



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE

ECOLOGICAL SERVICES  
3616 W. Thomas, Suite 6  
Phoenix, Arizona 85019

2-21-91-F-060

February 21, 1991

MEMORANDUM

TO: District Manager, Phoenix District Office, Bureau of Land  
Management, Phoenix, Arizona

FROM: Acting Field Supervisor

SUBJECT: Biological Opinion, Tule Creek Riparian Exclosure

This responds to your request of November 21, 1990, for formal consultation pursuant to Section 7 of the Endangered Species Act (Act) of 1973, as amended, on proposed construction of a fenced riparian exclosure at Tule Creek, Yavapai County, Arizona. The species of concern is the Gila topminnow (Poeciliopsis occidentalis). The 90-day consultation period began on November 23, 1990, the date your request was received in our office.

The following biological opinion is based on information provided in your November 21, 1990, biological evaluation, data in our files, and other sources of information.

BIOLOGICAL OPINION

It is my biological opinion that construction of the proposed fenced riparian exclosure at Tule Creek is not likely to jeopardize the continued existence of the Gila topminnow.

BACKGROUND INFORMATION

Species Description

The Gila topminnow was listed as an endangered species on March 11, 1967. No critical habitat has been designated for this species. The Gila topminnow is a small, livebearing fish found in the Gila, Sonora, and de la Concepcion River drainages in Arizona, New Mexico, and Sonora, Mexico (Minckley 1973, Vrijenhoek et al. 1985). It was once among the commonest species of the Gila River and its tributaries (Hubbs and Miller 1941). Destruction of its habitat through water diversion, stream downcutting, backwater draining, vegetation clearing, channelization, water impoundment, and other human uses of the natural resources; plus competition with and/or predation by nonnative fish species, most notably mosquitofish (Gambusia affinis), have resulted in extirpation of the Gila topminnow throughout most of its range (USFWS 1984, Meffe et al. 1983).

Tule Creek lies within the historic range of Gila topminnow and was stocked with Gila topminnow in 1968 (Minckley and Brooks 1985) as part of the recovery effort for that species. That population persisted until a severe flood in 1978, which wiped out the topminnow and incised the channel, removing part of the cienega deposits (Collins et al. 1981). Gila topminnow were restocked into Tule Creek in 1981. Both the 1968 and 1981 stockings were made with stock from Monkey Springs by way of Boyce-Thompson Arboretum. Since 1981, Gila topminnow have been abundant in Tule Creek, with the linear extent of their distribution varying from year to year (Simons 1987, Bagley et al. 1990). The best habitat for Gila topminnow in Tule Creek is found in an approximately 1/2 mile long section of perennial flow in T.8N., R.1E., Sections 28 and 29. The Tule Creek population of Gila topminnow is considered to be among the most successful of the reintroduced populations.

