

**United States Department of the Interior  
U.S. Fish and Wildlife Service  
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July 25, 1995

In Reply Refer To:  
AESO/SE  
2-21-94-F-129

Mr. Humberto Hernandez  
State Conservationist  
Natural Resources Conservation Service  
3003 North Central Avenue Suite 800  
Phoenix, Arizona 85012-2954

Dear Mr. Hernandez:

The U.S. Fish and Wildlife Service (FWS) has reviewed the information provided on the Emergency Watershed Project (EWP) designated by the Natural Resources Conservation Service (NRCS) as the Gonzales Project located in Yavapai County, Arizona. Your June 12, 1995 request for reinitiation of formal consultation was received on June 15, 1995. This document represents the FWS biological opinion on the effects of that action on the endangered southwestern willow flycatcher (Empidonax traillii extimus), bald eagle (Haliaeetus leucocephalus), peregrine falcon (Falco peregrinus anatum), and razorback sucker (Xyrauchen texanus) and its designated critical habitat. In addition, there is a designated experimental non-essential population of Colorado squawfish (Ptychocheilus lucius) in the Verde River in the action area. This document is in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.).

This biological opinion is based on information provided in the biological evaluation, information developed for the earlier biological opinion for this project and other sources of information. A complete administrative record of this consultation is on file in this office.

#### Consultation history

The NRCS has previously consulted with the FWS on this EWP and a biological opinion was issued for the project as then designed on March 24, 1994. Please refer directly to that biological opinion for information on the history of the consultation and other information pertinent to that consultation.

Due to a change in the project design, NRCS determined that additional consultation was necessary. The NRCS is also pursuing modification of the section 404 permit for the original project. This permit (PN No. 93-1192TD) would be reissued for the modified project upon the completion of other regulatory requirements.

## **BIOLOGICAL OPINION**

Description of the proposed action

The design of the proposed action has been altered in response to information gained by NRCS on the effectiveness of Kelner jacks in protecting banks of the Verde River against erosion caused by high-water events. The plan originally called for the placement of 500 feet of Kelner jacks in front of the bank at the Gonzales property to protect against additional erosion after the 1993 high-water events. The project was not completed, and in 1995, NRCS observed that other Kelner jacks placed in the Verde River after the 1993 events were damaged or failed during the 1995 events. As a result of these failures, the land owners at the Gonzales project requested a change in the project design.

The new project design calls for sloping the existing eroded bank and the placement of approximately 500 feet of rock riprap armor on the sloped bank. Creation of the slope would require 1700 cubic yards of fill. Most of the material would come from a five foot deep toe trench at the base of the bank slope. The trench would serve to place riprap below the scour level of the river. The remainder of the fill would be taken from material displaced to create the diversion channel to relocate the river away from the construction site. The diversion channel would be refilled and the grade recontoured after the construction was completed. Rock for the riprap would be obtained from commercial sources. Access to the river bed for construction equipment would be needed.

#### Status of the species

The proposed action is not likely to affect the bald eagle, peregrine falcon, and southwestern willow flycatcher or its proposed critical habitat. These species will not be considered further in this biological opinion.

The razorback sucker is a large fish endemic to the Colorado River Basin including the major tributaries in the Gila River subbasin (Bestgen 1990). The species has suffered severe declines in both population size and overall range as a result of physical and biological changes to river habitats. In the Upper Colorado River Basin, small populations remain in portions of the lower Yampa and Green rivers, the mainstem Colorado River and the lower San Juan River (USFWS 1993). In the Lower Colorado River Basin, populations exist in the mainstem Colorado River and its reservoirs. Efforts to reintroduce the razorback sucker to the Gila River Basin were begun in the 1980's.

No significant natural recruitment has been documented for any of the extant populations of razorback sucker. Most of the existing populations are largely comprised of old, adult fish and the loss of these populations within the next decade is highly likely. Efforts to replace the existing populations in Lake Mohave and Lake Havasu on the Colorado River are underway using young fish reared in predator-free environments.

The Colorado squawfish is the largest minnow in North America, capable of reaching nearly six feet in length, and was the primary predator on many other native fishes of the Colorado River Basin. All natural populations in the Lower Colorado River Basin have been extirpated. The only remaining natural populations of this species are in the Upper Colorado River Basin in portions of the Green, Yampa, White, Gunnison, Colorado and San Juan rivers (USFWS 1993). The species appears to be self-sustaining in at least portions of its remaining range.

