DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AB42

Endangered and Threatened Wildlife and Plants; Proposed Threatened Status for the Yellow-Blotched Map Turtle, Graptemys flavimaculata

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The Service proposes the yellow-blotched map turtle, *Graptemys flavimaculata*, to be a threatened species under the authority of the Endangered Species Act of 1973, as amended (Act). This basking turtle is known from only the Pascagoula River system in southeast Mississippi. It is threatened by habitat modification, wanton shooting, collecting, water quality degradation, and nest predation. This proposal, if made final, would implement the protection of the Act for the yellow-blotched map turtle. The Service seeks relevant data and comments from the public.

DATES: Comments from all interested parties must be received by September 10, 1990. Public hearing requests must be received by August 27, 1990.

ADDRESSES: Comments and materials concerning this proposal should be sent to the Complex Field Supervisor, U.S. Fish and Wildlife Service, Jackson Mall Office Center, suite 316, 300 Woodrow Wilson Avenue, Jackson, Mississippi 39213. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Mr. James H. Stewart at the above address (601/965-4900 or FTS 490-4900).

SUPPLEMENTARY INFORMATION:

Background

The yellow-blotched map turtle, *Graptemys flavimaculata*, was described from the Pascagoula River in George County, Mississippi (Cagle 1954). It is restricted to the Pascagoula River system in Mississippi, including the Leaf and Chickasawhay Rivers and other tributaries (Cagle 1954, Cliburn 1971, and McCoy and Vogt 1980). A survey of herpetologists and museums by the Service did not find any records of this species outside the Pascagoula River system. The only other name applied to this species is the yellow-blotched sawback turtle.

The yellow-blotched map turtle is a member of the narrow-head complex of *Graptemys*. It is a medium-sized aquatic turtle with females attaining a carapace size of at least 20.3 centimeters (cm) (8 inches) and males occasionally exceeding 12 cm (4¾ inches). The carapace is olive to light brown. Each costal scute has an irregular bright yellow or orange blotch. Juveniles and adult males have a black spine on the first four vertebral scutes. These spines become smaller and may be lost in adult females. The closely related ringed sawback *Graptemys oculifera*, and black-knobbed map turtle, *Graptemys nigrinoda*, lack the solid blotches and have ring on each costal.

The yellow-blotched map turtle requires rivers that are large enough to have open canopy allowing for several hours of sunshine daily. The preferred habitat is a moderate current, a sand or clay substrate, sand bars or beaches for nesting, and snags or other structure for basking. This species feeds largely on snails and insects (Ernst and Barbour 1972). Growth is rapid and males may mature in the second growing season. Cagle (1954) was unable to determine the age of maturity in females. Lahanas (1982) inferred that female *G. nigrinoda* mature at 8 or 9 years of age. Webb (1961) found that female *G. ouachitensis* in Lake Texoma, Oklahoma, matured at 6 or 7 years of age. Little is known about the reproduction of the yellow-blotched map turtle. The most definitive work on a related species is by Lahanas (1982) on *G. nigrinoda*. He found that this species produced 3 or 4 clutches annually with an average clutch size of 5-6 eggs. Cagle (1953) collected a *G. oculifera* female that had 3 eggs in the oviduct and 4 enlarged follicles. This turtle would probably have produced 7 eggs during the breeding season. Jones and Hartfield (1989) found a complete clutch laid by *G. oculifera* that contained 6 eggs. It is likely that *G. flavimaculata* is similar to these closely related turtles in reproductive capacity and requirements.

The Pascagoula River Basin includes 9,700 square miles (U.S. Army Corps of Engineers 1987) with a wide variety of land uses. Much of the area is in private ownership and agricultural production. The U.S. Forest Service owns significant acreage in DeSoto National Forest. The Mississippi Department of Wildlife, Fisheries, and Parks owns or manages several wildlife management areas in the basin.

