

The Cat Island turtle originally was considered a full species, *Pseudemys felis* (Barbour 1935), and subsequently was regarded as the subspecies *Trachemys terrapen felis* (Seidel and Adkins 1987), but may actually be only a population of *T. terrapen* restricted to Cat Island in the Bahamas (see below). Adults are inconspicuous, with the carapace varying in color from grayish brown to yellowish olive and being approximately 10 to 13 inches (25 to 32 centimeters) long (Ernst and Barbour 1989). Juveniles make more attractive pets, because their stripes and plastral markings are more distinct. This turtle generally lives in or around ephemeral freshwater ponds, as available, and persists through dry periods by burrowing into the remaining muck and leaf litter of former ponds. It is fond of basking when freshwater is not limited, a behavioral trait that aids in its capture. The diet is apparently omnivorous, but there is a strong preference for custard apples, a local wild fruit.

The Inagua Island turtle, found only on Great Inagua Island in the Bahamas, formerly was considered to be a full species, *Pseudemys malonei* (Barbour and Carr 1938), but now is regarded as a subspecies of the Central Antillean slider (Seidel 1988). It has a variable green-brown, oval, high-domed carapace, up to 9.5 inches (24 centimeters) long; gray to olive skin; a blunt to rounded snout; and either a solid yellow or dark-seamed plastron. The subspecies inhabits freshwater ponds, rivers, streams, or swamps, with soft bottoms and abundant aquatic vegetation (Ernst and Barbour 1989). It feeds on vegetation, preferably fruit, supplemented with insects and occasionally fish (Barbour and Carr 1938).

The colorful Colombian slider, or South American red-lined turtle, once was common to Caribbean drainages in northern Colombia and northwestern Venezuela. Named for the bright red postorbital stripe on its head, it is a very attractive reptile and has appeared regularly in the European pet trade for many years (Pritchard 1979). The carapace is a weakly keeled oval with a slightly serrated posterior rim, and is 8 to 24 inches (20 to 60 centimeters) long. The ground color on adults is olive to brown, but the shell is also highly patterned with yellow bars and ocelli, as well as green and black concentric circles. The plastral configuration is equally decorative. Hatchlings are brighter, the ground color being emerald green upon emergence. The color and patterning of juveniles inspires local

people to gather large numbers for eventual sale as dried trinkets (Groombridge 1982). This turtle prefers quiet, soft-bottomed waters with plenty of aquatic plants and basking sites. Reports regarding diet vary, but indicate that individuals or geographic populations may display vegetarian, omnivorous, or even predatory and carnivorous feeding behavior.

Summary of Comments and Recommendations

In the proposed rule of April 25, 1990, and associated notifications, all interested parties were requested to submit information that might contribute to development of a final rule. Cables were sent to United States embassies in countries within the ranges of the subject species, requesting new data and the comments of the governments of those countries. Six comments were received, all supportive and some providing new information that is discussed below. However, two of the comments pointed out that the new studies by Seidel (1988) indicate that the Cat Island turtle is not a separate subspecies (*Trachemys terrapen felis*) as proposed, but is a population of *Trachemys terrapen*, which otherwise is found on Jamaica and Eleuthera Island in the Bahamas. Seidel (1988) suggested that populations of *T. terrapen* in the Bahamas are the result of human introduction, but he also noted that the recent discovery of late Pleistocene fossils on the island of San Salvador, only 42 miles (70 kilometers) from Cat Island, may substantiate the presence of *Trachemys* in the area prior to the arrival of people. While the taxonomic issue thus is in doubt, there seems no question of the deteriorating status of the Cat Island turtle, and the Service has decided to proceed with its classification as endangered, but will treat it as a distinct vertebrate population segment pursuant to section 3(16) of the Act.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that the six reptiles named above should be classified as endangered. Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act were followed. A species may be determined to be 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 six reptiles named above are as follows.

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

The riverine habitat of the Brazilian sideneck turtle has undergone extensive deforestation in the past 20 years. The banks and marshes of the Rio Itapermirim and Rio Paraiba drainages are no longer suitable for freshwater turtle habitation or reproduction. Periodic field collections of specimens for taxonomic studies have failed to obtain any juvenile samples (Russell Mittermeier, State University of New York, pers. comm.).

The remaining habitat of the Cat Island turtle is small and subject to development and disturbance by road construction (Groombridge 1982). According to Bostock 1987, only a single site supporting a population remains undisturbed by people. The seven other areas with populations have been degraded by agricultural burning or excessive human use. The total number of individuals appears to have declined since a survey in 1983. Surveys conducted in 1987 resulted in the capture (followed by release) of fewer than 350 turtles. In its response to the proposed rule, the Bahamas National Trust estimated total current numbers at 300 to 1,500 and indicated that populations are slowly declining.

