UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
3616 W. Thomas, Suite 6
Phoenix, Arizona 85019

2-21-91-F-469

September 3, 1991

MEMORANDUM

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

FROM: Acting Field Supervisor

SUBJECT: Biological Opinion, Tule Creek Riparian Exclosure Pipeline

This responds to your request of August 1, 1991, for formal consultation pursuant to Section 7 of the Endangered Species Act (Act) of 1973, as amended, on the construction of the Tule Creek Riparian Exclosure Pipeline in Yavapai County, Arizona. The species of concern is the Gila topminnow (Poeciliopsis occidentalis occidentalis). The 90-day consultation period began on August 2, 1991, the date your request was received in our office.

The following biological opinion is based on information provided in the August 1, 1991 biological evaluation, data in our files, and other sources of information.

BIOLOGICAL OPINION

It is my biological opinion that construction and maintenance of the proposed Tule Creek Riparian Exclosure Pipeline 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 and 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. The population persisted until a severe flood in 1978 extirpated 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 end of Lake Pleasant (Figure 1). It is within the Phoenix District of the Bureau of Land Management (BLM). The stream is small with approximately 1/2 mile of perennial flow through cienega type organic deposits. Vegetation includes willow (Salix sp.), seepwillow (Baccharis salicifolia), salt cedar (Tamarix chinensis), mesquite (Prosopis juliflora), cottonwood (Populus fremontii), bulrush (Scirpus sp.), cattail (Typha sp.), arrow-weed (Pluchea sericea), and bermuda grass (Cynodon dactylon).

A fenced exclosure to remove livestock and feral burro grazing from the cienega portion of Tule Creek was completed by the BLM on May 2, 1991, in accordance with a biological opinion issued on February 21, 1991, and amended on March 28, 1991. Changes in the vegetation as a result of the removal of grazing apparently caused readjustment of the cienega hydrology, with a larger portion of the surface water being retained in the upper portion of the cienega. As the upper portion of the cienega becomes saturated, the lower portion will once again receive more water. However, the agreement between BLM and the livestock permittee regarding the exclosure provided that water for livestock use would be available outside the exclosure. Pools of water in the stream channel below the exclosure were expected to furnish sufficient livestock water. The readjustment process resulted in drying of those pools. The BLM reopened the exclosure on June 19, 1991, to allow livestock access to water. Livestock use inside the exclosure will continue until water can be piped to a trough outside.

The proposed project is to install a buried well screen and pipeline inside the existing fenced exclosure in T.8N., R.1E., section 28, NW¼ of the SW¼ (Figure 2). A trench would be dug adjacent to the creek using a backhoe or

trencher. The trench would be on the east side of the existing stream channel shortly upstream from the first old road crossing above the old house. A well screen would be placed at the head of the trench approximately 1.5 feet below ground level. The pipeline would consist of 1¼ inch polyethylene pipe which would run from the wellscreen underground for about 150 feet. It would then surface and run about an additional 600 feet to a trough. The trough would be located on a bench on the west side of the creek just downstream from the lower exclosure fence. The pipeline would cross Tule Creek near the lower portion of the exclosure and would be suspended above the creek. A float valve would be placed in the trough to ensure that only the amount of water necessary to fill the trough would be diverted from the stream. Upon completion of the pipeline and drinker, livestock and burros would be herded out of the exclosure and the fence repaired.

During trench excavation, care would be taken to ensure that heavy equipment does not enter waters occupied by Gila topminnow and no petroleum products are spilled. The vegetative mat overlying the trench would be removed from the trench prior to excavation and set aside for replacement on the refilled trench. This would expedite recovery of the disturbed area. The project is scheduled for September to avoid disturbance of the channel during the monsoon season.

Periodic maintenance of the above ground portion of the pipeline and float valve would be required. It is anticipated that monsoon flooding would damage the above ground pipe about every year or two. The float valve would require replacement about every two years. The BLM would inspect and maintain the exclosure, pipeline, and drinker a minimum of every six months and after significant rain storms. Monitoring of the Gila topminnow and aquatic habitat would be conducted twice a year.

If readjustment of the cienega system results in year-round water becoming available in the pool below the exclosure, the pipeline would be removed by BLM.

EFFECTS OF THE ACTION

The proposed construction and maintenance of a pipeline and trough at Tule Creek riparian exclosure is expected to result in minor short-term impacts to the Gila topminnow. This project would allow the fenced exclosure to be effective. In conjunction with the exclosure, this project is expected to have long-term benefits for the Gila topminnow and their habitat.

Short-term effects may occur from the disturbance of habitat and sediment increases resulting from work adjacent to the stream channel. The potential for serious erosion exists if heavy rains occur during or soon after trenching. Heavy runoff could potentially result in diversion of substantial

flow down the trench scar, eroding the trench, and redirecting the stream. The project would be conducted outside of the monsoon season to minimize this possibility. The replacement of the top vegetative mat in relatively intact form would also be an important step in minimizing this possibility.

