

NFS location	Remove	Insert
1817.503(a)(2)	FAR 15.405	FAR 15.201
1832.409-170(d)	1815.9	1815.404-470
1835.016-70(d)(1)	1815.508-70 and 1815.509-70	FAR 15.608, FAR 15.609, and 1815.609-70
1835.016-70(d)(2)	1815.412-70	1815.208
1835.016-70(d)(3)	FAR 15.413-2(f) and 1815.413-2	1815.207
1835.016-70(d)(3)	FAR 15.601	FAR 15.306
1835.016-70(d)(5)	FAR 15.610(e)(1)	FAR 15.306(e)
1835.016-70(d)(7)	FAR 15.1004	FAR 15.5
1844.201-2(c)(2)	FAR 15.806-2(a)(1) or (2)	FAR 15.404-3(c)
1853.242-70(g)	1815.805-5(a)(1)(E)	1815.404-2(a)(1)(D)
1871.105(f)	FAR 15.406	FAR 15.204
1871.401-3(a)(2)	FAR 52.215-16, Alternate II	FAR 52.215-1
1871.401-3(b)(4)	FAR 15.610	FAR 15.306
1871.401-4(a)(2)	FAR 52.215-16, Alternate II	FAR 52.215-1
1871.402(d)	15.402(i)	FAR 15.203(d)
1871.505 introductory text	FAR 15.1001	FAR 15.503
1871.604-3(a)	FAR 15.610	FAR 15.306
1872.505 introductory text	FAR 15.1004	FAR 15.5
1872.702(b)(1)	1815.412	1815.208
1872.705-1 paragraph VI	FAR 15.8	FAR 15.403-5

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 226

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Decision on Designation of Critical Habitat for the Gulf Sturgeon

AGENCIES: National Marine Fisheries Service, National Oceanic and Atmospheric Administration, Commerce; and Fish and Wildlife Service, Interior.

ACTION: Notice of decision on critical habitat designation.

SUMMARY: The National Marine Fisheries Service (NMFS) and the Fish and Wildlife Service (FWS), collectively the Services, announce a decision on designation of critical habitat for the Gulf sturgeon (*Acipenser oxyrinchus desotoi*), a federally listed threatened species pursuant to the Endangered Species Act of 1973, as amended. Based on lack of benefit to the species, the Services have determined that critical habitat designation is not prudent. This constitutes the Services' not prudent finding for the designation of critical habitat for the Gulf sturgeon.

DATES: The finding announced in this notice was made on February 24, 1998.

ADDRESSES: Information, comments, or questions should be submitted to the Field Supervisor, U.S. Fish and Wildlife Service, 6620 Southpoint Drive South, Suite 310, Jacksonville, Florida 32216; or the Regional Director, U.S. Department of Commerce, National Marine Fisheries Service, 9721 Executive Center Drive N., St. Petersburg, Florida 33702. The administrative record supporting this decision is available for public inspection, by appointment, during normal business hours at the above addresses.

FOR FURTHER INFORMATION CONTACT: Dr. Michael M. Bentzien, Assistant Field Supervisor, FWS, see **ADDRESSES** section above or telephone 904/232-2580, extension 106; or Ms. Colleen Coogan, NMFS, see **ADDRESSES** section above or telephone 813/570-5312.

SUPPLEMENTARY INFORMATION:

Background

The Gulf sturgeon (*Acipenser oxyrinchus (=oxyrhynchus) desotoi*), also known as the Gulf of Mexico sturgeon, is a nearly cylindrical fish with an extended snout, ventral mouth, chin barbels, and with the upper lobe of the tail longer than the lower. Adults range from 1.8 to 2.4 meters (m) (6 to 8 feet (ft)) in length, with adult females larger than males. It is a subspecies of Atlantic sturgeon, *Acipenser oxyrinchus (=oxyrhynchus)*, and is distinguished from *Acipenser oxyrinchus oxyrinchus*, the East Coast subspecies, by its longer head, pectoral fins, and spleen. The Gulf sturgeon is restricted to the Gulf of Mexico and its drainages, primarily

from the Mississippi River to the Suwannee River, within the States of Louisiana, Mississippi, Alabama, and Florida. Sporadic occurrences are known as far west as Texas (Rio Grande), and marine waters in Florida south to Florida Bay (Wooley and Crateau 1985, Reynolds 1993). An anadromous species, the Gulf sturgeon migrates between fresh and salt water.

The Services' involvement with the Gulf sturgeon began with monitoring and other studies of the Apalachicola River population by the FWS Panama City, Florida, Fisheries Assistance Office in 1979. The fish was included as a category 2 species in the FWS 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. Category 2 designation was given at that time to species for which listing as threatened or endangered was possibly appropriate, but for which additional biological information was needed to support a proposed rule. In 1980, the FWS Jacksonville, Florida, 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. In 1988, the Panama City 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 Services jointly proposed the Gulf sturgeon for listing as a threatened species on May 2, 1990 (55 FR 18357). In that proposed rule, the Service maintained that designation of

critical habitat was not determinable due to the sturgeon's broad range and the lack of knowledge of specific areas utilized by the subspecies. The final rule for the Gulf sturgeon was published on September 30, 1991 (56 FR 49653). It included special rules promulgated under Section 4(d) of the Act for a threatened species, allowing taking of Gulf sturgeon in accordance with applicable State laws, for educational and scientific purposes, the enhancement of propagation or survival of the species, zoological exhibition, and other conservation purposes. The final rule found that critical habitat designation "may be prudent but is not now determinable." Further comments on the critical habitat issue were solicited from all interested parties following listing. A final decision on designation of critical habitat was to have been made by May 2, 1992.

