

revokes a previous delegation of authority to the Maritime Administrator where the Secretary's statutory authority has expired.

EFFECTIVE DATE: This rule becomes effective July 20, 1994.

FOR FURTHER INFORMATION CONTACT: John W. Carnes, Chief, Division of Port and Intermodal Operations, Maritime Administration, MAR-831, Room 7201, 400 Seventh Street SW., Washington, DC, 20590, (202) 366-4357 or Steven B. Farbman, Office of the Assistant General Counsel for Regulation and Enforcement (C-50), Department of Transportation, Room 10424, 400 Seventh Street SW., Washington, DC 20590, (202) 366-9306.

SUPPLEMENTARY INFORMATION: Section 2927, Title XXIX, of Public Law 103-160, the National Defense Authorization Act for Fiscal Year 1994, amends Section 203 of the Federal Property and Administrative Services Act of 1949 (40 U.S.C. 484) to authorize the Secretary to convey surplus real property to public entities for development or operation of a port facility. Transfer of such real property by the Secretary is subject to the disapproval of the Administrator of General Services or the Secretary of Defense. The Secretary is hereby amending regulations of the Office of the Secretary of Transportation, at 49 CFR 1.66, to delegate that authority to the Maritime Administrator. Another change is being made to revoke the delegation of authority in § 1.66(x) to carry out the provisions of Section 709 of Public Law 101-595 (the Merchant Mariner Memorial Act of 1990), which authority has expired, and to reserve that paragraph. Corresponding changes are being made to the Department's Organization Manual.

Since this amendment relates to departmental management, organization, procedure, and practice; notice and comment are unnecessary, and the rule may become effective in fewer than 30 days after publication in the Federal Register.

List of Subjects in 49 CFR Part 1

Authority delegations (Government agencies), Organizations and functions (Government agencies).

In consideration of the foregoing, Part 1 of Title 49, Code of Federal Regulations, is amended as follows:

PART 1—[AMENDED]

1. The authority citation for Part 1 continues to read as follows:

Authority: 49 U.S.C. 322; Pub.L. 101-552, 28 U.S.C. 2672, 31 U.S.C. 3711(a)(2).

2. Section 1.66 is amended by removing and reserving paragraph (x),

and by adding new paragraph (z), to read as follows:

§ 1.66 Delegations to Maritime Administration.

* * * * *

(z) Carry out the functions vested in the Secretary by Section 2927, Title XXIX of the National Defense Authorization Act of 1994 (Public Law 103-160; November 30, 1993) relating to authority to convey surplus real property to public entities for use in the development or operation of port facilities.

Issued at Washington, DC this 20th day of June 1994.

Federico Peña,

Secretary of Transportation.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

138-94

RIN 1018-AB88

Endangered and Threatened Wildlife and Plants; Final Rule To List the Rio Grande Silvery Minnow as an Endangered Species

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) determines the Rio Grande silvery minnow (*Hybognathus amarus*) to be an endangered species under the Endangered Species Act of 1973 (Act), as amended. This fish occurs only in the middle Rio Grande from Cochiti Dam downstream to the headwaters of Elephant Butte Reservoir, New Mexico. Threats to the species include dewatering, channelization and regulation of river flow to provide water for irrigation; diminished water quality caused by municipal, industrial, and agricultural discharges; and competition or predation by introduced non-native fish species. Currently, the species occupies about five percent of its known historic range. This action will implement Federal protection provided by the Act for the Rio Grande silvery minnow. The Service further determines that finalization of proposed critical habitat will not occur at this time, as critical habitat is not now determinable because the required economic analysis has not been completed. Pursuant to section 4(b)(6)(C)(ii) of the Act, a final determination on critical habitat may be

delayed up to 1 year beyond the normal deadline.

EFFECTIVE DATE: August 19, 1994.

ADDRESSES: The complete file for this rule is available for inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, New Mexico Ecological Services State Office, 3530 Pan American Highway NE., Suite D, Albuquerque, New Mexico 87107.

FOR FURTHER INFORMATION CONTACT: Jennifer Fowler-Propst, State Supervisor, at the above address (505/883-7877).

SUPPLEMENTARY INFORMATION:

Background

The Rio Grande silvery minnow is one of seven species in the genus *Hybognathus* found in the United States (Pflieger 1980). The species was first described by Girard (1856) from specimens taken from the Rio Grande near Fort Brown, Cameron County, Texas. It is a stout silvery minnow with moderately small eyes and a small, slightly oblique mouth (Pflieger 1975). Adults may reach 90 mm (3.5 in) in total length (Sublette et al. 1990). Its dorsal fin is distinctly pointed with the front located slightly closer to the tip of the snout than to the base of the tail (Pflieger 1975). Life color is silver with emerald reflections. Its belly is silvery white, fins are plain, and barbels are absent (Pflieger 1975, Sublette et al. 1990).

