
DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AB31

**Endangered and Threatened Wildlife
and Plants; Purple Cat's Paw
Pearlymussel Determined To Be an
Endangered Species**

AGENCY: Fish and Wildlife Service,
Interior.

ACTION: Final rule.

SUMMARY: The Service determines the purple cat's paw pearlymussel (*Epioblasma* (= *Dysnomia*) *obliquata* (*=E. sulcata sulcata*)), to be an endangered species under the Endangered Species Act of 1973, as amended (Act). This freshwater mussel

historically occurred in the Ohio River and its large tributaries in Ohio, Indiana, Illinois, Kentucky, Tennessee, and Alabama. Presently the purple cat's paw pearlymussel in known from only two relict, apparently nonreproducing populations—one in a reach of the Cumberland River in Tennessee and one in a reach of the Green River in Kentucky. The distribution and reproductive capacity of this species have been seriously impacted by the construction of impoundments on the large rivers it once inhabited. Unless reproducing populations are found or methods developed to maintain existing populations, this species will likely become extinct in the foreseeable future.

EFFECTIVE DATE: August 9, 1990.

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, Asheville Field Office, 100 Otis Street, Room 224, Asheville, North Carolina 28801.

FOR FURTHER INFORMATION CONTACT: Mr. Richard G. Biggins at the above address (704/259-0321 or FTS 672-0321).

SUPPLEMENTARY INFORMATION:

Background

The purple cat's paw pearlymussel (*Epioblasma* (= *Dysnomia*) *obliquata obliquata* (= *E. sulcata sulcata*)) was described by Rafinesque (1820). The white cat's paw (*Epioblasma* (= *Dysnomia*) *sulcata delicata*), the northern subspecies of the cat's paw pearlymussel known from the Lake Erie system of the St. Lawrence drainage, was listed as endangered on June 14, 1976 (41 FR 24064). The purple cat's paw, which is characterized as a large river species (Bates and Dennis 1985), has a medium-size shell that is subquadrate in outline (Bogan and Parmalee 1983). The shell has fine, faint, wavy green rays with a smooth and shiny surface. The inside of the shell is purplish to deep purple (the inside shell of the white cat's paw is white). Like other freshwater mussels, the purple cat's paw feeds by filtering food particles from the water. It has a complex reproductive cycle in which the mussel's larvae parasitize fish. The mussel's life span, fish species its larvae parasitize, and other aspects of its life history are unknown.

The purple cat's paw pearlymussel was historically distributed in the Ohio, Cumberland, and Tennessee River systems in Ohio, Illinois, Indiana, Kentucky, Tennessee and Alabama (Bogan and Parmalee 1983, Isom, *et al.* 1979, Kentucky State Nature Preserves Commission 1980, Parmalee *et al.* 1980, Stansbery 1970, Watters 1986). Based on

personal communications with knowledgeable experts (Steven Ahlstedt and John Jenkinson, Tennessee Valley Authority, 1987; Mark Gordon and Robert Anderson, Tennessee Technological University, 1988; Arthur Bogan, Philadelphia Academy of Sciences, 1988; Ronald Cicerello, Kentucky State Nature Preserves Commission, 1988; David Stansbery, Ohio State University, 1987) and a review of current literature, the species is known to survive in only two river reaches, but apparently as nonreproducing populations. These are located in the Cumberland River, Smith County, Tennessee, and the Green River, Warren and Butler Counties, Kentucky.

The continued existence of these two populations is questionable. Unless reproducing populations can be found or methods can be developed to maintain these or create new populations, the species will become extinct in the foreseeable future. Any individuals that do still survive in these two river reaches are also threatened from other factors. The Green River in Kentucky has experienced water quality problems related to the impacts from oil and gas production in the watershed. The individuals still surviving in the Cumberland River are potentially threatened by gravel dredging, channel maintenance, and commercial mussel fishing. Although the species is not commercially valuable, incidental take of the species does sometimes occur in the Cumberland River during commercial mussel fishing for other species.

The purple cat's paw pearlymussel was recognized by the Service as a category 2 species (one that is being considered for possible addition to the Federal List of Endangered and Threatened Wildlife) in a May 22, 1984, notice published in the *Federal Register* (49 FR 21664). On May 2, 1988, and September 8, 1988, the Service notified Federal, State, and local governmental agencies and interested individuals by mail that a status review was being conducted specifically on the purple cat's paw pearlymussel and that the species could be proposed for listing.

