to each community is based upon fuels, topography, the current state of fire prevention preparedness and unique aspects of each. Above- or below-average precipitation can greatly affect the risk to each community and individual areas by increasing or decreasing the amount of fuel available to a fire. Special considerations will be made for communities with increased risk.
The communities listed below lie within the boundaries of FMU #2 and are categorized by their individual average risk level.

Low Risk:
1) Aguila
2) Circle City
3) Gila Bend
4) Hillside
5) Morristown
6) Phoenix
7) Skull Valley
8) Wickenburg
9) Wittmann

Moderate Risk:
1) Congress
2) New River
3) Stanton

High Risk:
1) Black Canyon City
2) Rock Springs

Fire Management Objectives

The desired Fire Management Objective is to limit the number of burned acres and to suppress all fires 90% of the time at or below 150 acres. Sonoran Desert vegetation types are not considered dependent or adapted to fire. Fires within this vegetation type can significantly alter vegetation composition and the ecosystem as a whole. Desert vegetation such as saguaro cactus, palo verde, organ pipe cactus, and creosote are very susceptible to fire and may take as long as a century to reestablish. Recurring fires would totally eliminate these species from the vegetative community. Sonoran Desert vegetation is more susceptible to larger and more frequent fires due to increasing human starts and naturalized exotic vegetation such as red brome.

Fire in the Sonoran Desert vegetation type may negatively impact threatened or endangered wildlife plant species such as cactus ferruginous pygmy owls and lesser long-nosed bats. Other sensitive species such as desert tortoise and Acuna Valley pineapple cactus may also be negatively impacted.

Fire Management Strategies

a) Suppression

Firefighter and public safety is the first priority in all fire management strategies and suppression actions. All other applicable suppression strategies are included in section III-D, Fire Management Strategies Common to All FMUs.

Health and Safety

Safety hazards to firefighters are extreme temperatures (daytime 115 to 130 degrees; nighttime temperatures range from 90 to 100 degrees, and relative humidity runs 5 to 10 percent), open and hidden mine shafts and pits are present, hazardous materials dump sites, chemical and pesticide dumping. Venomous animals/insects, low-level military aircraft training routes, recreational shooting and OHV use is common and presents a safety concern.

Access

Access by vehicles into this FMU is good off of numerous dirt roads. Depending on the fire location crews may have short hikes to reach the fire.

Fire Behavior

The Sonoran Desert is mostly barren and wildfire fuels types consists of grass, annuals and perennials with little to no brush cover. Fuels in the desert depend on heavy winter and early spring moisture or fuels that carry over from the previous year's growing season. Above-average moisture usually results in an abundance of annual fuels.

Fires in the desert usually do not go beyond the first burning period due to non continuous fuels, fuel size, terrain features such as washes and rocky outcroppings. In years of heavy precipitation, and where fuels are continuous, fires can spread rapidly through the grass and associated material. The grass fuels are also easily influenced by change in relative humidity. A significant increase in relative humidity and a decrease in temperature can quickly slow or extinguish a fire.

Desert Fuel types are represented by NFDRS fuel model A and NFFL fuel model 1.

Suppression tactics

Suppression strategies and tactics in this fuel type are usually direct attack using hand crews, engines where possible and helicopter dropping water to knock down the fire edge, patrol and mop up. Fires in the desert usually are quickly contained in the first burning period.

Rate of spread	- Low to high (depending on fuel continuity)
Flame length	- Depending on wind, one to four feet
Resistance to control	- low to moderate

Acceptable wildfire size is up to 300 acres at Fire Intensity Level (FIL) 1 and 150 acres for all others FILs.

FIL 1- 0-2 ft FL, FIL 2 - 2-4 ft FL, FIL 3 - 4-6 ft FL, FIL 4 - 6-8 ft FL, FIL 5 - 8-12 ft FL,
FIL 6 -12 + ft FL,

b) Wildland Fire Use

Wildland fire use is not desired. Statewide Land Use Plan Amendment Allocation 2 – Non Wildland Fire Use: Areas not suitable for wildland fire use for resource benefit. Reference pages 13-15 of this FMP.

c) Prescribed Fire

Native vegetation in this Fire Management Unit is not fire dependant or fire adapted. In limited instances prescribed fire may be used to reduce hazardous fuel accumulations along riparian corridors where the presence of saltcedar/tamarisk and other undesirable species poses a significant risk to improvements or critical habitat. Prescribed fire may be used as a means of fuel reduction following mechanical treatments.

d) Non-Fire Fuels Treatments

Mechanical thinning or vegetation removal may be conducted to reduce the presence of tamarisk and other undesirable hazardous vegetation along riparian corridors. Mechanical treatment of upland areas will be limited to treating WUI areas at risk during years of high annual grass production.

e) Post Fire Restoration and Rehabilitation

Rehabilitation and restoration efforts may be needed for ecological sites other than Sonoran Desert.

f) Community Protection/Community Assistance

Prevention, education and mitigation efforts for FMU #2 include utilizing the local news media to provide fire prevention information and updates to the public, building strong collaborative relationships with local governments and fire departments, performing school presentations, attending events/parades and develop partnerships with home owner organizations, permitees and other groups to assist communities in reducing the risk from wildfire.

FMU # 3 Description- PFO Wilderness Areas

a) Characteristics

This FMU consists of approximately 346,833 acres of public lands; the landscapes are typical of Sonoran Desert section of the Basin and Range Physiographic Province. The area is characterized by flood plains, basin floors, stream terraces, alluvial fans, fan terraces and steep, rocky mountains that rise abruptly from the fans. Elevation ranges from 420 feet to more than 4000 feet on the higher mountains.

The wilderness areas provide a standard of solitude and naturalness that ranges from good to outstanding. They contain little to no surface disturbance other than former vehicle ways, and provide visitors with an excellent opportunity to provide solitude experience.

Winters are mild and summers are hot and dry, the two main periods of rainfall are during the last half of summer and in early winter. Most of the area is desert rangeland, and farming is an important industry on the private lands found in the area, the main crops are cotton, alfalfa and vegetables and grains.

Vegetation is typical of the Sonoran Desert with a great diversity of plants including creosote bush, palo verde, ironwood and variety of cacti. Grasses and forbs do not constitute a large volume of the community but there are many species that may be present including, threeawn, galleta, bush muhly.

Prehistoric and historic aboriginal groups generally used desert mountains for wild food procurement, and there is evidence of archaeological sites.

Many species of wildlife inhabit the area including mule deer, bighorn sheep, javelina, cottontail and jack rabbits, and a variety of songbirds and raptors.

Phoenix Field Office Wilderness Areas

Big Horn Mountains Wilderness 21,000 ac
Harquahala Mountains Wilderness 22,880 ac
Hassayampa River Canyon Wilderness*11,840 ac
Hells Canyon Wilderness* 9,900 ac
Hummingbird Springs Wilderness 31,200 ac

b) Fire History

Historical fire frequency is greater than 250-year return interval. Between 1980 and 2003, 11 fires started on BLM-administered public lands. These fires burned an estimated 7800 acres. Most of the area burned was Sonoran Desert ecosystem. The largest fire burned 4824 acres. Average fire size was 650 acres. There have been three large fires of 1000-plus acres during this time period

c) Fire Regime/Condition Class

Wilderness areas managed by the Phoenix Field Office are vegetated with Sonoran desert scrub and are classified in Fire Regime III (35-100+ year frequency, mixed severity). Low elevation (below 2000') areas within this unit are primarily in condition class 1. Most areas above 2000' in elevation are now in condition class 2 due to the presence of exotic annual grasses in upland areas. Small portions of the Harquahala and Hassayampa Canyon wilderness areas are vegetated with interior chaparral. These areas would be classified in Fire Regime IV (35-100+ year frequency, stand replacement severity), and condition class 2.

d) Values at Risk

Air Quality - Wilderness areas have Class II air quality designation.

ACECs - None

T&E, Sensitive, Wildlife/Plant Species – includes lesser long-nosed bat foraging habitat, yellow-billed cuckoo, cactus ferruginous pygmy-owl (Wilderness South of I-10), lowland leopard frog, BLM Sensitive species (bats), Category 1, 2 & 3 Sonoran desert tortoise habitat, desert bighorn sheep, mule deer.

Recreation – Natural landscapes and functioning Sonoran Desert ecosystems. Outstanding riparian areas within the Hells Canyon, Hassayampa River Canyon and Harquahala Mountains wildernesses.

Cultural Resources – Sites include prehistoric and historic artifact scatters, prehistoric camps, rock art, roasting pits, homesteads, ranching features, and mines.

Standard mitigation measures:

- Use Minimum Impact Suppression Tactics.
- Utilize resource advisor and use extreme caution around historic mines, prehistoric pueblos, and other structures.
- Bulldozers or heavy equipment use will be coordinated with the resource advisor and approved by the Field Office Manager.
- Use of retardant on wooden and stone structures is discouraged, but is permissible under extreme conditions.

Specific FMU mitigation measures:

- Exercise extra caution near springs, where there tends to be a higher density of cultural resources.

Riparian – Hassayampa River drainage.

Forage production – Livestock grazing is authorized for public lands within this FMU.

e) Communities at Risk

There are no communities located within the boundaries of FMU #3. There are communities located in FMUs adjacent to FMU #3. Those communities are addressed within the appropriate FMU descriptions.

Fire Management Objectives

The desired Fire Management Objective within the wilderness areas is to limit the number of burned acres and to suppress all fires 90% of the time at or below 150 acres. These wilderness areas are typically Sonoran Desert vegetation types and are not considered dependent or adapted to fire. Fires within this vegetation type can significantly alter vegetation composition and the ecosystem as a whole. Desert vegetation such as saguaro cactus, palo verdes, organ pipe cactus, and creosote are very susceptible to fire and may take as long as a century to reestablish. Recurring fires would totally eliminate these species from the vegetative community. Sonoran Desert vegetation is more susceptible to larger and more frequent fires due to increasing human starts and naturalized exotic vegetation such as red brome.

Wilderness Fire Guidance
Phoenix District Interim Guidance for Fire Suppression in Wilderness 1991, modified 2001.This plan provides interim guidance for fire suppression actions in Phoenix/Kingman fire management zone wilderness areas. This plan provides guidance on special legal and administrative constraints, resource management considerations, fire suppression measures, and coordination with BLM management. This interim suppression guidance will be followed until wilderness management plans are completed for each wilderness areas.

This interim guidance follows BLM management Policy for Management of Designated Wilderness Areas; 43 CFR Part 8560; Handbooks 8560-1; WO IM 90-221 – Revisions to the 8560 Manual

Management of Designated Wilderness Areas Relating to Fire Management Policy; 910 DM 1 – Wildland Fire Suppression and Management.

Wilderness Management Plans (General Management Section).