On August 11, 1994, the Sierra Club Legal Defense Fund, Inc. (Fund), on behalf of the Orleans Audubon Society and Florida Wildlife Federation, gave written notice of their intent to file suit against the Department of the Interior for failure to designate critical habitat for the Gulf sturgeon within the statutory time limits established under the Act. The Fund filed suit (Orleans Audubon Society v. Babbitt, Civ. No. 94-3510 (E.D. La)) following a combined meeting and teleconference with the Service on October 11, 1994.

On August 23, 1995, the Services published a notice of decision (60 FR 43721) on critical habitat designation for the Gulf sturgeon. The Services determined that critical habitat designation was not prudent based on the lack of additional conservation benefit to the species.

On November 23, 1995, the above mentioned plaintiffs again gave notice of their intent to file suit against the Departments of the Interior and Commerce for failing to designate critical habitat for the Gulf sturgeon. On January 31, 1996, the Court denied both the Services' motion to dismiss the suit and the plaintiffs' motion to find the Services in contempt. On October 28, 1997, the Court rejected the plaintiffs' request for a Court order requiring the Services to designate critical habitat. The plaintiffs' motion for summary judgment was granted, with relief restricted to a remand of the matter to the agencies for further consideration based on the best scientific information available.

Critical Habitat Definition and Requirements

Critical habitat is defined in section 3(5)(A) of the Act as "(i) the specific

areas within the geographic area occupied by a species * * * on which are found those physical or biological features (I) essential to the conservation of the species, and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by a species at the time it is listed * * * upon determination by the Secretary that such areas are essential for the conservation of the species." The term "conservation," as defined in Section 3(3) of the Act, means "* * * to use and the use of all methods and procedures which are necessary to bring any endangered or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary," i.e., the species is recovered and can be removed from the list of endangered and threatened species. Section 4(a)(3) of the Act requires that critical habitat be designated at the time any species is listed as an endangered or threatened species, to the extent prudent and determinable. If a final regulation listing a species finds that critical habitat is not determinable, a critical habitat designation must be made within one additional year (within two years of the date on which the species was proposed for listing).

Section 4(b)(2) of the Act requires the Services to consider the economic impact of designating any particular area as critical habitat. The Services' regulations for listing endangered and threatened species and designating critical habitat (50 CFR 424.19) require that, in analyzing such impacts, the Services identify any significant activities that would either affect an area considered for designation as critical habitat or be likely to be affected by the designation, and after proposing the designation for such an area, consider the probable economic and other impacts of the designation upon proposed or ongoing activities. An area may be excluded from critical habitat if it is determined that the economic benefits of such exclusion outweigh the conservation benefits of including the area in critical habitat. Exclusions may not be made if the failure to designate them as critical habitat would result in the extinction of the species concerned. This standard approximates the jeopardy standard of the Act, but may be less stringent because it requires a determination that the exclusion "* * * will result in the extinction * * *" rather than more probabilistic criterion "* * * likely to jeopardize the continued existence * * *" of section 7(a)(2).

If no exclusions are made to critical habitat, it should (presuming adequate

biological and distributional information is available) include all areas necessary to recover the species. If areas are excluded from critical habitat for economic reasons, final critical habitat designation could range from an area just under that required for recovery to an area barely sufficient to prevent the species' extinction, and insufficient for its recovery. In summary, while the Act defines "conservation" to mean recovery of the species, section 4(b)(2) does not require the Services to designate critical habitat sufficient for the recovery of the species if economic benefits of excluding certain areas outweigh the conservation benefit to the species from their inclusion.

In accordance with the definition of critical habitat provided by section 3(5)(A)(i) of the Act, the Services' regulations (50 CFR 424.12) require the Services to consider the principal biological or physical features that are essential to the conservation of the species. General requirements of species include, but are not limited to:

- (1) Space for individual and population growth, and for normal behavior;
- (2) Food, water, air, light, minerals, or other nutritional or physiological requirements;
- (3) Cover or shelter;
- (4) Sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and generally
- (5) Habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

The regulations further require the Services to focus on principal biological or physical constituent elements within the defined area that are essential to the conservation of the species. Primary constituent elements may include, but are not limited to, roost sites, nesting grounds, spawning sites, seasonal wetland or dryland, water quality or quantity, host species or plant pollinators, geological formation, vegetation type, tide, and specific soil types.

The regulations state that a designation of critical habitat is not prudent if either of the two following situations exist:

- (1) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of such threat to the species, or
- (2) Such designation of critical habitat would not be beneficial to the species.

Potential benefits of critical habitat designation derive from section 7(a)(2) of the Act, which requires Federal

agencies, in consultation with the Service, to ensure that their actions are not likely to jeopardize the continued existence of listed species or to result in the destruction or adverse modification of critical habitat of such species. Implementing regulations (50 CFR 402.14) require each Federal agency to review its actions at the earliest possible time to determine whether any action may affect listed species or critical habitat. If a determination is made that a Federal action may adversely affect a listed species a formal consultation is required. All consultations result in a finding of whether or not the proposed action is likely to jeopardize the continued existence of the species, and, if critical habitat is designated, whether the action is likely to destroy or adversely modify critical habitat.

Critical habitat, by definition, applies only to Federal agency actions. 50 CFR 402.02 defines "jeopardize the continued existence of" as meaning to engage in an action that would reasonably be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species. "Destruction or adverse modification" is defined as a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species. Such alterations include, but are not limited to, alterations adversely modifying any of those physical or biological features that were the basis for determining the habitat to be critical. Thus, in the section 7(a)(2) consultation process, the jeopardy analysis focuses on potential effects on the species' populations, whereas the destruction or adverse modification analysis focuses on habitat value, specifically on those constituent elements identified in the critical habitat listings in 50 CFR 17.95, 17.96 (FWS), or 226 (NMFS). However, either a jeopardy or a destruction or adverse modification biological opinion requires the Services to find an appreciable effect on both the species' survival and recovery.