This species was historically one of the most abundant and widespread fishes in the Rio Grande basin, occurring from Espanola, New Mexico, to the Gulf of Mexico (Bestgen and Platania 1991). It was also found in the Pecos River, a major tributary of the Rio Grande, from Santa Rosa, New Mexico, downstream to its confluence with the Rio Grande in south Texas (Pflieger 1980). Collection data indicate the species presently occupies about five percent of its historic range (Platania 1993). It has been completely extirpated from the Pecos River and from the Rio Grande downstream of Elephant Butte Reservoir. Currently, it is found only in a 275 km (170 mi) reach of the middle Rio Grande, New Mexico, from Cochiti Dam, Sandoval County, to the headwaters of Elephant Butte Reservoir, Socorro County (Bestgen and Platania 1991). Throughout much of its historic range, decline of *H. amarus* may be attributed to modification of stream discharge patterns and channel desiccation by impoundments, water diversion for agriculture, and stream channelization (Bestgen and Platania 1991, Cook et al. 1992).

The Rio Grande silvery minnow no longer exists in the Pecos River where it was replaced by a congener, the introduced plains minnow (*H. placitus*) (Hatch et al. 1985, Bestgen et al. 1989, Cook et al. 1992). It is believed that the plains minnow was introduced into the Pecos drainage during 1968, probably the result of the release of "bait minnows" that were collected from the Arkansas River drainage. The replacement that ensued was complete in less than one decade (Cowley 1979). The plains minnow may be more tolerant of modified habitats and therefore able to replace *H. amarus* in the modified reaches of the Pecos River where it was introduced. It is also believed the two species hybridized (Cook et al. 1992). Habitat alteration and resulting flow modification could have also contributed to extirpation of the Rio Grande silvery minnow in the Pecos River.

Decline of the species in the Rio Grande probably began in 1916 when the gates at Elephant Butte Dam were closed. Elephant Butte was the first of five major mainstream dams constructed within the Rio Grande silvery minnow's habitat (Shupe and Williams 1988). These dams allowed the flow of the river to be manipulated and diverted for the benefit of agriculture. Often this manipulation resulted in the desiccation of some river reaches and elimination of all fish. Concurrent with construction of the mainstream dams was an increase in the abundance of non-native and exotic fish species, as these species were stocked into the reservoirs created by the dams (Sublette et al. 1990). Once established, these species often completely replaced the native fish fauna (Propst et al. 1987). Development of agriculture and the growth of cities within the historic range of *H. amarus* resulted in a decrease in the quality of water in the river that may have adversely affected the range and distribution of the species.

Most land bordering the river where the species currently exists is owned by the Middle Rio Grande Conservancy District, which is a quasi-public agency of the State of New Mexico. Other landowners include six Native American Pueblos, the U.S. Bureau of Reclamation, the Service, the U.S. Bureau of Land Management, New Mexico State Parks, New Mexico Department of Game and Fish, New Mexico State Lands Department, and the U.S. Army Corps of Engineers (Corps).

Water flow in the middle Rio Grande is controlled by the Rio Grande Compact Commission. Established in 1929 for the purpose of permanently and equitably apportioning the flows of the Rio

Grande, the Commission is composed of a Federal chairperson appointed by the President of the United States and three voting members—a representative designated by the Texas Governor and the State Engineers of New Mexico and Colorado. The Commission meets annually to review compliance with the compact over the preceding year, to hear reports from Federal water management agencies, and to consider water management decisions that have interstate implications. Federal agencies that also determine timing and amount of flow in the river include the International Boundary and Water Commission, the Bureau of Reclamation, and the Corps.

Previous Service Actions

The Rio Grande silvery minnow was listed on the Service's Animal Notice of Review (56 FR 58804; November 21, 1991) as a category 1 species. A category 1 species is one for which the Service has on file substantial information on biological vulnerability and threat(s) to support a proposal to list it as an endangered or threatened species. A proposed rule to list the Rio Grande silvery minnow as endangered with critical habitat was published in the Federal Register on March 1, 1993 (58 FR 11821).

Summary of Comments and Recommendations

In the March 1, 1993, proposed rule and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. The comment period originally scheduled to close on April 30, 1993, was extended until August 25, 1993, (58 FR 19220; April 13, 1993) to conduct public hearings and allow submission of additional comments. Appropriate Tribal governments, State agencies, county governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. Newspaper notices inviting public comment were published in New Mexico in the Albuquerque Journal on May 2, 1993; Las Cruces Sun News on April 30, 1993; Socorro Defensor Chieftain on April 28, 1993; Santa Fe New Mexican on April 20, 1993; and in Texas in the El Paso Times on March 20, 1993.

Because of anticipated widespread public interest, the Service held two public hearings that were announced in an April 13, 1993, Federal Register notice. Interested parties were contacted and notified of the hearings. Thirty-seven people attended the hearing in

Albuquerque, New Mexico, and 58 attended the hearing in Socorro, New Mexico. Oral or written comments were received from 25 parties at the hearings; none directly supported the proposed listing. Transcripts of these hearings are available for inspection (see ADDRESSES). Briefing sessions were also held for tribal leaders on May 18, 1993, in Albuquerque, New Mexico; and for a number of northern pueblos at Santo Domingo Pueblo, New Mexico, on September 9, 1993.

A total of 40 written comments were received at the Service's Ecological Services State Office in Albuquerque, New Mexico: 13 supported the proposed listing; 14 opposed the proposed listing; and 13 commented on information in the proposed rule but expressed neither support nor opposition.

