

**United States Department of the Interior
U.S. Fish and Wildlife Service
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November 30, 1995

In Response Refer To:
AESO/SE
2-21-95-F-413

Mr. Humberto Hernandez
State Conservationist
National Resources Conservation Service
3003 N. Central Avenue Suite 800
Phoenix, Arizona 85012

Dear Mr. Hernandez:

The U.S. Fish and Wildlife Service reviewed the information provided by the National Resources Conservation Service on the Emergency Watershed Protection: Eureka Ditch Project on the Verde River in Yavapai County, Arizona. Your August 29, 1995 request for formal consultation was received on August 30, 1995. This document represents the Service's biological opinion on the effects of that action on the endangered razorback sucker (Xyrauchen texanus) with its designated critical habitat) in the project area in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

This biological opinion is based on information provided in the August 9, 1995 biological evaluation, additional information provided by the NRCS in a letter to the Service dated October 11, 1995 and other sources of information. A complete administrative record of this consultation is on file in this office.

Consultation history

The NRCS contacted the Service on June 20, 1995 to request a species list for the project area. In their evaluation of the effects of the project, the NRCS determined that there would be no effect to the endangered southwestern willow flycatcher (Empidonax traillii extimus), bald eagle (Haliaeetus leucocephalus), the proposed ferruginous cactus pygmy owl (Glaucidium brasilianum cactorum) or critical habitat proposed for the southwestern willow flycatcher. The NRCS also determined that the proposed project would not jeopardize the continued existence of the Colorado squawfish experimental non-essential population in the Verde River. The Service received a request for formal consultation on the Eureka Ditch in a letter dated August 29, 1995. The information provided with the request was not sufficient for the Service to process the consultation. A letter from the Service to the NRCS dated September 18, 1995 requested additional information on several topics. The NRCS responded with a letter dated October 11, 1995.

BIOLOGICAL OPINION

Description of the proposed action

High water events in the Verde River during February and March, 1995 resulted in damage to the streambanks adjacent to the existing Eureka Ditch. This irrigation ditch conveys water to 440 acres of farmland in the Verde Valley. The NRCS designated this project as an exigency because the near term hazard represented a threat to life and property. The existing streambanks are eroded and vertical.

The proposed action consists of approximately 700 feet of bank sloping and placement of rock rip-rap on the sloped bank. A diversion channel will be required to relocate the active channel of the Verde River away from the work site. The construction of the diversion will require use of rubber-tired equipment in the river channel for an estimated one-half day. Approximately one acre would be required for the diversion channel. The amount of work in the water will be limited to the amount needed to construct the diversion. Activities in the river bed will be limited to the amount needed to construct the project. The diversion channel would be re-filled and graded after construction is complete.

Material for creating the bank slope would largely come from the excavation of a five foot deep toe trench. Additional material, if needed, would come from spoil created by digging the diversion channel. The toe trench would reach below the water table and water encountered would be drained off and run through three small sediment traps before being returned to the river. The project will place 4,700 tons of rock rip-rap in the toe trench and up the sloped bank. Rock would be placed from the top of the bank to eliminate the need for additional disturbance to the river bed. Completed slopes would be 1:1 or 2:1 depending upon conditions along the 700 foot length. Placement of fill to create the sloped banks would intrude into the existing channel. The amount of this intrusion varies along the project length relative to the amount of bank erosion.

The project contains several measures to reduce the effects of the action on listed species or critical habitat. Limiting the amount of work done in the river bed, the use of rubber tired tractors instead of tracked vehicles in the construction process and the placement of rip-rap from the bank rather than from the channel reduces the amount of river bed disturbed by the action. In addition, the amount of sediment entering the river is reduced by the use of small sediment traps.

Status of the species throughout the range

The razorback sucker is a large fish endemic to the Colorado River Basin (Basin) including the major tributaries in the Gila River sub-basin (Bestgen 1990). The razorback sucker has suffered severe declines in both population size and overall range as a result of physical and biological changes to river habitats in the Basin. 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 and continue to the present. To date, none of these

programs has released sufficient fish to reverse the continuing decline to extant populations.