#### Environmental baseline

##### Status of the species in the project area

In the Verde River, the razorback sucker was historically found as far upstream as Perkinsville (Minckley 1973); however, the last recorded individual in the drainage was taken from Peck's Lake in 1954.

The razorback sucker has been reintroduced into the Verde River. Beginning in 1981, hatcherybred fish from Lake Mohave stock were introduced into the mainstem and tributaries of the river. Due to a number of factors including predation, parasites and disease, and competition with other fish species, these reintroductions have not been successful in establishing self-sustaining populations in the Verde River. Due to the difficulty of sampling a river system the size of the Verde River, it is not possible to know precisely where in the river all the surviving razorback suckers may be found.

Historically, the Colorado squawfish was known from the Verde River, but it was extirpated by the middle of this century (Miller and Lowe 1964, Minckley and Deacon 1968). Reintroductions under the experimental non-essential designation were begun in the 1980's and continue to the present day. Due to a variety of factors, including predation and parasites and disease, a self-sustaining population of Colorado squawfish has not been established in the Verde River as a result of these stockings.

#### Effects of the action

There are both direct and indirect effects of the proposed action on the razorback sucker and Colorado squawfish. Relocating the river out of the construction zone has the potential to take individual razorback suckers or Colorado squawfish and causes a disturbance to the existing habitat. Use of construction equipment in the watered area of the channel runs the risk of killing or injuring individuals. If any pools or other watered areas are cut off from the main river because of the diversion, fish in these areas could also be killed or injured if these areas are destroyed by construction activities, the pools dry up or water quality issues become a problem for fish survival.

Temporary increases in sediment load from the disturbed areas is also anticipated due to movement of materials and disturbance by construction equipment. The amount of this disturbance has not been calculated and may be difficult to quantify due to existing sediment loads carried by the Verde River. Increases in sediment load may impair feeding ability of these fish species or have an adverse effect on potential prey items. Because this effect is likely to be transitory, and these fish species are adapted to turbid conditions, this may not be a long term problem. If the project is completed outside of the spawning period of these fish, potential effects on eggs and larvae would be avoided.

The original project design would have created a slow water area with deposition of materials that would eventually have created a riparian terrace. This area could have provided habitat for young fish, food resources (from litter and insects) and other benefits. The new project plan would not provide such benefits to the aquatic habitats. There may be some long-term changes in river hydraulics at the site of the project once the rock riprap is in place that could have additional effects on the suitability or usability of aquatic habitats at the project site. The types or significance of these effects is not known.

#### Cumulative effects

Extensive areas of the Verde River and its watershed are in State or private ownership. Construction of urban centers, agricultural areas, mines and other developments has had an effect on the quality and quantity of aquatic habitats on the Verde River. Expansion of the urban areas in the watershed is likely and this will have further effects to water availability and quality, riparian health, watershed conditions and other issues that affect aquatic habitats. Because of the continued and growing presence of homes and other structures along the river bank, there will be a continued pressure to provide relief during and after high-water events. Some of the measures to protect property would be Federally funded and subject to section 7 consultation. Other measures might lack a Federal nexus and be completed without consultation.

## Conclusion

After reviewing the current status of the razorback sucker, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is the FWS's biological opinion that the construction of a diversion channel and placement of 500 feet of rock riprap along a sloped bank, as proposed is not likely to jeopardize the continued existence of the razorback sucker or Colorado squawfish and is not likely to destroy or adversely modify designated critical habitat for the razorback sucker.

## INCIDENTAL TAKE STATEMENT

Sections 4(d) and 9 of the ESA, as amended, prohibit 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 or 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. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or the applicant. 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 terms and conditions of this incidental take statement.

The measures described below are non-discretionary, and must be implemented by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7 (o)(2) to apply. The NRCS has a continuing duty to regulate the activity covered by this incidental take statement, If the NRCS (1) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7 (o)(2) may lapse.

The status of the Colorado squawfish under the experimental non-essential designation is that of a species proposed for listing as threatened. Incidental take statements are not provided for species proposed for listing, however, the FWS believes that the measures described below for the razorback sucker would also minimize the taking of Colorado squawfish.

