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**DEPARTMENT OF THE INTERIOR**

**Fish and Wildlife Service**

**50 CFR Part 17**

**Endangered and Threatened Wildlife  
and Plants; Threatened Status for *Gila  
Nigrescens* (Chihuahua Chub)**

**AGENCY:** Fish and Wildlife Service,  
Interior.

**ACTION:** Final rule.

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**SUMMARY:** The service determines the Chihuahua chub (*Gila nigrescens*) to be a Threatened species throughout its range under the authority contained in the Endangered Species Act of 1973, as amended. It was first proposed as Endangered by the Service on December 15, 1980 (45 FR 82474-77). The Chihuahua chub occurs in the Guzman Basin, including the Mimbres River of New Mexico and the Rio Casas Grandes, Rio Santa Maria, and Laguna Bustillos drainages of Mexico. This action is being taken because populations of the Chihuahua chub have been significantly reduced by habitat destruction and deterioration resulting from channelization, development of

flood levees, diversion of surface water for irrigation, dam construction, pollution, deforestation, and excessive groundwater pumping. The proposed Endangered status has been changed to Threatened status because of the chub's status in Mexico and the highly successful propagation efforts in the Dexter National Fish Hatchery. The hatchery fish will be used to attempt to reestablish the species in renovated habitat as part of a recovery effort. Critical Habitat has not been included in this final rule because of the strongly unfavorable response to the Critical Habitat portion of the proposed rule by local landowners. It appeared likely that the entire species could have been lost to illegal actions if Critical Habitat had been determined. It is therefore determined to be imprudent to designate Critical Habitat at this time.

This determination of *Gila nigrescens* to be a Threatened species implements the protection provided by the Endangered Species Act of 1973, as amended.

**DATES:** This rule becomes effective on November 10, 1983.

**ADDRESSES:** The complete file for this rule is available for inspection during normal business hours by appointment at the Regional Office of the U.S. Fish and Wildlife Service, 500 Gold Avenue, SW., P.O. Box 1306, Albuquerque, New Mexico 87103 (505/766-2323).

**FOR FURTHER INFORMATION CONTACT:** Dr. James Johnson, Region 2, Endangered Species staff (see Addresses above), or Mr. John L. Spinks, Jr., Chief, Office of Endangered Species, U.S. Fish and Wildlife Service, Washington, D.C. 20240 (703/235-2771).

**SUPPLEMENTARY INFORMATION:**

**Background**

The Chihuahua chub was first discovered in 1851 by J. H. Clark in the Mimbres River of New Mexico and, separately, by B. C. Kennerly in the Rio Casas Grandes of Mexico. Adult chubs average about 6 inches in length and are usually found in pools (3 feet in depth) or associated with some type of cover (undercut banks, submerged trees or shrubs, etc.) in small and medium-sized streams. This species is assumed to feed primarily on aquatic invertebrates, but no data are available. Spawning occurs in the spring, possibly extending through summer, perhaps in quiet pools over beds of aquatic vegetation. Little else is known about the biology of the Chihuahua chub.

Populations of the Chihuahua chub have been reduced in the Guzman Basin because of recent modifications in the aquatic habitats. The chub's preferred

pool and undercut bank habitat has been altered through a combination of factors including diversion of surface water for irrigation, channelization, construction of dams and levees, and deforestation. The excessive pumping of underground water supplies has also caused some springs and permanent aquatic habitats supporting the species to dry up. Finally, pollution is reported to be responsible for the elimination of chubs from some streams in Mexico.

In 1979, the Service contracted biologists from the University of Michigan to survey the status of the Chihuahua chub in the U.S. and Mexico. These workers found one small Chihuahua chub population (about 100 fish) in the U.S. They also documented the disappearance of chubs from 8 of 15 localities in Mexico where they were previously common or abundant.

In 1981 and 1982, the New Mexico Department of Game and Fish conducted Surveys for *Gila nigrescens* on the Mimbres River (U.S. tributary of the Guzman Basin) between the confluence of Allie and Shepard Canyons and two spring-fed tributaries. In 1981, 51 chubs of various ages were found in the mainstream, suggesting successful reproduction since flooding in 1978-1979. Eighty chubs were found in the same area in 1982. This flooding increased the number of pools with undercut streambanks containing some debris. These pools are now beginning to silt in. The main threat to the chub is the loss of habitat, especially deep holes and undercut banks, loss of water from the best habitat areas, and changes in the habitat resulting from levee and irrigation diversion construction. The distribution of the chub is limited to the few miles of permanent waters; much of the river is intermittent, most likely from use of water for irrigation.

