

and Mobile rivers in Alabama to southeastern Louisiana. The historic western gopher tortoise habitat has been reduced more than 80 percent by conversion to urban areas, croplands, and pasturelands. Certain forest management practices have also reduced the value of some remaining forest habitats. Fragmentation of the western range has accentuated these impacts. Taking gopher tortoises for sale and use as food or as pets has had a serious effect on some populations. All these problems are complicated by the great length of time required for tortoises to reach sexual maturity and by their low reproductive rate. This proposal, if made final, would implement the protections provided by the Endangered Species Act of 1973, as amended. The Service requests comments and data from the public on this proposal.

**DATES:** Comments from all interested parties must be received by September 8, 1986. Public hearing requests must be received by August 22, 1986.

**ADDRESSES:** Comments and materials concerning this proposal should be sent to the Endangered Species Field Station 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. Dennis B. Jordan at the above address (601/960-4900 or FTS 490-4900)

**SUPPLEMENTARY INFORMATION:**

**Background**

The gopher tortoise (*Gopherus polyphemus*) was described in 1802 by F.M. Daudin. It is a large (shell 15-37 centimeters or 5.9-14.6 inches long) dark-brown to grayish-black terrestrial turtle with elephantine hind feet, shovellike forefeet, and a gular projectio beneath the head on the yellowish, hingeless plastron or undershell (Ernst and Barbour, 1972). It ranges along the coastal plain from South Carolina through Florida to southeastern Louisiana.

The gopher tortoise most often lives on well-drained sandy soils in transitional (forest and grassy) areas (Ernst and Barbour, 1972). It is commonly associated with a pine overstory and an open understory with grass and forb groundcover and sunny areas for nesting (Landers, 1980). Using statistics of the U.S. Department of

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**DEPARTMENT OF THE INTERIOR**

**Fish and Wildlife Service**

**50 CFR Part 17**

**Endangered and Threatened Wildlife and Plants; Proposed Threatened Status for the Western Population of the Gopher Tortoise (*Gopherus polyphemus*)**

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Proposed rule.

**SUMMARY:** The Service proposes to list the western population of the gopher tortoise as a threatened species. This

estimates that present ownership distribution of gopher tortoise habitat is approximately two-tenths in National Forest, one-tenth in other public ownership, three-tenths in forest industry, and four-tenths in other private ownership.

Conversion of gopher tortoise habitat to urban areas, croplands, and pasturelands along with adverse forest management practices has reduced the western portion of the historic range of the gopher tortoise by more than 80 percent. Fragmentation of the western range accentuates those impacts. Taking gopher tortoises for sale or use as food or pets has also had a serious effect on some populations. The seriousness of the loss of adult tortoises is magnified by the length of time required for tortoises to reach sexual maturity and their low reproductive rate. Current estimates of human predation and road mortality alone are at levels that could offset any annual addition to the population. Sightings of gopher tortoises have become rare in many areas and the ones sighted are much smaller than in the past (Diemer, 1984).

The gopher tortoise was included in the Notice of Review of Vertebrate Wildlife for listing as Endangered or Threatened Species (December 30, 1982; 47 FR 58454) as a species in Category 2. Category 2 included taxa for which information then in possession of the Service indicated that proposing to list the species was possibly appropriate, but for which available data were not judged sufficient to support a proposed rule. In 1983 the Service selected the gopher tortoise as a species of special emphasis, and developed a Regional Resource Plan for it. On July 18, 1984, Dr. Ren Lohofener and Dr. Lynne Lohmeier submitted a petition to list the western population of the gopher tortoise. The petition and accompanying status report were accepted as providing substantial information that the requested action may be warranted. The report attached to the petition was sent out for expert review, together with a request for comments on the substantiality of its methods and conclusions, the petitioned action, and any other relevant data. Of 17 responses received, 14 provided comments or additional information that supported the petitioned action. Two reviewers recommended against listing the western population separately, and one recommended adoption of harvest restrictions only. On July 26, 1985, the Service made a 12-month finding that the action requested by the petitioners was warranted but precluded by other listing actions in accordance with 4(b)(3)(B)(iii). This proposed rule

constitutes an additional required petition finding, confirming that the requested action is warranted. The status of the eastern population of the gopher tortoise is still under review by the Service and State conservation agencies.