Federal actions satisfying the standard for adverse modification are nearly always found to also jeopardize the species concerned, and the existence of critical habitat designation does not materially affect the outcome of consultation. Biological opinions which conclude that a Federal agency action is likely to adversely modify critical habitat but is not likely to jeopardize the species for which it is designated are extremely rare historically; none have been issued in recent years. Such

situations might involve a Federal action in critical habitat outside of current range of the species, where the action would not reduce the current reproduction, distribution, or numbers of the species, but would appreciably reduce the value of critical habitat for both survival and recovery. For some highly endangered species whose survival and recovery in its current range was unlikely, and which depended on the expansion of its range and numbers into currently unoccupied habitat, the designation of unoccupied critical habitat may in certain rare instances provide additional protection to that afforded by the jeopardy standard. Since threatened species such as the Gulf sturgeon are, by definition, not currently at risk of extinction, but are rather anticipated to become so in the foreseeable future, unoccupied critical habitat would not be immediately required for their survival.

It should be noted also that regardless of critical habitat designation, Federal agencies are required by section 7(a)(1) of the Act to utilize their authorities in furtherance of the Act's purposes by carrying out conservation (i.e., recovery) activities for listed species. For no jeopardy (or no destruction or adverse modification) biological opinions, the Services may provide discretionary conservation recommendations to the consulting Federal agency to assist them in this responsibility. Recovery plans also provide guidance on specific tasks that Federal and other agencies can carry out to assist in the recovery of listed species.

Ecology of the Gulf Sturgeon

The Gulf sturgeon is an anadromous species inhabiting the Gulf of Mexico and Gulf Coast rivers from Louisiana to Florida. Adults and subadults spend eight to nine months each year in rivers where they spawn and three to four of the coolest months in estuaries or Gulf waters.

Migration

In Florida, both adults and subadults begin moving from the Gulf of Mexico into the Suwannee and Apalachicola rivers in early spring until early May (Carr 1983, Wooley and Crateau 1985, Odenkirk 1989, Clugston *et al.* 1995). River water temperatures at that time range from 16.0 °C to 23.0 °C (60.8 °F to 75.0 °F). Large females apparently prefer migrating upstream in shallow water areas, whereas deep water areas are preferred during downstream or post spawning migrations. This preference does not apply to males (Huff 1975). Downstream migration in the Apalachicola River begins in late

September when water temperatures reach about 23.0 °C (75.0 °F), and extends into November (Wooley and Crateau 1985). During the fall migration from fresh to salt water, Gulf sturgeon in the Apalachicola River enter the Brothers River, a tributary located about 19.2 kilometers (km) (12.0 miles (mi)) above the Gulf of Mexico. It is believed that the Brothers River is used as a staging area for Gulf sturgeon to osmoregulate (adjust to changed salinity) prior to entering the Gulf of Mexico. The sturgeon occupy a microhabitat 8.0 to 18.0 m (26.2 to 59.0 ft) in depth with a sand and clay substrate covered with Asiatic clams (*Corbicula fluminea*) and detritus (Wooley and Crateau 1985). The fish remain in the Brothers River for an average of twelve days (Wooley and Crateau 1985, Odenkirk 1989). Very little is known about the estuarine and neritic (shallow coastal waters) habitat use of migrating Gulf sturgeon. Parauka (U.S. Fish and Wildlife Service 1997) found that subadult Gulf sturgeon immigrating from the Choctawhatchee River into the estuarine waters of Choctawhatchee Bay moved generally along the shoreline. Water depths ranged from 2.0 to 7.0 m (6.5 to 23.0 ft) with a sand and mud substrate.

Freshwater Habitat

Foster and Clugston (1997) found that telemetered Gulf sturgeon in the Suwannee River were frequently located close to springs throughout the warmest period, but none were located within a spring or the thermal plume emanating from a spring. The substrate of much of the Suwannee River is sand and limerock, especially in those areas near springs and spring runs. Wooley and Crateau (1985) reported that Gulf sturgeon in the Apalachicola River utilized the area immediately downstream from Jim Woodruff Lock and Dam (JWLD) from May through September. The area occupied consisted of the tailrace and spillway basin of JWLD and a large scour hole below the lock. The area consisted of sand and gravel substrate with water depths ranging from 6.0 to 12.0 m (19.7 to 39.4 ft). Telemetry studies conducted on Gulf sturgeon in the Choctawhatchee River found that they did not distribute themselves uniformly throughout the river and did not occupy the deepest and coolest water available (Potak *et al.* 1995). Fish remained within two primary summer holding areas staying outside the main channel where water velocities were less than the maximum available. Most fish were in water depths of 1.5 to 3.0 m (4.9 to 9.9 ft) and substrates were silt or clay. Morrow *et*

al. (in press) reported that the lower part of the West Middle River (lower Pearl River system) was an important summer habitat for juvenile and sub-adult Gulf sturgeon. The habitat is characterized with water depths ranging from 9.0 to 19.0 m (29.5 to 62.3 ft) with sluggish flows and a hard substrate of sand and gravel.