The Service originally proposed to list the Chihuahua chub as Endangered. The New Mexico Department of Game and Fish felt that Threatened status was more appropriate. It based its recommendation on the presence of several populations in Mexico and the status of the captive population at Dexter National Fish Hatchery, and pointed out that the species was not in danger of extinction. In addition, the New Mexico Department of Game and Fish noted several other listed species that maintained most of their populations in Mexico and only peripheral populations in the United States that have been listed or proposed as Threatened (i.e., New Mexico ridge-nosed rattlesnake, beautiful shiner, Yaqui catfish). The Service agrees with this analysis and has changed the status to Threatened with special regulations.

**Summary of Comments and Recommendations**

In the December 15, 1980, Federal Register proposed rule and associated press releases, all interested parties were invited to submit factual reports or information and comments or suggestions that might contribute to the formulation of a final rule. The Service has considered all comments and recommendations received on the proposed rules. Comments and recommendations received on the proposal, together with responses, are summarized below.

A total of seven written comments were received, one each from the Governor of New Mexico, New Mexico Department of Game and Fish, New Mexico Department of Agriculture, Soil Conservation Service, New Mexico Farm and Livestock Bureau, one conservation organization and one scientific society.

The Governor of New Mexico opposed the listing of the Chihuahua chub as Endangered and the designation of Critical Habitat because he believed that the State could adequately protect the fish. The New Mexico Department of Game and Fish also opposed the listing of the chub as Endangered and the designation of Critical Habitat, but indicated that listing as Threatened without Critical Habitat would be supported. The New Mexico Department of Agriculture opposed listing and Critical Habitat designation because of the success of artificial propagation, results of recent surveys that found greater numbers of the chub, and because of local landowner concern for the effect of Critical Habitat designation on flood control and irrigation practices.

The Albuquerque Office of the U.S. Soil Conservation Service (SCS) commented that flooding could be a direct cause of habitat loss, that recent inventories that found successful reproduction should be recognized, as should the use of artificial propagation. The SCS agreed that water use of agriculture reduced the habitat, and this use would not change without a change in water rights. Most SCS activities could continue if this species was listed, but expenses could be higher.

For response, the Service believes that flooding is a principal reason for loss of chub habitat, as private landowners push up temporary dams within the streambed to divert flood waters. Artificial propagation of the Chihuahua chub at the Service's Dexter Hatchery has been successful in maintaining the species in captivity. This captive population will be used to help recover

the species when additional habitat is available, thereby supplementing the existing population. Listing of the chub could have an effect on SCS activities if such activities were detrimental to the species or its habitat. The Endangered Species Act does not consider increased project costs as a factor in the listing of species.

The New Mexico Farm and Livestock Bureau opposed listing of the Chihuahua chub for the following reasons: The proposed rule was contradictory concerning groundwater use; irrigation practices have been constant for over 100 years and would not suddenly impact the chub; counts of the fish were inaccurate; the proposed Critical Habitat area was too large; there were considerable numbers of this chub in Mexico, artificial propagation was successful, and more study was needed on predation by other fishes, the effects of exotic fishes, and the possible occurrence of the species in other States. The Bureau also felt that Critical Habitat designation would change irrigation practices at an increased cost to the private landowners.

The Service responds that excessive groundwater use has degraded the chub habitat, and depletion of the river would continue to do so. The well near San Lorenzo is far enough downstream that it is not expected to affect the chub's habitat. The Service believes that the impacts of irrigation were not "sudden," but that the species had been known to be declining since the turn of the century and that irrigation is one of several factors resulting in habitat loss and changes in the character of the Mimbres River over the last 100 years. The chub has gradually declined; in 1884, it was relatively abundant, in 1938 it was reported to be extinct, and it was found again in 1975. The fish have been counted using a variety of effective methods since 1938; even so the chub, never has been found to be abundant.

The Mexican Chihuahua chub populations are larger than the Mimbres River populations, but the Mexican populations are also reduced and appear to be declining in some areas due to the loss of habitat. As for the Bureau's comments regarding predation, fish of all life stages are preyed upon by larger organisms, but a species rarely becomes extinct from predation alone. Alteration of the chub's habitat and subsequent decline of its population has also created more habitat for exotic species. The main factor limiting the chub is loss of habitat, as indicated by all available data. The Chihuahua chub is only known from the Guzman Basin of New Mexico and Mexico, and not from any

other States. Privately funded irrigation practices will not be affected by this rule since Section 7 of the Endangered Species Act does not apply to any project that is not funded, authorized, or carried out by a Federal agency.

The conservation group and the scientific society supported the proposal to protect the Chihuahua chub under the provisions of the Endangered Species Act.

