

#180-91

DEPARTMENT OF THE INTERIOR**Fish and Wildlife Service****50 CFR Part 17****RIN 1018-AB73****Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for the Giant Garter Snake****AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Proposed rule.

SUMMARY: The Fish and Wildlife Service (Service) proposes to list the giant garter snake (*Thamnophis gigas*) as an endangered species pursuant to the Endangered Species Act of 1973, as amended (Act). This snake inhabits localized wetland habitats in portions of the Central Valley of California. The species is endangered by habitat loss caused by numerous factors, primarily urbanization, agricultural, and flood control activities. This proposal, if made final, would extend the Act's protective provisions to this animal. The service seeks data and comments from the public on this proposal.**DATES:** Comments from all interested parties must be received by February 25, 1992. Public hearing requests must be received by February 10, 1992.**ADDRESSES:** Comments and materials concerning this proposal should be sent to the Field Supervisor, Sacramento Field Office, U.S. Fish and Wildlife Service, 2800 Cottage Way, room E-1803, Sacramento, California 95825-1846. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.**FOR FURTHER INFORMATION CONTACT:** Peter Sorensen (see **ADDRESSES** section) at 916/978-4866 or FTS 460-4866.

SUPPLEMENTARY INFORMATION:**Background**

The giant garter snake (*Thamnophis gigas*) is one of the largest garter snakes, reaching a total length of at least 140 centimeters (cm) (55 inches (in)) (Van Denburgh 1922). Females are slightly longer and proportionately heavier (typically 500–700 grams (g)) (1.0–1.4 pounds (lb)) than males (George Hansen, independent researcher, pers. comm., 1991). Dorsal background coloration is brownish with a checkered pattern of black spots, separated by a yellow dorsal stripe and two light colored lateral stripes. Prominence of the three yellow stripes is geographically variable. First described by Fitch (1940) as a subspecies of the northwestern garter snake (*Thamnophis ordinoides gigas*), the status of the giant garter snake, along with the other western garter snakes, has undergone several taxonomic revisions including its placement as a subspecies of the western terrestrial garter snake (*Thamnophis elegans*) (Johnson 1947, Fox 1951), and then the western aquatic garter snake (*Thamnophis couchii*) (Fox and Dessauer 1965, Lawson and Dessauer 1979). In 1987, it was accorded the status of a full species, (*Thamnophis gigas*) (Rossman and Stewart 1987).

Endemic to valley floor wetlands in the Sacramento and San Joaquin valleys of California, the giant garter snake inhabits sloughs, ponds, small lakes, low gradient streams, and other waterways, where it feeds primarily on small fishes and frogs. Habitat requisites consist of (1) adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover, (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season, (3) grassy banks and openings in waterside vegetation for basking, and (4) higher elevation uplands for cover and refuge from flood waters during the snake's dormant season in the winter (California Department of Fish and Game (CDFG), unpubl. data). Giant garter snakes typically are absent from larger rivers and other water bodies that support large, predatory fish, and from wetlands with sand, gravel, or rock substrates (*ibid.*). Riparian woodlands with excessive shade do not provide suitable habitat because of the lack of basking sites and/or prey populations.

The giant garter snake inhabits small mammal burrows above prevailing flood elevations throughout its winter dormancy period (November to mid-March). Giant garter snakes typically select burrows with sunny aspects

(along south and west facing slopes). Upon emergence, males immediately begin wandering in search of mates (George Hansen, pers. comm., 1991). The breeding season extends through March and April, and females give birth to live young from late July through early September (*ibid.*). Clutch size is variable, ranging from 10 to 46 young (*ibid.*). At birth, young average about 25 cm (10 in) and 3–5 g (0.1–0.18 ounces (oz)). Upon birth, young immediately scatter in search of food. In rice growing regions, young snakes are found more commonly in rice fields than in adjoining irrigation and drainage canals (*ibid.*). Although growth rates are variable, young typically more than double in size by 1 year of age (*ibid.*). Sexual maturity averages 3 years of age in males and 5 years for females (*ibid.*).