Much of the range of the Inagua Island turtle is within a preserve leased by the Bahamas National Trust and managed for flamingos. Solar salt-processing operations if permitted to expand, inundating some parts of the preserve would not adversely affect the flamingos or their habitat. Although the turtle is tolerant of brackish water, the high salinity of seawater is lethal. The turtle frequently resides in freshwater lenses that form when rain accumulates in ponds above the heavier saltwater from the ground. These lenses also are considered an inexpensive source of drinking water by the growing human population (1,000 or more people) on Great Inagua Island. When imported freshwater supplies are not readily available, the freshwater lenses of pools are pumped for drinking water, decreasing habitat for the turtle (Karen Bjorndahl, University of Florida, pers. comm.). In its response to the proposed rule, the Bahamas National Trust estimated current numbers of the turtle at 250 to 550 and indicated that populations are slowly declining.

In 1975, the range of the South American red-lined turtle in Colombia was reported to be restricted to the

Magdalene and Sinu' river drainages, and more recent reports indicate that the easternmost populations have been extirpated (Russell Mittermeier, State University of New York, pers. comm.); the same is suspected of populations on the western edge of this range. Populations in Venezuela may also have been extirpated, as virtually all historical habitat in that country is now occupied by petroleum facilities and storage tanks (Russell Mittermeier, State University of New York, pers. comm.). Remaining wetland habitat is being destroyed by burning and development (Groombridge 1982).

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

Ross (1982) reported extensive utilization of the Cat Island turtles for food by some of the local people. Bostock (1987) found this problem to continue in northern parts of Cat Island, and also noted that hatchling turtles were being taken throughout the island to supply a local pet trade. In its response to the proposed rule, the Bahamas National Trust considered this trade to be the main threat to the Cat Island and Inagua Island turtles.

According to information supplied by the Environmental Institute of Colombia (INDERENA) in its response to the proposed rule, and by Peter Pritchard (Florida Audubon Society, pers. comm.), the South American red-lined turtle is intensively exploited for its meat and eggs. Although it is illegal, hunting is especially severe just prior to and during Holy Week, when many people do not consume mammalian flesh for religious reasons. This period comes at a time when the female turtles are laden with eggs, and thus the death of an adult may result in the direct loss of many young. Hunting also causes considerable damage to habitat, since the taking of the turtles involves burning the cover along the river banks. Within the last decade there has been a decline of 50 percent in the number of turtles and a reduction in the average size of those taken. Population structure has been modified, with a relative loss of reproductively mature animals. In addition to these other problems, many hatchlings are being collected alive for exportation or local use as pets.

C. Disease or Predation

The Inagua Island turtle is preyed upon by feral hogs, which were introduced to the island by people. (Karen Bjorndahl, University of Florida, pers. comm.). According to Corke (1983, 1987), the Maria Island snake and ground lizard probably were totally

extirpated from the mainland of St. Lucia through predation by introduced rats and mongooses. They survive only in extremely restricted habitats, amounting to not more than 30 acres (12 hectares) on the two islets, Maria Major and Maria Minor. There are fewer than 1,000 of the lizards and only 50 to 100 snakes. They remain vulnerable to potential introduction of predators and other environmental disruptions (see below).

D. The Inadequacy of Existing Regulatory Mechanisms

In 1973, both of the tiny volcanic islets inhabited by the Maria Island snake and ground lizard became a nature preserve, under the control of the St. Lucia National Trust, specifically for the protection of these two species (Earl Long, Center for Disease Control, pers. comm.). In 1986, the islets were resurveyed, but no snakes were found, and only three individuals have been sighted since 1983 (Corke 1987). In his response to the proposed rule, the Director of the St. Lucia National Trust noted that while controls have been placed on the use of the islets by fishermen, there is an ever present danger to the dry, scrubby habitat from fire, and also the threat of introduction of rats and mongooses from fishing boats.

Existing regulatory mechanisms provide only limited assistance to the other reptiles covered by this rule. The Brazilian sideneck turtle is officially listed as endangered by the Brazilian government, but such classification can do little to prevent the destruction of the limited habitat of the species. According to the Bahamas National Trust, both the Cat Island and Inagua Island turtles are currently unprotected outside of preserves and are subject to collection and sale. Most of the range of the Inagua Island turtle is within a preserve created for the protection of flamingos, but there are apparently no provisions mandating that the area remain in its present state, which is a freshwater habitat suitable for the turtle (see above). In its response to the proposed rule, the Environmental Institute of Colombia (INDERENA) noted that the South American red-lined turtle is legally protected in the country, but continues to suffer severely from hunting and habitat destruction.

None of the reptiles covered by this rule is on the appendices to the Convention on International Trade in Endangered Species of Wild Fauna and Flora. There thus are no mechanisms preventing the importation of, for example, young specimens of the Cat Island, Inagua Island, or South American red-lined turtles.

