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Irene M. Flannery,

Chief, Accounting Policy Division.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018–AF90

Endangered and Threatened Wildlife and Plants; Proposed Rule To List the Mississippi Gopher Frog Distinct Population Segment of Dusky Gopher Frog as Endangered

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the Fish and Wildlife Service, propose to list the Mississippi gopher frog distinct population segment of the dusky gopher frog (*Rana capito sevosa*) as an endangered species under the authority of the Endangered Species Act of 1973, as amended (Act). Historically, the Mississippi gopher frog occurred in at least nine counties or parishes across Louisiana, Mississippi, and Alabama, ranging from east of the Mississippi River in Louisiana to the Mobile River delta in Alabama. Today, it is known from only one site in Harrison County, Mississippi. This last surviving population is threatened by habitat destruction and degradation from a proposed housing development on property within 200 meters (m) (656 feet (ft)) of its only remaining breeding pond; the construction and expansion of two highways in the vicinity of the pond; and a proposed reservoir. These actions pose threats to the terrestrial habitat of adult frogs and their ability to offset mortality rates with reproduction and recruitment. This proposed rule, if made final, would extend the Act's protection to the Mississippi gopher frog distinct population segment.

DATES: Send your comments to reach us on or before July 24, 2000. We will not consider comments received after the above date in making our decision on the proposed rule. We must receive requests for public hearings by July 7, 2000.

ADDRESSES: Send comments and materials concerning this proposal to the Field Supervisor, U.S. Fish and Wildlife Service, Mississippi Field Office, 6578 Dogwood View Parkway, 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: Ms. Linda LaClaire at the above address, telephone 601/965–4900, or facsimile 601/965–4340.

SUPPLEMENTARY INFORMATION:

Background

The gopher frog (*Rana capito*) is a member of the large cosmopolitan family, Ranidae (''true frogs''). The genus *Rana* is the only North American representative of this family. We define the Mississippi gopher frog distinct population segment as those populations of gopher frogs in the lower coastal plain ranging from the Mississippi River in Louisiana to the Mobile River delta of Alabama. Goin and Netting (1940) described frogs from this geographic range as a distinct species of gopher frog, *Rana sevosa*. The taxonomic history of gopher frogs is complex (summary in Altig and Lohoefener 1983). Subsequent to the original description by Goin and Netting, frogs of this population segment were considered subspecies of *Rana capito* (gopher frog) (*R. c. sevosa*) (Wright and Wright 1942) and later subspecies of *R. areolata* (crayfish frog) (*R. a. sevosa*) (Viosca 1949). In 1991, Collins challenged the taxonomic arrangement that lumped crayfish frogs and gopher frogs together as one species and recommended their separation based on biogeographical grounds. This arrangement was followed by Conant and Collins (1991), who again recognized the name *R. c. sevosa*. Wright and Wright (1942) first used the common name of ''dusky gopher frog'' for this subspecies, and it has been used in subsequent publications. The range of the subspecies, as presently described, also extends to the Gulf Coast of western Florida and adjacent Alabama (Conant and Collins 1991).

Young (1997) conducted the first comprehensive biochemical analysis of the relationships between gopher frogs and crayfish frogs and among subspecies of gopher frogs. She used allozyme electrophoresis (an assay (examination) of gene products) to examine allelic (genetic) differences between and among populations. Allozyme data have been used extensively to investigate the evolution of genetic relationships among related species. Young found strong support for the species designations *R. areolata* (crayfish frogs) and *R. capito* (gopher frogs). Gopher and crayfish frogs varied from each other by fixed differences at four loci (specific locations on a gene). In addition, she found that populations of gopher frogs from Harrison County, Mississippi, were genetically distinct from other populations of gopher frogs east of the Mobile River drainage in Alabama. Young analyzed tissue from gopher frogs across the range of the species including populations in Mississippi, Alabama, Georgia, Florida, and North Carolina. Although Mississippi gopher frogs showed a fixed difference at only a single locus (site for a specific gene on a chromosome) from all other gopher frogs, this difference is considered by many taxonomists to be significant enough to warrant elevation of the frog to its own species (B. Crother, Southern Louisiana University, pers. comm. 1999). No other specific taxonomic divisions could be determined among the remaining populations of gopher frogs sampled. Since Harrison County is within the range of the original specimens used to describe *R. sevosa*, Young recommended the resurrection of *R. sevosa* as a distinct species. A manuscript summarizing her findings has been submitted for publication (Young and Crother, unpublished manuscript). If her recommendations are accepted by the herpetological scientific community, we will reflect this taxonomic change in subsequent publications in the **Federal Register**. Researchers have recommended ''Mississippi gopher frog'' as the common name for this population segment to distinguish it from the other populations of gopher frogs further east (R. Seigel, pers. comm. 1998).

The Mississippi gopher frog has a stubby appearance due to its short, plump body, comparatively large head, and relatively short legs (Conant and Collins 1991). The coloration of its back is dark and varies in individual frogs. It ranges from an almost uniform black to a pattern of reddish brown or dark brown spots on a ground color of gray or brown (Goin and Netting 1940). Warts densely cover the back. The belly is thickly covered with dark spots and dusky markings from chin to mid-body (Goin and Netting 1940, Conant and Collins 1991). Males are distinguished from females by their smaller size, enlarged thumbs, and paired vocal sacs on either side of the throat (Godley 1992). Richter and Seigel (1998b) reported a mean snout-vent length of 67.7 millimeters (mm) (2.7 inches (in)) for males and 79.3 mm (3.2 in) for females in the extant population. Mississippi gopher frog tadpoles are presently indistinguishable from those of leopard frogs and other gopher frogs

(R. Altig, Mississippi State University, pers. comm. 1999).