Historic population status for this species is primarily limited to the work of Cliburn (1971), McCoy and Vogt (1980), and a 1989 survey conducted by biologists from the Service and the Mississippi Department of Wildlife, Fisheries, and Parks. Cliburn (1971) reported this species from Red, Black, and Tallahala Creeks of the Pascagoula River drainage. McCoy and Vogt (1980) did not find any yellow-blotched map turtles in their survey of these streams and reported the habitat to be marginal. McCoy and Vogt reported decreasing numbers at two stations on the Chickasawhay River over a three-year period. In two basking surveys on the Chickasawhay River, Service biologists in 1989 observed 43 and 60 yellow-blotched map turtles in approximately 20 river miles (Service field notes). This survey area included one of the sites where this species was reported in decline by McCoy and Vogt (1980). The Service survey was more extensive than that of McCoy and Vogt and as a result observed more yellow-blotched map turtles over the survey area. However, the number of yellow-blotched map turtles per river mile in the Chickasawhay River was three or less, a figure comparable to that observed by McCoy and Vogt.

In the basking survey conducted by Service biologists along 54 river miles of the Leaf and Pascagoula Rivers and 20 river miles of the Chickasawhay River, there were less than four yellow-blotched map turtles observed per river mile. In the lower Pascagoula River, a mark and recapture study by Service and Mississippi Department of Wildlife, Fisheries, and Parks biologists observed up to 70 yellow-blotched map turtles per river mile. The estimate for total numbers of this species, based upon the mark-recapture study, was as high as 336 per mile in the lower Pascagoula River. This figure is low when compared with estimates of 549 *G. Oculifera* (listed as threatened) per mile in good habitat and 230 per mile in poor habitat. The increase in population of the yellow-blotched map turtle seems to occur in the vicinity of Wade and proceeds downstream for a distance of about 18 river miles. In this stretch, there are several short tributaries where this species occurs. However, these populations are likely dependent upon the main river population for viability. Turtles less than four years old were seldom observed or trapped in the lower Pascagoula River. This could indicate a problem with reproduction and recruitment. If this problem exists, it may be due to limited nesting habitat or to high nest predation. The most abundant population of this species based upon observations by Service biologists occurs in the Pascagoula River between Wade and Vancleave, Mississippi.

The yellow-blotched map turtle was listed as a category 1 candidate in the notice of review published in the **Federal Register** on December 30, 1982 (47 FR 58454) and as a category 2 candidate in the notice of review published in the **Federal Register** on September 18, 1985 (50 FR 37958) and on January 6, 1989 (54 FR 554). A category 1 candidate is a taxon for which the Service currently has substantial information on hand to support the biological appropriateness of proposing to list. A category 2 candidate is a taxon for which information now in possession of the Service indicates that proposing to list the species is possibly appropriate, but for which substantial data are not currently available.

Summary of Factors Affecting the Species

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 set forth the procedures for adding species to the Federal lists. 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 yellow-blotched map turtle, *Graptemys flavimaculata*, are as follows:

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

The yellow-blotched map turtle must have some type of structure on which it can bask and be safe from predation, and it must have suitable nesting habitat. Basking structures are logs, snags, and other debris commonly occurring in streams. These structures also serve as habitat for food organisms. Nesting is believed to occur on sand beaches well above the water level and near the vegetation line. Navigation and flood control measures often require the removal of basking structure and nesting beaches to deepen the channel and to remove restrictions to water flow. Gravel dredging removes sand and gravel nesting sites. Increased turbidity and sedimentation impact the snails and insects upon which this species feeds.

There are several channel modification projects on or planned for tributary streams that have the potential to impact the habitat of this species (USACE 1987). A clearing and snagging project has impacted 12,500 feet of the Leaf River channel at Hattiesburg. Selective snagging of 7.25 miles of Tallahala Creek to provide flood control for Laurel was approved in 1987. Flood control projects have been conducted or planned for Sowashee Creek at Meridian, Gordon's Creek and Upper Gordon's Creek at Hattiesburg, and Green's Creek at Petal. Studies for flood control projects on Mixon's Creek, Lamar County and Mill Creek at Sumrall are ongoing. Four existing reservoirs have modified portions of the drainage and affect water flows. There are authorized reservoirs on Tallahala Creek and Bowie River that have been determined not economically feasible, but have not been de-authorized. An active and extensive gravel mining operation in the Bowie River near its confluence with the Leaf River undoubtedly contributes to sedimentation in downstream reaches of the Leaf River. Turbidity and sedimentation may occur from clear cutting timber and agricultural activities.