Oral or written comments were received from 7 Federal and 5 state agencies, 14 local officials, and 36 private organizations, companies, and individuals. Written comments and oral statements presented at the public hearings and received during the comment periods are covered in the following summary. Comments of a similar nature or point are grouped into a number of general issues. These issues, and the Service's response to each, are discussed below.

Issue 1: The Service has come to the conclusion that only instream flow will assure the species' existence. Will the Service propose a program for the purchase of water rights in order to provide water for the species?

Response: The Service has not reached this conclusion. Possible instream flow requirements of the species are among several factors that need to be considered in the recovery planning process. If, during the recovery planning process, the Service determines that the purchase of water rights will enhance recovery of the species, the Service would explore with other State and Federal entities the possible purchase of water rights from willing sellers.

Issue 2: The United States, under the terms of the Convention of 1906, has the obligation to deliver 60,000 acre-feet of water annually to the Republic of Mexico. The U.S. International Boundary and Water Commission (IBWC) is responsible for ensuring that the U.S. government meets those obligations. The IBWC is concerned that the listing may interfere with their ability to meet these treaty requirements.

Response: The Service recognizes the treaty obligation of the United States to provide to the Republic of Mexico 60,000 acre-feet of water annually from

the Rio Grande. Measures taken to protect and recover the Rio Grande silvery minnow will take into consideration this treaty obligation and IBWC's ability to meet treaty requirements.

Issue 3: Completion of the dams above Elephant Butte Dam has had the effect of extending stream flow. Flood control and conservation storage operations do not, cannot, and have not been used to create or extend reaches of no flow in the riverbed.

Response: The Service agrees with the statement. Availability of flow is likely not the only factor affecting decline of the silvery minnow. These operations change the natural flow regime of the river and thus may affect survival of the Rio Grande silvery minnow. The final rule recognizes these other factors in the "Summary of Factors Affecting the Species."

Issue 4: Reservoirs do not, as implied, store all spring runoff and summer inflows. Water is normally released during summer, not winter months. Diversion dams and canals have limited capacities to divert flows. They cannot "completely divert all flows . . . into irrigation ditches" under flood conditions.

Response: The Service agrees with the statement that reservoirs do not store all spring runoff and summer inflow. While most water is released during the spring and summer, a fall and winter release does occur in the Middle Rio Grande Valley when conditions permit (Beal and Gold 1988, Borland and Gold 1989). Under flood conditions, the irrigation diversions do not have the capacity to divert all flows. Under non-flood flows they do have the capacity to divert all flows. United States Geological Survey (USGS) records substantiate the occurrence of no-flow periods downstream of the various irrigation diversion dams.

Issue 5: The proposed regulation is unsupported by any hydrological study as to the statements that irrigation uses have depleted the water flow. Not a single source of information is cited for comments regarding hydrology of the river. Depletions of water in the system may be the result of the construction of wildlife watering impoundments by the Forest Service and Bureau of Land Management.

Response: It can be readily documented by examining USGS flow gage records that river flows decrease when the irrigation season starts. In addition, the Service reviewed Bullard and Wells (1992), which provides information on the hydrology of the middle Rio Grande. This reduction in flow is most noticeable in mid-summer

after the spring to early summer peak flow has passed. Wildlife impoundments are often very small (less than one acre in size) and are considered to be insignificant in the amount of water they deplete from the drainage.

Issue 6: Economic considerations should be given more weight when communities may be affected.

Response: Section 4(a)(1) of the Act identifies five factors that are considered in making a determination of whether a species should be listed as threatened or endangered. Section 4(b)(1)(A) of the Act requires that listing determinations be based solely on the best available scientific and commercial data, and prohibits the Service from considering economic factors (50 CFR 424.11(b)). However, because economics are considered in the designation of critical habitat, the Service will conduct an economic analysis in the process of evaluating proposed critical habitat for the Rio Grande silvery minnow.

Issue 7: The Service needs to ensure public input before listing the Rio Grande silvery minnow. The Service is required to notify counties and other affected parties to solicit their input prior to listing a species under the Act. The Service failed to meet this obligation.

Response: On February 19, 1991, about 80 pre-proposal letters of inquiry were mailed to various governmental agencies, knowledgeable individuals, and the New Mexico Congressional delegation. On March 20, 1992, the Service held a meeting in Albuquerque, New Mexico, with various interested governmental and private entities to explore existing or potential flexibility in water delivery schedules that might avoid dewatering of the Rio Grande within the range of the Rio Grande silvery minnow. The Service also published notices of the proposal in 5 local newspapers and mailed copies of the proposed rule to 148 different government agencies, private organizations, and interested individuals, including all counties having lands that border the area being proposed for critical habitat designation. Two public hearings were also held. The Service has fully met or surpassed the requirements of the Endangered Species Act for public notification.

Issue 8: The Service held public hearings only to fulfill a legal obligation and will not pay attention to any public comment. The Service should have held public hearings in El Paso and Las Cruces.

Response: The Service disagrees. All comments are carefully evaluated before the Service makes a determination on

whether to proceed with a final rule. Numerous notifications of the proposed rule and extension of the comment period were distributed, and Service biologists traveled to several areas, including El Paso and Las Cruces, to present briefings on the proposed rule and accept comments.