Mississippi gopher frog habitat includes both upland sandy habitats historically forested with longleaf pine and isolated temporary wetland breeding sites embedded within the forested landscape. Frequent fires are necessary to maintain the open canopy and ground cover vegetation of their aquatic and terrestrial habitat.

Adult and subadult Mississippi gopher frogs spend the majority of their lives underground. They use active and abandoned gopher tortoise (*Gopherus polyphemus*) burrows, abandoned mammal burrows, and holes in and under old stumps as refugia (Allen 1932; LaClaire, pers. obs. 1996; Richter and Seigel 1998a). Gopher tortoise burrows likely represent preferred underground habitats. In Florida, Godley (1992) reported that the closely related Florida gopher frog was known only from sites that supported gopher tortoises. The remaining Mississippi gopher frog population occurs in an area presently lacking gopher tortoises, most likely as a result of habitat degradation. An abandoned tortoise burrow occurs approximately 0.8 kilometers (km) (0.5 miles (mi)) from the breeding pond, and an active burrow was found within 1.6 km (1 mi) of the site in 1992 (T. Mann, Mississippi Department of Wildlife, Fisheries and Parks, pers. comm. 1999).

Gopher frog breeding sites are isolated ponds (not connected to any other water body) that dry completely on a cyclic basis. Substantial winter rains are needed to ensure that ponds are filled sufficiently to allow hatching, development, and metamorphosis of larvae. The timing and frequency of rainfall are critical to the successful reproduction and recruitment of Mississippi gopher frogs.

Today, only a single breeding pond is known for the Mississippi gopher frog. It is located in Harrison County, Mississippi. Adult frogs move to this wetland breeding site during heavy rain events, usually from January to late March (Richter and Seigel 1998b). The breeding pond is approximately 1.5 hectares (3.8 acres) when filled. It attains a maximum depth of 1.1 m (3.6 ft). The pond is hard-bottomed, has an open canopy, and contains emergent and submergent vegetation. Female Mississippi gopher frogs attach their eggs to the rigid vertical stems of emergent vegetation (Young 1997, Richter and Seigel 1998a, 1998b). The pond typically dries in early to mid-summer, but on occasion has remained wet until early fall (G. Johnson, U.S. Forest Service, pers. comm. 1993; Young 1997; Richter and Seigel 1998b). As many as 20 amphibian species (18 frogs and 2 salamanders) are known to breed at the site (G. Johnson, pers. comm. 1993). Bailey (1990) and Palis (1998) found similar habitat attributes in breeding ponds of the closely related gopher frogs in Alabama and Florida.

Adult Mississippi gopher frogs leave the pond site after breeding during major rainfall events. Adults of both sexes use specific migratory corridors when exiting the breeding pond (Richter and Seigel 1998b). Movements away from the pond are slightly east of due north. Young (1997) and Richter and Seigel (1998a) tracked a total of 13 frogs using radio transmitters. The farthest movement recorded was 268 m (879 ft) by a frog tracked for 88 days from its exit of the breeding site. In Florida, gopher frogs have been found 2 km (1.2 mi) from their breeding sites (Carr 1940, Franz *et al.* 1988). It is unclear if the distances recorded for the Mississippi gopher frogs were typical; the tracking periods represented only a fraction of their yearly life cycle. Movements corresponded with major rain events. However, dry conditions prevailed during most of the two study periods. In fact, the frogs in Richter and Seigel's study moved during only one 24-hour period, which was associated with a weather event. Another compounding factor was the clearcut timber harvest in 1994 of a site adjacent to the breeding pond. Migratory corridors and available habitat were eliminated by the forestry operation. In 1996, two frogs were tracked to the property line delineating the clearcut, and they did not move from their burrows during the remainder of the study (Richter and Seigel 1997).

Amphibians need to maintain moist skin for respiration (breathing) and osmoregulation (controlling the amounts of water and salts in their bodies) (Duellman and Trueb 1986). Since they disperse from their aquatic breeding sites to the uplands where they live as adults, desiccation (drying out) can be a limiting factor in their movements. Thus, it is important that areas connecting their wetland and terrestrial habitats are protected in order to provide cover and appropriate moisture regimes during their migration.

It is likely that, given appropriate habitat, Mississippi gopher frogs are long-lived. The longevity record for a captive close relative, the Carolina gopher frog (*R. capito capito*), is 9 years, 1 month (Snider and Bowler 1992). However, overall low rates of recapture at the extant breeding pond suggest low adult survival in the Mississippi gopher frog population (Richter and Seigel 1998b).

Historical records for the Mississippi gopher frog exist for two or possibly three parishes in Louisiana, six counties in Mississippi, and one county in Alabama. Researchers conducting numerous surveys have been unable to document the continuing existence of the Mississippi gopher frog in Louisiana (Seigel and Doody 1992, Thomas 1996) or in Alabama (Bailey 1992, 1994). The last observation of a gopher frog in Louisiana was in 1967 (Gary Lester, Louisiana Natural Heritage Program, pers. comm. 1991). In Alabama, it was last seen in 1922 (Bailey 1994).

Historical records for the Mississippi gopher frog are limited. We have compiled 35 historical records—1 in Alabama, 14 in Louisiana, and 20 in Mississippi. Historical records are defined as those localities where gopher frogs were found prior to 1990. No new localities for the frog have been found since 1988. Localities are sites identified from specimens captured or heard calling during sampling of potential breeding sites or by surveying highway crossings when individuals were on their way to or from breeding sites. Of the 35 historical records, 24 provided data that could be used to approximate the location of the original site.