E. Other Natural or Manmade Factors Affecting its Continued Existence.

All six reptiles covered by this proposal occur in such small numbers that inbreeding and loss of genetic viability could be problems. On Cat Island, land often is cleared for agricultural purposes by burning all of the existing vegetation in an area, and such activity usually results in the death of some turtles (Bostock 1987). Water pollution is a problem for the Brazilian sideneck turtle and the South American red-lined turtle. The river drainages within the ranges of both species have been virtually denuded of vegetative cover, thus promoting siltation problems. Some of these areas have been heavily industrialized in the past few decades (Russell Mittermeier, State University of New York, pers. comm.).

The decision to determine endangered status for the Maria Island ground lizard, Maria Island snake, Brazilian sideneck turtle, Cat Island turtle, Inagua Island turtle, and South American red-lined turtle was based on an assessment of the best available scientific information, and of past, present, and probable future threats to these reptiles. All six have experienced significant declines in population numbers in recent years and are vulnerable to human exploitation and disturbance. If conservation measures are not implemented, further declines are likely to occur, increasing the danger of extinction for these reptiles. Critical habitat is not being determined, as such designation is not applicable to foreign species.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened pursuant to the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages conservation measures by Federal, international, and private agencies, groups, and individuals.

Section 7(a) of the Act, as amended, and as implemented by regulations at 50 CFR part 402, requires Federal agencies to evaluate their actions that are to be conducted within the United States or on the high seas, with respect to any species that is proposed or listed as endangered or threatened and with respect to its proposed or designated critical habitat (if any). Section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species

or destroy or adversely modify its critical habitat. If a proposed Federal action may affect a listed species, the responsible Federal agency must enter into formal consultation with the Service. No such activities are currently known with respect to the species covered by this rule.

Section 8(a) of the Act authorizes the provision of limited financial assistance for the development and management of programs that the Secretary of the Interior determines to be necessary or useful for the conservation of endangered species in foreign countries. Sections 8(b) and 8(c) of the Act authorize the Secretary to encourage conservation programs for foreign endangered species, and to provide assistance for such programs, in the form of personnel and the training of personnel.

Section 9 of the Act, and implementing regulations found at 50 CFR 17.21 set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take, (within the U.S. or on the high seas), 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 endangered wildlife. It also is illegal to possess, sell, deliver, transport, or ship any such wildlife that has been taken in violation of the Act. 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 under certain circumstances. Regulations governing permits are codified at 50 CFR 17.22. Such permits are available for scientific purposes, to enhance propagation or survival, or for incidental take in connection with other such lawful activities. All such permits must also be consistent with the purposes and policy of the Act, as required by section 10(d).

International trade in these six reptiles is expected to be minimal, with the possible exception of movement of the young of certain turtles, as noted above. In any case, the Service will review these species to determine whether any of them should be placed on the Annex of the Convention on

Nature Protection and Wildlife Preservation in the Western Hemisphere, which is implemented through section 8A(e) of the Act, and whether they should be considered for other appropriate international agreements, including the Convention on International Trade in Endangered Species of Wild Fauna and Flora and the Cartagena Convention's Protocol for Specially Protected Areas and Wildlife.

National Environmental Policy Act

The Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act, as amended. A notice outlining the Service's reasons for this determination was published in the *Federal Register* of October 25, 1983 (48 FR 49244).

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Author

The primary authors of this rule are Ronald M. Nowak and Linda Coley, Office of Scientific Authority, U.S. Fish and Wildlife Service, Washington, DC 20240 (phone 703–358–1708 or FTS 921–1708).

List of Subjects in 50 CFR Part 17

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

Regulations Promulgation

PART 17—[AMENDED]

Accordingly, part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, is hereby amended 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; Public Law 99–625, 100 Stat. 3500; unless otherwise noted.

2. Amended § 17.11(h) by adding the following, in alphabetical order under Reptiles, to the List of Endangered and Threatened Wildlife:

§ 17.11 Endangered and threatened wildlife.

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(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
REPTILES							
Lizard, Maria Island ground	Cnemidophorus vanzoi.....	West Indies: St. Lucia (Maria Islands).	Entire	E	443	NA	NA
Snake, Maria Island.....	Liophis ornatu.....	West Indies: St. Lucia (Maria Islands).	Entire	E	443	NA	NA
Turtle, Brazilian (=Hoge's) sideneck.	Phrynops hogeni	Brazil.....	Entire	E	443	NA	NA
Turtle, Cat Island.....	Trachemys terrapen.....	West Indies: Jamaica, Bahamas.	Cat Island in the Bahamas.	E	443	NA	NA
Turtle, Inagua Island.....	Trachemys stejnegeri malonei.	West Indies: Bahamas (Great Inagua Island).	Entire	E	443	NA	NA
Turtle, South American red-lined.	Trachemys scripta callirostris.	Colombia, Venezuela.....	Entire	E	443	NA	NA

Dated: September 24, 1991.

Sam Marler,

Acting Director.