The interim suppression guidance will be followed until wilderness management plans are completed for these wilderness areas. Big Horn Mountains Wilderness 21,000 ac, Harquahala Mountains Wilderness 22,880 ac and Hummingbird Springs Wilderness 31,200 ac.
Hassayampa River Canyon Wilderness*11,840 ac
Hassayampa River WMP 1996
Fire - The six recorded fires in the wilderness since 1980 burned more than 4000 acres. The Hassayampa River Canyon consists primarily of desert scrub, oak chaparral and riparian fuel. Annual fuel accumulation in the desert scrub is generated by winter season precipitation. During years of high precipitation, the annual fuels can be abundant and significantly increase the fuel loading and fire potential. Fires are best characterized as fast-moving fires of medium intensity. Arizona chaparral either burns fiercely or does not burn at all; there seems to be no gradation in between. Conditions must be suitable for generating rapid spread before fire will propagate. Resistance to control is moderate to very high.

Hells Canyon Wilderness* 9900 ac
Hells Canyon WMP 1995
Fire - Historically, fires within the wilderness areas are rare. Hells Canyon consists of primarily desert shrub fuels. Annual fuel accumulation is generated by winter season precipitation. During years of high precipitation, the annual fuels can be abundant and significantly increase the fuel loading and fire potential. Fires are best characterized as fast moving fires of medium intensity.
Since 1980 two fires have been known to have occurred within the wilderness

Fire Management Strategies

a) Suppression

Firefighter and public safety is the first priority in all fire management strategies and suppression actions. In wilderness areas, fire management strategies and tactics will be utilized that will limit impacts on wilderness values and minimize any surface disturbance. Wilderness suppression objectives are to minimize acres burned, the damage done to wilderness resource values by utilizing "light hands on the land." All other applicable suppression strategies are included in section III-D, Fire Management Strategies Common to All FMUs.

<u>Health and Safety</u>

Safety hazard to firefighters are extreme temperatures (daytime 115 to 130 degrees; nighttime temperatures range from 90 to 100 degrees, and relative humidity runs 5 to 10 percent), venomous animals/insects, low-level military aircraft training routes, etc.

<u>Access</u>

Access by vehicles into this FMU is only on approved cherry-stemmed roads. Depending on the fire location crews may have long hikes to reach the fire. If the field office manager cannot be contacted within a 15-minute notification window after arrival of the incident commander at the fire, the incident

commander has the discretion to authorize, helicopter landings in wilderness for transporting crews, the use of airtankers and helicopter water bucket drops.

Fire Behavior

The Sonoran Desert is mostly barren and wildfire fuels types consists of grass, annuals and perennials with little to no brush cover. Fuels in the desert depend on heavy winter and early spring moisture or fuels that carry over from the previous year's growing season. Above-average moisture usually results in an abundance of annual fuels.

Fires in the desert usually do not go beyond the first burning period due to non continuous fuels, fuel size, terrain features such as washes and rocky outcroppings. In of heavy precipitation and where fuels are continuous fires can spread rapidly through the grass and associated material. The grass fuels are also easily influenced by change in relative humidity. A significant increase in relative humidity and a decrease in temperature can quickly slow or extinguish a fire.

Desert Fuel types are represented by NFDRS fuel model A and NFFL fuel model 1.

Suppression tactics

Suppression strategies and tactics in this fuel type are usually direct attack using hand crews, engines where possible and helicopter water drops to knock down the fire edge, patrolling and mop up. Fires in the desert usually are quickly contained in the first burning period.

Rate of spread	- Low to high (depending on fuel continuity)
Flame length	- Depending on wind, one to four feet
Resistance to control	- low to moderate

Acceptable wildfire size is up to 300 acres at Fire Intensity Level (FIL) 1 and 150 acres for all others FIL.

FIL 1- 0-2 ft FL, FIL 2 - 2-4 ft FL, FIL 3 - 4-6 ft FL, FIL 4 - 6-8 ft FL, FIL 5 - 8-12 ft FL, FIL 6 -12 + ft FL

b) Wildland Fire Use

Fire use is not a desired management use in these wilderness areas. Minimum impact suppression tactics and appropriate management response will be used to ensure for firefighter and public safety first and minimize impacts to natural resources.

Statewide Land Use Plan Amendment Allocation 2 – Non Wildland Fire Use: Areas not suitable for wildland fire use for resource benefit. Reference pages 13-15 of this FMP. The Phoenix Field Office has completed all Wilderness Management Plans except for Big Horn Mountains, Harquahala Mountains Wilderness and Hummingbird Springs Wilderness Areas.

c) Prescribed Fire

Prescribed fire treatments are not anticipated within these wilderness areas, as most areas are dominated by non-fire adapted native vegetation.

d) Non-Fire Fuels Treatments

Fuels treatments are not anticipated for these areas. However, special circumstances that threaten the integrity of the wilderness environment could facilitate the need for future fuels treatment as deemed necessary by resource specialists.

e) Post Fire Restoration and Rehabilitation

Post Fire Restoration and Rehabilitation is not applicable in this type of ecosystem. Restoration and rehabilitation efforts may result in more damage to the landscape

f) Community Protection/Community Assistance

Prevention and mitigation efforts for FMU #3 include public education by utilizing local media outlets, educational signing, outreach to public land use groups, prevention patrols and contacts.

FMU # 4 Description- PFO Bradshaws 3500' North

a) Characteristics

This FMU consists of approximately 104,807 acres of public lands; the landscapes are typical of the Mexican Highlands and Sonoran Desert sections of the Basin and Range Physiographic Province. The area is characterized by a series of moderately steep and steep soils on hills and mountains and nearly level to strongly sloping soils on alluvial plains. Elevation ranges from 3500 feet to more than 8000 feet on the higher mountains near Crown King.

Winters are mild and summers are hot and dry, the two main periods of rainfall are during the last half of summer and in early winter. Most of the area is desert rangeland, and much of the area is used for livestock grazing, although annual authorizations have declined in the past few years due to economic reasons compounded by extensive drought. The area is popular with recreationists, including hikers and off-highway vehicle enthusiasts.

Vegetation varies from a sparse cover of desert shrubs at lower elevations to a chaparral, grass or pinyon-pine cover in the intermediate areas. Marked differences in vegetation occur within short distances because of the wide variance in soils, elevation, precipitation, and temperature.

Prehistoric and historic aboriginal groups generally used desert mountains for wild food procurement, and there is evidence of archaeological sites.

Many species of wildlife inhabit the area including mule deer, bear, mountain lion, javelina, cottontail and jack rabbits, squirrels and a variety of songbirds and raptors.

b) Fire History

Historical fire frequency 35 to 100-plus-year return interval, Between 1980 and 2003, 146 fires started on BLM-administered public lands. These fires burned an estimated 14,735 acres. Most of the area burned was chaparral plant communities. The largest fire burned 5000 acres. Average fire size was 99.6 acres. There have been 18 large fires (100-plus acres) during this time period.

c) Fire Regime/Condition Class

The chaparral vegetative community that dominates this fire management unit is represented by fire regime 4 (35-100+ year frequency, stand replacement). Current fire condition class is 2, due to the lack of fires having occurred in this area in the recent past. The current condition is overrepresentation of old-age-class chaparral and lack of mixed age class mosaic.

d) Values at Risk

Air Quality - No non-attainment or special status areas occur within this FMU.

ACECs – None

T&E, Sensitive, Wildlife/Plant Species – includes BLM Sensitive species (Native fishes, bats), lowland leopard frog, Category 2 & 3 Sonoran desert tortoise habitat.

Recreation – OHV use, hunting and camping uses.

Cultural Resources– Sites include historic mines and associated features, which could include "ghost towns," historic homestead and ranching features; prehistoric artifact scatters; rock art; roasting pits; and prehistoric stone structures on hilltops.

Standard mitigation measures:

- Use Minimum Impact Suppression Tactics.
- Utilize resource advisor, use extreme caution around historic mines, prehistoric pueblos, and other structures.
- Bulldozers or heavy equipment use is to be coordinated with the resource advisor.
- Use of retardant on wooden and stone structures is discouraged, but is permissible under extreme conditions.
- Fire engines should be used on established roads only.

Specific FMU mitigation measures:

- Identify the locations of flammable structures through ground or aerial reconnaissance surveys.
- Exercise extra caution near springs, which tend to be associated with a higher density of cultural resources.

Riparian – Tributaries of the Hassayampa and Agua Fria rivers.

Forage production – Livestock grazing is authorized for public lands within this FMU.

e) Communities at Risk

FMU #4 has several communities within the unit boundaries. There are multiple areas with sub-divided, residential properties that are not associated with a specific community. There are also recreation sites, range improvements, railways, roadways, utility lines, substations and communication sites within the FMU that may be at risk. Prevention, education and mitigation efforts for most of the subdivided areas can be made through local fire departments but many will require outreach by direct contact. The risk level to each community is based upon fuels, topography, the current state of fire prevention preparedness and unique aspects of each. Above- or below-average precipitation can greatly affect the risk to each

community and individual areas by increasing or decreasing the amount of fuel available to a fire. Special considerations will be made for communities with increased risk.

The communities listed below lie within the boundaries of FMU #4 and are categorized by their individual average risk level.

Moderate Risk:
1) Dewey
2) Humboldt
3) Kirkland Junction
4) Peeples Valley
5) Wilhoit

High Risk:
1) Cordes Junction
2) Mayer
3) Spring Valley
4) Yarnell

Fire Management Objectives

In chaparral vegetative type the desired Fire Management Objective is to suppress all fire 90% of the time at or below 100 acres. No more than 2,000 acres per year or 20,000 acres per decade in this polygon from wildfire or prescribed fire. The chaparral on the north side of the Bradshaw's is more typical of interior chaparral and probably has a natural fire cycle of once every 25 years or less. Fires in this area should not exceed an average of 2,000 acres of BLM-administered land per year.

Chaparral as a general vegetation type evolved with fire as a natural component of the ecosystem and is maintained in a healthy state by regular burning. The chaparral in the Phoenix Field office area is more open and has a mixture of upper Sonoran Desert vegetation. Natural fires in these areas were probably less common than typically occur in chaparral vegetation in general.

Desert tortoise habitat extends in to the chaparral vegetation type. Depending on the season and weather tortoise and their habitat can be very susceptible to fires. Small cool fires during the right season and under the right weather conditions would reduce fuel loads, and help alleviate the risk of large hot fires that would severely impact tortoise and their habitat. Any prescribed burn or let-burn situation would have to be carefully considered to prevent negative impacts to desert tortoise and Sonoran Desert vegetation.

Although there are no federally listed species associated with chaparral vegetation type, if a fire was to burn out of the chaparral into Sonoran Desert vegetation it could impact lesser long-nosed bats and cactus ferruginous pygmy owls.

Resource constraints during fire suppression actions are: Suppression tactics and use of heavy equipment (dozers) will be utilized that limit damage or disturbance to the habitat and landscape.
A portion of this FMU also includes the urban interface near Cordes Junction; this area is a full suppression area. The desired Fire Management Objective is to suppress all fire 90% of the time at or below 150 acres.

Other grassland vegetation exists in the Phoenix Field Office area most notably in the vicinity of Cordes Junction and Congress. However, due to concerns, such as intermingled ownership patterns, association with Sonoran Desert vegetation in the vicinity of Congress, desert tortoise habitat; any action other than full suppression would have to be carefully considered.

