

(928) 348-4400

6800

May 5, 2005

Dear Cooperating Agency and Affected Parties:

The Bureau of Land Management (BLM) Safford Field Office (SFO), in coordination with The Nature Conservancy (TNC) and the Arizona Game and Fish Department (AGFD), jointly propose to introduce Gila topminnow and Desert pupfish into multiple springs and streams that lie within the watershed of the south rim of Aravaipa Canyon. Tributaries for inclusion within the project range are as follows: Oak Grove Canyon (T.7S R.18E), Parson Canyon (T.7S R.18E, T.6S R.18E), and Virgus Canyon (T.7S R.18E, T.6S R.18E). Other suitable sites and/or tributaries found within the south rim of Aravaipa Creek capable of sustaining fish populations would also be considered as potential introduction sites.

This project was proposed as a result of the interagency Memorandum of Understanding (MOU) that was signed in 1996 for Gila topminnow and Desert pupfish introductions on federal lands in Arizona. Cooperating agencies are the BLM, United States Fish and Wildlife Service (USFWS), and the Arizona Game and Fish Department (AGFD). Project Scoping occurred on site of proposed projects where representatives of BLM, TNC, USFWS, and AGFD were present on three different occasions during the scoping process. We thank you for your involvement in this project.

Enclosed is the combined Finding of No Significant Impact (FONSI) and Decision Record (DR) for this project. This decision of the authorized officer is subject to appeal (43 Code of Federal Regulations Part 4). A notice of appeal must be filed with the officer who made the decision within 30 days of the date of publication or date of service [4.411(a)]. Appeals shall be addressed to: Bonnie Winslow, Assistant Field Office Manager, Safford Field Office, at 711 S. 14th Ave., Safford, AZ 85546.

FONSI/DECISION RECORD

EA Number: AZ-040-2003-0031

Lease/Serial/Case File No. Not Applicable

BLM Office: Safford Field Office

DECISION:

It is my decision to accept the proposed action as stated in EA (AZ-040-2003-0031): Establishment of Gila Topminnow (*Poeciliopsis occidentalis occidentalis*) and Desert Pupfish (*Cyprinodon macularius macularius*) into Multiple Springs and Streams within the Watershed of the South Rim of Aravaipa Canyon. This will include the establishment of two endangered fish species, desert pupfish and Gila topminnow to springs and tributaries along the south rim of Aravaipa Creek. Preferably, this action will be initiated in spring or autumn of 2005 and continued until at least seven sites have been populated with these fish or it has been determined that there is a limiting factor that will not allow the fish to survive.

FINDING OF NO SIGNIFICANT IMPACTS:

Based upon Environmental Assessment AZ-040-2003-0031, I conclude that this action is in conformance with the approved land use plan (Safford District Resource Management Plan) and will result in no significant impact to the human environment. Therefore, preparation of an Environmental Impact Statement is not necessary.

RATIONALE FOR DECISION:

The purpose of the proposed action is to assist in the recovery of two endangered fish species, Gila topminnow and desert pupfish. In order to obtain the objective of downlisting the desert pupfish and Gila topminnow, the following actions are necessary: protection of natural populations, reestablishment of new populations, establishment of refuge populations, development of protocols for the exchange of genetic material between reestablished populations, determination of factors affecting population persistence, and information and education to foster recovery efforts.

The project will assist in establishing and securing new reproductive, self-sustaining populations of the above mentioned species within their historical range. This is vital because the fishes of the Gila River system are all biologically imperiled to various degrees and are included on Federal, State, and BLM sensitive species lists. Furthermore, Section 7(a)(1) of the Endangered Species Act (ESA) directs Federal agencies to utilize their authorities to carry out affirmative conservation programs that would recover endangered and threatened species (50 CFR 402.01). The Bureau of Land Management is directed to encourage or initiate the reintroduction of listed wildlife, fish, and plants onto suitable habitat when such actions promote recovery of the species.

The following elements have been analyzed and would not be affected: ACEC, T&E animals, wilderness, livestock grazing, recreation, prescribed fire, and land ownership/private property rights.

MITIGATION MEASURES:

The following terms and conditions will implement reasonable and prudent measure 1:

- a. In years when livestock are present on the South Rim allotment, annual monitoring of utilization of woody riparian vegetation and physical impacts on streambanks will be done by permittee and / or BLM before, during, and after cattle have been in the pasture. A fenced riparian enclosure will be constructed if utilization in the area exceeds 30 percent of woody riparian species (measured as a percentage of apical meristems within 2 m (6 ft) of the ground grazed) or trampling, chiseling, or other physical impact by livestock on more than 20 percent of the alterable streambanks by length occurs in any two out of three years. If an enclosure becomes necessary under these terms, it shall be designed in cooperation with FWS and AGFD. BLM shall include results of monitoring in an annual report to FWS, due by March 1 of each year, starting in March 2006. This report can be combined with the reporting requirement of other existing BOs for ease in reporting. If the dates differ, please contact our office with the date that we can expect the combined report from your office.
 - b. During the winter grazing period, inspect and monitor each reestablishment site and any sites that are occupied through dispersal.
 - c. Inspect and maintain any enclosure a minimum of three times per year; inspection reports from the permittee may be used to accomplish this term and condition. The permittee will report their inspection and maintenance work annually. Livestock will be removed from the Oak Grove Canyon sites or the potential enclosure of Parsons Springs, if built, immediately upon the permittee learning of such an event. FWS will be notified of any enclosure fence damage and any livestock intrusion into these sites within 48 hours of our knowledge of such an event. Notification may be by telephone, electronic transmission, facsimile, or letter. A brief summary of such events will be included in our annual reports to FWS.
 - d. During any activities that involve work in the stream channel (fence, road, or water development activities), all reasonable efforts to manage activities within the channel to minimize mortality and harm to Gila topminnow and desert pupfish will be taken. No heavy equipment shall be used within wetted areas or channels. All reasonable efforts shall be made to ensure that no pollutants enter surface waters during any activities.
 - e. All contacts with AGFD and academic institutions and data collected should be included in our annual report to FWS.
2. Conduct all proposed actions to minimize harm (loss and alteration) to occupied Gila topminnow and desert pupfish habitat.

