

50 CFR Part 17

RIN 1018-AB31

**Endangered and Threatened Wildlife
and Plants; Threatened Status
Determined for the Arkansas
Fatmucket, *Lampsilis powelli***

AGENCY: Fish and Wildlife Service,
Interior.

ACTION: Final rule.

SUMMARY: The Service determines the Arkansas fatmucket, *Lampsilis powelli*, to be a threatened species under the authority of the Endangered Species Act of 1973, as amended (Act). This freshwater mussel is known to exist in the headwaters of the Saline River, and in the Caddo, Ouachita, and South Fork Ouachita Rivers of central Arkansas. Major threats to its continued existence

are impoundments, channel alteration, gravel dredging, sedimentation, and water quality degradation.

EFFECTIVE DATE: May 7, 1990.

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: James Stewart at the above address (601/965-4900 or FTS 490-4900).

SUPPLEMENTARY INFORMATION:

Background

The Arkansas fatmucket was described as *Unio powelli* by Lea in 1852 from the Saline River, Arkansas (Johnson 1980). It was synonymized under *Actinonaias ligamentina* by Call in 1895 (Harris and Gordon 1988). In 1900, Simpson placed it in the genus *Lampsilis* (Simpson 1914). The species has been overlooked by a number of authors in reviews of Arkansas mussel fauna, including Burch (1975), Gordon, et al. (1980) and Gordon (1980). Johnson (1980), in his monograph, Stansbery (1983), and Gordon and Harris (1985), all consider *L. powelli* as a valid species. Reported collections of *L. powelli* from the Spring and Neosho Rivers, Kansas, and the Black River, Missouri, are misidentifications.

The shell of the Arkansas fatmucket is generally of medium size, but it occasionally exceeds 100 mm in length. It is elliptical to long obovate with subinflated valves. The umbos are moderately full and project slightly above the hinge line. The shall surface is generally smooth with a shiny olive brown to tawny periostracum and lacks rays. The nacre is bluish white and iridescent. There is sexual dimorphism (Johnson 1980).

The Arkansas fatmucket prefers deep pools and backwater areas that possess sand, sand-gravel, sand-cobble or sand-rock with sufficient flow to periodically remove organic detritus, leaves and other debris. It is not generally found in riffles nor does it occur in impoundments. It is frequently found with islands of *Justicia americana* (water willow) where substrate is typically depositional and water depth is about 1 meter (Harris and Gordon 1988).

The Arkansas fatmucket is known to exist in the Ouachita, Saline and Caddo River systems. In the Ouachita, Basin, this species occurs in the Ouachita River upstream of Lake Ouachita in Montgomery and Polk Counties, and in

the South Fork Ouachita River upstream of Lake Ouachita in Montgomery County. In the Saline River Basin, the species occurs in Alum Fork, the Middle Fork, and the North Fork above their confluence with the Saline River, and in the Saline River from its formation downstream to about the Fall Line. The species does not occur in the South Fork of the Saline or in Hurricane Creek, a major tributary, but it probably did historically. In the Caddo River, the Arkansas fatmucket is known from three locations, all of which are in the mainstem.

Collection records on which to base historical distribution of this species do not exist. However, some assumptions can be made by examining the current distribution, current habitat types, and alterations to habitat that have occurred for various reasons. The probable historic range of this species likely included the Caddo River from Norman downstream to the Ouachita River, including at least the lower reach of the South Fork Caddo River. It seems likely that the species occupied the Ouachita River from Malvern upstream to the species' currently known range, and the South Fork Ouachita River for its entire length. In the Saline River drainage, the Arkansas fatmucket likely occurred in all four forks and the mainstem from the Fall Line upstream to the extent of permanent flowing water, and in Hurricane Creek upstream of the Fall Line. Archeological records of other Ozarkian mussels indicate these species may have historically occurred throughout the entire drainage of those systems rather than being restricted to the headwaters as they are at present.

Land use in the basins where this species occurs is predominantly silviculture with lesser amounts of crop land, grass land and urban development. Most of the forest land is owned by timber companies, although a small portion of the species' range lies within the Ouachita National Forest. The remainder of the land is privately owned in relatively small tracts (Harris and Gordon 1988).

The species was listed as a candidate (category 2) in the notice of review published on January 6, 1989 (54 FR 579). Category 2 species are those taxa for which the Service needs additional information before proposing to list the species. The proposed rule to classify *L. powelli* as a threatened species was published on July 27, 1989 (54 FR 31212).

Summary of Comments and Recommendations

In the 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. Appropriate State agencies, county governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. A newspaper notice inviting general public comment was published in the *Sentinel Record*, Hot Springs, Arkansas on August 12, 1989, and in the *Arkansas Democrat* and the *Arkansas Gazette*, Little Rock, Arkansas on August 13, 1989. Ten comments were received. Four State agencies commented in support of the proposed rule and two State agencies did not take a position. A Federal agency committed to supporting populations of *L. powelli* without specifically expressing a position on the proposed rule. Several issues were raised by commenters and are discussed below.