Fitch (1940) described the historical range of the species as extending from the vicinity of Sacramento and Contra Costa Counties southward to Buena Vista Lake, near Bakersfield in Kern County. Prior to 1970, the giant garter snake was recorded historically from only 16 localities (Hansen and Brode 1980). With five of these localities clustered in and around Los Banos, Merced County, the paucity of early records makes it difficult to determine precisely the species' former range. Nonetheless, these records coincide with the historical distribution of wetland habitats. Reclamation of wetlands for agricultural and other purposes has extirpated the species from the southern portion of its range, including the former Buena Vista Lake and Kern Lake in Kern County, and probably also the historic Tulare Lake and other wetlands in Kings and Tulare Counties.

The current range of the giant garter snake extends from near Burrell, Fresno County, northward to the vicinity of Gridley, Butte County, (Hansen and Brode 1980). Unpublished studies sponsored by the California Department of Fish and Game indicate that giant garter snake populations currently are distributed in the rice production zones of Sacramento, Sutter, Butte, Colusa, and Glenn Counties; within portions of the Yolo Bypass and Putah Creek in Yolo County; along the eastern fringes of the Sacramento-San Joaquin River delta from the Laguna Creek-Elk Grove region of central Sacramento County southward to the Stockton area of San Joaquin County; in the north and south Grasslands district of Merced County; and in the Mendota area of Fresno County.

Within these regions, giant garter snake populations occur discontinuously

in isolated patches of valley floor habitat, often in association with agricultural water delivery and drainage facilities. Extant populations are clustered in 11 areas, geographically and genetically isolated from one another (CDFG, unpubl. information). The species has been extirpated from 5 of the 16 localities known to exist prior to 1970. The 11 extant population clusters largely coincide with historical riverine flood basins throughout the Central Valley. Some of these clusters consist of numerous subpopulations, whereas others are limited to as few as one or two populations. The degree of genetic interchange within each of these 11 clusters is variable, depending on the number and quality of movement corridors connecting the constituent populations. Although other undiscovered populations probably remain, some of the known populations within these clusters probably have disappeared since their discovery (*ibid.*). Most known giant garter snake populations appear to support few individuals due to limited extent and quality of habitat (*ibid.*).

The species appears absent from most or all of the northern portion of the San Joaquin Valley, where the floodplain of the San Joaquin River is restricted to a relatively narrow trough by alluvium from tributary rivers and streams. This apparent 100 kilometer (km) (62 mile (mi)) gap in its distribution separates populations in Merced County from those along the eastern fringes in the Sacramento-San Joaquin River delta (the Delta) in San Joaquin County (Hansen and Brode 1980). Suitable habitat for the giant garter snake has been eliminated from essentially all of the Delta (CDFG, unpubl. data).

On September 18, 1995, the Service published the Vertebrate Wildlife Notice of Review (50 FR 37958), which included the giant garter snake as a category 2 candidate species for possible future listing as threatened or endangered. Category 2 candidates are those species for which information contained in Service files indicates that proposing to list is possibly appropriate but additional data is needed to support a listing proposal. In the January 6, 1989, Animal Notice of Review (54 FR 554), the Service again included the giant garter snake as a category 2 candidate, soliciting information on the status of this species. On September 12, 1990, the California-Nevada Chapter of the American Fisheries Society petitioned the Service to list the giant garter snake as an endangered species. The Service published a 90-day petition finding on March 22, 1991 (56 FR 12146), which

concluded that the petition presented substantial information indicating that listing may be warranted. The decision to propose this species for listing is based on information contained in the petition, referenced in the petition, and otherwise available to the Service. This proposal constitutes the final finding on the petitioned action.

Summary of Factors Affecting the Species

Section 4 of the Act 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 of threatened and endangered species. 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 giant garter snake (*Thamnophis gigas*) (Fitch) are as follows:

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

Examination of the historical localities from which giant garter snakes were recorded and the historic losses of wetland habitats throughout the Central Valley indicates that the current distribution and abundance of the species is much reduced from former times. As discussed above, agricultural and flood control activities have extirpated the giant garter snake from the southern one third of its range in former wetlands associated with the historic Buena Vista, Tulare, and Kern lakebeds. These lakebeds once provided the largest single block of wetland habitat in California. These shallow lakes, typically less than 12 meters (m) (40 feet (ft)) deep, supported vast expanses of ideal giant garter snake habitat, consisting of cattail and bulrush dominated marshes. Tulare and Buena Vista lakebeds alone covered over 2,000 square km (over 800 square mi) indicating that suitable habitat was prevalent over much of the San Joaquin Valley (San Joaquin Valley Drainage Program 1990).