Issue 9: The Service should establish a coordinating committee composed of interests below Elephant Butte Reservoir whose task would be to develop a full-scale report on the existing data available on the Rio Grande silvery minnow and how the river could be managed for the benefit of all, including the Rio Grande silvery minnow.

Response: After the species is listed the Service will consider, through the recovery planning process, establishing a coordinating committee to develop a report on the Rio Grande silvery minnow and how the river could be managed for the benefit of all, including the Rio Grande silvery minnow.

Issue 10: During periods of dewatering of the river, the ditches provide habitat for the species. The Service should consider exploring with the Middle Rio Grande Conservancy District, the counties, and other agencies the multiple use of riverside drains for the species and the preservation of bosque habitat.

Response: The Service agrees that during periods of drought, which result in the dewatering of the mainstream Rio Grande, the various irrigation ditches and drains may provide a temporary place of refuge for the Rio Grande silvery minnow. However, these areas do not contain suitable habitat for long-term use by the species. Few Rio Grande silvery minnows are found in the ditches and drains. Those that are found are believed to represent Rio Grande silvery minnows that became entrapped due to the diversion of irrigation water from the mainstream. The Service intends to investigate, with all interests, the potential use of the riverside drains for recovery of the species.

Issue 11: Few data exist on the abundance of the species on Pueblo lands or whether it can survive in the mud and sand when the river bed is dry.

Response: The Service used all available biological information in making the determination to list the Rio Grande silvery minnow as an endangered species. Recent census data from Pueblo lands are reported by Bestgen and Platania (1991), Platania and Bestgen (1988), Platania and Clemmer (1984), and the U.S. Bureau of Reclamation (1992). As additional information becomes available, including information from Pueblo waters, the Service will use that

information in the recovery planning process. The Service hopes that, through initiation of recovery efforts for the species, and in cooperation with the Pueblos, additional information can be obtained on the status of the species on Pueblo lands. The Service has no scientific data indicating that the species survives in the mud and sand during periods when the river is dry.

Issue 12: Competition between *H. amarus* and its congener *H. placitus* could have also contributed to extirpation of the species from the Pecos River. Studies should be conducted to determine if predation or competition by non-native fishes impacts the species. The studies should not just determine if it is a problem, they should also determine where and to what extent it is a problem.

Response: The Service has no data to substantiate any reasons for extirpation of the Rio Grande silvery minnow from the Pecos River and replacement by its congener *H. placitus*. Competition may have been a factor in its extirpation; however, it is more likely that hybridization between the two species was the primary factor. Studies designed to determine if predation or competition by non-native fishes impacts the survival of the Rio Grande silvery minnow will be conducted as part of recovery efforts for the species.

Issue 13: Recent biological studies have been conducted during a period of high flow; therefore, the results of those studies do not accurately reflect the distribution of the species under normal conditions.

Response: It is true that, other than 1989, recent data have been collected during a period of higher than normal flow. However, even these data show that the species is not as abundant as it was during other periods of above-normal flow. This leads to a conclusion that factors other than flow may be impacting the species and its habitat.

Issue 14: It seems a fair conclusion that the Cochiti downstream reach is no longer favorable habitat because of lowered water temperatures and degradation of favored *H. amarus* substrate. This further limits the area in which the species has to survive.

Response: Although the reach immediately downstream of Cochiti Dam may not be favorable habitat for the Rio Grande silvery minnow, it is not known how far downstream these conditions persist. As part of recovery efforts for the species, studies will be conducted on this question, and attempts may be made to correct the unfavorable conditions.

Issue 15: Since little is known of feeding habits or reproduction, the

claim that channel modification would adversely affect the Rio Grande silvery minnow is not supported by the best scientific evidence. Changes in food supply, not water supply, may be a factor affecting the species in the Rio Grande. Also, the effects of non-native plants upon the habitat need to be investigated.

Response: Recent data have shown that spawning activity occurs during peak spring and early-summer flows. The fertilized eggs drift with the current for about 24 hours and then hatch. The larval fish continue to drift downstream until they are swept into calm backwater and edge areas where food is abundant and they can continue to grow. Because of this spawning behavior, any modifications to the channel that result in changes that sweep the eggs and larval fish into less favorable habitats would adversely affect the species. There are no data presently available to support the contention that a reason for decline of the species was a decrease in the species' food supply or the invasion of non-native plants. As part of recovery efforts, the impacts of all habitat modifications will be investigated to determine if and how they impact the species.

Issue 16: Very little information was presented at the public hearing or in the Federal Register to show a cause-and-effect relationship between water quality and decline of the species.

Response: Limited information exists on the relationship between water quality and the decline of the species. A better understanding of this relationship will be developed as a result of recovery efforts.

Issue 17: The proposed listing of the Rio Grande silvery minnow is just a part of a much larger problem—the modification of the floodplain. Are activities at Bosque del Apache National Wildlife Refuge (NWR) affecting the species?

