DEPARTMENT OF COMMERCE Signed 05/24/2002

National Oceanic and Atmospheric Administration

50 CFR Part 226

[Docket No. 0202522126-2126-01; I.D. 052002A]

RIN 0648-AQ03

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AI23

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

AGENCY: Fish and Wildlife Service, Interior, and National Oceanic and Atmospheric Administration, Commerce.

ACTION: Proposed rule.

SUMMARY: We, the Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS), collectively "the Services," propose to designate critical habitat for the Gulf sturgeon (Acipenser oxyrinchus desotoi), a threatened species listed under the Endangered Species Act of 1973, as amended (Act). We propose 14 geographic areas among the Gulf of Mexico rivers and tributaries as critical habitat for the Gulf sturgeon. These 14 geographic areas (units) encompass approximately 2,544 river kilometers (rkm) (1,580 river miles (rmi)) and 6,042 square kilometers (km^2) (2,333 square miles (mi^2)) of estuarine and marine habitat.

Critical habitat identifies specific areas that are essential to the conservation of a listed species, and that may require special management considerations or protection. If this proposal is made final, section 7(a)(2) of the Act requires that Federal agencies ensure that actions they fund, permit, or carry out are not likely to result in the destruction or adverse modification of critical habitat. The regulatory effect of the critical habitat designation does not extend beyond those activities funded, permitted, or carried out by Federal agencies. State or private actions, with no Federal involvement, are not affected.

Section 4 of the Act requires us to consider the economic and other relevant impacts of specifying any particular area as critical habitat. We hereby solicit data and comments from the public on all aspects of this proposal, including data on the economic and other impacts of the designation.

DATES: Comments: We will accept comments until September 23, 2002.

Public Hearings: We have scheduled four public hearings for this proposal. We will hold public

informational meetings prior to each public hearing at the hearing location. The public information sessions will start at 5:00 p.m. and end at 6:30 p.m.. The formal public hearings will start at 7:00 p.m. and end at 9:00 p.m. on the dates indicated:

(1) August 19, 2002, Live Oak, FL.

(2) August 20, 2002, Defuniak Springs, FL.

(3) August 21, 2002, Biloxi, MS.

(4) August 22, 2002, Kenner, LA.

All comments received during the comment period, both written and presented at public hearings, will receive equal consideration.

ADDRESSES: Comments: If you wish to comment, you may submit your comments by any one of several methods:

(1) You may submit written comments and information to the Panama City Field Office, addressed to Patty Kelly, U.S. Fish and Wildlife Service, 1601 Balboa Avenue, Panama City, FL 32405.

(2) You may hand-deliver written comments to the Panama City Field Office, at the above address, or fax your comments to 850/763-2177.

(3) You may send comments by electronic mail (e-mail) to gulfsturgeon@fws.gov. For directions on electronic filing of comments, see the "Public Comments Solicited" section.

Comments and materials received, as well as supporting documentation used in the preparation of this proposed rule, will be available for public inspection, by appointment, during normal business hours at the above address.

Public Hearings:

(1) Suwannee River Water Management District, 9225 C.R. 49, Live Oak, FL 32060.

(2) City of Defuniak Springs, 71 U.S. Highway 90 West, Chautauqua Building, Museum Room, Defuniak Springs, FL 32433.

(3) J.L. Scott Marine Ed Center, 115 Beach Boulevard, Biloxi, MS 39530.

(4) Hilton New Orleans Airport, 901 Airline Drive, Kenner, LA 70062.

FOR FURTHER INFORMATION CONTACT: Patty Kelly, FWS, at the above address (telephone 850/769-0552, extension 228; facsimile 850/763-2177) with questions concerning units 1 to 7; or Stephania Bolden, NMFS, at 9721 Executive Center Drive North, St. Petersburg, FL 33702-2449, (telephone 727/570-5312; facsimile 727/570-5517) with questions concerning units 8 to 14.

SUPPLEMENTARY INFORMATION:

Background

The Gulf sturgeon (Acipenser oxyrinchus (=oxyrhynchus) desotoi), also known as the Gulf of Mexico sturgeon, is an anadromous fish (ascending rivers from the sea for breeding), inhabiting coastal rivers from Louisiana to Florida during the warmer months and overwintering in estuaries, bays, and the Gulf of Mexico. It is a nearly cylindrical primitive fish embedded with bony plates or scutes. The snout is greatly extended with four barbels in front of the mouth and the suction type mouth is located beneath the head. The upper lobe of the tail is longer than the lower lobe. Adults range from 1.8 to 2.4 meters (m) (6 to 8 feet (ft)) in length, with adult females larger than males. The Gulf sturgeon is distinguished from the geographically disjunct Atlantic coast subspecies (A. o. oxyrinchus) by its longer head, pectoral fins, and spleen (Vladykov 1955, Wooley 1985).

Distribution and Status

Historically, the Gulf sturgeon occurred from the Mississippi River to Tampa Bay. Its present range extends from Lake Pontchartrain and the Pearl River system in Louisiana and Mississippi east to the Suwannee River in Florida. Sporadic occurrences have been recorded as far west as the Rio Grande River between Texas and Mexico, and as far east and south as Florida Bay (Wooley and Crateau 1985, Reynolds 1993).

In the late 19th century and early 20th century, the Gulf sturgeon supported an important commercial fishery, providing eggs for caviar, flesh for smoked fish, and swim bladders for isinglass, a gelatin used in food products and glues (Carr 1983). Gulf sturgeon numbers declined due to overfishing throughout most of the 20th century. The decline was exacerbated by habitat loss associated with the construction of water control structures, such as dams and sills, mostly after 1950. In several rivers throughout its range, dams have severely restricted sturgeon access to historic migration routes and spawning areas (Boschung 1976, Wooley and Crateau 1985, McDowell 1988).

On September 30, 1991, we listed the Gulf sturgeon as a threatened species under the Act (16 U.S.C. 1531 et seq.) (56 FR 49653). Other threats and potential threats identified in the listing rule included modifications to habitat associated with dredged material disposal, de-snagging, and other navigation maintenance activities; incidental take by commercial fishermen; poor water quality associated with contamination by pesticides, heavy metals, and industrial contaminants; aquaculture and incidental or accidental introductions; and the Gulf sturgeon's slow growth and late maturation. The Gulf sturgeon listing rule and the Gulf Sturgeon Recovery/Management Plan (FWS et al. 1995), which was approved by the Services and the Gulf States Marine Fisheries Commission, provide a more detailed discussion of the reasons for the species' decline and threats to surviving populations.

The Gulf Sturgeon Recovery/Management Plan (FWS et al. 1995) recommended that genetic studies be done to determine geographically distinct management units. Some work in this regard has been completed (Waldman and Wirgin 1998), but we have not formally adopted management units at this time. For purposes of this proposed rule, we have used the term subpopulation to subdivide the Gulf sturgeon population based on geography, degree of connectedness, and genetic interchange (Lande and Barrowclough 1987). Seven subpopulations are described below.

Feeding Habits

Gulf sturgeon feeding habits in freshwater vary depending on the fish's life history stage (i.e., young-of-year, juvenile, subadult, adult). Young-of-year Gulf sturgeon remain in freshwater through early February feeding on aquatic invertebrates and detritus (Mason and Clugston 1993, Sulak and Clugston 1999). Juvenile feeding is believed to be widely distributed, exploiting scarce food resources throughout the river, including aquatic insects (e.g., mayflies and caddisflies), worms (oligochaetes), and bivalve molluscs (Huff 1975, Mason and Clugston 1993). Mason and Clugston (1993) found that subadult and adult Gulf sturgeon collected during June and October do not feed in fresh water.

Many reports indicate that adult and subadult Gulf sturgeon fast and lose up to 30 percent of their total body weight while in fresh water, and then compensate the loss during winter feeding in the sea (Carr 1983, Wooley and Crateau 1985, Clugston et al. 1995, Morrow et al. 1998a, Heise et al. 1999a, Sulak and Clugston 1999, Ross et al. 2000). Gu et al. (2001) tested the hypothesis that Gulf sturgeon do not feed significantly during their annual residence in fresh waters by comparing stable carbon isotope ratios of tissue samples from subadult and adult Suwannee River Gulf sturgeon and their potential fresh water and marine food sources. A large difference in isotope ratios between fresh water food sources and fish muscle tissue suggests that Gulf sturgeon do not feed significantly in fresh waters. The isotope similarity between Gulf sturgeon and marine food resources strongly indicates that this species relies almost entirely on the marine food web for its growth (Gu et al. 2001).

Once Gulf sturgeon leave the river, having spent at least 6 months in the river fasting, we presume that they immediately begin feeding. Upon exiting the rivers, Gulf sturgeon are found in high concentrations near their natal river mouths. Lakes and bays at the mouths of the river systems where Gulf sturgeon occur are important because they offer the first opportunity for Gulf sturgeon exiting their natal rivers to forage. Gulf sturgeon rely almost entirely on estuarine and marine food for their growth (Gu et al. 2001). Gulf sturgeon must be able to consume sufficient quantities of prey while in estuarine and marine waters to regain the weight they lose while in the river system and to maintain positive growth on a yearly basis. In addition, reproductive Gulf sturgeon require additional food resources to obtain sufficient energy necessary for reproduction (Fox et al. in press, Murie and Parkyn pers. comm. 2002).

Adult and subadult Gulf sturgeon, during marine and estuarine periods, are thought to forage opportunistically (Huff 1975), primarily on benthic (bottom dwelling) invertebrates. Gut content analyses have indicated that the Gulf sturgeon's diet is predominated by amphipods, lancelets, polychaetes, gastropods, shrimp, isopods, molluscs, and crustaceans (Huff 1975, Mason and Clugston 1993, Carr et al. 1996b, Fox et al. 2000, Fox et al. in press). Gulf sturgeon from the Suwannee River subpopulation are known to forage on brachiopods (D. Murie and D. Parkyn, University of Florida (UF), pers. comm. 2002); however this is not a documented prey of other subpopulations. Ghost shrimp (Lepidophthalmus louisianensis) and the haustoriid amphipod (Lepidactylus sp.) are strongly suspected to be the most important prey for adult Gulf sturgeon over 20 kilograms (kg) (44 pounds (lb)) (Heard et al. 2000, Fox et al. in press). This hypothesis is based on the following evidence--(1) Gulf sturgeon have been consistently located and observed actively feeding in areas where numerous burrows similar to those occupied by ghost shrimp exist (Fox et al. 2000) and with high densities of both ghost shrimp and haustoriid amphipods (Heard et al. 2000), (2) the digestive tracts of two adult Gulf sturgeon that died during netting operations contained numerous ghost shrimp (Fox et al. 2000), (3) stomach contents of a 30 kg (67 lb) sturgeon taken in the upper portion of Choctawhatchee Bay contained more than 100 individual haustoriid amphipods and 67 ghost shrimp (Heard et al. 2000), and (4) one-third of 157

sturgeon guts analyzed by Carr et al. (1996b) contained exclusively brachipods and ghost shrimp.

Reproduction

Gulf sturgeon are long-lived, with some individuals 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). Gulf sturgeon eggs are demersal (they are heavy and sink to the bottom), adhesive, and vary in color from gray to brown to black (Vladykov 1963, Huff 1975, Parauka et al. 1991). Chapman et al. (1993) estimated that mature female Gulf sturgeon produce an average of 400,000 eggs. Habitat at egg collection sites consist of limestone bluffs and outcroppings, cobble, limestone bedrock covered with gravel and small cobble, gravel, and sand (Marchant and Shutters 1996, Sulak and Clugston 1999, Fox et al. 2000). A dense matrix of gravel or cobble is probably essential for Gulf sturgeon egg adhesion and the sheltering of the yolk sac larvae, and is a habitat the adults apparently select (Sulak and Clugston 1999). Other substrates identified as possible spawning habitat include marl (clay with substantial calcium carbonate), soapstone, or hard clay (W. Slack, Mississippi Museum of Natural Science, pers. comm. 2002; F. Parauka, FWS, pers. comm. 2002). Water depths at egg collection sites ranged from 1.4 to 7.9 m (4.6 to 26 ft), with temperatures ranging from 18.3 to 22.0 degrees Celsius (°C) (64.9 to 71.6 degrees Fahrenheit (°F)) (Fox et al. 2000). Laboratory experiments indicated optimal water temperature for survival of Gulf sturgeon larvae is between 15 and 20°C (59 and 68°F), with low tolerance to temperatures above 25°C (77°F) (Chapman and Carr 1995).

Sulak and Clugston (1999) suggested that sturgeon spawning activity in the Suwannee River is related to the lunar phase of the moon, but only after the water temperature has risen to 17°C (62.6°F). Fox et al. (in press) however, found little evidence of spawning associated with lunar cycles within the Choctawhatchee River system. Spawning in the Suwannee River occurs during the general period of spring high water, when ionic conductivity and calcium ion concentration are most favorable for egg development and adhesion (Sulak and Clugston 1999). Fox et al. (in press) found no clear pattern between timing of river entrance and flow patterns on the Choctawhatchee River.

Atlantic sturgeon (A. oxyrhynchus) exhibit a long inter-spawning period, with females spawning at intervals ranging from every 3 to 5 years, and males every 1 to 5 years (Smith 1985). It is believed that Gulf sturgeon exhibit similar behavior, as male Gulf sturgeon are capable of annual spawning, and females require more than one year between spawning events (Huff 1975, Fox et al. 2000).

Fresh Water Habitat

In the spring (March to May), adult and subadult Gulf sturgeon return to their natal river, where sexually mature sturgeon spawn, and the population spends until October or November (6 to 8 months) in fresh water rivers (Odenkirk 1989, Foster 1993, Clugston et al. 1995, Fox et al. 2000). During their early life history stages, sturgeon require bedrock and clean gravel or cobble substrate for eggs to adhere to and for shelter for developing larvae (Sulak and Clugston 1998). Young-of-year appear to disperse widely, using extensive portions of the river as nursery habitat. They are typically found on sandbars and sand shoals over rippled bottom and in shallow, relatively open, unstructured areas. This dispersion may be an adaptation to maximize scarce food resources (Randall and Sulak 1999). Clugston et al. (1995) reported that young Gulf sturgeon in the Suwannee River, weighing between 0.3 and 2.4 kg (0.7 and 5.3 lb), remain in the vicinity of the river mouth and estuary during the winter and spring.

Adult Gulf sturgeon spawn in upper river reaches. On some river systems such as the Pascagoula River and Apalachicola River, adult and subadult Gulf sturgeon remain near the spawning grounds throughout the summer months (Wooley and Crateau 1985, Ross et al. 2001b). However, in other rivers Gulf sturgeon spawn and move downstream to areas referred to as summer resting or holding areas. Adults and subadults are not distributed uniformly throughout the river, but show a preference for these discrete areas usually located in lower and middle river reaches (Potak et al. 1995). Often, these resting areas are located in close proximity to springs throughout the warmest months of the year, but not located within a spring or thermal plume emanating from a spring (Clugston et al. 1995, Potak et al. 1995, Foster and Clugston 1997). These resting areas are also often located in deep holes or shallow areas along straight-aways ranging from 2 to 19 m (6.6 to 62.3 ft) deep (Wooley and Crateau 1985, Morrow et al. 1998a, Ross et al. 2001a and b, Craft et al. 2001, Hightower et al. in press). The substrates consisted of mixtures of limerock and sand (Clugston et al. 1995), sand and gravel (Wooley and Crateau 1985, Morrow et al. 1998a), or just sandy substrate (Hightower et al. in press).

River flow may serve as an environmental cue that governs both sturgeon migration and spawning (Chapman and Carr 1995). If the flow rate is too high, sturgeon in several life-history stages can be adversely affected. Data describing the sturgeon's swimming ability in the Suwannee River strongly indicated that they cannot continually swim against prevailing currents of greater than 1 to 2 m per second (3.2 to 6.6 ft per second) (Wakeford 2001). If the flow is too strong, eggs might not be able to settle on and adhere to suitable substrate (Wakeford 2001). Flow velocity needs for age zero sturgeon may vary depending on substrate type. Chan et al. (1997) found that age zero Gulf sturgeon under laboratory conditions exposed to water velocities over 12 centimeters per second (cm/s) (4.7 inches per second (in/s)) preferred a cobble substrate, but favored water velocities under 12 cm/s (4.7 in/s) and then utilized a variety of substrates (sand, gravel, and cobble). Natural surface and groundwater discharges influence a river's characteristic fluctuations in volume, depth, and velocity (Leitman et al. 1993, Albertson and Torak 2002).

Gulf sturgeon require large areas of diverse habitat that have natural variations in water flow, velocity, temperature, and turbidity (FWS et al. 1995, Wakeford 2001). Change in temperature is one of the most important factors in initiating sturgeon migration (Wooley and Crateau 1985, Chapman and Carr 1995, Foster and Clugston 1997) (see the "Migration" section for temperature ranges). Laboratory experiments show that Gulf sturgeon eggs, embryos, and larvae have the highest survival rates when temperatures are between 15 and 20°C (59 and 68°F). Mortality rates of Gulf sturgeon gametes and embryos are highest when temperatures are 25°C (77°F) and above (Chapman and Carr 1995) (see "Reproduction" section for more detail). Researchers have documented temperature ranges at Gulf sturgeon resting areas between 15.3 and 33.7°C (59.5 and 92.7°F) with dissolved oxygen levels between 5.6 and 9.1 milligrams per liter (mg/l) (Morrow et al. 1998a, Hightower et al. in press).

In comparison to other fish species, sturgeon have a limited behavioral and physiological capacity to respond to hypoxia (insufficient oxygen levels) (Secor and Niklitschek 2001). Basal metabolism, growth, consumption, and survival are sensitive to changes in oxygen levels (Secor and Niklitschek 2001). Temperatures greater than 20°C (68°F) amplify the effect of hypoxia on sturgeon and other fishes (Coutant 1987). In laboratory experiments, young shortnose sturgeon (A. brevirostrum) (less than 77 days old) died at oxygen levels of 3.0 mg/l and all sturgeon died at oxygen levels of 2.0 mg/l (Jenkins et al. 1993). Data concerning the temperature, oxygen, and current velocity requirements of cultured sturgeon are being collected. Researchers plan to use this information to develop detailed information on

water flow requirements of wild sturgeon throughout different phases of their fresh water residence (Wakeford 2001).

Estuarine and Marine Habitat

Subadult and adult Gulf sturgeon spend cool months (October or November through March or April) in estuarine areas, bays, or in the Gulf of Mexico (Odenkirk 1989, Foster 1993, Clugston et al. 1995). Studies of subadult Gulf sturgeon (ages 4 to 7) in Choctawhatchee Bay found that 78 percent of tagged fish remained in the bay the entire winter, while 13 percent ventured into a connecting bay. Possibly 9 percent spent some time in the Gulf of Mexico (FWS 1998). Adult Gulf sturgeon are more likely to overwinter in the Gulf of Mexico, with 40 percent of the tagged adults presumed to have left Choctawhatchee Bay and spent extended periods of time in the Gulf of Mexico (Fox and Hightower 1998a). In contrast, Gulf sturgeon from the Suwannee River subpopulation are known to migrate into the nearshore waters, where they remain for up to two months and then depart to unknown feeding locations in the open Gulf of Mexico (Carr et al. 1996b, Edwards et al. in prep.).

Subadult Gulf sturgeon show a preference for sandy shoreline habitats with water depths less than 3.5 m (11.5 ft) and salinities less than 6.3 parts per thousand (Parauka et al. in press). Fox and Hightower (1998a) found that adult Gulf sturgeon monitored in Choctawhatchee Bay use some of the same habitats as subadults. Some subadult Gulf sturgeon use seagrass habitats in Choctawhatchee Bay. However, the majority of tagged fish have been located in areas lacking seagrass (Parauka et al. in press). Adult Gulf sturgeon also have not been frequently found in areas containing seagrass, which were concentrated in the western portion of the bay.

Craft et al. (2001) found that Gulf sturgeon in Pensacola Bay appear to prefer shallow shoals 1.5 to 2.1 m (5 to 7 ft) and deep holes near passes. Unvegetated, fine to medium-grain sand habitats, such as sandbars, and intertidal and subtidal energy zones resulting in sediment sorting and a preponderance of sand support a variety of potential prey items including estuarine crustaceans, small bivalve mollusks, and lancelets (Brim pers. comm. 2002, Menzel 1971, Abele 1986, American Fisheries Society 1989).

Habitats used by Gulf sturgeon in the vicinity of the Mississippi Sound barrier islands tend to have a sand substrate and an average depth of 1.9 to 5.9 m (6.2 to 19.4 ft). Preliminary data from bottom samples taken in these barrier island areas show that all samples contain lancelets (Branchiostoma). Since lancelets are a documented prey of Gulf sturgeon, it is likely that Gulf sturgeon are feeding along the sand substrate at barrier island passes (Ross et al. 2001a). Gulf nearshore (less than 1.6 km (1 mi)) unconsolidated, fine-medium grain sands, including natural inlets and passes from the Gulf to estuaries, support crustaceans such as mole crabs, sand fleas, various amphipod species, and lancelets (Brim pers. comm. 2002, Menzel 1971, Abele 1986, American Fisheries Society 1989).

Estuary and bay unvegetated "mud" habitats having a preponderance of natural silts and clays support burrowing and deep burrowing crustaceans, such as ghost shrimp, small crabs, also various polychaete worms, and small bivalve mollusks (Brim pers. comm. 2002, Menzel 1971, Abele 1986, American Fisheries Society 1989). Gulf sturgeon are found in these areas and since these are known food sources, it is assumed that Gulf sturgeon are also feeding in these areas.