Vast expanses of bulrush and cattail floodplain habitat also typified much of the Sacramento Valley historically (Hinds 1952). Prior to reclamation activities beginning in the mid to late 1800's, about 60 percent of the Sacramento Valley was subject to seasonal overflow flooding in broad, shallow flood basins that provided expansive areas of giant garter snake habitat (*ibid.*).

Several other studies on the historical and current extent of wetlands in the

Central Valley shed additional light on the extent of decline in giant garter snake habitat. Of the estimated 1.6 million hectares (ha) (4.0 million acres (ac)) of wetlands originally present throughout the Central Valley, about 101,175 to 153,300 ha (250,000 to 378,800 ac) (6 to 9 percent) currently remain (Jones and Stokes Associates 1987, U.S. Fish and Wildlife Service (USFWS) 1989). Because much of the current wetland acreage consists of artificial habitats (e.g., managed duck hunting clubs, irrigation drainwater evaporation ponds), the loss of natural wetland communities probably exceeds 99 percent (Jones and Stokes Associates 1987). About 36,000 ha (88,963 ac) support emergent vegetation suitable for the giant garter snake (Kempka and Kollasch 1990). Field studies indicate, however, that giant garter snakes are absent from most areas with seemingly suitable habitat (CDFG, unpubl. data). This may be a result of habitat fragmentation and/or the presence of predatory fish. Therefore, only a small percentage of extant wetlands provides habitat for the giant garter snake.

A number of land use practices and other human activities currently threaten the survival of the giant garter snake throughout its range. Although some giant garter snake populations have survived in artificial habitats created by agricultural and flood control activities, many of these altered wetlands are now threatened with rapid urban development. Within the range of the species, development of several new cities are proposed, including three in San Joaquin County, one in Stanislaus County, and one in Sutter County. Numerous other expansions of existing cities are proposed as well (see below). Although the potential impact of these new and expanded cities on the giant garter snake is unknown at this time because environmental studies are as yet incomplete, these project proposals occur in areas of known or potential habitat.

The largest extant population inhabits extensive agricultural lands in the American Basin, a large flood basin at the confluence of the Sacramento and American Rivers, in Sacramento and Sutter Counties. Throughout this area, reconnaissance level surveys (USFWS 1991) indicate that about 570 ha (1,400 ac) of giant garter snake habitat exist in the form of man-made irrigation channels and drainage ditches, as well as an undetermined acreage of suitable habitat within nearly 5,260 ha (13,000 ac) of adjoining rice fields. The giant garter snake also uses an undetermined amount of habitat at higher elevations to escape from winter flooding during the

inactive winter phases of the snake's like cycle. The U.S. Army Corps of Engineers (Corps) and local project sponsors are proposing a minimum of 400-year flood protection for this 22,260 ha (55,000 ac) agricultural area, as part of its American River Watershed Investigation. The U.S. Fish and Wildlife Service (USFWS 1991) anticipates that this flood control proposal would result in the conversion of most or all of this area to urban land uses within the next 50 years. Absent adequate mitigation, this project could extirpate the giant garter snake from the American Basin (CDFG, unpubl. information).

Other future and ongoing activities throughout the American Basin also may adversely impact the species. These include the North Natomas Community Drainage System, proposed by the City of Sacramento, which could eliminate or degrade about 42 km (26 miles) of giant garter snake habitat along existing canals and ditches, and additional rice field habitat (CDFG, unpubl. information). Potential effectiveness of a proposed mitigation plan remains undetermined. Although at the conceptual planning stage, the proposed Sutter Bay project at the north end of the American Basin could eliminate or degrade about 68 km (42 miles) of giant garter snake habitat associated with existing agricultural land (*ibid.*). The proposed South Sutter Industrial Center, located near the Sutter Bay project, could eliminate another 14.5 km (9.0 miles) of aquatic habitat. The Sacramento Metropolitan Airport is proposing about 777 ha (1,920 ac) of development on agricultural and vacant lands that potentially could result in major adverse impacts to the species, including the loss of about 14.5 km (9.0 miles) of canal habitat and 607 ha (1,500 ac) of rice fields, as well as the disruption of movement corridors (*ibid.*). Any highway improvement or construction projects, or the planned extension of the Sacramento Regional Transit system in this area, also increases the likelihood for major impacts to the species, including elevated mortality from increased traffic on local roads and highways.

