

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Final Endangered Status for the Louisiana Pearlshell "*Margaritana hembeli*"

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

summary: The Service determines the Louisiana pearlshell (*Margaritana hembeli*) to be an endangered species under the Endangered Species Act of 1973, as amended. This freshwater mussel is known to occur in 11 headwater streams of the Bayou Boeuf drainage in Rapides Parish, Louisiana. The preferred habitat is stable sand and gravel substrate in small, clear flowing

streams. The historic range of this species probably included most of the Bayou Boeuf headwater streams. The Louisiana pearlshell has been impacted by reservoir construction, silviculture practices, sedimentation, and domestic runoff. This determination implements the protection of the Endangered Species Act of 1973, as amended, for this freshwater mollusk.

EFFECTIVE DATE: March 7, 1988.

ADDRESSES: The complete file for this rule is available for inspection, by appointment, during normal business hours at the Jackson Field Office, U.S. Fish and Wildlife Service, Jackson Mall Office Center, Suite 316, 300 Woodrow Wilson Avenue, Jackson, Mississippi 39213.

FOR FURTHER INFORMATION CONTACT: Mr. James H. Stewart at the above address (601/695-4900 or FTS 490-4900).

SUPPLEMENTARY INFORMATION:

Background

The Louisiana pearlshell was described as *Unio hembeli* by Conrad in 1838. This species was placed in the genus *Margarona* by Lea (1870), then in *Margaritana* by Simpson (1900), and finally in *Margaritifera* by Athearn (1970). This mussel is about 100 millimeters (mm) (3.9 inches) long, 50 mm (2.0 inches) high, and 30 mm (1.2 inches) wide. The shell is generally elliptical with an angular posterior margin, obtuse undulations on the posterior slope, a dark brown to black periostracum, and white nacre. The species has been collected from only the Bayou Boeuf drainage in Rapides Parish, Louisiana. The Alabama population of earlier records is now considered a different species, the Alabama pearlshell, which was described as *Margaritifera marrianae* by Johnson in 1983. An extensive search of 39 streams in Rapides Parish by biologists from the Louisiana Natural Heritage Program (Louisiana Heritage 1985) found the Louisiana pearlshell in 11 streams. Nearly 90 percent of the population was in four streams: Long Branch, Bayou Clear, Loving Creek, and Little Loving Creek. Most individuals were in flowing water at depths ranging from 31 to 61 centimeters (12-20 inches) on sand and gravel substrates. The surrounding forest community is mixed hardwood-lobolly pine with a typical canopy closure of 75-100 percent (Louisiana Heritage 1985). Almost the entire known population of the Louisiana pearlshell occurs within areas administered by the U.S. Forest Service. The remaining range is within lands administered by the U.S. Air Force or is in private ownership.

The scattered occurrence of the Louisiana pearlshell in headwater

streams of the Bayou Boeuf drainage suggests that the species once occurred throughout the drainage, if not in other drainages. The Heritage survey estimated a total population at approximately 10,000 individuals. Since the survey, at least one bed of mussels has been inundated by a beaver pond and apparently eliminated. The Service published a proposed rule to list this species as endangered in the **Federal Register** (52 FR13794) on April 24, 1987.

Summary of Comments and Recommendations

In the April 24, 1987, proposed rule (52 FR 13794) and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. Appropriate State agencies, county governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. Newspaper notices that invited public comment were published in the *Baton Rouge State Times* and the *Baton Rouge Advocate* on May 20, 1987, and in the *Alexandria Daily Town Talk* on May 24, 1987. Comments were received from two Federal agencies, one State agency, and one professional biologist. In commenting on the proposed rule, the U.S. Forest Service described actions it is taking to protect this species, but did not take a position on the proposed rule. In earlier correspondence, this agency had requested the Service to expedite the listing to help it in protecting the species. On this basis it is evident that the Forest Service also supported the proposed rule. The U.S. Air Force and the other two commenters supported the proposed rule.