Migration

Migratory behavior of the Gulf sturgeon varies by sex, maturity, water temperature, and river flow. Male Gulf sturgeon generally enter the rivers earlier in the spring and move greater distances than females; ripe (in reproductive condition) males and females enter the river earlier than nonripe fish (Fox et al. 2000). Adults and subadults begin moving from the estuaries, bays, and Gulf of Mexico into the coastal rivers in early spring (i.e., March through May) when river water temperatures range from 16.0 to 23.0°C (60.8 to 73.4°C) (Huff 1975, Carr 1983, Wooley and Crateau 1985, Odenkirk 1989, Clugston et al. 1995, Foster and Clugston 1997, Fox and Hightower 1998, Sulak and Clugston 1999, Fox et al. 2000). Some research supports the theory that spring migration coincides with the general period of spring high water (Sulak and Clugston 1999), while observations on other rivers systems do not support this theory (Fox et al. in press).

Fall downstream migration from fresh to saltwater begins in September (at about 23ºC (73.4°F)) and continues through November (Huff 1975, Wooley and Crateau 1985, Foster and Clugston 1997). During the fall migration from fresh to saltwater, Gulf sturgeon may require a period of physiological acclimation to changing salinity levels, referred to as osmoregulation or staging, (Wooley and Crateau 1985). This period may be short (Fox et al. in press) as sturgeon develop an active mechanism for osmoregulation and ionic balance by age one (Altinok 1997). On some river systems, timing of the fall migration appears to be associated with pulses of higher river discharge (Heise et al. 1999a and b, Ross et al. 2000 and 2001b, Parauka et al. in press).

Sturgeon ages 1 through 6 remain in the mouth of the Suwannee River over winter. In late January through early February, young-of-the-year Gulf sturgeon migrate down river for the first time (Sulak and Clugston 1999). Huff (1975) noted that juvenile Gulf sturgeon in the Suwannee River most likely participated in pre- and post-spawning migrations, along with the adults.

Findeis (1997) describes sturgeon (Acipenseridae) as exhibiting evolutionary traits adapted for benthic cruising. Tracking observations by Sulak and Clugston (1999), Edwards et al. (in prep.), and Fox et al. (in press) support that individual fish move over an area until they encounter suitable prey type and density, at which time they forage for extended periods of time. Individual fish often remained in localized areas (less than 1 km^2 (0.4 mi^2) for extended periods of time (greater than two weeks) and then moved rapidly to another area where localized movements occurred again (Fox et al. in press). It is unknown precisely how much benthic area is needed to sustain Gulf sturgeon health and growth, but because Gulf sturgeon have been known to travel long distances (greater than 161 km (100 mi)) during their winter feeding phase, significant resources must be necessary. These winter migrations are an important strategy for feeding and for occasional travel to non-natal rivers for possible spawning and genetic interchange. Bays and portions of Gulf of Mexico waters adjacent to the lakes and bays near the mouths of the rivers where Gulf sturgeon occur are believed to be important for feeding and/or migrating (for increased gene flow and, therefore, increased genetic stability among subpopulations).

When temperature drops occur that are associated with major cold fronts, researchers of the Escambia, Yellow, and Suwannee River subpopulations have been unable to locate adult Gulf sturgeon within the bays (Craft et al. 2001, Fox et al. in press, Edwards et al. in prep.). It is hypothesized that the cold fronts disperse sturgeon to more distant foraging grounds. It is currently unknown whether Gulf sturgeon undertake extensive offshore migrations, and further study is needed to determine whether important winter feeding habitat occurs in farther offshore areas.

Sulak and Clugston (1999) describe two hypotheses regarding where adult Gulf sturgeon may overwinter in the Gulf of Mexico to find abundant prey. The first hypothesis is that Gulf sturgeon spread along the coast in nearshore waters in depths less than 10 m (33 ft). The alternative hypothesis is that they migrate far offshore to the broad sedimentary plateau in deep water (40 to 100 m (131 to 328 ft)) west of the Florida Middle Grounds, where over twenty species of bottom-feeding fish congregate in the winter (Darnell and Kleypas 1987). Available data support the first hypothesis. Evaluation of tagging data has identified several nearshore Gulf of Mexico feeding migrations, but no offshore Gulf of Mexico feeding migrations. Telemetry data document Gulf sturgeon from the Pearl River and Pascagoula River subpopulations migrate from their natal bay systems to Mississippi Sound and move along the barrier islands on both the barrier island passes (Ross et al. 2001a, Rogillio et al. in prep.). Gulf sturgeon from the Choctawhatchee River, Yellow River, and Apalachicola River have been documented migrating in the nearshore Gulf of Mexico waters between Pensacola and Apalachicola Bays units (Fox et al. in press, F. Parauka pers. comm. 2002). Telemetry data from the Gulf of Mexico mainly show sturgeon in depths of 6 m (19.8 ft) or less (Ross et al. 2001a, Rogillio et al. in prep., Fox et al. in press, F. Parauka pers. comm. 2002).

River-Specific Fidelity

Stabile et al. (1996) analyzed Gulf sturgeon subpopulations from eight drainages along the Gulf of Mexico for genetic diversity. They 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 Pontchartrain and Pearl River, (2) Pascagoula River, (3) Escambia and Yellow Rivers, (4) Choctawhatchee River, and (5) Apalachicola, Ochlockonee, and Suwannee Rivers.

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. Of these, 860 fish (21 percent) were recaptured in the river of their initial collection. Only eight subadults (.002 percent) moved between rivers (FWS et al. 1995). 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.

To date, biologists have documented a total of 21 Gulf sturgeon making inter-river movements from natal rivers. They are as follows--Apalachicola River to Suwannee River, six Gulf sturgeon (Carr et al. 1996b); Suwannee River to Apalachicola River, three sturgeon (Carr et al. 1996b, F. Parauka pers. comm. 2002); Choctawhatchee River to Apalachicola River, one sturgeon (F. Parauka pers. comm. 2002); Yellow River to Choctawhatchee River, three sturgeon (one adult female, one subadult female) (Craft et al. 2001); Yellow River to Louisiana Estuarine area, one female sturgeon (Craft et al. 2001); Escambia River to Yellow River, one mature female on spawning grounds (Craft et al. 2001); Suwannee River to Ochlockonee River, one sturgeon (FWS et al. 1995); Choctawhatchee River to Escambia River, one male sturgeon (Fox et al. in press); Choctawhatchee River to Escambia, one female sturgeon (Fox et al. in press); Pearl River (Bogue Chitto) to Pascagoula River, one sturgeon (Ross et al. 2001b); Choctawhatchee River to Pascagoula River, one subadult sturgeon (Ross et al. 2001b); and Pascagoula River to Yellow River, one sturgeon (Ross et al. 2001b). Tallman and Healey (1994) note that observed straying rates between rivers were not the same as actual gene flow rates, i.e. inter-stock movement does not equate to successful reproduction. The gene flow is low in Gulf sturgeon stocks, with each stock

exchanging less than one mature female per generation (Waldman and Wirgin 1997).

Previous Federal Action

Federal action on the Gulf sturgeon began in 1982, when the fish was included as a Category 2 candidate species for listing in the FWS's vertebrate notices of review dated December 30, 1982 (47 FR 58454) and September 18, 1985 (50 FR 37958), and in the animal notice of review dated January 6, 1989 (54 FR 554). At that time, the FWS gave Category 2 designation 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. A status report on the Gulf sturgeon (Hollowell 1980) had concluded that the fish had been reduced to a small population due to overfishing and habitat loss. In 1988, the FWS completed a report on the conservation status of the Gulf sturgeon, which recommended listing it as a threatened species (Barkuloo 1988).

The Services jointly proposed the Gulf sturgeon for listing as a threatened species on May 2, 1990 (55 FR 18357). In that proposed rule, we stated that designation of critical habitat was not prudent due to the species' broad range and the lack of knowledge about specific areas used by the species. We published the final rule on September 30, 1991 (56 FR 49653) to add Gulf sturgeon to the list of threatened species, and included a special rule under section 4(d) of the Act to allow the take of Gulf sturgeon, in accordance with applicable State fish and wildlife conservation laws and regulations, for educational and scientific purposes, the enhancement of propagation or survival of the species, zoological exhibition, and other conservation purposes. In the final rule, we found that a critical habitat designation may be prudent but was not determinable. Section 4(b)(6)(C) of the Act provides that a concurrent critical habitat determination is not required with a final regulation implementing endangered or threatened status and that the final designation may be postponed for one additional year beyond the period specified in section 4(b)(6)(A), if a prompt determination of endangered or threatened status is essential to the conservation of the species, or critical habitat is not then determinable. We found that prompt determination of threatened status was essential to the conservation of the species and stated that we would make a final decision on designation of critical habitat by May 2, 1992. This decision, however, was not made.

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 on October 11, 1994 (Orleans Audubon Society v. Babbitt, Civ. No. 94-3510 (E.D. La)). Following a court order on August 9, 1995, granting the Fund's motion for summary judgement, the Services published a notice of decision on critical habitat designation for the Gulf sturgeon on August 23, 1995 (60 FR 43721). We determined that critical habitat designation was not prudent based on the lack of additional conservation benefit to the species.

On September 22, 1995, the Services and the Gulf States Marine Fisheries Commission approved the Gulf Sturgeon Recovery/Management Plan (FWS et al. 1995). The recovery plan established the criteria that must be met prior to the delisting of the Gulf sturgeon. The recovery plan also identified the actions that are needed to assist in the recovery of the Gulf sturgeon.

On August 12, 1996, the plaintiffs filed a motion to add the Department of Commerce as a

defendant in the lawsuit. The Fund amended their complaint to challenge the August 1995 "not prudent" determination. On October 30, 1997, the court granted the plaintiffs' motion for summary judgment, with relief restricted to a remand of the "not prudent" determination to the Services, requiring that the Services publish a determination on designation of critical habitat, based on the best scientific information available. On February 27, 1998, we published a notice of decision (63 FR 9967) on critical habitat designation for the Gulf sturgeon. We again determined that lack of additional conservation benefit from critical habitat designation for this species made such designation not prudent.

On December 18, 1998, the Sierra Club sued the Services challenging the new determination not to designate critical habitat for the Gulf sturgeon (Sierra Club v. U.S. Fish and Wildlife Service et al. CA No. 98-3788 (E.D. La.)). On January 25, 2000, the Court issued an order granting our motion for summary judgment and dismissing the complaint. The Sierra Club filed an appeal and, in March 2001, the United States Court of Appeals for the Fifth Circuit reversed the decision of the District Court and instructed the District Court to remand the decision to us for reconsideration (Sierra Club v. U.S. Fish and Wildlife Service, 245 F.3d 434 (5th Cir. 2001)). On August 3, 2001, the District Court issued an order directing us to publish a proposed decision concerning critical habitat designation for the Gulf sturgeon by February 2, 2002, and a final decision by August 2, 2002. Negotiation with the plaintiff resulted in an agreement to publish the proposed decision by May 23, 2002, and the final decision by February 28, 2003.

This proposal is the product of our reexamination of our 1998 prudency determination for the Gulf sturgeon. It reflects our interpretation of the recent judicial opinions on critical habitat designation and the standards placed on us for making a prudency determination. If additional information becomes available on the species' biology and distribution and threats to the species, we may reevaluate this proposal to designate critical habitat, including proposing additional critical habitat, proposing the deletion or boundary refinement of existing proposed critical habitat, or withdrawing our proposal to designate critical habitat.

Critical Habitat

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

In order for habitat to be included in a critical habitat designation, the habitat features must be "essential to the conservation of the species." Such critical habitat designations identify, to the extent known using the best scientific data available, habitat areas that provide essential life cycle needs of the species (i.e., areas on which are found the primary constituent elements, as defined at 50 CFR 424.12(b)).

Regulations at 50 CFR 424.02(j) define special management considerations or protection to mean any methods or procedures useful in protecting the physical and biological features of the environment for

the conservation of listed species. If any areas containing the primary constituent elements are currently being managed to address the conservation needs of the Gulf sturgeon, they may not require special management or protection, and, therefore, may not meet the definition of critical habitat in section 3(5)(A)(i) of the Act.

When we designate critical habitat, we may not have the information necessary to identify all areas which are essential for the conservation of the species. Nevertheless, we are required to designate those areas we know to be critical habitat, using the best information available to us.

Within the geographic area of the species, we will designate only currently known essential areas. We will not speculate about what areas might be found to be essential if better information became available, or what areas may become essential over time. If the information available at the time of designation does not show that an area provides essential life cycle needs of the species, then the area will not be included in the critical habitat designation. Our regulations state that, "The Secretary shall designate as critical habitat areas outside the geographic area presently occupied by the species only when a designation limited to its present range would be inadequate to ensure the conservation of the species" (50 CFR 424.12(e)). Accordingly, when the best available scientific data do not demonstrate that the conservation needs of the species require designation of critical habitat outside of occupied areas, we will not designate critical habitat in areas outside the geographic area occupied by the species.

Section 4(b)(2) of the Act requires that we take into consideration the economic impact, and any other relevant impact, of specifying any particular area as critical habitat. We may exclude areas from critical habitat designation when the benefits of exclusion outweigh the benefits of including the areas within critical habitat, provided the exclusion will not result in extinction of the species.

Our Policy on Information Standards Under the Endangered Species Act, published on July 1, 1994 (59 FR 34271), provides guidance to ensure that our decisions are based on the best scientific and commercial data available. It requires that our biologists, to the extent consistent with the Act and with the use of the best scientific and commercial data available, use primary and original sources of information as the basis for recommendations to designate critical habitat. When determining which areas are critical habitat, information that should be considered includes the listing package for the species, the recovery plan, articles in peer-reviewed journals, conservation plans developed by States and Counties, scientific status surveys, studies, and biological assessments, unpublished materials, and expert opinion or personal knowledge.

Habitat is often dynamic, however, and populations may move from one area to another over time. Furthermore, we recognize that designation of critical habitat may not include all of the habitat areas that may eventually be determined to be necessary for the recovery of the species. Therefore, critical habitat designations do not signal that habitat outside the designation is unimportant or may not be required for recovery. Areas outside the critical habitat designation will continue to be subject to conservation actions that may be implemented under section 7(a)(1) of the Act and to the regulatory protections afforded by the section 7(a)(2) jeopardy standard and the section 9 of the Act take prohibition, as determined on the basis of the best available information at the time of the action. It is possible that federally funded or assisted projects affecting listed species outside their designated critical habitat areas could jeopardize those species. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of

future recovery plans, habitat conservation plans, or other species conservation planning and recovery efforts if new information available to these planning efforts calls for a different outcome.

Prudency Determination

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

In our February 27, 1998, notice of decision, we determined that the designation of critical habitat was not prudent for the Gulf sturgeon because such designation would not be beneficial to the species. However, on March 15, 2001, the United States Court of Appeals for the Fifth Circuit determined that this "not prudent" determination was made erroneously, and ordered us to reconsider it (Sierra Club v. U.S. Fish and Wildlife Service, 245 F.3d 434). Accordingly, we withdraw our previous determination that designation of critical habitat will not benefit the Gulf sturgeon.

In reconsidering whether designation of critical habitat for the Gulf sturgeon will be prudent, we find that designation will be clearly beneficial to the species. Critical habitat will primarily benefit the sturgeon through the Act's consulting mechanism under section 7 of the Act. If critical habitat is designated for the Gulf sturgeon, other Federal agencies will be required to consult with us on actions they carry out, fund, or authorize, to ensure that their actions will not destroy or adversely modify critical habitat. In this way, a critical habitat designation will protect areas that are necessary for the conservation of the species. It may also serve to enhance awareness within Federal agencies and the general public of the importance of Gulf sturgeon habitat and the need for special management considerations.

A designation of critical habitat will provide Federal agencies with a clearer indication as to when consultation under Section 7 of the Act is required, particularly in cases where the action would not result in direct mortality, injury or harm to individuals of the species (e.g., an action occurring within the critical habitat area when or where the Gulf sturgeon is not present). The critical habitat designation, in describing the essential features of the habitat, will also help determine which activities conducted outside the designated area are subject to section 7 consultation (i.e., activities that may affect essential features of the designated area). For example, disposal of waste material in water adjacent to a critical habitat area may affect an essential feature (water quality) of the designated habitat and so would be subject to the provisions of section 7.

A critical habitat designation will also assist Federal agencies in planning future actions because it establishes, in advance, those habitats that will be given an additional review in section 7 consultations. This is particularly true in cases where there are alternative areas that would provide for the conservation of the species and the success of the action. With a designation of critical habitat, potential conflicts between Federal actions and listed species can be identified and possibly avoided early in the agency's process.

It is true that we are already working with Federal and State agencies, and private individuals and organizations, in carrying out conservation activities for the Gulf sturgeon, such as conducting population surveys and assessing habitat conditions. It is also true that these entities are fully aware of the distribution, status, and habitat requirements for the Gulf sturgeon, as they are currently known. However, as discussed above, some additional educational and informational benefit will result from designation.

Though the identification of known spawning habitat in this proposed rule may increase illegal harvest, we currently have no knowledge that illegal harvest is or has been an issue with the Gulf sturgeon. Since the States of Louisiana, Mississippi, Alabama, and Florida have deemed harvest illegal since the 1980s, and we found no records of illegal harvest during our literature review or in discussions with researchers, we have found no evidence that identification of Gulf sturgeon critical habitat would increase the degree of threat to the species. Therefore, we propose that designation of critical habitat is prudent for the Gulf sturgeon.

Methods and Criteria Used to Identify Critical Habitat

As required by section 4(b)(2) of the Act and its implementing regulations (50 CFR 424.12), this proposal is based on the best scientific information available concerning the species' present and historical range, habitat, biology, and threats. In preparing this rule, we reviewed and summarized the current information available on the Gulf sturgeon, including the physical and biological features that are essential for the conservation of the species (see "Primary Constituent Elements" section), and identified the areas containing these features. The information used includes known locations; our own site-specific species and habitat information; State-wide Geographic Information System (GIS) coverages (e.g., land ownership, bathymetry (the measurement of depths of water in oceans, seas, and lakes), and estuarine substrates); the final listing rule for the Gulf sturgeon; recent biological surveys and reports; peer-reviewed literature; our recovery plan; discussions and recommendations from Gulf sturgeon experts; and information received during Gulf sturgeon recovery meetings. The Gulf Sturgeon Recovery/Management Plan (FWS et al. 1995) contains valuable biological information, and it is cited throughout this document. However, the state of our knowledge regarding Gulf sturgeon biology and distribution has changed markedly since publication of the recovery plan for this species. The recovery criteria put forth in this recovery plan were deemed preliminary and may now warrant revision in light of new information. As a result of recent research and survey efforts directed towards this species, substantial portions of the biological information presented in the recovery plan are now dated or obsolete. Thus, although the recovery plan is a valuable source of information, it is not the final authority on the natural history and distribution of this species.

In the past, we had assumed, based on the information available at the time, that unoccupied habitat would be necessary for the recovery of the Gulf sturgeon. Since approval of the recovery plan in 1995 and our 1998 not prudent finding, we have collected new biological information on this species. We have analyzed what is necessary for the conservation of the Gulf sturgeon, as described above, and based on the best scientific information available at this time, we have determined that unoccupied habitat is not essential to the conservation of the Gulf sturgeon.

Determining the Scale of the Proposed Designation

We first evaluated the Gulf sturgeon in the context of its current distribution throughout the historic range to determine what portion of the range must be conserved to ensure recovery of the species. We considered several factors in this evaluation--(1) maintaining overall genetic integrity and minimizing the potential for inbreeding, (2) retaining potential evolutionary importance at the margins of the species' range by protecting the eastern- and western-most subpopulations, (3) decreasing the extinction risk of a subpopulation by protecting adjacent subpopulations that can provide a rescue effect, if needed, (4) avoiding the potential for subpopulation extirpation from environmental catastrophes, and (5) protecting sufficient habitat to support full recovery of the species.

The historic range of the Gulf sturgeon included nine major rivers and several smaller rivers from the Mississippi River, Louisiana, to the Suwannee River, Florida, and in marine waters of the Central and Eastern Gulf of Mexico, south to Tampa Bay (Wooley and Crateau 1985, FWS et al. 1995). Seven of these major river systems continue to support reproducing subpopulations. These include (from west to east)--the Pearl, Pascagoula, Escambia, Yellow/Blackwater, Choctawhatchee, Apalachicola, and Suwannee Rivers.

Gulf sturgeon is listed as a single Distinct Population Segment (DPS) throughout its range (see policy 61 FR 4722). However, this species exists as several subpopulations with limited mixing. The Gulf Sturgeon Recovery/Management Plan (FWS et al. 1995) noted the importance of identifying and maintaining genetic integrity and diversity during restoration efforts on Gulf sturgeon. A severe loss of genetic variability often leads to a noticeable decline in the fitness of a species (Soulé 1987). Evidence suggests that peripheral subpopulations are often genetically and morphologically divergent from central subpopulations (Lesica and Allendorf 1995). Distinct traits found in peripheral subpopulations may be crucial to the species, allowing adaptation in the face of environmental change (Lesica and Allendorf 1995, Allendorf et al. 1997). In light of these considerations, we determined that the inclusion of stocks or subpopulations from both the eastern and the western margins of the current range were necessary to protect the potential evolutionary importance of those subpopulations (Scudder 1989, Lesica and Allendorf 1995, Young and Harig 2001).

While telemetry data indicate that Gulf sturgeon from one genetically distinct drainage occasionally enter another river and also mix during the winter months in estuarine and marine habitats, a genetic analysis of tissue samples concluded that Gulf sturgeon exhibit a strong natal river fidelity, with stocks exchanging less than one mature female per generation on the average (Waldman and Wirgin 1997). These low gene flow estimates strongly suggest that natural recolonization of extirpated subpopulations of Gulf sturgeon would proceed slowly (Waldman and Wirgin 1997). Semi-isolated subpopulations are more vulnerable to the effects of demographic and environmental population fluctuations (Forney and Gilpin 1989, Wahlberg et al. 1996).