[FR Doc. 91-23461 Filed 9-27-91; 8:45 am]

BILLING CODE 4310-55-M

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AB38

Endangered and Threatened Wildlife and Plants; Threatened Status for the Gulf Sturgeon

AGENCIES: Fish and Wildlife Service, Interior, and National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Final rule.

SUMMARY: The Service determines the Gulf sturgeon (*Acipenser oxyrinchus desotoi*) to be a threatened species, pursuant to the Endangered Species Act of 1973 (Act), as amended. This rule has been coordinated with NOAA and they have cosigned the document. This large fish ranges from Lake Pontchartrain in Louisiana to Tampa Bay in Florida. Gulf sturgeon stocks have been greatly reduced or extirpated throughout much of the historic range by overfishing, dam construction and habitat degradation. This action will implement the protection and recovery provisions

afforded by the Act for the Gulf sturgeon.

EFFECTIVE DATE: October 30, 1991.

ADDRESSES: The complete files for this rule are available for inspection, by appointment, during normal business hours at the Jacksonville Field Office, U.S. Fish and Wildlife Service, 3100 University Boulevard South, suite 120, Jacksonville, Florida 32216.

FOR FURTHER INFORMATION CONTACT: David J. Wesley, Field Supervisor, at the above address (telephone 904/791-2580 or FTS 946-2580).

SUPPLEMENTARY INFORMATION:

Background

The Gulf sturgeon (*Acipenser oxyrinchus desotoi*), also known as the Gulf of Mexico sturgeon, is a subspecies of the Atlantic sturgeon (*Acipenser oxyrinchus*). The Gulf sturgeon was described by Vladykov in 1955. It is a large, nearly cylindrical fish with an extended snout, vertical mouth, chin barbels, and with the upper lobe of the tail longer than the lower. Adults range from 1.8-2.4 meters (6-8 feet) or more in length, with adult females larger than males. The skin is scaleless, brown dorsally and pale ventrally, and imbedded with five rows of bony plates. The Gulf sturgeon has a longer head, pectoral fins, and spleen than the related Atlantic sturgeon (Huff 1975, Wooley 1985).

The following information is derived primarily from Barkuloo (1988). Historically, the Gulf sturgeon occurred from the Mississippi River to Tampa Bay, Florida. It still occurs, at least occasionally, throughout this range, but in greatly reduced numbers. The fish is

essentially confined to the eastern Gulf of Mexico, possibly because this portion of the Gulf has predominately hard bottoms that are better suited to the Gulf sturgeon's feeding habits. (The western Gulf has mostly mud, clay, and silt bottom sediments.) Adult fish are bottom feeders, eating primarily invertebrates, including brachiopods, insect larvae, mollusks, worms, and crustaceans. Gulf sturgeon are anadromous, with reproduction occurring in fresh water but with most adult feeding taking place in the Gulf of Mexico and its estuaries. The fish probably return to breed in the same river system in which they hatched. Adult sturgeon enter the Apalachicola and Suwannee River Systems from February through April. Spawning is believed to occur in areas of deep water and clean (rock, gravel, or sand) bottoms. The eggs are sticky and adhere in clumps or strings to snags, outcroppings, or other clean surfaces. Larvae have been collected in April and May in the Apalachicola River. Adults remain in fresh water as late as November. The adults lose weight while in fresh water but regain it while wintering in estuaries or the Gulf of Mexico. In the Suwannee River, Florida, female sturgeon require 8 to 12 years, and males 7 to 10 years, to reach sexual maturity (Huff 1975). The Gulf sturgeon, therefore, is a slow-maturing, long-lived fish.

The Gulf sturgeon has historically been of commercial importance, with the eggs used for caviar, the flesh for smoked fish, and the swim bladder yielding isinglass, a gelatin used in food products and glues. Available landing

records for Gulf sturgeon indicate that the principal historic fisheries were in Florida and Alabama, with little directed fishing in the other Gulf States; mainly by-catch from other fishing. In Florida, recorded catches peaked about the turn of the century, and while fluctuating over the years, have decreased drastically since that time. The decline was initially due to overfishing, but subsequent dam construction has impacted habitat and eliminated or seriously reduced some populations in more recent years.

Service involvement with the Gulf sturgeon began with monitoring and other studies of the Apalachicola River population by the Service's Panama City, Florida, Fisheries Assistance Office in 1979. The fish was included as a category 2 species in the Service's December 30, 1982 (47 FR 58454), and September 18, 1985 (50 FR 37958), vertebrate review notices, and in the January 6, 1989 (54 FR 554), animal notice of review. These notices indicated that the Gulf sturgeon was a species for which listing as threatened or endangered was possibly appropriate. In 1980, the Service's Jacksonville, Florida, Area Office contracted a status survey report on the Gulf sturgeon (Hollowell 1980). The report concluded that the fish had been reduced to a small population due to overfishing and habitat loss, and that any further adverse changes would make its survival questionable. In 1988, the Panama City, Florida, Office completed a report (Barkuloo 1988) on the conservation status of the Gulf sturgeon, recommending that the subspecies be listed as a threatened species pursuant to the Act. The Service proposed the Gulf sturgeon for listing as a threatened species on May 2, 1990 (55 FR 18357).

