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U.S. Fish and Wildlife Service
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2-21-93-F-406

September 14, 1993

MEMORANDUM

TO: Gila Area Manager, Gila Resource Area, Bureau of Land Management,
Safford, Arizona

FROM: State Supervisor

SUBJECT: Biological Opinion, Reconstruction of the Bonita Creek Trail,
Graham County, Arizona

This responds to your request of July 2, 1993, for formal section 7 consultation with the Fish and Wildlife Service (Service) pursuant to the Endangered Species Act (Act) of 1973, as amended, on the proposed reconstruction and maintenance of the Bonita Creek Trail in Graham County, Arizona. The species potentially affected by this action is the endangered razorback sucker (Xyrauchen texanus). Proposed critical habitat in Bonita Creek for the razorback sucker is located several miles downstream of the proposed reconstruction.

This biological opinion was prepared using information contained in the biological evaluation and other records furnished by the Bureau of Land Management (Bureau). Additional information was obtained through the grey and published literature and discussions with knowledgeable individuals. Data in Service files and other sources of information were also used.

The 90-day formal consultation period began on July 2, 1993, the date your request was received by the Arizona Ecological Services Office. Notice of that receipt was sent to you in a memorandum dated July 8, 1993.

Biological Opinion

It is the Service's biological opinion that the reconstruction and maintenance of the existing road across Bonita Creek is not likely to jeopardize the continued existence of the endangered razorback sucker in Bonita Creek. These actions are not likely to destroy or adversely modify proposed critical habitat for the razorback sucker.

This biological opinion is for the proposed reconstruction of the road across Bonita Creek

necessitated by high water flows in early 1993. The Bureau also requested that this consultation consider the effects of similar reconstruction efforts in the event of any future high flow events. This biological opinion does cover such reconstruction under the following conditions:

1. That the type of work to be done in the creek is not more extensive than proposed for this project and the mechanical equipment used for any future project is not significantly different from the equipment proposed for use under this project.
2. That any reconstruction will not improve the road in any way that would result in increased use of the road by the public.
3. That all requirements and limitations on construction contained in this opinion are made part of the future projects.
4. That the Bureau inform the Service in writing of any reconstruction work that would be covered under this opinion prior to the commencement of the work.
5. That the long-term maintenance and persistence of this road be covered under the upcoming Gila Box Riparian National Conservation Area management plan.

This biological opinion does not cover any reconstruction work needed for any other road crossings or project along Bonita Creek. Those actions should be handled under separate consultation.

Background Information

Consultation History

The Service received the biological evaluation from the Bureau on July 2, 1993.

Description of the Proposed Action

The Bureau proposes to reconstruct nine crossings over Bonita Creek within a 0.8 mile segment of the creek. This section of road connects Lee Trail to Jones Road and is used by recreationists and livestock operators as well as Bureau personnel to access the lands on the east side of the creek. Within a 15-mile reach, there are two other roads that cross Bonita Creek. According to the biological evaluation, these other roads do not provide reasonable access to certain areas on the east side of the creek. The proposed reconstruction is of an existing road and does not create new access. A bulldozer will be used to recreate the nine crossings. The road will not be improved beyond 4-wheel drive standards. The road has been damaged in the past by high flows, and the Bureau anticipates that damage will occur in the future that will necessitate similar reconstruction actions.

The biological evaluation contained several stipulations on construction practices that are designed to minimize the effects to the creek from the construction and use of the road. These stipulations are incorporated in this opinion by reference.

Species Description

The razorback sucker is a large (approximately three feet at maturity) native sucker that was historically abundant in the Gila River drainage (Kirsch 1988). Natural populations in the Gila basin were extirpated by the mid 1900's (Minckley and Deacon 1968). Surveys in the 1970's, prior to the 10-year stocking effort, failed to locate any razorback suckers in the Gila River (Minckley and Clarkson 1979). Stocking of hatchery bred razorback suckers (Lake Mohave stock) into the mainstem Gila and major tributaries began in 1981. This introduction effort did not reach the goal of re-establishing a viable razorback sucker population in the Gila River. The razorback sucker was listed as an endangered species in November 1991. That listing recognized the razorback suckers in the Gila River basin as being fully protected under the Act.

Environmental Baseline

The environmental baseline includes past and present impacts of all Federal, State or private actions and other human activities in the action area, the anticipated impacts of all Federal actions in the project area that have undergone formal or early Section 7 consultation, and the impact of State and private actions which are contemporaneous with the consultation process. The environmental baseline defines the present status of the listed species and its habitat to provide a platform to assess the effects of the action now under consultation.