In West Sacramento, Yolo County, local governments and the Corps are proposing the Sacramento Metropolitan Area Investigation, a 400-year flood protection project for over 3,240 ha (8,000 ac) of agricultural lands (USFWS, unpubl. information). As in the American Basin, improved flood protection would enable urban development to occur in agricultural lands throughout the 100-year life of the project. Within the study area, an

estimated 45 km (28 miles) of small waterway habitat potentially inhabited by the giant garter snake would be threatened.

In the Laguna Creek-Elk Grove region of Sacramento County, residential developments and associated stream channelization and road improvement projects pose a severe threat to the few populations known to still survive in this region. These proposed and ongoing projects, sponsored by private interests and local governments, include 11 residential developments. Other proposals in Sacramento County that could adversely affect the giant garter snake include the closure of Mather Air Force Base; the North Delta Water Management Project, proposed by the California Department of Water Resources; and other residential developments.

Elsewhere, numerous other proposed or ongoing projects could adversely affect the giant garter snake. These include new and expanded residential developments in six counties, and wastewater treatment plant expansions, landfill expansions, water development projects, drainwater conveyance projects, and flood control projects in the San Joaquin Valley.

Ongoing maintenance of aquatic habitats for flood control and agricultural purposes poses additional threats to the giant garter snake throughout its range. Local agencies routinely control vegetative cover along canal banks and stream courses to maintain water conveyance capabilities. These activities eliminate or prevent the establishment of habitat characteristics required by this cover dependent species. Because many giant garter snake populations currently are restricted to such artificially created and maintained habitats, these vegetation control activities fragment and isolate available habitat, and prevent dispersal of snakes among habitat units.

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

Although giant garter snakes do not seem to be particularly popular among reptile collectors, the species has been found for sale in pet shops (John Brode, CDFG, pers. comm., 1991). Federal listing could raise the value of the giant garter snake within reptilian trade markets and increase the threat of unauthorized collection above current levels. Even limited interest in the species among collectors could pose a serious threat to smaller populations that contain few individuals.

C. Disease or Predation

The real or potential impact of disease on the giant garter snake is unknown. However, contamination of irrigation and drainage canals with agricultural and urban pollutants could affect the health of resident giant garter snakes. Less healthy individuals may be more prone to disease and infection.

A number of native mammals and birds are known or likely predators of giant garter snakes, including raccoons, skunks, opossums, foxes, hawks, egrets, and herons. Giant garter snakes of all sizes commonly are found scarred or injured, apparently from attacks by herons and egrets (George Hansen, pers. comm., 1991). In general, giant garter snakes have adapted physically and behaviorally to withstand predation levels from these animals. However, in situations where giant garter snake habitats have become fragmented, isolated, and otherwise impacted by human activities, increased predatory pressure may become excessive, especially where alien species, such as rats and feral and domestic house cats and dogs are introduced. These additional threats likely become particularly acute where urban development immediately abuts giant garter snake habitat. Although the actual impact of predation under such situations has not been studied, the likelihood for serious impact exists.

To date, studies indicate that the giant garter snake is typically absent from waters supporting large predatory fishes. Although most adult giant garter snakes are too large to represent suitably sized prey items for large fish, subadult snakes undoubtedly sustain mortality rates high enough to prevent sustainable populations. The artificial introduction of such alien game fish species as striped bass, largemouth bass, sunfish, crappie, and various catfish species, combined with the elimination of suitable shoreline vegetative cover from stream channelization and levee construction projects, may have contributed to the elimination of the giant garter snake from many areas throughout its former range, particularly in the Sacramento-San Joaquin River delta.