The FWS has determined that construction activities in the river channel would result in incidental take of razorback sucker through two mechanisms; the direct take of an individual fish through the construction activity and because breeding, feeding and sheltering may be affected by the work in the river channel itself or by increased sedimentation downstream. Given the small population of razorback sucker in the Verde River, it is not possible to determine the actual amount of take or the number of individuals that would be affected. Because of the small size of the razorback sucker population in the Verde River, the loss of even one individual is significant. The likelihood that more than one individual would be in the project area is low. Given these conditions, the incidental take limit is set at one individual. It is also not clear how much habitat away from and within the construction site would be affected either over the short term or the long term. In the absence of definite figures on the amount of take of habitat that would occur, it is difficult to define when that level has been exceeded. It is, however, reasonable to define a level of effect to the habitat that can be considered as a surrogate. The FWS will consider that incidental take of habitat would be

exceeded if turbidity levels on the Verde River one half mile below the construction area has a greater than 25% increase over the same measurement immediately above the project area.

#### Effect of the take

In the accompanying biological opinion, the FWS determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

#### Reasonable and prudent measures

The FWS believes the following reasonable and prudent measures are necessary and appropriate to minimize take of the razorback sucker:

1. Efforts to minimize ground disturbing activities in the river channel will be incorporated into project construction plans.
2. Efforts to reduce the downstream effects of the action will be incorporated into project construction plans.
3. Efforts to reduce the risk of mortality to an individual razorback sucker will be incorporated into project construction plans.

In order to be exempt from the prohibitions of section 9 of the ESA, the NRCS must comply with the following terms and conditions which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To implement reasonable and prudent measure 1, the following terms and conditions will be implemented:
  - a. Construction machinery should utilize the smallest area of the river bed needed for completing the project.
  - b. All construction equipment and materials other than fill materials will be stored outside of the floodplain. Areas used for storage should not contain riparian vegetation or similar values.
2. To implement reasonable and prudent measure 2, the following terms and conditions will be implemented:
  - a. To reduce sediment increases resulting from the construction, barriers, hay bales or other filtration techniques will be placed between the work area and the river downstream. Any water runoff from the work site, including any well water pumped for use in construction, will be diverted through the filtration area if such water is discharged to the river.
  - b. The work area and any borrow areas will be recontoured to approximate pre-construction grades at the completion of the project.
  - c. Recommendations from our January 13, 1994 letter of comment on the section 404 permit or other letters dealing with the permit revision that deal with minimizing or quantifying downstream effects will be explored and implemented if feasible.

- d. Measurements of sediment load or turbidity immediately upstream of the work area and one half mile below the work area will be made. Measurements should also be taken below the filtration area if turbidity levels downstream are elevated.
3. To implement reasonable and prudent measure 3, the following terms and conditions will be implemented:
    - a. Prior to any work in standing or live water at the project site, the area will be surveyed for the presence of native fish. Any isolated pools or other riverine areas that would be affected by construction activities should also be surveyed prior to initiation of the work that would affect them.

#### Reporting requirements

The NRCS shall report to the FWS any capture or mortality of a razorback sucker during the course of the activity. If there is a mortality, all construction work must cease until the circumstances of the taking are investigated. At the conclusion of the project, the NRCS will provide the FWS with a report describing how the terms and conditions were implemented.

### CONSERVATION RECOMMENDATIONS

Section 7 (a)(1) of ESA directs Federal agencies to utilize their authorities to further the purpose of ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The FWS recommends the following action:

1. No fill material for the proposed action be taken from the river channel, instead upland sources should be used.

In order for the FWS to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the FWS requests notification of the implementation of any conservation recommendations.

### CONCLUSION

This concludes formal consultation on the action outlined in the reinitiation request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect 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 not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operation causing such take must cease pending reinitiation.

In future communications on this project, please refer to consultation number 2-21-94-F-129. If we may be of assistance, please contact Ted Cordery or Lesley Fitzpatrick.

Sincerely,

/s/ Sam F. Spiller  
State Supervisor

cc: Director, Arizona Game and Fish Department, Phoenix, Arizona  
Chief, Fish and Wildlife Service, Arlington, Virginia (DES)  
Regional Director, Fish and Wildlife Service, Region 2, Albuquerque, New Mexico (AES)  
Project Coordinator, Parker Fisheries Research Office, Fish and Wildlife Service, Parker, Arizona  
Chief, Regulatory Division, Corps of Engineers, Phoenix, Arizona

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