The following terms and conditions will implement reasonable and prudent measure 2:

- a. Monitor recreational use of roads and road conditions through the action area. If the road

condition deteriorates and results in excess sediment run off, corrective action should be taken to control erosion. Any wildcat roads that are created shall be closed as soon as they are discovered. Wherever possible, any illegal road or track should be rehabilitated. Roads can negatively affect watershed function and hydrological processes and also allow human access. Human access and proximity to roads is a factor in the spread of nonnative aquatic species.

- b. For all construction, development, or maintenance projects within the watershed, best management practices will be used to control soil movement from newly exposed, erodible soils. Monitoring of sedimentation in downstream occupied habitats shall occur before, during and after the project is completed to document successful erosion control.
 - c. Include all activities under these terms and conditions within the annual report.
3. Monitor and document dates and levels of direct incidental take (mortality) and adverse effects to occupied and periodically occupied habitat; include this information in your annual report.

The following terms and conditions will implement reasonable and prudent measure 3:

- a. Spot monitoring by a biological monitor is acceptable for long-duration projects outside the channel of water (such as fence construction, road work, or water development or improvements) in the Aravaipa Watershed. The biological monitor shall monitor for the presence of dead or dying fish within the surface waters downstream of the project activity. FWS and AGFD shall be notified immediately by telephone or e-mail upon detection of more than 20 dead or dying fish of any species. This will be a clear indicator something is wrong and does not require specialized biological knowledge, as opposed to the skills needed to identify (specifically) Gila topminnow or desert pupfish. This does not apply to activities associated with routine fence maintenance. For work conducted in water, a biological monitor will always be present during project operations.
 - b. Continue coordination through FWS, AGFD, and participating academic institutions for the annual monitoring of the Aravaipa fish communities. The annual monitoring will include all sites where Gila topminnow and desert pupfish are reestablished. Results of the annual monitoring should be included in our annual report.
4. BLM will maintain a complete and accurate record of actions which may result in take through mortality of fish and adverse effects to occupied and periodically occupied Gila topminnow and desert pupfish habitat.

The following terms and conditions will implement reasonable and prudent measure 4:

- a. Records of enclosure and gap fence construction, maintenance, and monitoring shall be maintained. A brief summary on enclosure construction, maintenance, repair, livestock intrusion, and other relevant information will be furnished in the annual report.
- b. In our annual report, we will briefly summarize for the previous calendar year; 1)

Copies of the supporting Environmental Assessment No. AZ-040-2003-0031 are available upon request. If you have any questions regarding this notice, please contact Heidi Blasius, SFO Fisheries biologist, at (928)348-4400 or Marlo Draper, Planning and Environmental Coordinator at (928)348-4400.

Sincerely,

Marlo Draper
Planning and
Environmental
Coordinator

Enclosure:

- FONSI/Decision Record – Aravaipa

Cc:

Ken Wiley, Arizona Chapter of The Nature Conservancy
Rob Bettaso, Research Branch, Arizona Game and Fish Department
Gerry Perry, Arizona Game and Fish Department, Region V
Marty Tuegel, United States Fish and Wildlife Service, Arizona Ecological Services,
Tucson Office
Bob Broscheid, Habitat Branch, Arizona Game and Fish Department

ENVIRONMENTAL ASSESSMENT

Establishment of Gila Topminnow and Desert Pupfish Into Multiple Springs and Streams Within the Watershed of the South Rim of Aravaipa Canyon.

EA Number: AZ-040-2003-0031

Lease/Serial/Case File No. Not applicable

Applicant: U.S. Bureau of Land Management

BLM Office: Heidi B. Blasius, BLM, Safford Field Office

Location of Proposed Action: South Rim of Aravaipa Canyon (see map)

Conformance With applicable Land Use Plan

This proposed action is subject to the following land use plan:

Name of Plan: Safford District Resource Management Plan (RMP), Environmental Impact Statement (EIS)

Date Approved: Record of Decision (ROD) Part I (September 1992) and Part II (July 1994).

The proposed action has been reviewed to determine if it conforms to the applicable land use plan as required by 43 CFR 1610.5.

This plan is in conformance with the applicable land use plan:

CHECK ONE

YES **NO**

Remarks: The RMP (Page 135) states, “animal species receiving the highest priority for funding and habitat improvement projects are: 1) federally listed threatened and endangered species, 2) priority wildlife species as identified by the Bureau of Land Management (BLM) in cooperation with the Arizona Game and Fish Department (AGFD), and 3) other species, habitats or features of local importance.”

Related Documents: Mescal-Dripping Springs Habitat Management Plan (HMP), September 1992.

Under the Direct Actions outlined in the Mescal-Dripping Springs HMP, Item 3.2(e) states that AGFD will begin stocking Gila topminnow (*Poeciliopsis occidentalis occidentalis*) and Desert pupfish (*Cyprinodon macularius macularius*) into suitable habitat in the Aravaipa watershed as reestablishment plans are completed and personnel are available.

The proposed establishment of Gila topminnow and desert pupfish into the Aravaipa watershed is consistent with both the draft revised Gila Topminnow Recovery Plan (Weedman, 1999, not yet signed by the Service) and the Desert Pupfish Recovery Plan (USFWS, 1993).

PURPOSE/NEED FOR PROPOSED ACTION

The purpose of the proposed action is to assist in the recovery of two endangered fish species, the Gila topminnow and desert pupfish. In order to obtain the objective of downlisting the desert pupfish and Gila topminnow, the following actions are necessary: protection of natural populations, reestablishment of new populations, establishment of refuge populations, development of protocols for the exchange of genetic material between reestablished populations, determination of factors affecting population persistence, and information and education to foster recovery efforts.