B. Over Utilization for Commerical, Recreational, Scientific or Educational Purposes

Wanton shooting (use of basking turtles for target practice) and collecting pose a threat to the yellow-blotched map turtle. This threat becomes more serious as the population declines. An increasing public awareness of the species' plight on the part of many scientists seems to be reducing the threat from scientific and educational collecting. Collecting for commercial purposes is a more serious threat. This very attractive turtle has been advertised for retail sale at $65 each. It is very vulnerable to knowledgeable commerical collectors, who can seriously damage a local population in a short period.

C. Disease or Predation

There is no known threat from disease. This species is subject to natural predation. Lahanas (1982) found 82 percent mortality of eggs of *G. nigrinoda* from predation, primarily by fish crows. Other authors have found predation of turtle eggs ranging from 90 to 100 percent (Cagle 1950. Moll and Legler 1971, Shealy 1976, Vogt 1980). Lahanas attributed the lower predation rate he observed to his frequent presence on the nesting beaches. while conducting a mark and recapture study of the ringed sawback, Service biologists estimated, from casual observation, that 95 percent of nests were destroyed by predators. A serious threat to adult turtles is wanton shooting as discussed in Factor "B". The alteration and degradation of habitat as discussed in Factors "A" and "E" make predation, wanton shooting, and collecting more significant threats to the yellow-blotched map turtle than they would be otherwise.

D. The Inadequacy of Existing Regulatory Mechanisms

The yellow-blotched map turtle is listed as endangered under Mississippi Department of Wildlife, Fisheries, and Parks Public Notice 2779. Because of this State protection, the Lacey Act (16 U.S.C. 3401–3408) applies to the taking and transportation of this species from Mississippi. A State collecting permit is required for taking this species. Compliance with these regulations is extremely difficult to enforce due to other law enforcement priorities and the difficulty of proving a violation if the species has been removed from the river. The loss or alteration of habitat is the more serious threat to the yellow-blotched map turtle. No regulations requiring consideration of this species during project planning yet exists. Listing under the Endangered Species Act would provide much needed protection through sections 7 and 9 and the recovery process.

E. Other Natural or Manmade Factors Affecting Its Continued Existence

Water quality degradation poses a serious threat to the yellow-blotched map turtle. This impact includes bioaccumulation of toxic materials and the loss of food organisms. The total effects of pollution and siltation upon map turtles have not been fully documented. However, the effects on insect larva and snails are well documented, and this group of organisms is the primary food source of all the narrow-headed map turtles (Cagle 1953, Ernst and Barbour 1972, Lahanas 1982). The reduced population of yellow-blotched map turtles in areas that have otherwise suitable habitat, but are polluted from some source, indicates impacts to the food source. Water quality problems exist on the Leaf River from municipal runoff at Hattiesburg and dioxin contamination at New Augusta; on the Tallahala River from municipal runoff at Laurel; and on the Chickasawhay River from brine water releases from oil fields (R. Ball, Mississippi Bureau of Pollution Control, pers. comm. 1989). Permitted effluent to the Pascagoula River Basin includes ammonia, chlorine, sodium sulfate, toluene, cyclohexane, and acetone (EPA 1989).

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 propose this rule. Based on this evaluation, the

preferred action is to list the yellow-blotched map turtle as threatened, defined as likely to become in danger of extinction within the foreseeable future throughout all or a significant portion of its range. This preferred action is chosen due to the restricted range, sparse populations above the Pascagoula River, and water quality problems. Endangered status is not chosen because the species exists over many river miles in the Pascagoula River system and the known threats do not place it in imminent danger of extinction. Critical habitat is not being proposed as discussed below.

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that to the maximum extent prudent and determinable, the Secretary propose critical habitat at the time the species is proposed to be endangered or threatened. The Service finds that designation of critical habitat is not presently prudent for this species. All Federal and State agencies are aware of the existence of this species and the importance of protecting its habitat. Protection of this species' habitat will be addressed through the recovery process and through the section 7 jeopardy standard. Commercial collecting is a potentially significant threat (see Factor B) and specific identification of its habitat through designation of critical habitat could increase the threat to this species. Therefore, it would not now be prudent to determine critical habitat for the yellow-blotched map turtle.

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. 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)(4) requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, 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 such a 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 the U.S. Army Corps of Engineers through its flood control projects and permits for water related activities, and the Environmental Protection Agency through the Clean Water Act provisions for pesticide registration, wastewater treatment, and permitted effluent discharge.