Subsequent to publication of the proposed rule, Service contacts with agencies and individuals working on conservation of the Gulf sturgeon indicated that it would be in the best interest of the species to increase post listing regulatory flexibility relative to Service permitting requirements. The Endangered Species Act allows such flexibility in the case of species that are classified as threatened. Accordingly, a special rule has been added to allow taking of the Gulf sturgeon for certain purposes without a Federal permit, provided that the taking is done in accordance with applicable State fish and wildlife conservation laws and regulations.

The Service and the National Marine Fisheries Service (NMFS) executed a Memorandum of Understanding (MOU) in 1974 regarding jurisdictional

responsibilities and listing procedures under the Endangered Species Act. Based upon the terms of the MOU, the Service has determined, for purposes of this final rule, that it has jurisdictional authority to list this species because the Gulf sturgeon spends the majority of its lifespan in fresh water. However, the NMFS also claims jurisdiction, contending that the Presidential Reorganization Plan No. 4 of 1970 clearly placed anadromous fish under NMFS jurisdiction, and, thus the intended scope of the MOU did not include anadromous fish.

Although the agencies intend to resolve this disagreement in the future, both agree that it is in the best interest of the Gulf sturgeon to list the subspecies without further delay. Until the jurisdictional issue is resolved, the Service will be responsible for the Gulf sturgeon once the listing becomes effective. Both agencies have signed this rule to eliminate confusion while the issue of jurisdiction is under review.

Summary of Comments and Recommendations

In the May 2, 1990, proposed rule and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. Appropriate State agencies, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. Newspaper notices were published in the Mobile, Alabama, "Press Register" on May 19, 1990; in the Atlanta, Georgia, "Constitution" on May 20, 1990; in the Tallahassee, Florida, "Democrat" on May 22, 1990; in the New Orleans, Louisiana, "Times-Picayune" on May 22, 1990; and in the Jackson, Mississippi, "Clarion-Ledger" on June 4, 1990.

Nine comments were received during the comment period. The proposal was supported by the Alabama Department of Conservation and Natural Resources; the Mississippi Department of Wildlife, Fisheries, and Parks; Florida's Marine Fisheries Commission, Department of Natural Resources, and Game and Fresh Water Fish Commission; and a representative of a private conservation foundation.

Mississippi commented that the proposed rule was misleading in stating that the Gulf sturgeon was essentially confined to the eastern Gulf and in implying that the only viable populations remained in Florida. They pointed out that a potentially healthy population still exists in the Pearl River, and that spawning areas were still available in the lower 150 miles of the

Pearl River, including some tributaries. They further stated that a sturgeon fishery existed on the Pascagoula River in the early twentieth century, and that additional survey work should be done in Mississippi rivers. Service response: The eastern Gulf of Mexico distribution referred to in the proposed rule meant that the Gulf sturgeon was essentially restricted to rivers east of the Mississippi, not that the species was restricted to Florida. Historical catch data, however, do indicate that Florida supported the largest part of the distribution. This final rule has incorporated the additional information provided by Mississippi. The Service agrees that further survey work will be necessary to determine the status of the Gulf sturgeon in several of the Gulf coast rivers, but believes that sufficient evidence exists to indicate that the subspecies is threatened over most, if not all, of its range.

The Louisiana Department of Wildlife and Fisheries stated that the Gulf sturgeon was formerly found in the Pearl River and the major Lake Pontchartrain tributaries, but that the current status was unknown. They reported that the Louisiana Wildlife and Fisheries Commission had closed all Louisiana waters to taking of sturgeon effective May 20, 1990.

A private individual expressed concern about potential economic effects of the listing, particularly with regard to interfering with commercial fishing. Service response: Section 4(b) of the Act requires that listing decisions be made solely on the basis of the best available scientific and commercial data; economic factors may not be considered. Nonetheless, the Service does not anticipate that the listing of the Gulf sturgeon will impede commercial fishing. Take of the fish is already prohibited by Louisiana, Mississippi, Alabama, and Florida. Existing Federal (National Marine Fisheries Service) regulations currently require the use of turtle excluder devices (TEDs) by shrimpers, and potential future requirements to reduce the incidental finfish catch should also reduce the incidental take of Gulf sturgeon.