The project will assist in securing reproductive, self-sustaining populations of the above mentioned species within their historic range. This is vital since the fishes of the Gila River system are all biologically imperiled to various degrees and are found on Federal, State, and BLM sensitive species lists. Furthermore, Section 7(a)(1) of the Endangered Species Act (ESA) directs Federal agencies to utilize their authorities to carry out affirmative conservation programs that would recover endangered and threatened species (50 CFR 402.01). The Bureau of Land Management is directed to encourage or initiate the reintroduction of listed wildlife, fish, and plants onto suitable habitat when such actions promote recovery of the species.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Proposed Action: The Bureau of Land Management, Safford Field Office, in coordination with the Arizona Chapter of the Nature Conservancy (TNC), Arizona Game and Fish Department (AGFD), and United States Fish and Wildlife Service (Service) jointly propose to introduce Gila topminnow and desert pupfish into multiple springs and streams that lie within the watershed of the south rim of Aravaipa Canyon. Tributaries for inclusion within the project range are as follows: Oak Grove Canyon (T.7S R.18E), Parson Canyon (T.7S R.18E, T.6S R.18E), and Virgus Canyon (T.7S R.18E, T.6S R.18E). Other suitable sites and/or tributaries found within the south rim of Aravaipa Creek capable of sustaining fish populations would also be considered as potential establishment sites.

The initial stocking will occur during summer or early fall of 2005 and will consist of up to 500 Gila topminnow and/or desert pupfish per stocking site, depending on availability of fish from donor sources. Populations will be augmented over time, as needed, until self-sustaining populations become established. Bureau of Land Management, Service, and AGFD will be responsible for collecting, transporting, and stocking fish. The genetic lineage and origin of Gila topminnow and desert pupfish stock for reestablishment will be consistent with the draft revised Gila topminnow recovery plan (Weedman, 1999, not yet signed by the Service) and the desert pupfish recovery plan (USFWS, 1993). The decision to discontinue augmentations at a site will be decided jointly by BLM, Service, and AGFD.

The Gila topminnow will be triple sorted by skilled fish biologists to eliminate any chance of contamination by mosquitofish. This is the accepted protocol to prevent misidentification of poeciliid fishes. After being sorted, Gila topminnow will be placed in fish haulers with potable water from Arizona Game and Fish Department. The use of potable water will reduce the likelihood of aquatic plants or aquatic invertebrates being transported along with the fish to the stocking locality. The water will be treated with stress coat to remove chlorine and any other additives added to potable water. Stress coat also replaces the natural mucous slime coating on fish scales and skin when it has

been damaged by handling, netting, or other forms of stress. The fish establishment efforts will follow appropriate protocols and respective recovery plans, and will comply with the provisions of existing permits authorizing the fish stockings. Bureau of Land Management and AGFD will coordinate stocking efforts with the Service prior to stocking the sites.

Bureau of Land Management, Arizona Game and Fish Department, and United States Fish and Wildlife Service will transport fish to the proposed augmentation sites from a variety of sources. In addition, the terrain at the various augmentation sites can be rugged. For these reasons, a variety of transport methods will likely be used, and may include transport by helicopter, truck, mule, or backpack. Appropriate methodologies will be used, regardless of the type of transport provided. Motorized vehicles used to transport fish will stay on existing roads. No new roads or off road travel will be permitted.

The proposed action is consistent with on-going and foreseeable future land uses including: (1) prescribed burning within the Aravaipa watershed drainage, consistent with the Aravaipa Prescribed Burn Plan and associated environmental assessment (EA # AZ-040-08-25) approved in March 1999, and (2) grazing activities as delineated in the South Rim Allotment Management Plan (AMP) No. 4259.

The following monitoring is included as part of the proposed action:

Monitor Gila topminnow and/or desert pupfish populations, appropriate aquatic habitat variables, riparian vegetation, and stream banks at least once annually, using accepted BLM and AGFD standards.

Monitor for fish kill immediately following the first runoff event following prescribed fires in the watershed.

A report of monitoring results will be submitted to the Service annually.

No Action Alternative: Under this alternative, Gila topminnow and desert pupfish would not be introduced into suitable habitat in the Aravaipa Creek watershed.

EXISTING ENVIRONMENT

General Setting: Scientific names for plants and animals mentioned in this Environmental Assessment are listed in Appendix 1. The canyons and streams within the project area are referred to as the south rim of Aravaipa Creek (Appendix 2). The south rim area is characterized by moderate slopes, steep drainages, and several major north-south canyons. The climate is mild with hot, dry summers and cool winters. The average annual precipitation in the area is approximately 12 inches. The precipitation pattern is bimodal with rainy seasons between January and March and July and September.

Although, not inclusive, several perennial water sources have been identified within the projects geographic scope (Oak Grove Canyon [T.7S R.18E], Garden Spring Canyon [T.7S R.19E], Parson Canyon [T.7S R.18E, T.6S R.18E], Turkey Creek [T.7S R.18E, T.6S R.18E], and Virgus Canyon

[T.7S R.18E, T.6S R.18E]). All of the above mentioned sites are considered suitable stocking locations for Gila topminnow and desert pupfish.

Oak Grove Canyon

Oak Grove Canyon is a tributary to Turkey Creek and includes three unconnected stretches of perennial stream identified for possible reestablishment efforts. The upper perennial reach of this stream (T.7S R.18E sec13 – elev. 4363 ft.) starts on land owned and managed by TNC. This reach begins approximately ½ mile south of the boundary with BLM administered lands, and flows northeasterly for approximately 1 ¼ mile before going subsurface. The creek is interspersed with a dense canopy of Arizona alder (*Alnus oblongifolia*), velvet ash (*Fraxinus velutina*), cottonwood (*Populus fremontii*), Goodding willow (*Salix gooddingii*), Arizona sycamore (*Planatus wrightii*), and open areas. The understory is dominated by deer grass (*Muhlenbergia rigens*). This portion of the stream is fishless, although invertebrates and aquatic vegetation are present. The stocking site can be accessed by a fairly rough jeep trail, which crosses the stream in one place. In the 1960's over grazing resulted in loss of ground cover causing accelerated erosion and channel downcutting. Current land management practices are allowing these lands the time to heal and begin to function properly. Despite some concern with stream stability, the banks are highly vegetated with a diversity of herbaceous and woody plant species present. The upper portion of this perennial stretch is owned by TNC and the remaining portion is owned and managed by BLM.