The overall status of the razorback sucker throughout its range has not improved significantly since the species was listed in 1991. Natural recruitment of young fish to the existing populations is extremely limited and is not sufficient to sustain those populations. Stocking of hatchery bred fish continues. The use of grow-out ponds to provide a predator-reduced environment for the growth of both wild-bred and hatchery-bred juveniles is becoming more widespread in Arizona. It will take many years and the expansion of these programs to restore adult razorback sucker populations in Arizona.

The Bonita Creek drainage has been affected by various human activities over at least the last 100 years. Mining, livestock use and recreation have all had effects on the watershed conditions. Construction and use of roads to access areas of the watershed have also had an effect on stream conditions. Depletions from the creek for municipal water and other purposes have affected the amount of flow available.

Evolving in the harsh conditions of the Colorado River Basin, the razorback sucker possesses an inherent ability to adapt to harsh, changing physical conditions. The physical changes to the watershed and the creek itself are likely not sufficient to destroy all suitable habitats. The introduction of non-native fish species that compete with and prey on native species has had significant adverse effects to native fish species including the razorback sucker. The presence of non-native fish species in otherwise physically suitable habitat apparently restricts the ability of the razorback sucker to persist.

Effects of the Proposed Action

Direct and Indirect Effects

The physical reconstruction of the nine fords will disturb the stream channel sediments at each crossing and will affect turbidity downstream. All crossings will be in areas of shallow riffles or runs that already contain quantities of coarse substrate for use in creating the road bed. The amount of fine material in these substrates has not been estimated. Depending upon flows at the time of the work, disturbed sediments may be flushed a considerable distance downstream or may remain in nearby pools until a larger flow moves through the system. Because the flows in Bonita Creek are largely uncontrolled above the project area and flushing flows are not uncommon, it would be anticipated that the sedimentation caused by the construction activity would not have a long-term effect on conditions in the creek. Selecting a season for reconstruction of these crossings that takes advantage of these flows and also minimizes effects to fish during the spawning period would help to alleviate some of the construction effects.

The actual construction work will have a short-term effect on turbidity with the use of the road having the long-term effect. An estimated use of two to five vehicles per day with nine crossings per direction equals approximately 36 to 90 actual crossings of the stream within the 0.8 mile reach. The amount of sediment released per crossing is not known and may vary with season, weight of vehicle and other factors. The extent to which this level of turbidity will affect fish habitat is not clear.

In addition to the effects due to turbidity, the presence of machinery in the creek bed will create vibrations in the substrate and in the water that may disturb fish. Again, the short-term effect is from the bulldozer activities in the channel and these will be of short duration. The Bureau expects to complete the project in one day, thus reducing the time period of the effect. The use of the road over the year will contribute to vibration levels. Because vehicles will be smaller than the bulldozer and will be in the creek for a shorter period of time, the effects are likely to be less. The exact magnitude of these effects is not known.

For each future repair period, the effects of reconstruction will be the same. Adjustments to the actual time of the repair work, as described in the biological evaluation, will be used to minimize the potential for impacts.

Effects to Survival and Recovery

The reconstruction and use of the road crossings has the potential to reduce the suitability of the overall area as razorback sucker habitat due to vibration and changes in turbidity. There is also the potential for mortality if a razorback sucker is present at a crossing site when it is in use. Maintenance and use of the road crossings may impede movement of fish through the area, but this could not be considered a complete barrier. It is not expected that these potentials will eliminate the value of Bonita Creek to the survival and recovery of this species.

Cumulative Effects

Cumulative effects are those effects of future State and private activities that have no Federal connection and that are reasonably certain to occur within the action area of the Federal action subject to consultation. The action is entirely on Federal lands; however, the result of the action allows for access to the river by private individuals.

Photographs provided with the biological evaluation show that once a vehicle is in the creek bottom, there is nothing to prevent their crossing the creek at other than the nine established crossings. Vehicles driving in otherwise unaffected areas of the creek bed expand the area of potential impact from vibration and turbidity and potentially increase the risk of actual mortality. This is not a new effect, the road has been present since the 1940's, but restoring the road to allow access will continue these types of activities.

Summary of Effects

The proposed action would temporarily increase vibration within the construction area and increase turbidity levels downstream. Continued use of the road would cause vibration and turbidity effects. Vehicle access along the creekbed would be maintained.