No significant natural recruitment has been documented for any of the extant razorback sucker populations. As a result, these extant populations are comprised of old, adult fish nearing the end of their life expectancy. Efforts to augment these existing populations in Lake Mohave, Lake Havasu and the lower Colorado River mainstem is ongoing. Young fish are reared in areas with reduced numbers of potential predators then released into the river or reservoir once they have grown sufficiently to be less vulnerable to predation.

Environmental baseline

Status of the species in the action area

The razorback sucker is known to have occurred in the Verde River as far north as Perkinsville (Minckley 1973). The last recorded individual from the wild population was taken from Peck's Lake in 1954. Beginning in 1981, hatchery bred fish derived from Lake Mohave stock were introduced into the Verde and the lower reaches of tributary streams. Due to a number of factors including predation, parasites and disease, and competition with other fish species, these reintroductions have not been successful in re-establishing a large, self-sustaining population of razorback suckers in the Verde River. The difficulties inherent in surveying a river the size and complexity of the Verde River to locate individuals of the razorback sucker population largely preclude any reasonable predictions of the size of the population. The Service, in the listing and designation of critical habitat for the razorback sucker, included the Verde River as occupied habitat.

Effects of the action

The proposed project would take place within designated critical habitat for the razorback sucker. For the purposes of this analysis, the presence of individual razorback suckers in the project area is assumed.

Direct effects of the project include an increase in sediment load resulting from excavating the diversion channel and the possibility of direct take if a razorback sucker is in the river at the location of the proposed diversion channel at the time the construction is ongoing or when the diversion is removed. The increase in sediment load is likely to be temporary and is difficult to quantify. Depending upon sediment loads being carried by the river at the time of the disturbance, this increase may or may not be noticeable. Sediment carried in the water column decreases the visibility and may affect foraging behavior. Since the razorback sucker evolved in conditions of very high to very low visibility and likely does not rely on vision for foraging, the effects of water carried sediment may not be significant except as it could affect availability of food. The deposition of sediments is a different concern. Razorback suckers spawn on gravels and deposition of sediments in such areas reduces the suitability of the habitat.

Indirectly, the narrowing of the river channel and the change in water flow past the new rip-rap will have effects to adjacent habitats. Information on why the high flows of 1993 affected this particular river bank is not available. The NRCS does state that they have not had any previous projects at the site, and the proposed project would provide the same level of protection as existed prior to the high flows. The placement of the rip-rap changes the hydraulics of the particular area and may result in increased erosion or deposition in adjacent areas, however, NRCS believes these changes would be so small that they could not be detected given the other

conditions in the area. The reduction in sediment load carried downstream from this bank may not occur over the long term if the project is not stable and is eroded by the next high water event. The rip-rap itself may also provide areas for food production, shelter or other habitat components where it is inundated and thus provide some local habitat diversity.

Past management practices in the Verde River watershed have affected the seasonal flows and conditions along the banks and riparian areas. Frequency and duration of high water events, amount of erosion from banks, and aggrading and degrading reaches of the channel have all been affected to some degree. The effects of the proposed action must be evaluated in concert with the existing condition. This is not to infer that the condition of the river and its floodplain are acceptable, but that defining the exact effect of one action in a system that has been and continues to be affected by human activities is extremely difficult.

Cumulative effects

The Verde River watershed is a patchwork of federal, state and private lands. Some of the activities have undergone section 7 consultation. These include livestock grazing, issuance of section 404 permits under the Clean Water Act, and other NRCS and Federal Emergency Management Agency activities. The proposed action is on private land.

Expansion of the urban areas within the watershed is likely, with subsequent effects to runoff into and water diversions out of the river. Increasing development along the banks and in the floodplain is not substantially under federal control, yet this type of development would likely result in increases to requests for federal assistance after high water events. Increases in areas of rip-rap or other bank stabilization would occur, all would likely require some form of federal oversight.

Conclusions

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 Service's biological opinion that the placement of 700 feet of rock rip-rap at the Eureka Ditch, as proposed, is not likely to jeopardize the continued existence of the razorback sucker and is not likely to destroy or adversely modify designated critical habitat.