Gene flow estimates usually were higher between adjacent stocks, suggesting that migrants from semi-isolated subpopulations are exchanged chiefly with neighboring subpopulations (Waldman and Wirgin 1997). The loss of any intermediate subpopulations by a single environmental catastrophe could seriously limit a species' recovery (Kautz and Cox 2000, Young and Harig 2001). In light of this, we determined that it is necessary to propose as critical habitat rivers used by subpopulations evenly spaced between the western- and eastern-most limits of the current range. To ensure conservation of the species, subpopulations must be geographically located so that existing subpopulations could serve as sources of sturgeon emigration, albeit at a slow rate (Waldman and Wirgin 1997), to adjacent rivers as

their subpopulations increase and so that they can provide a rescue effect if an adjacent subpopulation is extirpated (Brown and Kodric-Brown 1977, Hanski and Gyllenberg 1993, Young and Harig 2001).

Designating critical habitat for only a few subpopulation units, or for units not spaced in a manner that allows fish to exchange with other subpopulations, could increase the vulnerability of the species due to isolation of subpopulations. Protection of a single, isolated, minimally viable population risks the extirpation or extinction of a species as a result of harsh environmental conditions, catastrophic events, or genetic deterioration over several generations (Kautz and Cox 2000). To reduce the risk of extinction through these processes, it is important to establish multiple protected subpopulations across the landscape (Soulé and Simberloff 1986, Wiens 1996).

Because of these considerations, we reached the conclusion that this proposal should include critical habitat units within the major river systems that support the seven currently reproducing subpopulations (FWS et al. 1995) and associated marine habitats. These river systems include (from west to east)--the Pearl, Pascagoula, Escambia, Yellow/Blackwater, Choctawhatchee, Apalachicola, and Suwannee Rivers. We believe that with proper protection and management, these units collectively represent habitat necessary to provide for the conservation of the species. The number, distribution, and range of Gulf sturgeon subpopulations included in these units is necessary to protect and sustain this species' genetic integrity and diversity and to provide a rescue effect, if needed. We believe that these seven river systems, with their associated estuarine and marine environments, represent habitat that is essential for the conservation of the Gulf sturgeon.

Assessing Specific Habitat Areas Essential to the Conservation of Gulf Sturgeon

Once we determined that the proper scale of the proposed critical habitat designation should cover the area occupied by the seven reproducing subpopulations, we evaluated which habitats used by those seven subpopulations are essential to their conservation. To conduct this evaluation, we assessed the critical life history components of Gulf sturgeon as they relate to habitat. Gulf sturgeon use the rivers for spawning, juvenile feeding, adult resting, and staging, and to move between the areas that support these components. Gulf sturgeon use the lower riverine, estuarine, and marine environment during winter months primarily for feeding, and more rarely, for inter-river migrations.

We then investigated what types of habitat support these life history components and where these areas of habitat are located. We evaluated empirical data, published and unpublished literature, and solicited the views of experts. These habitat components are described in the "Primary Constituent Elements" section of this proposed rule. We identified known or presumed spawning sites in each of the seven river systems. Some spawning sites have been conclusively identified; others are presumed due to the presence of suitable habitat. We identified known or presumed sites used for resting or staging. We identified areas where subadult and adult Gulf sturgeon occur during winter to feed. These areas are primarily in the marine or estuarine environment; young-of-year and juveniles feed mostly in the riverine environment. As a component of the above identifications, we gathered all available data on locations and habitat use of marked (tagged) fish.

To determine which areas should be proposed as critical habitat, we then evaluated where the necessary constituent elements of Gulf sturgeon habitat intersected with areas known to be used by both marked and unmarked fish. Detailed location data, where available, is included with each proposed unit

description in the "Critical Habitat Unit Descriptions" section of this proposed rule. Because most of the sturgeon species' upstream movement is for spawning (Bane 1997; J. Hightower, U.S. Geological Survey (USGS)-Biological Resources Division, pers. comm. 2002), we have determined that the proposal should include areas as far upstream as the furthest known or presumed spawning site. Therefore, in rivers where spawning sites have been confirmed, the proposed units extend upstream to a geographically identifiable point such as a river confluence above those sites. In areas where spawning sites are presumed but not confirmed, we have included river reaches that contain the primary constituent elements necessary for spawning (e.g., appropriate substrate, and water quality and quantity), if those areas occur within close proximity of Gulf sturgeon historic and/or current sightings or captures, and if they are still accessible to sturgeon (e.g., not blocked by dams). The proposed riverine critical habitat units include areas that continue to offer at least periodic passage of Gulf sturgeon to known and presumed spawning sites. Successful reproduction and recent recruitment have been documented in each riverine unit by eggs, larvae, and/or juveniles, or by a mixed age structure. We are proposing to protect spawning habitats from a catastrophic occurrence by including both the main stem spawning sites and at least one tributary site.

We have included riverine habitat from the river mouth up to and including spawning grounds in order to provide sufficient habitat necessary for the other riverine life stages of Gulf sturgeon while they reside in the riverine habitats. Habitat necessary for these life stages includes habitat for summer resting or staging areas, juvenile feeding, entire young-of-year life cycle, passage throughout the river, and passage into and out of estuarine habitat. All of the selected areas are known to be used by Gulf sturgeon for some portion of their life cycle.

Subadult and adult sturgeon use estuarine and marine areas for feeding and passage between river systems. Designation of critical habitat units encompassing estuaries and bays adjacent to the riverine units discussed above would protect unobstructed passage of sturgeon from feeding areas to spawning grounds. In evaluating the estuarine and marine areas, we first reviewed where Gulf sturgeon from the seven adjacent riverine units have been documented by telemetry relocations and tag returns from incidental captures. We also considered areas for which we have Gulf sturgeon sightings and targeted and incidental capture records. When available, we reviewed habitat data (e.g., bathymetry, substrate type, and benthic organisms) associated with these estuarine and marine systems and compared these data with studies pertaining to the habitat requirements and preferences of Gulf sturgeon. We also evaluated data for evidence of critical migratory pathways between the river systems and the adjacent bays and Gulf of Mexico that allow Gulf sturgeon to travel to important feeding areas, as well as allow for the occasional travel to non-natal rivers for possible spawning and genetic interchange. Where documented interchanges have occurred, but no telemetry data exist to identify the migratory path used (e.g., between the Pascagoula River and Yellow River, the Pascagoula and Choctawhatchee River, and between Suwannee River and Apalachicola River), we have not proposed a migration route. We then assessed the Gulf sturgeon's overall use of estuarine and marine waters and delineated specific critical habitat boundaries.

Migration and feeding may take place via the Gulf Intracoastal Waterway (GIWW) in some of the proposed units. Portions of the GIWW that consist primarily of excavated land cuts and canals have been excluded from this designation because they were not available historically, and, therefore, are not considered to be evolutionarily significant.

This proposed designation includes a significant portion, but not all, of the species' historic range. The fourteen proposed critical habitat units include riverine main stems and in some cases tributaries, distributaries (a river branch flowing away from the main stem in the floodplain) and adjacent estuarine and marine areas that contain one or more of the primary constituent elements essential for the conservation of the Gulf sturgeon (see "Primary Constituent Elements" section). The omission of some historically occupied river drainages and estuarine and marine areas from this proposed critical habitat designation does not diminish their individual or cumulative importance to the species. Rather, it is our determination that the seven riverine units with known spawning and seven associated estuarine and marine units included in this proposed rule include the habitats essential for the conservation of the Gulf sturgeon. With unobstructed passage in the estuarine and marine habitat, the subpopulations within the proposed designated critical habitat units may eventually populate presently unoccupied coastal river systems or augment adjacent surviving small subpopulations.

Although the Mobile River Basin is the largest Gulf of Mexico drainage east of the Mississippi River, it has been extensively impounded and modified for navigation. Further, there have been relatively limited reports of captures and no evidence of reproduction of Gulf sturgeon from that system for many years. Gulf sturgeon have been reported from other river systems. Some of these other systems historically supported a commercial fishery (e.g., Mobile River, Ochlockonee River) and some may support small reproducing subpopulations (e.g., Techefuncte River, Ochlockonee River, Mobile River); however, there is no recent documented spawning and we have no evidence at this time that these systems are essential to the conservation of the species. Therefore, we have not proposed them as critical habitat.

The data available to us are insufficient to support a determination that Lake Maurepas, Breton and Chandeleur Sounds, the Mississippi River Delta, St. Louis, Biloxi, Mobile, Perdido, St. Andrews, St. Joseph, Ochlockonee, or Apalachee Bays are essential to the conservation of the species. Records within the majority of these bays are relatively scarce. Although some Gulf sturgeon from the seven subpopulations may occasionally use these bays for winter feeding, there are insufficient data to support these bays' regular winter use or importance and no documented spawning. Therefore, we have not proposed these bays for designation as critical habitat.

The amount of research and status surveys conducted on many subpopulations is limited. Because of the limited availability of data specific to each river system and specific to the Gulf sturgeon's use of the marine environment, we are aware that habitat other than that identified in this proposed rule may later be found to be essential to the conservation of Gulf sturgeon. To the extent feasible, we will continue, with the assistance of other Federal, State, and private researchers, to conduct surveys, research, and conservation actions on the species and its habitat in areas designated and not designated as critical habitat. If additional information becomes available on the species' biology, distribution, and threats, we will evaluate the need to designate additional critical habitat, delete or reduce critical habitat, or refine the boundaries of critical habitat. Gulf sturgeon surviving in, or moving to rivers that are not being proposed for critical habitat will continue to receive protection under the section 7 of the Act jeopardy standard and the section 9 of the Act prohibitions on take (see "Critical Habitat" section).

Primary Constituent Elements

In accordance with sections 3(5)(A)(i) and 4(b)(1)(A) of the Act and regulations at 50 CFR

424.12, in determining which areas to propose as critical habitat, we are required to base critical habitat determinations on the best scientific data available and to focus on those physical and biological features (primary constituent elements) that are essential to the conservation of the species and that may require special management considerations or protection. Such requirements include, but are not limited to, space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, and rearing of offspring; and habitats that are protected from disturbance or are representative of the historical geographical and ecological distribution of a species.

Based on the best available information, primary constituent elements essential for the conservation of the Gulf sturgeon include the following:

(1) abundant prey items, such as detritus, aquatic insects, worms, and/or molluscs, within riverine habitats for larval and juvenile life stages; and abundant prey items, such as amphipods, lancelets, polychaetes, gastropods, ghost shrimp, isopods, molluscs and/or crustaceans, within estuarine and marine habitats for subadult and adult life stages.

(2) riverine spawning sites with substrates suitable for egg deposition and development, such as limestone outcrops and cut limestone banks, bedrock, large gravel or cobble beds, marl, soapstone, or hard clay;

(3) a flow regime (i.e., the magnitude, frequency, duration, seasonality, and rate-of-change of freshwater discharge over time) necessary for normal behavior, growth, and survival of all life stages in the riverine environment, including migration, breeding site selection, courtship, egg fertilization, resting, and staging, and for maintaining spawning sites in suitable condition for egg attachment, egg sheltering, resting, and larval staging;

(4) water quality, including temperature, salinity, pH, hardness, turbidity, oxygen content, and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages;

(5) sediment quality, including texture and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages; and

(6) safe and unobstructed migratory pathways necessary for passage within and between riverine, estuarine, and marine habitats.

Need for Special Management Consideration or Protection

An area designated as critical habitat contains one or more of the primary constituent elements that are essential to the conservation of the species (see “Primary Constituent Elements” section), and that may require special management considerations or protection. Various activities in or adjacent to each of the critical habitat units described in this proposed rule may affect one or more of the primary constituent elements that are found in the unit. These activities include, but are not limited to, those listed in the “Effects of Critical Habitat” section as “Federal Actions That May Affect Critical Habitat and Require Consultation.” For example, riverine spawning sites for Gulf sturgeon must be relatively sediment-free for successful egg development and may need best management practices implemented in

the watershed upstream to prevent an excessive accumulation of sediment in these areas. None of the proposed critical habitat units is presently under special management or protection provided by a legally operative plan or agreement for the conservation of the Gulf sturgeon. Therefore, we have determined that the proposed units may require special management or protection.

Proposed Critical Habitat Designation

The areas proposed for designation as critical habitat for the Gulf sturgeon provide one or more of the primary constituent elements described above. Tables 1 and 2 summarize the location and extent of proposed critical habitat. All of the proposed areas require special management considerations to ensure their contribution to the conservation of the Gulf sturgeon. The boundaries of proposed critical habitat units are described generally below.

Table 1. Approximate Linear Distance of the Proposed Riverine Critical Habitat Units for the Gulf Sturgeon. Main Stems Are Listed First and Tributaries Are Indented.

Critical Habitat Unit River Systems	State	River Kilometers	River Miles
1. Pearl (East, West, and all distributaries)	Louisiana/ Mississippi	616	383
Bogue Chitto		153	95
2. Pascagoula	Mississippi	130	81
Leaf		164	102
Bowie		24	15
Chickasawhay		232	144
Big Black Creek		10	6
3. Escambia	Florida/ Alabama	93	58
Conecuh		128	79
Sepulga		11	7
4. Yellow	Florida/ Alabama	136	84
Blackwater		18	11
Shoal		13	8
5. Choctawhatchee	Florida/ Alabama	224	139
Pea		92	57
6. Apalachicola	Florida	172	107
Brothers		23	14
7. Suwannee	Florida	286	178
Withlacoochee		19	12
Total		2,544	1,580

Table 2. Approximate Area of the Proposed Estuarine and Marine Critical Habitat Units for the Gulf Sturgeon.

Critical Habitat Unit Estuarine and Marine Systems	State	Kilometers^2	Miles^2
8. Lake Borgne	Louisiana/	718	277
Little Lake	Mississippi/	8	3
Lake Pontchartrain	Alabama	763	295
Lake St. Catherine		26	10
The Rigolets		13	5
Mississippi Sound		1,879	725
MS near shore Gulf		160	62
9. Pensacola Bay	Florida	381	147
10. Santa Rosa Sound	Florida	102	39
11. Near shore Gulf of Mexico	Florida	442	171
12. Choctawhatchee Bay	Florida	321	124
13. Apalachicola Bay	Florida	683	264
14. Suwannee Sound	Florida	546	211
Total		6,042	2,333

Critical Habitat Unit Descriptions

The river reaches within units 1 to 7 proposed as critical habitat lie within the ordinary high water line. As defined in 33 CFR 329.11, the ordinary high water line on non-tidal rivers is the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas.

The downstream limit of the riverine units is the mouth of each river. The mouth is defined as rkm 0 (rm 0). Although the interface of fresh and saltwater, referred to as the saltwater wedge, occurs within the lower-most reach of a river, for ease in delineating critical habitat units, we are defining the boundary between the riverine and estuarine units as rkm 0 (rm 0).

Regulatory jurisdiction in coastal areas extends to the line on the shore reached by the plane of the mean (average) high water (MHW) (33 CFR 329.12(a)(2)). All bays and estuaries within units 8 to 14, therefore, lie below the MHW lines. Where precise determination of the actual location becomes necessary, it must be established by survey with reference to the available tidal datum, preferably averaged over a period of 18.6 years. Less precise methods, such as observation of the "apparent shoreline," which is determined by reference to physical markings, lines of vegetation, may be used only where an estimate is needed of the line reached by the mean high water.

The term 72 COLREGS is defined as demarcation lines which delineate those waters upon which mariners shall comply with the International Regulations for Preventing Collisions at Sea, 1972 and those waters upon which mariners shall comply with the Inland Navigation Rules (33 CFR 80.01). The waters inside of these lines are Inland Rules waters and the waters outside the lines are COLREGS waters. These lines are defined in 33 CFR 80, and have been used for identification purposes to delineate boundary lines of the estuarine and marine habitat Units 8, 9, 11, and 12.

Unit 1. Pearl River System in St. Tammany and Washington Parishes in Louisiana and Walthall, Hancock, Pearl River, Marion, Lawrence, Simpson, Copiah, Hinds, Rankin, and Pike Counties in Mississippi.

Unit 1 includes the Pearl River main stem from the spillway of the Ross Barnett Dam, Hinds and Rankin Counties, Mississippi, downstream to where the main stem river drainage discharges at its mouth joining Lake Borgne, Little Lake, or The Rigolets in Hancock County, Mississippi, and St. Tammany Parish, Louisiana. It includes the main stems of the East Pearl River, West Pearl River, West Middle River, Holmes Bayou, Wilson Slough, downstream to where these main stem river drainages discharge at the mouths of Lake Borgne, Little Lake, or The Rigolets. Unit 1 also includes the Bogue Chitto River main stem, a tributary of the Pearl River, from its confluence with Lazy Creek just upstream of its crossing with Mississippi State Highway 570, Pike County, Mississippi, downstream to its confluence with the West Pearl River, St. Tammany Parish, Louisiana. The lateral extent of Unit 1 is the ordinary high water line on each bank of the associated rivers and shorelines.

The majority of recent Gulf sturgeon sightings in the Pearl River drainage have occurred downstream of the Pools Bluff sill on the Pearl River, near Bogalusa, Washington Parish, Louisiana, and

downstream of the Bogue Chitto sill on the Bogue Chitto River in St. Tammany Parish, Louisiana. Between 1992 and 1996, 257 Gulf sturgeon were captured from the Pearl River system (West Middle River, Bogue Chitto River, East Pearl River, and West Pearl River). The subpopulation was estimated at 292 fish, of which only 2 to 3 percent were adults (Morrow et al. 1998b). The annual mortality rate was calculated to be 25 percent. Preliminary results from captures between 1992 and 2001 suggest a stable subpopulation of 430 fish, with approximately 300 adults (Rogillio et al. in prep.). These Pearl River distributaries are used for migration to spawning grounds, summer resting holes, and juvenile feeding. Gulf sturgeon have been captured in all of these distributaries and all are proposed as critical habitat.

The presence of juvenile Gulf sturgeon (1 to 4 years old) in the Pearl River system indicates successful spawning at some location in the Pearl River system. It is believed that the only suitable habitat for spawning for the Pearl River subpopulation of Gulf sturgeon occurs above the sills on the Pearl River and the Bogue Chitto River with access to these areas only during high flows (Morrow et al. 1996, Morrow et al. 1998a). Bedrock and limestone outcropping that are typical of Gulf sturgeon spawning areas in other systems do not occur here. However, within the Pearl drainage, spawning areas likely include soapstone, hard clay, gravel and rubble areas, and undercut banks adjacent to these substrates (W. Slack pers. comm. 2001). Although the Pools Bluff sill blocks upstream movement on the Pearl River during periods of low water, potential spawning sites have been identified upstream of the sill at various locations between Monticello, Lawrence County, Mississippi, and the Ross Barnett Dam spillway, Hinds and Rankin Counties, Mississippi (F. Parauka pers. comm. 2002). Gulf sturgeon have also been recently reported as far upstream as Jackson, Hinds County, Mississippi (Morrow et al. 1996, Lorio 2000). The Ross Barnett Dam upstream of Jackson prevents sturgeon movement further upstream at all flow conditions. Identified suitable spawning habitat, presence of juvenile fish, and documented adult captures support our inclusion of the Pearl River up to the spillway of the Ross Barnett Dam.

The Bogue Chitto sill, located on the Bogue Chitto River near its confluence with the Pearl River, also hinders movement of Gulf sturgeon upstream of the sill except during high water flows. Suitable spawning habitat occurs within the Bogue Chitto upriver of the sill (F. Parauka pers. comm. 2002, W. Slack pers. comm. 2001) and juvenile, adult and subadult Gulf sturgeon have been documented on the Bogue Chitto River as far upstream as McComb, Pike County, Mississippi (D. Oge, Department of Environmental Quality, pers. comm. 2002; F. Parauka pers. comm. 2002; W. Slack pers. comm. 2001). We, therefore, have proposed as critical habitat the main stem of the Bogue Chitto River upstream of Quins Bridge (Mississippi State Highway 570) to its confluence with Lazy Creek.

Unit 2. Pascagoula River System in Forrest, Perry, Greene, George, Jackson, Clarke, Jones, and Wayne Counties, Mississippi.

Unit 2 includes all of the Pascagoula River main stem and its distributaries, portions of the Bowie, Leaf, and Chickasawhay tributaries, and all of the Big Black Creek tributary. It includes the Bowie River main stem beginning at its confluence with Bowie Creek and Okatoma Creek, Forrest County, Mississippi, downstream to its confluence with the Leaf River, Forrest County, Mississippi. The Leaf River main stem beginning from Mississippi State Highway 588, Jones County, Mississippi, downstream to its confluence with the Chickasawhay River, George County, Mississippi is included. The main stem of the Chickasawhay River from the mouth of Oaky Creek, Clarke County, Mississippi, downstream to its confluence with the Leaf River, George County, Mississippi is included. Unit 2 also includes Big Black Creek main stem from its confluence with Black and Red Creeks, Jackson County, Mississippi, to

its confluence with the Pascagoula River, Jackson County, Mississippi. All of the main stem of the Pascagoula River from its confluence with the Leaf and Chickasawhay Rivers, George County, Mississippi, to the discharge of the East and West Pascagoula Rivers into Pascagoula Bay, Jackson County, Mississippi, is included. The lateral extent of Unit 2 is the ordinary high water line on each bank of the associated rivers and shorelines.

Subpopulation estimates, calculated from sturgeon captures in 1999 and 2000 in the summer holding areas on the Pascagoula River, range between 162 and 216 individuals (Heise et al. 1999a, Ross et al. 2001b). Due to the sampling technique, these estimates are based primarily on large fish and do not account for juvenile or subadult fish (S. Ross, University of Southern Mississippi (USM), pers. comm. 2001).

Gulf sturgeon spawning on the Bowie River was confirmed via egg collection in 1999 (Slack et al. 1999, Heise et al. 1999a). This is the only confirmed spawning area in the Pascagoula River drainage. Downstream, the Bowie River is sometimes used as a summer holding area (Ross et al. 2001b). Gulf sturgeon have been documented using the area above the known spawning habitat (Reynolds 1993, W. Slack pers. comm. 2002). Additional suitable spawning habitat has been identified in this upstream reach (F. Parauka pers. comm. 2002), and since Gulf sturgeon have rarely been documented upstream of spawning grounds, we have also included the 19 rkm (12 rmi) of river reach upstream of the confirmed spawning grounds. Confirmed use for spawning and use as a summer holding area support the inclusion of the Bowie River as proposed critical habitat.

