

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 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; and Edwards *et al.*, in prep.). Tracking data indicate that 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 foraging (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 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 km² (44.4 mi²)) 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 data and tag recaptures documented Gulf sturgeon using Gulf of Mexico waters as far out as 9 nm (16.7 km) (Sulak and Clugston, 1999; and 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 (greater than 6 nm (11.1 km)) (Harris, pers. comm. 2002). Benthic samples taken where the fish were jumping 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 designation, therefore, includes waters out to 9 nm (16.7 km)

to encompass these areas that we believe are essential for the conservation of the Gulf sturgeon. 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 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 are designating 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 critical habitat area (Reynolds, 1993; F. Chapman, pers. comm. 2002; and Edwards *et al.*, in prep.), records are relatively rare and encompass approximately 643.7 km (400 mi) of coastline (from Charlotte Harbor to Apalachicola Bay). While Gulf sturgeon may congregate in additional shallow water areas or migrate throughout the entire area, without additional information we cannot include additional areas 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 designated 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, John C. Stennis Space Center.
Unit 2. Pascagoula—Desoto NF, Pascagoula River WMA, Ward Bayou WMA, MS Sandhill Crane NWR.
Unit 3. Escambia—Lower Escambia River WMA, Conecuh NF.
Unit 4. Yellow—Yellow River WMA, Eglin Air Force Base, Conecuh NF, Blue Spring WMA, Blackwater River Recreational Area.