Habitat degradation is the primary factor in the loss of gopher frog populations in Alabama, Louisiana, and Mississippi. Bailey (1994) visited the historical Alabama locality in 1993. The habitat had been developed as a residential area, and was no longer suitable for the gopher frog. Seigel and Doody (1992) and Thomas (1996) surveyed historical sites in Louisiana and searched for other potential sites that might be occupied by gopher frogs. They also found that longleaf pine forests had been severely degraded. The historical breeding and upland habitats had changed as a result of urbanization and/or conversion of forest to pine plantation. For example, they found three historical breeding sites that had been extensively altered. One had been made a permanent pond in a residential backyard. Two other ponds had been extensively altered by bedding, clearing, and nutrient loading during conversion of the surrounding habitat to pine plantation. Both Seigel and Doody (1992) and Thomas (1996) were unsuccessful at finding any Mississippi gopher frogs in Louisiana.

Crawford (1988) surveyed 42 ponds in 6 Mississippi counties in 1987 and 1988. He attempted to relocate all of the State's historical localities for the gopher frog. He found that habitat in the vicinity of historical localities had been altered by conversion of natural forest to agriculture and pine plantations.

Urbanization was a factor in the loss of at least three breeding ponds. The character of relocated historical breeding ponds had been changed from open-canopy, temporary ponds with clear water and hard bottoms to muddy, more permanent ponds with a closed canopy (G. Johnson, pers. comm. 1999). No appropriate habitat for the Mississippi gopher frog could be found near any of the localities (G. Johnson, pers. comm. 1999). Crawford (1988) also used aerial maps to identify potential breeding sites. In many cases, ponds identified on these maps no longer existed due to land use changes. However, he was able to verify the presence of the species at four new sites in Harrison County, Mississippi. At three of these four sites, only one individual was observed. Kuss (1988) surveyed 60 ponds in southern Mississippi for the flatwoods salamander (*Ambystoma cingulatum*). He did not encounter any gopher frogs during the surveys. Subsequent to these studies, surveys have documented the continued existence of only one population in Mississippi. This population breeds at a pond located in the DeSoto National Forest in Harrison County. Surveyors working in Mississippi during the 1990s have been unable to find the species at any other sites (R. Jones, Mississippi Department of Wildlife, Fisheries and Parks, pers. comm. 1998; G. Johnson, pers. comm. 1999). Although Allen (1932) found gopher frogs to be common in the coastal counties of Mississippi earlier in the century, today R. Seigel (pers. comm. 1998) estimates the extant Mississippi gopher frog population to be only 100 adult frogs at a single site.

The extensive habitat alteration found during surveys of historical gopher frog localities in Alabama, Louisiana, and Mississippi resulted from the loss of virtually all of the natural longleaf pine forest in these States. Presettlement longleaf pine forests were the dominant forest type of the southeastern coastal plain. Today, less than 2 percent of these forests remain (Ware *et al.* 1993). Second growth longleaf pine forests in the vicinity of historical Mississippi gopher frog breeding sites were clearcut extensively in the mid-1950s and then again in the 1980s and 1990s. Longleaf pine forest habitat was replaced with dense pine plantations, agriculture, and urban areas. Habitat degradation has occurred as a result of alterations in the soil horizon (layering of different soil types), forest litter, herbaceous community, and occurrence of downed trees and stumps that Mississippi gopher frogs use as refugia. Fire suppression has further degraded the habitat. The hydrology of many isolated temporary wetlands, required as breeding sites for the Mississippi gopher frog, has been altered. In addition, these same factors have resulted in the decline of the gopher tortoise, whose burrows are most likely the preferred habitat for adult gopher frogs. As a result of these habitat changes, both the uplands and the pond basins previously occupied by the Mississippi gopher frog have become unsuitable.

Distinct Vertebrate Population Segment

Recent genetic analysis suggested reevaluation of the taxonomy of gopher frogs (*Rana capito*) is necessary (Young 1997). The analysis of the relationships between gopher frogs and crayfish frogs, and among subspecies of gopher frogs, failed to support the current taxonomy for gopher frogs at the subspecific level. However, the research did support taxonomic distinction of the Mississippi gopher frog from all other gopher frogs east of the Mobile River delta, including other dusky gopher frogs. Young and Crother (unpublished manuscript) concluded that the Mississippi gopher frog population segment should be resurrected to species status.

The biological evidence supports recognition of the Mississippi gopher frog as a distinct vertebrate population segment for purposes of listing, as defined in our February 7, 1996, Policy Regarding the Recognition of Distinct Vertebrate Population Segments (61 FR 4722). The definition of ''species'' in section 3(16) of the Act includes ''any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature.'' For a population to be listed under the Act as a distinct vertebrate population segment, three elements are considered—(1) the discreteness of the population segment in relation to the remainder of the species to which it belongs; (2) the significance of the population segment to the species to which it belongs; and (3) the population segment's conservation status in relation to the Act's standards for listing (*i.e.,* is the population segment endangered or threatened?).

Habitat of the lower Gulf Coastal Plain from the Mississippi River to the Mobile River delta contains the westernmost subpopulation of dusky gopher frogs. This population segment is discrete because it is geographically segregated from other gopher frogs by a large gap (approximately 200 km (125 mi)) of unoccupied habitat and the Mobile River delta. Consequently, this subpopulation does not mix with other dusky gopher frogs.

Young (1997) presented evidence that the Mississippi gopher frog distinct population segment is biologically and ecologically significant due to genetic characteristics different from the species as a whole (see discussion in Background section). The habitat occupied by the Mississippi gopher frog is disjunct from habitat occupied by other populations of the dusky gopher frog. No other populations of gopher frogs remain in Louisiana, Mississippi, or Alabama west of the Mobile River drainage. As a result, loss of the Mississippi gopher frog population segment would result in a substantial modification of the species' range.