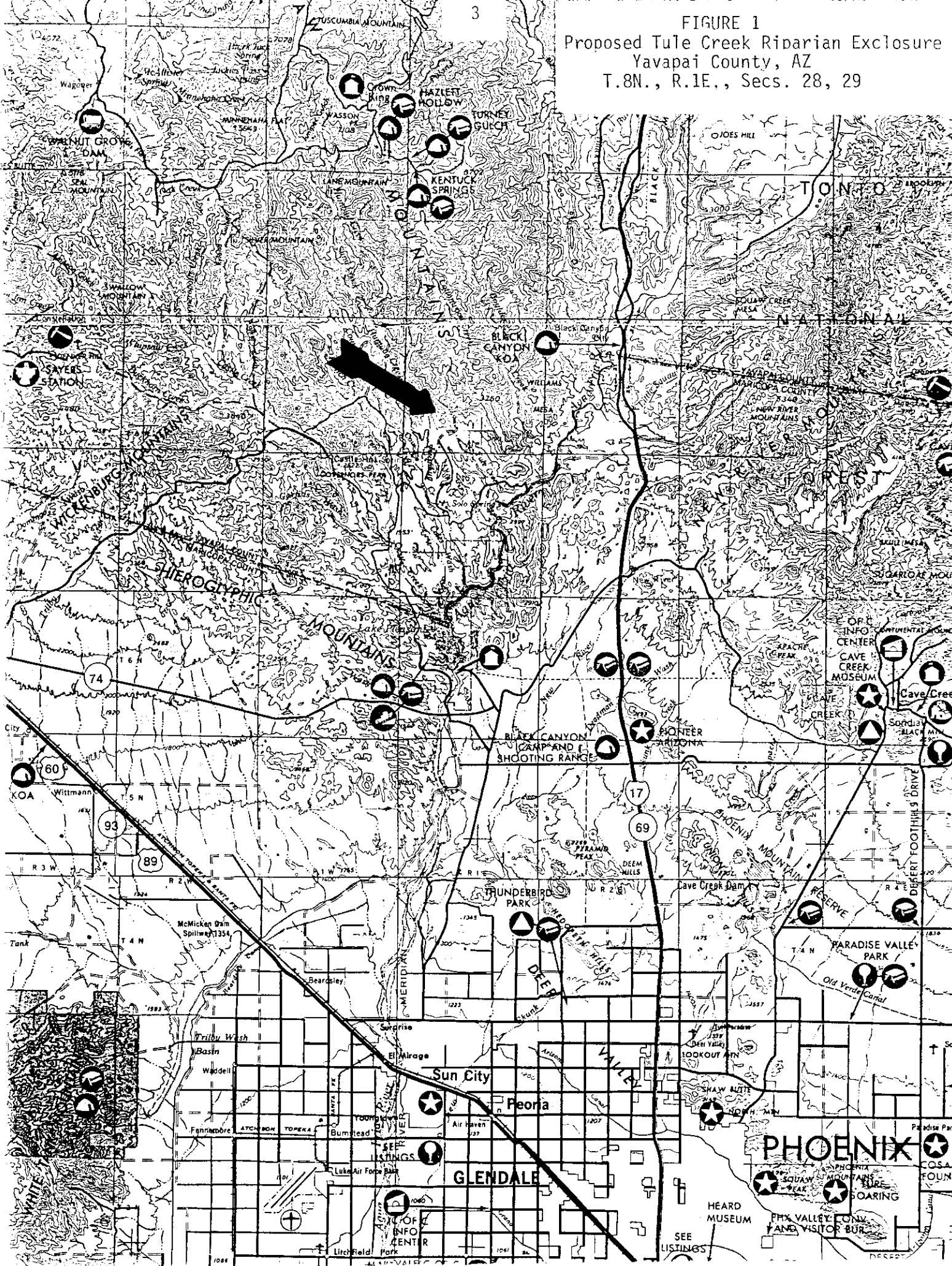
### Project Description

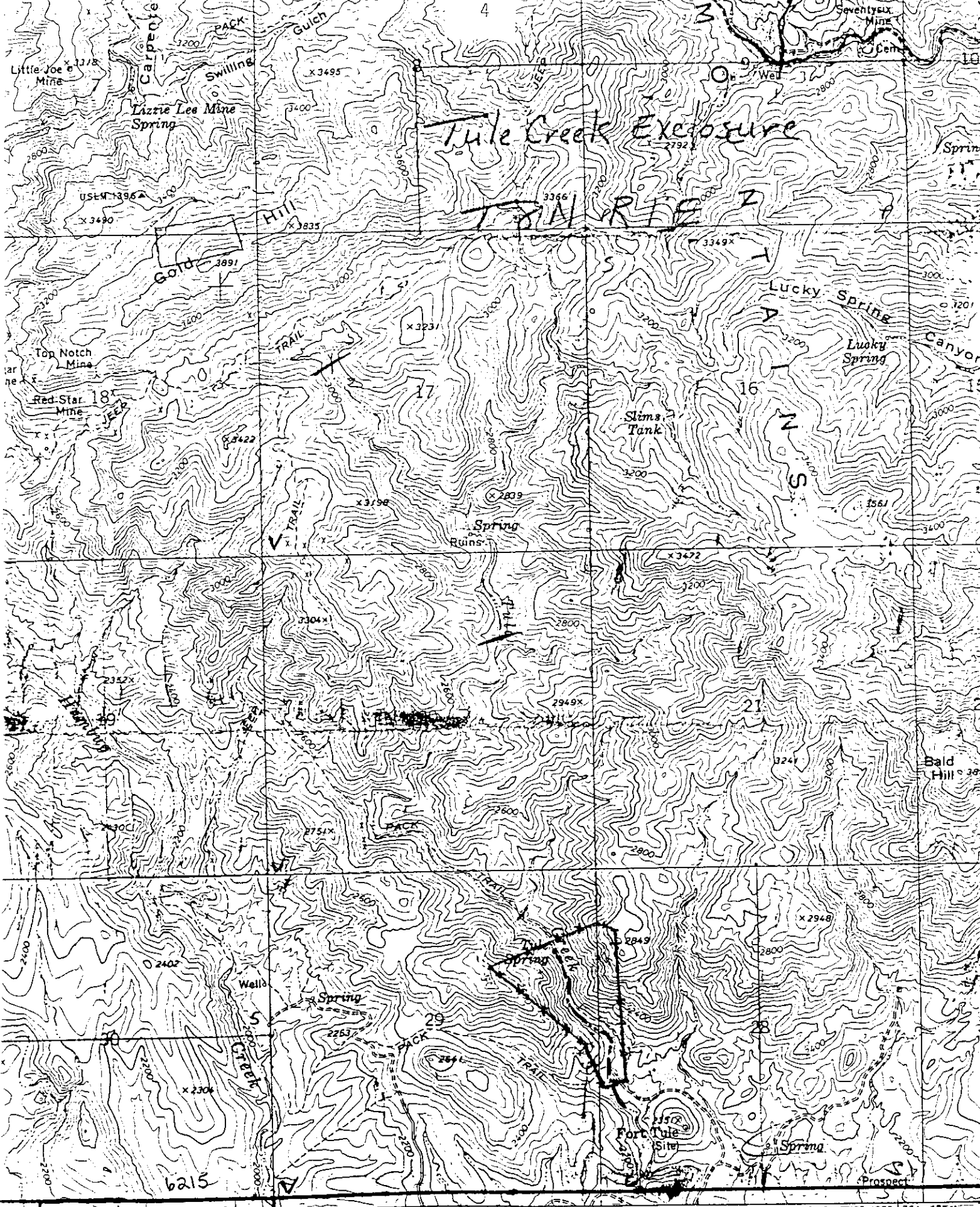
Tule Creek is a spatially intermittent tributary of the Agua Fria River in Yavapai County, Arizona. It enters the Agua Fria River just upstream from the present upper end of Lake Pleasant (Figure 1). It is within the Phoenix District of the Bureau of Land Management (BLM). The stream is small and in the 1/2 mile target section flows primarily through cienega type organic deposits. Vegetation includes willow (Salix sp.), seepwillow (Baccharis salicifolia), cottonwood (Populus fremontii), salt cedar (Tamarix chinensis), bullrush (Scirpus sp.), cattail (Typha sp.), arrowweed (Pluchea sericea), and bermuda grass (Cynodon dactylon).

Tule Creek lies within the Boulder Creek grazing allotment and is presently grazed by both domestic cattle and feral burros. BLM considers the riparian vegetation to be in unsatisfactory condition due to livestock grazing and in the 1982 Black Canyon Habitat Management Plan identified the need to fence the area to exclude livestock. Construction of that fencing is now proposed as a joint project of the BLM and the Arizona Game and Fish Department.

Proposed fencing would be four-strand barbed wire with a smooth bottom wire. Fencing would enclose approximately 70 acres including about 1/2 mile of stream channel (Figure 2). Fencing would be constructed on ridgelines to the extent practicable. Drilling would be done to set most of the fenceposts. Hanging