The middle canyon (T.7S R.19E, sec 6, 7 – elev. 3540 ft.) is owned and managed by BLM with TNC as the grazing permittee. Access is limited and one must hike in from the confluence of Turkey Creek (approximately two miles) to reach the site. The canyon is fairly narrow and stable, both laterally and vertically. Two species of native fish, desert sucker (*Pantosteus clarki*) and speckled dace (*Rhinichthys osculus*), exist within the middle (and lower) portions of the creek,. The stream is comprised mostly of bedrock pools and runs, with a mixture of cobble, gravel, sand, and silt bottoms. A 20 foot waterfall is located at the upper end of the perennial stretch and flows into a large, deep pool. This segment of stream is separated from the lower perennial stretch by approximately one mile and from the upper perennial stretch by approximately one mile.

The lower-most perennial portion of the creek flows approximately for ½ mile and may also be suitable for future stocking activities. This portion of the creek is more canyon-bound than either the upper or middle stretches of the creek, creating a more shaded environment during the day. Oak Grove canyon currently supports two species of native fish, speckled dace and desert sucker.

Parsons Grove Spring

Parsons Grove Spring (T.7S R.18E sec14 – elev. 4485 ft.), within Parsons Canyon, is a boxed springhead that is comprised of two interconnected pools. The spring is located at the base of a descending slick rock and supports a 50 yard perennial reach. The stream goes subsurface for 3 ½ miles below Parson Grove before resurfacing. This reach flows through a steep, narrow, boulder-strewn gorge with several pools. Vegetation is comprised of a sycamore overstory and a deergrass understory. No fish exist in this stretch. Lowland leopard frogs (*Rana yavapaiensis*), canyon tree frogs (*Hyla arenicolor*), and common black hawks (*Buteogallus anthracinus*) occur along this reach. Access is limited to one unmaintained jeep trail, which is mostly used by hunters and for hiker access. The Bureau of Land Management and TNC share ownership of this water and TNC holds the grazing

permit for the lands solely owned and managed by BLM.

Bleak Springs

Bleak Springs (T.7S R.18E sec15 – elev. 4610 ft.) is a small, isolated spring located above Virgus Canyon on TNC land near an old homestead. Its location keeps it isolated and protected from most high water events. Access to Bleak springs is limited to one unmaintained jeep trail that must be hiked from Virgus Canyon to the spring, a distance of approximately ¼ mile. The previous owners constructed a spring box around the spring to contain the flow. The spring currently supports aquatic algae and invertebrates. No fish have been observed in the spring.

Cement Tank Spring

Cement Tank Spring, located within Virgus Canyon (T.7S R.18E sec 23 – elev. 4412 ft.) is also a boxed spring situated above the Virgus Canyon floodplain. Water from the spring overflows the cement tanks and runs into the Virgus Canyon streambed. Virgus Canyon creek flows intermittently for about ¼ mile downstream from the tank. The banks are stable in this reach and grounded in bedrock. Access to Cement Tank Spring is limited to one unmaintained jeep trail. Segments of the canyon exist on BLM lands and TNC holds all grazing permits for this area. No fish exist in this spring.

Virgus Canyon

Sycamore Creek at the Virgus Canyon confluence (T.7S R.18E sec10-15 – elev. 4414 ft.) is located within BLM managed Aravaipa Canyon Wilderness Area and is just north of Bleak Springs. The Arizona Chapter of the Nature Conservancy holds the grazing permit for this area. The perennial stretch of water is fairly shallow and slow moving. Access is limited, requiring hiking from a jeep trail to get to the site. No fish exist in this stream segment.

EXISTING RESOURCES/ISSUES RELEVANT TO THE PROPOSED ACTION

Areas of Critical Environmental Concern (ACEC): The Oak Grove Canyon tributary is inside the Turkey Creek Riparian Area of Critical Environmental Concern (ACEC). Virgus Canyon is just east of the Table Mountain Research Natural Area (RNA) ACEC and falls within the project area boundary.

The Turkey Creek Riparian ACEC was established to protect the fragile and sensitive cultural and scenic values, wildlife resources, and riparian habitat/vegetation.

Table Mountain Research Natural Area ACEC contains an alligator juniper savanna, a unique plant community known in less than 20 locations. The bordering Sycamore and Saddle canyons support a white oak woodland that contain Mexican blue oak (*Quercus oblongifolia*) at the northernmost limit of its range

Threatened and Endangered (T&E) Animals: A list of threatened, endangered, proposed, and candidate species within the project area or species likely to be affected by the project was developed using the AGFD's Heritage Data Management System (Table 1).

Table 1. Endangered, Threatened, Proposed, Candidate, or Wildlife of Special Concern in Arizona within 3-miles of the proposed project area, with Federal and State status.

Species	Federal Endangered	Federal Threatened	Federal Candidate	Wildlife of Special Concern in Arizona (AGFD 1996)
Loach Minnow ¹		X		X
Spikedace ¹		X		X
Yellow-Billed Cuckoo			X	X
Common Black Hawk				X

¹: critical habitat designated in or around the project area.

Livestock Grazing: The proposed project area falls within the South Rim Allotment of the Winkelman Planning Unit. The 40,902 acre South Rim Allotment is located in Graham and Pinal counties, about 8 miles northwest of Klondyke Arizona, on the south side of Aravaipa Canyon. A portion of the allotment is in the Aravaipa Wilderness Area. The elevation varies from about 3,100 feet at Aravaipa Creek to 6,200 feet at the top of Table Mountain. The Allotment is divided by Virgus Canyon into two units, West South Rim and East South Rim. When signed in 1989, the South Rim RMP (No. 4529) authorized the use of 5,796 AUMs with a grazing period from March 1st – February 28th. However, the final decision notice in the 1991 BLM Safford District RMP called for immediate initiation of a 50% suspension (2,898 AUMs) on the South Rim Allotment in order to accelerate rehabilitation of uplands and riparian areas.