Issue 1: Impacts to Lampsilis powelli from silvicultural practices within the Ouachita Mountains.

Response: One commenter objected to conclusions in the proposed rule regarding the adverse impacts of silviculture to this species and provided information to support an opposing position. This information has been incorporated into the discussion under Factor A in the "Summary of Factors Affecting the Species" below.

Issue 2: Establish present extent of distribution prior to making ruling.

Response: The Service contracted for a survey of the range and based the proposed rule upon that survey. This is the best available information on the status of the species.

Issue 3: Impact of listing on potential municipal water supply.

Response: The Service must make determinations solely on the basis of the best available scientific and commercial information regarding a species' status, without reference to possible economic or other impacts of such determination.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that the Arkansas fatmucket (*Lampsilis powelli*) should be classified as a threatened 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 listed 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 Arkansas

fatmucket (*Lampsilis powelli*) are as follows:

A. *The present or threatened destruction, modification or curtailment of its habitat or range.* The range of this species has been curtailed and continues to be threatened by impoundments, channel alteration, gravel dredging, sedimentation and water quality degradation. On the Ouachita River, the range of this species has been reduced by the construction of Lake Ouachita, Lake Hamilton and Lake Catherine and the hypolimnetic water releases from these impoundments. On the Caddo River, the impoundment of DeGray Reservoir and resulting hypolimnetic water releases have impacted what was probably the uppermost historic habitat for the species in this system. A part of the Ouachita River Basin Comprehensive Study by the U.S. Army Corps of Engineers includes a feasibility study for one or more impoundments for flood control and other purposes on the Saline River near Benton (Harris and Gordon 1988). The Soil Conservation Service has constructed one impoundment on a tributary of the South Fork Ouachita River, has another under construction, and plans a third impoundment on the mainstem South Fork Ouachita River (Harris and Gordon 1988). While these Soil Conservation Service impoundments will not directly inundate known populations of this species, there are impacts occurring during the construction and possibly during the operation of these impoundments. During construction, there is increased threat from silt and sediment, and after completion, the control of water flows during low flow periods could expose the mussel and also result in lowered dissolved oxygen. Harris and Gordon (1988) list 16 existing impoundments, 1 under construction, and 1 planned within the known range of this mussel that undoubtedly have already impacted its existence or will in the future.

In the South Fork Ouachita River, there is evidence of adverse impacts to a population of the Arkansas fatmucket from channel alteration as a result of highway repairs occurring in 1984-85. The existing channel is filling with organic debris, and flows are apparently inadequate to flush the area. Channel modification is common at highway crossings, and habitat for this species undoubtedly has been impacted by the many road crossings within its range.

Small gravel operations are common within the range of this species, and many streams are impacted by the removal of preferred substrate and by the resulting downstream sedimentation.

The Saline River downstream of Benton is severely impacted by gravel dredging (Harris and Gordon 1988).

A large majority of the watershed in rivers where this mussel occurs is in timber production, with the next most common land use being agricultural production—primarily livestock and broiler chickens. Silvicultural practices in the area have contributed to sedimentation problems. There is a difference of opinion in the literature over the degree of impact from sedimentation resulting from silviculture. Using an Arkansas Soil and Water Conservation Commission (Commission) report, Harris and Gordon (1988) estimated 214,300 tons of sediment are transported annually in the Alum Fork and Middle Fork Saline Rivers, where the best population and habitat occurs. The majority of this erosion is sheet and rill, with road- and stream-bank erosion accounting for most of the remainder.

In a nonpoint source assessment of potential erosion and siltation from silviculture, the Arkansas Department of Pollution Control and Ecology (1989) found that significant impairments to the streams in the Ouachita Mountains region had not occurred. Beasley, *et al.* (1984), developed data that cast doubt on the Commission method of predicting erosion of forest roads. Miller, *et al.* (1985 a, b), estimated the sediment rate from forest roads and lands to be about one percent of the Commission's estimated rate. Lawson (1985) considered erosion rates in Ozark-Ouachita Mountain soils to be low due to very porous soil, high filtration rates, moderate to large amounts of rock, and fibrous roots of vegetation that protect the soil surface from raindrop impact and impede flow. The use of a universal soil loss equation in the Commission's estimate for the Ouachita Mountains is apparently inadequate in light of this later research. As a result, the impact of sediment from silviculture on Ouachita Mountain streams may not be significant.

Water quality degradation apparently is responsible for the absence of the Arkansas fatmucket from a significant area within the species' probable historic range. The South Fork Caddo River receives runoff from a barite mining operation. Prairie Creek, a tributary of the Ouachita River, receives improperly treated municipal waste (Harris and Gordon 1988). Hurricane Creek and Lost Creek of the Saline River drainage receive acid mine runoff from bauxite mines. Additionally, non-point source pollution occurs in varying degrees from feedlot runoff, timber

harvest, road construction, and fertilization for agriculture in all three river basins where this species is found.