#### 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 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 western population of the gopher tortoise (*Gopherus polyphemus*) are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* According to Lohofener and Lohmeier (1984), only 147,313 hectares (364,000 acres) of pine forested upland sandy soils that provide suitable habitat remain within the western range of the gopher tortoise. This reflects a habitat loss of 82 percent, although an additional 94,907 hectares (234,000 acres) of pine forested upland sandy soils exist that could provide additional habitat with suitable management. A general continuation of recent decline in forest area in these states is likely (USDA, 1978c). There was a statewide longleaf/slash pine acreage reduction of 24 percent in Mississippi from 1967 to 1983 (USDA, 1973a, 1978b, 1983a), 12 percent in Alabama from 1972 to 1982 (USDA, 1973b, 1983b), and 18 percent in Louisiana from 1967 to 1980 (USDA, 1965, 1975, 1980). Land use changes from forest to agriculture and growth of urban areas are responsible for most of this loss of gopher tortoise habitat. In Mississippi over the next 30 years, according to the Land Use Center, Mississippi Cooperative Extension Service, cropland is expected to double and pastureland to increase by 40 percent. Much of the crop and pasture acreage will come from flat to gently sloping forestland. Within the tortoise's range, human population projections indicate an increase of approximately 50 percent in Mississippi from 1980 to 2000 (according to the Land Use Center, Mississippi Cooperative Extension Service). A 53 percent human population increase occurred in Louisiana from 1970 to 1980, with less than a 10 percent increase during the same period of time

in Alabama (Lohofener and Lohmeier, in press).

In addition to this loss of habitat is adverse modification of habitat associated with some forest management practices. The gopher tortoise requires an open forest floor with grasses and forbs for food and sunny areas for nesting (Landers, 1980). Regular burning or thinning of trees is required to maintain this type of habitat. Private landowners may not manage their forest to provide suitable gopher tortoise habitat. Development of thick underbrush, closing of forest canopies, or clearcutting destroys food plants, inhibits nesting, and causes tortoises to relocate to the edge of roadsides and ditch banks, increasing their susceptibility to human predation and vehicle mortality. One year after timber removal in South Carolina, Wright (1982) found no hatchling gopher tortoises, a 66 percent loss of juveniles, and a 32 percent loss of adults. In another area that was site prepared and planted to pine 30 years before, he found the lowest gopher tortoise population of several areas he compared, and no hatchling or juveniles.

Forest management on the DeSoto National Forest will probably be more compatible with the gopher tortoise than on private forests, but the National Forest is only 22 percent of the total western range (Lohofener and Lohmeier, 1984; USDA, 1984). The greatest problem for the gopher tortoise caused by typical forest management is probably the closed canopy of young pine stands. Alternative forest management schemes will ultimately determine the impact of forestry operations on the gopher tortoise. The effects of habitat loss and modification are magnified by the fragmented nature of the sand ridges within the western range of the gopher tortoise (Lohofener and Lohmeier, 1984). Possible minor habitat effects may also result from training maneuvers of the U.S. Army in DeSoto National Forest.

B. *Overutilization for commercial, recreational, scientific, or educational purposes.* Gopher tortoises are collected for use or sale as food or as pets. Research in Florida has shown up to 20 percent of a colony has been taken at one time by "gopher pullers" (Taylor, 1981), and Lohofener and Lohmeier (1984) have documented a 4.8 percent annual human predation rate in Mississippi. The impact of this activity is magnified because of the fact that this effort is directed solely toward the adult, or reproducing, segment of the population. The number of tortoises taken for us as pets is unknown, but the

New Orleans Nature Center reports about 20 tortoises per year turned in by residents.

*C. Disease or predation.* The gopher tortoise suffers a heavy natural predation loss of almost 97 percent through the first two years of life (Landers, 1980; Wright, 1982). There is additional predation on juveniles and adults from two years to maturity, but the magnitude is unknown.

*D. The inadequacy of existing regulatory mechanisms.* The gopher tortoise is on the Mississippi State List of Endangered Species, and is considered a game animal in Alabama with no open season. Both of these actions offer some protection against taking. Lacey Act provisions are also applicable for these two States. The U.S. Forest Service has recently issued a closure order for taking gopher tortoises within DeSoto National Forest. Federal listing could enhance these protection efforts and provide protection that does not presently exist in Louisiana in relation to taking. Federal listing could also result in increased consideration for tortoise habitat in management practices on Federal lands. Some modification of forest management practices on the DeSoto National Forest in particular could be advantageous.