A public meeting was held on January 6, 1981, in Silver City, New Mexico, to answer questions and receive statements relative to the Endangered status and Critical Habitat of the Chihuahua chub. A total of 12 statements were made at the hearing and included those from the New Mexico Department of Agriculture, the Grant County Extension Service, and 10 individuals. The representative from the Department of Agriculture requested information concerning: Status of the species in the wild, the draft impact analysis, public hearing requests, due dates for comments, and Fish and Wildlife Service (FWS) land acquisitions. The County Extension Agent commented that more study on the factors affecting the species appeared necessary and perhaps flooding was the main impact to the chub. The Service agreed that more study is needed in order to assist recovery, but that sufficient data already existed to demonstrate the need to list. No research was conducted between 1938 and 1975 because the chub was believed to be extinct. Flooding has destroyed some chub habitat, but habitat is also lost to such activities as push-up dams to prevent flooding and stream dewatering.

Individual comments and questions concerned the effect of listing and Critical Habitat designation on private individuals and the Corps of Engineers. Concern was expressed about increases in costs to private landowners for reconstruction of their levees and temporary irrigation dams within the Mimbres River after the listing, the possibility that individuals would have to give up land for construction of dams or levees by the Corps of Engineers or that the Corps would be permitted to build dams or levees without the landowner's consent. The Service replied that the activities of private individuals, such as construction of push-ups dams or fruit tree spraying would not be affected if there were no Federal involvement and if the prohibitions of Section 9(a)(1) of the Endangered Species Act were not violated. The Service explained that the listing probably would not increase the

landowner costs and that the other actions would proceed only with landowner agreements. The major worry of private individuals centers around Critical Habitat. Because of Threatened illegal retaliation against the fish if Critical Habitat were declared, the Service has decided to withdraw the Critical Habitat proposal.

The Corps of Engineers would be affected only if a Corps' activity would be detrimental to the chub as provided in Section 7(a)(2) of the Endangered Species Act; use of Federal funds for flood rehabilitation or levee or dam construction would require consultation with the FWS if determined that such actions may effect the species.

After a thorough review and consideration of all information available, the Service has determined that the Chihuahua chub is a Threatened species throughout all or a significant portion of its range due to one or more of the factors described in Section 4(a)(1) (A) through (E) of the Endangered Species Act. This determination differs from the original proposal to list as Endangered, with Critical Habitat. Endangered status was changed to Threatened due to the presence of several populations of the chub in Mexico and the success of propagation efforts. Critical Habitat was removed to reduce the possibility of illegal acts that could easily result in the destruction of the chub in the Mimbres River.

The Service has determined that *Gila nigrescens* is primarily affected by factors A and E of Subsection 4(a)(1) of the Act. All five factors and their application to *Gila nigrescens* are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* The Mimbres River of New Mexico, which in the past supported an abundant Chihuahua chub population, has been significantly modified by agricultural and flood control developments. These activities have resulted in the elimination of much of the natural pool and undercut bank habitat, restricting the present population to one small section of the Mimbres River. Further flood reclamation work, maintenance of push-up irrigation diversions, channelization, and development of flood control levees without concern for the Chihuahua chub will continue to threaten the continued existence of this species in the United States. Studies in Mexico revealed that historic Chihuahua chub habitats were destroyed because of pollution, massive diversion of surface waters for irrigation, development of hydroelectric facilities, construction of levees, and

channelization. Some streams in Mexico were found to be completely dry, probably due to excessive pumping of underground aquifers or diversion of surface waters. Manipulations of the stream habitat as described above will likely continue as the interior of Mexico and areas along the Mimbres River in New Mexico are further developed.

B. *Overutilization for commercial, recreational, scientific, or educational purposes.* Overutilization of the Chihuahua chub is not a threat to its survival.

C. *Disease or predation.* Some predation of Chihuahua chubs by introduced rainbow trout and other species probably occurs, but the extent is unknown. The impact of this factor may be negligible if adequate escape cover is available.

D. *The inadequacy of existing regulatory mechanisms.* Laws concerning State listed Endangered species of New Mexico do not provide mechanisms to protect habitat. Listing the Chihuahua chub, pursuant to the Endangered Species Act of 1973 (87 Stat. 884; 16 U.S.C. 1531 *et seq.*), as amended, would protect its habitat from certain Federal actions through the consultation process under Section 7.

E. *Other natural or manmade factors affecting its continued existence.* The introduction of exotic fishes has been documented to have detrimental effects on many types of native stream fish. Therefore, it has been assumed that the establishment of the rainbow trout, carp, longfin dace, black bullhead, mosquitofish, and rock bass within the range of the Chihuahua chub could be a threat to its continued existence. However, the effect of this factor on the Chihuahua chub needs to be further studied.

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#### Critical Habitat

Section 4(a)(3) of the Act requires the Secretary to designate Critical Habitat for a species, to the maximum extent prudent and determinable, concurrent with the determination that such species is an Endangered or Threatened species. Designation of Critical Habitat for the Chihuahua chub is considered imprudent at this time.