D. The Inadequacy of Existing Regulatory Mechanisms

The primary cause of the decline in giant garter snake numbers is believed to be the loss of habitat from human activities. Federal, State, and local laws and regulations have not proven adequate to arrest the historical and ongoing losses of giant garter snake habitat.

The National Environmental Policy Act and section 404 of the Clean Water Act represent the primary Federal laws that could afford some protection for the giant garter snake. These laws, however, do not protect candidate species *per se*. Nationwide Permit Number 26 (33 CFR part 330.5(a)(26)) was established by the Corps to facilitate issuance of permits for discharges of fill material into wetlands up to 4.0 ha (10 ac). For project proposals falling under Nationwide Permit 26, the Corps has been reluctant to withhold authorization unless a listed threatened or endangered species is known to be present, regardless of the significance of other wetland resources. Candidate species receive no special consideration. This situation may be attributable in part to the absence of any requirement to assess cumulative impacts of implementing this regulation on wetlands and candidate species such as the giant garter snake.

Pursuant to 33 CFR 323.4, the Corps also has promulgated regulations that exempt various farming, forestry, and maintenance activities from the regulatory requirements of section 404. Based on past jurisdictional determinations conducted by the Corps, many of the irrigation and drain water canals, and other agricultural wetlands, such as rice fields that provide giant garter snake habitat, are not subject to section 404 regulation. For example, in the recent jurisdictional determination for the American River Watershed Investigation, the Corps found that the 373 km (232 miles), totalling 515 ha (1,272 ac) of canal and waterway habitat in the American Basin, only 153 ha (379 ac) constituted jurisdictional wetlands. Moreover, most maintenance activities on agricultural lands are not subject to State laws or local ordinances. Thus, legal mechanisms often are not available to protect giant garter snake populations inhabiting artificially created and maintained wetlands.

The California Environmental Quality Act and California Endangered Species Act are the primary environmental legislation at the State level that potentially benefit giant garter snakes. The snake was listed as a threatened species by the State in 1971. Although these State laws provide a measure of protection to the species and have resulted in the formulation of mitigation measures to reduce or offset impacts for projects proposed in certain giant garter snake habitats, these laws do not adequately protect the species in all cases. Numerous activities do not fall under the purview of this legislation, such as projects proposed by the Federal government, and State statutory

exemptions. Further, these laws at times are not adequately enforced. Where overriding social and economic considerations can be demonstrated, these laws allow project proposals to go forward, even in cases where the continued existence of the species may be jeopardized, or where adverse impacts are not mitigated to a point of insignificance.

Five of the known populations occur on State and Federal lands managed for wildlife purposes. These are: Gray Lodge Waterfowl Management Area, Kesterson National Wildlife Refuge (NWR), San Luis NWR, Los Banos Wildlife Area, and Mendota Wildlife Area. Although the giant garter snake populations in these areas appear relatively secure, these populations may be vulnerable to potentially incompatible management practices and flooding. For example, recent surveys indicate that giant garter snake population levels have not recovered from the effects of heavy flooding in 1986 at Mendota Wildlife Area (CDFG, unpubl. data).

E. Other Natural or Manmade Factors Affecting its Continued Existence

As discussed under Factors A, C, and D, agricultural activities affect giant garter snakes positively and negatively. Most of the historical habitat loss was caused by the diking and draining of wetlands for agricultural purposes. Agricultural conversions, including maintenance activities, incrementally continue to eliminate giant garter snake habitat. Particularly in the southern portion of its range, intensive control of vegetation along water delivery and drainage facilities progressively is eliminating remaining habitat and preventing reestablishment of former habitat. Application of fertilizers and pesticides, although not yet studied as potential threats to the species, could degrade water quality and reduce prey populations to the extent that giant garter snake populations are reduced or eliminated. In addition, selenium contamination of irrigation drainwater throughout portions of the San Joaquin Valley may pose a threat to some populations.