Fire Management Strategies

a) Suppression

Firefighter and public safety is the first priority in all fire management strategies and suppression actions. In the grasslands and lower elevations of the FMU that transactions with association with Sonoran Desert vegetation types Minimum Impact Suppression Tactics "MIST" will be utilized that limit damage or disturbance to the habitat and landscape.

In the area above 3500 feet, fires will be contained at the minimal acres possible. Washes, roads, natural breaks will be utilized when possible for fire lines. Burn out operations will be conducted that burn the least acreage possible to establish a safe containment/control line. Unburned islands will not be intentionally burned unless they pose a risk to the fire line. Heavy equipment such as dozers can be used if necessary in the chaparral vegetation with resource advisor consultation. In the Cordes Junction and Congress grasslands heavy equipment use should be in consultation with the resource advisor. Fire engines and support vehicles should stay as much as possible on existing roads and paths.

All other applicable suppression strategies are included in section III-D, Fire Management Strategies Common to All FMUs.

Health and Safety

Safety hazards to firefighters are extreme temperatures (daytime 90 to 100 degrees; nighttime temperatures range from 60 to 75 degrees, and relative humidity runs 5 to15 percent), open and hidden mine shafts and pits are present, venomous animals/insects, as well as hazardous materials and dump sites containing hazardous chemicals, pesticide, and tires. Low-level military aircraft training routes, recreational shooting, and OHV use is prevalent and presents a safety concern. In the Bradshaw Mountains, steep terrain is a hazard, slopes average 30 to 40 percent and increase up to 60 percent. The thick chaparral fuel type limits escape routes and safety zones.

Access

Access by vehicles into this FMU is limited due to steepness of grade and road conditions. The number of existing roads into this FMU is few. Travel time into this FMU can exceed one and one-half hours. Depending on the fire location crews may either have a long hike or require helicopter shuttle (if helispots are available) to reach fire location.

Fire Behavior

The Bradshaw Mountains above 3500 feet are dominated by Arizona interior oak chaparral (scrub oak, ceanothus, manzanita, sumac and mahogany). Fire behavior in Arizona oak chaparral should not be underestimated. Under certain conditions, it can burn as intensely as California chaparral.

Arizona chaparral either burns fiercely or does not burn at all; there seems to be no graduation. The critical rate of spread threshold in chaparral to sustain itself is 20 or more feet per minute. Conditions must be suitable for generating spread at or above this rate before fire will spread.

In very high to extreme burning conditions, flame lengths up to 50 feet are common. Spotting up to 1/4 mile and erratic fire behavior may occur. At times, firestorms, firewhirls and major blow-ups could occur

instantaneously. High rates of spread of 45 feet per minute would not be unusual. Extreme fire behavior can occur with live fuel moistures below 90%,

Grass fuel types are represented by NFDRS fuel model A and NFFL fuel model 1.

Chaparral fuel types are represented by NFDRS fuel model F and NFFL fuel model 4 and 6.

Suppression strategies and tactics in grass fuel type are usually direct attack using hand crews, engines where possible and helicopter dropping water to knock down the fire edge. Fires in the grass usually are quickly contained. Occasional fires in this fuel type can go into multiple burning periods.

Suppression tactics

Suppression strategies and tactics in chaparral fuel type are dependent on fire intensity. Low intensity fires; allow for direct attack. High intensity fires; suppression strategies and tactics in chaparral fuel type are usually indirect. Fires in the chaparral fuel type usually go into multiple burning periods.

Grass Fuel

Rate of spread	- Low to high
Flame length	- Depending on wind, one to four feet
Resistance to control	- low to moderate

Chaparral Fuel

Rate of spread	- moderate to very high
Flame length	- 20 to 50 ft plus
Resistance to control	- moderate to very high

Bradshaw/Yarnell - Acceptable wildfire size is up to 2000 acres at Fire Intensity Level (FIL) 1 and 100 acres for all others FIL 2-6.

Cordes Junction - Acceptable wildfire size is up to 300 acres at Fire Intensity Level (FIL) 1 and 150 acres for all others FIL 2-6.

FIL 1- 0-2 ft FL, FIL 2 - 2-4 ft FL, FIL 3 - 4-6 ft FL, FIL 4 - 6-8 ft FL, FIL 5 - 8-12 ft FL,
FIL 6 -12 + ft FL

b) Wildland Fire Use

Portions of the Weaver and Bradshaw mountains may be analyzed for wildland fire use at a future date. Wildland fire use is a viable management consideration for the chaparral vegetative community that covers much of this fire management zone**.** Statewide Land Use Plan Amendment Allocation 1 – Wildland Fire Use: Areas suitable for wildland fire use for resource benefit. Reference pages 13-15 of this FMP.

c) Prescribed Fire

Prescribed fire will be used to treat hazardous fuel accumulations in chaparral vegetation in the Weaver and Bradshaw mountains.

The prescribed fire resource objectives in the chaparral community would be to use fire to remove decadent chaparral and stimulate regrowth for both wildlife and livestock. Prescribed fire in the Bradshaws would be limited to 2000 acres per year. The is due to adjacent landownership (ie National Forest) and topography features.

d) Non-Fire Fuels Treatments

Mechanical, biological, or chemical treatments may be applied where approved to meet resource and fire management objectives. Non-fire fuels treatments will be utilized in WUI areas or those areas where prescribed fire is not a safe and viable means of treatment.

e) Post Fire Restoration and Rehabilitation

Potential exists for emergency restoration and stabilization efforts.

f) Community Protection/Community Assistance

Prevention, education and mitigation efforts for FMU #4 include utilizing the local news media to provide fire prevention information and updates to the public, building strong collaborative relationships with local governments and fire departments, performing school presentations, attending events/parades and develop partnerships with home owner organizations, permitees and other groups to assist communities in reducing the risk from wildfire.

FMU # 5 Description- PFO Agua Fria National Monument

a) Characteristics

This FMU consists of approximately 71,000 acres of public lands; the landscapes are typical of the Mexican Highlands and Sonoran Desert sections of the Basin and Range Physiographic Province. The area is characterized by three landforms: the relatively narrow river channel and associated drainages, broad benches that border the river and drainages, and low hills and mountains found within short proximity of the drainage. Elevation ranges from 2000 feet to 4000 feet at the top of Joe's Hill.

The Agua Fria National Monument is one of the most significant systems of prehistoric sites in the American Southwest. It contains more than 400 archaeological sites, spanning some 2,000 years of human history. Remnants of stone pueblos, some containing more than 100 rooms represent a system of communities with economic and social ties. There are numerous petroglyphs commonly called rock art located on the monument with many wildlife and human figures. Networks of hilltop structures may have acted as a communication system and structures sitting at the edges of steep canyons are though to have provided defense against invaders.

Vegetation varies from a large cover of desert shrubs at lower elevations on the south end of the monuments to some of the best examples of a tobosa grassland found in the Southwest. Lush riparian forests are along the Agua Fria River and its tributaries and include cottonwood, black walnut, and sycamore. Marked differences in vegetation occur within short distances because of the wide variance in soils, elevation, precipitation, and temperature.

Many species of wildlife inhabit the area including pronghorn antelope, mule deer, bear, mountain lion, javelina, cottontail and jack rabbits, squirrels. The river corridor is one of the best habitats for songbirds and raptors within this part of Arizona.

Winters are mild and summers are hot and dry, the two main periods of rainfall are during the last half of summer and in early winter.

b) Fire History

Historical fire frequency is zero to 35-year return interval, between 1980 and 2003, 101 fires started on BLM-administered public lands. These fires burned an estimated 26,728 acres. Most of the area burned was tobosa grasslands. The largest fire burned 6000 acres. Average fire size was 245.2 acres. There have been 12 large (100-plus acres) fires during this time period.

c) Fire Regime/Condition Class

Tobosa grasslands can be classified as a fire regime 2 (zero to 35-year frequency, stand replacement severity). Grasslands on the Agua Fria National Monument are currently classified as condition class 2. This rating is due primarily to the invasion of woody plant species (juniper, mesquite, snakeweed, prickly pear) and the presence of introduced annuals and noxious weeds.

d) Values at Risk

Air Quality – No non-attainment or special status areas occur in this FMU.

ACECs - Larry Canyon, Lousy Canyon

T&E, Sensitive, Wildlife/Plant Species–includes Gila topminnow, desert pupfish, Gila chub, yellow-billed cuckoo, BLM Sensitive species (Native fishes), pronghorn.

Recreation - Proposed Wild and Scenic River corridor ¼ mile wide on the Agua Fria River north and south of Bloody Basin Road. Hiking and equestrian use at Badger Springs Wash. Dispersed and unstructured recreation resource opportunities dependent on natural resources such as hunting, OHV driving, sightseeing, hiking, camping, etc. Outstanding primitive recreation opportunities within the Agua Fria River canyon.

Cultural Resources:

- Sites include prehistoric stone pueblos and structures, including from one to more than a hundred rooms.
- stone structures on hilltops.
- artifact scatters roasting pits;
- agricultural features, such as terraces bordered by rock alignments;
- rock art sites;
- and historic mines and ranching-related sites.

Standard mitigation measures:

- Use Minimum Impact Suppression Tactics.
- Utilize resource advisor and use extreme caution near historic mines, prehistoric pueblos, and other structures.
- Bulldozers or heavy equipment use is to be coordinated with the resource advisor.
- The use of retardant on wooden and stone structures is discouraged, but is permissible under extreme conditions.
- Fire engines should be used on established roads only.

Specific FMU mitigation measures:

- Minimize surface disturbing activities and off-road driving.
- Implement measures to protect rock art, if needed, in areas of relatively dense vegetation. Avoid igniting prescribed burns within sites.
- If it is necessary to extract water from the Agua Fria River, avoid damage to the rock flume structure that transmitted water to the historic Richinbar Mine; this site is situated in the river canyon, between Badger Springs and Perry Tank Canyon.
- Given the importance of the monument's cultural resources, an archaeologist should play a key role in the development of fire and fuels management plans.

Riparian – Agua Fria River and tributaries.

Forage production – Livestock grazing is authorized for public lands within this FMU with the exception of Larry and Lousy Canyons ACEC.

e) Communities at Risk

There are no communities located within the boundaries of FMU #5. There are communities located in adjacent FMUs. Those communities are addressed within the appropriate FMU descriptions.

Fire Management Objectives

Agua Fria Grasslands is a area where fire is desired to manage the ecosystem. Suppress wildfires at Fire Intensity Level (FIL) 1-6 to 1000 acres or less 90% of the time. Size is limited to assist in creating a mosaic pattern within the grasslands. Allow for up to 8,000 acres per year or 80,000 per decade of burned acres through wildfire or prescribed fire at any fire intensity level.