Existing habitat in the Ouachita and Caddo Rivers is marginal at best. In a 1987-1988 survey of the mainstem Ouachita River, involving some 54 river miles of potential habitat, only 5 individuals of the Arkansas fatmucket were collected (Harris and Gordon 1988). In the Caddo River, the stream gradient upstream of DeGray Reservoir is such that habitat is marginal and the two known populations of this species may be in jeopardy. The only known population in the Caddo River below DeGray Reservoir may be impacted by hypolimnetic water releases.

The probable historic range of this species has been reduced by over 40 percent (138 river miles), and the optimum habitat and good populations currently occur in only about 20 percent (62 river miles) of the total estimated area of historic habitat. These calculations are based upon the historic range as described in the "Background" section. If habitat loss were based upon the range that is indicated by archeological records, the percentage would be much greater.

B. *Over-utilization for commercial, recreational, scientific or educational purposes.* This species has not been collected for scientific purposes and does not seem to be in jeopardy from over-collecting. However, this could pose a threat to the limited populations occurring in the Ouachita, Caddo, Saline or the North Fork Saline Rivers, should someone decide to collect in these areas.

C. *Disease or Predation.* There are no known diseases or predators for this species. Muskrats have not been observed to use the species for food.

D. *The inadequacy of existing regulatory mechanisms.* The State of Arkansas requires a scientific collector's permit prior to taking any species of mollusc. However, this is an almost unenforceable regulation because of limited law enforcement personnel and more urgent priorities. Other environmental regulations will not give priority to this species unless it is listed.

E. *Other natural or manmade factors affecting its continued existence.* The life history requirements for this species, including the fish host, are unknown, making it impossible to evaluate potential impacts in this regard. The remaining populations of the Arkansas fatmucket are somewhat isolated from each other, which can lead to a loss of genetic diversity and difficulty with reproduction, especially in those streams where the population is very

low. The good population in the South Fork Ouachita River (9 percent of existing habitat) is isolated from all other populations by Lake Ouachita, as is the very sparse population in the mainstem Ouachita River. The Caddo River populations are isolated from each other by DeGray Reservoir and from the Saline River populations by some 200 river miles. The Saline River drainage populations are isolated from the other populations, but they are not isolated from each other by any obvious natural barriers. However, if the fish host is not migratory, the exchange of genetic material between these populations would be a very uncommon event.

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 Arkansas fatmucket as threatened rather than endangered. Threatened status was chosen because the species still occurs in good numbers in the headwater streams of two river systems. This distribution makes it unlikely that all populations would be affected by a simultaneous action. Critical habitat is not designated for reasons discussed in that section.

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that to the maximum extent prudent and determinable, the Secretary may designate any habitat of a species that is considered to be critical habitat at the time the 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 owing to lack of benefit from such designation. No additional benefits would accrue from a critical habitat designation that do not already accrue from the listing. Precise locality data are available to appropriate agencies through the Service office described in the "ADDRESSES" section. All involved parties and landowners will be notified of the location and importance of protecting this species' habitat.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery action, 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 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 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 being 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.

Protection needs of the Arkansas fatmucket should be considered during the following potential involvement by Federal agencies: The Environmental Protection Agency—pesticide registration and waste management actions; Corps of Engineers—project planning and operation, and during the permit review process; Soil Conservation Service—construction and operation of impoundments; Federal Highway Administration—bridge and road construction at points where known habitat is crossed; and possibly the Farmers Home Administration—various loan programs that may be associated with further urban development within the species' range.

The Act and implementing regulations found at 50 CFR 17.21 and 17.31 set forth a series of general prohibitions and exceptions that apply to all threatened 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 species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions would apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving threatened wildlife species under certain circumstances. Regulations governing permits are at 50 CFR 17.22 and 17.23 and 17.32. 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. For threatened species, there are also permits for zoological exhibition, educational purposes, or special purposes consistent with the purposes of the Act.

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).

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 Stansbery, D.H. 1983. Some sources of nomenclatural and systematic problems in

unionid mussels. Pp. 46-62 In A.C. Miller, compiler. Report of freshwater mussels workshop. 26-27 October 1982. U.S. Army Engineer Waterways Experiment Station, Environmental Laboratory, Vicksburg, MS.

Author

The primary author of this rule is James Stewart (see "ADDRESSES" section).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, 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: 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1543; 16 U.S.C. 4201-4245; Pub. L. 99-625, 100 Stat. 3500, 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:							
Fatmucket, Arkansas.....	<i>Lampsilis powelli</i>	U.S.A. (AR).....	.	NA	T	382	NA NA

Dated: March 15, 1990.
 Richard N. Smith,
 Acting Director, Fish and Wildlife Service.
 [FR Doc. 90-7813 Filed 4-4-90; 8:45 am]
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