Response: The Service agrees. Listing the species will invoke protective provisions of the Act, such as those contained in section 7. The Service has no information that indicates activities at Bosque del Apache NWR impact the species. The Service will work with Federal agencies, including Bosque del Apache NWR, to ensure that their actions do not jeopardize the species through adverse effects on the floodplain. In addition, the Service is involved in several cooperative efforts with Federal, State, and private entities to protect the Rio Grande Bosque and associated floodplain.

Issue 18: The facts presented in the status report do not support the

conclusion that "anticipated additional modifications" would limit prospects of survival for the species in the middle Rio Grande.

Response: The facts presented in the status report do support the conclusion that "anticipated additional modifications" would limit prospects of survival for the species in the middle Rio Grande. According to the authors of the status report, "Conservation measures are necessary as continued habitat and flow modifications, introductions of non-native species, and lack of refugia threaten survival of *H. amarus*." The present status of the species is such that any activity that could negatively impact the species may limit prospects for its survival.

Issue 19: Only two facts support listing; that the species is presently found in only 5 percent of its historic range, and that other fish native to the middle Rio Grande (Rio Grande bluntnose shiner, phantom shiner, Rio Grande shiner, and speckled chub) have been extirpated from the river. The Service does not have adequate data to support the conclusion that the Rio Grande silvery minnow is endangered and should be listed under the Act.

Response: The Service agrees that the above two facts support listing. However, other facts that support listing include the species' decrease in abundance within the area it presently occupies, and its extirpation from the Pecos River after the introduction of the plains minnow into that system. The Service concludes, as detailed in the "Summary of Factors" section, that there is sufficient evidence to support listing the species as endangered under the Act. The Service reviewed the best scientific and commercial data available to make this determination.

Issue 20: The Rio Grande silvery minnow is not a distinct species. It is just a local population of the Mississippi silvery minnow. The Service should consider conducting studies for two years on the species' taxonomy.

Response: The Service has taxonomic information that verifies the Rio Grande silvery minnow as a distinct species. The Rio Grande silvery minnow is recognized by the American Fisheries Society, which is considered the scientific authority for the names of fishes, as a full species (American Fisheries Society 1991). Cook et al. (1992), using starch gel electrophoretic methods, found that phenetic and phylogenetic analyses corroborated the hypothesis that *H. amarus* is distinct at the species level from *H. nuchalis* and *H. placitus*, with which it was previously grouped.

Issue 21: The Service has not conducted in-depth studies to determine the number of silvery minnows that exist in the Middle Rio Grande Valley and associated drainage ditches. The species may be doing well without protection of the Federal government.

Response: Since 1987, studies have been conducted to document the population of Rio Grande silvery minnows in both the Middle Rio Grande Valley and its associated irrigation and drainage ditches from Velarde to Elephant Butte Reservoir, New Mexico. These studies have shown that very few Rio Grande silvery minnows survive in the drainage ditches. The listing is based, in part, upon the extirpation of the species from about 95 percent of its historic range. The species was once thought to be one of the most numerous fish in the Rio Grande. In 50 fish collections made between Bernalillo and Elephant Butte Reservoir between 1987 and 1988, the Rio Grande silvery minnow was the second most abundant species, comprising 18 percent of the total fish collected. From 1989 to 1992, 56 collections were made in the same area and only 3 Rio Grande silvery minnows were collected. During that period, the Rio Grande silvery minnow went from being the second most abundant native fish species to the least abundant native species (Platania 1993). The Service believes that without the protection afforded through Federal listing, the species is likely to become extinct. Two native Rio Grande fish species have already become extinct.

Issue 22: The fish exist in stretches of the river that have been subject to drying for at least 50 years, but have disappeared from areas where there has been instream flow for the past 50 years.

Response: The Service agrees that the species has persisted in reaches of the river that have experienced seasonal drying during the past 50 years and has been extirpated from reaches where there has been continual flow during the last 50 years. In the past, during periods of extremely low flow, the species survived in areas where irrigation water returned to the river, in seepage and leakage pools located downstream of irrigation diversion dams, and, prior to construction of Cochiti Dam, in the canyon reach of the Rio Grande upstream of Cochiti. Prior to the construction of irrigation and flood control dams in the southwest, it was not unusual for portions of major rivers to become dry during periods of drought. During these drought periods, native fishes would retreat to canyon reaches where permanent water existed. After the drought ended, they would re-

inhabit the reaches of river that had formerly been dry. There was a constant expansion and contraction of fish populations. Construction of mainstream dams prevented this movement and may have contributed to the extirpation of downstream populations of native fishes.

The reasons for the extirpation of the species from continual flow reaches of the river are not known but probably relate to factors other than flow. Changes in species composition, flow regimes, and water quality could all have been causative factors in the decline of the Rio Grande silvery minnow from these areas. Even in those areas where the species presently persists, its abundance has been substantially reduced (Platania 1993).

Issue 23: Listing is not necessary because of existing protection that is afforded the species by the requirements of the Coordination Act, National Environmental Policy Act, and other habitat protection regulations, such as section 404 of the Clean Water Act. Any activity that could affect the habitat of the species would have to undergo these reviews, including the Middle Rio Grande Conservancy District's work on its structures. Such work could not be done with impunity. Protection is also provided to the species because of its listing as endangered by the State of New Mexico.