The Agua Fria Grassland is one area where fire has been recognized as a primary tool in natural resource management and has an interagency cooperative burn plan in place and functioning. . The BLM plan was written and approved in 1994, the three agencies that manage the Agua Fria Grasslands (167,000

acres) are the BLM Phoenix (42,000 acres), Tonto (10,000 acres) and Prescott National Forests (115,000 acres). The resource objectives is to use prescribed fire as a management tool to: increase forage quality for pronghorn antelope and livestock, increase antelope fawn survival, reduce the risk of resource damaging wildfires and maintain the grassland component of the Agua Fria Grassland ecosystem. Burn cycle rotation on BLM land is five to 10 years. The grassland vegetation is Tobosa grass, Side Oats, and Black Gramma. The grasslands have been invaded by mesquite, Snakeweed and Juniper. The shrub component in the vegetation is being reduced and a serial mosaic within the grassland is being created, benefiting pronghorn and other wildlife species. All known and potential conflicts with this burn plan have been addressed and mitigated.

Fire Management Strategies

a) Suppression

Firefighter and public safety is the first priority in all fire management strategies and suppression actions. All other applicable suppression strategies are included in section III-D, Fire Management Strategies Common to All FMUs.

Health and Safety

Safety hazards to firefighters are extreme temperatures (daytime 90 to105 degrees; nighttime temperatures range from 70 to 90 degrees, and relative humidity runs 5 to 15 percent), open mine shafts and pits are present, venomous animals/insects, low-level military aircraft training routes. When fires are located around mesa edges, steep drop offs and rocky canyon walls are safety hazards. Recreational shooting, and OHV use is common and presents a safety concern. Powerlines adjacent to I-17 present a major concern for aviation resources and for firefighters safety. Interstate I-17 runs on the west side of the monument. Fires adjacent to I-17 presents a traffic concern and safety for the public and firefighters. Smoke obscures visibility and with traffic traveling at high speeds of 70 to 80 mph, this is a hazard to firefighters working in and around the Interstate.

Access

Access by vehicles into this FMU is good off of numerous dirt roads. Depending on the fire location crews may have to hike to reach the fire.

Fire Behavior

Fuels on the monument are predominantly tobosa grass intermixed with small shrubs, cactus, snake weed some mesquite and junipers. The tobosa grasslands depend on heavy winter and early spring moisture or fuels that carry over from the previous year's growing season. Above average moisture usually results in an abundance of annual fuels and a continues fuel bed. Tobosa grass can grow to above two feet in height.

In years of heavy precipitation and where fuels are continuous fires can spread rapidly through the grass and associated material. The grass fuels are also easily influenced by change in relative humidity.
A significant increase in relative humidity and a decrease in temperature can quickly slow or extinguish a fire.

Fuels Grass fuel types are represented by NFDRS fuel model A and NFFL fuel model 1.

Suppression tactics

Suppression strategies and tactics in grass fuel type are usually direct attack using hand crews, engines where possible, airtankers and helicopters dropping water to knock down the fire edge, patrol and mop up. Fires in the grass usually are quickly contained. In years of abundant grass, fires on the monument usually go into multiple burning periods.

Rate of spread	- Low to high (depending on fuel continuity)
Flame length	- Depending on wind, one to ten feet
Resistance to control	- Moderate to high

Acceptable wildfire size is up to 1000 acres at Fire Intensity Level (FIL) 1- 6.

FIL 1- 0-2 ft FL, FIL 2 - 2-4 ft FL, FIL 3 - 4-6 ft FL, FIL 4 - 6-8 ft FL, FIL 5 - 8-12 ft FL, FIL 6 -12 + ft FL

b) Wildland Fire Use

Wildand Fire Use is a desired future condition on the Monument. Fire is recognized as a natural process in fire-adapted ecosystems and is used to achieve objectives for other resources and to maintain grasslands on the Agua Fria National Monument. Wildland Fire Use would be allowed from natural ignitions under specific prescribed criteria. Statewide Land Use Plan Amendment Allocation 1 – Wildland Fire Use: Areas suitable for wildland fire use for resource benefit. Reference pages 13-15 of this FMP.

c) Prescribed Fire

Prescribed broadcast burning will be the primary method used to maintain native grasslands located on the Agua Fria National Monument. Pile burning of juniper may occur following hand thinning in some areas. Total treatment will not exceed 10,000 acres per year.

d) Non-Fire Fuels Treatments

Hand thinning of juniper may occur in areas where grass cover is not sufficient to support broadcast burning. Management of the Agua Fria National Monument will limit the possibility of off-road mechanical treatments. Chemical and biological methods would need monument and field office manager approval prior to implementation.

e) Post Fire Restoration and Rehabilitation

Historically suppression activities have followed “MIST” guidelines with little surface disturbance. In the event of surface disturbance implementation of appropriate suppression damage rehabilitation will occur.

f) Community Protection/Community Assistance

There are two ranch headquarters located within the Agua Fria National Monument: Box Bar and Horseshoe. Typically these ranches are maintained, leaving minimal threat from wildfire.

Prevention and mitigation efforts for FMU #5 include public education by utilizing local media outlets, educational signing, outreach to public land use groups, prevention patrols and contacts.

Appendix M – Population Growth Model

Spatial Growth Model

Spatial Growth Modeling is accomplished using a contractor developed ArcView extension and can be done at the parcel level, or by the use of any size-assigned grid cells. The Spatial Growth Model (SGM) may be constructed as a set of "nested" models moving from the County to the community and potentially the neighborhood level. The following steps are involved in the creation of an SGM, which will generate GIS maps for the growth study area by decade (or other preferred time step):

1. Determine the growth study area; insure the data available spatially matches this region.

2. Determine the land available for growth with the study area. This process will create an initial "land bank" which can exclude areas such as those designated for open space, agriculture, riparian preserves, etc. (This land bank can be adjusted to meet the needs of different groups or values, and several land banks may be created to test different policies.) This creates a grid file in Arc View using Spatial Analyst. Land may be assigned as a "zoning" category specifying that the model, "assign this land sub-area to a particular type of growth."

3. Input the anticipated population growth rate, by housing type; including commercial and industrial allocations. A "Growth Calculator" has been developed to accomplish this in a Graphical User Interface (GUI) venue. This Growth Calculator allows the user to adjust the percentage of population assigned to different housing types (i.e., Single Family 35%, Multi-family 30%, Rural 25%, etc. – this may also be more specific zoning), as well as adding/deleting or changing these values/types for each scenario run. This also allows the user to calculate the amount of land required to accommodate different choices for each land use type, reflecting demand in term of total land, lot size, people per household, units/lot, etc.

4. Develop a set of "Growth Rules" (this can be specific zoning) by which this growing number of people and businesses will be housed and distributed. Conversely, growth rules can specify land *not to be developed.* For instance:
   - Place new multi-family within one mile of existing multifamily
   - Place new multi-family within 2 miles of existing commercial
   - Keep all low density (perhaps 1/2 acre or more…) 2 miles away from existing intersections
   - Cluster all development around nodes on a new/existing transportation corridor.
   - Notably, there may be <u>any number of rules</u>, and
   - <u>Each rule may be assigned a priority weight</u> in relation to the other rules used in that scenario "run" to reflect the values of the user.
   - The addition of rules will add to the "run times" of the model, however the output will reflect the complex aggregation of these rules.

These rules can be developed as a separate set for each type of land use being assessed in the model. These various rules sets can then be run consecutively in a comprehensive model run, letting each rule set allocate land based on available area and priority in the run. Essentially, this allows the user to assess various differences based on which types of development have priority. When a scenario is generating, once land is used up by one type of development, it becomes unavailable to any other land use type. The model also notifies the user if there is insufficient land to meet the demand of a particular rule set. There is no limit on the number of rules in rule set or the number of rule sets run for a given scenario.

5. Run the model; this will take anywhere from a few minutes to several hours, based on the number of rules used, the size of the land bank and the scale of the grid, lot or parcel resolution to be utilized.
    - The model will generate a grid for each rule, which can be displayed to show where the rule applied.
    - The resultant rule grids are then combined to create a Composite Suitability Grid. This grid is used to allocate growth for that particular rule set.
    - Finally, a grid is created for each time step and rule set. For example if there was a set of 4 rules for Single Family Growth growing in ten year intervals to 2050, the model would generate:
        i. 4 grids representing each rule
        ii. 1 Composite Suitability Grid
        iii. Grids that represent Single Family Growth 2010, Single Family Growth 2020, Single Family Growth 2030, Single Family Growth 2040 and Single Family Growth 2050
    - These sets of grids are created for each rule set run for a given Scenario. These grids can then be merged by land use type, year of growth, etc., to display different scenario data for assessment.

6. Rerun the model with different population, land bank and growth rule scenarios. This accommodates a variety of values and opinions regarding community growth options.

7. These scenarios may be overlaid or otherwise compared for similarities and differences.

Appendix N – Bradshaw-Harquahala Route Model

The following table is an estimate of the effect of the management decisions described in the Alternatives Chapter of this document on the vehicle route network. The table is simply a possible outcome based on a set of conditions that represents a way to compare alternatives and to estimate environmental impacts. ***This table is a tool for RMP level analysis and not an RMP decision.*** The methodology for estimating the percentage of open, closed and new routes in the planning area was derived by interpreting land use allocations and the specific prescriptions that come with these allocations and making an estimate of the effects on the route system. This table is only an estimate of possible foreseeable outcomes of how the range of alternatives could affect route designation scenarios. Since actual route designation is likely to take several years to complete, detailed route-by-route analysis was not done. Instead, the potential affect of alternative decisions on the overall vehicle route network is displayed as estimated percentages of open, closed, and new routes. It was felt by the planning team that this was the most informative way to convey the possible effects of management actions in the alternatives.