*E. Other natural or manmade factors affecting its continued existence.* The previously discussed threats are accentuated by the length of time required for gopher tortoises to reach sexual maturity and their low reproductive rate. Females take 13 to 21 years to reach sexual maturity (19 to 21 years as far north as southwestern Georgia), and lay an average of only 5.8 eggs per clutch (Landers and McRae, 1980; Landers *et al.*, 1982; Lohofener and Lohmeier, 1984). There is some evidence to indicate that all females may not nest every year (Lohofener and Lohmeier, 1984; Wright, 1982). Documented human predation and road mortality alone may already be at a level that would offset any annual recruitment to the population computed from these data. After subtracting all other mortality of juveniles and adults, such as that due to predators other than humans, or crushing of nests and juveniles during site preparation for tree planting, the likelihood of population decline is even greater. Declines of this nature seem to already be indicated in comparisons of recent status survey results. Auffenberg and Franz (1982) estimated a population density of 0.713 tortoises per hectare in Mississippi and 0.97 tortoises per hectare in Alabama in 1975, whereas Lohofener and Lohmeier (1984) estimated a density of 0.107 and

0.32 per hectare in those states, respectively, in the early 1980's. Lohofener and Lohmeier (1984) were also able to document only 11 active burrows in Louisiana in 1981, and only one remaining in 1984. Although these estimates may not be strictly comparable because of different methodologies, there is an indicated decline in population densities ranging from 67 percent in Alabama to 91 percent in Louisiana.

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 western population of the gopher tortoise as threatened. Even though the previously discussed threats are currently impacting the gopher tortoise, it may be some time before the species is in danger of extinction. Therefore, it seems more appropriate to list the gopher tortoise as threatened, defined as likely to become in danger of extinction within the foreseeable future throughout all or a significant portion of its range. Critical habitat is not being proposed for the reasons discussed below.

#### Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that to the maximum extent prudent and determinable, the Secretary designate any habitat of a species that is considered to be critical habitat at the time the species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not prudent for this species at this time. As discussed under Factor B in the "Summary of Factors Affecting the Species," the gopher tortoise is threatened by taking. Publication of critical habitat descriptions would make this species even more vulnerable and increase enforcement problems. Therefore, it would not be prudent to determine critical habitat for the western population of the gopher tortoise at this time.

#### 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 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 402x and were recently revised at 51 FR 19926 (June 3, 1986). 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. Activities by Federal agencies that modify habitat or change land use could affect the gopher tortoise. Such activities could include certain timber management practices of the Department of Agriculture and military training activities within the National Forest by the Department of Defense. Only relatively minor precautionary constraints should be needed to avoid such impacts.

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, 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 survival of the species, and/or for incidental take in connection with otherwise lawful activities. For threatened species, there are also permits for zoological exhibition, educational purposes, or special purposes consistent with the purposes of the Act. In some instances, permits may be issued during a specified period of time to relieve undue economic hardship that would be suffered if such relief were not available.

On July 1, 1975, the gopher tortoise was included in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The effect of this listing is that export permits are required before international shipment may occur. Such shipment is strictly regulated by CITES member nations to prevent it from being detrimental to the survival of the species.

#### Public Comments Solicited

The Service intends that any final rule adopted will be accurate and as effective as possible in the conservation of endangered or threatened species. Therefore, any comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning any aspect of these proposed rules are hereby solicited. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to the gopher tortoise;

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

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

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

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 adoption of 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 filed within 45 days of the date of the proposal. Such requests must be made in writing and addressed to Endangered Species Field Supervisor (see ADDRESSES section).

#### National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined by 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