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 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 threatened wildlife species under certain circumstances. Regulations governing permits are at 50 CFR 17.22, 17.23, and 17.32. Such permits are available for scientific purposes, to enhance the propagation or suvival 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.

Public Comments Solicited

The Service intends that any final action resulting from this proposal will be accurate and as effective as possible. Therefore, comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning this proposed rule are hereby solicited. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to this species;

(2) The location of any additional populations of this species and the reasons why any habitat should or should not be determined to be critical habitat as provided in section 4 of the Act;

(3) Additional information concerning the range, distribution, and population size of this species; and

(4) Current or planned activities in the subject area and their possible impacts on this species.

Final promulgation of the regulation on this species will take into consideration the comments and any additional information received by the Service, and such communications may lead to a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be received within 45 days of the date of publication of the proposal. Such requests must be made in writing and addressed to Complex Field Supervisor (see **ADDRESSES** section).

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

Cagle, F.R. 1950. The life history of the slider turtle, *Pseudemys scripta troostii* (Holbrook). Ecol. Monographs 20(1):32–54.

Cagle, F.R. 1953. The status of the turtle *Graptemys oculifera* (Baur). Zoologica 83:137–144.

Cagle, F.R. 1954. Two new species of the genus *Graptemys*. Tulane Studies in Zoology 1:166–186.

Cliburn, J.W. 1971. The ranges of four species of *Graptemys* in Mississipi. J. Mississippi Acad. Sci. 16:16–19.

Environmental Protection Agency. 1989. Toxic release inventory system reports dated December 12, 1989. 8 pp.

Ernst, C.H., and R.W. Barbour. 1972. Turtles of the United States. Univ. Kentucky Press. pg 132–134.

Jones, R.L., and P.D. Hartfield. 1989. Density and population structure of the ringed sawback turtle *Graptemys oculifera* (Baur). Mississippi Dept. Wildlife, Fisheries and Parks. 34 pp.

Lahanas, P.N. 1982. Aspects of the life history of the southern black-knobbed sawback, *Graptemys nigrinoda delticola* Folkerts and Mount. An unpublished masters thesis to Auburn University. 275 pp.

McCoy, C.J., and R.C. Vogt. 1980. Distribution and population status of the yellow-blotched sawback *Graptemys flavimaculata* Cagle in Mississippi. A status survey report for the U.S. Fish and Wildlife Service. 23 pp.

Moll, E.D., and J.M. Legler. 1971. The life history of a nestropical slider turtle, *Pseudemys scripta* (Schoepff), in Panama. Bull. Los Angeles Co. Mus. Natl. History Sci. 11:83–86.

Shealy, R.M. 1976. The natural history of the Alabama map turtle, *Graptemys pulchra* Baur, in Alabama. Bull. Florida State Mus., Biol. Sci. 21:47–111.

U.S. Army Corps of Engineers. 1987. Pascagoula River Basin Mississippi. A review report on the Pascagoula River Basin, Mississippi. 10 pp.

Vogt, R.C. 1980. Natural history of the map turtles *Graptemys pseudogeographica* and *G. ouachitensis* in Wisconsin. Tulane Stud. Zool. Bot. 22:17–48.

Webb, R.G. 1961. Observations on the life histories of Turtles (Genus *Pseudemys* and *Graptemys*) in Lake Texoma Oklahoma. Am. Midl. Nat. 65(1):193–214.

Author

The author of this proposed rule is James H. Stewart (see **ADDRESSES** section) at 601/965–4900, FTS 490–4900.

List of Subjects in 50 CFR Part 17

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

Proposed Regulation Promulgation

PART 17—[AMENDED]

Accordingly, it is hereby proposed to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, 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. 1531–1543: 16 U.S.C. 4201–4245: Pub. L. 99–625. 100 Stat. 3500: unless otherwise noted.

2. It is proposed to amend § 17.11(h) by adding the following, in alphabetical order under "REPTILES," 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						
REPTILES							
Turtle, yellow-blotched map (=sawback).	*Graptemys flavimaculata.*	U.S.A. (MS)	Entire	T		NA	Na

Dated: June 8, 1990.

Richard N. Smith,

Acting Director, Fish and Wildlife Service.

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