In 1995, TNC received a 10-year grazing lease on the South Rim Allotment. Between 1996 and 2001, TNC requested non-use to improve resource conditions on the public lands. This request was approved by the Safford Field Office. The Arizona Chapter of the Nature Conservancy also requested non-use for the 2002 grazing year so that prescribed burns could be conducted on the allotment. Bureau of Land Management along with cooperators from TNC conducted a prescribed burn on the South Rim allotment during spring 2003.

Recreation: Recreational use in the vicinity of the proposed project area is light. It consists mostly of dispersed recreation associated with equestrian use, off-highway vehicle use, hiking, camping, and hunting.

Prescribed Fire: The proposed action includes the continued use of prescribed fire by the BLM and TNC on oak woodlands and scrub grassland uplands, adjacent to and within the watersheds within the project area. The environmental impacts of the prescribed burns on BLM-administered lands are evaluated in EA # AZ-040-08-25.

Landownership/Private Property Rights: The proposed project area includes private land (all owned and managed by TNC) and BLM administered public land. As detailed in the proposed action, TNC is a cooperator with the proposed project.

ENVIRONMENTAL IMPACTS

Determine Scope of the Assessment: This project was proposed as a result of the interagency Memorandum of Understanding (MOU) that was signed in 1996 for Gila topminnow and desert pupfish introductions on federal lands in Arizona. Participating agencies are the BLM, Service, and AGFD.

Project Scoping occurred on site of proposed projects where representatives from BLM, TNC, Service, and AGFD were present on three different occasions (September 11, 2001; January 17-18, 2002; and February 28, 2002). The key individuals from each organization are Heidi Blasius (BLM), Russell Fox, (BLM), Mark Haberstich (TNC), Ted McRae (BLM), and Jeremy Voeltz (AGFD).

Issues Identified/Critical Elements: The proposed action will not affect the following critical elements (Table 2) and these elements will not be carried forward for analysis: Air Quality, Cultural Resources, Environmental Justice/Socioeconomics, Flood Plains, Hazardous Materials, Native American Religious Concerns, Prime/Unique Farmland, Solid Waste, Threatened or Endangered (T&E) Plants, Water Quality, Wetland/Riparian, and Wild Scenic Rivers.

Table 2. Critical Elements analyzed for this project.

CRITICAL ELEMENTS (required by federal law)	AFFECTED		CRITICAL ELEMENTS (required by federal law)	AFFECTED	
	YES	NO		YES	NO
Air Quality		X	ACECs	X	
Cultural Resources		X	T&E Animal	X	
Environmental Justice/ Socioeconomics		X	Invasive/Noxious Plants	X	
Flood Plains		X	VRM	X	
Hazardous Materials		X	Wilderness	X	
Native American Religious Concerns		X			
Prime/Unique Farmland		X			

Table 2 Continued. Critical Elements analyzed for this project.

Solid Waste		X			

T&E Plant		X		
Water Quality		X		
Wetland/Riparian		X		
Wild & Scenic River		X		

The following critical elements, Area of Critical Environmental Concern (ACEC), Invasive/Noxious Plants, T&E Animal, Visual Resource Management (VRM), and Wilderness may be affected (positively or negatively) in the proposed action, and therefore are carried forward for analysis. Other issues evaluated for this proposed project include livestock grazing, recreation, prescribed fire, and landownership/private property rights.

DESCRIPTION OF IMPACTS

ACECs: Both the Table Mountain Research Natural Area (RNA) ACEC and the Turkey Creek ACEC were established to prioritize management of the plant communities therein as well as for wildlife, natural, and cultural resources. The proposed action would increase the biodiversity and the scientific and research values within the Turkey Creek Riparian ACEC and the Table Mountain Research Natural Area ACEC. The stocking and subsequent establishment of two endangered fish species will increase the natural resource value of these two ACEC's.

Invasive/Noxious Plants: The proposed action will involve collecting native fish from either wild or captive populations and transferring them to suitable aquatic habitat located on the South Rim of Aravaipa Canyon. The potential exists for nonnative/invasive plants species to be inadvertently collected, transferred, and released with the native fish. All efforts will be made to prevent this from happening and will include sorting each fish to eliminate any chance of contamination by nonnative aquatic species, observing each individual fish and making sure that no vegetation is attached, and using potable water from the Arizona Game and Fish Department. This will reduce the likelihood of aquatic plants or aquatic invertebrates being transported along with the fish to the stocking locality.

T&E Animals: The proposed action is expected to result in the establishment of at least 3-5 populations of Gila topminnow and/or desert pupfish. The establishment of these new populations would contribute significantly toward the recovery of these two endangered fishes as well as the biological diversity and richness of the South Rim of Aravaipa watershed.

Speckled dace and desert suckers occupy the lower and middle perennial portions of Oak Grove Canyon. If Gila topminnow and/or desert pupfish are introduced into these stretches of creek (or are washed down from upper Oak Grove Canyon through a large flood event) they are expected to co-exist. These native fishes historically occurred together throughout the Gila River Basin (Chamberlain, 1904).

The Gila topminnow and/or desert pupfish stocked into sites within the project area would be relatively secure. There is a remote possibility that individual fishes may be trampled by livestock

using upper Oak Grove Canyon, Garden Grove Canyon (tributary to Oak Grove Canyon), Virgus Canyon, and Parsons Canyon, or hit by vehicles at the road crossing at upper Oak Grove Canyon. However, these fish are expected to shy away from livestock and slow moving vehicles.

Because much of the drainage connecting Virgus Canyon, Parsons Canyon, and Oak Grove Canyon to Aravaipa Creek is dry, it is unlikely that Gila topminnow and/or desert pupfish would move downstream through regular annual floods or rainy season events. In the unforeseen event of a large (30 year or more) flood, it is possible that Gila topminnow and/or desert pupfish may move downstream into Aravaipa Creek.

Historical reestablishments of Gila topminnow have been attempted in or directly around Aravaipa creek; twice in 1967 (stocked into a marsh near the creek in Pinal County and directly into the creek in Graham County both from Monkey Spring) and again in 1977 (upper Klondyke area of Aravaipa Creek). All three attempts failed and Gila topminnows were extirpated from Aravaipa Creek (Minckley and Brooks, 1985 and Weedman and Young, 1997) likely due to flash flooding events or predation from the larger native cyprinids.