The Service has reached this finding based on the small size of the project area and the mitigation included in the proposed action. Also considered was the degree to which the project altered or removed the components of critical habitat.

INCIDENTAL TAKE STATEMENT

Introduction

Sections 4(d) and 9 of the Act, 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 and extent as to significantly

disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, and 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.

Amount or extent of take

There would be a temporary reduction in habitat quality due to increased sediment from the construction site and the relocation of the river. The project would also remove 700 feet of existing natural bank and replace it with rock rip-rap. The actual effects to individual razorback suckers from this change are not difficult to define and are not quantifiable. There is also the potential to kill or harass an individual razorback sucker from the construction and removal of the diversion and the introduction of sediment from the project area.

The Service recognizes that NRCS has incorporated actions to reduce the risk to the razorback sucker and reduce the downstream effects of sediment.

Effect of the take

In the accompanying biological opinion, the Service 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 Service believes the following reasonable and prudent measures (RPMs) are necessary and appropriate to minimize take of the razorback sucker:

1. Efforts to ensure measures included in the project plan to reduce the likelihood of take and the area affected are enforced will be made.
2. Efforts to document the take will be made.

Terms and conditions

In order to be exempt from the prohibitions of section 9 of the Act, 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 RPM 1, the following terms and conditions are required:
 - a. All commitments in the project plan that reduce the area of effect from the proposed action will be strictly enforced.
 - b. A comparison of the effects of removing the diversion mechanically versus allowing the river to remove it during the next high flow period should be made. Whichever option offers the lowest level of effect should be selected and implemented.
2. To implement RPM 2, the following terms and conditions are required:
 - a. During the construction or mechanical removal of the diversion, observers will be on site to determine if any razorback suckers are injured or killed.
 - b. Any pools or other water areas isolated by the diversion of the river will be examined to determine if any razorback suckers are present before such pools dry up or water quality declines to levels that cannot support fish. Surveys to determine if razorback suckers are in any of these pools will be completed before any pool is disturbed by construction activities.
 - c. In the event a razorback sucker is found or seen in the project area, the NRCS or its contractors will contact the Service within two working days if the fish was found alive and within one working day if the fish was dead or injured. Any live razorback sucker encountered should be immediately released into the river if there is a risk of death or injury from either the water conditions where it was found or from the construction.
 - d. Within three months of project completion, NRCS will provide the Service with a report on the actual construction activities at the site, the amount of area disturbed, the effectiveness of mitigation measures and the results of any surveys done for razorback suckers as part of the project.

The RPMs and their implementing terms and conditions are designed to minimize incidental take that might otherwise result from the proposed action. With implementation of these measures, the Service believes that no razorback suckers will be incidentally taken. If, during the course of the action, this minimized level of incidental take is exceeded, such incidental take represents new information requiring review of the RPMs provided. The NRCS must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the RPMs.

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. 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 Service recommends the following action:

1. No fill material for the proposed action be taken from the river channel.

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

REINITIATION AND CLOSING STATEMENT

This concludes formal consultation on the action outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action is 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 operations causing such take must cease pending reinitiation.

In future communications on this project, please refer to consultation number 2-21-95-F-413. If additional assistance is required, please contact Ted Cordery or Lesley Fitzpatrick.

Sincerely,

Sam F. Spiller
Field Supervisor

cc/

Chief, Fish and Wildlife Service, Arlington, Virginia (DES)

Regional Director, Fish and Wildlife Service, Albuquerque, New Mexico (GM:GSV/LCR)

Project Leader, Arizona Fisheries Resources Office, Parker, Arizona

Director, Arizona Game and Fish Department, Phoenix, Arizona

LITERATURE CITED

Bestgen, K.R. 1990. Status review of the razorback sucker, Xyrauchen texanus. Larval Fish Laboratory Report #44. Colorado State University, Ft. Collins.

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U.S. Fish and Wildlife Service. 1993. Colorado River endangered fishes critical habitat draft biological support document. Utah/Colorado Field Office, Salt Lake City.