Response: To date, the species has declined even with these regulations in place. These regulations do not ensure that habitat for the Rio Grande silvery minnow will be protected. Listing of the species by the State of New Mexico only regulates collecting of the species. It does not provide protection for its habitat or for its recovery. The Service believes the protective mechanisms of the Act are necessary to prevent the species' extinction.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that the Rio Grande silvery minnow should be classified as an endangered species. Procedures found at section 4(a)(1) of the Act (16 U.S.C. 1531 *et seq.*), and regulations (50 CFR Part 424) promulgated to implement the listing provisions of the Act were followed. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to the Rio Grande silvery minnow (*Hybognathus amarus*) are as follows:

A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

The only existing population of *H. amarus* continues to be threatened by annual dewatering of a large percentage of its habitat. This dewatering is primarily the result of diversion of river flow for agriculture within the Middle Rio Grande Valley of New Mexico. During a year when an average or above-average amount of water is available, the impacts of the diversions are not severe. During a below-average water year, the river channel may be dry from Isleta Diversion Dam downstream about 179 km (111 mi) to the headwaters of Elephant Butte Reservoir for two months or more. When two below-average flow years occur consecutively, a short-lived species such as *H. amarus* can be severely affected, if not completely eliminated from the dry reaches of river. During the 94 years for which flow records have been maintained for the middle Rio Grande, it has not been unusual for the 245 km (153 mi) reach of the Rio Grande from the Angostura Diversion Dam downstream to Elephant Butte Reservoir to experience periods of no flow. Even before construction of mainstream dams, the middle Rio Grande frequently experienced periods of no flow. During such periods, it is suspected *H. amarus* survived in areas where irrigation return flows re-entered the river, in the pools formed by water leaking through the gates of the diversion dams, in the irrigation ditches and drains, and in the reaches of stream above the diversions from which their offspring could repopulate downstream reaches when conditions permitted. It is not known why these same factors do not provide sufficient habitat to support *H. amarus* under current conditions. Other factors, such as an increase in non-native and exotic fish species, or an increase in contamination may be exacerbating the stress placed upon the species during low-flow periods.

Mainstream dams permit the artificial regulation of flow, prevent flooding, trap nutrients, alter sediment transport, prolong flows, and create reservoirs that favor non-native fish species. These changes may affect the Rio Grande silvery minnow by reducing its food supply, altering its preferred habitat, preventing dispersal, and providing a continual supply of non-native fishes that may compete with or prey upon the species. Altering flow regimes may also improve conditions for other native fish species that occupy the same habitat as the Rio Grande silvery minnow and may thereby cause their populations to

expand at the expense of the Rio Grande silvery minnow.

Since completion of Elephant Butte Dam in 1916, four additional mainstream dams have been constructed on the middle Rio Grande, and two dams have been constructed on one of its major tributaries, the Rio Chama (Shupe and Williams 1988).

Construction and operation of these dams, which are either irrigation diversion dams such as Angostura, Isleta, and San Acacia; or flood control and water storage dams such as Elephant Butte, Cochiti, Abiquiu, and El Vado, have modified the natural flow of the river. The dams make it possible during a low-flow year to completely divert all of the flow from the river channel into irrigation ditches. The species does not persist in the irrigation ditches or the low-flow conveyance channel. Platania (1993) collected fish samples from 11 locations along the low-flow conveyance channel between 1987-1989 and failed to locate any Rio Grande silvery minnows. The dams also store spring runoff and summer inflow, which would normally cause flooding, and release this water back into the river channel over a prolonged period of time. This release is often made during the winter months when low flows would normally occur. Artificially-controlled flows depart significantly from natural conditions. Reduced flows may limit the amount of preferred habitat available to the species and may limit dispersal of the species. Although the mechanisms of how the decline of the species occurred are not fully understood, manipulation of flow may be one of the primary reasons *H. amarus* has been extirpated from portions of its historic range.

Channelization of the middle Rio Grande has resulted primarily from the placement of Kellner jetty fields, or jacks, along the river. They are designed to protect the levees by retarding flood flows, trapping sediment, and promoting the establishment of vegetation. Since 1951, the Bureau of Reclamation and Corps have installed in excess of 100,000 individual jetties occupying more than 2,000 ha (5,000 ac) (Bullard and Wells 1992).

From Elephant Butte Dam downstream about 325 km (200 mi) to its confluence with the Rio Conchos, the Rio Grande is fully controlled by reservoir releases and irrigation return flows. Meanders, oxbows and other components of historic aquatic habitat have been eliminated in order to pass water as efficiently as possible for agricultural irrigation and downstream deliveries. These changes affected the Rio Grande silvery minnow by altering

its habitat to the extent that its survival was not possible. The sandy substrate, which it prefers, has been replaced by gravel and cobble, and no backwater areas exist where the young can develop. Winter flows released from Caballo Dam often equal .06 cubic meters per second (2 cubic feet per second), which is not enough flow to maintain habitat for fishes.