Estuarine Habitat

Mason and Clugston (1993) noted that the estuarine seagrass beds with mud and sand substrates appear to be important winter habitats for Gulf sturgeon where most of the feeding is thought to occur. Clugston *et al.* (1995) reported that the young Gulf sturgeon in the Suwannee River, weighing between 0.3 and 2.5 kilograms (kg) (0.7 to 5.5 pounds (lb)), remained in the vicinity of the river mouth and estuary during the winter and spring. Fox and Hightower (1997) captured adult Gulf sturgeon in the early spring in Choctawhatchee Bay prior to their migration into the Choctawhatchee River. Fish were collected in stationary gill nets set 455.0 m (1,500 ft) from shore at depths of 2.0 to 4.0 m (6.5 to 13.0 ft). The bay at that site is about 5.5 km (3.4 mi) wide and with depths up to 6.7 m (22.0 ft). Parauka (U.S. Fish and Wildlife Service 1997) collected 6 subadult Gulf sturgeon in the Choctawhatchee River, equipped them with acoustic tags, and monitored their movement in the estuary during the winter. Five of six fish remained in the estuary the entire winter occupying nearshore habitats, 1.2 to 4.6 m (4 to 15 ft) in depth with a sand and mud substrate.

Food Habits

Mason and Clugston (1993) reported that in the spring, immigrating subadult and adult Gulf sturgeon collected from the mouth of the Suwannee River contained gammarid, haustoriid, and other maphipods, polychaete and oligochaete annelids, lancelets, and brachiopods. However, once in fresh water, these Gulf sturgeon did not eat as evidenced by the presence of only a greenish-tinged mucus in their guts from June through October. The stomach contents of a 79.5 kg (175 lb) Gulf sturgeon collected in Choctawhatchee Bay during the winter contained adult ghost and commensal shrimp (R. Head, Gulf Coast Research Laboratory, personal communication 1997). Clugston *et al.* (1995) concluded that Gulf sturgeon appear to gain weight only during the winter and spring while in marine or estuarine waters and lose weight during the eight to nine month period while in fresh water. Carr (1983) reported that marked Gulf sturgeon from

the Suwannee River gained up to 30 percent of body weight in one year but showed little or no growth when recaptured during the same season. Wooley and Crateau (1985) noted that Gulf sturgeon 80.0 to 114.0 centimeters (cm) (31.5 to 44.9 inches (in)) long that were captured and recaptured in the Apalachicola River during the summer period exhibited weight losses of 4 to 15 percent or 0.5 to 2.3 kg (1.1 to 5.1 lb).

River-Specific Fidelity

The results of tagging studies suggest that Gulf sturgeon exhibit a high degree of river fidelity. From 1981 to 1993, 4,100 fish were tagged in the Apalachicola and Suwannee rivers, with 860 fish recaptured in the river of initial collection and only 8 sub-adults exhibiting inter-river movement (Wooley and Crateau 1985, U.S. Fish and Wildlife Service and Gulf States Marine Fisheries Commission 1995, Carr *et al.* 1996, Foster and Clugston 1997). Foster and Clugston (1997) noted that telemetered Gulf sturgeon in the Suwannee River returned to the same areas as the previous summer suggesting that chemical cuing may influence distribution. Wooley and Crateau (1985) indicate that the results of tagging Gulf sturgeon in the Apalachicola River would suggest the fish are genetically or behaviorally imprinted to the chemosensory environment of their home rivers. Stabile *et al.* (1996) analyzed Gulf sturgeon populations from eight drainages along the Gulf of Mexico for genetic diversity. He noted significant differences among Gulf sturgeon stocks and suggested that they displayed region-specific affinities and may exhibit river-specific fidelity. Stabile *et al.* (1996) identified five regional or river-specific stocks (from west to east)—(1) Lake Ponchartrain and Pearl River, (2) Pascagoula River, (3) Escambia and Yellow rivers, (4) Choctawhatchee River, and (5) Apalachicola, Ochlockonee, and Suwannee rivers.

Reproduction

Gulf sturgeon are long-lived, reaching at least 42 years in age (Huff 1975). Age at sexual maturity for females ranges from 8 to 17 years, and for males from 7 to 21 years (Huff 1975). Fertilized Gulf sturgeon eggs were collected at 2 upriver locations on the Suwannee River (Marchent and Shutters 1996) and 6 upriver sites on the Pea and Choctawhatchee rivers (Fox 1997). Habitat at the egg collection sites consisted of limestone bluffs and outcroppings, cobble, limestone gravel and sand with water depths ranging from 1.4 to 7.9 m (4.5 to 26.0 ft). Water

temperatures ranged from 18.3 °C to 22.0 °C (65.0 °F to 71.6 °F). Chapman *et al.* (1993) reported that three mature Gulf sturgeon had 458,080; 274,680; and 475,000 eggs and were estimated to have an average fecundity of 20,652 eggs/kg (9,366 eggs/lb).

Population

Population estimates for Gulf sturgeon in the Apalachicola River have been conducted from 1984 to 1993. During that period, estimates of fish exceeding 45.0 cm (17.7 in) in length ranged from 96 to 131 fish with a mean of 115 (F. Parauka, FWS, personal communication; U.S. Fish and Wildlife Service and Gulf States Marine Fisheries Commission 1995). In the Suwannee River, a mark/recapture study implemented from 1986 to 1994 estimated a population of 1,504 to 3,066 for Gulf sturgeon weighing between 3.0 and 81.0 kg (6.6 to 178.2 lb) (Carr *et al.* 1996). Morrow *et al.* (in press) estimated that the summer population of Gulf sturgeon in the West Middle Pearl River, 459 to 1143 mm (18 to 46 in) in length, ranged from 67 to 124 fish.