Table N-1. Route Models

Special Designations and Allocations	Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
	mi	%	mi	%	mi	%	mi	%	mi	%
ACECs										
Total Routes	**0.0**		**2.0**	**0.09**	**189**	**8.44**	**299**	**13.35**	**166.0**	**7.41**
open	N/A	N/A	0.2	10	18.9	10	0.0	0	143.5	86
closed	N/A	N/A	1.8	90	170.1	90	299.0	100	22.5	14
new [2.]	N/A	N/A	0.0	0	0.0	0	0.0	0	0	0
subtotal open			0.2		18.9		0.0		143.5	
Areas Allocated to Maintain or Enhance Wilderness Characteristics										
Total routes	**0**		**158.0**	**7.05**	**92.0**	**4.11**	**113.5**	**5.07**	**126.5**	**5.65**
open	N/A	N/A	47.4	30	9.2	10	0.0	0	35.0	28
closed	N/A	N/A	110.6	70	82.8	90	113.5	100	91.5	72
new [2.]	N/A	N/A	0.0	0	0.0	0	0.0	0	0	0
subtotal open			47.4		9.2		0.0		35.0	
SRMA										
Total routes	**0.0**		**667.0**	**29.78**	**664.0**	**29.64**	**277.0**	**12.37**	**1277.0**	**57.01**
open	0.0	100	653.7	98	630.8	95	249.3	90	1213.2	95
closed	0.0		28.3	2	64.8	5	155.1	10	63.9	5
new [2.]	0.0		7.1	0.5	13.0	1	31.0	2	26	2
subtotal open	0.0		660.7		643.8		280.3		1238.7	
ERMA										
Total routes	**0.0**		**1413.0**	**63.08**	**1295.0**	**57.81**	**1550.5**	**69.22**	**670.5**	**29.93**
open	0.0	100	1384.7	98	1230.3	95	1395.5	90	637.0	95
closed	0.0		28.3	2	64.8	5	155.1	10	33.5	5

Special Designations and Allocations	Alternative A		Alternative B		Alternative C		Alternative D		Alternative E	
New [2.]	0.0		7.1	0.5	13.0	1	31.0	2	13.4	2
subtotal open	0.0		1391.8		1243.2		1426.5		650.4	
Total [1.]	2240.0		2240.0		2240.0		2240.0		2240.0	
Total open	**2240.0**		**2086.0**		**1889.2**		**1644.8**		**2028.6**	
Total closed	**0.0**		**168.9**		**382.4**		**722.6**		**211.4**	
Total new*	**0.0**		**14.1**		**25.9**		**62.0**		**39.0**	
Net Route Mi. Closed [3.]	**0.0**		**154.8**		**356.5**		**660.6**		**172.4**	
% Closed (of exist. 2240)	**0.0**		**6.9%**		**15.9%**		**29.5%**		**7.7%**	

1. Total routes in Bradshaw-Harquahala – 2,240 miles
Route total based on GPS route inventory data where complete and Arizona Land Resource Information System data where GPS data collection has not yet been collected. Total miles excludes state and county highways.

2. New routes (as % of total within management areas) developed to maintain connectivity of network as mitigation for closures for resource protection

3. Total closed, less new routes

The following lists explain some of the conditions that were considered in developing the percentages in the table of open, closed, and new routes:

Within SRMA/RMZ - Intent is to manage, at a higher level, specific activities and uses such as motorized/mechanized/equestrian use.

Factors that were considered:

1. Routes that meet Land Health Standards for erosion, desired plant communities, riparian management and other standards would generally be retained.
2. Routes consistent with management of the SRMA/RMZ intent would be retained. Areas allocated to day use recreation may have more looping route opportunities, while primitive areas may create more "cherry stem" spur route opportunities to maximize primitive recreation opportunities.
3. Spur routes for parking and camping would be designated open if no resource concerns exist.
4. New routes would be considered when needed to:
    - Mitigate routes not meeting Land Health Standard criteria.
    - Replace lost access opportunities
    - Enhance recreation opportunities
5. Utility Rights-of-Way would generally be left open to public use.
6. Access to private property would be generally left open to public use.
7. Routes to wildlife water catchments would generally be left open for public use.
8. Motorized routes that cause conflict with other land uses or resources would be mitigated or closed (per 43 CFR 8342.1)

Within ACEC - Intent is to limit activities that diminish the purpose of the ACEC.

Factors that were considered:

1. Routes that facilitate an increase in human activity that may be damaging, such as camping spur routes, may be closed.
2. Routes that are determined to fragment habitat would be closed or limits placed on their use.
3. "Through" routes compatible with management will be left open. Analysis would attempt to identify important connecting routes.
4. The ACEC allocation would generally prohibit building new routes unless required for management.
5. Utility Rights-of-Way may be closed to public use if determined that use of the route is incompatible with the ACEC's purpose.
6. Access to private property may be closed to public use, and a Right-of-Way grant required for access by property owners.
7. Routes to wildlife water catchments would generally be left open for public use.
8. Motorized routes that cause conflict with other land uses or resources would be mitigated or closed (per 43 CFR 8342.1)

Within areas allocated to maintain or enhance wilderness characteristics/Backcountry and Passage Zone - Intent is to manage generally for semi-primitive non-motorized and primitive experiences.

Factors that were considered:

1. Routes that facilitate an increase in motorized activity, such as vehicle camping spur routes and "through" routes with intensive motorized use, may be closed.
2. Routes incompatible with maintaining the primitive values, such as redundant routes and routes no longer needed for management or other land uses would be closed.
3. "Through" routes compatible with management would be left open. Analysis would attempt to identify important connecting routes.
4. New routes would generally be prohibited unless required for management.
5. Routes to wildlife water catchments would generally be left open for public use.
6. Utility Rights-of-Way would generally be left open to public use.
7. Access to private property may be closed to public use, and a Right-of-Way grant required for access by property owner.
8. Motorized routes that cause conflict with other land uses or resources would be mitigated or closed (per 43 CFR 8342.1)

Appendix O - Grazing Allotment Information

Allotment Name	Allotment Number	Permitted AUMs	Livestock Number	Livestock Type
AGUA FRIA NATIONAL MONUMENT				
Badger Spring Wash	06182	12	1	Cattle
Bluebell	06012	72	6	Cattle
Box Bar	06063	2447	206	Cattle
Cordes	06005	731	2470	Sheep
Cordes	06005	936	78	Cattle/Horse
Cosanti Ranch	06145	48	4	Cattle
Cross Y	06013	2790	250	Cattle
EZ Ranch	06045	972	81	Cattle
Horseshoe	06235	4572	381	Cattle
2Y	00048	216	18	Cattle
Sycamore	06169	696	58	Cattle/Horse
BRADSHAW-HARQUAHALA PLANNING AREA				
6Y Ranch Lease	05042	213	25	Cattle
A Bar V	05047	24	2	Cattle
Aguila	03000	5073	427	Cattle
Antelope Creek	06238	600	50	Cattle
Arrow Y (15)	00084	204	33	Cattle
Arrow Y (3)	00069	2151	339	Cattle
Auza	05032	84	7	Cattle
Beardsley Canal	06185	12	1	Cattle
Bialac	03008	Ephemeral		Cattle
Big Bug Creek	06143	108	9	Cattle
Big Rebel Mine	06066	36	3	Cattle
Black Canyon	06122	95	16	Horse
Bo Nine	06095	948	79	Cattle
Boulder Creek	06215	5040	600	Cattle
Box Canyon Ranch	05029	72	6	Cattle
Buckhorn	06243	924	175	Cattle/Horse
Buckhorn Creek	06150	72	6	Cattle
Bumble Bee	06161	2640	485	Cattle
Cactus Garden	03011	1098	104	Cattle
Carter-Herrera	03015	512	52	Cattle
Castle Hot Springs	06206	60	8	Cattle
Central Az Ranch Co	03014	2329	211	Cattle
Champie	06026	1100	195	Cattle
Chaparral Gulch	06065	408	34	Cattle
Clem	03017	1085	400	Cattle
Congress	03019	3242	614	Cattle
Congress-Sky Arrow	05014	108	52	Cattle

Allotment Name	Allotment Number	Permitted AUMs	Livestock Number	Livestock Type
Cooper Ranch	05013	2220	185	Cattle
Copper Mountain	06139	216	18	Cattle
Cottonwood Creek	06246	96	8	Cattle
Coughlin	05015	168	14	Cattle
Cross Mountain	03021	12	1	Cattle
Desert Hills	03025	365	39	Cattle
Desert Hills Lease	05016	432	36	Cattle
Dewey	06094	180	75	Goat
Douglas	03026	144	300	Cattle
Eagle Eye	03027	Ephemeral		Cattle
Echeverria	03029	713	60	Cattle
Effus	03030	1155	125	Cattle
Eleven L	06103	1962	244	Cattle/Horse
Flat Iron	03031	457	38	Cattle
Foraker	05017	180	15	Cattle
Forepaugh Cattle Co.	05012	888	74	Cattle
Galena Gulch	06201	432	36	Cattle
Garcia	03095	3150	350	Cattle/Sheep
Grantham Bros. Lease	05049	156	13	Cattle
Green Gulch	06229	12	1	Cattle
Hackberry Gulch	06057	60	5	Cattle
Hackberry Mine	06046	12	1	Cattle
Hassayampa River	06035	12	1	Cattle
Hassayampa River Ran	05008	732	61	Cattle
Heine	05023	24	2	Cattle
Hozoni	06223	1703	330	Cattle
Humboldt	06181	24	2	Cattle
Humbug	06245	101	111	Cattle/Horse
J V Bar	06222	1781	209	Cattle/Horse
Jesus Canyon	06227	1068	111	Cattle/Horse
Jones	03045	900	75	Cattle
Kennedy	03010	360	30	Cattle
Kirkland	05019	132	11	Cattle
Lockett	06109	60	5	Cattle
Los Caballeros	03052	939	103	Cattle/Horse
Lower Bo Nine	00095	60	5	Cattle
Mayer	06011	264	22	Cattle
Michael Lease	05033	516	52	Cattle
Minnehaha Creek	06021	60	5	Cattle
Moralez	05035	826	86	Cattle
Ohaco	03060	1476	150	Cattle
Osborne Spring Wash	06213	60	5	Cattle
Oso Ranch Allotment	05040	768	64	Cattle
Poland Junction	06135	276	23	Cattle
Quarter Circle J	05020	144	12	Cattle
R. and E. Park Lease	00085	144	33	Cattle

Allotment Name	Allotment Number	Permitted AUMs	Livestock Number	Livestock Type
Rafter Lazy W Ranch	05030	120	10	Cattle
Ridgeway-Kong	03071	120	10	Cattle
Rock Springs	06219	96	8	Cattle
Sky Arrow	03079	684	339	Cattle
Sprouse	03081	819	75	Cattle
Square M	05010	60	5	Cattle
Tee	06128	1728	144	Cattle
Texas Gulch	06048	48	4	Cattle
Thompson Lease	05004	144	12	Cattle
Three Canyon	06142	252	21	Cattle
Turner	03084	Ephemeral		Cattle
U Cross	06239	1667	248	Cattle
VX Ranch	06104	680	111	Cattle/Horse
W Diamond	05028	384	32	Cattle
Wagoner	06147	12	1	Cattle
West Wing Mountain	06056	Ephemeral		Cattle/Sheep
Whitehead	05048	288	24	Cattle
Yarber Wash	06027	156	13	Cattle

Appendix P - Conservation Measures for Fire, Fuel, and Air Quality

Conservation Measures for Fire Management Activities

Wildland Fire Suppression (FS)

The following Conservation Measures will be implemented during fire suppression operations, unless firefighter or public safety, or the protection of property, improvements, or natural resources, render them infeasible during a particular operation. Each Conservation Measure has been given an alphanumerical designation for organizational purposes (*e.g.*, FS-1). Necessary modifications of the Conservation Measures or impacts to Federally protected species and habitat during fire suppression operations will be documented by the Resource Advisor, and coordinated with the USFWS.

FS-1 Protect known locations of habitat occupied by Federally listed species. Minimum Impact Suppression Tactics (M.I.S.T.) will be followed in all areas with known Federally protected species or habitat [Appendix U, *Interagency Standards for Fire and Aviation Operations 2003*, or updates].