In 1958, in an effort to meet Rio Grande Compact water delivery requirements, the Bureau of Reclamation initiated operation of a 97 km (60 mi) long conveyance channel from San Acacia to Elephant Butte Reservoir. The purpose of the conveyance channel is to divert all flow less than 63 cubic meters per second (2000 cubic feet per second) in order to prevent loss of the Rio Grande flow to seepage and evaporation from the aggraded riverbed. Prior to 1985, the conveyance channel had been operated to its full capacity for about 28 years. Since 1985, it has not been operated at full capacity. If, however, the channel were to be operated at full capacity, the natural stream bed downstream of San Acacia would be dry more frequently and for longer periods of time. Both the Corps and the Bureau of Reclamation are drafting plans to rehabilitate and protect the conveyance channel in order to bring it into full operation. Should the conveyance channel be placed in full operation, the portion of the Rio Grande silvery minnow's habitat downstream of San Acacia dam would be desiccated when river flows at the dam became less than 63 cubic meters per second (2000 cubic feet per second), resulting in death or displacement of individuals.

Water diversions also occur above the Middle Rio Grande Valley in both Colorado and New Mexico. These diversions, which provide irrigation for about 248,000 ha (620,000 ac) in Colorado and about 24,400 ha (61,000 ac) in New Mexico, have a significant effect on flows (Cruz et al. 1993). In addition to these upstream diversions, about 94,000 acre-feet of water are diverted annually from the San Juan River basin and transported via a tunnel into the Rio Grande basin. This diversion may benefit the species since it is used to supplement flows during periods of low flow.

Growth of agriculture and cities along the Rio Grande during the last century may have adversely affected the quality of the river's water. During low-flow periods, a large percentage of the river's flow consists of municipal and agricultural discharge and less water is available to dilute pollutants. This degradation of water quality may affect

H. amarus survival. Poor water quality in the Rio Grande near Albuquerque, especially during low flows, may be a problem, as low numbers of *H. amarus* and an overall reduced fish community are found there (Bestgen and Platania 1991).

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

It is not presently known if the species is being overutilized for commercial, recreational, scientific, or educational purposes. New Mexico Department of Game and Fish controls scientific taking of the species through a permit process. Licensed commercial bait dealers may sell bait minnows only within the drainage where they have been collected. They are also restricted from selling any State-listed fish species. However, it has been demonstrated on the Pecos River, New Mexico, that often the dealers and retailers cannot identify listed fish species. Utilization of the species for recreational purposes could occur should an individual unknowingly collect the species while gathering bait minnows for personal use.

C. Disease or Predation

When fish are forced into confined habitats due to low flow, they are more susceptible to both disease and predation. Predation takes place when non-native species, including northern pike (*Esox lucius*), walleye (*Stizostedion vitreum*), white crappie (*Pomoxis annularis*), white bass (*Morone chrysops*), black and brown bullheads (*Ameiurus melas*, *A. nebulosus*), smallmouth bass (*Micropterus dolomieu*), and largemouth bass (*Micropterus salmoides*) are confined, during low flow or no flow, in limited habitat with *H. amarus* and other native species. These species have been introduced primarily by State and Federal fish and wildlife management agencies in efforts to develop sport fisheries in reservoirs created by the mainstream dams. The species have not remained confined to the reservoirs and have become established in the river both upstream from the impoundments and downstream of the dams where it is suspected they may compete with *H. amarus* for space and food in addition to preying upon them. Native predatory fish species, including the Rio Grande chub (*Gila pandora*) and bluegill (*Lepomis macrochirus*), may also prey upon subadult *H. amarus* under these circumstances. Avian and mammalian predation probably increases when *H. amarus* become confined in small clear-water pools.

Confining fish to pools causes stress that can often result in outbreaks of parasitic disease. Most notable is parasitism by the protozoan *Ichthyophthirius multifiliis*, which can be promoted by stress. External parasites, such as the copepod *Lernaea*, are more common among fish in confined conditions. No studies have been conducted on the impact of disease and parasites upon *H. amarus*; therefore, the significance of these threats for existing populations of the species is not known. However, stress-induced outbreaks may be exacerbated when high levels of pollutants or other stressors are present.

D. The Inadequacy of Existing Regulatory Mechanisms

The State of New Mexico lists *H. amarus* as an endangered species, Group 2 (New Mexico Department of Game and Fish 1993), which includes those species "... whose prospects of survival or recruitment within the State are likely to be in jeopardy within the foreseeable future." This listing provides the protection of the New Mexico Wildlife Conservation Act (Section 17-2-37 through 17-2-46 NMSA 1978) and prohibits taking of such species except under the issuance of a scientific collecting permit. The protection afforded to the species by the State does not provide protection to the habitat upon which the species depends.

New Mexico water law does not include provisions for acquisition of instream water rights for protection of fish and wildlife and their habitats. This has been a major factor affecting the survival of species dependent upon the presence of instream flow. Agencies responsible for administering water rights have been unable to administer the rights in a manner that protects, maintains, and recovers the Rio Grande silvery minnow. Under the existing water rights administration, two native fish species in the Rio Grande have become extinct, and two others have been extirpated.

State Game and Fish regulations in New Mexico allow the use of live minnows, including those brought into the State from other drainages, for sport fishing. This practice has encouraged the spread of these species, one of which, the plains minnow, has completely replaced and/or hybridized with *H. amarus* in the Pecos River.