pipe watergaps would be constructed on the two stream crossings. A gate would be located at the lower end of the enclosure to allow for removal of any livestock or burros that get into the enclosure. A walk-through would be placed in the fence at the vehicle turnaround to allow for recreational use by people. Transport of materials would be done by helicopter and truck. Some vehicle traffic would occur on the existing fords during construction.

FIGURE 1  
 Proposed Tule Creek Riparian Exclosure  
 Yavapai County, AZ  
 T.8N., R.1E., Secs. 28, 29

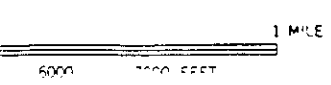




Tule Creek Exposure

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17°30' 108°30' U.S. GOVERNMENT PRINTING OFFICE: 1973-784-282/1 384000m E



Columbia 7.5

ROAD CLASSIFICATION  
 Primary highway, hard surface  
 Light-duty road, hard or improved surface

In the area of the proposed exclosure a user-maintained road runs along Tule Creek and crosses the stream by ford at several points. Several of the crossings are eroding. The proposed fencing would block those crossings. The road would also be signed as closed and a backhoe would be used to make the roadway physically impassable.

#### EFFECTS OF THE ACTION

The proposed construction of a fence to exclude livestock and feral burro use from about 1/2 mile of Tule Creek and closure of the existing track crossing the stream is expected to result in an overall improvement in the status of the Gila topminnow at this site.