FS-2 Resource Advisors will be designated to coordinate natural resource concerns, including Federally protected species. They will also serve as a field contact representative (FCR) responsible for coordination with the USFWS. Duties will include identifying protective measures endorsed by the Field Office Manager, and delivering these measures to the Incident Commander; surveying prospective campsites, aircraft landing and fueling sites; and performing other duties necessary to ensure adverse effects to Federally protected species and their habitats are minimized. On-the-ground monitors will be designated and used when fire suppression activities occur within identified occupied or suitable habitat for Federally protected species.

FS-3 All personnel on the fire (firefighters and support personnel) will be briefed and educated by Resource Advisors or designated supervisors about listed species and the importance of minimizing impacts to individuals and their habitats. All personnel will be informed of the conservation measures designed to minimize or eliminate take of the species present. This information is best identified in the incident objectives.

FS-4 Permanent road construction will not be permitted during fire suppression activities in habitat occupied by Federally protected species. Construction of temporary roads is approved only if necessary for safety or the protection of property or resources, including Federally protected species habitat. Temporary road construction should be coordinated with the USFWS, through the Resource Advisor.

FS-5 Crew camps, equipment staging areas, and aircraft landing and fueling areas should be located outside of listed species habitats, and preferably in locations that are disturbed. If camps must be located in listed species habitat, the Resource Advisor will be consulted to ensure habitat damage and other effects to listed species are minimized and documented. The Resource Advisor should also consider the potential for indirect effects to listed species or their habitat from the siting of camps and staging areas (*e.g.,* if an area is within the water flow pattern, there may be indirect effects to aquatic habitat or species located off-site).

FS-6 All fire management protocols to protect Federally protected species will be coordinated with local fire suppression agencies that conduct fire suppression on BLM-administered lands to ensure that the agency knows how to minimize impacts to Federally protected species in the area.

FS-7 The effectiveness of fire suppression activities and Conservation Measures for Federally protected species should be evaluated after a fire, when practical, and the results shared with the USFWS and AGFD. Revise future fire suppression plans and tactical applications as needed and as practical.

Fuels Treatments (prescribed burning and other fuels management) (FT)

The following Conservation Measures are mandatory when implementing wildland fire use, prescribed fires, and the proposed vegetation treatments (mechanical, chemical, biological):

FT-1 Biologists will be involved in the development of prescribed burn plans and vegetation treatment plans to minimize effects to Federally protected species and their habitats within, adjacent to, and downstream from proposed project sites. Biologists will consider the protection of seasonal and spatial needs of Federally protected species (*e.g.*, avoiding or protecting important use areas or structures and maintaining adequate patches of key habitat components) during project planning and implementation.

FT-2 M.I.S.T. will be followed in all areas with known Federally protected species or habitats.

FT-3 Pre-project surveys and clearances (biological evaluations/assessments) for Federally protected species will be required for each project site before implementation. All applicable Conservation Measures will be applied to areas with unsurveyed suitable habitat for Federally protected species, until a survey has been conducted by qualified personnel to clear the area for the treatment activity.

FT-4 Use of motorized vehicles during prescribed burns or other fuels treatment activities in suitable or occupied habitat will be restricted, to the extent feasible, to existing roads, trails, washes, and temporary fuelbreaks or site-access routes. If off-road travel is deemed necessary, any cross-country travel paths will be surveyed prior to use and will be closed and rehabilitated after the prescribed burn or fuels treatment project is completed.

FT-5 As part of the mandatory fire briefing held prior to prescribed burning, all personnel (firefighters and support personnel) will be briefed and educated by Resource Advisors or designated supervisors about listed species and the importance of minimizing impacts to individuals and their habitats. All personnel will be informed of the Conservation Measures designed to minimize or eliminate take of the species present.

Rehabilitation and Restoration (RR)

RR-1 When rehabilitating important areas for Federally listed species that have been damaged by fire or other fuels treatments, the biologist will give careful consideration to minimizing short-term and long-term impacts. Someone who is familiar with fire impacts and the needs of the affected species will contribute to rehabilitation plan development. Appropriate timing of rehabilitation and spatial needs of Federally listed species will be addressed in rehabilitation plans.

RR-2 Seed from regionally native or sterile alien (non-native) species of grasses and herbaceous vegetation will be used in areas where reseeding is necessary following ground disturbance to stabilize soils and prevent erosion by both wind and water.

RR-3 Sediment traps or other erosion control methods will be used to reduce or eliminate influx of ash and sediment into aquatic systems.

RR-4 Use of motorized vehicles during rehabilitation or restoration activities in suitable or occupied habitat will be restricted, to the extent feasible, to existing roads, trails, or washes, and to temporary access roads or fuelbreaks created to enable the fire suppression, prescribed burn, or fuels treatment activities to occur. If off-road travel is deemed necessary, any cross-country travel paths will be surveyed prior to use and will be closed and rehabilitated after rehabilitation or restoration activities are completed.

RR-5 All temporary roads, vehicle tracks, skid trails, and off-road vehicle (ORV) trails resulting from fire suppression and the proposed fire management activities will be rehabilitated (water bars, etc.), and will be closed or made impassible for future use.

RR-6 Burned area emergency rehabilitation (BAER) activities and long-term restoration activities should be monitored, and the results provided to the USFWS and AGFD. Section 7 consultation for BAER activities will be conducted independently, if necessary.

RR-7 **(Recommended)** Develop public education plans that discourage or restrict fires and fire-prone recreation uses during high fire-risk periods. Develop brochures, signs, and other interpretive materials to educate recreationists about the ecological role of fires, and the potential dangers of accidental fires.

Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats (RA)

Wildland Fire Suppression and Rehabilitation

The following Conservation Measures will be implemented during fire suppression operations in riparian, wetland, or aquatic habitats, unless firefighter or public safety, or the protection of property, improvements, or natural resources, render them infeasible during a particular operation. Necessary modifications of the Conservation Measures or impacts to Federally protected species and habitat during fire suppression operations will be documented by the Resource Advisor, and coordinated with the USFWS. The BLM's 1987 policy statement on riparian area management defines a riparian area as "an area of land directly influenced by permanent water. It has visible vegetation or physical characteristics

reflective of permanent water influence. Lakeshores and streambanks are typical riparian areas. Excluded are such sites as ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil."

RA-1 During wildfire suppression, apply M.I.S.T. within riparian areas. Fire suppression actions in riparian areas should be prioritized to minimize damage to stands of native vegetation from wildfire or suppression operations. To the extent possible, retain large, downed woody materials and snags that are not a hazard to firefighters.

RA-2 Fire suppression and rehabilitation in riparian corridors will be coordinated with the Resource Advisor or qualified biologist approved by BLM.

RA-3 Site-specific implementation plans that include project areas with Federally protected aquatic or riparian-obligate species will specify fire management objectives and wildland fire suppression guidance, taking into account the special concerns related to these species.

RA-4 In riparian areas, use natural barriers or openings in riparian vegetation where possible as the easiest, safest method to manage a riparian wildfire. Where possible and practical, use wet firebreaks in sandy overflow channels rather than constructing firelines by hand or with heavy equipment.

RA-5 Construction or development of a crossing for motorized vehicles across a perennial stream will not be permitted, unless an established road already exists or where dry, intermittent sections occur.

RA-6 Avoid the use of fire retardants or chemical foams in riparian habitats or within 300 feet of aquatic habitats, particularly sites occupied by Federally protected species. Apply operational guidelines as stated in the *Interagency Standards for Fire and Fire Aviation Operations 2003 (or updates),* "Environmental Guidelines for Delivery of Retardant or Foam Near Waterways," Chapter 8 (pp. 8-13 through 8-15).

RA-8 When using water from sources supporting Federally protected species, care must be taken to ensure adverse impacts to these species are minimized or prevented. Unused water from fire abatement activities will not be dumped in sites occupied by Federally protected aquatic species to avoid introducing non-native species, diseases, or parasites.

RA-9 If water is drafted from a stock tank or other body of water for fire suppression, it will not be refilled with water from another tank, lakes, or other water sources that may support non-native fishes, bullfrogs, crayfish, or salamanders.

RA-10 Use of containment systems for portable pumps to avoid fuel spills in riparian or aquatic systems will be required.

Fuels Treatments (prescribed fire; mechanical, chemical, and biological treatments)

The following Conservation Measures are mandatory when implementing wildland fire use, prescribed fires, and the proposed vegetation treatments (mechanical, chemical, biological) within riparian, wetland, or aquatic habitats.

RA-12 All Conservation Measures for wildland fire suppression (**RA-1 to RA-11, Section 2.1**) also apply to fuels treatment activities (prescribed fire; mechanical, chemical, and biological treatments) in riparian, wetland, and aquatic habitats.

RA-13 Fire management treatments within or adjacent to riparian and aquatic habitats will be designed to provide long-term benefits to aquatic and riparian resources by reducing threats associated with dewatering and surface disturbance, or by improving the condition of the watershed and enhancing watershed function.

RA-14 For priority fire/fuels management areas (*e.g.*, WUIs) with Federally protected species or designated critical habitat downstream, BLM biologists and other resource specialists, as appropriate, in coordination with USFWS and AGFD, will determine:

A) The number of acres and the number of projects or phases of projects to occur within one watershed per year.

B) An appropriately-sized buffer adjacent to perennial streams in order to minimize soil and ash from entering the stream.

C) Where livestock grazing occurs in areas that have been burned, specialists will determine when grazing can be resumed. Such deferments from grazing will only occur when necessary to protect streams from increased ash or sediment flow into streams[1].

If agreement cannot be reached or treatment will not meet fuel reduction objectives, BLM will re-initiate consultation. Our authority to make these types of changes is in the regulations at 43 CFR 4110.3-3(b).

Species Specific Conservation Measures

In addition to the general Conservation Measures listed in **Sections 1.0** and **2.0**, the following species-specific Conservation Measures will be applied during wildfire suppression to the extent possible, and will be required during fuels treatment activities (wildland fire use, prescribed fire, vegetation treatments). Necessary modifications of the Conservation Measures or impacts to Federally protected species and habitat during fire suppression operations will be documented by the Resource Advisor, and coordinated with the USFWS.

Birds

California brown pelican (FE)

BP-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats.

Southwestern willow flycatcher (FE)

WF-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats.

WF-2 Except where fires are active in occupied habitat, minimize unnecessary low-level helicopter flights during the breeding season (April 1 – September 30). Approach bucket dip sites at a 90-degree direction to rivers to minimize flight time over the river corridor and occupied riparian habitats. Locate landing sites for helicopters at least ¼ mile from occupied sites to avoid impacts to willow flycatchers and their habitat.

WF-3 Minimize use of chainsaws or bulldozers to construct firelines through occupied or suitable habitat except where necessary to reduce the overall acreage of occupied habitat or other important habitat areas that would otherwise be burned.

WF-4 Implement activities to reduce hazardous fuels or improve riparian habitats (prescribed burning or vegetation treatments) within occupied or unsurveyed suitable habitat for southwestern willow flycatchers only during the non-breeding season (October 1 to March 31).