One commenter suggested that the Louisiana pearlshell historically occurred in drainages other than Bayou Boeuf based on information contained in museum notes but did not provide the information. The available data supports the current restriction of the Louisiana pearlshell to the Bayou Boeuf drainage. The historic occurrence of this species in other drainages would indicate an even greater range loss for the species and a more urgent need for this determination. Evidence of such historic occurrences is important to the recovery planning process.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that the Louisiana pearlshell (*Margaritifera hembeli*) should be classified as an endangered species. Procedures found at section 4(a)(1) of

the **Endangered Species 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 Louisiana pearlshell (*Margaritifera hembeli*) are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* The scattered occurrence of the species in headwater streams of the drainage suggests a historic range including most, if not all, of the Bayou Boeuf headwater systems, and that impoundments have eliminated populations in intervening areas. This suggested range is supported by a small population in Brown's Creek of the Bayou Rapides drainage. Bayou Rapides enters Bayou Boeuf several miles below any other known population of the Louisiana pearlshell. The species presently occurs in Mack Branch above Kincaid Reservoir but not in other streams contributing to this impoundment. Kincaid Reservoir impounds the uppermost headwaters of Bayou Boeuf. The known good populations occur in the unimpounded Caster Creek and Bayou Clear drainages, tributaries to Bayou Boeuf. Other impoundments of the Bayou Boeuf system that may have affected this species are Indian Creek Reservoir, Oden Lake, and Cotile Lake.

Inundation by beaver dams appears to be a significant threat. One population of about 1,000 individuals found in 1985 by the Louisiana Heritage survey was later inundated by a beaver pond. A 1986 Service survey of the site determined that this particular population of the Louisiana pearlshell had been eliminated. The small localized populations of this species are especially susceptible to beaver impoundments.

Freshwater mussels are adversely impacted by sediment and by unstable substrate. The Bayou Boeuf drainage includes a number of gravel pits on private lands that contribute to sedimentation, especially in the Indian Creek drainage. The sedimentation likely contributed to the elimination of Louisiana pearlshell populations that could have occurred in this drainage. Habitat within the Kisatchie National Forest is impacted by silviculture practices. Clear cutting, especially up to stream banks, increases erosion and runoff. In addition to the impacts of sedimentation from erosion, there are impacts from scouring of the substrate resulting from increased water velocity.

This scouring causes the substrate to shift and the mussels to be displaced. The known populations of this species occur in small, localized areas of stable sand and gravel substrate. Some adults are found in loose shifting sand, probably because of displacement. A field survey by a Service biologist found recruitment only in populations located in stable substrate containing some gravel. Adults may be able to survive a temporary shifting of the substrate where immature individuals cannot survive.

B. Overutilization for commercial, recreational, scientific, or educational purposes. Collecting poses a significant threat to this species. This mussel occurs in very shallow, clear streams and generally has about one inch of the shell protruding from the substrate. The entire population of a small stream may occur in only several yards of stream length. This restricted distribution and high visibility makes collection of the species very easy. A single overzealous recreational or scientific collector could drastically reduce the population of any given stream in a few hours. The collecting impacts could easily reduce the population below levels necessary for reproduction.

C. Disease or predation. There is no evidence of threats from disease. The shallow stream habitat of this species makes it very vulnerable to predation by raccoons and muskrats.

D. The inadequacy of existing regulatory mechanisms. There are no Federal, State, or local laws or regulations specifically covering this species. Although U.S. Forest Service regulations prohibit the taking of sensitive species, such prohibitions are difficult to enforce.

E. Other natural or manmade factors affecting its continued existence. The fish host for the juvenile stage of this species is unknown; therefore, impacts on this aspect of the mussel's life cycle cannot be evaluated. There is some evidence that the Brown's Creek population is affected by domestic pollution from upstream houses and farms. The Louisiana pearlshell is threatened by its limited range and low numbers. Many of the streams where this species occurs are isolated from each other. This creates isolated gene pools that are vulnerable to loss of genetic variability. Because this species depends upon water currents to transport gametes from one individual to another, isolation and reduced density of populations decreases the likelihood of successful reproduction.

