

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) described two hypotheses regarding areas adult Gulf sturgeon may overwinter in the Gulf of Mexico in order 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 or areas. Telemetry data document that 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, with relocation of tagged individuals greatest in the passes between islands (Ross *et al.*, 2001a; and Rogillio *et al.*, 2002). 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 (Fox *et al.*, 2002; and F. Parauka, pers. comm. 2002). Telemetry data in the Gulf of Mexico usually locate sturgeon in depths of 6 m (19.8 ft) or less (Ross *et al.*, 2001a; Fox *et al.*, 2002; Rogillio *et al.*, 2002; and F. Parauka, pers. comm. 2002).

River-Specific Fidelity

Stabile *et al.* (1996) analyzed tissue from Gulf sturgeon in 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 (Carr, 1983). From 1981 to 1993, 4,100 fish were tagged in the Apalachicola and Suwannee Rivers. Of

these, 868 total fish were recaptured (FWS *et al.* 1995). Of the recaptured fish, 860 fish (99 percent) were recaptured in the river of their initial collection. Eight fish moved between river systems and represented less than 1 percent (0.009) of the 868 total fish recaptured (FWS *et al.*, 1995). We have no information documenting spawning adults in non-natal rivers. Foster and Clugston (1997) noted that telemetered Gulf sturgeon in the Suwannee River returned to the same areas as the previous summer, and suggested that chemical cuing may influence distribution.

To date, biologists have documented a total of 22 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); Apalachicola River to Deer Point Lake (North Bay of the St. Andrew Bay system), one fish (Wooley and Crateau, 1985); Suwannee River to Apalachicola River, three sturgeon (Carr *et al.*, 1996b; and F. Parauka, pers. comm. 2002); Choctawhatchee River to Apalachicola River, one sturgeon (F. Parauka, pers. comm. 2002); Yellow River to Choctawhatchee River, three female sturgeon (two adult, one subadult) (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.*, 2002); Choctawhatchee River to Escambia, one female sturgeon (Fox *et al.*, 2002); 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) noted that observed straying rates between rivers were not the same as actual gene flow rates, *i.e.*, inter-stock movement does not equate to interstock reproduction. The gene flow is low in Gulf sturgeon stocks, with each stock exchanging less than one mature female per generation (Waldman and Wirgin, 1998).

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.

Section 4(a)(3)(A) of the Act requires that critical habitat be designated concurrently with a determination that a species is endangered or threatened, to the maximum extent prudent and determinable. When such a designation is not determinable at the time of final listing of a species, or if a prompt determination of endangered or threatened status is essential to the conservation of the species, section 4(b)(6)(C) of the Act provides for an additional year to promulgate a final critical habitat designation. In the final rule listing Gulf sturgeon as a threatened species, we found that a critical habitat designation may be prudent but was not 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