WF-5 Avoid developing access roads that would result in fragmentation or a reduction in habitat quality. Close and rehabilitate all roads that were necessary for project implementation (see **RR-5**).

WF-6 Prescribed burning will only be allowed within ½ mile of occupied or unsurveyed suitable habitat when weather conditions allow smoke to disperse away from the habitat when birds may be present (breeding season of April 1 – September 30).

WF-7 Vegetation treatment projects adjacent to occupied or unsurveyed suitable habitat will only be conducted when willow flycatchers are not present (October 1 – March 31).

Bald eagle (FT)

BE-1 No human activity within ½ mile of known bald eagle nest sites between December 1 and June 30.

BE-2 No tree cutting within ¼ mile of known nest trees.

BE-3 No human activity within ¼ mile of known bald eagle winter roost areas between October 15 and April 15.

BE-4 No tree cutting within the area immediately around winter roost sites as determined by BLM biologists.

BE-5 No helicopter or aircraft activity or aerial retardant application within ½ mile of bald eagle nest sites between December 1 and June 30 or winter roost sites between October 15 and April 15.

BE-6 Conduct prescribed burn activities outside of nesting season in a manner to ensure nest and winter roost sites are more than ½ mile from downwind smoke effects.

BE-7 Provide reasonable protective measures so fire prescription or fuels treatment will not consume dominant, large trees as identified by the Resource Advisor or qualified biologist approved by BLM within ½ mile of known nests and roosts of bald eagles Pre-treatment efforts should provide reasonable protection of identified nesting and roosting trees (see Conservation Measure FT-4).

Yellow-billed cuckoo (FC)

YC-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats.

Fish

The following Conservation Measure will be implemented for all Federally protected fish species that may be affected by the Proposed Action during fire suppression to the extent possible, and are mandatory for wildland fire use, prescribed fire, and vegetation treatment activities:

FI-1 BLM will cooperate with other agencies to develop emergency protocols to decrease the impacts of fire suppression and fuels treatment activities on Federally listed fish species. Emergency protocols will include appropriate agency contacts, a list of facilities that can hold fish, sources of equipment needed (e.g., sampling gear, trucks) and how to address human health and safety issues.

In addition to implementing **FI-1**, the following species-specific Conservation Measures will also apply:

Desert pupfish (FE, CH)

DP-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats for occupied reaches and critical habitat.

DP-2 Conduct prescribed burns such that no more than one-half of the watershed of each desert pupfish site is burned in a two-year period (excluding buffers to the streams and/or spring habitats) and repeat treatments at greater than two-year intervals.

DP-3 Monitor, where practical, for fish kill immediately following the first runoff event after prescribed fires in watersheds containing desert pupfish.

DP-4 When considering which creek crossings to use for fire management activities, avoid crossings that are known to be occupied by desert pupfish.

Gila topminnow (FE)

GT-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats.

GT-2 Conduct prescribed burns such that no more than one-half of the watershed of each gila topminnow natural or reintroduction site is burned in a two-year period (excluding buffers to the streams and/or spring habitats) and repeat treatments at greater than two-year intervals.

GT-3 Monitor for fish kill, where practical, immediately following the first runoff event after prescribed fires in the watersheds containing gila topminnows.

GT-4 When considering which creek crossings to use for fire management activities, avoid crossings that are known to be occupied by Gila topminnow, when possible.

GT-5 Develop mitigation plans in coordination with the USFWS for each fuels management project (prescribed fire vegetation treatments) that may adversely affect the gila topminnow. Mitigation

plans for prescribed fire will limit to the extent practicable the possibility that fire would spread to riparian habitats. Mitigation plans will be approved by the USFWS.

GT-6 Cooperate with the USFWS and AGFD to identify site-specific measures, such as prescribed fires in grassland vegetation types to improve watershed conditions (*e.g.*, in the Cienega Creek watershed), to protect populations of gila topminnow from other resource program impacts.

Gila chub (PE, Proposed CH)

GC-1 Implement the Conservation Measures for Fire Management Activities in Riparian and Aquatic Habitats for occupied reaches and proposed critical habitat.

GC-2 When considering which creek crossings to use for fire management activities, avoid crossings that are known to be occupied by Gila chub, when possible.

GC-3 Cooperate with the USFWS and AGFD to identify site-specific measures, such as prescribed fires in grassland vegetation types to improve watershed conditions (*e.g.*, in the Cienega Creek watershed), to protect populations of gila chub from other resource program impacts.

Flowering Plants

The following Conservation Measures for known locations and unsurveyed habitat of all Federally protected plant species within the planning area will be implemented during fire suppression to the extent possible, and are mandatory for wildland fire use, prescribed fire, and vegetation treatment activities:

PL-1 Known locations and potential habitat for plant populations will be mapped to facilitate planning for wildland fire use, prescribed fires, and vegetation treatments, and to ensure protection of these populations during fire suppression.

PL-2 BLM will coordinate with FWS to delineate buffer areas around plant populations prior to prescribed fire and vegetation treatment activities. BLM will coordinate with USFWS during any emergency response and wildland fire use activities to ensure protection of plant populations from fire and fire suppression activities.

PL-3 During fire suppression, wildland fire use, and prescribed fire in habitat occupied by Federally protected plant species, no staging of equipment or personnel will be permitted within 100 meters of identified individuals or populations, nor will off-road vehicles be allowed within the 100-meter buffer area, unless necessary for firefighter or public safety or the protection of property, improvements, or other resources (see **FS-7**). One of the primary threats to many of these plant species is trampling/crushing from personnel and vehicles.

PL-4 No prescribed burning will be implemented within 100 meters of identified locations or unsurveyed suitable habitat for Federally protected and sensitive plant populations unless specifically designed to maintain or improve the existing population.

There are no additional species-specific conservation measures for the following Federally protected plant species: **Pima Pineapple Cactus** (*Coryphantha scheeri* var. *robustispina*), **Siler Pincushion Cactus** (*Pediocactus sileri*), **Acuña Cactus** (*Echinomastus erectocentrus* var. *acunensis*), **Fickeisen Plains Cactus** (*Pediocactus peeblesianus* var. *fickeiseniae*).

[1]The Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook, Exhibit 4-2, BLM supplemental guidance, page 5 of 9 (http://fire.r9.fws.gov/ifcc/ESR/handbook/4PolicyGuidance.htm) establishes the following policy for livestock exclusion following burns:

Exclusion of livestock is critical for the recovery of burned vegetation or establishment and maintenance of new seedings and use of these areas should not be permitted until the vegetation recovers or is established. Both re-vegetated and, burned but not re-vegetated areas, will be closed to livestock grazing for at least two growing seasons following the season in which the wildfire occurred to promote recovery of burned perennial plants and/or facilitate the establishment of seeded species. Livestock permittees must be informed of the closure early during the plan preparation process, and livestock closures will be made a condition or term on the grazing license or permit through the issuance of grazing decision (see 43 CFR 4160). Livestock closures for less than two growing seasons may be justified on a case-by-case basis based on sound resource data and experience. Livestock management following seedling establishment and/ or burned area recovery should maintain both non-native and/or native species to meet land use (including Standards for Rangeland Health and Guidelines for Grazing Management) or activity plan objectives.

Appendix Q-1. Riparian Functional Condition – Agua Fria National Monument

Definitions			
Conditions:	PFC = Proper Functioning Condition	Trends:	UP = Upward Trend	NA = Not Applicable
	FAR = Functioning At Risk		NAT = No Apparent Trend	
	NF = Non-Functioning		DWN = Downward Trend	

AGUA FRIA NATIONAL MONUMENT								
Stream	**Segment #**	**BLM (miles)**	**Other (miles)**	**Total (miles)**	**Condition**	**Trend**	**Miles per Condition/Trend**	**Year Evaluated**
Agua Fria River	1-H	0.40	1.60	2.00	PFC	NA	0.40	2000
	1-I	2.20	0.20	2.40	PFC	NA	2.20	2000
	1-J	2.60	0.00	2.60	FAR	UP	2.60	2000
	1-K	2.10	0.40	2.50	PFC	NA	2.10	2000
	1-L	2.00	0.00	2.00	PFC	NA	2.00	1998
	1-M	3.00	0.00	3.00	FAR	UP	3.00	1998
	1-N	3.30	0.60	3.90	FAR	UP	3.30	1998
	1-O	2.40	0.00	2.40	FAR	NAT	2.40	1999
	1-P	2.40	0.30	2.70	FAR	NAT	2.40	2004
Stream Total		**20.40**	**3.10**	**23.50**	**Total PFC/NA**		**6.70**	
					Total FAR/UP		**8.90**	
					Total FAR/NAT		**4.80**	
Ash Creek	72-A	0.70	1.10	1.80	PFC	NA	0.70	2003
	72-B	0.90	0.00	0.90	PFC	NA	0.90	2003
Stream Total		**1.60**	**1.10**	**2.70**	**Total PFC/NA**		**1.60**	
Badger Springs Wash	41-A	**1.76**	**0.00**	**1.76**	**FAR**	**UP**	**1.76**	2002
Big Bug Creek	45-A	**0.83**	**0.00**	**0.83**	**FAR**	**UP**	**0.83**	1995
Bishop Creek	42-A	**2.00**	**0.00**	**2.00**	**PFC**	**NA**	**2.00**	1998

Dry Creek	77-A	**0.80**	**0.00**	**0.80**	**FAR**	**DWN**	**0.80**	2003
Indian Creek	44-A	2.10	0.00	2.10	FAR	DWN	2.10	2003
	44-B	4.00	0.00	4.00	FAR	NAT	4.00	2003
Stream Total		**6.10**	**0.00**	**6.10**	**Total FAR/DWN**		**2.10**	
					Total FAR/NAT		**4.00**	
Indian Creek Tributary	84-A	**0.40**	**0.00**	**0.40**	**PFC**	**NA**	**0.40**	1999
Larry Creek	79-A	**1.00**	**0.00**	**1.00**	**PFC**	**NA**	**1.00**	2003
Larry Creek Tributary	8-A	**0.60**	**0.00**	**0.60**	**PFC**	**NA**	**0.60**	1998
Little Ash Creek	73-A	1.40	0.00	1.40	FAR	DWN	1.40	2003
	73-B	0.40	0.60	1.00	PFC	NA	0.40	2000
Stream Total		**1.80**	**0.60**	**2.40**	**Total FAR/DWN**		**1.40**	
					Total PFC/NA		**0.40**	
Lousy Canyon	78-A	**1.80**	**0.00**	**1.80**	**PFC**	**NA**	**1.80**	2002
Silver Creek	43-A	1.00	0.00	1.00	FAR	UP	1.00	1998
	43-B	2.00	0.00	2.00	PFC	NA	2.00	1998
	43-C	2.00	0.00	2.00	FAR	UP	2.00	1998
Stream Total		**5.00**	**0.00**	**5.00**	**Total FAR/UP**		**3.00**	
					Total PFC/NA		**2.00**	
Sycamore Creek	46-A	1.90	0.70	2.60	FAR	UP	1.90	2000
	46-B	0.60	0.00	0.60	PFC	NA	0.60	2003
	46-C	1.20	2.00	3.20	PFC	NA	1.20	2003
Stream Total		**3.70**	**2.70**	**6.40**	**Total PFC/NA**		**1.80**	
					Total FAR/UP		**1.90**	