Long-term benefits of removal of livestock and feral burro grazing from the cienega were addressed in the February 21, 1991, biological opinion on exclosure construction.

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 nondiscretionary and must be undertaken by the agency or made a binding condition of any grant or permit issued to the applicant, as appropriate.**

The FWS anticipates that the proposed construction and maintenance of the Tule Creek riparian exclosure pipeline will result in incidental take of Gila topminnow through direct loss of individual fish during construction and through habitat modification due to short-term increases in sedimentation and bank degradation. Incidental take of Gila topminnow cannot be quantified because reliable estimates of populations of Gila topminnow are not obtainable due to sampling difficulties and because of the rapid population changes inherent in a short-lived species with high fecundity. Therefore, greater than anticipated incidental take will be considered to have occurred if more than 10 dead fish of any species are observed within the project area during project implementation.

If, during the course of the action, the amount or extent of the incidental take limit is reached, 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 take of Gila topminnow and their habitat.

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 activities within, the wetted stream channel and cienega of Tule Creek.

2. The BLM shall regularly inspect and repair the pipeline, drinker, and float valve.

3. The BLM shall prepare a written report on the construction of the pipeline and drinker. The report shall include documentation of the actions taken, including maps, and before and after photographs of the project area. A copy of this report shall be furnished, in writing, to the FWS within two months following 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. Care should be taken to ensure that no pollutants enter the water during action implementation.

2. We recommend that the pipeline and trough be left in place and not removed even if the pools below the exclosure refill. The pipeline and trough provide a more secure source of livestock water which may be necessary during very dry years. Removal of the watering system may result in the exclosure being reopened to livestock use if the in-channel pools fail at a later date.

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 August 1, 1991 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 (4) a new species is listed or critical habitat designated that may be affected by the action.

If we can be of further assistance, please contact Sally Stefferud or me (Telephone: 602/379-4720 or FTS 261-4720).

Kirke A. King

Kirke A. King

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

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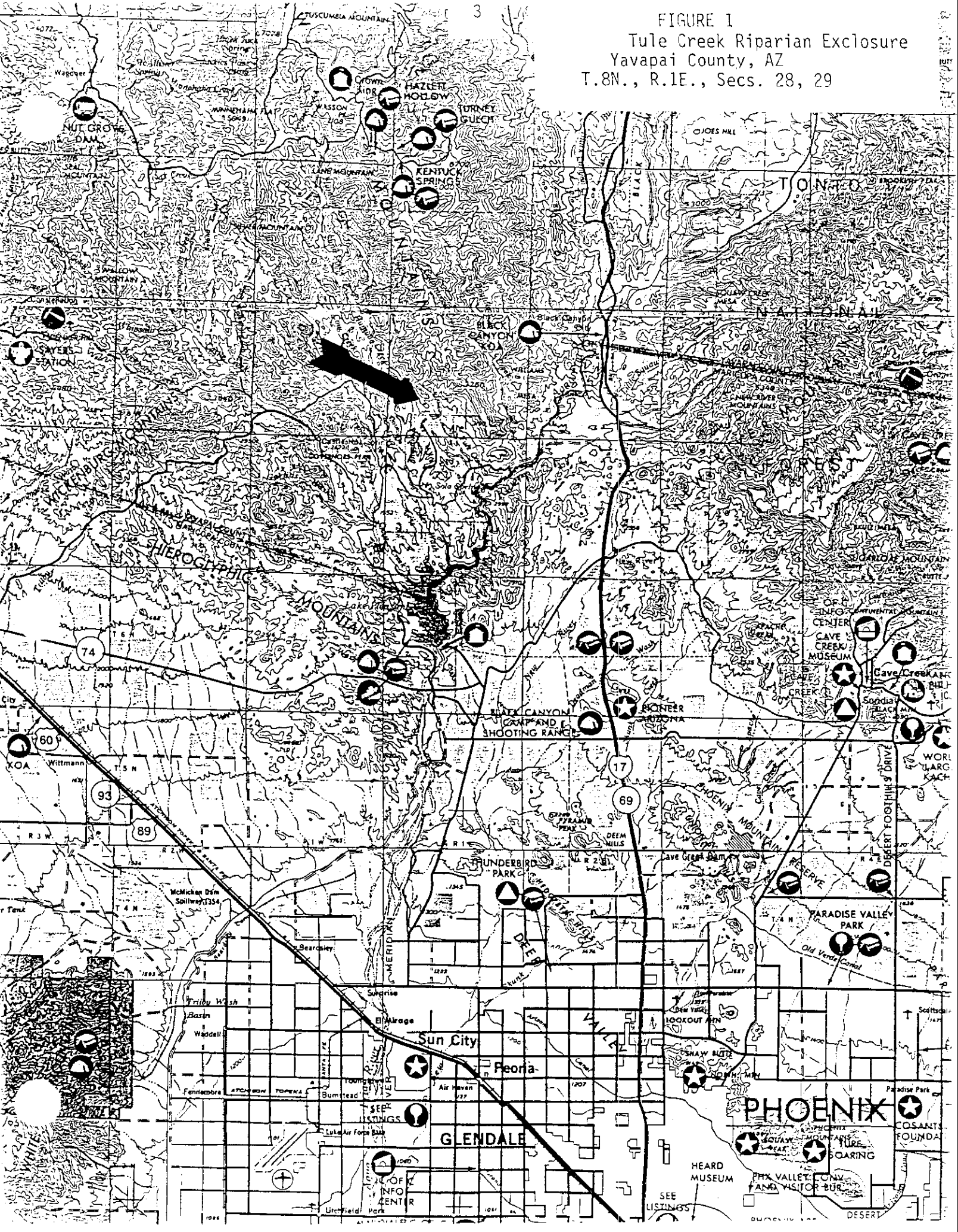
FIGURE 1
Tule Creek Riparian Exclosure
Yavapai County, AZ
T.8N., R.1E., Secs. 28, 29



