

APPENDIX F
Conference Opinion for the
Razorback Sucker



United States Department of the Interior
FISH AND WILDLIFE SERVICE



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Memorandum

To: Regional Director, Bureau of Reclamation, Upper Colorado
Regional Office, Salt Lake City, Utah

From: Regional Director, Region 6
U.S. Fish and Wildlife Service
Denver, Colorado

Subject: Conference Opinion on the Razorback Sucker for the Animas-La Plata
Project, Colorado and New Mexico

In a letter dated March 4, 1991, the Bureau of Reclamation (Reclamation) requested that the Fish and Wildlife Service initiate a conference on the razorback sucker for the Animas-La Plata Project (Project).

INTRODUCTION

In accordance with Section 7 of the Endangered Species Act (16 U.S.C. 1531 et seq.) and Interagency Cooperation Regulations (50 CFR 402), this is the Service's conference opinion on the effects of the proposed Project on the razorback sucker (Xyrauchen texanus).

Background

The razorback sucker was originally proposed for listing as a threatened species in April 1978 in the Federal Register (43 FR 17375). The proposal was subsequently withdrawn in May 1980, in compliance with provisions of the 1978 amendments to the Endangered Species Act. The 1978 amendments required the Service to include critical habitat in the listing of most species and to complete the listing process within 2 years or withdraw the proposal from further consideration. The Service did not complete the listing process within 2 years or withdraw the proposal from further consideration.

In March 1989, a petition to list the razorback sucker as an endangered species was received from the Sierra Club, National Audubon Society, Wilderness Society, Colorado Environmental Coalition, Southern Utah Wilderness Alliance, and Northwest Rivers Alliance. A positive finding on this petition was made in June 1989 and subsequently published by the Service in the Federal Register in August 1989 (54 FR 33586). This notice also stated that a status review was in progress and that the Service was seeking information until December 1989. A proposed rule to list the razorback sucker as endangered (without critical habitat) was published in the Federal Register on May 22, 1990 (46 FR 21154). The initial comment period was from May 22, 1990, to July 23, 1990. The comment period was reopened from July 27, 1990, to August 27, 1990. A public hearing was held on August 14, 1990, in Farmington, New Mexico.

A final rule to list the razorback sucker as endangered throughout its range was published in the October 23, 1991, Federal Register and will go into effect 30 days thereafter. Consultation procedures on proposed species, consistent with 50 CFR 402.10, require each Federal Agency to confer with the Service on any action which is likely to jeopardize the continued existence of any proposed species. Further, if requested by the Federal Agency and deemed appropriate by the Service, a conference may be conducted in accordance with procedures for formal consultation and subsequently adopted as the biological opinion when the species is listed.

This conference opinion addresses potential effects of the construction and operation of the proposed Project on the razorback sucker.

CONFERENCE OPINION

Based on the best scientific and commercial information that is currently available, the Project, as described in the biological opinion, is likely to jeopardize the continued existence of the razorback sucker by appreciably reducing the likelihood of both the survival and recovery of the species in the wild by further reducing its numbers and distribution.

BASIS FOR OPINION

This conference opinion is based on the full Project development scenario as requested by Reclamation. Reclamation estimates that the Project would result in a net average annual depletion of 154,800 acre-feet of water from the two rivers. The Animas and La Plata Rivers are tributaries to the San Juan River which is inhabited by a small population of razorback sucker.

Water depletions in the Upper Colorado River Basin (UCRB) have long been recognized as a major source of impact to endangered fish species. The Service believes that continued withdrawal of water throughout the UCRB has restricted the ability of the Colorado River system to produce flow conditions required by various life stages of the fish. Numerous impoundments and diversions have altered the shape of the natural hydrograph of the San Juan River by reducing peak discharges by as much as 50 percent in some reaches while doubling base flows in other reaches. Significant depletions and redistribution of flows of the San Juan River have occurred as a result of major water development projects.

Depletions, along with a number of other factors, have resulted in such drastic reductions in populations of razorback sucker that it has become one of the rarest native fishes in the UCRB. With the exception of the bonytail chub (Gila elegans), there are fewer razorback suckers than any other native species in the UCRB.