Overall Total for AFNM	***BLM***	***Other***	***Total***	***PFC/NA***	***FAR/UP***	***FAR/NAT***	***FAR/DWN***	***NF***
	47.79	***7.50***	***55.29***	***18.30***	***16.39***	***8.80***	***4.30***	***0.00***

Appendix Q-2. Riparian Functional Condition – Bradshaw-Harquahala

Definitions				
Conditions:	PFC = Proper Functioning Condition	Trends:	UP = Upward Trend	NA = Not Applicable
	FAR = Functioning At Risk		NAT = No Apparent Trend	
	NF = Non-Functioning		DWN = Downward Trend	

BRADSHAW-HARQUAHALA PLANNING AREA								
Stream	**Segment #**	**BLM (miles)**	**Other (miles)**	**Total (miles)**	**Condition**	**Trend**	**Miles per Condition/Trend**	**Year Evaluated**
Agua Fria River	1-D	1.54	0.62	2.16	PFC	NA	1.54	1997
	1-E	0.85	0.65	1.50	FAR	NAT	0.85	1997
	1-F	0.77	0.50	1.27	FAR	NAT	0.77	1997
	1-G	2.65	0.00	2.65	PFC	NA	2.65	1997
	1-Q	0.60	0.00	0.60	FAR	UP	0.60	1995
Stream Total		**6.41**	**1.77**	**8.18**	**Total PFC/NA**		**4.19**	
					Total FAR/UP		**0.60**	
					Total FAR/NAT		**1.62**	
Antelope Creek	9-A	**1.90**	**0.00**	**1.90**	**FAR**	**UP**	**1.90**	2000
Antelope Creek	67-A	2.00	0.60	2.60	FAR	NAT	2.00	2004
	67-B	0.70	0.10	0.80	PFC	NA	0.70	2004
	67-C	1.00	0.80	1.80	PFC	NA	1.00	2004
Stream Total		**3.70**	**1.50**	**5.20**	**Total PFC/NA**		**1.70**	
					Total FAR/NAT		**2.00**	
Arrastre Creek	16-A	0.20	1.10	1.30	FAR	DWN	0.20	2001
	16-B	0.70	0.10	0.80	FAR	DWN	0.70	2001
	16-C	1.60	3.50	5.10	PFC	NA	1.60	2004
Stream Total		**2.50**	**4.70**	**7.20**	**Total PFC/NA**		**1.60**	
					Total FAR/DWN		**0.90**	
Banty Creek	27-A	1.20	1.30	2.50	PFC	NA	1.20	1998
	27-B	2.40	1.80	4.20	PFC	NA	2.40	1998
	27-C	2.00	1.20	3.20	FAR	NAT	2.00	2004

	Stream Total	**5.60**	**4.30**	**9.90**		**Total PFC/NA**	**3.60**	
						Total FAR/NAT	**2.00**	
Big Bug Creek	45-C	**1.00**	**1.00**	**2.00**	**NF**	**NA**	**1.00**	1998
Bitter Creek	22-A	**1.85**	**0.00**	**1.85**	**FAR**	**DWN**	**1.85**	2000
Black Canyon Creek	2-A	1.04	0.00	1.04	PFC	NA	1.04	2000
	2-B	1.40	0.00	1.40	FAR	NAT	1.40	1997
	2-C	1.35	0.15	1.50	FAR	DWN	1.35	1997
	2-D	1.96	0.00	1.96	FAR	NAT	1.96	1997
	2-E							
		1.54	0.00	1.54	FAR	NAT	1.54	1997
	2-F	2.80	0.00	2.80	FAR	NAT	2.80	1997
	2-G	0.72	0.00	0.72	FAR	NAT	0.72	1997
	2-H	1.92	0.00	1.92	FAR	NAT	1.92	1997
	2-I	1.11	0.12	1.23	FAR	NAT	1.11	1997
	2-J	0.85	0.00	0.85	FAR	NAT	0.85	1997
	Stream Total	**14.69**	**0.27**	**14.96**		**Total PFC/NA**	**1.04**	
						Total FAR/NAT	**12.30**	
						Total FAR/DWN	**1.35**	
Boulder Creek	34-B	1.50	1.90	3.40	PFC	NA	1.50	1998
	34-C	4.50	3.00	7.50	PFC	NA	4.50	1998
	34-D	1.40	1.40	2.80	PFC	NA	1.40	1998
	Stream Total	**7.40**	**6.30**	**13.70**		**Total PFC/NA**	**7.40**	
Brown's Canyon	3-A	**0.40**	**0.00**	**0.40**	**FAR**	**DWN**	**0.40**	2000
Buckhorn Spring	24-A	**0.40**	**0.00**	**0.40**	**PFC**	**NA**	**0.40**	2003
Bumble Bee Creek	6-A	0.54	0.00	0.54	FAR	NAT	0.54	1998
	6-D	0.62	0.00	0.62	FAR	NAT	0.62	2002
	Stream Total	**1.16**	**0.00**	**1.16**		**Total FAR/NAT**	**1.16**	
Buzzard Roost Creek	25-A	**0.60**	**0.00**	**0.60**	**PFC**	**NA**	**0.60**	1998
Castle Creek	4-A	0.81	0.00	0.81	FAR	NAT	0.81	2000
	4-B	0.81	0.00	0.81	FAR	NAT	0.81	1998
	4-C	1.02	0.00	1.02	FAR	NAT	1.02	1998
	Stream Total	**2.64**	**0.00**	**2.64**		**Total FAR/NAT**	**2.64**	
Cherry Creek	18-B	0.15	0.20	0.35	PFC	NA	0.15	1998
	18-C	0.10	0.70	0.80	FAR	UP	0.10	1998
	Stream Total	**0.25**	**0.90**	**1.15**		**Total PFC/NA**	**0.15**	
						Total FAR/UP	**0.10**	
Cottonwood Creek	15-A	0.60	0.15	0.75	PFC	NA	0.60	2003
	15-B	1.10	3.70	4.80	FAR	NAT	1.10	2003

	15-C	0.80	0.20	1.00	FAR	NAT	0.80	2003
	Stream Total	**2.50**	**4.05**	**6.55**		**Total PFC/NA**	**0.60**	
						Total FAR/NAT	**1.90**	
Cottonwood Gulch	38-B	**0.82**	**0.17**	**0.99**	**FAR**	**NAT**	**0.82**	1998
Cow Creek	83-A	**0.40**	**0.80**	**1.20**	**FAR**	**NAT**	**0.40**	2000
East Antelope Creek	68-B	**0.90**	**1.40**	**2.30**	**PFC**	**NA**	**0.90**	2004
French Gulch	69-A	**1.30**	**0.00**	**1.30**	**FAR**	**UP**	**1.30**	1998
Galena Gulch	47-A	**0.80**	**0.00**	**0.80**	**FAR**	**NAT**	**0.80**	1998
Hassayampa River	14-C	0.70	0.00	0.70	FAR	NAT	0.70	2004
	14-D	0.60	0.80	1.40	FAR	NAT	0.60	2004
	14-E	1.50	1.90	3.40	NF	NA	1.50	2004
	14-F	1.70	1.80	3.50	FAR	NAT	1.70	1995
	14-G	1.90	0.00	1.90	PFC	NA	1.90	1995
	14-H	5.10	0.20	5.30	FAR	UP	5.10	2004
	14-I	1.20	0.00	1.20	PFC	NA	1.20	2001
	14-J	0.00	1.40	1.40	PFC	NA	0.00	2001
	14-K	2.60	0.90	3.50	PFC	NA	2.60	2001
	14-L	0.55	1.45	2.00	PFC	NA	0.55	2001
	14-M	0.40	0.00	0.40	FAR	NAT	0.40	2001
	14-N	0.50	0.00	0.50	PFC	NA	0.50	2001
	Stream Total	**16.75**	**8.45**	**25.20**		**Total PFC/NA**	**6.75**	
						Total FAR/UP	**5.10**	
						Total FAR/NAT	**3.40**	
						Total NF/NA	**1.50**	
Humbug Creek	30-B	1.50	0.47	1.97	FAR	DWN	1.50	2000
	30-C	1.20	0.00	1.20	PFC	NA	1.20	1997
	30-D	0.61	1.82	2.43	FAR	UP	0.61	1997
	30-E	1.20	0.00	1.20	FAR	DWN	1.20	2004
	30-F	2.20	0.70	2.90	FAR	DWN	2.20	2004
	30-H	0.70	3.30	4.00	FAR	NAT	0.70	1997
	30-I	2.20	0.30	2.50	PFC	NA	2.20	1997
	Stream Total	**9.61**	**6.59**	**16.20**		**Total PFC/NA**	**3.40**	
						Total FAR/UP	**0.61**	
						Total FAR/NAT	**0.70**	
						Total FAR/DWN	**4.90**	
Minnehaha Creek	17-B	**0.60**	**0.55**	**1.15**	**FAR**	**NAT**	**0.60**	2000

Oak Creek	19-A	0.75	1.00	1.75	PFC	NA	0.75	1998
	19-B	0.79	0.00	0.79	PFC	NA	0.79	1998
	19-C	0.65	1.65	2.30	FAR	UP	0.65	2004
	19-D	1.30	0.00	1.30	FAR	UP	1.30	2004
	19-E	0.20	0.50	0.70	FAR	UP	0.20	2004
	Stream Total	**3.69**	**3.15**	**6.84**		**Total PFC/NA**	**1.54**	
						Total FAR/UP	**2.15**	
S. Fork Spring Creek	21-A	**0.20**	**0.50**	**0.70**	**FAR**	**NAT**	**0.20**	1999
Spring Creek	20-A	0.25	2.25	2.50	FAR	NAT	0.25	1999
	20-B	0.60	2.00	2.60	FAR	UP	0.60	1999
	20-C	0.40	0.00	0.40	FAR	NAT	0.40	2003
	20-D	0.90	0.00	0.90	FAR	NAT	0.90	2003
	Stream Total	**2.15**	**4.25**	**6.40**		**Total FAR/UP**	**0.60**	
						Total FAR/NAT	**1.55**	
Tiger Canyon	66-A	**0.70**	**0.00**	**0.70**	**FAR**	**NAT**	**0.70**	1998
Tule Creek	10-E	**1.27**	**0.00**	**1.27**	**PFC**	**NA**	**1.27**	2000
Weaver Creek	70-B	**0.40**	**0.80**	**1.20**	**FAR**	**NAT**	**0.40**	1999

Overall Totals for Bradshaw-Harquahala	***BLM***	***Other***	***Total***	***PFC/NA***	***FAR/UP***	***FAR/NAT***	***FAR/DWN***	***NF***
	92.59	***51.45***	***144.04***	***35.14***	***12.36***	***33.19***	***9.40***	***2.50***

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