The Lower Mississippi Division of the U.S. Army Corps of Engineers indicated a number of civil works projects that would require coordination with the Fish and Wildlife Service. Service response: The Fish and Wildlife Service has already conferred with, and will now consult with Federal agencies pursuant to activities that may affect the Gulf sturgeon, as required by section 7 of the Act.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that the Gulf sturgeon should be classified as a threatened species. Procedures found at Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.* and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act were followed. A species may be determined to be 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 Gulf sturgeon (*Acipenser oxyrinchus desotoi*) are as follows:

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

The Gulf sturgeon formerly ranged from the Mississippi River eastward to the Tampa Bay area on the west coast of Florida. Three major rivers (the Pearl in Mississippi, the Alabama in Alabama, and the Apalachicola in Florida) within the range of the Gulf sturgeon have been dammed, preventing use of upstream areas for spawning. The Gulf sturgeon is apparently unable to pass through dam systems. The Ross Barnett Dam near Jackson, Mississippi, prevents sturgeon movement further upstream, although sturgeon still have access to the lower 240 kilometers (150 miles) of the Pearl, and the tributaries in that area. Substantial spawning habitat remains in the Pearl and large tributaries like the Bogue Chitto and Strong Rivers (Mississippi Department of Wildlife, Fisheries, and Parks, *in litt.* 1990). Wooley and Crateau (1985) estimated that construction of the Jim Woodruff Lock and Dam on the Apalachicola River in the 1950's restricted Gulf sturgeon to 172 kilometers (107 miles) of the 1,018 kilometers (636 miles) of river habitat formerly available in the Apalachicola-Chattahoochee-Flint River System. Prior to dam construction, the Gulf sturgeon used all three rivers; subsequently the fish has been restricted to that portion of the Apalachicola River below the dam. Even if the Jim Woodruff Dam could be passed by Gulf sturgeon, the tributaries of the Apalachicola have many additional dams; 14 on the Chattahoochee and three on the Flint. A breeding population of Gulf sturgeon in Bear Creek, Bay County, Florida, was apparently extirpated due to construction of a dam in 1962.

In addition to the structures preventing Gulf sturgeon from reaching

spawning areas, dredging, desnagging, and spoil deposition carried out in connection with channel improvement and maintenance represent a threat to the Gulf sturgeon. Although precise spawning areas are not known, indications are that deep holes and rock surfaces are important for spawning. Modification of such features, especially in rivers in which upstream migration is already limited by dams, could further jeopardize the already reduced stocks of the Gulf sturgeon.

The majority of the range of the Gulf sturgeon is along the panhandle and northwest peninsular coasts of Florida. Tampa Bay, Florida, was the site of the first significant fishery for the Gulf sturgeon. Fifteen hundred fish were taken when the fishery began in 1886-1887, 2,000 in 1887-1888, and only seven fish in 1888-1889, at which time the fishery ended. Only occasional Gulf sturgeon have been taken there since that time. These are believed to originate in other river systems; the Tampa Bay breeding population is considered extirpated.

The Apalachicola River population of the Gulf sturgeon supported a major fishery at the beginning of the century, but population estimates from 1983-1988 by the Service's Panama City, Florida, Fisheries Assistance Office range from 60-285 fish. Any additional decline in this population could result in its extirpation. The Ochlockonee River supported a fishery until the 1950's, but no Gulf sturgeon have been reported there in recent years.

The Suwannee River is believed to support the healthiest remaining population of the Gulf sturgeon, and the population currently appears stable. Steve Carr (in Barkuloo 1988) of the Caribbean Conservation Foundation caught and released 300 Gulf sturgeon during a tagging program in 1988, and 500 in 1989. However, the population may have been reduced seriously following a large commercial harvest in 1983-1984. The Suwannee River currently has good water quality but future development in its watershed has the potential to lower water quality there.

Gulf sturgeon populations in other states are believed to remain low following overfishing and habitat change earlier in the century. Based on the limited data available, the Gulf sturgeon is rare in these states. Incidental catches of Gulf sturgeon are unusual enough in some areas to attract newspaper accounts.

Alabama formerly supported a Gulf sturgeon fishery; commercial landing records from 1927 to 1964 show a decline from a range of 2,850-15,134

pounds taken during the first five years of the fishery (1927-1931) to 100-3,500 pounds in the last five years (1960-1964). Gulf sturgeon have been taken in the Mobile River System as recently as 1986 and 1987, but captures in coastal waters have not been reported since 1980.

In Mississippi, Miranda and Jackson (1987) collected a Gulf sturgeon from the Pascagoula River in June 1987 during 30 net-nights of effort. They reported the capture of another Gulf sturgeon on the Chickasawhay, a tributary of the Pascagoula, in 1985.

In 1988 the Louisiana Department of Wildlife and Fisheries began collecting information on Gulf sturgeon. As of March 1989, specimens had been recorded from Lake Pontchartrain (a total of six adults and subadults), Halfmoon Island (one juvenile), and the Pearl River (one adult and five juveniles). Dr. Frank Petzold of Mississippi State University caught 63 juvenile to subadult Gulf sturgeon in the Pearl River in 1985. While Miranda and Jackson took no Gulf sturgeon in that river during 46 net-nights in June 1987, Dwight Bradshaw (pers. comm.) of Mississippi State University believes that significant numbers of Gulf sturgeon remain in the Pearl.