On July 27, 1989, the Service published in the *Federal Register* (54 FR 31209) a proposal to list the purple cat's paw pearlymussel as an endangered species. That proposal provided information on the species' biology, status, and threats to its continued existence.

Summary of Comments and Recommendations

In the July 27, 1989, proposed rule and associated notifications, all interested parties were requested to submit factual

reports and information that might contribute to development of the final rule. Appropriate Federal and State agencies, county governments, scientific organizations, and interested parties were contacted and requested to comment. A legal notice was published in the following newspapers: The *Daily News*, Bowling Green, Kentucky, August 13, 1989; and the *Lebanon Democrat*, Tennessee, August 10, 1989.

A total of ten comments were received from nine entities. Six respondents (National Park Service, Mammoth Cave National Park; U.S. Soil Conservation Service, Tennessee Office; the Department of the Army, Corps of Engineers, Louisville District; Kentucky Department of Fish and Wildlife; Kentucky State Nature Preserve Commission; and Tennessee Department of Conservation) supported the proposal to list the purple cat's paw pearlymussel as an endangered species. The Department of the Army, Corps of Engineers, Nashville District, noted that listing the species would not significantly impact their district program or jurisdiction. The Indiana Department of Natural Resources stated that they were unaware of any historical records for the species in their State.

The Kentucky Farm Bureau Federation (KFBF) requested (September 7, 1989) that a public hearing be held primarily to discuss potential restrictions to agriculture that might result from listing the species. A Service biologist contacted KFBF, and an informal meeting was arranged and held in Bowling Green, Kentucky, on September 20, 1989, with KFBF representatives, local governmental officials, and farmers to discuss their concerns. Based on the results of that meeting, the KFBF withdrew on September 21, 1989, their request for a public hearing. In the withdrawal letter, the KFBF expressed the following concerns.

1. The KFBF stated that species should be listed only if a clear determination is made that they are actually endangered or threatened.

Response: The Service is convinced, based on personal communications with mussel experts and a review of relevant literature (see "Background" section of this rule), that the purple cat's paw pearlymussel is clearly close to extinction and thus qualifies for protection under the Act.

2. The KFBF felt that adequate follow-up monitoring of listed species should be conducted to ensure that a species' status information is current.

Response: The Service has historically had only limited resources to monitor

listed species through field assessments. However, the Service regularly updates its data base on listed species through frequent contact with species experts. Additionally, the Service, as the Act specifically requires, conducts a status review of each listed species every 5 years after it is listed.

3. The KFBF requested a list of agricultural chemicals that might be prohibited as a result of the U.S. Environmental Protection Agency's (EPA) proposed pesticide labeling program.

Response: Although the Service is unable to predict which agricultural chemicals may be prohibited by EPA, the results of a recent consultation between the Service and EPA involving pesticides would indicate that the number of prohibited pesticides should be minimal. The Service on July 14, 1989, issued to EPA a biological opinion (KFBF was provided with a copy at the September 20, 1989, meeting) addressing the potential impact of 108 pesticides to federally listed species. In that opinion, the Service concluded that some chemicals should be somewhat restricted to avoid the likelihood of jeopardizing the continued existence of some federally listed species, but the Service also concluded that none of these 108 pesticides should be prohibited from use. The most stringent restriction to avoid jeopardy to federally listed mussels was to ban the use of certain pesticides within 40 yards of the water's edge for ground application and 200 yards for aerial application within ¼ mile of sites known to be inhabited by the mussel.

4. The KFBF requested information on the nature and extent of impact that listing will have on agriculture.

Response: Except for potential impacts from restrictions on agricultural pesticide use, the Service is unaware of any other direct impacts to agriculture that may occur as a result of listing the purple cat's paw pearlymussel.

5. The KFBF requested clarification of the process that would be used for public involvement before land acquisitions, enlargement of buffer zones, or additional chemical restrictions could be imposed.