Previous Federal Action

In our December 30, 1982, Notice of Review, we designated the dusky gopher frog (designation *Rana areolata sevosa*) as a category 2 candidate and solicited status information (47 FR 58454). Category 2 candidates were those taxa for which we had information indicating that proposing to list as endangered or threatened was possibly appropriate, but for which sufficient data on biological vulnerability and threats were not currently available to support a proposed rule. Category 1 taxa were those taxa for which we had sufficient information on biological vulnerability and threats on file to support issuance of proposed listing rules. In our September 18, 1985 (50 FR 37958), and January 6, 1989 (54 FR 554), Notices of Review, we retained the dusky gopher frog in category 2. We identified the dusky gopher frog as a category 1 candidate species in our November 21, 1991 (56 FR 58804), and November 15, 1994 (59 FR 58982), Notices of Review. Beginning with our February 28, 1996, Notice of Review (61 FR 235), we discontinued the designation of multiple categories of candidates, and we now consider only taxa that meet the definition of former category 1 taxa as candidates for listing. We also removed Rana areolata sevosa from candidate status based on the need for additional information to support a listing proposal. We have recently completed an analysis of newly available information from current studies and determined that listing the Mississippi gopher frog distinct population segment of the dusky gopher frog is warranted. We elevated the Mississippi gopher frog to candidate status in our October 25, 1999, Notice of Review (64 FR 57534).

The processing of this proposed rule conforms with our Listing Priority Guidance published in the **Federal Register** on October 22, 1999 (64 FR 57114). The guidance clarifies the order

in which we will process rulemakings. Highest priority is processing emergency listing rules for any species determined to face a significant and imminent risk to its well-being (Priority 1). Second priority (Priority 2) is processing final determinations on proposed additions to the lists of endangered and threatened wildlife and plants. Third priority is processing new proposals to add species to the lists. The processing of administrative petition findings (petitions filed under section 4 of the Act) is the fourth priority. The processing of critical habitat determinations (prudency and determinability decisions) and proposed or final designations of critical habitat will no longer be subject to prioritization under the Listing Priority Guidance. This proposed rule is a Priority 3 action and is being completed in accordance with the current Listing Priority Guidance.

Summary of Factors Affecting the Species

Section 4 of the Act and regulations (50 CFR part 424) issued to implement the listing provisions of the Act set forth the procedures for adding species to the Federal lists. We may determine a species 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 Mississippi gopher frog distinct population segment (*Rana capito sevosa*) are as follows:

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

The range of the Mississippi gopher frog has been reduced as a result of habitat destruction and modification (see ''Background'' section). Historically, the Mississippi gopher frog occurred in at least nine counties or parishes in the States of Alabama, Mississippi, and Louisiana. Today, it is known from only one site in Harrison County, Mississippi.

The Mississippi Gulf Coast has experienced a recent increase in residential development. The land 200 m (656 ft) immediately north of the only known Mississippi gopher frog breeding site is slated for development, including a 20,000-unit retirement community, a sewage treatment plant, and several golf courses (L. Lewis, Brown and Mitchell, Inc., pers. comm. 1999). The sewage treatment plant and one golf course are currently planned immediately north of the gopher frog pond. Richter and Seigel (1998b) reported that the majority of gopher frogs leaving the breeding pond moved in the general direction of the development site. Two frogs, tracked using transmitters, were observed at the fence line delineating the DeSoto National Forest property boundary from the lands currently slated for development (Richter and Seigel 1998a). It seems likely that Mississippi gopher frogs occupy, or in the very recent past have occupied, this site. Residential development of the site would likely destroy its suitability for the frog.

Due to the close proximity of this development to the Mississippi gopher frog pond, a number of indirect impacts are possible. The most severe is the potential alteration of hydrology (physical factors that influence the movement of water into and out of a wetland) in the local region. The breeding pond of the Mississippi gopher frog must maintain its isolation and cycle of filling and drying, or it will no longer be suitable habitat. Wetland dredging and filling will be required in order to site houses and build the golf course and sewage treatment plant. The consequences of these proposed hydrological alterations cannot be estimated without further study. However, the only known breeding pond for the Mississippi gopher frog would undoubtedly be affected in some way (W. Oakley, U.S. Geological Survey, pers. comm. 1999).

A number of scenarios are possible due to the proximity of a proposed regional sewage treatment plant within 1.6 km (1 mi) of the Mississippi gopher frog pond. If sewage lagoons are used, it is possible they could overflow and flood gopher frog habitat. Such conditions of high water periodically result from the tropical storms that occur along the Mississippi Gulf Coast. Another potential effect is the lowering or raising of the groundwater table. Changes in the water table will alter the hydroperiod of the Mississippi gopher frog breeding pond and reduce its habitat suitability.

A dam has been proposed for the Biloxi River within 1.6 km (1 mi) of the Mississippi gopher frog pond. The reservoir plan involves a dam on the Biloxi River that would flood approximately 567 hectares (1,400 acres), primarily within the boundaries of the DeSoto National Forest (*Sun Herald,* Gulfport, Mississippi, May 4, 1999). The impoundment created by this dam would likely alter the temporary nature of the breeding site and flood occupied upland habitat used by adult frogs and/or potentially unoccupied upland habitat.

The highway expansion, both ongoing and planned, in the vicinity of the existing Mississippi gopher frog pond will fragment the available longleaf pine habitat (see Factor E). Urbanization will expand along these highway corridors and further reduce available habitat for the frog. Highway construction may also alter the existing hydrology of the area through creation of drainage ditches, filling of wetlands, and sedimentation.