The original Service plan was to proceed with the designation of Critical Habitat with the listing action. However, after initial contact with landowners and public officials in the local area, the Service determined that taking and vandalism threats in these remote streams were real possibilities and were likely to result in further reductions or perhaps even extirpation of the species. Therefore, for the long term benefit of the species, the proposal of Critical Habitat is withdrawn.

#### Available Conservation Measures

In addition to the effects discussed above, the effects of this final rule would include, but not necessarily be limited to, those mentioned below.

The Act and implementing regulations published in the June 24, 1977, **Federal Register** (42 FR 32372-32381) set forth a series of general prohibitions and exceptions which apply to Threatened wildlife. These regulations are found at § 17.31 of 50 CFR and are summarized below. In addition to these standardized regulations for Threatened species, Section 4(d) of the Act authorizes the Secretary to issue special regulations for a Threatened species that are necessary and advisable for the conservation of the species.

Such a special rule for the Chihuahua chub is included in this regulation. The special rule allows take in accordance with New Mexico State laws. The State law prohibits taking of the Chihuahua chub without a collecting permit. These permits are issued by the State and allow take for scientific purposes. The State law specifically prohibits bait minnow seining in the Mimbres River where this species occurs.

With respect to the Chihuahua chub, all prohibitions of Section 9(a)(1) of the Act, as implemented by § 17.31, would apply except that the Chihuahua chub may be taken in accordance with State laws. The prohibitions, in part, would make it illegal for any person subject to the jurisdiction of the United States to take, import or export, ship in interstate commerce in the course of a commercial activity, or sell or offer for sale this species in interstate or foreign commerce. It would also be illegal to

possess, sell, deliver, carry, transport, or ship any such wildlife which was illegally taken. Certain exceptions would apply to agents of the Service and the State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving Threatened species under certain circumstances. Regulations governing permits are codified at 50 CFR 17.32. Such permits are available for scientific purposes, for incidental take, or the enhancement of propagation or survival of the species.

Subsection 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species which is listed as Endangered or Threatened. This final rule requires Federal agencies to consult with the Service concerning any action that may affect the species, to insure that activities they authorize, fund, or carry out, are not likely to jeopardize the continued existence of the Chihuahua chub. Provisions for Interagency Cooperation are codified at 50 CFR Part 402.

**National Environmental Policy Act**

An Environmental Assessment has been prepared in conjunction with this rule. It is on file in the Service's Regional Endangered Species Office, 500 Gold Avenue, SW., Albuquerque, New Mexico 87103, and may be examined by appointment during regular business hours. This assessment forms the basis for a decision that this is not a major Federal action which would significantly affect the quality of the human environment within the meaning of Section 102(2)(C) of the National Environmental Policy Act of 1969 (implemented at 40 CFR Parts 1500-1508).

**Authors**

The primary authors of this rule are Dr. James Johnson and Ms. Sandra Limerick, Endangered Species Staff, U.S. Fish and Wildlife Service, Department of the Interior, P.O. Box 1306, Albuquerque, New Mexico 87103 (505/766-3972).

**List of Subjects in 50 CFR Part 17**

Endangered and threatened wildlife, Fish, Marine mammals, Plants (agriculture).

**Regulations Promulgation**

**PART 17—[AMENDED]**

Accordingly, Part 17, Subchapter B of Chapter I, Title 50 of the U.S. Code of Federal Regulations is amended as set forth below:

1. The authority citation for Part 17 reads as follows:

**Authority:** Pub. L. 93-205, 87 Stat. 884; Pub. L. 95-632, 92 Stat. 3751; Pub. L. 96-159, 93 Stat. 1225; and Pub. L. 97-304, 96 Stat. 1411 (16 U.S.C. 1531, *et seq.*).

2. Section 17.11(h) is amended by adding, in alphabetical order, the following to the list of fishes:

§ 17.11 **Endangered and threatened wildlife.**

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rule
Common name	Scientific name						
Fishes							
Chub, Chihuahua	<i>Gila nigrescens</i>	U.S.A. (NM) Mexico (Chihuahua).	Entre.....	T.....	NA.....	17.44(g)	

3. Title 50 CFR 17.44 is amended by adding a new paragraph (g) as follows:

§ 17.44 **Special rules—fishes.**

- (g) Chihuahua chub, *Gila nigrescens*
- (1) All provisions of § 17.31 apply to this species, except that it may be taken in accordance with applicable State law.
- (2) Any violation of State law will also be a violation of the Endangered Species Act.

Dated: September 15, 1983.

**J. Craig Potter,**  
Acting Assistant Secretary for Fish and Wildlife and Parks.

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