Although efforts to reestablish Gila topminnow populations failed in Aravaipa Creek, it is presently still considered one of the last strongholds for a diverse assemblage of naturally occurring native fishes in the state of Arizona. Aravaipa Creek supports seven species of native fishes, including the federally threatened loach minnow (*Tiaroga cobitis*) and spikedace (*Meda fulgida*). Additional native fish species found in Aravaipa Creek are Sonora sucker (*Catostomus insignis*), desert sucker, longfin dace (*Agosia chrysogaster*), speckled dace, and roundtail chub (*Gila robusta*).

Gila topminnow and/or desert pupfish may impact or be impacted by spikedace and/or loach minnow were downstream movements to occur. Interaction between species is not likely to occur since spikedace and loach minnow are run and riffle obligate species and Gila topminnow and desert pupfish are noted for their preference to slower moving backwaters and cienegas (Minckley, 1973). Furthermore, aquatic habitat in Aravaipa Canyon is mostly comprised of runs and riffles, with slower moving pools and backwaters comprising only a very small portion of the total habitat (Velasco, 1994; and Velasco, 1997). However, Gila topminnow and desert pupfish may be subjected to predation and competition from both native and nonnative fishes if they disperse into Aravaipa Creek.

Aravaipa Creek is occasionally subjected to periodic influxes of nonnative predatory and competitive fishes thought mostly to come from earth tanks and from upstream movements from the confluence with the San Pedro River. Nonnative species documented from Aravaipa Creek include green sunfish (*Lepomis cyanellus*), red shiners (*Cyprinella lutrensis*), yellow bullhead (*Amerius natalis*), and Western mosquitofish (*Gambusia affinis affinis*). If downstream movements occur, Gila topminnow and or pupfish are unlikely to coexist with these introduced predatory species (Minckley, 1973). The other special status wildlife species that occur in the vicinity of the establishment sites are listed in Table 2. None of these species would be impacted by the proposed action.

Visual Resource Management (VRM): The Turkey Creek ACEC is designated as a Visual Resource Management (VRM) Class II area. The objective of VRM Class II is retention of the landscape characteristics. This classification provides guidelines to retain the existing character of the

landscape. This class includes areas where changes to the landscape must follow the basic element of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Wilderness: Wilderness Areas are considered by many to be the crown jewels of America's public lands. The proposed action would strengthen this designation by increasing biodiversity, scientific, and research values of the Aravaipa Canyon Wilderness Area. In Wilderness Areas, fish will be transported by foot and backpack. The establishment of native endangered fish will not violate any wilderness regulations.

Livestock Grazing: The continuation of livestock grazing under the existing management system is consistent with the proposed action. The terms and conditions pertinent to livestock grazing included in the Biological Opinion from the Service reflect the levels of allowable and current use under the existing grazing strategy. However, if the existing livestock grazing plan on the South Rim Allotment was modified to allow winter use grazing (November 01 through March 01) and provide growing season rest from July 01 through October 31 the riparian habitat would likely continue to improve. Winter use grazing is being used in allotments with riparian habitat and threatened and endangered fish to reduce impacts from livestock grazing (Tim Hughes, BLM, PFO, personal communication, March 10, 2004). Spring grazing (April 01 through June 30) could also be curtailed to allow for native fish breeding and spawning activities.

Grazing will likely resume on the South Rim Allotment at the following authorized levels (as mentioned above) by spring of 2005. Livestock utilization standards within the riparian areas will average less than 40% perennial grass use; whereas, bank alteration will average less than 20%, woody species seedling apical stem browse rate will not exceed 30%, and upland utilization will not exceed 40% perennial grass use. Livestock grazing on BLM administered South Rim Allotment (as mentioned above) may be modified by implementation of the Bureau's Standards and Guides for Rangeland Health or other BLM efforts designed to improve or maintain upland and riparian habitat conditions if needed.

Past grazing activities on private lands precipitated bank erosion, creating cut banks of 10 to 15 feet. However, since the period of non-use (includes the private portions of the project area as well as the BLM administered portions), the banks have begun to stabilize with a diversity of riparian vegetation filling in ground cover. The TNC owned upper portion of Oak Grove Canyon is still accessible to livestock but could be fenced if negative effects caused by cattle were noted. An alternative source of water may be developed for livestock use if the area is fenced. The BLM portion of the upper reach of Oak Grove Canyon is not accessible to livestock because of steep terrain, waterfalls, and large rocks in the drainage. The lower and middle reaches of Oak Grove Canyon are also not accessible to livestock due to the steep and rocky nature of the terrain.

The spring at Parsons Grove is accessible to livestock, however, if negative impacts are noted fencing to exclude cattle along with developing an alternative source of water may be considered to remove cattle from being able to directly access the spring.

Virgus Canyon is the longest of the south rim canyons. The upper seven miles of the canyon is

accessible to livestock, whereas, the lower three miles of the canyon narrows and becomes steep and is not accessible by livestock.

Recreation: Recreational use is light and dispersed in the vicinity of the proposed project area and is generally associated with equestrian, hiking, birding, and hunting use. Recreation opportunities will not be affected by the proposed action and for some recreational users the establishment of native endangered fish may increase their recreation experience.

Prescribed Fire: The proposed action is consistent with fire management plans for the project area as evaluated in the environmental impacts of the prescribed burns on BLM-administered lands in EA # AZ-040-08-25.

Landownership/Private Property Rights: Part of the proposed project area is within private lands owned and managed by TNC. The Arizona Chapter of TNC, as a cooperator of the project, is developing a Safe Harbor Agreement with the Service. The Arizona Chapter of TNC will apply for a Section 10(a)(1)(A) permit (enhancement of survival) from the Service that will allow for current and future land management practices that may result in incidental take of Gila topminnow and desert pupfish to occur without violating Section 9 (Prohibited Acts) of the Endangered Species Act.