E. Other Natural or Manmade Factors Affecting Its Continued Existence

In 1979, Cowley discovered the introduction of plains minnow (*H. placitus*) into the Pecos River drainage,

from collections made as early as 1968, and also recognized the disappearance of native *H. amarus*. The last known collections of *H. amarus* from the Pecos River took place in 1968 near Roswell, New Mexico. These same collections verified the first specimens of *H. placitus* from the river. It is suspected, because of the widespread use of *H. placitus* as a commercial bait species, that its introduction into the Pecos River was the result of release of bait fish by anglers.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to make this rule final. Based on this evaluation, the preferred action is to list the Rio Grande silvery minnow (*Hybognathus amarus*) as endangered throughout its historic range. A decision to take no action would constitute failure to properly classify this species pursuant to the Endangered Species Act and would exclude it from protection of the Act. The Service believes threatened status is not the proper classification for the species because of the extremely limited habitat the species presently occupies and the threats it faces. Endangered status is appropriate because of the significantly reduced range and declining abundance of the species, and because of the remaining threats to this fish and its habitat. Without Federal protection, the Rio Grande silvery minnow can be expected to become extinct in the foreseeable future.

Critical Habitat

Section 4(a)(3) of the Act requires, to the maximum extent prudent and determinable, that the Secretary designate critical habitat at the time a species is determined to be endangered or threatened. Section 4(b)(6)(C) states that a concurrent critical habitat designation is not required, and that the final decision on designation may be postponed for 1 year from the date of publication of the final rule to list the species. Section 4(b)(6)(C)(ii) allows the Service to delay critical habitat designation if it is not then determinable. The Service's regulations (50 CFR 424.12(a)(2)) state that critical habitat is not determinable if information sufficient to perform required analyses of the impacts of the designation is lacking or if the biological needs of the species are not sufficiently well known to permit identification of an area as critical habitat. Section 4(b)(2) of the Act requires the Service to consider economic and other impacts of designating a particular area as critical habitat. The Service is in the process of

evaluating the information obtained during the comment period on the economic impacts of designating critical habitat, and has started the process of having an economic analysis prepared on the proposed critical habitat designation. The complexities and extent of the activities that must be assessed preclude completion of the economic analysis within the 1-year deadline for listing the species. The completed draft economic analysis will be made available for public review and comment. The final decision on designation of critical habitat for the Rio Grande silvery minnow must be made by March 1, 1995, pursuant to section 4(b)(6)(C)(ii) of the Act.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and authorizes recovery plans for all listed species. The protection required of Federal agencies and the prohibitions against taking and harm are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat if any is proposed or designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

Federal actions that are expected to occur that may affect the survival of *H. amarus* include the operation and maintenance of dams and other structures that regulate the flow of water in the Rio Grande. Federal agencies that serve as water managers and decision-makers who determine timing and amount of flow in the river include the International Boundary and Water Commission, which ensures delivery of

water to Mexico under international treaties; the Bureau of Reclamation, which has played an important role in water development in the middle Rio Grande and has been actively involved in the major water supply networks of the basin; and the Corps, which is responsible for controlling any dredging or filling within navigable waterways and associated wetlands under section 404 of the Clean Water Act. The Corps also has constructed and operates Abiquiu, Cochiti, Galisteo, and Jemez dams to control flood waters and sediment in the Rio Grande. The Environmental Protection Agency oversees water quality issues that may affect the river. In addition, actions on the northern pueblos that are funded, authorized, or carried out by the Bureau of Indian Affairs may affect the Rio Grande silvery minnow.

The Act and implementing regulations found at 50 CFR 17.21 set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, or collect, or to attempt any of these), import or export, ship in interstate commerce in the course of a commercial activity, or sell or offer for sale in interstate or foreign commerce any listed wildlife species. It also is illegal to possess, sell, deliver, carry, transport, or ship any

such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered wildlife species under certain circumstances. Regulations governing permits are at 50 CFR 17.22 and 17.23. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities. In some instances, permits may be issued for a specified time to relieve undue economic hardship that would be suffered if such relief were not available. This species is not in trade, and such permit requests are not expected.

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to Section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the Federal Register on October 25, 1983 (48 FR 49244).

References Cited

A complete list of all references cited herein, as well as others, is available upon request from the State Supervisor, New Mexico Ecological Services State Office (see ADDRESSES section).

Author: The primary author of this final rule is Gerald L. Burton (see ADDRESSES section).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, and Transportation.

Regulation Promulgation

PART 17—[AMENDED]

Accordingly, part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, is amended as set forth below:

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Public Law 99–625, 100 Stat. 3500; unless otherwise noted.

2. Amend § 17.11(h) by adding the following, in alphabetical order under "FISHES", to the List of Endangered and Threatened Wildlife:

§ 17.11 Endangered and threatened wildlife.
 * * * * *
 (h) * * *

Species	Common name Scientific name	Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Fishes							
Minnow, Rio Grande silvery.	<i>Hybognathus amarus</i>	U.S.A. (NM, TX), Mexico.	Entire	E	541	NA	NA

Dated: June 30, 1994.
Mollie H. Beattie
 Director, Fish and Wildlife Service.
 [FR Doc. 94-17576 Filed 7-19-94; 8:45 am]
 BILLING CODE 4310-55-P