Documented sightings of Gulf sturgeon and identified suitable spawning habitat upstream to Mississippi State Highway 588 (Reynolds 1993, W. Slack pers. comm. 2002, F. Parauka pers. comm. 2002), confirmed use as a migration corridor, and confirmed use by juvenile Gulf sturgeon (W. Slack pers. comm. 2002) support the inclusion of the Leaf River as proposed critical habitat.

Documented sightings of Gulf sturgeon using the Chickasawhay River (Miranda and Jackson 1987, Reynolds 1993, Ross et al. 2001b) upstream to Quitman (Ross et al. 2001b), and the presence of apparently suitable spawning habitat at Quitman (F. Parauka pers. comm. 2002), support the inclusion of this river reach as proposed critical habitat for spawning, migration, and juvenile feeding. We have included the suitable spawning habitat located within .8 rkm (.5 rmi) upstream of Mississippi State Road 512 and have extended the proposed designation 9 rkm (5.5 rmi) upstream to the confluence with Oaky Creek for ease of identification.

Gulf sturgeon use the West and East distributaries of the Pascagoula River during spring and fall migrations (Ross et al. 2001b). Summer resting areas have been consistently documented on Big Black Creek and on the Pascagoula River (Ross et al. 2001a and b). Confirmed use for migration and/or summer resting areas and probable feeding use by juveniles support our inclusion of these river reaches.

Unit 3. Escambia River System in Santa Rosa and Escambia Counties, Florida and Escambia, Conecuh, and Covington Counties, Alabama.

Unit 3 includes the Conecuh River main stem beginning just downstream of the spillway of Point A Dam, Covington County, Alabama, downstream to the Florida State line, where its name changes to the Escambia River, Escambia County, Alabama, and Escambia and Santa Rosa Counties, Florida. It

includes the entire main stem of the Escambia River downstream to its discharge into Escambia Bay and Macky Bay, Escambia and Santa Rosa Counties, Florida. All of the distributaries of the Escambia River including White River, Little White River, Simpson River, and Dead River, Santa Rosa County, Florida are included. The Sepulga River main stem from Alabama County Road 42, Conecuh and Escambia Counties, Alabama, downstream to its confluence with the Conecuh River, Escambia County, Alabama, is also included. The lateral extent of Unit 3 is the ordinary high water line on each bank of the associated lakes, rivers and shorelines.

Sufficient data are not yet available to estimate historic or current subpopulation sizes of the Escambia River drainage subpopulation. Collection and tagging of Gulf sturgeon, monitoring, and eventual subpopulation estimates are in the initial phases on the Escambia River in Florida and the Conecuh River in Alabama.

Suitable spawning habitat (Parauka and Giorgianni in prep.) and a reported larval sighting (N. Craft, Department of Environmental Protection (DEP), pers. comm. 2001), just below the Point A Dam (221 rkm (137 rmi) on the Conecuh River support inclusion of critical habitat upstream to the Point A Dam. The Point A Dam prevents sturgeon movement further upstream at all flow conditions. In addition, spawning has been confirmed between rkm 161 and 170 (rmi 100 and 105.6) (Craft et al. 2001) on the Conecuh River. The use of the river main stem for spawning, adult resting areas, juvenile feeding and resting, and the use for migration to these sites supports our inclusion of the Escambia/Conecuh River main stem as proposed critical habitat for the Escambia River subpopulation of Gulf sturgeon.

Historic sightings reported from the 1910s and 1920s, and as recently as 1991, have been documented in Escambia County, Alabama, on the Sepulga River (Reynolds 1993). Estes (1991) describes the Sepulga as having smooth rock walls, and long pools with stretches of rocky shoals and sandbars. We included the Sepulga River reach upstream to Alabama County Road 42, Escambia County, Alabama, because it has suitable spawning habitat and documented sightings.

We believe it is most likely that Gulf sturgeon use the Escambia River main stem and all the distributaries for exiting and entering the Escambia/Conecuh River. Gulf sturgeon have been documented to use distributaries near the river mouth within other systems (e.g., Suwannee, Pearl, and Pascagoula River systems) for migration into and out of riverine habitat. We, therefore, have included all distributaries on the Escambia River system (i.e., White River, Little White River, Simpson River, and Dead River) in Unit 3.

Unit 4. Yellow River System in Santa Rosa and Okaloosa Counties, Florida and Covington County, Alabama.

Unit 4 includes the Yellow River main stem from Alabama State Highway 55, Covington County, Alabama, downstream to its discharge at Blackwater Bay, Santa Rosa County, Florida. All Yellow River distributaries (including Weaver River and Skim Lake) discharging into Blackwater Bay are included. The Shoal River main stem, a Yellow River tributary, from Florida Highway 85, Okaloosa County, Florida, to its confluence with the Yellow River, is included. The Blackwater River from its confluence with Big Coldwater Creek, Santa Rosa County, Florida, downstream to its discharge into Blackwater Bay is included. Wright Basin and Cooper Basin, Santa Rosa County, on the Blackwater River are included. The lateral extent of Unit 4 is the ordinary high water line on each bank of the associated lakes,

rivers and shorelines.

The USGS conducted a subpopulation study in the Yellow River system during the spring (May to July) and fall (October) of 2001. Based on the capture of 98 fish in the spring and the capture/recapture of 94 fish that fall, the USGS estimated the subpopulation to consist of 580 Gulf sturgeon of 1 m (3.3 ft) or greater in size (M. Randall, USGS, pers. comm. 2001). This estimate excludes fish younger than 3 to 4 years of age.

Five distinct limestone outcrops have been documented as possible spawning sites on the Yellow River, between rkm 43 and 134 (rmi 26.7 and 83.3) (Parauka and Giorgianni in prep.). Several sites consist of brittle marl and limestone, and others of porous limestone. The lowest downstream site (rkm 43 (rmi 26.7)) is a primitive rock revetment, a manmade structure with a fair amount of rock substrate (Craft et al. 2001). In recent years, Alabama State biologists have observed young-of-year Gulf sturgeon near limestone outcrops 3.2 km (2 mi) south of Alabama State Highway 55 (136 rkm (84 rmi)) (Craft et al. 2001), which confirms that reproduction is occurring within this subpopulation. The river upstream of Alabama State Highway 55 is shallow, sandy, and creek-like and, therefore, not believed suitable for spawning (M. Randall pers. comm. 2001; F. Parauka pers.comm. 2001; G. Morgan, Conecuh National Forest, pers. comm. 2001). Preliminary surveys located four potential summer resting areas on the Yellow River main stem (Craft et al. 2001). Recent fish captures and the confirmation of spawning at the furthest upstream spawning habitat location near Alabama State Highway 55 support our inclusion of the Yellow River main stem to Alabama State Highway 55 (136 rkm (84 rmi)) as proposed critical habitat for the Yellow River subpopulation of Gulf sturgeon.

The inclusion of the Shoal River, from the Yellow River confluence upstream to the Florida Highway 85 bridge (13 rkm (8 rmi)) , is supported as proposed critical habitat because it is a confirmed summer resting area (Lorio 2000). The potential for distributaries Weaver River and Skim Lake to be used for migration to and from the Yellow River system (Craft et al. 2001) supports their inclusion as proposed critical habitat. The current and historic use of deep holes by Gulf sturgeon on the Blackwater River main stem and between Wright Basin and Cooper Basin demonstrate the importance of this area for summer resting and staging (Reynolds 1993, Craft et al. 2001) and support its inclusion as proposed critical habitat for the Yellow River subpopulation.

Unit 5. Choctawhatchee River System in Holmes, Washington, and Walton Counties, Florida and Dale, Coffee, Geneva, and Houston Counties, Alabama.

Unit 5 includes the Choctawhatchee River main stem from its confluence with the west and east fork of the Choctawhatchee River, Dale County, Alabama, downstream to its discharge at Choctawhatchee Bay, Walton County, Florida. The distributaries discharging into Choctawhatchee Bay known as Mitchell River, Indian River, Cypress River, and Bells Leg are included. The Boynton Cutoff, Washington County, Florida, which joins the Choctawhatchee River main stem, and Holmes Creek, Washington County, Florida, are included. The section of Holmes Creek from Boynton Cutoff to the mouth of Holmes Creek, Washington County, Florida, is included. The Pea River main stem, a Choctawhatchee River tributary, from the Elba Dam, Coffee County, Alabama, to its confluence with the Choctawhatchee River, Geneva County, Alabama, is included. The lateral extent of Unit 5 is the ordinary high water line on each bank of the associated rivers and shorelines.

Preliminary estimates of the size of the Gulf sturgeon subpopulation in the Choctawhatchee River system are 2,000 to 3,000 fish over 61 cm (24 inches (in)) total length (F. Parauka pers. comm. 2001).

Biologists have located Gulf sturgeon within .8 rkm (.5 rmi) downstream of the Elba Dam, Coffee County, Alabama, on the Pea River (Lorio 2000) and have identified suitable spawning habitat from the Elba Dam to the Pea River mouth (Parauka and Giorgianni in prep., Zehfuss et al. in prep.). The Elba Dam prevents sturgeon movement further upstream at all flow conditions. This river reach has one confirmed spawning site, and Gulf sturgeon often use the lower reach for summer resting (Fox et al. 2000, Hightower et al. in press). Suitable spawning and resting habitat, confirmed spawning, and young-of-year and juvenile feeding (F. Parauka pers. comm. 2001) support inclusion of the Pea River reach as proposed critical habitat.

Five spawning sites and seven resting areas have been identified on the Choctawhatchee River main stem between the river mouth (0 rkm (0 rmi)) and upstream to 150 rkm (93 rmi) (Hightower et al. in press, Zehfuss et al. in prep.). Biologists have identified suitable spawning habitat (limestone outcrops) periodically between 135 rkm (84 rmi) to the confluence of the West Fork Choctawhatchee River and East Fork Choctawhatchee River (224 rkm (139 rmi)) (H. Blalock-Herod, FWS, pers. comm. 2002; Parauka and Giorgianni in prep.; Zehfuss et al. in prep.). Fox et al. (2000) located a male at 150 rkm (93 rmi) and another male in spawning condition near Newton (214 rkm (133 rmi)) on the Choctawhatchee River, 8 rkm (5 rmi) downstream of the confluence of the West Fork Choctawhatchee River and East Fork Choctawhatchee River. Since Gulf sturgeon rarely occur upstream of spawning grounds, we have included up to the confluence of West Fork Choctawhatchee River and East Fork Choctawhatchee River for ease of identification and with the probability of unconfirmed spawning grounds. Suitable habitat, confirmed spawning, and young-of-year and juvenile feeding support the inclusion of the Choctawhatchee River main stem as proposed critical habitat.

No sturgeon have been documented within Holmes Creek, except for the section that connects the Choctawhatchee River and Boynton Cutoff, north and south. We have included this river section of Holmes Creek because it acts as part of the Choctawhatchee River main stem. In 1994, Gulf sturgeon were captured during March and April at the mouths of Indian River, Cypress River, and Bells Leg, indicating that sturgeon probably use these distributaries as migratory corridors to and from the Choctawhatchee River main stem. All distributaries, including the Indian River, Cypress River, Bells Leg, and Mitchell River, are included as proposed critical habitat.

Unit 6. Apalachicola River System in Franklin, Gulf, Liberty, Calhoun, Jackson, and Gadsen Counties, Florida.

Unit 6 includes the Apalachicola River mainstem, beginning from the Jim Woodruff Lock and Dam, Gadsden and Jackson Counties, Florida, downstream to its discharge at East Bay or Apalachicola Bay, Franklin County, Florida. All Apalachicola River distributaries, including the East River, Little St. Marks River, St. Marks River, Franklin County, Florida, to their discharge into East Bay and/or Apalachicola Bay are included. The entire main stem of the Brothers River, Franklin and Gulf Counties, Florida, a tributary of the Apalachicola River, is included. The lateral extent of Unit 6 is the ordinary high water line on each bank of the associated rivers and shorelines.

Based on mark/recapture studies conducted in 1998 and 1999 in the Apalachicola River

downstream of Jim Woodruff Lock and Dam, the summer subpopulation of subadult and adult Gulf sturgeon was estimated to be between 270 and 321 individuals (FWS 1998, 1999). Seventy-one sturgeon were collected in the upper Brothers River, upstream of the Brickyard Cutoff and downstream of Bearman Creek between June and September 1999 (FWS 1999, Lorio 2000). Gulf sturgeon captured on the Brothers River have not been included in the Apalachicola River subpopulation size estimate although they are believed to be part of the subpopulation.

The Gulf sturgeon became restricted to the portion of the Apalachicola River downstream of the Jim Woodruff Lock and Dam upon the construction of the dam in the 1950s. Wooley et al. (1982) documented the capture of two Gulf sturgeon larvae on the Apalachicola River just downstream of the Jim Woodruff Lock and Dam, thereby confirming successful spawning up to the dam. Resting aggregations are often seen at the base of the dam. Seven potential spawning sites have been identified in the upper Apalachicola River between Highway 20 and the Jim Woodruff Lock and Dam (120 to 171 km (76 to 106 rmi)) (Parauka and Giorgianni in prep.). Suitable spawning and resting habitat, confirmed spawning, and young-of-year and juvenile feeding support inclusion of the Apalachicola River as proposed critical habitat.

The entire main stem of the Brothers River, a major tributary of the Apalachicola River, is also included as proposed critical habitat. Spawning has not been documented within this tributary, but an important resting area is located in the uppermost section of the Brothers River between Brickyard Cutoff and Bearman Creek (FWS 1999, Lorio 2000). Sturgeon use the lower Brothers River as a resting and possible osmoregulation area (staging) before migrating into the estuarine and marine habitats for winter feeding (Wooley and Crateau 1985). The Apalachicola River distributaries, including the East River, St. Marks River and Little St. Marks River, are included, based on information derived from other systems. Gulf sturgeon tend to use more than just the main stem for migration into and out of the river systems (e.g., Suwannee, Choctawhatchee, and Pearl River systems).

Unit 7. Suwannee River System in Hamilton, Suwannee, Madison, Lafayette, Gilchrist, Levy, Dixie, and Columbia Counties, Florida.

Unit 7 includes the Suwannee River main stem, beginning from its confluence with Long Branch Creek, Hamilton County, Florida, downstream to the mouth of the Suwannee River. It includes all the Suwannee River distributaries, including the East Pass, West Pass, Wadley Pass, and Alligator Pass, Dixie and Levy Counties, Florida, to their discharge into the Suwannee Sound or the Gulf of Mexico. The Withlacoochee River main stem from Florida State Road 6, Madison and Hamilton Counties, Florida, to its confluence with the Suwannee River is included. The lateral extent of Unit 7 is the ordinary high water line on each bank of the associated rivers and shorelines.

The Suwannee River supports the largest Gulf sturgeon subpopulation among the coastal rivers of the Gulf of Mexico (Huff 1975, Gilbert 1992). Sulak and Clugston (1999) reported 5,344 uniquely tagged Suwannee River sturgeons from 1986 to 1998. Multiple models using various age classes have been used to estimate the subpopulation size of Gulf sturgeon on the Suwannee River system. Chapman et al. (1997) estimated the subpopulation at 3,152 fish greater than age 6. Sulak and Clugston's (1999) estimate was 7,650 individuals greater than 61 cm (24 in) total length and older than age 2. Pine et al. (2001) estimated the Suwannee River subpopulation at 5,500 individuals ages 2 to 25. Based on intensive egg sampling efforts conducted between 1993 and 1998, Sulak and Clugston (1999) estimated

that 30 to 90 female fish spawn per year.

Marchant and Shutters (1996) collected two Gulf sturgeon eggs in April 1993 on the Suwannee River. These were the first eggs reported from the wild for Gulf sturgeon. Between 1993 and 1998, three spawning sites were confirmed with the collection of Gulf sturgeon eggs on artificial substrate samplers (Marchant and Shutters 1996, Sulak and Clugston 1999). Young-of-year have been documented using between rkm 10 to 237 (rmi 6.2 to 147.3) on the Suwannee River main stem (Carr et al. 1996a, Sulak and Clugston 1999). The young-of-year sturgeon located at rkm 237 (rmi 147.3), north of Interstate 75, by Sulak and Clugston (1999) was likely spawned in the river as far upstream as Big Shoals and was captured on its way downstream (M. Randall pers. comm. 2002). It is believed that the farthest upstream that sturgeon spawn during high water is Big Shoals, near White Springs, Hamilton and Columbia Counties, Florida, but adult sturgeon are probably unable to move upstream of Big Shoals (Huff 1975; K. Sulak, USGS, pers. comm. 2002; M. Randall pers. comm. 2002). Suitable spawning habitat has been identified upstream to Big Shoals (Huff 1975; H. Blalock-Herod, FWS, pers. comm. 2002). Foster and Clugston (1997) located five major resting areas throughout the Suwannee River. A deep river bend and a shallow sandy section were characteristic features of the resting areas (Foster and Clugston 1997). Confirmed use for spawning, identified and probable spawning habitat upstream to Big Shoals, young-of year and juvenile feeding, and summer resting support the inclusion of the Suwannee River as proposed critical habitat. For ease of identification, the Suwannee River has been included upstream of Big Shoals .8 rkm (.5 rmi) to its confluence with Long Branch Creek.

Adult Gulf sturgeon sightings and suitable spawning habitat on the lower Withlacoochee River near Florida State Road 141, Hamilton and Madison Counties, Florida, support the inclusion of this area as proposed critical habitat. We have included shoals (5 rkm (3 rmi)) located just upstream of where sturgeon have been observed as possible spawning habitat, and have stopped at Florida State Road 6 (14 rkm (9 rmi)), upstream from the shoals, for ease of identification.

The Suwannee River branches near its mouth into the East Pass and West Pass. Gulf sturgeon adults use the East Pass and West Pass for emigration and immigration (Mason and Clugston 1993, Edwards et al. in prep.). The West pass is divided into two primary channels--Wadley Pass, connected to the Gulf of Mexico by a straight dredged channel across the northern portion of the Sound, and Alligator Pass, used by juveniles (Huff 1975), connected to the Gulf of Mexico by an undredged, natural channel. Confirmed use of the East Pass, West Pass, and Alligator Pass, and probable use of the Wadley Pass by adult and juvenile Gulf sturgeon for migration and feeding support the inclusion of all distributaries of the Suwannee River as proposed critical habitat.

Unit 8. Lake Pontchartrain, Lake St. Catherine, The Rigolets, Little Lake, Lake Borgne, and Mississippi Sound in Jefferson, Orleans, St. Tammany, and St. Bernard Parish, Louisiana , Hancock, Jackson, and Harrison Counties in Mississippi, and in Mobile County, Alabama.

Unit 8 encompasses Lake Pontchartrain east of the Lake Pontchartrain Causeway, all of Little Lake, The Rigolets, Lake St. Catherine, Lake Borgne, including Heron Bay, and the Mississippi Sound. Proposed critical habitat follows the shorelines around the perimeters of each included lake. The Mississippi Sound includes adjacent open bays including Pascagoula Bay, Point aux Chenes Bay, Grand Bay, Sandy Bay, and barrier island passes, including Ship Island Pass, Dog Keys Pass, Horn Island Pass,

and Petit Bois Pass. The northern boundary of the Mississippi Sound is the shoreline of the mainland between Heron Bay Point, Mississippi and Point aux Pins, Alabama. Proposed critical habitat excludes St. Louis Bay, north of the railroad bridge across its mouth; Biloxi Bay, north of the U.S. Highway 90 bridge; and Back Bay of Biloxi. The southern boundary follows along the broken shoreline of Lake Borgne created by low swampy islands from Malheureux Point to Isle au Pitre. From the northeast point of Isle au Pitre, the boundary continues in a straight north-northeast line to the point 1 nautical mile (nm) (1.9 km) seaward of the western most extremity of Cat Island (30°13'N, 89°10'W). The southern boundary continues 1 nm (1.9 km) offshore of the barrier islands and offshore of the 72 COLREGS lines at barrier island passes (defined at 33 CFR 80.815 (c), (d) and (e)) to the eastern boundary. Between Cat Island and Ship Island there is no 72 COLREGS line. We therefore, have defined that section of the southern boundary as 1 nm (1.9 km) offshore of a straight line drawn from the southern tip of Cat Island to the western tip of Ship Island. The eastern boundary is the line of longitude 88˚18.8'W from its intersection with the shore (Point aux Pins) to its intersection with the southern boundary. The lateral extent of Unit 8 is the MHW line on each shoreline of the included water bodies or the entrance to rivers, bayous, and creeks.

The Pearl River and its distributaries flow into The Rigolets, Little Lake, and Lake Borgne, the western extension of Mississippi Sound. The Rigolets connect Lake Pontchartrain and Lake St. Catherine with Little Lake and Lake Borgne. The Pascagoula River and its distributaries flow into Pascagoula Bay and Mississippi Sound.

This proposed unit provides juvenile, subadult and adult feeding, resting, and passage habitat for Gulf sturgeon from the Pascagoula and the Pearl River subpopulations. One or both of these subpopulations have been documented by tagging data, historic sightings, and incidental captures as using Pascagoula Bay, The Rigolets, the eastern half of Lake Pontchartrain, Little Lake, Lake St. Catherine, Lake Borgne, Mississippi Sound, within 1 nm (1.9 km) of the nearshore Gulf of Mexico adjacent to the barrier islands and within the passes (Davis et al. 1970, Reynolds 1993, Rogillio 1993, Morrow et al. 1998a, Ross et al. 2001a, Rogillio et al. in prep., F. Parauka pers. comm. 2002). Substrate in these areas ranges from sand to silt, all of which contain known Gulf sturgeon prey items (Abele 1986, American Fisheries Society 1989, Menzel, 1971).