IMPACTS OF THE NO ACTION ALTERNATIVE

The following elements of the human environment have been analyzed and will not be affected by this alternative: Air Quality, Cultural Resources, Environmental Justice, Flood Plains, Hazardous Materials, Invasive/Noxious Plants, Native American Religious Concerns, Prime/Unique Farmland, Solid Waste, Threatened or Endangered (T&E) Plants, Visual Resource Management (VRM), Water Quality, Wetland/Riparian, Wild Scenic Rivers, Livestock Grazing, Recreation, Prescribed Fire, and Land Ownership/Private Property Rights.

Areas of Critical Environmental Concern (ACEC): New populations of Gila topminnow and/or desert pupfish would not be established and the resulting increase in the biodiversity and scientific research values within the Turkey Creek and the Table Mountain (RNA) ACECs would not occur.

Nonnative/Invasive Plants: The proposed action/project will not be considered and there would be no effect to invasive/noxious plants.

Visual Resource Management (VRM): There would be no effect to landscape characteristics under this alternative. Visual Resource Management focuses on the landscape of a given area. Landscapes rich in flora and fauna are often more pleasing to visit and view. The addition of the diminutive Gila topminnow and the pugnacious Desert pupfish, two endangered fish species, to the South Rim of Aravaipa Canyon would increase visual quality of the Turkey Creek ACEC.

Threatened and Endangered (T&E) Animals: Under this alternative, the opportunity to further the recovery of the endangered Gila topminnow and desert pupfish by establishing additional self-sustaining populations of these two fishes would be missed. The biological diversity and richness of the Aravaipa watershed ecosystem would not include these two imperiled species of fish.

Wilderness: New populations of Gila topminnow and desert pupfish would not be established and the resulting increase in the biodiversity and scientific research values within the Aravaipa Wilderness Area would not occur.

CUMULATIVE IMPACTS

Past Action:

An unimproved 4x4 road was constructed when the area was homesteaded.

Several pasture fences were built to control livestock movement.

Six earth tanks are scattered across the allotment to water cattle and wildlife species.

Several corrals are located on private land.

Two line shacks were built on private land.

Proposed Action:

Establish populations of endangered Gila topminnow and desert pupfish into suitable locations along the South Rim of Aravaipa Canyon.

Future Action:

Construct a low profile concrete barrier across Parson Canyon. A low profile barrier across Parson Canyon may be constructed to prevent the upstream movement of nonnative green sunfish at normal surface flows.

Construct up to 10 dirt gully plugs in tributaries to the major drainages of the south rim allotment. Dirt gully plugs may be constructed to reduce erosion and increase available habitats for fish by creating pools.

Gila topminnow and desert pupfish populations will be augmented (if needed) until self-sustaining populations become established. Augmentations may also be necessary if populations are eliminated due to flooding, drought, or other factors.

Monitor fish populations for at least five years in which stocking take place in order to determine the success of the project. If success cannot be determined within five years, monitoring may continue, but not for more than five years after stocking has discontinued. Monitoring of stocking efforts will include, at a minimum, a determination of persistence of fish in the area, age classes present, and their relative percentages of the population at that site

The current year-long grazing strategy currently being used on the South Rim Allotment may be modified to winter use only grazing. This grazing strategy affords aquatic and riparian habitat

protection while still allowing grazing. The permittee, the Arizona Chapter of the Nature Conservancy, is currently exploring this option with the Bureau of Land Management, SFO.

Areas of Critical Environmental Concern (ACEC): Construction of a small barrier and gully plugs will not cumulatively affect the ACECs in the proposed project area. If needed, these construction projects will be small, localized, and will cause minimal disturbance.

Threatened and Endangered (T&E) Animals: Construction of a small barrier, gully plugs, and population augmentation will benefit Gila topminnow and desert pupfish populations and will not have any negative cumulative effects on any other threatened and endangered animal(s).

Livestock Grazing: These future actions, if implemented, would likely have cumulative effects on current and proposed authorized livestock grazing activities in the project area. The Bureau of Land Management may modify livestock grazing on the South Rim allotment by implementing the Bureau's Standards and Guides for Rangeland Health or other efforts designed to improve or maintain upland and riparian habitat conditions. It has been shown that winter use livestock grazing in riparian areas reduces impacts from livestock and allows for rangeland health improvement.

The current permittee, the Arizona Chapter of the Nature Conservancy, is currently discussing winter use grazing with the BLM, SFO.

Recreation: These future actions, if implemented, will have no cumulative effects on recreation activities in the project area.

Prescribed Fire: These future actions, if implemented, will have no cumulative effects on future authorized prescribed fires in the project area.

Landownership/Private Property Rights: These future actions, if implemented, will have no cumulative effects on land ownership and private property rights in the project area.

No Action Alternative:

There will be no cumulative impact beyond those already in place if the no action alternative is chosen.

MITIGATING MEASURES

- Ongoing and/or future livestock activities will likely include winter use grazing (November 01 – March 01), growing season rest from July 01 through October 31, upland utilization up to 40% perennial grasses, riparian area herbaceous utilization up to 40%, apical stem browse rate on riparian woody species will not exceed 30%, and bank alteration of less than 20%.
- Prescribed burns will impact less than ½ of the watershed of any stocking site in any two-year period.

- Aquatic and riparian areas accessible to livestock may be fenced on private lands owned by TNC if negative impacts to habitat or fish are observed.

RESIDUAL IMPACTS

Proposed Action: Residual impacts of the proposed action would include the establishment of at least 3-5 populations of Gila topminnow and/or desert pupfish on public and private lands that would be fully protected by the Endangered Species Act. The successful implementation of the proposed action may set a precedent for the future establishment of endangered fish in additional sites where their presence and management would not preclude nor unacceptably restrict other resource uses of the public lands. This action may contribute to the eventual recovery of these two species of endangered fish.

No Action Alternative: Residual impacts of the no action alternative would be that the status of the Gila topminnow and the desert pupfish would not improve. Additionally, multiple use activities that affect remaining topminnow and pupfish populations are likely to become increasingly restricted as the status of existing populations continue to decline. Such restrictions have resulted in “jeopardy” Biological Opinions issued by the Service concerning other endangered species that have declined precipitously close to extinction.