RAZORBACK SUCKER

Status

The razorback sucker (Xyrauchen texanus), an endemic species unique to the Colorado River Basin, was historically abundant and widely distributed within warmwater reaches throughout the Colorado River Basin. Historically, razorbacks were found in the main stem Colorado River and major tributaries in Arizona, California, Colorado, Nevada, New Mexico, Utah, Wyoming, and Mexico (Ellis 1914, Minckley 1973). Bestgen (1990) reported that this species was once so numerous that it was commonly used as food by early settlers, and further, that commercially marketable quantities were caught in Arizona as recently as 1949. In the UCRB, razorback suckers were reported in the Green River to be very abundant near Green River, Utah, in the late 1800's (Jordan 1891). An account in Osmundson and Kaeding (1989) reported that residents living along the Colorado River near Clifton, Colorado, observed several thousand razorback suckers during spring runoff in the 1930's and early 1940's. In the San Juan River drainage, Platania and Young (1989) relayed historical accounts of razorback suckers ascending the Animas River to Durango, Colorado, around the turn of the century.

A marked decline in populations of razorback suckers can be attributed to fragmentation of the natural river habitat by the construction of dams and reservoirs, the introduction of nonnative fishes, and the removal of large quantities of water from the Colorado River system. Dams on the main stem Colorado River and its major tributaries have segmented the river system and drastically altered flows, temperatures, and channel geomorphology. Major changes in species composition have occurred due to the introduction of numerous nonnative fishes, many of which have thrived due to man-induced changes to the natural riverine system.

The current distribution and abundance of razorback suckers have been significantly reduced throughout the Colorado River system (McAda 1987, McAda and Wydoski 1980, Holden and Stalnaker 1975, Minckley 1983, Marsh and Minckley 1989, Tyus 1987). The only substantial population of razorback suckers remaining in the Lower Basin, made up entirely of old adults (McCarthy and Minckley 1987), is found in Lake Mohave; however, they do not appear to be successfully recruiting. While limited numbers of razorback suckers persist in other locations in the Lower Colorado River Basin, they are considered rare or incidental and may be continuing to decline.

In the UCRB, above Glen Canyon Dam, razorback suckers are found in limited numbers in both lentic and lotic environments. The largest population of razorback suckers in the UCRB is found in the upper Green River and lower Yampa River (Tyus 1987). Lanigan and Tyus (1989) estimated that from 758 to 1,138 razorback suckers inhabit the upper Green River. In the Colorado River most razorback suckers occur in the Grand Valley area near Grand Junction, Colorado; however, they are increasingly rare. Osmundson and Kaeding (1990) report that the number of razorback sucker captures in the Grand Junction area have declined dramatically since 1974.

In the San Juan River subbasin, small concentrations of razorback suckers have been reported at the inflow area in the San Juan arm of Lake Powell, Utah (Meyer and Moretti 1988) and at least one specimen was captured in the San Juan River near Bluff, Utah, in 1988 (Platania 1990, Platania et al. 1991). In Bestgen (1990) additional captures of small numbers of razorback suckers also were reported from the Dirty Devil and Colorado River arms of Lake Powell. All recent captures of razorback suckers in the UCRB have been mature adults. There is no evidence anywhere in the entire Colorado River system that indicates significant recruitment to any population of razorback sucker (Bestgen 1990, Platania 1990, Platania et al. 1991, Tyus 1987, McCarthy and Minckley 1987, Osmundson and Kaeding 1989).

Razorback suckers are in imminent danger of extirpation in the wild. The specific cause(s) of this species' continued decline are largely unknown at this time. As Bestgen (1990) pointed out:

Reasons for decline of most native fishes in the Colorado River Basin have been attributed to habitat loss due to construction of mainstream dams and subsequent interruption or alteration of natural flow and physio-chemical regimes, inundation of river reaches by reservoirs, channelization, water quality degradation, introduction of nonnative fish species and resulting competitive interactions or predation, and other man-induced disturbances (Miller 1961, Joseph et al. 1977, Behnke and Benson 1983, Carlson and Muth 1989, Tyus and Karp 1989). These factors are almost certainly not mutually exclusive, therefore it is often difficult to determine exact cause and effect relationships.

The virtual absence of any recruitment in the UCRB suggests a combination of biological, physical, and/or chemical factors that may be affecting the survival and recruitment of early life stages of razorback suckers. Within the UCRB, recovery efforts endorsed by the Upper Colorado River Recovery Implementation Program include the capture and removal of razorback suckers from all known locations for genetic analyses and development of discrete brood stocks if necessary. These measures have been undertaken to develop refugia populations of razorback suckers from the same genetic parentage as their wild counterparts such that, if these fish are genetically unique by subbasin or individual population, then separate stocks will be available for future management options. These management options include augmentation which may be a necessary step to prevent the extinction of razorback suckers in the UCRB.

Biology

Specific information on biological and physical habitat requirements of the razorback sucker within the UCRB is very limited. Until very recently, fisheries research investigations throughout the UCRB have focused on the three listed Colorado River fishes and data collected on razorback suckers were largely coincident to those studies. Localized extirpation of razorback suckers from some localities, coupled with the species' continued decline in numbers and distribution, has prompted some research; however, details of its life history requirements, particularly in riverine environments, are still not fully understood.