The Rigolets is a 11.3 km (7 mi) long and about 0.6 km (0.4 mi) wide passage connecting Lake Pontchartrain and Lake Borgne (U.S. Department of Commerce (USDOC) 2002). This brackish water area is used by adult Gulf sturgeon as a staging area for osmoregulation and for passage to and from wintering areas (Rogillio et al. in prep.). Lake St. Catherine is a relatively shallow lake with depths averaging approximately 1.2 m (4 ft), connected to The Rigolets by Sawmill Pass. Bottom sediments in Sawmill Pass are primarily silt, while Lake Catherine's bottom is composed of silt and sand (Barett 1971). Incidental catches of Gulf sturgeon are documented from Lake St. Catherine and Sawmill Pass (Reynolds 1993; H. Rogillio, Louisiana Department of Wildlife and Fisheries, pers. comm. 2002). Based on the proximity of Little Lake, Lake St Catherine, and Sawmill Pass to The Rigolets and Pearl River, we believe these areas are also used for staging and feeding and, therefore, are including them with the Rigolets as proposed critical habitat.

Rogillio (1990) and Morrow et al. (1996) indicated that Lake Pontchartrain and Lake Borgne were used by Gulf sturgeon as wintering habitat, with most catches during late September through March. Lake Pontchartrain is 57.9 km (36 mi) long, 35.4 km (22 mi) wide at its widest point, and 3 to

4.9 m (10 to 16 ft) deep (USDOC 2002). Morrow et al. (1996) documented Gulf sturgeon from the Pearl River system using Lake Pontchartrain (verified by tags) and summarized existing Gulf sturgeon records, which indicated greater use of the eastern half of Lake Pontchartrain. Although Rogillio et al. (in prep.) did not relocate any of their sonic tagged adult Gulf sturgeon in Lake Pontchartrain, H. Rogillio (pers. comm. 2002) believes the eastern part of this lake to be an important winter habitat for juveniles and subadults based on previous records. We believe that Gulf sturgeon feed in Lake Pontchartrain during the winter. The Lake Pontchartrain Causeway, twin toll highway bridges, extends 33.6 km (20.9 mi) across Lake Pontchartrain from Indian Beach on the south shore to Lewisburg and Mandeville on the north shore. Sediment data from Lake Pontchartrain indicate sediments have a greater sand content east of the causeway (Barret 1976, Manheim et al. 2002). Most records from Lake Pontchartrain are located east of the causeway, with concentrations near Bayou Lacombe and Goose Point, both on the eastern north shore (Reynolds 1993, Morrow et al. 1996). Gulf sturgeon have also been documented west of the causeway, generally near the mouths of small river systems (Davis 1970). We have excluded the western half of Lake Pontchartrain, however, because we believe that the sturgeon using these areas are coming from these western tributaries and not the Pearl River.

Lake Pontchartrain connects by The Rigolets with Lake Borgne. Lake Borgne, the western extension of Mississippi Sound, is partly separated from Mississippi Sound by Grassy Island, Half Moon (Grand) Island and Le Petit Pass Island. Lake Borgne is approximately 14.3 km (23 mi) in length, 3 to 6 km (5 to 10 mi) in width and 1.8 to 3 m (6 to 10 ft) in depth (USDOC 2002). Most of Lake Borgne sediment is clay and silt (Barett 1971). Many Gulf sturgeon were anecdotally reported as taken incidentally in shrimp trawls in Lake Borgne 0.6 to 1.2 km (1 to 2 mi) south of the Pearl River between August and October from the 1950s through the 1980s (Reynolds 1993). There are twenty-two additional records of Gulf sturgeon in Lake Borgne (D. Walther, FWS, pers. comm. 2002). Known locations are spread out around the perimeter of the Lake, including at the mouth of The Rigolets, Violet Canal, Bayou Bienvenue, Polebe, Alligator Point, and at Half Moon Island (Reynolds 1993). We are proposing to include all of Lake Borgne as critical habitat.

The Mississippi Sound is separated from the Gulf of Mexico by a chain of barrier islands, including Cat, Ship, Horn, and Petit Bois Islands. Natural depths of 3.7-5.5 m (12 to 18 ft) are found throughout the Sound and a channel 3.7 m (12 ft) deep has been dredged where necessary from Mobile Bay to New Orleans (USDOC 2001). Incidental captures and recent studies confirm that both Pearl River and Pascagoula River adult Gulf sturgeon winter in the Mississippi Sound, particularly around barrier islands and barrier islands passes (Reynolds 1993, Ross et al. 2001a, Rogillio et al. in prep.). Pascagoula Bay is adjacent to the Mississippi Sound. Gulf sturgeon exiting the Pascagoula River move both east and west, with telemetry recoveries as far east as Dauphin Island and as far west as Cat Island and the entrance to Lake Pontchartrain, Louisiana (Ross et al. 2001a). Gulf sturgeon from the Pearl River subpopulation have been documented scattered between Cat Island, Ship Island, Horn Island, and east of Petit Bois Islands to the Alabama State line (Rogillio et al. in prep.). Gulf sturgeon have also been documented within 1 nm (1.9 km) off the barrier islands of Mississippi Sound. We, therefore, have included 1 nm (1.9 km) offshore of the barrier islands of Mississippi Sound. Habitat used by Gulf sturgeon in the vicinity of the barrier islands is 1.9 to 5.9 m (6.2 to 19.4 ft) deep (average 4.2 m (13.8 ft)), with clean sand substrata (Heise et al. 1999b, Ross et al. 2001a, Rogillio et al. in prep.). Preliminary data from substrate samples taken in the barrier island areas indicate that all samples contained lancelets (Ross et al. 2001a). Inshore locations where Gulf sturgeon were located (Deer Island, Round Island) were 1.9 to 2.8 m (6.2 to 9.2 ft) deep and all had mud (mostly silt and clay) substrata (Heise et al. 1999b)

typical of substrates supporting known Gulf sturgeon prey.

Unit 9. Pensacola Bay System in Escambia and Santa Rosa Counties, Florida.

Unit 9 includes Pensacola Bay and its adjacent main bays and coves. These include Big Lagoon, Escambia Bay, East Bay, Blackwater Bay, Bayou Grande, Macky Bay, Saultsmar Cove, Bass Hole Cove, and Catfish Basin. All other bays, bayous, creeks, and rivers are excluded at their mouths. The western boundary is the Florida State Highway 292 Bridge crossing Big Lagoon to Perdido Key. The southern boundary is the 72 COLREGS line between Perdido Key and Santa Rosa Island (defined at 33 CFR 80.810 (g)). The eastern boundary is the Florida State Highway 399 Bridge at Gulf Breeze, Florida. The lateral extent of Unit 9 is the MHW line on each shoreline of the included water bodies.

The Pensacola Bay system includes five interconnected bays, including Escambia Bay, Pensacola Bay, Blackwater Bay, East Bay, and the Santa Rosa Sound. The Santa Rosa Sound is addressed separately in proposed unit 10. The Escambia River and its distributaries (Little White River, Dead River, and Simpson River) empty into Escambia Bay, including Bass Hole Cove, Saultsmar Cove, and Macky Bay. The Yellow River empties into Blackwater Bay. The entire system discharges into the Gulf of Mexico, primarily through a narrow pass at the mouth of Pensacola Bay.

The Pensacola Bay system provides winter feeding and migration habitat for Gulf sturgeon from the Escambia River and Yellow River subpopulations. Over the past four years, researchers of the Florida Department of Environment Protection (FDEP) have conducted tracking studies in the Pensacola Bay system to observe Gulf sturgeon winter migrations. They have identified specific areas in the bays where Escambia River and Yellow River Gulf sturgeon collect, or migrate through, during the fall and winter season. These studies also identified two main habitat types where Gulf sturgeon concentrate during winter months. Movement is generally along the shoreline area of Pensacola Bay. Gulf sturgeon showed a preference for several areas in the bay, including Redfish Point, Fort Dickens, and Escribano Point, near Catfish Basin (FWS 1998, Craft et al. 2001). Sandy shoal areas, located along the south and east side of Garcon Point, south shore of East Bay (Redfish Point area) and near Fair Point, appear to be commonly used, especially in the fall and early spring. During midwinter, common areas are in deep holes located north of the barrier island at Ft. Pickens, south of the Pensacola Naval Air Station, and at the entrance of Pensacola Pass. The depth in these areas ranges from 6 to 12.1 m (20 to 40 ft). Other areas where tagged fish were frequently located include Escribano Point, near Catfish Basin, and the mouth of the Yellow River. Previous incidental captures of Gulf sturgeon have been recorded in Pensacola Bay, Big Lagoon, and Bayou Grande (Reynolds 1993, Lorio 2000).

Unit 10. Santa Rosa Sound in Escambia, Santa Rosa, and Okaloosa Counties, Florida.

Unit 10 includes the Santa Rosa Sound, bounded on the west by the Florida State Highway 399 bridge in Gulf Breeze, Florida. The eastern boundary is the U.S. Highway 98 bridge in Fort Walton Beach, Florida. The northern and southern boundaries of Unit 10 are formed by the shorelines to the MHW line or by the entrance to rivers, bayous, and creeks.

The Santa Rosa Sound is a lagoon between the mainland and Santa Rosa Island that connects Pensacola Bay in the west with Choctawhatchee Bay in the east. The Sound extends approximately 57.9 km (35.9 mi) along an east-west orientation, varying in width between 0.32 and 3.5 km (0.2 to 2.2 mi)

(FDEP 1993). The Intracoastal Waterway transects the sound. The Santa Rosa Sound is proposed as critical habitat because we believe it provides one continuous migratory pathway between Choctawhatchee Bay, Pensacola Bay, and the Gulf of Mexico for feeding and genetic interchange. Within the last 3,000 years, periodic shoaling closed the opening of Choctawhatchee Bay to the Gulf of Mexico. For many years, the Santa Rosa Sound provided the only way for Choctawhatchee River Gulf sturgeon to migrate to the Gulf of Mexico (Wakeford 2001). Recent locations of subadult and adult Gulf sturgeon within the Santa Rosa Sound confirm its present use by the Choctawhatchee River subpopulations (F. Parauka pers. comm. 2002, Fox et al. in press). The Escambia and Yellow River subpopulations may also use this area due to its close proximity. Gulf sturgeon have been located mid-channel and in shoreline areas in 2 to 5.2 m (6.6 to 17.1 ft) depths and sand substrate. The approximate length of the proposed critical habitat unit is 52.8 km (33 miles). Bridges were chosen as the eastern and western boundaries for ease in identification. Any portion of the sound not included in this unit is captured by the adjacent critical habitat units.

Unit 11. Florida Nearshore Gulf of Mexico Unit in Escambia, Santa Rosa, Okaloosa, Walton, Bay, and Gulf Counties in Florida.

Unit 11 includes a portion of the Gulf of Mexico as defined by the following boundaries. The western boundary is the line of longitude 87˚20.0'W (approximately 1 nm (1.9 km) west of Pensacola Pass) from its intersection with the shore to its intersection with the southern boundary. The northern boundary is the MHW of the mainland shoreline and the 72 COLREGS lines at passes as defined at 30 CFR 80.810 (a-g). The southern boundary is 1 nm (1.9 km) offshore of the northern boundary. The eastern boundary is the line of longitude 85˚17.0'W from its intersection with the shore (near Money Bayou between Cape San Blas and Indian Peninsula) to its intersection with the southern boundary.

Unit 11 includes winter feeding and migration habitat for Gulf sturgeon from the Yellow River, Choctawhatchee River, and Apalachicola River subpopulations. Telemetry relocation data suggest that these subpopulations feed in nearshore Gulf of Mexico waters between their natal river systems (Fox et al. in press, F. Parauka pers. comm. 2002). Gulf sturgeon from the Choctawhatchee River subpopulation have been documented both east and west of Choctawhatchee Bay (F. Parauka pers. comm. 2002, Fox et al. in press). In the winter of 2001-2002, the USGS and FWS attached pop-up satellite tags to 20 Gulf sturgeon (12 from the Suwannee River, 4 from the Choctawhatchee River, 2 from the Apalachicola, and 2 from the Yellow River) to investigate winter feeding migrations in the Gulf of Mexico. Due to a design flaw, errors in attachment, or sturgeon's ability to successfully knock the tags off, the tags failed to report reliable data with only two exceptions. One of the Choctawhatchee-tagged Gulf sturgeon was located in Hogtown Bayou in Choctawhatchee Bay. This provided no new information, as we already knew that some adult Gulf sturgeon overwinter in this bayou. The other operating tag, however, was one that had been attached to a Yellow River Gulf sturgeon. Sonic tracking in the vicinity of that Yellow River Gulf sturgeon led to the relocation of other sonic tagged Gulf sturgeon. Sonic-tagged individuals from three different subpopulations (Choctawhatchee, Yellow, and Apalachicola Rivers) were relocated on multiple occasions in close proximity to one another, suggesting an important feeding area just offshore of Mexico Beach, Crooked Island East, and Crooked Island West over sand substrate. The data suggest that Gulf sturgeon from the Yellow River, Choctawhatchee River, and Apalachicola River remain within 1.6 km (1 mi) of the coastline between these river systems (F. Parauka pers. comm. 2002). Examination of bathymetry data along the Gulf of Mexico coastline between the Pensacola Bay and Apalachicola Bay reveals that depths of less than 6 m (19.7 ft), within which Gulf sturgeon are generally found, are all

contained within 1 nm (1.9 km) from shore. Gulf nearshore substrate contains unconsolidated, fine-medium grain sands which support crustaceans such as mole crabs, sand fleas, various amphipod species, and lancelets (Menzel 1971, Abele 1986, American Fisheries Society 1989). Based on their direction of movement over time, it appeared these Gulf sturgeon were feeding in the nearshore Gulf of Mexico on route to their natal rivers. Given this information we are including the nearshore (up to 1 nm (1.9 km)) Gulf of Mexico waters between Pensacola and Apalachicola Bays.

Unit 12. Choctawhatchee Bay in Okaloosa and Walton Counties, Florida.

Unit 12 includes the main body of Choctawhatchee Bay, Hogtown Bayou, Jolly Bay, Bunker Cove, and Grassy Cove. All other bayous, creeks, and rivers are excluded at their mouths/entrances. The western boundary is the U.S. Highway 98 bridge at Fort Walton Beach, Florida. The southern boundary is the 72 COLREGS line across East (Destin) Pass as defined at 33 CFR 80.810 (f). The lateral extent of Unit 12 is the MHW line on each shoreline of the included water bodies.

Choctawhatchee Bay provides important habitat for maintaining the health of subadult and adult Gulf sturgeon as evidenced by a large number of Gulf sturgeon overwintering in the system (FWS 1997, 1998; Parauka et al. in press). The Choctawhatchee Bay offers a feeding area for both subadults and adults (FWS 1998, Fox et al. in press). Tagged subadults showed a preference for shoreline habitats which are predominated by sandy substrates, low salinity and water depths less than 3 m (10 ft) (FWS 1997, 1998; Parauka et al. in press). Most adult Gulf sturgeon were found in shallow water (2 to 4 m (6.6 to 13.1 ft)) with predominantly (greater than 80 percent) sandy sediment (Fox et al. in press). Ghost shrimp, a component of the sturgeon diet, are typically found in substrates ranging from sandy mud to organic silty sand (Felder and Lovett 1989), and their densities were greatest nearshore along the middle and eastern portions of the Choctawhatchee Bay (Heard et al. 2000), the area frequented by the Gulf sturgeon (Fox et al. in press). We include the deeper central portion of the Bay in Unit 12 as proposed critical habitat because the Gulf sturgeon are known to use the deeper bay waters for movement between the shoreline areas (Fox et al. in press).

Unit 13. Apalachicola Bay in Gulf and Franklin County, Florida.

Unit 13 includes the main body of Apalachicola Bay and its adjacent sounds, bays, and the nearshore waters of the Gulf of Mexico. These consist of St. Vincent Sound, including Indian Lagoon; Apalachicola Bay including Horseshoe Cove and All Tides Cove; East Bay including Little Bay and Big Bay; and St George Sound, including Rattlesnake Cove and East Cove. Barrier Island passes (Indian Pass, West Pass, and East Pass) are also included. Sike's cut is excluded from the lighted buoys on the Gulf of Mexico side to the day boards on the bay side. The southern boundary includes water extending into the Gulf of Mexico 1 nm (1.9 km) from the MHW line of the barrier islands and from 72 COLREGS lines between the barrier islands (defined at 33 CFR 80.805 (e-h)). The western boundary is the line of longitude 85˚17.0'W from its intersection with the shore (near Money Bayou between Cape San Blas and Indian Peninsula) to its intersection with the southern boundary. The eastern boundary is formed by a straight line drawn from the shoreline of Lanark Village at 29°53.1'N, 84°35.0'W to a point that is 1 nm (1.9 km) offshore from the northeastern extremity of Dog Island at 29°49.6'N, 84°33.2'W. The lateral extent of Unit 13 is the MHW line on each shoreline of the included water bodies or the entrance of excluded rivers, bayous, and creeks.

The Apalachicola River empties into Apalachicola Bay near Little Bay and Big Bay. The Apalachicola Bay system, a highly productive lagoon-and-barrier-island complex, encompasses 54,910 hectares (549 km^2) and consists of the bay proper, East Bay, St. George Sound, Indian Lagoon, and St. Vincent Sound (Wakeford 2001). It is relatively shallow, averaging 2 to 3 m (6.6 to 9.8 ft) in depth (Livingston 1983). The largest benthic habitat type found in Apalachicola Bay system is soft sediment, comprising approximately 70 percent of the estuarine area (Livingston 1984). Its composition of sand, clay, and silt varies considerably depending on the location in the bay. The Apalachicola Bay connects with the Gulf of Mexico through several passes, including Indian Pass, West Pass, East Pass, and Sike's cut, a man-made opening established in the mid 1950s (Odenkirk 1989).

Unit 13 provides winter feeding migration habitat for the Apalachicola River Gulf sturgeon subpopulation. Gulf sturgeon have been documented by sightings, incidental captures, and telemetry studies throughout Apalachicola Bay, East Bay, St. George Sound, St. Vincent Sound, and Indian Lagoon (Swift et al. 1977, Wooley and Crateau 1985, Odenkirk 1989, FWS 2000, F. Parauka pers. comm. 2002). Gulf sturgeon have also been documented in Indian Pass, West Pass, East Pass, and just north of Dog Island (Wooley and Crateau 1985, Odenkirk 1989, FWS 2000, F. Parauka pers. comm. 2002). Substantial weight gains and the presence of suitable habitat for prey items indicate that Gulf sturgeon are feeding while within these bodies of water (Wooley and Crateau 1985, Odenkirk 1989). These areas are also used for accessing adjacent marine and estuarine feeding areas proposed in Unit 11. Gulf sturgeon are believed to migrate from Apalachicola Bay into the Gulf of Mexico following prevailing currents and exiting primarily through the two most western passes (Indian and West) (Odenkirk 1989). No Gulf sturgeon have been documented using Sike's Cut, a man-made opening established in the 1950s bisecting Little St. George Island and St. George Island, therefore, Sike's Cut is excluded from our proposed designation.

Tag return data from incidental captures and recent relocation data document Gulf sturgeon south of the Apalachicola barrier islands, generally within a mile of the shoreline (Odenkirk 1989, FWS 2000). On June 8, 1992, a commercial shrimp fishermen provided anecdotal information that he and other shrimp fishermen, had caught hundreds of Gulf sturgeon, with estimated weights generally between 50 to 60 lbs (22.7 to 27.2 kg), in the same location, each spring (April, May and June), for the past thirty years (1962 to 1992) (F. Parauka pers. comm. 2002). The fishermen described the location as south of St. George Island, within a few hundred yards of the beach. He described the areas as adjacent to a shoal extending approximately 3.2 km (2 mi) offshore. Examination of bathymetric data shows that there are several shoals in that general vicinity. Since we are unable to confirm the specific location of the shoaled area described by this fisherman, we propose to extend this proposed critical habitat unit only 1 nm (1.9 km) offshore of the barrier islands bordering Apalachicola Bay and Cape San Blas, a distance for which we have supporting telemetry data. In doing so, we will still capture some of the shallow shoals extending south of the barrier islands in this area, which we believe provide important feeding substrate.

Unit 14. Suwannee Sound in Dixie and Levy Counties, Florida.

Unit 14 includes Suwannee Sound and a portion of adjacent Gulf of Mexico waters extending 9 nm from shore (16.7 km) out to the State territorial water boundary. Its northern boundary is formed by a straight line from the northern tip of Big Pine Island (at approximately 29°23'N, 83°12'W) to the Federal-State boundary at 29°17'N, 83°21'W. The southern boundary is formed by a straight line from the southern tip of Richards Island (at approximately 29°11'N, 83°04'W) to the Federal-State boundary at

29°04'N, 83°15'W. The lateral extent of Unit 14 is the MHW line along the shorelines and the mouths of the Suwannee River (East and West Pass), its distributaries and other rivers, creeks, or water bodies.

The Suwannee River system is unique among Gulf sturgeon river systems in that the river flows directly into the Suwannee Sound and Gulf of Mexico without any intervening barrier islands. Suwannee Sound is a shallow (typically less than 2 m (6.6 ft)), estuarine basin, a little less than 10 nm (8 km) long and a little over 4 nm (8 km) wide at its widest point. It is enclosed on its seaward side by Suwannee Reef, an approximately 14.6 nm (27 km) long arc of oyster reefs and shoals (Edwards et al. in prep.). The bathymetry of waters off the coastline and north and south of Suwannee Sound is different from the waters adjacent to other systems. Shallow waters are not confined to the nearshore environment, and depths less than 6 m (19.7 ft) extend 9 to 10 mi (14.5 to 16.1 km) off the coastline.