On the other hand, the species is known to inhabit irrigation and drainage canals where adequate vegetative cover remains. In fact, the majority of known populations occur in artificial wetlands associated with agricultural land uses. This is particularly true in certain rice production areas, where giant garter snakes inhabit water management facilities and adjoining rice fields. As described above, the largest extant population of giant garter snakes occurs

in association with rice production areas of the American Basin. The seasonal drying of rice ponds and canals incidentally may benefit the giant garter snake by preventing establishment of populations of large predatory fish.

The recent 5-year drought in California has resulted in drying of many seasonal wetlands that potentially provide habitat for the giant garter snake during "normal" water years. Some populations inhabiting seasonal and intermittent wetlands probably have become extirpated or greatly reduced by this prolonged drought. In response to State-wide water shortages for agricultural, municipal, and industrial uses, water management agencies, including the California Department of Water Resources and U.S. Bureau of Reclamation, have announced major reductions in delivery for agricultural uses (Grubb 1991). Reduced levels of water delivery for agricultural purposes could adversely impact giant garter snake populations dependent upon agricultural water. In addition, the Department of Water Resources has begun acting as a broker to facilitate transfer of water from districts with extra supplies to those with inadequate reserves (Schnitt 1991). Water districts from around the State are offering to purchase water from water districts in rice production regions of the Sacramento Valley with superior water rights (*ibid.*). If such transactions are approved, these additional reductions in water delivery could accentuate the impact of drought on the giant garter snake.

Some giant garter snake populations also are vulnerable to adverse effects from flooding. As described above, giant garter snakes seek habitat at higher elevations in which to retreat during the winter dormancy period. Flooding of these retreat areas exposes inactive snakes to the threat of drowning and increased predation. Past, proposed, and ongoing projects have reduced greatly the availability of winter retreat habitat. Surveys conducted after the heavy flooding associated with the February 1986 storm indicated that several giant garter snake populations throughout the southern and central regions of its range had been eliminated or greatly reduced because of a lack of winter retreat habitat (CDFG, unpubl. data).

Livestock grazing also represents a threat to the species. The giant garter snake requires dense vegetative cover in proximity to foraging and basking areas in which to seek refuge from predators and other forms of disturbance. The attraction of livestock to water sources appears to have contributed to the

elimination and reduction of the quality of available habitat throughout portions of the species' range (George Hansen, unpubl. report, 1982).

Habitat loss throughout the range of the giant garter snake has resulted in a patchwork of fragmented and isolated habitat remnants. Because of small population size and limited habitat availability, most of the remaining populations appear vulnerable to extirpation from unpredictable environmental, genetic, and demographic events. Island biogeographic theory suggests that extinction rates increase as habitat size decreases and distance from neighboring populations increases. Most remaining giant garter snake populations are small and geographically isolated from one another. These factors predispose such populations to mortality and emigration rates that exceed birth and immigration rates. Further, as remaining habitat units decrease in size, edge effects become increasingly important; smaller habitats have less space available to buffer adverse impacts from outside influences, such as predation, human disturbance, livestock grazing, or chemical contamination. In addition, giant garter snake populations in smaller habitat fragments often are more susceptible to the effects of chance environmental events, such as fire, flooding, and drought.

The breeding of closely related individuals can cause genetic problems in small populations, particularly the expression of deleterious genes (known as inbreeding depression). Individuals and populations possessing deleterious genetic material are less able to cope with environmental conditions and adapt to environmental change. Further, small populations are subject to the effects of genetic drift (the random loss of genetic variability). This phenomenon also reduces the ability of individuals and populations to successfully respond to environmental stresses. Overall, these genetic factors could influence the survivability of the many smaller, genetically isolated giant garter snake populations.

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 course of action is to list the giant garter snake as endangered. The current restriction of most giant garter snake populations to small patches of variable quality, privately-owned habitat, and the numerous ongoing and

proposed development projects within its range are imminent threats to the species. Because the giant garter snake is in danger of extinction throughout all or a significant portion of its range, it fits the definition of endangered as defined by the Act. Critical habitat is not being designated for this species for reasons discussed in the "Critical Habitat" section of this rule.