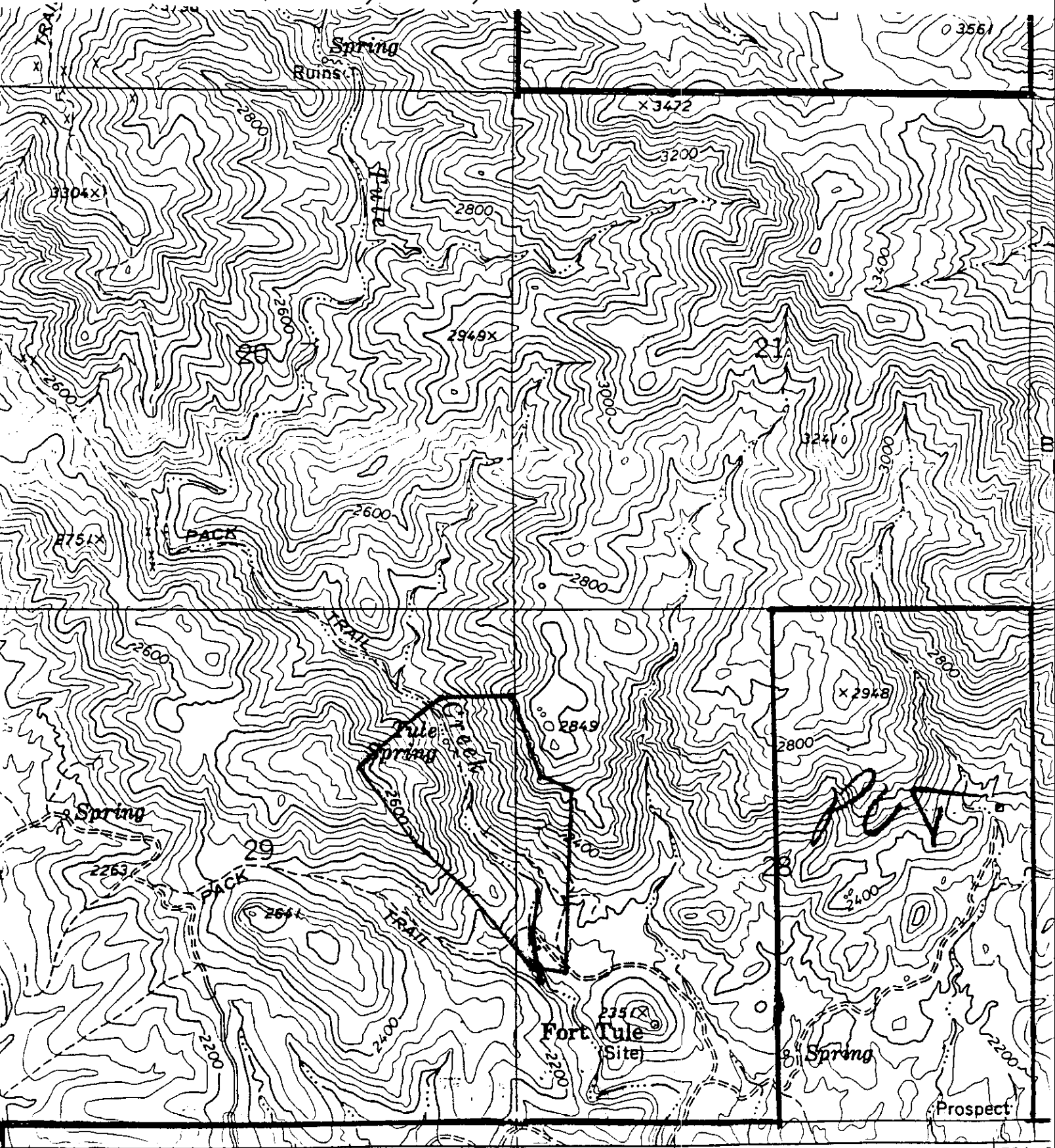
Existing Fence Exclosure

Proposed underground pipe and well screen

Proposed above ground pipe and trough

FIGURE 2
PROPOSED TULE CREEK RIPARIAN EXCLOSURE PIPELINE

T. 8 N., R. 1 E., Section 28



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