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 Louisiana pearlshell as endangered. Endangered status was chosen because of the very limited range, small population size, and vulnerability owing to small stream habitat of the species. Threatened status is not appropriate because the species is restricted to a few small streams in a single drainage and occurs in small areas within each stream. An entire stream's population is therefore vulnerable to a single catastrophic event. Critical habitat is not proposed for this species for reasons given in the next section.

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time a species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not prudent for this species at this time. The Louisiana pearlshell is the most southerly occurring member of the family *Margaritiferidae*. As such, it is sought by both scientific and amateur collectors. Publication of the exact location of populations could lead to excessive collection of this easily observed species. The U.S. Forest Service is the Federal agency most involved with this species and is already aware of the existing populations. All other involved parties and landowners have been notified of the location and importance of protecting this species' habitat. Precise locality data are available to appropriate Federal agencies through the Service office described in **ADDRESSES** section.

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 prohibition 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 requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following listing. The protection required of Federal agencies and the prohibition 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 being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR Part 402. Section 7(a)(4) 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 involvement is expected to include U.S. Forest Service silviculture practices and U.S. Air Force activities on a practice bombing range. The U.S. Forest Service prepares sites, plants seedling trees, and harvests timber within the range of this species. The U.S. Air Force conducts combat training exercises for pilots on Claiborne Range. The above agencies may be required to consult with the Service on such activities to ensure that they are not likely to jeopardize the continued existence of this species.

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, 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 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 during a specified period of time to relieve undue economic hardship that would be suffered if such relief were not available.

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

Athearn, H.D. 1970. Discussion of Dr. Heard's paper (Eastern freshwater mollusks, the south Atlantic and Gulf drainages). Pages 28-31 in A.H. Clarke (ed.), Papers on the rare and endangered mollusks of North America. *Malacologia* 20(1):1-50.

Conrad, T.A. 1838. *Monography of the family Unionidae, or naiades of Lamarck (Freshwater bivalve shells) of North America* 1:93-94, plate 51.

Johnson, R.E. 1986. *Margaritifera morrianae*, a new species of Unionacea (Bivalvia: Margaritiferidae) from Mobile-Alabama-Coosa and Escambia River systems, Alabama. Occasional Papers on Mollusks (Museum of Comparative Zoology, Harvard University) 4(62):299-304.

Lee, I. 1870. A synopsis of the family Unionidae. 4th edition. H.C. Lea, Philadelphia. 164 pp.

Louisiana Natural Heritage Program. 1985. Status of *Margaritifera hembeli* (Unionacea: Margaritiferidae) in Kisatchie National Forest, Evangeline Ranger District, Rapides Parish, Louisiana, November 1985. An unpublished report to the U.S. Forest Service. 20 pp.

Simpson, C.T. 1900. Synopsis of the naiades, or pearly fresh-water mussels. Proc. U.S. Natl. Mus. 22-679.

Author

The primary author of this final rule is James H. Stewart (see ADDRESSES section). Contact by telephone at 601/965-4900 or FTS 490-4900.

List of Subjects in 50 CFR Part 17

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

Regulation Promulgation

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

PART 17—(AMENDED)

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

Authority: Pub. L. 93-205, 87 Stat. 884; Pub. L. 94-350, 90 Stat. 911; Pub. L. 95-632, 92 Stat. 3751; Pub. L. 96-159, 93 Stat. 1225; Pub. L. 97-304, 96 Stat. 1411 (16 U.S.C. 1531 et seq.); Pub. L. 99-625, 100 Stat. 3500 (1986), unless otherwise noted.

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

§ 17.11 Endangered and threatened wildlife.

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(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
CLAMS							
Pearlshell, Louisiana	<i>Margaritifera hembeli</i>	U.S.A. (LA)	NA	E	304	NA	NA

Dated: January 12, 1988.
 Susan Recca,
 Assistant Secretary for Fish and Wildlife and Parks.
 [FR Doc. 88-2470 Filed 2-4-88; 8:45 am]
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