Incidental Take

Section 9 of the Act, as amended, prohibits the taking (harass, harm, pursue, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species without a special exemption. The concept of harm includes significant habitat modification and degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding and sheltering. Case law has affirmed that taking does include harm to listed threatened species when there is definable injury or death to individuals. 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 taking within the bounds of the Act, provided such taking is in compliance with the incidental take statement provided in the biological opinion.

The reconstruction and subsequent use of the Bonita Creek road will result in some habitat degradation that may have effects on potential breeding, feeding and sheltering behaviors of the razorback sucker. Within the 0.8 mile reach of the project, there is no complete removal of habitat. The crossings themselves may have reduced productivity due to the passage of vehicles. Downstream effects of turbidity, vibration and introduction of petroleum products from vehicles are not likely to have a major effect on those habitats at the present level of road use. There is also a small possibility of actual mortality if a razorback is at one of the crossing sites during either the reconstruction or use of the crossing. Given the size of the impact area, the degree of disturbance and the likely size of the population of razorback suckers in the vicinity of the project, the level of incidental take, while not quantifiable, is low.

Reasonable and Prudent Measures

Reasonable and prudent measures (RPM) are minor changes to a project that do not alter the basic design, location, duration, or timing of that project. The goal of the RPMs is to minimize the amount of incidental take associated with the project. Development of RPMs for this action is difficult, since the Bureau has built into the project design many

commitments and design features to reduce the amount of disturbance.

As noted in the biological evaluation, there are two other roads that cross Bonita Creek within the 15-mile reach. The Bureau is considering road access as part of the Gila Box Riparian National Conservation Area management plan. The Service believes that the overall issue of incidental take from roads is more appropriately addressed in that document.

The Service believes the following RPA is necessary and appropriate to minimize the level of incidental take resulting from the proposed action:

1. Measures will be taken to minimize the amount of disturbance from reconstruction.

Terms and Conditions

In order to be exempt from the prohibitions of Section 9 of the Act, the Bureau must ensure their compliance with the following terms and conditions which implement the RPA described above.

1. To implement RPA 1, the following terms and conditions will be implemented.
 - a. Workers performing the reconstruction will be advised that Bonita Creek is a sensitive area. Only the minimal amount of work in the watered channel needed to reconstruct the crossing will be done.
 - b. Only those activities needed for the physical reconstruction of the crossings will take place in the watered channel. To the extent possible, all other activities will take place outside the creek channel.

Conservation Recommendations

Sections 2(c) and 7(a)(1) of the Act direct Federal agencies to use 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 Service suggestions regarding discretionary activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding development of information. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's Section 7(a)(1) responsibility for the species.

The Service recommends the following actions be taken by the Bureau to minimize adverse effects of the proposed Bonita Creek road reconstruction to the razorback sucker:

1. All crossing sites should be visually inspected prior to the commencement of construction to ensure no razorback suckers are present.
2. Provide monitoring to determine if there are increased sediment loads resulting from the reconstruction and use of the road crossings.
3. Determine the area of effect of vibration resulting from reconstruction and use of the road crossings.

4. Emphasize to users of the road the sensitive nature of Bonita Creek and the need to use only the maintained roadway to cross the creek.

Conclusion

This concludes formal consultation on the reconstruction of the Bonita Creek road as outlined in your July 2, 1993 request. As required by regulations, reinitiation of formal consultation is required if: 1) the amount or extent of incidental take is exceeded, 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 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 agency action.

The Service would appreciate notification of your final decision on this action. We remind the Bureau that terms and conditions to implement RPA's are mandatory and must be implemented. In order for the Service to be kept informed of actions that either minimize or avoid adverse effects, or that benefit the listed species or their habitats, we would appreciate notification of the implementation of any conservation recommendations by the Bureau.

Thank you for assisting in the conservation of endangered and threatened species. In future communication on this project, please refer to consultation number 2-21-93-F-406. If we may be of assistance, please contact Tom Gatz or Lesley Fitzpatrick.

/s/ Sam F. Spiller

cc: Chief, Fish and Wildlife Service, Arlington, Virginia (DES)
Regional Director, Fish and Wildlife Service, Albuquerque, New Mexico
(AES)
Project Leader, Parker Fishery Assistance Office, Parker, Arizona
Director, Arizona Game and Fish Department, Phoenix, Arizona

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