The remaining breeding pond for the Mississippi gopher frog is located in the DeSoto National Forest. Silviculture, including timber sales with associated clearcutting, is currently the primary activity in this area. Inappropriate timber management could alter the suitability of the Mississippi gopher frog's remaining habitat (see ''Background'' section). In 1994, habitat on private land 200 m (656 ft) north of the breeding pond, now slated for residential development, was clearcut. The behavior of two Mississippi gopher frogs tracked from their breeding site may be indicative of the negative effects of clearcutting. The two frogs were followed to a burrow at the boundary of the clearcut (Richter and Seigel 1998a). They never left this location during the life of the transmitters. The burrow and stump holes used by migrating frogs on the clearcut site were likely altered. In addition, the site had no overstory and would represent a desert to moisture-requiring frogs. Although the effects of the clearcut on the population are unknown, it appears likely that, at least temporarily, the habitat was unsuitable for the frogs.

Historical gopher frog breeding sites have been degraded by roads that pass through or are adjacent to ponds. Erosion of unpaved roads adjacent to breeding sites may result in an influx of sediment from surrounding uplands during rainstorms. The hydroperiod (period during which a wetland holds water) at the Mississippi gopher frog breeding site has been negatively affected by a poorly maintained logging road that runs within 20 m (66 ft) of the pond (R. Seigel, pers. comm. 1998).

The open canopy and flat, unforested bottom of the Mississippi gopher frog breeding pond represent an alluring site for dumping unwanted trash and riding off-road vehicles (ORV). Many temporary ponds throughout the southeast have been degraded as a result of garbage dumping (LaClaire, pers. obs. 1994). ORVs can cause direct mortality of gopher frog tadpoles and adults (J. Jensen, Georgia Department of Natural Resources, pers. comm. 1996) as well as alter the quality of a breeding site. ORVs alter the contours of the pond floor, eliminate herbaceous vegetation, and can alter the hydrology of the site (LaClaire, pers. obs. 1995). Loss of herbaceous vegetation caused by ORVs could also discourage gopher frog

reproduction, since egg masses are attached to stems of herbaceous vegetation (Young 1997; Richter and Seigel 1998a, 1998b). ORV tracks have been documented within the Mississippi gopher frog breeding site (G. Johnson, pers. comm. 1994). In 1994, an area of the DeSoto National Forest within 2.4 km (1.5 mi) of the existing breeding pond was temporarily closed due to accumulation of trash, soil erosion and water quality degradation caused by ORVs, damage to endangered and sensitive plants and animals, and other vandalism (K. Godwin, U.S. Forest Service, pers. comm. 1994). ORV use will likely increase in the vicinity of the pond if the proposed housing development occurs adjacent to the site.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Direct take of Mississippi gopher frogs for commercial, recreational, scientific, or educational purposes is not currently a threat. However, listing the Mississippi gopher frog may make it more attractive to collectors through recognition of its rarity. In addition, the life history and ecology of Mississippi gopher frogs make them vulnerable to overcollecting, as well as vandalism. Only a single breeding pond remains for this frog. At predictable times of the year, all breeding adults congregate at this one site to breed.

C. Disease or Predation

Disease is not known to be a factor in the decline of the Mississippi gopher frog. However, predation may be a threat. Richter and Seigel (1998a) reported that approximately 44 percent of all eggs at the existing breeding site were lost in 1997 prior to hatching. An undetermined amount of the egg mortality was due to predation by caddisfly larvae (Order Trichoptera, Family Phryganeidae) on the egg masses. Caddisfly larvae were not observed on egg masses in the previous year of the study. The effect on the Mississippi gopher frog population is unknown. However, if mortality of this magnitude is a result of predation, it is a cause for concern in such an extremely small and isolated population.

Predation from fish probably contributed to the loss of historic populations. Temporary ponds altered to form more permanent bodies of water and stocked with fish are no longer suitable breeding sites. Fish may have also entered breeding sites through the connection of drainage ditches and firebreaks to pond basins. The Mississippi gopher frog is adapted to temporary wetlands, and its larvae cannot survive the heavy predation of bass and sunfish commonly used to stock ponds. One historical location in Louisiana was destroyed in part because it has become a permanent pond with fish (Thomas 1996). In Mississippi, a calling male was discovered in 1987 at a site that has since been converted to a fish pond (T. Mann, pers. comm. 1998). No gopher frogs have been reported subsequently at this site, which is no longer considered suitable breeding habitat.

D. The Inadequacy of Existing Regulatory Mechanisms

Louisiana has no protective legislation for the Mississippi gopher frog. Alabama protects all gopher frogs as nongame species (J. Woehr, Alabama Department of Conservation and Natural Resources, pers. comm. 1994). The Mississippi gopher frog is listed as endangered in Mississippi (Mississippi Department of Wildlife, Fisheries and Parks 1992), and both Mississippi and Alabama provide protection against collecting of the species. However, this legislation does nothing to alleviate the habitat loss that has caused the decline of the species. The only known breeding site for the Mississippi gopher frog is on U.S. Forest Service land. As a result, there has been a concerted effort to encourage the U.S. Forest Service to manage the site for the frog. Although the U.S. Forest Service has an obligation to ensure their land management activities protect fish and wildlife (National Forest Management Act), forest management is often limited by existing funding. Other avenues of funding become available to the U.S. Forest Service once a species is federally listed.