Response: The Service has reviewed EPA's proposed Endangered Species Protection Program regarding the registration of pesticides, which was published in the *Federal Register* (54 FR 27984) on July 3, 1989, and has conferred with EPA personnel on this matter. The Service is unaware of any land acquisition plans by EPA as part of their Endangered Species Protection Program. Additionally, it is not anticipated that the Service will enter into a land

acquisition program as part of its recovery efforts for this species. Changes to buffer zones or additional chemical restrictions would result from conclusions contained in a Service biological opinion; and before EPA would implement such changes, the conclusions in the biological opinion would be made available for public review and comment. Additionally, according to personal communications with EPA biologists (William Gill and Lyla Koroma 1989), EPA encourages public comment at any time on all phases of their Endangered Species Protection Program.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that the purple cat's paw pearlymussel 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 endangered or threatened due to one or more of the five factors described in Section 4(a)(1). These factors and their application to the purple cat's paw pearlymussel (*Epioblasma* [= *Dysnomia*] *obliquata obliquata* [= *E. sulcata sulcata*]) are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* The purple cat's paw pearlymussel was once known from the large tributaries of the Ohio River system in Ohio, Indiana, Illinois, Kentucky, Tennessee, and Alabama (Bogan and Parmalee 1983). However, all but two of the historically known populations were apparently lost due to conversion of many sections of the bigger rivers to a series of large impoundments. This seriously reduced the availability of preferred riverine gravel/sand habitat and likely affected the distribution and availability of the mussel's fish host. As a result, the species' distribution has been substantially reduced.

The State of Indiana has no current records of the species in the State (Indiana Department of Natural Resources, personal communication, 1988). The species has not been collected in Illinois in over 100 years (Illinois Natural History Survey Division, personal communication, 1988). In Kentucky the species is now known only from the Green River, Warren and Butler Counties, Kentucky (Kentucky Department of Fish and

Wildlife Resources and Kentucky State Nature Preserves Commission, personal communications, 1988). This Green River population is represented by only one old but freshly dead individual taken on the Green River in Warren and Butler Counties, Kentucky, in 1988 (Robert Anderson, Tennessee Technological University, personal communication, 1988). Prior to 1988, the mussel had not been collected in the Green River since 1971 (Kentucky State Nature Preserves Commission, personal communication, 1988). The middle Cumberland River (Smith County, Tennessee) contains the only known living representative of the purple cat's paw in Tennessee (U.S. Army Corps of Engineers, personal communication, 1988). The historic collection site in Alabama (on the Tennessee River at Muscle Shoals) is now impounded (Bogan and Parmalee 1983).

The two surviving populations are threatened from impacts on their environment. The Green River population is threatened from degradation of water quality resulting from inadequate environmental controls at oil and gas exploration and production facilities and from altered stream flows from upstream reservoirs. The Cumberland River population is potentially threatened by river channel maintenance, navigation projects, and gravel and sand dredging.

B. *Overutilization for commercial, recreational, scientific, or educational purposes.* Although the species is not commercially valuable, it does exist on harvested mussel beds, and the species is therefore sometimes taken by mussel fishermen. Thus, take does pose some threat to the species. Federal protection would help to control the take of individuals.

C. *Disease or predation.* Although the purple cat's paw pearlymussel is undoubtedly consumed by predatory animals, there is no evidence that predation threatens the species. However, freshwater mussel die-offs have recently (early to mid-1980s) been reported throughout the Mississippi River basin, including the Tennessee River and its tributaries (Richard Neves, Virginia Polytechnic Institute and State University, personal communication, 1986). The cause of the die-offs has not been determined, but significant losses have occurred to some populations.

D. *The inadequacy of existing regulatory mechanisms.* The States of Kentucky and Tennessee prohibit taking fish and wildlife, including freshwater mussels, for scientific purposes without a State collecting permit. However, these States do not protect the species

from take for other purposes. Federal listing will provide the species additional protection under the Endangered Species Act by requiring Federal permits to take the species and by requiring Federal agencies to consult with the Service when projects they fund, authorize, or carry out may affect the species.

E. Other natural or manmade factors affecting its continued existence.

Neither of the presently known populations is known to be reproducing. Therefore, unless reproducing populations can be found or methods can be developed to maintain existing populations or create new ones, the species will be lost in the foreseeable future. In fact, both known populations may contain only old individuals that have passed their reproductive age.

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 purple cat's paw pearl mussel (*Epioblasma* (= *Dysnomia*) *obliquata obliquata* (= *E. sulcata sulcata*)) as an endangered species. Historical records reveal that the species was once much more widely distributed in many of the large rivers of the Ohio River system. Presently only two isolated, apparently nonreproducing populations are known to survive. Due to the species' history of population losses and the vulnerability of the two remaining populations, classification as endangered appears appropriate for this species (see "Critical Habitat" section for a discussion of why critical habitat is not being proposed for the purple cat's paw pearl mussel).