CONSULTATION AND COORDINATION

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REVISED AND UPDATED:

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DATE:

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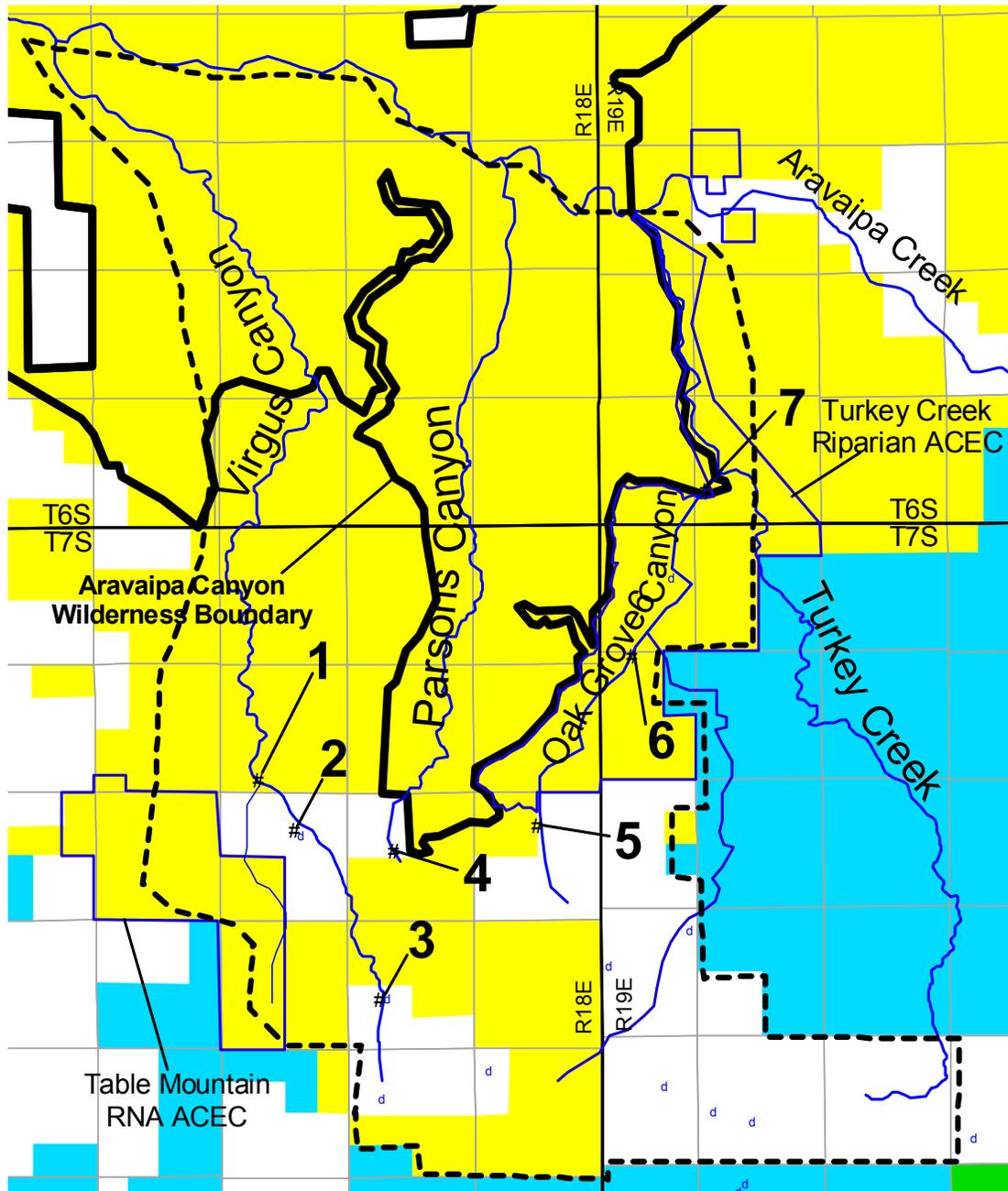
Date:

January 17, 2003

APPENDIX 1. COMMON AND SCIENTIFIC NAMES OF WILDLIFE USED IN THE ENVIRONMENTAL ASSESSMENT (EA).

<u>Common Name</u>	<u>Scientific Name</u>
Arizona alder	<i>Alnus oblongifolia</i>
Arizona sycamore	<i>Planatus wrightii</i>
canyon tree frogs	<i>Hyla arenicolor</i>
common black hawk	<i>Buteogallus anthracinus</i>
cottonwood	<i>Populus fremontii</i>
deer grass	<i>Muhlenbergia rigens</i>
desert pupfish	<i>Cyprinodon macularius</i>
desert sucker	<i>Pantosteus clarki</i>
Gila topminnow	<i>Poeciliopsis occidentalis occidentalis</i>
Goodding willow	<i>Salix goodingii</i>
green sunfish	<i>Lepomis cyanellus</i>
loach minnow	<i>Tiaroga cobitis</i>
longfin dace	<i>Agosia chrysogaster</i>
lowland leopard frog	<i>Rana yavapaiensis</i>
Mexican blue oak	<i>Quercus oblongifolia</i>
red shiner	<i>Cyprinella lutrensis</i>
roundtail chub	<i>Gila robusta</i>
Sonora sucker	<i>Catostomus insignis</i>
speckled dace	<i>Rhinichthys osculus</i>
spikedace	<i>Meda fulgida</i>
velvet ash	<i>Fraxinus velutina</i>
Western mosquitofish	<i>Gambusia affinis affinis</i>
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>
yellow bullhead	<i>Ameiurus natalis</i>

APPENDIX 2. MAP OF PROPOSED PROJECT AREA



- Potential stocking locations**
- 1 - Virgus Canyon @ Sycamore Canyon confluence
 - 2 - Bleak Spring
 - 3 - Cement Tank Spring
 - 4 - Parsons Grove
 - 5 - Upper Oak Grove Canyon
 - 6 - Middle Oak Grove Canyon
 - 7 - Lower Oak Grove Canyon