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that, to the maximum extent prudent and determinable, the Secretary designate critical habitat concurrently with determining a species to be endangered or threatened. The Service finds that designation of critical habitat is not presently prudent for the giant garter snake. Five giant garter snake populations occur on wildlife refuges managed by the Service or California Department of Fish and Game. These agencies are aware of the presence of the species and the importance of protecting the giant garter snake and its habitat. However, most populations on private lands typically contain low numbers of individuals and occur in small patches of variable quality habitat. This situation renders the species vulnerable to acts of vandalism, such as trapping, habitat manipulation, poisoning, or collection, which could seriously deplete population levels and cause irreparable harm. Although fish eating snakes are relatively difficult to keep in captivity, giant garter snakes have been found for sale in pet shops (John Brode, pers. comm., 1991). Considering that rare and listed species typically generate high levels of demand relative to supply in reptilian trade markets, the Service anticipates that the threat of unauthorized collection would increase were the giant garter snake to be listed by the Federal government. Publication of maps and precise descriptions delineating critical habitat areas would likely lead to increased collection of this species and violation of section 9 of the Act.

As discussed above under Factor D, many of the artificially created habitats inhabited by giant garter snakes, such as irrigation and drainage canals, do not fall under Federal jurisdiction. Absent jurisdiction by Federal agencies, designation of critical habitat on private land does not afford additional protection to listed species. Where Federal jurisdiction does extend to populations on private lands, habitat protection will be addressed through the recovery process under section 4 of the Act and through the formal consultation requirements under section 7 of the Act. Therefore, the Service finds that

designation of critical habitat is not prudent at this time, because such designation would increase the degree of threat from vandalism and collecting and because it is unlikely to aid in conservation of the giant garter snake.

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 encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Act provides for possible land acquisition and cooperation with the State 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 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) of the Act 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 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 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.

Giant garter snake populations inhabiting wetlands on private and public lands would fall under the regulatory jurisdiction of the Corps, pursuant to section 404 of the Clean Water Act and section 10 of the Rivers and Harbors Act. As described under Factor A above, numerous commercial developments currently are proposed in known and likely giant garter snake habitat. Pursuant to 33 CFR 330.5(b)(3), project proposals in giant garter snake habitat otherwise allowed under nationwide permit authority would be subject to scrutiny under section 7 of the Endangered Species Act and imposition of special permit conditions needed to

avoid and/or offset impacts incurred by the projects. Pursuant to 33 CFR part 325, individual permits, letters of permission, and regional permits issued by the Corps also would be subject to consultation requirements under section 7 of the Act. In addition, any water development projects proposed by Federal agencies, such as the Department of the Army and U.S. Bureau of Reclamation, would fall under the purview of section 7 of the Act. The American River Watershed Investigation, Sacramento Metropolitan Area Investigation, and the Merced County Streams project, among other Federal project proposals, may require modifications to avoid and/or offset impacts to the giant garter snake should this listing proposal be made final. As discussed above, the giant garter snake is known to occur on several waterfowl management areas owned by the State or Federal government. Habitat manipulation and recreational activities on these areas may be affected by the regulatory requirements of sections 7, 9, and 10 of the Act.

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 (including harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt any such conduct), import or export, transport in interstate or foreign 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 endangered wildlife species under certain circumstances. Regulations governing permits are at 50 CFR 17.22 and 17.23. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities. In some instances, permits may be issued for a specified time to relieve undue economic hardship that would be suffered if such relief were not available.

Public Comments Solicited

The Service intends that any final action resulting from this proposal will be as 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 by 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.

Any final decision on this proposal 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 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 the Field Supervisor at the Sacramento Field Office (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 Act. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

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Author

The primary author of this proposed rule is Peter C. Sorensen (see **ADDRESSES** section).

List of Subjects in 50 CFR Part 17

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

Proposed Regulations Promulgation

PART 17—[AMENDED]

Accordingly, it is hereby proposed to amend part 17 subchapter B of chapter I, title 50 of the Code 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. 1531-1544; 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.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Social rules
Common name	Scientific name						
Reptiles:	.	.	.	.	.	.	.
Snake, giant garter.....	<i>Thamnophis gigas</i>	U.S.A (CA)...	Entire.....	E.....	.....	NA.....	NA

Dated: December 5, 1991.
 Richard N. Smith,
 Acting Director, U.S. Fish and Wildlife
 Service.
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