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DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
Public Health Service

REPORT ON

ENVIRONMENTAL SANITATION ON THE COCOPAH RESERVATION

Yuma, Arizona

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INTRODUCTION

The Cocopah Indian Reservation lies southwest of Yuma, Arizona. There are two portions, approximately equal in size, making a total area of 528 acres, of which 390 acres are irrigable. The "Western" reserve lies along the Colorado River, opposite the state of Sonora in Old Mexico, is 14 miles from Yuma, and is the home of the majority of the group. The "Eastern" reserve is located away from the river and some miles closer to Yuma.

The Cocopahs are administered on behalf of the Government by the Fort Yuma Sub-Agency and receive medical care from the Public Health Service Hospital at Fort Yuma. Much of the Report on the Environmental Conditions of the Fort Yuma Indian Reservation is applicable to the Cocopah, particularly that portion which deals with the climate, topography, and environmental conditions. However, the Cocopah as a group are quite different from the Yumans and it was considered advisable to prepare a separate report for them.

The land allotted to the Cocopahs was set up about 1938, but the status of the area as a full-fledged reservation is still somewhat in doubt. Because of the desperate needs of these Indians, the Phoenix Area Office, through the Medical Officer in Charge of the Hospital at Fort Yuma and his sanitarian, has assumed a degree of responsibility for improving the environmental sanitation of the Cocopahs. These families live in Yuma County, Arizona, and because of limited funds and personnel the county health department, with headquarters in Yuma, has been unable to provide any preventive health services to the reservation.

Beginning in the summer of 1956, Mr. Edmond Jackson, the Public Health Service sanitarian stationed at Fort Yuma, has been making periodic visits to the Cocopah Reservation. Using the PHS form No. 2500 he has surveyed all of the homes being lived in at the present time, and the data so collected are the bases for this report. Immunization clinics have been held at regular intervals on the reservation by the Public Health Service doctors from Fort Yuma.

It is the intention of the Phoenix Area Office that a sustained field health program in sanitation be carried out in the future on the Cocopah Reservation.

THE PEOPLE

Photo 1. A Group of Cocopah Indians

Because this group of Indians is so little known, we are taking the liberty of developing a section regarding the people before we consider the status of sanitation on the reservation. There is a total of 89 Cocopahs residing in the area, 47 males and 42 females. This group represents the northern extension of a major Indian tribe which lives throughout western and northern Sonora. It is our understanding that their status as American nationals was indeterminate until the Government established the reservation for them and enrolled them about 1938. Table I gives information regarding the composition of the population.

TABLE I. Age Composition, Cocopah Indians, 1957

Age Group	Number	Percent of Total
Infant	5	6%
Pre-School	11	12%
School	30	34%
Adult	43	48%
Total	89	100%

No information is available regarding the income of these people. It is the opinion of the sanitarian, concurred in by Mr. Norwood Cox, Sub-Agent in charge of the reservation, that it is considerably below that of the Yumans. The men work as laborers on farms up and down the Gila River Valley all the way to Buckeye and Phoenix. In contrast to the Yumans, the Cocopah women go with their husbands, as a general trend, and the tribe is highly mobile.

Tribal affairs are governed by a Tribal Council made up of five members. The present chairman is Mr. Pedro Jim.

The western reserve with its 12 homes is accessible by black-topped highway from Yuma and Gadsden, but once the reserve is reached there are only sandy roads leading to the various houses. On the eastern reserve the same situation prevails, with a good road to the area and a one-lane dirt road to the 7 dwellings.

HOUSING

The traditional frame and adobe dwelling used by the Yumans has been adopted by the Cocopah, and of the 19 homes surveyed by Mr. Jackson in the winter of 1956-57 all but one were of this type of construction. As pointed out in the Fort Yuma report, this is NOT an acceptable type of building, because it cannot be readily screened, is difficult to clean, is drafty in the winter, and presents an appearance of squalor which discourages cleanliness and sanitation about the premises. Because the board floors are laid directly upon the ground and are difficult to keep clean, there is occasional trouble with scorpions, centipedes, and spiders.

Photo 2. A frame and adobe dwelling on the Eastern Reserve

Only 4 (or 21%) of the homes are fully screened. Thirteen were partially screened (68% of those surveyed), and 2 (11%) had no screening. Fourteen of the households used wood stoves for cooking, with the remaining 5 not determined in the survey.

In the spring of 1956 the Public Health Service sanitarian, with the help of the tribal council, carried out a clean-up campaign. Not all of the households cooperated, but a marked improvement was noted on the reservation. There is at present NO sanitary landfill--in fact no dump site of any type. A survey card (PHS form 2500) was made out for each house, and without exception every card notes that the premises were cluttered with refuse and in need of clean-up work.

There are only two ice boxes for refrigeration of food on the entire reservation.

Facilities for bathing and personal hygiene are practically non-existent. Photo 3 illustrates the only means for ablutions, a nearby irrigation canal.