E. Other Natural or Manmade Factors Affecting Its Continued Existence

Fire is needed to maintain the natural longleaf pine community. Ecologists consider fire suppression a primary reason for the degradation of the remaining longleaf pine acreage in the southeast (Noss 1988, Ware *et al.* 1993). Fire suppression has reduced the quality of the terrestrial and aquatic habitat for the Mississippi gopher frog. Canopy closure from fire suppression alters the forest floor vegetation and threatens the open, herbaceous character typical of gopher frog breeding ponds (Kirkman 1995, LaClaire 1995). In addition, fire causes the release of nutrients bound in plant material. This release of nutrients results in a flush of primary productivity that is important to the herbivorous gopher frog tadpoles. Fire suppression has probably negatively impacted all of the historical Mississippi gopher frog sites. At this time, fire is the only known management tool that will maintain the existing breeding pond as suitable habitat.

Between 1991 and 1998, the U.S. Forest Service conducted periodic growing-season burns of the forest compartment surrounding the Mississippi gopher frog breeding pond. These burns improved habitat conditions, but their frequency and extent have been insufficient. For example, the interior of the breeding site has been burned only once since 1991. This frequency of burning is too low to prevent woody encroachment and, therefore, too low to enhance herbaceous growth. Residential development and road construction in the vicinity of the breeding pond will create increased concerns about, and likely reduce the use of, fire as a management tool.

Habitat fragmentation of the longleaf pine ecosystem, resulting from habitat conversion, threatens the survival of the single remaining Mississippi gopher frog population. Studies have shown that the loss of small, fragmented populations is common, and recolonization is critical for their regional survival (Fahrig and Merriam 1994, Burkey 1995). As patches of available habitat become separated beyond the dispersal range of a species, populations are more sensitive to genetic, demographic, and environmental variability and may be unable to recover (Gilpin 1987, Sjogren 1991, Blaustein *et al.* 1994). This scenario describes threats to the Mississippi gopher frog. Five historical Mississippi gopher frog localities exist within a 19.2-km (12-mi) radius of the remaining site. Highways have fragmented this area and contributed to habitat degradation. The most recent records of frogs at these locales was in the late 1980s. The planned construction of highways within 5 km (3.1 mi) both to the north and east of the existing Mississippi gopher frog pond will further isolate the remaining population from the two potentially restorable historical breeding sites in the DeSoto National Forest. The Biloxi River and additional residential development bound the habitat to the west and south.

Low reproductive potential may also present a threat to the Mississippi gopher frog's continued existence. Studies at the Mississippi breeding site suggest that female Mississippi gopher frogs may not breed until 2 to 3 years of age and may breed only in alternate years and/or have only a single lifetime

breeding event (Richter and Seigel 1998b). In addition, survival of juvenile frogs is thought to be extremely low (Richter and Seigel 1998b).

Annual variability in rainfall influences how frequently and how long a pond is appropriate breeding habitat. Reliance on specific weather conditions results in unpredictable breeding events and reduces the likelihood that recruitment will occur every year. No larvae survived to metamorphosis in 3 out of 6 years of the reproductive study of the extant Mississippi gopher frog population (summarized in Richter and Seigel 1998b). In addition, study results indicate that only 1 year out of 6 resulted in the explosive numbers (2,488) of juveniles typical of temporary pond breeding amphibians.

The Mississippi gopher frog population is highly susceptible to genetic isolation, inbreeding, and random demographic events as a result of having only one known breeding site. Long-lasting droughts or frequent floods may negatively affect the population. Although these are natural processes, other threats, such as habitat fragmentation, habitat degradation, and low reproductive potential, may cause the population to decline to the point that it cannot recover.

Pesticides and herbicides pose a threat to amphibians such as the Mississippi gopher frog, because their permeable eggs and skin readily absorb substances from the surrounding aquatic or terrestrial environment (Duellman and Trueb 1986). Aquatic frog larvae are likely more vulnerable than adults to chemical changes in their environment. Negative effects of commonly used pesticides and herbicides on amphibian larvae include delayed metamorphosis, paralysis, reduced growth rates, and mortality (Bishop 1992, Berrill and Bertram 1997, Bridges 1999). Adult gopher frogs are predaceous and could be affected by pesticides accumulated in their invertebrate prey. If a golf course is built in the drainage area of the Mississippi gopher frog breeding pond, as proposed, the herbicides and pesticides used to maintain it would pose a potential threat to the population. In addition, runoff from chemically maintained yards and roads in the proposed residential development may contribute toxins that could threaten the frog. Herbicides may also alter the density and species composition of vegetation surrounding a breeding site and reduce the number of potential sites for egg deposition, larval development, or shelter for migrating frogs.

We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by the Mississippi gopher frog distinct population segment in determining to propose this rule. Based on this evaluation, the preferred action is to list the Mississippi gopher frog distinct population segment as endangered. The Act defines an endangered species as one that is in danger of extinction throughout all or a significant portion of its range. A threatened species is one that is likely to become an endangered species in the foreseeable future throughout all or a significant portion of its range. As discussed under Factor A, in spite of extensive surveys throughout the known range of the Mississippi gopher frog, only one population is known to exist. Further, residential development, new and expanding highways, increased fire suppression, and a proposed reservoir pose threats to the remaining habitat of adult gopher frogs. For these reasons, we find that the Mississippi gopher frog distinct population segment is in danger of extinction throughout all or a significant portion of its range and, therefore, endangered status is appropriate.

Critical Habitat

Critical habitat is defined in section 3 of the Act as: (I) The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. ''Conservation'' means the use of all methods and procedures needed to bring the species to the point at which listing under the Act is no longer necessary.

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, we designate critical habitat at the time the species is determined to be endangered or threatened. Our regulations (50 CFR 424.12(a)(1)) state that designation of critical habitat is not prudent when one or both of the following situations exist—(I) The species is threatened by taking or other activity and the identification of critical habitat can be expected to increase the degree of threat to the species or (ii) such designation of critical habitat would not be beneficial to the species. We find that designation of critical habitat is prudent for the Mississippi gopher frog.

