

Common Name: **Goliath Grouper**



Photo credit: Don De Maria

Scientific Name: *Epinephelus itajara*

Area of Concern: Western Atlantic: Gulf of Mexico, Caribbean, and South Atlantic

Year First Listed as a "Species of Concern": 1991

Species Description:

Goliath grouper are the largest of the western north Atlantic groupers, with a maximum length of about 250 cm TL, and a maximum weight of 400 kg. Diagnostic characters include a robust and oblong body with an extremely broad head and small eyes. Body color is generally brownish yellow, but can also be grey or greenish. The dorsal part of the head, body and fins may have small black dots. Large adults are often found in shallow water, and also offshore on wrecks and in areas of high relief; juveniles common in mangroves and both juveniles and adults occur in bays and harbors. Adults occur either as solitary individuals or in groups of up to 100 in shallow water (typically in less than 40 m depth). Spawning is presumed to occur in the summer months when adults form offshore aggregations. Unlike many other groupers, there is no evidence for hermaphroditism. Adults and juveniles feed predominantly on crustaceans (shrimps, crabs, and lobsters).

Rationale for "Species of Concern" Listing:

Demographic and Diversity Concerns:

Goliath grouper are long-lived (up to 37 years) and late-maturing (4 to 6 years males; 6 to 7 years females). Recent analysis indicates that the stocks are recovering in the Gulf of Mexico; however, there is a paucity of information from the Atlantic Ocean and Caribbean Sea. Information from a limited part of the range indicates that relative abundance of goliath grouper was very high in the mid-1990's, suggesting that strong year classes had recently occurred.

Factors for decline:

Goliath grouper was added to the candidate list (now a species of concern) after a precipitous decline in numbers during the 1970s and 1980s. In the US, from 1979-88, commercial catches of goliath grouper increased from 15,454 kg to 61,818 kg and then declined drastically. The rapid increase in fishing effort coupled with the decline in landings led to extreme regulatory measures by the Gulf of Mexico Fishery Management Council:

Last updated 4/13/2004

initially a 50-inch size limit was implemented, then Amendment 2 of the Gulf of Mexico Reef Fish Fishery Management Plan in 1990 prohibited all capture of goliath grouper in federal Gulf waters. The South Atlantic Fishery Management Council followed suit shortly thereafter in prohibiting capture, followed by the Caribbean Fishery Management Council in 1993. The State of Florida banned the capture of goliath grouper in 1990, and, although rarely caught in the Atlantic north of Florida, there are regulations restricting the take of this species from special management zones around artificial reefs off South Carolina and Georgia. While the main factor of decline is fishing pressure, juvenile habitat may also be impacted due to coastal development and runoff. Juvenile goliath grouper rely heavily on shallow mangrove shorelines.

Status Reviews/Research Completed or Underway:

A 2003 assessment was conducted by the Southeast Fisheries Science Center and indicated that there is a 90% chance that the population will have recovered to a spawning potential ratio (SPR) of 50% by 2006 and essentially a 100% chance that it will recover by 2009. Another less optimistic result, obtained by using catch rate data, indicated that there is a 50% chance that the population will have recovered to a 50% SPR by 2008 and a 100% chance that it will recover by 2011.

NMFS funded, via Recover Protected Species funds to SEFSC, numerous goliath grouper research projects in the 1990s.

For further information on this Species of Concern, or on the Species of Concern Program in general, please contact Ms. Marta Nammack, NMFS, Office of Protected Resources, 1315 East West Highway, Silver Spring, MD 20910, (301) 713-1401, Marta.Nammack@noaa.gov; Dr. Stephania Bolden, NMFS, Southeast Region, Protected Resources Division, 9721 Executive Center Drive, St. Petersburg, FL 33702, (727)570-5312, Stephania.Bolden@noaa.gov; or Dr. Anne Marie Eklund, NMFS, Southeast Fisheries Science Center, 75 Virginia Beach Dr., Miami FL 33149 (305) 361-4271 anne.marie.eklund@noaa.gov or please see <http://spo.nwr.noaa.gov/tr146.pdf>.

Web Links:

<http://www.flmnh.ufl.edu/fish/Gallery/Descript/GoliathGrouper/GoliathGrouper.html>

References:

- Cass-Calay, S.L., and T.W. Schmidt. 2003. Standardized catch rates of juvenile goliath grouper, *Epinephelus itajara*, from the Everglades National Park creel survey, 1973-1999. NOAA Fisheries, Southeast Fisheries Science Center, Sustainable Fisheries Division. SFD-2003-0016.
- FAO Species Identification Guide for Fishery Purposes. 2002. Pp. 1233 *In*: K.E. Carpenter (ed). Volume 2: Bony fishes part 1. Rome, FAO.
- Heemstra, P.C., and J.E. Randall. 1993. FAO Species Catalogue. Groupers of the world (Family Serranidae, Subfamily Epinephelinae). An Annotated and illustrated catalogue of the grouper, rockcod, hind, coral grouper and lyretail species known to date. FAO Fisheries Synopsis 16 (125), 382 p.
- Porch, C.E., A.M. Eklund and G.P. Scott. 2003. An assessment of rebuilding times for goliath grouper. NOAA Fisheries, Southeast Fisheries Science Center, Sustainable Fisheries Division. SFD-2003-0018.
- Sadovy, Y.J., and A.M. Eklund. 1999. Synopsis of biological information on *Epinephelus striatus* (Bloch 1792), the Nassau grouper and *E. itajara* (Lichtenstein, 1822) the jewfish. NOAA-NMFS Technical Report 146. 65 pp. <http://spo.nwr.noaa.gov/tr146.pdf>