TABLE II. Rates of Occupancy of Dwellings, Cocopah Reservation

Rooms per Dwelling	No. of Dwlgs.	Population	Percent of Total Pop.	Inhabitants per room
1	5	14	16	2.8
2	6	25	28	2.1
3	3	16	18	1.8
4	5	34	38	1.7
Total	19	89	100	1.9

Photo 3. Swimming Site on the Eastern Reserve

SANITATION

Under this heading we would like to consider water supply, sewage disposal and insect control. This reservation, like the Fort Yuma reservation, is fortunate in that it is located on the floodplain of the Colorado River and the ground water table is high. The soil is granular without any coarse gravel or stones and a well point can be driven almost anywhere to the water-bearing soil underground. Photo 4 illustrates the type of source in

Photo 4. Typical Water Supply on the Cocopah Reservation

universal use on the reservation. Every one of the 19 houses surveyed had a driven well with a hand-operated suction pump. Not a well was protected against surface contamination by the installation of a concrete plug at the ground surface around the pump base. Ten water samples have been taken by the sanitarian and tested bacteriologically at the Thomas Laboratories in Yuma. Of these ten, six were satisfactory and four showed the presence of coliform bacteria indicating some degree of fecal contamination.

In Photo 4 it will be noticed that there are two 5-gallon pails on the ground to the right of the pump. This is the type of container available to the people for the storage of water. Not a covered, sanitary water container was found on the reservation.

Every premise on the reservation had a privy. However, none were in a sanitary condition at the time of the survey. Every privy had a defect such that the contents of the privy pit were accessible to flies. All of the privies are many years old and can reasonably be considered to have outlived their economical life and to be in need of replacement.

There is a desperate need for fly control activities on the reservation. Because food storage in covered containers is not generally practiced and there few refrigerators, food is kept in the open and available to flies for long periods. The poor construction of the privies (and the observed fact that they are not always used) makes fecal contamination of food by flies very likely.

Because the economic condition of the Cocopahs is low and because of a lack of sanitation awareness, it is not likely that they will undertake any sort of vector control activity on their own, even with encouragement and guidance from the Public Health Service. It is our considered opinion that we should provide a community-wide fly control program for the reservation for several years into the future. This should involve both refuse collection and disposal and spraying of the premises with insecticides.

CONCLUSION AND RECOMMENDATIONS

While it is under the jurisdiction of the Fort Yuma Sub-Agency, the Cocopah Reservation presents an entirely different picture from the Fort Yuma Reservation proper. The Yuman Indians appear to us to have a fairly developed sense of sanitation, whereas the Cocopahs, because of their different derivation and economic condition, are without benefit of even rudimentary sanitary facilities. Since they are located up to 24 miles from the Public Health Service Hospital at Fort Yuma, they have not in the past patronized that installation, although they are beginning to as our program reaches them.

Recommendations.

Program: It is recommended that a basic reservation-wide sanitation program be provided for the Cocopah. This should be "pitched" at the simplest level possible, and must of necessity entail considerable service from the Government, to the point of donating privies, proper wells, and supplying the materials and an operator for a fly control program.

Water: The 19 existing wells should without exception be deepened to intercept higher-quality water, and this would involve one additional length of well casing per well. In addition, each well should be provided with a concrete base to prevent the seepage of contaminated water down the outside of the well casing. The total cost of this work is estimated at $580.00.

Every household should be provided with a sanitary water storage tank. It is recommended that 10-gallon milk cans be given to the people for their use in carrying water from the well to a 50-gallon galvanized water storage tank with cover and spigot. Milk cans at $10.00 apiece and the storage tank at $25.00 each would amount to an expenditure of $665.00 for the reservation for this purpose.

Our sanitarian should, of course, continue to test each well in turn, particularly as opportunity develops for repairing any defects found.

Excreta Disposal: The 19 privies on the two reserves should be razed and replaced with sanitary frame pit privies. With proper motivation it can be assumed that each householder will carry out the manual labor involved, under the direction of the sanitarian. The Government must provide the materials, if any improvement at all is to be looked for, and this would indicate the spending of $60.00 per privy, or $1,140.00 for the entire reservation.

Refuse Disposal: It is urgent that the Public Health Service work with the tribal council in the setting up of a proper dump site for trash. Considerable health education activity seems indicated, both with the tribal council and the people themselves, in order that the premises may be kept clean and not serve as a breeding place for flies, scorpions, centipedes, etc. A periodic clean-up campaign should be carried out by Mr. Jackson, possibly twice or three times a year, as his time permits.

Fly Control: Materials and advice should be made available to the Cocopah to the end that every dwelling is effectively screened against flies and mosquitoes. It is estimated that the cost of wire cloth screening and framing would amount to $400.00 for the reservation.

A continuing community-wide fly-spraying program should be provided by the Public Health Service. This service is already budgeted for the spring of 1957. It is planned to use a 2.5% solution of Malathion in water, using a 10% sugar attractant in the spray. Each premise exterior will be sprayed, and should average one gallon of finished spray solution per dwelling.