Habitat Needs

The Gulf sturgeon requires nearshore (bays and estuaries) and offshore (Gulf of Mexico) feeding areas, and freshwater rivers for spawning and resting habitat. Specific habitat needs of the Gulf sturgeon, in the context of the constituent elements discussed above, include:

1. Migration corridors which support subspecies' distribution throughout its primary range. Primary range for the Gulf sturgeon in freshwater extends from the Mississippi River to the Suwannee River in Florida (Wooley and Crateau 1985). A migration corridor is a Gulf Coast river drainage within the primary range through which sturgeon pass between marine and estuarine environments to freshwater spawning and resting sites. Records of Gulf sturgeon through sightings, incidental captures, and tagging studies have been made over the last ten years from most major drainages and a number of smaller river systems (Reynolds 1993, U.S. Fish and Wildlife Service and Gulf States Marine Fisheries Commission 1995). Tagging studies in the Apalachicola and Suwannee rivers demonstrated the high probability of recapturing fish in the same river where they were first tagged (Wooley and Crateau 1985, Foster and Clugston 1997). A small number of sub-adult fish exhibited inter-river movement; however, the data obtained from capture and recapture studies suggest that Gulf sturgeon have a high degree of river

fidelity. Stabile *et al.* (1996) noted significant genetic differences among Gulf sturgeon stocks and suggested that they displayed region-specific affinities and may exhibit river-specific fidelity which further defines an essential migratory corridor. The significance of this study to critical habitat is discussed in the section on proposed designation.

2. Silt-free, consolidated bottom substrate composed of rock, gravel or hard sand. This material can be the predominant benthic substrate in some drainages, while in others it can be more patchily distributed (U.S. Fish and Wildlife Service and Gulf States Marine Fisheries Commission 1995). This feature is often associated with springs, geologic outcroppings, and deep holes. Adult, sub-adult, and juvenile Gulf sturgeon frequent such sites and these areas are thought to be important for spawning and resting (Wooley and Crateau 1985, Odenkirk 1989, Carr *et al.* 1996, Marchent and Shutters 1996, Foster and Clugston 1997). Telemetry and tagging studies further suggest that individuals return to the same areas of the river inhabited the previous summer (Foster 1993, Carr *et al.* 1996, Foster and Clugston 1997, U.S. Fish and Wildlife Service 1989, 1990, 1991, 1992, 1993).

3. Adequate water quantity and quality for normal behavior in both fresh and brackish environments. Normal behavior includes, but is not limited to, migration of adult, subadult, and juvenile sturgeon; local movement and feeding by larval and juvenile stages; and reproduction. Natural surface and groundwater discharges influence a river's characteristic fluctuations in volume, depth, and velocity (Torak *et al.* 1993, Leitman *et al.* 1993). Migrating sturgeon and planktonic larvae are adapted to conditions in their natal rivers which affect distance traveled and survival. These demographics may be influenced by changes in the water quantity parameters (U.S. Fish and Wildlife Service and Gulf States Marine Fisheries Commission 1995).

Temperature, sediment load, and chemical constituents are important water quality features. Seasonal changes in water temperature trigger sturgeon migration into and out of rivers (Wooley and Crateau 1985). Cooler waters associated with deep holes, springs and spring runs appear to be important for spawning (Marchant and Shutters 1996, Smith and Clugston 1997) and also as refugia from ambient water temperatures during summer and fall (Carr *et al.* 1996). Sturgeon access to these springs, spring runs, and deep holes may depend upon the maintenance of stream bed elevation

through the natural removal and deposition of sediment (U.S. Army Corps of Engineers 1986). Changes in flow dynamics resulting from surface and groundwater withdrawals for drinking and irrigation (Torak *et al.* 1993, Leitman *et al.* 1993), and excessive sedimentation resulting from riverbed elevation changes due to dams and other navigation activities (U.S. Army Corps of Engineers 1986) have impacted these sites.

Undesirable chemicals contaminating river water may enter sturgeon through contact with water, sediment, or food sources. Bateman and Brim (1994, 1995) found heavy metals, other inorganics, organochlorine compounds, and polycyclic aromatic hydrocarbons in juvenile and adult Gulf sturgeon from Florida. A variety of toxic effects to fish from these contaminants have been demonstrated (Mayer and Mehrle 1977, Armstrong 1979, Johnson and Finley 1980, White *et al.* 1983, Fox 1992).

Historical and Current Threats to the Species

Identified threats for the Gulf sturgeon include historic overexploitation, incidental take, habitat loss and degradation, contaminants, and potential hybridization with a non-native species, the white sturgeon (*Acipenser transmontanus*), used in aquaculture.

The Gulf sturgeon historically was considered important because its eggs and smoked flesh were valued foods, its oil was used in paints, and the swim bladder yielded isinglass, a gelatin used in food products and glues (Smith and Clugston 1994). The resulting demand produced an intense and directed fishing industry. Available landing records indicate that the principal commercial, recreational, and subsistence fisheries were in west Florida, especially in the Apalachicola and Suwannee rivers (Burgess 1963, Huff 1975, Swift *et al.* 1977, Futch 1984, Barkuloo 1988). Directed commercial harvest of Gulf sturgeon in other Gulf states was minor or incidental. Most commercial fishing occurred from the late 19th century until the 1970's, with peak catches in Florida recorded around 1900. Harvest thereafter declined swiftly and averaged around three percent of peak until the fishery collapsed by the late 1970's. From 1972 to 1990, State regulatory agencies in Alabama, Mississippi, Florida, and Louisiana enacted laws prohibiting any take of Gulf sturgeon within their jurisdictional waters.