Telemetry tracking data confirm that subadult and adult Gulf sturgeon leave the river during October and November and enter Suwannee Sound and the nearshore Gulf of Mexico (Carr et al. 1996b, Edwards et al. in prep.). Tracked and relocated Gulf sturgeon move slowly and remained offshore of Suwannee Sound in nearby shallow (less than 6 m (19.7 ft)) marine/estuarine habitats for a period of two months, until at least mid or late December. Overall movement patterns are punctuated by periods of slow movement within small areas, suggesting feeding (Edwards et al. in prep.). Mason and Clugston (1993) found large, immigrating Suwannee River Gulf sturgeon fed on nearshore coastal shelf organisms lancelets (Branchiostoma caribaeum), brachiopods (Glottida pyramida), unidentified pelagic shrimps, polychaetes, unidentified marine molluscs, starfish and sea cucumbers. Carr et al. (1996b) found that adult Gulf sturgeon feed primarily on brachiopods and ghost shrimp, before entering the river. The consumption of brachiopods as a primary Gulf sturgeon food source is currently being researched by the University of Florida. Numerous underwater beds containing brachiopods have recently been located in the Suwannee River estuary and adjacent areas in Suwannee Sound (D. Murie and D. Parkyn pers. comm. 2002). Recent stomach content analyses using a non-lethal method of stomach pumping (lavaging) support that Gulf sturgeon from the Suwannee River subpopulation feed primarily on brachiopods, and to lesser amounts on ghost shrimp, amphipods, and worms prior to entering the river (D. Murie and D. Parkyn pers. comm. 2002).

Gulf sturgeon tracking and relocation data were used to delineate the boundaries of this proposed critical habitat unit. In 1998, 18 out of 19 sonic-tagged Gulf sturgeon were consistently relocated and found to be concentrated in a relatively small area (115 km^2 (44.4 mi^2)) offshore of Suwannee Sound (Edwards et al. in prep.). Specific locations within the concentration area were around Waldley Channel, West Gap, and Hedemon Reef. The farthest offshore area was Hedemon Reef, approximately 5 to 6 nm (9.3 to 11.1 km) from the Suwannee River opening. Previous telemetry relocation and tracking data collected in 1996 documented Gulf sturgeon using Gulf of Mexico waters as far out as 9 nm (16.7 km) (Sulak and Clugston 1999, Edwards et al. in prep.). More recently, on March 22, 2002, two Gulf sturgeon were observed jumping in the area of 29°14'N, 83°18'W, further substantiating the Gulf sturgeon's use of shallow State waters further offshore (> 6 nm (11.1 km) (Harris pers. comm. 2002). Benthic samples were taken where the fish were jumping and were comprised of fine sand substrate and lancelets. Although lancelets are recovered less frequently than brachiopods in the stomachs of Suwannee River Gulf sturgeon, this may be a result of quicker decomposition of lancelets during digestion compared to brachiopods. Our proposed designation, therefore, includes waters out to 9 nm (16.7 km) to encompass these areas that we believe are essential for recovery. The northern extent of the tracked sturgeon concentration area depicted in Edwards et al. (in prep.) corresponds approximately to

the northern-most extremity of Big Pine Island. We, therefore, have chosen that easy-to-identify location for the northern limit of this proposed critical habitat unit. The southern extent of the concentration area depicted in Edwards et al. (in prep.) corresponds approximately to Richards Island. In addition to the telemetry data, Gulf sturgeon sightings are frequently reported around Deer Island and Derrick Key (F. Chapman, UF, pers. comm. 2002). Derrick Key is approximately 1 m (1.6 km) offshore of Richards Island. Based on these data, we propose the southernmost extremity of Richards Island for the southern limit of Unit 14.

Although Gulf sturgeon have been relocated both north and south of this proposed critical habitat area (Reynolds 1993, F. Chapman pers. comm. 2002, Edwards et al. in prep.), these records are relatively rare and spread out over approximately 643.7 km (400 mi) of coastline (from Charlotte Harbor to Apalachicola Bay). Because shallow waters believed to be used primarily by Gulf sturgeon are not confined to the nearshore environment, we have no way of estimating which other areas might be essential for feeding or movement. Gulf sturgeon may congregate in certain areas or diffuse throughout the entire area. Without additional information we cannot currently identify other areas to propose as critical habitat.

Land Ownership

Upon statehood in 1811 for Louisiana, 1817 for Mississippi, 1819 for Alabama, and 1845 for Florida, these States were granted ownership of lands beneath tidally influenced and navigable waters up to the high water mark (Pollard v. Hagan, 44 U.S. (3 How.) 212 (1845)). It is possible that prior sovereigns or the States have made grants to private parties which include lands below mean high waters of the navigable waters included within this rule. Thus, this rule may affect limited parcels of private land. However, we believe that the majority of lands proposed here as critical habitat are owned by the States of Louisiana, Mississippi, Alabama, and Florida. The majority of riparian lands bordering riverine critical habitat units are in private ownership. Table 3 summarizes public lands adjacent to designated critical habitat units.

Table 3. Public Lands Adjacent To Designated Critical Habitat Units.
Unit 1. Pearl--Lefleur's Bluff SP, Pearl River WMA, Bogue Chitto NWR, Old River WMA, National Space Technology Laboratories (National Aeronautics and Space Administration (NASA))
Unit 2. Pascagoula--Desoto NF, Pascagoula River WMA, Ward Bayou WMA, MS Sandhill Crane NWR.
Unit 3. Escambia--Lower Escambia River WtrMA, Conecuh NF.
Unit 4. Yellow--Yellow River WtrMA, Eglin Air Force Base, Conecuh NF, Blue Spring WMA, Blackwater River Recreational Area.
Unit 5. Choctawhatchee--Choctawhatchee River SF, Choctawhatchee River Delta Preserve, Choctawhatchee River WtrMA.
Unit 6. Apalachicola--Chattahoochee Nature Park, Torreya SP, Apalachicola Bluffs and Ravines Preserve, Apalachicola WMA, Apalachicola River WtrMA, Apalachicola NF, Apalachicola National Estuarine Research Reserve.
Unit 7. Suwannee--Ft. Union CA, Holton Creek CA, Suwannee River SP CA, Twin Rivers SF, Madison Co. CA, Anderson Spring CA, Charles Spring CA, Allen Mill Pond CA, Peacock Spring CA, Little River CA, Troy Springs CA, Grady CA, Stuart Landing CA, Hatchbend CA, Rock Bluff CA, Log Landing CA, Wannee CA, Fanning Springs SRA, Andrews WMA, Manatee Springs SP, Fowler's Bluff CA, Cummer Sanctuary, Lower Suwannee NWR, Troy Springs SP, Convict Spring CA, Yellow Jacket CA, Suwannee River SP, Big Shoals SP, Big Shoals CA, Camp Branch CA, Deep Creek CA, Stephen Foster State Folk Culture Center, Suwannee Valley CA, Swift Creek CA, Woods Ferry CA.
Unit 8. Lake Borgne, Mississippi Sound, Lake Pontchartrain--Biloxi Marshland Corporation WMA, Bayou Sauvage NWR, Big Branch Marsh NWR, Grand Bay NWR, Gulf Islands NS, Buccaneer SP, St. Hospital WMA, Fontainebleau SP, St. Tammany SWR, Pearl River WMA, Fort Pike State Historic Site.

Unit 9. Pensacola Bay--Gulf Islands NS, Eglin AFB, Pensacola Naval Air Station, Garcon Point WMD, Yellow River WtMR, Lower Escambia River Mgt. Area, Bay Bluffs Park, Escambia Bay Bluffs, Fort Pickens AP, Yellow River Marsh AP.
Unit 10. Santa Rosa Sound--Gulf Islands NS, Eglin AFB.
Unit 11. Near Shore GOM--Gulf Islands NS, Eglin AFB (main base and Cape San Blas), St. Vincent NWR, St. Joe SP, Salina Park, Tyndall AFB, St. Andrew SP, Camp Helen SRA, Deer Lake SP, Grayton SRA, Topsail Hill St. Preserve, Henderson SRA, Pensacola Naval Air Station, Perdido Key SRA, Fort Pickens AP, St. Andrew Bay AP, St. Joseph Bay AP.
Unit 12. Choctawhatchee Bay--Choctawhatchee River Delta Preserve, Rocky Bayou State Recreation SRA, Eglin AFB, Basin Bayou Recreation Area.
Unit 13. Apalachicola Bay--St. Vincent NWR, St. George Island SP, Apalachicola WMA, Apalachicola National Estuarine Research Reserve, Apalachicola Bay AP.
Unit 14. Suwannee Sound-- Lower Suwannee NWR, Cedar Keys NWR, Big Bend Seagrasses AP.

*Abbreviations-- AFB=Air Force Base, AP=Aquatic Preserve, CA=Conservation Area, NF=National Forest, NS=National Seashore, NWR=National Wildlife Refuge, SCA=State Commemorative Area, SF=State Forest, SP=State Park, SRA=State Recreation Area, SWR=State Wildlife Refuge, WMA=Wildlife Management Area, WMD=Water Management District, WtrMA=Water Management Area.

Effects of Critical Habitat Designation

ESA Section 7 Consultation

The regulatory effects of a critical habitat designation under the Act are triggered through the provisions of section 7, which applies only to activities conducted, authorized, or funded by a Federal agency (Federal actions). Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR 402. Individuals, organizations, States, local governments, and other non-Federal entities are not affected by the designation of critical habitat unless their actions occur on Federal lands, require Federal authorization, or involve Federal funding.

Section 7(a)(2) of the Act requires Federal agencies, including us, to insure that their actions are not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. This requirement is met through section 7 consultation under the Act. Our regulations define "jeopardize the continued existence" as to engage in an action that reasonably would 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 (50 CFR 402.02). "Destruction or adverse modification of designated critical habitat" is defined as a direct or indirect alteration that appreciably diminishes the value of the critical habitat for both the survival and recovery of the species (50 CFR 402.02). Such alterations include, but are not limited to, adverse changes to the physical or biological features, i.e., the primary constituent elements, that were the basis for determining the habitat to be critical.

The relationship between a species' survival and its recovery has been a source of confusion to some in the past. We believe that a species' ability to recover depends on its ability to survive into the future when its recovery can be achieved; thus, the concepts of long-term survival and recovery are intricately linked. However, in the March 15, 2001, decision of the United States Court of Appeals for the Fifth Circuit (Sierra Club v. U.S. Fish and Wildlife Service et al., 245 F.3d 434) regarding our previous not prudent finding, the Court found our definition of destruction or adverse modification as currently contained in 50 CFR 402.02 to be invalid. In response to this decision, we are reviewing the regulatory definition of adverse modification in relation to the conservation of the species.

Conference for Proposed Critical Habitat

Section 7(a)(4) of the Act requires Federal agencies to confer with us on any action that is likely to result in the destruction or adverse modification of proposed critical habitat. The regulations for interagency cooperation regarding proposed critical habitat are codified at 50 CFR 402.10. During a conference on the effects of a Federal action on proposed critical habitat, we make non-binding recommendations on ways to minimize or avoid adverse effects of the action. We document these recommendations and any conclusions reached in a conference report provided to the Federal agency and to any applicant involved.

If requested by the Federal agency and deemed appropriate by us, the conference may be conducted in accordance with the procedures for formal consultation under 50 CFR 402.14. We may adopt an opinion issued at the conclusion of the conference as our biological opinion when the critical habitat is designated by final rule, but only if new information or changes to the proposed Federal action

would not significantly alter the content of the opinion.

Consultation for Designated Critical Habitat

If a Federal action may affect a listed species or its designated critical habitat, the action agency must initiate consultation with us (50 CFR 402.14). Through this consultation, we would advise the agency whether the action would likely jeopardize the continued existence of the species or adversely modify its critical habitat.

When we issue a biological opinion that concludes that an action is likely to result in the destruction or adverse modification of critical habitat, we must provide reasonable and prudent alternatives to the action, if any are identifiable. Reasonable and prudent alternatives are actions identified during consultation that can be implemented in a manner consistent with the intended purpose of the proposed action, are consistent with the scope of the action agency's authority and jurisdiction, are economically and technologically feasible, and would likely avoid the destruction or adverse modification of critical habitat (50 CFR 402.02).

Reinitiation of Prior Consultations

A Federal agency may request a conference with us for any previously reviewed action that is likely to destroy or adversely modify proposed critical habitat and over which the agency retains discretionary involvement or control, as described above under "Conference for Proposed Critical Habitat." Following designation of critical habitat, regulations at 50 CFR 402.16 require a Federal agency to reinitiate consultation for previously reviewed actions that may affect critical habitat and over which the agency has retained discretionary involvement or control.

Federal Actions That May Destroy or Adversely Modify Gulf Sturgeon Critical Habitat

Section 4(b)(8) of the Act requires us, in any proposed or final rule designating critical habitat, to briefly describe and evaluate those activities that may adversely modify such habitat, or that may be affected by such designation.

Federal actions that, when carried out, funded or authorized by a federal agency, may destroy or adversely modify critical habitat for the Gulf sturgeon include, but are not limited to:

(1) Actions that would appreciably reduce the abundance of riverine prey for larval and juvenile sturgeon, or of estuarine and marine prey for juvenile and adult Gulf sturgeon, within a designated critical habitat unit, such as dredging; dredged material disposal; channelization; in-stream mining; and land uses that cause excessive turbidity or sedimentation.

(2) Actions that would appreciably reduce the suitability of Gulf sturgeon spawning sites for egg deposition and development within a designated critical habitat unit, such as impoundment; hard-bottom removal for navigation channel deepening; dredged material disposal; in-stream mining; and land uses that cause excessive sedimentation.

(3) Actions that would alter the flow regime (the magnitude, frequency, duration, seasonality, and

rate-of-change of freshwater discharge over time) of a riverine critical habitat unit such that it is appreciably impaired for the purposes of Gulf sturgeon migration, resting, staging, breeding site selection, courtship, egg fertilization, egg deposition, and egg development, such as impoundment; water diversion; and dam operations.

(4) Actions that would alter water quality within a designated critical habitat unit, including temperature, salinity, pH, hardness, turbidity, oxygen content, and other chemical characteristics, such that it is appreciably impaired for normal Gulf sturgeon behavior, reproduction, growth, or viability, such as dredging; dredged material disposal; channelization; impoundment; in-stream mining; water diversion; dam operations; land uses that cause excessive turbidity; and release of chemicals, biological pollutants, or heated effluents into surface water or connected groundwater via point sources or dispersed non-point sources.

(5) Actions that would alter sediment quality within a designated critical habitat unit such that it is appreciably impaired for normal Gulf sturgeon behavior, reproduction, growth, or viability, such as dredged material disposal; channelization; impoundment; in-stream mining; land uses that cause excessive sedimentation; and release of chemical or biological pollutants that accumulate in sediments.

(6) Actions that would obstruct migratory pathways within and between adjacent riverine, estuarine, and marine critical habitat units, such as dams, dredging, point-source-pollutant discharges, and other physical or chemical alterations of channels and passes that restrict Gulf sturgeon movement.

Previous Section 7 Consultations

Many section 7 consultations for Federal actions affecting the Gulf sturgeon and its habitat have preceded this critical habitat proposal. The action agencies have included the U.S. Army Corps of Engineers (COE), other Department of Defense (DOD) agencies, the U.S. Coast Guard, the National Park Service, the Federal Highway Administration, the Minerals Management Service (MMS), the Federal Energy Regulatory Commission, and others. We have also conducted intra-service section 7 consultations on our own actions.

Since listing, the FWS has conducted 320 informal and 14 formal consultations, and NMFS has conducted 70 informal and 4 formal consultations involving Gulf sturgeon. The informal consultations, all of which concluded with a finding that the Federal action would not affect or would not likely adversely affect the Gulf sturgeon, addressed a wide range of actions including navigation, beach nourishment, Gulf of Mexico fishery management planning, oil and gas leases, power plants, bridges, pipelines, breakwaters, rip-rap, levees and other flood-protection structures, piers, bulkheads, jetties, military actions, and in-stream gravel mining. The formal consultations, which followed a finding that the Federal action may affect Gulf sturgeon, have dealt exclusively with navigation projects, oil and gas leases, pipelines, review of water quality standards, and disaster recovery activities, and have resulted in biological opinions. Also, the Gulf sturgeon was addressed in several biological opinions that were triggered by may-affect determinations for other listed species. To date, none of the Services' opinions has concluded that a proposed Federal action would jeopardize the continued existence of the Gulf sturgeon.

Previous biological opinions for the Gulf sturgeon have included discretionary conservation

recommendations to the action agency. Conservation recommendations are activities that would avoid or minimize the adverse effects of a proposed action on a listed species or its critical habitat, help implement recovery plans, or develop information useful to the species' conservation.

Previous biological opinions for the Gulf sturgeon also have included non-discretionary reasonable and prudent measures, with implementing terms and conditions, which are designed to minimize the proposed action's incidental take of Gulf sturgeon. Section 3(18) of the Act defines the term take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct." Harm is further defined in our regulations (50 CFR 7.3) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

The conservation recommendations and reasonable and prudent measures provided in previous Gulf sturgeon biological opinions have included enforcement of marine debris and trash regulations; avoidance of dredging and disposal in deeper portions of the channel; monitoring and reporting of "take" events during project construction; operation of equipment so as to avoid or minimize take; monitoring of post-project habitat conditions; monitoring of project-area Gulf sturgeon subpopulations; limiting of dredging to the minimum dimensions necessary; limiting of the depth of dredged material placed in disposal areas; arrangement of the sequence of areas for dredging to minimize potential harm; screening of intake structures; avoidance of riverine dredging during spawning months; limiting of tow times of trawl nets for hurricane debris cleanup; addition of specific measures for species protection to oil spill contingency plans; and funding of research useful for Gulf sturgeon conservation.

The designation of critical habitat will have no impact on private landowner activities that do not require Federal funding or permits. Designation of critical habitat is only applicable to activities approved, funded or carried out by Federal agencies.

While preparing this proposal, the FWS and the COE met several times to discuss and review riverine and estuarine navigation channel maintenance dredging requirements, formal and informal consultation procedures, and the biology of the Gulf sturgeon. During these consultations, the agencies agreed to conduct a formal programmatic consultation on channel maintenance activities in riverine and estuarine navigation channels occupied by the Gulf sturgeon. A programmatic consultation will consider overall effects of the project to the survival and recovery of the sturgeon, as well as other listed species, and identify reasonable and prudent measures to minimize incidental take of the sturgeon without altering the basic design, location, scope, duration, or timing of the projects. The COE is in the process of developing a biological assessment that will initiate the formal consultation process. If the biological assessment is completed before a final rule is published, potential effects to critical habitat will be considered under the conference process. All formal consultations concluded "no jeopardy" for the Gulf sturgeon.

If you have questions regarding whether specific activities would constitute adverse modification of critical habitat, you may contact the following Services' offices:

Alabama--Daphne, FWS Ecological Services Office (334/441-5181)
Florida--Panama City, FWS Ecological Services Office (850/769-0552)
Jacksonville, FWS Ecological Services Office (904/232-2580)

Louisiana--Lafayette, FWS Ecological Services Office (337/291-3100)
Mississippi--Jackson, FWS Ecological Services Office (601/965-4900)
NMFS--St. Petersburg, Florida, NMFS Regional Office (727/570-5312)

Jurisdictional Responsibilities for the Management of the Gulf Sturgeon

When the Gulf sturgeon was listed on September 30, 1991 (56 FR 49653), the Services had not resolved jurisdictional responsibilities for the management of the Gulf sturgeon. Both Services signed the listing rule in agreement that the species required protection. The final listing rule stated that until the jurisdictional issue was resolved, the FWS would be responsible for the species once the listing became effective. Although the issue has never been formally resolved, we have been operating under a verbal agreement in which the FWS maintains the lead for recovery actions. Consultation responsibilities were divided, with the FWS performing consultation review for projects impacting the Gulf sturgeon in the riverine and estuarine habitats, and NMFS performing consultation review for projects affecting the species in marine habitats.

We intend to formalize Gulf sturgeon jurisdictional responsibilities within the final critical habitat rule. In order to enhance consultation coordination efficiency for the action agencies, we propose the following structure. The FWS will maintain primary responsibility for recovery actions and the NMFS will assist in and continue to fund recovery actions pertaining to estuarine and marine habitats. In riverine units, the FWS will be responsible for all consultations regarding Gulf sturgeon and critical habitat. In estuarine units, we will divide responsibility based on the action agency involved. The FWS will consult with the Department of Transportation, the Environmental Protection Agency, the Coast Guard, and the Federal Emergency Management Agency. The NMFS will consult with the DOD, COE, MMS, and any other Federal agencies not mentioned here explicitly. In marine units, the NMFS will be responsible for all consultations regarding Gulf sturgeon and critical habitat. Any Federal projects that extend into the jurisdiction of both the Services will be consulted on by the FWS, but with NMFS assistance where needed. Each agency will conduct its own intra-agency consultations as necessary. We would like your comments on this proposal.

Exclusions Under Section 4(b)(2)

Section 4(b)(2) of the Act requires that we designate critical habitat on the basis of the best scientific and commercial information available, and that we consider the economic and other relevant impacts of designating a particular area as critical habitat. We may exclude areas from critical habitat if the benefits of exclusion outweigh the benefits of designation, provided the exclusion will not result in the extinction of the species. We will conduct an analysis of the economic impacts of designating these areas as critical habitat prior to a final determination. That economic analysis will be conducted in a manner that is consistent with the ruling of the 10th Circuit Court of Appeals in *N.M. Cattle Growers Ass'n v. USFWS*. When completed, we will announce the availability of the draft economic analysis with a notice in the Federal Register. Comments will be accepted on the draft economic rule for a minimum of 30 days, during which the comment period on this rule will remain open.