In general, a natural hydrograph with a large spring peak, a gradually descending limb into early summer, and low stable flows through summer, fall, and winter are thought to create the best habitat conditions for Colorado River endangered fishes while maintaining the integrity of the channel geomorphology. Prior to construction of large main stem dams and the suppression of spring peak flows, low velocity off-channel habitats (seasonally flooded bottomlands and shorelines) were commonly available throughout the UCRB (Tyus and Karp 1989, Osmundson and Kaeding 1990). The absence of these seasonally flooded riverine habitats is believed to be a limiting factor in the successful recruitment of razorback suckers in their native environment (Tyus and Karp 1989, Osmundson and Kaeding 1990). Tyus (1987) and McAda and Wydoski (1980) reported springtime aggregations of razorback suckers in off-channel impoundments and tributaries that were believed to be associated with reproductive activities. Tyus and Karp (1990) and Osmundson and Kaeding (1990) reported off-channel habitats to be much warmer than the main stem river and that razorback suckers presumably moved to these areas for feeding, resting, sexual maturation, spawning, and other activities associated with their reproductive cycle. While razorback suckers have never been directly observed spawning in turbid riverine environments within the UCRB, captures of ripe specimens, both males and females, have been recorded (Valdez et al. 1982, McAda and Wydoski 1980, Tyus 1987, Osmundson and Kaeding 1989, Tyus and Karp 1989, Tyus and Karp 1990, Osmundson and Kaeding 1990, Platania 1990) in the Yampa, Green, Colorado, and San Juan Rivers. Sexually mature razorback suckers are generally collected on the ascending limb of the hydrograph from mid-April through June and are associated with coarse gravel substrates (depending on the specific location).

Outside of the spawning season, adult razorback suckers occupy a variety of shoreline and main channel habitats including slow runs, shallow to deep pools, backwaters, eddies, and other relatively slow velocity areas associated with sand substrates (Tyus 1987, Tyus and Karp 1989, Osmundson and Kaeding 1989, Valdez and Masslich 1989, Osmundson and Kaeding 1990, Tyus and Karp 1990).

Habitat requirements of young and juvenile razorback suckers in the wild are largely unknown, particularly in native riverine environments. Life stages, other than adults, have not been collected anywhere in the UCRB in recent times. The last confirmed documentation of a razorback sucker juvenile in the UCRB was a capture in the Colorado River near Moab, Utah (Taba et al. 1965, reported in Bestgen 1990).

Areas of Impact and Concern

Areas of impact and concern associated with the proposed Animas-La Plata Project are described in the Biological Opinion on the Colorado squawfish.

Razorback Sucker Activity: San Juan River

Within the UCRB, the San Juan River has received comparatively minor research attention, and, therefore, the historic status of rare native species, including the razorback sucker, is largely unknown (Bestgen 1990).

Platania and Young (1989) reported the 1976 capture of two adult razorback suckers by VTN Consolidated, Inc., from an irrigation pond adjacent to the San Juan River at river mile 92 near Bluff, Utah. They also mentioned unsubstantiated historical accounts (Jordan 1891) of razorbacks ascending the Animas River to Durango, Colorado, around the turn of the century. In August 1990, the New Mexico Department of Game and Fish (Lief Ahlm, Fisheries Specialist, Personal Communication) interviewed two anglers from Aztec, New Mexico, who claimed to have "commonly" caught razorback suckers in the Animas River near Cedar Hill bridge in the 1930's and 1940's. When the two men were shown photographs, including roundtail chub (Gila robusta), humpback chub (Gila cypha), bonytail chub (Gila elegans), bluehead sucker (Pantosteus discobolus), flannelmouth sucker (Catostomus latipinis), razorback sucker (Xyrauchen texanus), and Colorado squawfish (Ptychocheilus lucius), they both immediately identified the razorback sucker as the fish they had caught. Prior to the 1976 literature citation, however, there were no verified reports of razorback sucker captures in the San Juan River drainage.

Beginning in May 1987 and continuing through October 1989, complementary investigations of fishes in the San Juan River were conducted in Colorado, New Mexico, and Utah (Platania 1990, Platania et al. 1991). In 1987 a total of 18 adult razorbacks (6 recaptures) were collected on the south shore of the San Juan arm of Lake Powell (Platania 1990, Platania et al. 1991). These fish were captured near a concrete boat ramp at Piute Farms Marina and were believed to be either a spawning aggregation or possibly using the site as a staging area in preparation for migration to some other spawning site. Of the 12 individual razorbacks handled in 1987, 8 were running ripe males while the other 4 specimens were females that appeared gravid.