The historic decline of Gulf sturgeon populations (Barkuloo 1988) begun by over-exploitation was later exacerbated

by habitat destruction, degradation, and inaccessibility. Water control structures, high- and low-head dams, and sills within a number of river drainages throughout its range prevent or severely restrict sturgeon access to historic migration routes and spawning areas (Boschung 1976, Murawski and Pacheco 1977, Wooley and Crateau 1985, McDowell 1988). Dredging, spoil disposal, and other navigation maintenance may have adversely affected Gulf sturgeon habitats through lowering of river elevations, elimination of deep holes, and altering of rock substrates (Carr 1983, Wooley and Crateau 1985). Cool waters emanating from springs are believed to be important thermal refugia for sturgeon and other anadromous fish during warm weather (see below).

S. Carr (pers. comm.) believed that cool water habitats which appear to serve as thermal refugia during summer months may be impacted by reduction in groundwater flows. Leitman *et al.* (1993) indicated that the major spring-fed flow component of Georgia's Flint River, a major flow contributor to the Apalachicola River during low-flow periods, has been reduced since the early 1970's from groundwater and surface water irrigation withdrawals. More specifically, increased groundwater withdrawal for irrigation in southwest Georgia may result in a 30 percent reduction of discharge to streams (Hayes *et al.* 1983). These actions, in conjunction with drought, may have caused the observed reduction and cessation of water flow from several springs and spring runs in the upper Apalachicola River. Reduction of cool water flows or their complete loss during critical summer periods could subject sturgeon to increased environmental stress.

Agricultural and industrial contaminants also may be affecting fish populations. DDT and its DDD/DDE metabolites were detected in Gulf sturgeon samples collected from Florida Gulf river drainages between 1985 to 1991 (Bateman and Brim 1994). A second organochlorine insecticide, toxaphene, was detected in fish from the Apalachicola River during the same study. General organochlorine effects on fish include reproductive failure, reduced survival of young, and physiological alterations affecting their ability to withstand stress (White *et al.* 1983). DDT compounds are also known to be endocrine disrupters (Fox 1992). Toxaphene has been shown to impair reproduction, reduce growth in adults and juveniles, and alter collagen formation in fry, resulting in "broken back syndrome" (Mayer and Mehrle

1977). Bateman and Brim (1994, 1995) also detected heavy metals including arsenic, cadmium, lead, mercury, and polycyclic aromatic hydrocarbons, the latter at levels which could adversely affect development and survival of eggs and larval and juvenile fish.

Accidental or intentional introductions of cultured stocks and non-endemic species, such as the white sturgeon (*Acipenser transmontanus*), could also potentially harm wild Gulf sturgeon stocks. In addition to these anthropogenic impacts, the life history of Gulf sturgeon complicates recovery efforts. Breeding populations take years to establish due to their advanced age at sexual maturity. The subspecies appears to be a home stream spawner, with little if any natural repopulation by migrants from other rivers.

Application of Critical Habitat Designation to Threats

Take of Gulf sturgeon is prohibited throughout its range by section 9 of the Act and by State laws. Critical habitat designation would provide no benefit to the application of these prohibitions.

Habitat loss and degradation and contaminant threats are directly related to physical and biological features essential to the conservation of the Gulf sturgeon. Additional protection from critical habitat designation would apply in the case of Federal actions that were likely to destroy or adversely modify critical habitat yet not jeopardize the continued existence of the species. The Services believe this scenario is highly unlikely. The U.S. Army Corps of Engineers' navigation maintenance activities, dam and water control construction and operations, and permitting program have the potential to affect all of the constituent elements discussed above—(1) migration corridors could be affected by dams and possibly reduced water flow, (2) bottom substrate could be affected by dredging or deposition of dredged materials, and (3) water quality could be affected by increased turbidity or changed temperature, and water quantity could be reduced. In order to trigger an adverse modification biological opinion without jeopardy, such effects would have to appreciably reduce the value of designated critical habitat for both the survival and recovery of the Gulf sturgeon without reducing its reproduction, distribution, or numbers. Most of the Corps' activities will take place in occupied habitat and a significant reduction in habitat value within occupied habitat of the Gulf sturgeon will inevitably reduce its reproduction, distribution, or numbers, thus providing the protection of the

jeopardy prohibition. Unoccupied upstream habitat will still be subject to consultation, regardless of critical habitat designation, if a proposed project would affect downstream occupied habitat (e.g., changed water flows). An example would be the Flint and Chattahoochee rivers in Georgia, where the disappearance of Gulf sturgeon occurred following the construction of Jim Woodruff Dam and its locks in Florida in 1956.

On July 25, 1996, the FWS provided the Corps with a biological opinion on the proposed West Pearl River Navigation Project in Louisiana and Mississippi. The project involved dredging three river segments. The Gulf sturgeon was one of the federally listed species considered in the opinion. Regardless of the lack of designated critical habitat, the FWS considered features of the Gulf sturgeon's habitat (resuspension of sediments, spread of contaminants, turbidity increases from increased navigation, geomorphic changes) in reaching the decision that the project was not likely to jeopardize the continued existence of the Gulf sturgeon. The no jeopardy finding was based on two factors—(1) existing stable populations of the Gulf sturgeon are found in off-project portions of the Lower Pearl River Basin; and (2) The proposed project activities were localized and temporary in nature.

This biological opinion demonstrates that habitat features are an essential part of the analysis for any biological opinion under the jeopardy standard; that is, any analysis of the effects on reproduction, distribution, or numbers of the Gulf sturgeon would have to consider the effects of changes to the fish's habitat. Critical habitat designation would not have added additional protection—it would not have been possible to arrive at a destruction of adverse modification biological opinion because habitat value for both survival and recovery of the species was not appreciably reduced.