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

Although there currently is no directed fishery for Gulf sturgeon, incidental take by commercial shrimpers and gill net fishermen may be significant (Wooley and Crateau 1985). Use of turtle excluder devices on shrimp trawls may help reduce incidental catch.

C. Disease or Predation

Not known to be a factor.

D. The Inadequacy of Existing Regulatory Mechanisms

The Gulf sturgeon is listed as a species of special concern by the Florida Game and Fresh Water Fish Commission (Title 39-27.05, Florida Administrative Code) and as an endangered species by the Mississippi Department of Wildlife, Fisheries, and Parks. Take is prohibited in both states. Take of Gulf sturgeon in Alabama is prohibited (Chapter 220-2-26 of Regulations of Department of Conservation and Natural Resources). On May 20, 1990, the Louisiana Wildlife and Fisheries Commission prohibited the take of all species of sturgeon in Louisiana waters. There is currently no known directed fishery for the Gulf sturgeon anywhere in its range.

E. Other Natural or Manmade Factors Affecting Its Continued Existence

Since the Gulf sturgeon is slow to mature, it is unable to rapidly establish a breeding population. The fish probably return to their natal river to breed; if so, recolonization of extirpated populations from other river systems is likely to be slow.

There is a potential threat to the Gulf sturgeon from hybridization with the white sturgeon (*Acipenser transmontanus*), a fish native to the Pacific coast of North America (Dr. James D. Williams, National Fisheries Research Center, Gainesville, Florida; pers. comm.). There have been preliminary attempts to introduce white sturgeon for aquaculture within the range of the Gulf sturgeon. Since species of *Acipenser* are capable of hybridization, any releases of white sturgeon within the range of the Gulf sturgeon could threaten the survival of the latter species.

Poor water quality may also be a threat. All major rivers in the fish's historic range have had heavy pesticide use in their watersheds, and some receive contamination from heavy metals and industrial contaminants. Several large Gulf sturgeon from the Apalachicola River have been found to have potentially detrimental levels of organochlorines and heavy metals in their tissues. While the effects of these contaminants are not certain, they are potentially detrimental to the sturgeon's survival.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to make this rule final. Based on this evaluation, the preferred action is to list the Gulf sturgeon as threatened. The species has declined seriously throughout its range, and has been extirpated in some portions of that range. Although not yet an endangered species, it is likely to become one in the foreseeable future if further habitat loss or degradation occurs.

Critical Habitat

Section 3 of the Act defines critical habitat for an endangered or threatened species as the specific areas containing the physical and biological features essential to 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, requires that, to the maximum extent prudent and determinable, the Secretary

designate critical habitat at the time the species is proposed to be endangered or threatened. Service regulations (50 CFR 424.12(a)(2)) state that critical habitat is not determinable if information sufficient to perform required analyses of the impacts of the designation is lacking or if the biological needs of the species are not sufficiently well known to permit identification of an area as critical habitat. Section 4(b)(2) of the Act requires the Service to consider economic and other relevant impacts of designating a particular area as critical habitat on the basis of the best scientific data available. The Secretary may exclude any area from critical habitat if he determines that the benefits of such exclusion outweigh the conservation benefits, unless to do such would result in the extinction of the species.

In the May 2, 1990, proposed rule to list the Gulf sturgeon, the Service stated that designation of critical habitat was not prudent. The basis for this determination was that it would be impractical to designate critical habitat over an area as large as the Gulf sturgeon's range, especially when the exact areas utilized are not fully known. Though there are areas that likely are important to the Gulf sturgeon, they have not yet been identified. The species feeds over large areas of the Gulf of Mexico and spawns in most of the larger rivers draining into the eastern Gulf. Each major river system in the eastern Gulf is believed to support its own breeding population. The highly migratory, wide-ranging behavior of the Gulf sturgeon requires very large areas of coastal waters and these areas are not currently understood. It would be impractical to designate critical habitat over this large area and insufficient information exists to designate smaller isolated areas.

Consideration of a not prudent finding within the Service since the publication of the proposed rule has resulted in a determination that designation of critical habitat may be prudent for the Gulf sturgeon but is not now determinable. Section 4(b)(6)(C) provides that a concurrent critical habitat determination is not required, and that the final decision on designation may be postponed for 1 additional year from the date of publication of the proposed rule, if the Service finds that a prompt determination of endangered or threatened status is essential to the conservation of the species. The Service believes that prompt determination of threatened status for the Gulf sturgeon is essential. This will afford the species identify those physical and biological features that are essential to the

conservation of the sturgeon and that may require special management considerations or protection and make a final decision on designation of critical habitat by May 2, 1992. In the interim, protection of this species' habitat will be addressed through the recovery process and through the section 7 jeopardy standard.

Federal agencies and activities likely to be affected by the listing of the Gulf sturgeon are discussed under "Available Conservation Measures" below.