Critical habitat designation, by definition, directly affects only Federal agency actions through consultation under section 7(a)(2) of the Act. 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.

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, we designate critical habitat at the time the species is determined to be endangered or threatened. Our regulations (50 CFR 424.12(a)(1)) state that designation of critical habitat is not prudent when one or both of the following situations exist—(1) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of threat to the species, or (2) such designation of critical habitat would not be beneficial to the species.

The Final Listing Priority Guidance for FY 2000 (64 FR 57114) states, ''The processing of critical habitat determinations (prudency and determinability decisions) and proposed or final designations of critical habitat will no longer be subject to prioritization under the Listing Priority Guidance. Critical habitat determinations, which were previously included in final listing rules published in the **Federal Register**, may now be processed separately, in which case stand-alone critical habitat determinations will be published as notices in the **Federal Register**. We will undertake critical habitat determinations and designations during FY 2000 as allowed by our funding allocation for that year.'' As explained in detail in the Listing Priority Guidance, our listing budget is currently insufficient to allow us to immediately complete all of the listing actions required by the Act.

We propose that critical habitat is prudent for the Mississippi gopher frog. In the last few years, a series of court decisions have overturned Service determinations regarding a variety of species that designation of critical habitat would not be prudent (*e.g., Natural Resources Defense Council* v. *U.S. Department of the Interior* 113 F. 3d 1121 (9th Cir. 1997); *Conservation Council for Hawaii* v. *Babbitt,* 2 F. Supp. 2d 1280 (D. Hawaii 1998)). Based on the standards applied in those judicial opinions, we believe that designation of

critical habitat would be prudent for the Mississippi gopher frog.

Due to the fact that the Mississippi gopher frog is only known from one site, it is vulnerable to unrestricted collection, vandalism, or other disturbance. We are concerned that these threats might be exacerbated by the publication of critical habitat maps and further dissemination of locational information. However, at this time we do not have specific evidence for the Mississippi gopher frog of taking, vandalism, collection, or trade of this species or any similarly situated species. Consequently, consistent with applicable regulations (50 CFR 424.12(a)(1)(I)) and recent case law, we do not expect that the identification of critical habitat will further increase the degree of threat of taking or other human activity above that of the listing of the species.

In the absence of a finding that critical habitat would increase threats to a species, if there are any benefits to critical habitat designation, then a prudent finding is warranted. In the case of this species, there may be some benefits to designation of critical habitat. The primary regulatory effect of critical habitat is the section 7 requirement that Federal agencies refrain from taking any action that destroys or adversely modifies critical habitat. While a critical habitat designation for habitat currently occupied by this species would not be likely to change the section 7 consultation outcome because an action that destroys or adversely modifies such critical habitat would also be likely to result in jeopardy to the species, there may be instances where section 7 consultation would be triggered only if critical habitat is designated. Examples could include unoccupied habitat or occupied habitat that may become unoccupied in the future. There may also be some educational or informational benefits to designating critical habitat. Therefore, we propose that critical habitat is prudent for the Mississippi gopher frog. However, the deferral of the critical habitat designation for the Mississippi gopher frog will allow us to concentrate our limited resources on higher priority critical habitat and other listing actions, while allowing us to put in place protections needed for the conservation of the Mississippi gopher frog without further delay. We anticipate in FY 2000 and beyond giving higher priority to critical habitat designation, including designations deferred pursuant to the Listing Priority Guidance, such as the designation for this species, than we have in recent fiscal years.

We plan to employ a priority system for deciding which outstanding critical habitat designations should be addressed first. We will focus our efforts on those designations that will provide the most conservation benefit, taking into consideration the efficacy of critical habitat designation in addressing the threats to the species, and the magnitude and immediacy of those threats. We will make the final critical habitat determination with the final listing determination for the Mississippi gopher frog. If this final critical habitat determination is that critical habitat is prudent, we will develop a proposal to designate critical habitat for the Mississippi gopher frog as soon as feasible, considering our workload priorities.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain activities. Recognition through listing results in public awareness and conservation actions by Federal, State, and local agencies, private organizations, and individuals. The 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 listed as endangered or threatened and with respect to its critical habitat, if any is 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 us on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. If a species is subsequently listed, 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 the 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 us.

The Mississippi gopher frog occurs in the DeSoto National Forest, Federal land administered by the U.S. Forest Service. The U.S. Forest Service will be required to evaluate whether their activities have the potential to adversely impact the Mississippi gopher frog. Their activities that could adversely modify suitable habitat include, but are not limited to, forest management and road construction. Other Federal agencies that may be involved in authorizing, funding, or carrying out activities that may affect the Mississippi gopher frog include the Army Corps of Engineers, due to their regulation of discharges of dredged or fill material into isolated wetlands under section 404 of the Clean Water Act (CWA), nationwide permit 26 and dam construction in navigable waters under section 10 of the Rivers and Harbors Act and 404 of the CWA; the Federal Energy Regulatory Commission, due to their oversight of gas pipeline and powerline rights-of-way; and the Federal Highway Administration, if Federal funds are involved in road construction.

We have been working with the U.S. Forest Service since 1988 to protect the last remaining population of the Mississippi gopher frog. We have advised the U.S. Forest Service on protection and management needs for this species. We have supported research on the ecology and life history of this population by projects funded through our cooperative agreement with the State of Mississippi under section 6 of the Act. In addition, we have collaborated with the U.S. Forest Service on the rehabilitation of a nearby pond as a future breeding site for the frog.

The Act and its 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 (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these), import, export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any endangered wildlife species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to our agents and agents of State conservation agencies.