Permitting under the Environmental Protection Agency's (EPA) National Pollution Discharge Elimination System (NPDES), water quality standards, and pesticide registration have the potential to affect water quality for the Gulf sturgeon. Since the Gulf sturgeon inhabits larger channel areas, the effects of any point discharge into its habitat would likely be minimized by dilution, and the States of Louisiana, Mississippi, Alabama, and Florida set water quality standards that are believed to be protective of aquatic life. The Service believes that if current Federal water quality standards under the CWA are maintained, there will be no need to

modify the State's water quality standards to protect habitat for the Gulf sturgeon. Pesticide registration would have to be evaluated on a case-by-case basis. The Services believe that, for these activities to reach the survival and recovery criteria, reproduction, distribution, or numbers of the Gulf sturgeon would be affected and that potential threats can be effectively addressed under the jeopardy standard.

Relation of Critical Habitat Designation to Recovery/Management Plan

Section 4(f)(1) of the Act requires the Services to develop and implement recovery plans for endangered and threatened species, unless such a plan would not promote the conservation of the species.

The Services classify recovery tasks according to three priorities:

- (1) Priority 1 tasks are actions that must be taken to prevent extinction or to prevent the species from declining irreversibly in the foreseeable future.
- (2) Priority 2 tasks are actions that must be taken to prevent a significant decline in species population, habitat quality, or some other significant negative impact short of extinction.
- (3) Priority 3 tasks are all other actions necessary to meet the recovery objectives.

The section 7 consultation process is closely linked with recovery through both section 7(a)(1) and 7(a)(2). Because priority 1 and 2 tasks are closely related to a species' survival and recovery, they provide guidance on Federal activities that could result in jeopardy or destruction or adverse modification biological opinions. Priority 3 tasks provide guidance on activities that could further the conservation of the species, and which would be included by the Services as conservation recommendations, pursuant to 50 CFR 402.14(j) in biological opinions.

The Recovery/Management Plan (Plan) for the Gulf sturgeon (U.S. Fish and Wildlife Service and Gulf States Marine Fisheries Commission, 1995) was written by a recovery/management team including representatives from the affected States, the Services, the U.S. Army Corps of Engineers, the Caribbean Conservation Corporation, the University of Florida, and a commercial fisherman. The Plan was approved by the Services and the Gulf States Marine Fisheries Commission in September 1995. The basic objectives of the Plan are:

- (1) In the short term, prevent further reductions of wild Gulf sturgeon populations throughout the range.
- (2) For recovery, establish population levels that would allow delisting of the

Gulf sturgeon by management units based on river drainages.

(3) Establish, following delisting, a self-sustaining population that could support fishing pressure within management units.

When a recovery plan has been prepared for a species it incorporates the management actions necessary for the conservation of the species. If the recovery tasks involve Federal actions, they are subject to consultation under section 7 of the Act, either between the implementing agency and the Services

or, if carried out by FWS or NMFS, within the agency.

Critical habitat designation is not included as a task in the Plan. However, since potential benefits of critical habitat designation are linked to recovery tasks through the section 7 consultation process, the Services have analyzed priority 1 and 2 recovery actions (those which are required for the survival of the Gulf sturgeon) for potential added protection if critical habitat were designated. The analysis is based on the assumption that loss of

habitat value to the point of affecting survival in occupied habitat will, by definition, reduce reproduction, distribution, or numbers of the Gulf sturgeon. Critical habitat designation, therefore, will not add protection in occupied habitat because the definition of destruction or adverse modification and that of jeopardy both require an effect on survival (and recovery) of the species. The high priority tasks are summarized as follows:

Priority	Task	Habitat value affected, not reproduction, numbers, or distribution	Net benefit from critical habitat?
1	1.3.1 Develop and implement monitoring techniques	No	No.
1	2.5.3 Regulate accidental and intentional introductions	No	No.
1	2.1.2 Reduce or eliminate incidental mortality	No	No.
1	2.4.5 Restore natural river habitats	No	No.
1	2.3.1 Protect habitat with existing laws or additional laws or incentives	Potentially	No.
2	2.1.1 Effectively enforce take prohibitions	No	No.
2	1.1.1 Locate important habitats	No	No.
2	1.1.2 Characterize essential habitat areas	No	No.
2	1.2 Conduct life history studies	No	No.
2	2.2.1 Identify contaminants	No	No.
2	2.2.2 Eliminate contaminants	Potentially	No.
2	2.4.6 Coordinate consistent water projects	No	No.
2	2.4.1 Identify dam/lock sites for restoration	Yes	No.
2	2.4.4 Minimize effects of navigation projects	Potentially	No.
2	4.3 Implement projects to achieve recovery plan objectives	No	No.
2	4.2 Seek funding for recovery activities	No	No.
2	2.2.4 Eliminate impacts to water quality and quantity	Potentially	No.
2	2.2.5 Assess effects of groundwater pumping on riverine habitat	No	No.

Tasks 1.3.1, 2.5.3, 2.1.2, and 2.1.1 are not habitat related and would not benefit from critical habitat designation. Tasks 1.1.1, 1.1.2, 1.2, 2.2.1, 2.4.6, 2.4.1, 4.3, 4.2, and 2.2.5 are informational or procedural and are, therefore, also independent of potential critical habitat benefits.

Tasks 2.4.5 and 2.3.1 address both occupied and unoccupied habitat; however, there is no priority 1 or 2 task in the plan requiring additional authority for protecting unoccupied habitat. Protection of unoccupied habitat is, therefore, essential for full recovery, but not for survival of the Gulf sturgeon.