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 402. Section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

Federal actions most likely to affect the Gulf sturgeon are the permitting programs and Federal water resource projects of the U.S. Army Corps of Engineers. Activities that would potentially involve section 7 of the Act include dredging of river channels, spoil deposition, and dam construction. Another potential section 7 involvement is pesticide registration by the U.S. Environmental Protection Agency. Following the proposal of the Gulf sturgeon as a threatened species, a

"conference" pursuant to section 7(a)(4) of the Act occurred between the Fish and Wildlife Service and the Minerals Management Service, with regard to offshore oil leasing in the Gulf of Mexico.

The Act and implementing regulations found at 50 CFR 17.21 and 17.31 set forth a series of general prohibitions and exceptions that apply to all threatened wildlife. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, or collect; or to attempt any of these), import or export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

The above generally applies to threatened species of fish and wildlife. However, the Secretary has the discretion under section 4(d) of the Act to issue special regulations for a threatened species that are necessary and advisable for the conservation of the species. Take of the Gulf sturgeon is now banned in all States within the historic range except Georgia, where the species has been extirpated. Conservation and restoration of Gulf sturgeon stocks is already underway or planned by a combination of Federal, State, and private agencies.

In order to avoid unnecessary duplication of permitting requirements, the Service is promulgating a special rule allowing taking of Gulf sturgeon, in accordance with applicable state laws, for educational purposes, scientific purposes, the enhancement of propagation or survival of the species, zoological exhibition, and other conservation purposes consistent with the Endangered Species Act. Taking of Gulf sturgeon for purposes other than those described above, including taking incidental to carrying out otherwise lawful activities, is prohibited except when permitted under 50 CFR 17.32. The special rule will allow conservation and recovery activities for the Gulf sturgeon to be carried out without a Federal permit, provided the activities are in

compliance with applicable State laws. Federal agency conservation activities involving Gulf sturgeon, however, will require consultation pursuant to section 7 of the Act, as discussed above.

On July 1, 1975, the Atlantic sturgeon (*Acipenser oxyrinchus*, including the Gulf sturgeon) 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 CITES permits are required before international shipment may occur. Such shipment is strictly regulated by CITES party nations to prevent effects that may be detrimental to the species' survival.

Conservation and propagation work on the Gulf sturgeon is underway by the Service's Panama City, Florida, Fisheries Assistance Office; Gainesville, Florida, National Fisheries Research Center; Welaka, Florida and Warm Springs, Georgia National Fish Hatcheries; and by the private Caribbean Conservation Corporation, funded by the Phipps Florida Foundation. The Louisiana Department of Wildlife and Fisheries has initiated status surveys for the Gulf sturgeon and plans to expand this work. The Gulf States Marine Fisheries Commission's Technical Coordinating Committee agreed in 1989 that their Anadromous Fish Subcommittee would begin preparation of a management plan for the Gulf sturgeon during 1990.

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

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Author

The primary author of this rule is Dr. Michael M. Bentzien (see **ADDRESSES** Section).

List of Subjects in 50 CFR Part 17

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

Regulations Promulgation

PART 17—[AMENDED]

Accordingly, part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1544; 16 U.S.C. 4201-4245; Pub. L. 99-625, 100 Stat. 3500; unless otherwise noted.

2. Amend § 17.11(h) for animals by adding the following, in alphabetical order under "Fishes" 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						
FISHES							
Sturgeon, Gulf	<i>Acipenser oxyrinchus desotoi</i>	U.S.A. (AL, FL, GA, LA, MS) ..	Entire	T	444	NA	17.44(v)

3. Amend § 17.44 by adding paragraph (v) to read as follows:

§ 17.44 Special rules—fishes.

(v) Gulf sturgeon (*Acipenser oxyrinchus desotoi*). (1) No person shall take this species, except in accordance with applicable State fish and wildlife conservation laws and regulations for educational purposes, scientific purposes, the enhancement of propagation or survival of the species, zoological exhibition, or other conservation purposes consistent with the Act.

(2) Any violation of applicable State

fish and wildlife conservation laws or regulations with respect to taking of this species is also a violation of the Endangered Species Act.

(3) No person shall possess, sell, deliver, carry, transport, ship, import, or export, by any means whatever, any of this species taken in violation of applicable State fish and wildlife conservation laws or regulations.

(4) It is unlawful for any person to attempt to commit, solicit another to commit, or cause to be committed, any offense defined in paragraphs (v) (1) through (3) of this section.

(5) Taking of this species for purposes other than those described in paragraph

(v)(1) of this section, including taking incidental to otherwise lawful activities, is prohibited except when permitted under 50 CFR 17.32.

Dated: August 5, 1991

Richard N. Smith,
Acting Director, Fish and Wildlife Service.

Dated: August 13, 1991.

Michael F. Tillman,
Deputy Assistant Administrator for Fisheries,
National Marine Fisheries Service, National
Oceanic and Atmospheric Administration,
Department of Commerce.

[FR Doc. 91-23462 Filed 9-27-91; 8:45 am]

BILLING CODE 4310-55-M