It is our policy, published in the **Federal Register** on July 1, 1994 (59 FR 34272), to identify, to the maximum extent practicable at the time a species is listed, those activities that are or are not likely to constitute a violation of section 9 of the Act. The intent of this policy is to increase public awareness of

the effects of the listing on proposed and ongoing activities within a species' range.

We believe the following activities are unlikely to result in a violation of section 9 for the Mississippi gopher frog:

(1) Possession of legally acquired Mississippi gopher frogs;

(2) Lawful hunting activities;

(3) Lawful burning of habitat where the Mississippi gopher frog is known to occur, including winter burning;

(4) Federally approved projects that involve activities such as discharge of fill material, draining, ditching, bedding, diversion or alteration of surface or ground water flow into or out of a wetland (*i.e.*, due to roads, impoundments, discharge pipes, etc.), when the activity is conducted in accordance with any reasonable and prudent measures given by us in accordance with section 7 of the Act; and,

(5) Conversion of longleaf pine habitat where the Mississippi gopher frog does not occur.

We believe the following activities could potentially result in ''take'' of the Mississippi gopher frog:

(1) Unauthorized killing, collecting, handling, or harassing of individual Mississippi gopher frogs; this would include unauthorized use of off-road vehicles in the wetland basins of known breeding sites of the species.

(2) Possessing, selling, transporting, or shipping illegally taken Mississippi gopher frogs;

(3) Unauthorized destruction or alteration of the hydrology of the frog's wetland breeding sites. These actions would include off-site activities that alter the regional hydrology by changing the natural recharge to the below-ground aquifer, altering the groundwater table, or altering flows in stream drainages, which would impact the appropriate temporal fluctuations and/or water-holding capacity at existing breeding sites. Unauthorized actions that could alter the hydrology of breeding sites would include discharge of fill material, draining, ditching, bedding, clear-cutting within the wetland, diversion or alteration of surface or ground water flow into or out of a wetland (*i.e.*, due to roads, impoundments, discharge pipes, etc.), and operation of any vehicles within the wetland; and,

(4) Discharge or dumping of toxic chemicals, silt, or other pollutants (*i.e.*, sewage, oil, pesticides, and gasoline) into isolated wetlands or upland habitats supporting the species. This includes any application of terrestrial or aquatic pesticide that results in the mortality of adult frogs or tadpoles, regardless if the pesticide was applied in accordance with the labeling instructions. This includes drift from aerial applications and runoff from surface applications.

We will review other activities not identified above on a case-by-case basis to determine whether they may be likely to result in a violation of section 9 of the Act. We do not consider these lists to be exhaustive and provide them as information to the public. You should direct questions regarding whether specific activities may constitute a violation of section 9 to the Field Supervisor of our Mississippi Field Office (see **ADDRESSES** section).

We may issue permits to carry out otherwise prohibited activities involving endangered wildlife species under certain circumstances. Regulations governing permits are at 50 CFR 17.22. For endangered species, you may obtain permits for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities. You may request copies of the regulations regarding listed wildlife from, and address questions about prohibitions and permits to, the U.S. Fish and Wildlife Service, 1875 Century Blvd., Suite 200, Atlanta, Georgia 30345, or telephone 404/679–7313; facsimile 404/679–7081.

Public Comments Solicited

We intend that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, we request comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning this proposed rule. Our practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Individual respondents may request that we withhold their home address from the rulemaking record, which we will honor to the extent allowable by law. There also may be circumstances in which we would withhold from the rulemaking record a respondent's identity, as allowable by law. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment. However, we will not consider anonymous comments. We will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety. We particularly seek comments concerning:

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

(2) The location of any additional populations of this distinct population segment;

(3) The reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;

(4) Additional information concerning the range, distribution, and size of this distinct population segment; and

(5) Current or planned activities in the subject area and their possible impacts on this distinct population segment.

We will take into consideration your comments and any additional information received on this distinct population segment when making a final determination regarding this proposal. We will also submit the available scientific data and information to appropriate, independent specialists for review. We will summarize the opinions of these reviewers in the final decision document. The final determination may differ from this proposal based upon the information we receive.

You may request a public hearing on this proposal. Your request for a hearing must be made in writing and filed within 45 days of the date of publication of this proposal in the **Federal Register**. Address your request to the Field Supervisor (see **ADDRESSES** section).

National Environmental Policy Act

We have determined that we do not need to prepare an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, in connection with regulations adopted pursuant to section 4(a) of the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

Paperwork Reduction Act

This rule does not contain any new collections of information other than those already approved under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, and assigned Office of Management and Budget clearance 1018–0094. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid control number. For additional information concerning permit and associated requirements for endangered species, see 50 CFR 17.22.

References Cited

You may request a list of all references cited in this document, as well as others, from the Mississippi Field Office (see **ADDRESSES** section).

Author. The primary author of this proposed rule is Linda V. LaClaire, Mississippi Field Office (see **ADDRESSES** section) (601/965–4900).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as follows:

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. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500, unless otherwise noted.

2. In § 17.11(h) add the following, in alphabetical order under AMPHIBIANS, to the List of Endangered and Threatened Wildlife:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
AMPHIBIANS							
*	*	*	*	*	*	*	
Frog, Mississippi gopher.	*Rana capito sevosa*	U.S.A.(AL, FL, LA, MS).	Wherever found west of Mobile and Tombigbee Rivers in AL, MS, and LA.	E	.....	NA	NA
*	*	*	*	*	*	*	

Dated: April 6, 2000.

Jamie Rappaport Clark,

Director, Fish and Wildlife Service.

[FR Doc. 00–12796 Filed 5–22–00; 8:45 am]

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