Under tasks 2.2.2, 2.2.4 and 2.4.4 navigation and water quality and quantity projects in unoccupied habitat will not affect survival of the Gulf sturgeon unless they indirectly affect its reproduction, distribution, or numbers in occupied areas. The criterion requiring harm to both "survival and recovery" is not met by projects affecting only unoccupied habitat.

Most of the Plan tasks involve activities that affect the reproduction, numbers, and distribution of the Gulf

sturgeon, and, therefore, for which critical habitat designation would afford no additional protection. Tasks that would potentially receive additional protection from the section 7 prohibition on destruction or adverse modification of critical habitat are those that involve unoccupied habitat, where habitat might be reduced in value without affecting reproduction, numbers, or distribution of the Gulf sturgeon. However, habitat related tasks in the Plan involving unoccupied habitat do not meet the "survival and recovery" criterion in the definition of destruction or adverse modification. In summary, no high priority recovery plan actions (those which are designed to ensure survival of the Gulf sturgeon) have been identified that would benefit from critical habitat designation. Known or anticipated Federal agency actions that would appreciably diminish the value of critical habitat of the Gulf sturgeon (thereby invoking the destruction or adverse modification standard) would also reduce appreciably the likelihood of both the survival and recovery of the species by reducing its reproduction, numbers, or

distribution (thus triggering the jeopardy standard). Both definitions require impairment of survival and recovery and are functionally equivalent.

Based on the above discussion, the Services have determined that the lack of additional conservation benefit from critical habitat designation for this species makes such designation not prudent.

References Cited

A complete list of all references cited herein is available upon request from the Jacksonville Field Office (see ADDRESSES section).

Authors: The primary authors of this document are Dr. Michael M. Bentzien and Mr. Francis M. Parauka, FWS; and Ms. Colleen Coogan, NMFS (see ADDRESSES section).

Authority: The authority for this action is the Endangered Species Act, as amended (16 U.S.C. 1531 *et seq.*).

Dated: February 20, 1998.

Jamie Rappaport Clark,
Director, Fish and Wildlife Service.

Dated: February 24, 1998.

David L. Evans,
*Deputy Assistant Administrator for Fisheries,
National Marine Fisheries Service.*

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 679

[Docket No. 971208296-7296-01; I.D. 022098B]

Fisheries of the Exclusive Economic Zone Off Alaska; Offshore Component of Pollock in the Aleutian Islands Subarea

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Closure.

SUMMARY: NMFS is prohibiting directed fishing for pollock by vessels catching pollock for processing by the offshore component in the Aleutian Islands subarea (AI) of the Bering Sea and Aleutian Islands management area (BSAI). This action is necessary to prevent exceeding the proposed first seasonal allowance of pollock apportioned to vessels catching pollock for processing by the offshore component in the AI of the BSAI.

DATES: Effective 1200 hrs, Alaska local time (A.l.t.), February 23, 1998, until 2400 hrs, A.l.t., December 31, 1998.

FOR FURTHER INFORMATION CONTACT:
Mary Furuness, 907-586-7228.

SUPPLEMENTARY INFORMATION: The groundfish fishery in the BSAI exclusive economic zone is managed by NMFS according to the Fishery Management Plan for the Groundfish Fishery of the Bering Sea and Aleutian Islands Area (FMP) prepared by the North Pacific Fishery Management Council under authority of the Magnuson-Stevens Fishery Conservation and Management Act. Fishing by U.S. processors is governed by regulations implementing the FMP at subpart H of 50 CFR part 600 and 50 CFR part 679.

In accordance with § 679.20(c)(2)(ii), the proposed first seasonal allowance of pollock apportioned to vessels catching pollock for processing by the offshore component in the AI of the BSAI was established as 15,470 metric tons (mt) by the Interim 1998 Harvest Specifications of Groundfish for the BSAI (62 FR 65626, December 15, 1997).

In accordance with § 679.20(d)(1)(i), the Administrator, Alaska Region, NMFS (Regional Administrator), has determined that the proposed first seasonal allowance of pollock apportioned to vessels catching pollock for processing by the offshore component in the AI of the BSAI soon will be reached. Therefore, the Regional Administrator is establishing a directed fishing allowance of 13,470 mt, and is setting aside the remaining 2,000 mt as bycatch to support other anticipated groundfish fisheries. In accordance with § 679.20(d)(1)(iii), the Regional Administrator finds that this directed fishing allowance will soon be reached. Consequently, NMFS is prohibiting directed fishing for pollock by vessels catching pollock for processing by the

offshore component in the AI of the BSAI.

Maximum retainable bycatch amounts for applicable gear types may be found in the regulations at § 679.20(e) and (f).

Classification

This action responds to the best available information recently obtained from the fishery. It must be implemented immediately in order to prevent overharvesting the proposed first seasonal allowance of pollock apportioned to vessels catching pollock for processing by the offshore component in the AI of the BSAI. A delay in the effective date is impracticable and contrary to the public interest. The fleet has already taken the proposed first seasonal allowance of pollock apportioned to vessels catching pollock for processing by the offshore component in the AI of the BSAI. Further delay would only result in overharvest which would disrupt the FMP's objective of providing sufficient pollock as bycatch to support other anticipated groundfish fisheries. NMFS finds for good cause that the implementation of this action can not be delayed for 30 days. Accordingly, under 5 U.S.C. 553(d), a delay in the effective date is hereby waived.

This action is required by § 679.20 and is exempt from review under E.O. 12866.

Authority: 16 U.S.C. 1801 *et seq.*

Gary C. Matlock,

*Director, Office of Sustainable Fisheries,
National Marine Fisheries Service.*

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