Public Comments Solicited

We intend that any final action resulting from this proposal be as accurate and as effective as

possible. Therefore, we solicit comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning this proposed rule. We are particularly interested in comments concerning:

(1) The reasons why any area should or should not be determined to be critical habitat as provided by section 4 of the Act and 50 CFR 424.12(a)(1), including whether the benefits of designation will outweigh any threats to the species due to designation;

(2) Specific information on the number and distribution of Gulf sturgeon and what habitat is essential to the conservation of this species and why;

(3) Whether areas within proposed critical habitat are currently being managed to address conservation needs of the Gulf sturgeon;

(4) Current or planned activities in the subject areas and their possible impacts on proposed critical habitat;

(5) Any foreseeable economic or other impacts resulting from the proposed designation of critical habitat, in particular, any impacts on small entities;

(6) Economic and other values associated with designating critical habitat for the Gulf sturgeon, such as those derived from non-consumptive uses (e.g., hiking, camping, wildlife-watching, enhanced watershed protection, improved air quality, increased soil retention, "existence values," and reductions in administrative costs).

If you wish to comment on this proposed rule, you may submit your comments and materials concerning this proposal by any one of several methods (see ADDRESSES section). Our practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Respondents may request that we withhold their home address, which we will honor to the extent allowable by law. There also may be circumstances in which we would withhold a respondent's identity, as allowable by law. If you wish for us to withhold your name and/or address, you must state this request prominently at the beginning of your comment. However, we will not consider anonymous comments. To the extent consistent with applicable law, we will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the FWS Ecological Services Office in Panama City Field Office (see ADDRESSES section).

Peer Review

In accordance with our joint policy published in the Federal Register on July 1, 1994 (59 FR 34270), we will seek the expert opinions of at least three appropriate and independent specialists regarding this proposed rule. The purpose of such review is to ensure that our critical habitat designation is based on scientifically sound data, assumptions, and analyses. We will send these peer reviewers copies of this proposed rule immediately following publication in the Federal Register. We will invite these peer reviewers to comment, during the public comment period, on the specific assumptions and conclusions

regarding the proposed designation of critical habitat.

We will consider all comments and information received during the comment period on this proposed rule during preparation of a final rulemaking. Accordingly, the final decision may differ from this proposal.

Clarity of the Rule

Executive Order 12866 requires each agency to write regulations and notices that are easy to understand. We invite your comments on how to make proposed rules easier to understand including answers to questions such as the following: (1) Are the requirements in the document clearly stated? (2) Does the proposed rule contain technical language or jargon that interferes with the clarity? (3) Does the format of the proposed rule (grouping and order of sections, use of headings, paragraphing, etc.) aid or reduce its clarity? (4) Is the description of the proposed rule in the "Supplementary Information" section of the preamble helpful in understanding the proposed rule? (5) What else could we do to make the proposed rule easier to understand?

Send a copy of any comments that concern how we could make this notice easier to understand to: Office of Regulatory Affairs, Department of the Interior, Room 7229, 1849 C Street, NW, Washington, D.C. 20240. You may e-mail your comments to this address: Execsec@ios.doi.gov.

Required Determinations

Regulatory Planning and Review

In accordance with Executive Order 12866, this document is a significant rule and was reviewed by the Office of Management and Budget (OMB). The Services are preparing a draft economic analysis of this proposed action. The Services will use this analysis to meet the requirement of section 4(b)(2) of the ESA to determine the economic consequences of designating the specific areas as critical habitat and excluding any area from critical habitat if it is determined that the benefits of such exclusion outweigh the benefits of specifying such areas as part of the critical habitat, unless failure to designate such area as critical habitat will lead to the extinction of Gulf sturgeon. This analysis will be available for public comment before finalizing this designation. In addition, NMFS will use this analysis to meet the requirements of and make determinations under the Regulatory Flexibility Act, the Unfunded Mandates Reform Act and Executive Order 12866. The availability of the draft economic analysis will be announced in the Federal Register.

Regulatory Flexibility Act (5 U.S.C. 601 et seq.)

The following discussion of the potential economic impact of this proposed rule reflects the conclusions of the FWS, only. This discussion is based upon the information regarding potential economic impact that is available to the FWS at this time. This assessment of economic effect may be modified prior to final rulemaking based upon development and review of the economic analysis being prepared pursuant to section 4(b)(2) of the ESA and E.O. 12866. This analysis is for the purposes of compliance with the Regulatory Flexibility Act and does not reflect the position of the FWS on the type of economic analysis required by *New Mexico Cattle Growers Assn. v. U.S. Fish & Wildlife Service* 248

F.3d 1277 (10th Cir. 2001).

Under the Regulatory Flexibility Act (5 U.S.C. 601 et seq., as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. A "substantial number" of small entities is more than 20 percent of those small entities affected by the regulation, out of the total universe of small entities in the industry or, if appropriate, industry segment. SBREFA amended the Regulatory Flexibility Act (RFA) to require Federal agencies to provide a statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities. SBREFA also amended the RFA to require a certification statement. The FWS is hereby certifying that this proposed rule will not have a significant effect on a substantial number of small entities.

According to the Small Business Administration, small entities include small organizations, such as independent nonprofit organizations, and small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents, as well as small businesses (13 CFR 121.201). Small businesses include manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than $5 million in annual sales, general and heavy construction businesses with less than $27.5 million in annual business, special trade contractors doing less than $11.5 million in annual business, and agricultural businesses with annual sales less than $750,000. To determine if potential economic impacts to these small entities are significant, the FWS considered the types of activities that might trigger regulatory impacts under this rule as well as the types of project modifications that may result. In general, the term significant economic impact is meant to apply to a typical small business firm's business operations.

To determine if the rule would affect a substantial number of small entities, the FWS considered the number of small entities affected within particular types of economic activities (e.g., housing development, grazing, oil and gas production, timber harvesting, etc.). The FWS applied the "substantial number" test individually to each industry to determine if certification is appropriate. In estimating the numbers of small entities potentially affected, the FWS also considered whether their activities have any Federal involvement; some kinds of activities are unlikely to have any Federal involvement and so will not be affected by critical habitat designation. Designation of critical habitat only affects activities conducted, funded, or permitted by Federal agencies; non-Federal activities are not affected by the designation. Federal agencies are already required to consult with the Services under section 7 of the Act on activities that they fund, permit, or implement that may affect the Gulf sturgeon. If this critical habitat designation is finalized, Federal agencies must also consult with the Services if their activities may affect designated critical habitat. However, the FWS believes this will result in minimal additional regulatory burden on Federal agencies or their applicants because consultation would already be required due to the presence of the listed species, and consultations to avoid the destruction or adverse modification of critical habitat would be incorporated into the existing consultation process and trigger only minimal additional regulatory impacts beyond the duty to avoid jeopardizing the species.

Designation of critical habitat could result in an additional economic burden on small entities due

to the requirement to reinitiate consultation for ongoing Federal activities. However, since the Gulf sturgeon was listed (1991), the FWS has conducted 320 informal and 14 formal consultations, and the NMFS has conducted 70 informal and 4 formal consultations involving this species. Most of these consultations involved Federal projects or permits to businesses that do not meet the definition of a small entity (e.g., federally sponsored projects, MMS lease sales). Also, a number of COE permit actions involved other large public entities (e.g., cities with populations greater than 50,000, counties, and State-sponsored activities) that also do not meet the definition of a small entity. No formal consultations involved a non-Federal entity. However, about 40 informal consultations were on behalf of a private business. Most of these informal consultations were energy-related (e.g., gas transmission lines, platform construction and removal, intake structures), some being proposed by small entities. There were also several piers, docks, bridges, and high-speed marine races proposed by small entities and authorized by either the COE or the Coast Guard. The FWS does not believe that the number of energy-related small entities; or small entities constructing docks, piers, and bridges; or high-speed marine-race small entities meets the definition of substantial described above.

The vast majority of critical habitat being proposed, with few exceptions, is public land involving river, stream, estuary, or marine habitat that is also regulated under the Clean Water Act, the Rivers and Harbors Act of 1899, and/or various Coast Guard authorities. Small entity economic activities that may require Federal authorization or permits include energy-related activities such as pipelines, harbors, and platforms; residential development including docks, piers, bridges, and shoreline protection; boating-related projects of small communities; private port operation including maintenance dredging and docks; small water supply or hydropower projects; and high speed marine events. However, the FWS is not aware of a significant number of future activities that would require Federal permitting or authorization in these coastal and river areas. Historically, there has been less than two informal consultations per State per year involving both large and small private entities. The FWS is not aware of any commercial activities on the Federal lands included in these proposed critical habitat designations. Therefore, the FWS concludes that the proposed rule would not affect a substantial number of small entities.

In summary, the FWS has considered whether this proposed rule would result in a significant economic effect on a substantial number of small entities. The FWS has concluded that it would not affect a substantial number of small entities. There would be no additional section 7 consultations resulting from this rule as all proposed critical habitat is currently occupied by the Gulf sturgeon so the consultation requirement has already been triggered. These consultations are not likely to affect a substantial number of small entities. This rule would result in project modifications only when proposed Federal activities would destroy or adversely modify critical habitat. While this may occur, it is not expected to occur frequently enough to affect a substantial number of small entities. Therefore, the FWS is certifying that the proposed designation of critical habitat for the Gulf sturgeon will not have a significant economic impact on a substantial number of small entities, and an initial regulatory flexibility analysis is not required. This determination will be revisited after completion of our economic analysis and revised, if necessary, in the final rule.

Executive Order 13211

On May 18, 2001, the President issued Executive Order 13211 on regulations that significantly affect energy supply, distribution, and use. Executive Order 13211 requires agencies to prepare Statements of Energy Effects when undertaking certain actions.

Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.) the agencies will use the economic analysis to further evaluate this situation.

Takings

In accordance with Executive Order 12630 ("Government Actions and Interference with Constitutionally Protected Private Property Rights"), this rule does not have significant takings implications. A takings implication assessment is not required. As discussed above, the designation of critical habitat affects only Federal agency actions. Since the proposed critical habitat includes only aquatic areas that are generally held in public trust, we believe that little or no private property is included in the proposed designation. Based on current public knowledge of the species protection and the prohibition against take of the species both within and outside of the designated areas, we do not anticipate that property values will be affected by the critical habitat designation. Additionally, critical habitat designation does not preclude development of habitat conservation plans and issuance of incidental take permits.

Federalism

In accordance with Executive Order 13132, this rule does not have significant Federalism effects. A Federalism assessment is not required. In keeping with Department of the Interior and Department of Commerce policies, we requested information from, and coordinated development of both the listing and the proposal to designate critical habitat with, appropriate State resource agencies in Louisiana, Mississippi, Alabama, and Florida. The designation of critical habitat for the Gulf sturgeon imposes no restrictions in addition to those currently in place, and, therefore, has little additional impact on State and local governments and their activities. The designation may have some benefit to these governments in

that the areas essential to the conservation of the species are more clearly defined, and the primary constituent elements of the habitat necessary to the conservation of the species are specifically identified. While this definition and identification does not alter where and what federally sponsored activities may occur, it may assist these local governments in long-range planning, rather than waiting for case-by-case section 7 consultations to occur.

Civil Justice Reform

In accordance with Executive Order 12988, the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and meets the requirements of sections 3(a) and 3(b)(2) of the Order. We are proposing to designate critical habitat in accordance with the provisions of the Endangered Species Act. The rule uses standard property descriptions and identifies the primary constituent elements within the designated areas to assist the public in understanding the habitat needs of the Gulf sturgeon.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This proposed rule does not contain new or revised information collection for which Office of Management and Budget approval is required under the Paperwork Reduction Act. Information collections associated with ESA permits are covered by an existing OMB approval, and are assigned clearance No. 1018-0094, Forms 3-200-55 and 3-200-56, with an expiration date of July 31, 2004. Detailed information for ESA documentation appears at 50 CFR 17. The Service may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

National Environmental Policy Act (NEPA)

The FWS has determined that it does not need to prepare an Environmental Assessment or an Environmental Impact Statement as defined by the National Environmental Policy Act of 1969 (NEPA) in connection with regulations adopted pursuant to section 4(a) of the Act. The FWS published a notice outlining its reasons for this determination in the Federal Register on October 25, 1983 (48 FR 49244). NMFS has determined that this action is categorically excluded from NEPA requirements.

Government-to-Government Relationship with Tribes

In accordance with the President's memorandum of April 29, 1994, "Government-to-Government Relations with Native American Tribal Governments" (59 FR 22951), Executive Order 13175, and the Department of Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. We have determined that there are no tribal lands essential for the conservation of the Gulf sturgeon. Therefore, designation of critical habitat for the Gulf sturgeon has not been proposed on Tribal lands.

References Cited

A complete list of all references cited in this proposed rule is available upon request from the Panama City Field Office (see ADDRESSES section).

Author

The primary authors of this document are Patty Kelly, FWS, (850/769-0552, extension 228), and Jennifer Lee, NMFS, (727/570-5312) (see ADDRESSES section).

List of Subjects in 50 CFR Part 17

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

List of Subjects in 50 CFR Part 226

Endangered and threatened species, Incorporation by reference.

Proposed Regulation Promulgation

For the reasons outlined in the preamble, we propose to amend part 17, subchapter B of chapter I, and part 226, subchapter C of Chapter II, title 50 of the Code of Federal Regulations, as follows:

PART 17--[AMENDED]

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

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

2. In section 17.11(h), revise the entry for the “Sturgeon, Gulf” under “FISHES” in the List of Endangered and Threatened Wildlife to read as follows:

§ 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	Acipenser oxyrinchus (=oxyrhynchus) desotoi	U.S.A. (AL, FL, GA, LA, MS)	Entire	T	444	17.95(e)	17.44(v)
* * * * * * *							

3. Amend §17.95(e) by adding critical habitat for the Gulf sturgeon (Acipenser oxyrinchus desotoi), in the same alphabetical order as the species occurs in §17.11(h) to read as follows:

§17.95 Critical habitat–fish and wildlife.

* * * * *

(e) Fishes. * * *

Gulf Sturgeon (Acipenser oxyrinchus desotoi)

(1) Critical habitat units are depicted for Louisiana, Mississippi, Alabama, and Florida on the maps below.

(2) The primary constituent elements essential for the conservation of Gulf sturgeon are those habitat components that support feeding, resting, and sheltering, reproduction, migration, and physical features necessary for maintaining the natural processes that support these habitat components. The primary constituent elements include:

(I) Abundant prey items within riverine habitats for larval and juvenile life stages, and within estuarine and marine habitats for juvenile, subadult, and adult life stages;

(ii) Riverine spawning sites with substrates suitable for egg deposition and development, such as limestone outcrops and cut limestone banks, bedrock, large gravel or cobble beds, marl, soapstone or hard clay;

(iii) A flow regime (i.e., the magnitude, frequency, duration, seasonality, and rate-of-change of freshwater discharge over time) necessary for normal behavior, growth, and survival of all life stages in the riverine environment, including migration, breeding site selection, courtship, egg fertilization, resting, and staging; and necessary for maintaining spawning sites in suitable condition for egg attachment, eggs sheltering, resting, and larvae staging;

(iv) Water quality, including temperature, salinity, pH, hardness, turbidity, oxygen content, and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages;

(v) Sediment quality, including texture and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages; and

(vi) Safe and unobstructed migratory pathways necessary for passage within and between riverine, estuarine, and marine habitats.

(3) The textual unit descriptions below are the definitive source for determining

the critical habitat boundaries. General location maps by unit are provided at the end of each unit description and are provided for general guidance purposes only, and not as a definitive source for determining critical habitat boundaries.

(4) Unit 1: Pearl River System in St. Tammany and Washington Parishes in Louisiana and Walthall, Hancock, Pearl River, Marion, Lawrence, Simpson, Copiah, Hinds, Rankin, and Pike Counties in Mississippi.

(I) Unit 1 includes the Pearl River main stem from the spillway of the Ross Barnett Dam, Hinds and Rankin Counties, Mississippi, downstream to where the main stem river drainage discharges at its mouth joining Lake Borgne, Little Lake, or The Rigolets in Hancock County, Mississippi, and St. Tammany Parish, Louisiana. It includes the main stems of the East Pearl River, West Pearl River, West Middle River, Holmes Bayou, Wilson Slough, downstream to where these main stem river drainages discharge at the mouths of Lake Borgne, Little Lake, or The Rigolets. Unit 1 also includes the Bogue Chitto River main stem, a tributary of the Pearl River, from its confluence with Lazy Creek just upstream of its crossing with Mississippi State Highway 570, Pike County, Mississippi, downstream to its confluence with the West Pearl River, St. Tammany Parish, Louisiana. The lateral extent of Unit 1 is the ordinary high water line on each bank of the associated rivers and shorelines.

(ii) Maps of Unit 1 follow:
Please refer to the document **riverine_maps.pdf** for the Unit 1 maps, including Map 1.1 and Map 1.2.

(5) Unit 2: Pascagoula River System in Forrest, Perry, Greene, George, Jackson, Clarke, Jones, and Wayne Counties, Mississippi.

(I) Unit 2 includes all of the Pascagoula River main stem and its distributaries, portions of the Bowie, Leaf, and Chickasawhay tributaries, and all of the Big Black Creek tributary. It includes the Bowie River main stem beginning at its confluence with Bowie Creek and Okatoma Creek, Forrest County, Mississippi, downstream to its confluence with the Leaf River, Forrest County, Mississippi. The Leaf River main stem beginning from Mississippi State Highway 588, Jones County, Mississippi, downstream to its confluence with the Chickasawhay River, George County, Mississippi is included. The main stem of the Chickasawhay River from the mouth of Oaky Creek, Clarke County, Mississippi, downstream to its confluence with the Leaf River, George County, Mississippi is included. Unit 2 also includes Big Black Creek main stem from its confluence with Black and Red Creeks, Jackson County, Mississippi, to its confluence with the Pascagoula River, Jackson County, Mississippi. All of the main stem of the Pascagoula River from its confluence with the Leaf and Chickasawhay Rivers, George County, Mississippi, to the discharge of the East and West Pascagoula Rivers into Pascagoula Bay, Jackson County, Mississippi, is included. The lateral extent of Unit 2 is the ordinary high water line on each bank of the associated rivers and shorelines.

(ii) Maps of Unit 2 follow:
Please refer to the document **riverine_maps.pdf** for the Unit 2 maps, including Map 2.1, Map 2.2, Map 2.3, Map 2.4, and Map 2.5.

(6) Unit 3: Escambia River System in Santa Rosa and Escambia Counties, Florida and Escambia, Conecuh, and Covington Counties, Alabama.

(I) Unit 3 includes the Conecuh River main stem beginning just downstream of the spillway of Point A Dam, Covington County, Alabama, downstream to the Florida State line, where its name changes to the Escambia River, Escambia County, Alabama, and Escambia and Santa Rosa Counties, Florida. It includes the entire main stem of the Escambia River downstream to its discharge into Escambia Bay and Macky Bay, Escambia and Santa Rosa Counties, Florida. All of the distributaries of the Escambia River including White River, Little White River, Simpson River, and Dead River, Santa Rosa County, Florida are included. The Sepulga River main stem from Alabama County Road 42, Conecuh and Escambia Counties, Alabama, downstream to its confluence with the Conecuh River, Escambia County, Alabama, is also included. The lateral extent of Unit 3 is the ordinary high water line on each bank of the associated lakes, rivers, and shorelines.

(ii) Maps of Unit 3 follow:
Please refer to the document **riverine_maps.pdf** for the Unit 3 maps, including Map 3.1 and Map 3.2.

(7) Unit 4: Yellow River System in Santa Rosa and Okaloosa Counties, Florida and Covington County, Alabama.

(I) Unit 4 includes the Yellow River main stem from Alabama State Highway 55, Covington County, Alabama, downstream to its discharge at Blackwater Bay, Santa Rosa County, Florida. All Yellow River distributaries (including Weaver River and Skim Lake) discharging into Blackwater Bay are included. The Shoal River main stem, a Yellow River tributary, from Florida Highway 85, Okaloosa County, Florida, to its confluence with the Yellow River, is included. The Blackwater River from its confluence with Big Coldwater Creek, Santa Rosa County, Florida, downstream to its discharge into Blackwater Bay is included. Wright Basin and Cooper Basin, Santa Rosa County, on the Blackwater River are included. The lateral extent of Unit 4 is the ordinary high water line on each bank of the associated lakes, rivers, and shorelines.

(ii) Maps of Unit 4 follow:
Please refer to the document **riverine_maps.pdf** for the Unit 4 maps, including Map 4.1, Map 4.2, Map 4.3, and Map 4.4.

(8) Unit 5: Choctawhatchee River System in Holmes, Washington, and Walton Counties, Florida and Dale, Coffee, Geneva, and Houston Counties, Alabama.

(I) Unit 5 includes the Choctawhatchee River main stem from its confluence with the west and east fork of the Choctawhatchee River, Dale County, Alabama, downstream to its discharge at Choctawhatchee Bay, Walton County, Florida. The distributaries discharging into Choctawhatchee Bay known as Mitchell River, Indian River, Cypress River, and Bells Leg are included. The Boynton Cutoff, Washington County, Florida, which joins the Choctawhatchee River main stem, and Holmes Creek, Washington County, Florida, are included. The section of Holmes Creek from Boynton Cutoff to the mouth of Holmes Creek, Washington County, Florida, is included. The Pea River main stem, a Choctawhatchee River tributary, from the Elba Dam, Coffee County, Alabama, to its confluence with the Choctawhatchee River, Geneva County, Alabama, is included. The lateral extent of Unit 5 is the ordinary high water line on each bank of the associated rivers and shorelines.

(ii) Maps of Unit 5 follow:
Please refer to the document **riverine_maps.pdf** for the Unit 5 maps, including Map 5.1, Map 5.2, and Map 5.3.

(9) Unit 6: Apalachicola River System in Franklin, Gulf, Liberty, Calhoun, Jackson, and Gadsen Counties, Florida.

(I) Unit 6 includes the Apalachicola River mainstem, beginning from the Jim Woodruff Lock and Dam, Gadsden and Jackson Counties, Florida, downstream to its discharge at East Bay or Apalachicola Bay, Franklin County, Florida. All Apalachicola River distributaries, including the East River, Little St. Marks River, St. Marks River, Franklin County, Florida, to their discharge into East Bay and/or Apalachicola Bay are included. The entire main stem of the Brothers River, Franklin and Gulf Counties, Florida, a tributary of the Apalachicola River, is included. The lateral extent of Unit 6 is the ordinary high water line on each bank of the associated rivers and shorelines.