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires, to the maximum extent prudent and determinable, that the Secretary designate 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 the purple cat's paw pearl mussel at this time, owing to the lack of benefits from such designation. The U.S. Army Corps of Engineers, the Tennessee Valley Authority, and the U.S. Park Service are the three Federal agencies most involved, and they, along with the State natural resources agencies in Tennessee and Kentucky, are already aware of the location of the remaining populations that would be affected by any activities in these river reaches. All the Federal agencies mentioned have conducted studies in these river basins and are

knowledgeable of the fauna and of their projects' impacts. No additional benefits would accrue from critical habitat designation that would not also accrue from the listing of the species. In addition, this species is so rare that taking for scientific purposes and private collection could be a threat. Publicity accompanying critical habitat designation could increase that threat by drawing attention to their specific habitat. The location of populations of this species has consequently been described only in general terms in this final rule. Any existing precise locality data would be available to appropriate Federal, State, and local governmental agencies through the Service office described in the "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 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 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)(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 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.

The Service has notified Federal agencies that may have programs that affect the species. Federal activities that could occur and impact the species include, but are not limited to, the carrying out or the issuance of permits for hydroelectric facility construction and operation, reservoir construction,

river channel maintenance, stream alterations, wastewater facilities development, and road and bridge construction. It has been the experience of the Service, however, that nearly all section 7 consultations have been resolved so that the species has been protected and the project objectives have been met. In fact, the areas inhabited by the purple cat's paw pearl mussel are also inhabited by other mussels that have been federally listed since 1976. The Service has a history of successful resolution of section 7 conflicts that have protected the species and allowed for project objectives to be met throughout these areas.

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 any listed species, import or export it, ship it in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce. It is also 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.

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

- Bates, J.M., and S.D. Dennis. 1985. Mussel resource survey—State of Tennessee. Tennessee Wildlife Resources Agency Technical Report No. 85-3. 125 pp.
- Bogan, A.E., and P.W. Parmalee. 1983. Tennessee's rare wildlife. Volume II: the mollusks. 123 pp.
- Kentucky State Nature Preserves Commission. 1980. Kentucky natural area

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 Isom, B.G., C. Gooch, S.D. Dennis. 1979. Rediscovery of a presumed extinct river mussel *Dysnomia sulcata* (Unionidae). The Nautilus 93(2-3):84.
 Parmalee, P.W., W.E. Klippel, and A.E. Bogan. 1980. Notes on the prehistoric and present status of Naiad fauna of the middle Cumberland River, Smith County, Tennessee. The Nautilus 94(3):93-105.
 Rafinesque, Constantine S. 1820. Monographie des coquilles bivalves et fluviatiles de la riviere Ohio. Generales des Sciences-Physiques 5(13):287-322, 3 pl.
 Sickel, James B. 1985. Biological assessment of the freshwater mussels in the Kentucky Dam tailwaters of the Tennessee River. Submitted to Kentucky Division of Water, Frankfort, Kentucky. 42 pp.
 Stansbery, David H. 1970. Eastern freshwater mollusks (I) The Mississippi and St. Lawrence River systems. Malacologia 10(1):9-22.

Watters, G.T. 1986. The Nature Conservancy Element Stewardship Abstract: *Epioblasma obliquata obliquata*. The Nature Conservancy, Midwest Regional Office, Minneapolis, Minnesota. Unpublished report. 4 pp.

Author

The primary author of this proposed rule is Richard G. Biggins, U.S. Fish and Wildlife Service, Asheville Field Office, 100 Otis Street, Room 224, Asheville, North Carolina 28801 (704/259-0321 or FTS 672-0321).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and record-keeping requirements, and Transportation.

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.

* * * * *
 (h) * * *

Species			Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name	Historic range					
CLAMS							
Pearly mussel, purple cat's paw.	<i>Epioblasma (=Dysnomia) obliquata obliquata (=E. sulcata sulcata).</i>	U.S.A. (AL, IL, IN, KY, TN).....	NA	E	394	NA	NA

Dated: June 8, 1990.
 Richard N. Smith,
 Acting Director, Fish and Wildlife Service.
 [FR Doc. 90-15939 Filed 7-9-90; 8:45 am]
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