In 1988 a total of 10 razorback suckers were handled at the same general location, 5 of which were in reproductive condition (Platania et al. 1991). Six of the ten individual specimens in 1988 samples were recaptures from 1987. Also in 1988 a single adult tuberculate male razorback sucker was captured at approximately river mile 91 on the San Juan River near Bluff, Utah. Particularly noteworthy is that this is the first confirmed record of this species from the main stem San Juan River. The presence of this reproductively mature specimen suggests that the razorback may be attempting to spawn in some unknown location within the riverine portion of the San Juan River drainage. No razorback suckers were captured in 1989. No larval specimens nor any other size classes of razorbacks (other than adults) have ever been documented in the San Juan River drainage.

The limited nature of historical and more recent ichthyofaunal surveys of the San Juan River drainage do not allow for accurate quantitative estimates of relative abundance for any of its native fishes, including the razorback sucker. However, the existing scientific literature and historic accounts by local residents strongly suggest that razorback suckers were once a viable, reproducing member of the native fish community in the San Juan River drainage.

Currently, the razorback sucker is rare throughout its historic range and extremely rare in the main stem San Juan River. A small enclave of razorback suckers persist in the San Juan arm inflow area of Lake Powell. Protection and enhancement of the San Juan River is needed to guard against the threat of extinction of this species in native riverine environments. By returning the San Juan River to a more natural condition through operation of the Navajo Dam, it is conceivable that riverine habitats important to the ecology of razorback suckers could be provided that would assist in the recovery of this unique native species.

Effects of the Proposed Action

Potential effects of the Project and impacts associated therewith are discussed in the Biological Opinion for the Colorado squawfish. The Service believes that Project impacts described for the Colorado squawfish would be similar for the razorback sucker.

In summary, further flow reductions and the associated loss of important native riverine habitats in the San Juan River are likely to jeopardize the continued existence of the razorback sucker. While the precise volume and duration of flows required for maintaining and/or improving important physical habitat and critical biological needs of razorback suckers are unknown, this species is in such a precarious state throughout the entire Colorado River system that efforts to protect and enhance native riverine habitats are necessary to avoid jeopardy and aid future recovery.

Reasonable and Prudent Alternative

The Service has determined that the reasonable and prudent alternative, as described in the Biological Opinion for the Colorado squawfish, will avoid the likelihood of jeopardizing the continued existence of the razorback sucker.

Incidental Take

Section 9 of the Endangered Species Act, as amended, prohibits any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in such conduct) of listed species 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 taking within the bounds of the Endangered Species Act provided that such taking is in compliance with the incidental take statement.

With protective provisions included in the reasonable and prudent alternative for the Colorado squawfish, the Service does not anticipate that construction and operation of the proposed Project will result in any incidental take of razorback suckers. The Service anticipates that a small but presently unquantifiable number of endangered fish could be taken as a result of the research program which is part of the reasonable and prudent alternative to preclude jeopardy. The take would be associated with activities, such as capture, holding, or transporting fish, required by the research program.

The following reasonable and prudent measure and resultant terms and conditions to reduce the amount of incidental take shall be implemented.

1. A permit which will include measures to reduce take will be obtained in accordance with 50 CFR 17.22 and 32 from the Fish and Wildlife Service.

If during the course of the action the amount or extent of the incidental take as permitted in item 1 above is exceeded, Reclamation must reinitiate formal consultation with the Service and provide detailed circumstances surrounding the take.

Consistent with 50 CFR 402.10, an incidental take statement provided with a conference opinion does not become effective unless the Service adopts it as the biological opinion once the listing of the species is final.

CONCLUSION

This concludes our conference opinion on the impacts of the proposed Animas-La Plata Project. The Service has determined that the impacts of the Project are likely to jeopardize the continued existence of the razorback sucker; however, a reasonable and prudent alternative which offsets jeopardy to the species has been identified.

This opinion was based on the best scientific and commercial data available as described. However, if new information becomes available, new species are listed, or should there be any changes to the Project which alter the operation of the Project from that which is described in this opinion and which may affect any endangered or threatened species in a manner or to an extent not considered in this opinion (see 50 CFR 402.16), formal Section 7 consultation should be reinitiated. Section 7 consultation also must be reinitiated if there is failure to carry out any portion of the reasonable and prudent alternative upon which this opinion is based.

While the razorback sucker (Xyrauchen texanus) is currently proposed for listing, it is anticipated that recommendations for additional studies included in the Biological Opinion for the Colorado squawfish will contribute to the conservation and protection of razorback suckers as well as other rare native fishes of the San Juan River.

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