(ii) Maps of Unit 6 follow:
Please refer to the document **riverine_maps.pdf** for the Unit 6 maps, including Map 6.1.

(10) Unit 7: Suwannee River System in Hamilton, Suwannee, Madison, Lafayette, Gilchrist, Levy, Dixie, and Columbia Counties, Florida.

(I) Unit 7 includes the Suwannee River main stem, beginning from its confluence with Long Branch Creek, Hamilton County, Florida, downstream to the mouth of the Suwannee River. It includes all the Suwannee River distributaries, including the East Pass, West Pass, Wadley Pass, and Alligator Pass, Dixie and Levy Counties, Florida, to their discharge into the Suwannee Sound or the Gulf of Mexico. The Withlacoochee River main stem from Florida State Road 6, Madison and Hamilton Counties, Florida, to its confluence with the Suwannee River is included. The lateral extent of Unit 7 is the

ordinary high water line on each bank of the associated rivers and shorelines.

(ii) Maps of Unit 7 follow:
Please refer to the document **riverine_maps.pdf** for the Unit 7 maps, including Map 7.1, Map 7.2, and Map 7.3.

(11) Unit 8: Lake Pontchartrain, Lake St. Catherine, The Rigolets, Little Lake, Lake Borgne, and Mississippi Sound in Jefferson, Orleans, St. Tammany, and St. Bernard Parish, Louisiana , Hancock, Jackson, and Harrison Counties in Mississippi, and in Mobile County, Alabama.

(I) Unit 8 encompasses Lake Pontchartrain east of the Lake Pontchartrain Causeway, all of Little Lake, The Rigolets, Lake St. Catherine, Lake Borgne, including Heron Bay, and the Mississippi Sound. Proposed critical habitat follows the shorelines around the perimeters of each included lake. The Mississippi Sound includes adjacent open bays including Pascagoula Bay, Point aux Chenes Bay, Grand Bay, Sandy Bay, and barrier island passes, including Ship Island Pass, Dog Keys Pass, Horn Island Pass, and Petit Bois Pass. The northern boundary of the Mississippi Sound is the shorelines of the mainland between Heron Bay Point, Mississippi and Point aux Pins, Alabama. Proposed critical habitat excludes St. Louis Bay, north of the railroad bridge across its mouth; Biloxi Bay, north of the U.S. Highway 90 bridge; and Back Bay of Biloxi. The southern boundary follows along the broken shoreline of Lake Borgne created by low swampy islands from Malheureux Point to Isle au Pitre. From the northeast point of Isle au Pitre, the boundary continues in a straight north-northeast line to the point 1 nm (1.9 km) seaward of the western most extremity of Cat Island (30°13'N, 89°10'W). The southern boundary continues 1 nm (1.9 km) offshore of the barrier islands and offshore of the 72 COLREGS lines at barrier island passes (defined at 33 CFR 80.815 (c), (d) and (e)) to the eastern boundary. Between Cat Island and Ship Island there is no 72 COLREGS line. We therefore, have defined that section of the southern boundary as 1 nm (1.9 km) offshore of a straight line drawn from the southern tip of Cat Island to the western tip of Ship Island. The eastern boundary is the line of longitude 88˚18.8'W from its intersection with the shore (Point aux Pins) to its intersection with the southern boundary. The lateral extent of Unit 8 is the MHW line on each shoreline of the included water bodies or the entrance to rivers, bayous, and creeks.

(ii) Maps of Unit 8 follow:
Please refer to the document **marine-estuarine_maps.pdf** for the Unit 8 maps, including Map 8.1, Map 8.2, and Map 8.3.

(12) Unit 9: Pensacola Bay System in Escambia and Santa Rosa Counties, Florida.

(I) Unit 9 includes Pensacola Bay and its adjacent main bays and coves. These include Big Lagoon, Escambia Bay, East Bay, Blackwater Bay, Bayou Grande, Macky Bay, Saultsmar Cove, Bass Hole Cove, and Catfish Basin. All other bays, bayous, creeks,

and rivers are excluded at their mouths. The western boundary is the Florida State Highway 292 Bridge crossing Big Lagoon to Perdido Key. The southern boundary is the 72 COLREGS line between Perdido Key and Santa Rosa Island (defined at 33 CFR 80.810 (g)). The eastern boundary is the Florida State Highway 399 Bridge at Gulf Breeze, Florida. The lateral extent of Unit 9 is the MHW line on each included bay's shoreline.

(ii) A map of Unit 9 follows:
Please refer to the document **marine-estuarine_maps.pdf** for the Unit 9 map.

(13) Unit 10: Santa Rosa Sound in Escambia, Santa Rosa, and Okaloosa Counties, Florida.

(I) Unit 10 includes the Santa Rosa Sound, bounded on the west by the Florida State Highway 399 bridge in Gulf Breeze, Florida. The eastern boundary is the U.S. Highway 98 bridge in Fort Walton Beach, Florida. The northern and southern boundaries of Unit 10 are formed by the shorelines to the MHW line or by the entrance to rivers, bayous, and creeks.

(ii) A map of Unit 10 follows:
Please refer to the document **marine-estuarine_maps.pdf** for the Unit 10 map.

(14) Unit 11: Florida Nearshore Gulf of Mexico Unit in Escambia, Santa Rosa, Okaloosa, Walton, Bay, and Gulf Counties in Florida.

(I) Unit 11 includes a portion of the Gulf of Mexico as defined by the following boundaries. The western boundary is the line of longitude 87˚20.0'W (approximately 1 nm (1.9 km) west of Pensacola Pass) from its intersection with the shore to its intersection with the southern boundary. The northern boundary is the MHW of the mainland shoreline and the 72 COLREGS lines at passes as defined at 30 CFR 80.810 (a-g). The southern boundary is 1 nm (1.9 km) offshore of the northern boundary. The eastern boundary is the line of longitude 85˚17.0'W from its intersection with the shore (near Money Bayou between Cape San Blas and Indian Peninsula) to its intersection with the southern boundary.

(ii) A map of Unit 11 follows:
Please refer to the document **marine-estuarine_maps.pdf** for the Unit 11 map.

(15) Unit 12: Choctawhatchee Bay in Okaloosa and Walton Counties, Florida.

(I) Unit 12 includes the main body of Choctawhatchee Bay, Hogtown Bayou, Jolly Bay, Bunker Cove, and Grassy Cove. All other bayous, creeks, rivers are excluded at their mouths/entrances. The western boundary is the U.S. Highway 98 bridge at Fort

Walton Beach, Florida. The southern boundary is the 72 COLREGS line across East (Destin) Pass as defined at 33 CFR 80.810 (f). The lateral extent of Unit 12 is the MHW line on each shoreline of the included water bodies.

(ii) A map of Unit 12 follows:
Please refer to the document **marine-estuarine_maps.pdf** for the Unit 12 map.

(16) Unit 13: Apalachicola Bay in Gulf and Franklin County, Florida.

(I) Unit 13 includes the main body of Apalachicola Bay and its adjacent sounds, bays, and the nearshore waters of the Gulf of Mexico. These consist of St. Vincent Sound, including Indian Lagoon; Apalachicola Bay including Horseshoe Cove and All Tides Cove; East Bay including Little Bay and Big Bay; and St George Sound, including Rattlesnake Cove and East Cove. Barrier Island passes (Indian Pass, West Pass, and East Pass) are also included. Sike's cut is excluded from the lighted buoys on the Gulf of Mexico side to the day boards on the bay side. The southern boundary includes water extending into the Gulf of Mexico 1 nm (1.9 km) from the MHW line of the barrier islands and from 72 COLREGS lines between the barrier islands (defined at 33 CFR 80.805 (e-h)). The western boundary is the line of longitude 85˚17.0'W from its intersection with the shore (near Money Bayou between Cape San Blas and Indian Peninsula) to its intersection with the southern boundary. The eastern boundary is formed by a straight line drawn from the shoreline of Lanark Village at 29°53.1'N, 84°35.0'W to a point that is 1 nm (1.9 km) offshore from the northeastern extremity of Dog Island at 29°49.6'N, 84°33.2'W. The lateral extent of Unit 13 is the MHW line on each shoreline of the included water bodies or the entrance of excluded rivers, bayous, and creeks.

(ii) A map of Unit 13 follows:
Please refer to the document **marine-estuarine_maps.pdf** for the Unit 13 map.

(17) Unit 14: Suwannee Sound in Dixie and Levy Counties, Florida.

(I) Unit 14 includes Suwannee Sound and a portion of adjacent Gulf of Mexico waters extending 9 nm from shore (16.7 km) out to the State territorial water boundary. Its northern boundary is formed by a straight line from the northern tip of Big Pine Island (at approximately 29°23'N, 83°12'W) to the Federal-State boundary at 29°17'N, 83°21'W. The southern boundary is formed by a straight line from the southern tip of Richards Island (at approximately 83°04'W, 29°11'N) to the Federal-State boundary at 83°15'W, 29°04'N. The lateral extent of Unit 14 is the MHW line along the shorelines and the mouths of the Suwannee River (East and West Pass), its distributaries, and other rivers, creeks, or water bodies.

(ii) A map of Unit 14 follows:
Please refer to the document **marine-estuarine_maps.pdf** for the Unit 14 map.

(18) The river reaches within Units 1 to 7 proposed as critical habitat lie within the ordinary high water line. As defined in 33 CFR 32911, the ordinary high water line on non-tidal rivers is the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas.

The downstream limit of the riverine units is the mouth of each river. The mouth is defined as rkm 0 (rm 0). Although the interface of fresh and saltwater, referred to as the saltwater wedge, occurs within the lower-most reach of a river, for ease in delineating critical habitat units, we are defining the boundary between the riverine and estuarine units as rkm 0 (rm 0).

Regulatory jurisdiction in coastal areas extends to the line on the shore reached by the plane of the mean (average) high water (MHW) (33 CFR 329.12(a)(2)). All bays and estuaries within Units 8 to 14 therefore, lie below the MHW lines. Where precise determination of the actual location becomes necessary, it must be established by survey with reference to the available tidal datum, preferably averaged over a period of 18.6 years. Less precise methods, such as observation of the "apparent shoreline" which is determined by reference to physical markings, lines of vegetation, may be used only where an estimate is needed of the line reached by the mean high water.

The term 72 COLREGS is defined as demarcation lines which delineate those waters upon which mariners shall comply with the International Regulations for Preventing Collisions at Sea, 1972 and those waters upon which mariners shall comply with the Inland Navigation Rules (33 CFR 80.01). The waters inside of these lines are Inland Rules waters and the waters outside the lines are COLREGS waters. These lines are defined in 33 CFR 80, and have been used for identification purposes to delineate boundary lines of the estuarine and marine habitat Units 8, 9, 11, and 12.

(19) Critical habitat does not include existing developed sites such as dams, piers, marinas, bridges, boat ramps, exposed oil and gas pipelines, oil rigs, and similar structures or designated public swimming areas.

* * * * *

Part 226–[Amended]

1. The authority citation for part 226 continues to read as follows:

Authority: 16 U.S.C. 1533

2. Section 226.214 is added to read as follows:

§ 226.214 Critical Habitat for Gulf sturgeon.

Gulf sturgeon is under the joint jurisdiction of the U.S. Fish and Wildlife Service (FWS) and NMFS. The FWS will maintain primary responsibility for recovery actions and NMFS will assist in and continue to fund recovery actions pertaining to estuarine and marine habitats. In riverine units, the FWS will be responsible for all consultations

regarding Gulf sturgeon and critical habitat. In estuarine units, we will divide responsibility based on the action agency involved. The FWS will consult with the Department of Transportation, the Environmental Protection Agency, the Coast Guard, and the Federal Emergency Management Agency. NMFS will consult with the DOD, COE, MMS and any other Federal agencies not mentioned here explicitly. In marine units, NMFS will be responsible for all consultations regarding Gulf sturgeon and critical habitat. Any Federal projects that extend into the jurisdiction of both the Services will be consulted on by the FWS, but with NMFS assistance where needed. Each agency will conduct its own intra-agency consultations as necessary.

Regulatory jurisdiction in coastal areas extends to the line on the shore reached by the plane of the mean (average) high water (MHW) (33 CFR 329.12(a)(2)). All bays and estuaries within Units 8 to 14, therefore, lie below the MHW lines. Where precise determination of the actual location becomes necessary, it must be established by survey with reference to the available tidal datum, preferably averaged over a period of 18.6 years. Less precise methods, such as observation of the "apparent shoreline" which is determined by reference to physical markings, lines of vegetation, may be used only where an estimate is needed of the line reached by the mean high water.

The term 72 COLREGS is defined as demarcation lines which delineate those waters upon which mariners shall comply with the International Regulations for Preventing Collisions at Sea, 1972 and those waters upon which mariners shall comply with the Inland Navigation Rules (33 CFR 80.01). The waters inside of these lines are Inland Rules waters and the waters outside the lines are COLREGS waters. These lines are defined in 33 CFR 80, and have been used for identification purposes to delineate boundary lines of the estuarine and marine habitat Units 8, 9, 11, and 12.

Critical habitat does not include existing developed sites such as dams, piers, marinas, bridges, boat ramps, exposed oil and gas pipelines, oil rigs, and similar structures or designated public swimming areas.

For a complete description of critical habitat units (1-14) and the constituent elements for Gulf sturgeon see 50 CFR part 17. Units 8 through 14 described below are in estuarine and marine waters, where NMFS has jurisdiction.

(a) Unit 8: Lake Pontchartrain, Lake St. Catherine, The Rigolets, Little Lake, Lake Borgne, and Mississippi Sound in Jefferson, Orleans, St. Tammany, and St. Bernard Parish, Louisiana , Hancock, Jackson, and Harrison Counties in MS, and in Mobile County, AL.

(1) Unit 8 encompasses Lake Pontchartrain east of the Lake Pontchartrain Causeway, all of Little Lake, The Rigolets, Lake St. Catherine, Lake Borgne, including Heron Bay, and the Mississippi Sound. Proposed critical habitat follows the shorelines around the perimeters of each included lake. The Mississippi Sound includes adjacent open bays including Pascagoula Bay, Point aux Chenes Bay, Grand Bay, Sandy Bay, and barrier island passes, including Ship Island Pass, Dog Keys Pass, Horn Island Pass, and Petit Bois Pass. The northern boundary of the Mississippi Sound is the shorelines of the

mainland between Heron Bay Point, MS and Point aux Pins, AL. Proposed critical habitat excludes St. Louis Bay, north of the railroad bridge across its mouth; Biloxi Bay, north of the U.S. Highway 90 bridge; and Back Bay of Biloxi. The southern boundary follows along the broken shoreline of Lake Borgne created by low swampy islands from Malheureux Point to Isle au Pitre. From the northeast point of Isle au Pitre, the boundary continues in a straight north-northeast line to the point 1 nm (1.9 km) seaward of the western most extremity of Cat Island (30°13'N, 89°10'W). The southern boundary continues 1 nm (1.9 km) offshore of the barrier islands and offshore of the 72 COLREGS lines at barrier island passes (defined at 33 CFR 80.815 (c), (d) and (e)) to the eastern boundary. Between Cat Island and Ship Island there is no 72 COLREGS line. We therefore, have defined that section of the southern boundary as 1 nm (1.9 km) offshore of a straight line drawn from the southern tip of Cat Island to the western tip of Ship Island. The eastern boundary is the line of longitude 88˚18.8'W from its intersection with the shore (Point aux Pins) to its intersection with the southern boundary. The lateral extent of Unit 8 is the MHW line on each shoreline of the included water bodies or the entrance to rivers, bayous, and creeks.

(2) Maps of Unit 8 follow:
Please refer to the document **marine-estuarine_maps.pdf** for the Unit 8 maps, including Map 8.1, Map 8.2, and Map 8.3.

(b) Unit 9: Pensacola Bay System in Escambia and Santa Rosa Counties, Florida.

(1) Unit 9 includes Pensacola Bay and its adjacent main bays and coves. These include Big Lagoon, Escambia Bay, East Bay, Blackwater Bay, Bayou Grande, Macky Bay, Saultsmar Cove, Bass Hole Cove, and Catfish Basin. All other bays, bayous, creeks, and rivers are excluded at their mouths. The western boundary is the Florida State Highway 292 Bridge crossing Big Lagoon to Perdido Key. The southern boundary is the 72 COLREGS line between Perdido Key and Santa Rosa Island (defined at 33 CFR 80.810 (g)). The eastern boundary is the Florida State Highway 399 Bridge at Gulf Breeze, FL. The lateral extent of Unit 9 is the MHW line on each included bay's shoreline.

(2) A map of Unit 9 follows:
Please refer to the document **marine-estuarine_maps.pdf** for the Unit 9 map.

(c) Unit 10: Santa Rosa Sound in Escambia, Santa Rosa, and Okaloosa Counties, FL.

(1) Unit 10 includes the Santa Rosa Sound, bounded on the west by the Florida State Highway 399 bridge in Gulf Breeze, FL. The eastern boundary is the U.S. Highway 98 bridge in Fort Walton Beach, FL. The northern and southern boundaries of Unit 10 are formed by the shorelines to the MHW line or by the entrance to rivers, bayous, and creeks.

(2) A map of Unit 10 follows:
Please refer to the document **marine-estuarine_maps.pdf** for the Unit 10 map.

(d) Unit 11: Florida Nearshore Gulf of Mexico Unit in Escambia, Santa Rosa, Okaloosa, Walton, Bay, and Gulf Counties, FL.

(1) Unit 11 includes a portion of the Gulf of Mexico as defined by the following boundaries. The western boundary is the line of longitude 87˚20.0'W (approximately 1 nm (1.9 km) west of Pensacola Pass) from its intersection with the shore to its intersection with the southern boundary. The northern boundary is the MHW of the mainland shoreline and the 72 COLREGS lines at passes as defined at 30 CFR 80.810 (a-g). The southern boundary is 1 nm (1.9 km) offshore of the northern boundary. The eastern boundary is the line of longitude 85˚17.0'W from its intersection with the shore (near Money Bayou between Cape San Blas and Indian Peninsula) to its intersection with the southern boundary.

(2) A map of Unit 11 follows:
Please refer to the document **marine-estuarine_maps.pdf** for the Unit 11 map.

(e) Unit 12: Choctawhatchee Bay in Okaloosa and Walton Counties, FL.

(1) Unit 12 includes the main body of Choctawhatchee Bay, Hogtown Bayou, Jolly Bay, Bunker Cove, and Grassy Cove. All other bayous, creeks, rivers are excluded at their mouths/entrances. The western boundary is the U.S. Highway 98 bridge at Fort Walton Beach, FL. The southern boundary is the 72 COLREGS line across East (Destin) Pass as defined at 33 CFR 80.810 (f). The lateral extent of Unit 12 is the MHW line on each shoreline of the included water bodies.

(2) A map of Unit 12 follows:
Please refer to the document **marine-estuarine_maps.pdf** for the Unit 12 map.

(f) Unit 13: Apalachicola Bay in Gulf and Franklin County, FL.

(1) Unit 13 includes the main body of Apalachicola Bay and its adjacent sounds, bays, and the nearshore waters of the Gulf of Mexico. These consist of St. Vincent Sound, including Indian Lagoon; Apalachicola Bay including Horseshoe Cove and All Tides Cove; East Bay including Little Bay and Big Bay; and St George Sound, including Rattlesnake Cove and East Cove. Barrier Island passes (Indian Pass, West Pass, and East Pass) are also included. Sike's cut is excluded from the lighted buoys on the Gulf of Mexico side to the day boards on the bay side. The southern boundary includes water extending into the Gulf of Mexico 1 nm (1.9 km) from the MHW line of the barrier islands and from 72 COLREGS lines between the barrier islands (defined at 33 CFR 80.805 (e-h)). The western boundary is the line of longitude 85˚17.0'W from its intersection with

the shore (near Money Bayou between Cape San Blas and Indian Peninsula) to its intersection with the southern boundary. The eastern boundary is formed by a straight line drawn from the shoreline of Lanark Village at 29°53.1'N, 84°35.0'W to a point that is 1 nm (1.9 km) offshore from the northeastern extremity of Dog Island at 29°49.6'N, 84°33.2'W. The lateral extent of Unit 13 is the MHW line on each shoreline of the included water bodies or the entrance of excluded rivers, bayous, and creeks.

(2) A map of Unit 13 follows:
Please refer to the document **marine-estuarine_maps.pdf** for the Unit 13 map.

(g) Unit 14: Suwannee Sound in Dixie and Levy Counties, FL.

(1) Unit 14 includes Suwannee Sound and a portion of adjacent Gulf of Mexico waters extending 9 nm from shore (16.7 km) out to the State territorial water boundary. Its northern boundary is formed by a straight line from the northern tip of Big Pine Island (at approximately 29°23'N, 83°12'W) to the Federal-State boundary at 29°17'N, 83°21'W. The southern boundary is formed by a straight line from the southern tip of Richards Island (at approximately 83°04'W, 29°11'N) to the Federal-State boundary at 83°15'W, 29°04'N. The lateral extent of Unit 14 is the MHW line along the shorelines and the mouths of the Suwannee River (East and West Pass), its distributaries, and other rivers, creeks, or water bodies.

(2) A map of Unit 14 follows:
Please refer to the document **marine-estuarine_maps.pdf** for the Unit 14 map.

(h) The river reaches within Units 1 to 7 proposed as critical habitat lie within the ordinary high water line. As defined in 33 CFR 32911, the ordinary high water line on non-tidal rivers is the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas.

Dated: May 24, 2002

John Oliver
Acting Assistant Administrator for Fisheries
National Marine Fisheries Service

Dated: May 24, 2002

Craig Manson
Assistant Secretary for Fish and Wildlife and Parks

Billing Code 4310-55-P