Some minor, short-term effects may occur from vehicular crossing of the stream during construction. However, long-term effects of the action are expected to result in stabilization of the riparian and aquatic communities. Riparian vegetation is expected to increase in density with resultant increases in bank stability, decreases in sedimentation, and moderation of water temperatures. Due to the increased stability and water retention capability, the cienega habitat may increase in length as a result of the proposed action.

#### INCIDENTAL TAKE

Section 9 of the Act, as amended, prohibits any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish and wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered a prohibited taking provided that such taking is in compliance with the incidental take statement. **The measures described below are non-discretionary, and must be undertaken by the agency or made a binding condition of any grant or permit issued to the applicant, as appropriate.**

The Fish and Wildlife Service (FWS) anticipates that construction of the proposed livestock exclosure fencing would result in incidental take of Gila topminnow through direct loss of individual fish during vehicular and human traffic in the stream channel during construction activities. Direct incidental take cannot be quantified because reliable estimates of populations of Gila topminnow are not obtainable due to sampling difficulties and to the rapid population changes inherent in a short-lived

species with high fecundity. Therefore, greater than anticipated incidental take will be identified as having occurred if more than 10 dead fish of any species are observed within the project area.

If, during the course of the action, more than 10 dead fish are observed, the BLM must reinitiate consultation with the FWS immediately to avoid violation of Section 9. Operations must be stopped in the interim period between the initiation and completion of the new consultation if it is determined that the impact of the additional taking will cause an irreversible and adverse impact on the species, as required by 50 CFR 402.14(i). The BLM should provide an explanation of the causes of the taking.

#### Reasonable and Prudent Measures

The FWS believes the following reasonable and prudent measures are necessary and appropriate to minimize the incidental taking authorized by this biological opinion.

1. Conduct all proposed actions in a manner which will minimize direct mortalities of Gila topminnow.
2. Maintain complete and accurate records of actions which may result in take of Gila topminnow and their habitat.

#### Terms and Conditions for Implementation

In order to be exempt from the prohibitions of Section 9 of the Act, the BLM is responsible for compliance with the following terms and conditions, which implement the reasonable and prudent measures described above.

1. The BLM shall make all reasonable effort to minimize disturbance of, and work within, the stream channel and cienega of Tule Creek.
2. The BLM (or appropriate designee) shall regularly inspect and repair the exclosure fence.
2. The BLM shall prepare a written report on the construction of the exclosure fence and road closure. The report shall include documentation of the actions taken, including maps, and before- and after photographs of the area. A copy of this report shall be furnished, in writing, to the FWS within two months of completion of the action.

## CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The term conservation recommendations has been defined as FWS suggestions regarding discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's 7(a)(1) responsibility for these species.

1. The gate in the enclosure should be placed to minimize the possibility of use by unauthorized persons and vehicles.
2. Steps should be taken to ensure that no pollutants enter the water during action implementation.
3. Effects of the enclosure on the riparian and aquatic communities, the channel morphology, and on the Gila topminnow should be monitored. Long-term photo points, cross-channel transects, and yearly fish sampling are recommended.

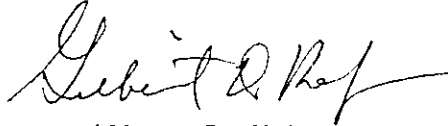
In order for the FWS to be kept informed of actions that either minimize or avoid adverse effects or that benefit listed species or their habitats, the FWS requests notification of the implementation of any conservation recommendations.

## CONCLUSION

This concludes formal consultation on the actions outlined in the November 21, 1990 biological evaluation. As required by 50 CFR 402.16, . reinitiation of formal consultation is required if: (1) the amount or extent of incidental take is reached; (2) new information reveals effects of the agency action that may impact listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (3) a new species is listed or critical habitat designated that may be affected by the action.

We appreciate BLM's continuing effort toward conservation of Gila topminnow. We are also appreciative of the attention and protection being afforded to candidate species during this proposed project. If we can be of further assistance, please contact Sally Stefferud or Sam Spiller, Field Supervisor (Telephone: 602/379-4720 or FTS 261-4720).

Sincerely,

A handwritten signature in cursive script, appearing to read "Gilbert D. Metz".

Gilbert D. Metz  
Acting Field Supervisor

cc: Director, Arizona Game and Fish Department, Phoenix, Arizona  
Regional Director, Fish and Wildlife Service, Albuquerque, New Mexico  
(FWE/HC)  
Director, Fish and Wildlife Service, Washington, D.C. (HC)



## LITERATURE CITED

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