- Affenberg, W., and R. Franz. 1982. The status and distribution of the gopher tortoise *Gopherus polyphemus*. Pages 95-126 in R.B. Bury (ed.), North American tortoises: conservation and ecology. U.S. Wildl. Ser. Res. Rep. 12. 126 pp.
- Diemer, J.E. 1984. Gopher tortoise status and harvest impact determination: a progress report. Florida Game and Fresh Water Fish Commission. 51 pp.
- Ernst, C.H., and R.W. Barbour. 1972. Turtles of the United States. The Univ. Press of Kentucky, Lexington, Kentucky. 347 pp.
- Landers, J.L. 1980. Recent research on the gopher tortoise and its implications. Pages 8-14 in R. Franz and R.J. Bryant (eds.), Proc. 1st Ann. Mtg., Gopher Tortoise Council. 80 pp.
- Landers, J.L., and W.A. McRae. 1980. Reproduction of the gopher tortoise (*Gopherus polyphemus*) in southwestern Georgia. Herpetologica 36:353-361.
- Landers, J.L., W.A. McRae, and J.A. Garner. 1982. Growth and maturity of the gopher tortoise in southwestern Georgia. Bul. Florida State Mts., Biol. Sci. 27:81-110.
- Lohofener, R., and L. Lohmeier. 1984. The Status of *Gopherus polyphemus* (Testudines: Testudinidae) west of the Tombigbee and Mobile Rivers. A report presented to U.S. Fish and Wildlife Service along with a petition to list the western population of the gopher tortoise. ii + 126 pp.
- \_\_\_\_\_. In press. Comparative strategies for protection and preservation of the gopher tortoise, *Gopherus polyphemus*. In M. Trotter and C.G. Jackson (eds.), Desert Tortoise Council Proc. 1983 Symp. 10 pp. in manuscript.
- Taylor, R.W., Jr. 1981. The gopher tortoise—its use as food by man. Pages 56-65 in R. Lohofener, L. Lohmeier, and G. Johnston (eds.), Proc. 2nd. Ann. Mtg., Gopher Tortoise Council. 114 pp.
- USDA (U.S. Department of Agriculture). 1965. Louisiana forests. USDA Forest Service. 31 pp.
- \_\_\_\_\_. 1973a. Forest area statistics for midsouth counties. USDA Forest Service. 64 pp.
- \_\_\_\_\_. 1973b. Forest statistics for Alabama counties. USDA Forest Service Resource Bulletin SO-39. 65 pp.
- \_\_\_\_\_. 1975. Louisiana forest: status and outlook. USDA Forest Service Resource Bulletin SO-53. 31 pp.
- \_\_\_\_\_. 1978a. Supplement to Forest Service Resource Bulletin SO-67, Mississippi South Region. 29 pp.
- \_\_\_\_\_. 1978b. Forest statistics for Mississippi counties. USDA Forest Service Resource Bulletin SO-69. 86 pp.
- \_\_\_\_\_. 1978c. Mississippi forests—trends and outlook. USDA Forest Service Resource Bulletin SO-67. 32 pp.
- \_\_\_\_\_. 1980. Mid-cycle Forest Survey—Louisiana. USDA Forest Service Resource Bulletin SO-86. 33 pp.
- \_\_\_\_\_. 1983a (unpublished). Mid-cycle Forest Survey. Mississippi—Southern Forest Experiment Station (Preliminary Data). USDA Forest Service. Unpaginated.
- \_\_\_\_\_. 1983b. Forest statistics for southeast—south Alabama counties. USDA Forest Service Resource Bulletin SO-91. 15 pp.
- \_\_\_\_\_. 1984. Proposed land and resource management plan—National Forest in Mississippi. USDA Forest Service Southern Region. x + 343 pp. + maps.
- Wright, S. 1982 (unpublished thesis). The distribution and population of the gopher tortoise (*Gopherus polyphemus*) in South Carolina. Unpubl. M.S. Thesis, Clemson Univ., Clemson, South Carolina. 74 pp.

#### Author

The primary author of this proposed rule is Mr. John J. Pulliam, III (see ADDRESSES section) at 601/960-4900 or FTS 490-4900.

#### List of Subjects in 50 CFR Part 17

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

#### 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: Pub. L. 93-205, 87 Stat. 624; Pub. L. 94-359, 90 Stat. 911; Pub. L. 95-632, 92 Stat. 3751; Pub. L. 96-159, 93 Stat. 1225; Pub. L. 97-304, 96 Stat. 1411 (16 U.S.C. 1531 *et seq.*).

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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Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
REPTILES							
Tombigbee gopher	<i>Gopherus polyphemus</i>	U.S.A. (AL, FL, GA, LA, MS, SC)	Wherever found west of Mobile and Tombigbee Rivers in AL, MS, and LA	T		NA	NA

Dated: June 12, 1986.

**Susan E. Recce,**

*Acting Assistant Secretary for Fish and Wildlife and Parks.*

[FR Doc. 86-15351 Filed 7-7-86; 8:45 am]

**BILLING CODE 4310-55-M**