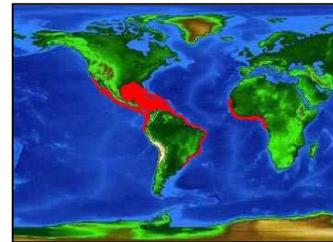


Goliath Grouper Biology



The Goliath Grouper (*Epinephelus itajara*) is the largest species of the western Atlantic groupers. It can weigh up to 800 pounds and reach over six feet in length. They are characterized by a broad head, round tail, small eyes, and short dorsal spines. They have a brownish yellow to greenish gray mottled pattern with small black spots on their fins.

Goliaths can be found from Florida south to Brazil, including the Gulf of Mexico and the Caribbean Sea. They are found in the eastern Atlantic Ocean from Senegal to Congo although rare in the Canary Islands. The species can also be found in the eastern Pacific Ocean from the Gulf of California to Peru.



World distribution of Goliath Grouper

World renowned fisheries biologist Dr. Chris Koenig from Florida State University has studied the goliath grouper in great detail and provides some interesting insight into the life history of this amazing fish.

What is juvenile goliath grouper habitat?



Mangroves provide important habitat for juvenile Goliaths.

Mangrove habitat is essential for juvenile survival and the Ten Thousand Islands and Everglades in southwest Florida is the most important source of juvenile recruitment, but other areas in Florida are also important. Juveniles remain in mangrove habitat for the first five to six years of life and they move offshore when they reach about three feet in length. The abundant food and shelter results in higher survival (95%) and rapid growth (4.5 to 6 inches/year). They tend to not move much and usually stay within 100 yards of the same spot.

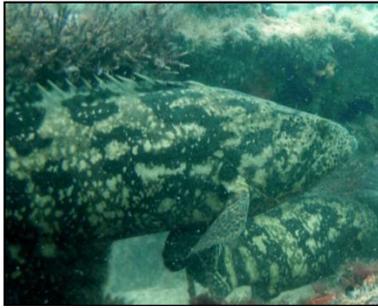
What do goliath grouper eat?

Most local anglers and divers are convinced that this massive grouper eats other small grouper and reef fish found on the reefs they inhabit. However, this does not appear to be true. Dr. Koenig found that 85% of their diet consisted of crustaceans, most of which were crabs. The remaining 15% of the diet primarily consisted of slow-moving fishes such as burrfish, catfish, toadfish etc. They forage for food during daylight and are mostly inactive during the night.



Stone crabs make up an important

How much do goliath grouper move around?



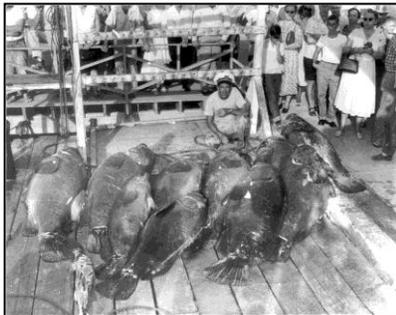
Goliath groupers rarely travel far from their established sites; a factor that contributed to their overharvesting in past decades.

As with juvenile goliath, adult goliath groupers do not appear to move around much once established. Many of the adults caught by the researchers were often found in the same location where they were tagged. However, when juveniles move out of their mangrove habitat, they may disperse far and wide. One juvenile tagged in the Ten Thousand Islands was recaptured on the central east coast of Florida in the Indian River area. Adults can also migrate up to 100 miles to spawning aggregation sites.

When and where do goliath grouper spawn?

As with many other groupers, goliath groupers form large aggregations to spawn. Most of the goliath spawning aggregations found to date are off of southwest Florida, but additional aggregations have recently been found off Florida's central east coast. These aggregations usually contain less than 100 individuals. Spawning occurs in late summer or early fall. Dr. Koenig found that spawning occurs on dark nights (new moon particularly) between 10 p.m. and 3 a.m. Such spawning behavior is likely an adaptation to avoid egg predation.

What is the status of the goliath grouper stock?



Overfishing of the slow moving Goliath Grouper along with habitat loss aided in the species demise: (Photo from Coleman and Koenig Laboratory)

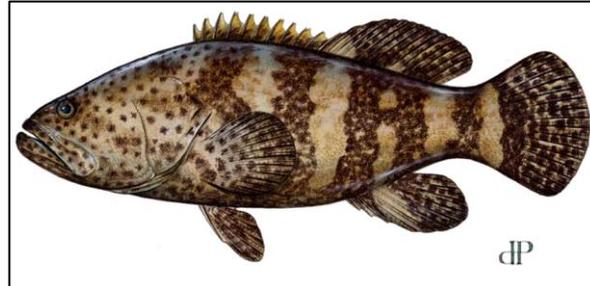
Goliath grouper were once very abundant in its native range; however, due to fishing pressure, they were nearly eliminated. Regulation passed in the early 1990's prohibited taking goliath grouper. Now, many years later, populations seem to be recovering, especially along Florida's southwest coast. Many anglers and divers report that they have become extremely abundant and may be "overpopulating" wrecks and reefs and depleting other reef fish. Goliath grouper have become accustomed to eating hooked fish making it essentially impossible for an angler to successfully bring a hooked fish to the boat. Spear fishermen increasingly report alarming encounters with goliath grouper aggressively attacking their speared fish.

Many folks have suggested that perhaps the time has come to allow keeping a limited number of goliath grouper fish. What little scientific data that is available indicates goliath grouper abundance is increasing. However, the data is very limited and is not available for its entire geographic range. Thus, to the dismay of many anglers, there is a great deal of uncertainty in projecting when goliath grouper abundance will be fully recovered to historic levels. Because of its rapid demise in the past, it is likely that fisheries scientists will want to have better data before any type of harvesting is allowed.



Anglers increasingly express frustration at having their catch stolen by goliath groupers. Despite such encounters, and limited data indicating increases in goliath numbers, harvest of goliath grouper remains prohibited.

It is still illegal to harvest goliath grouper in state and federal waters. If you do catch a goliath it is important to properly handle and release it so that it remains unharmed. To learn more about proper catch and release techniques, visit: www.catchandrelease.org. To report any illegal harvesting call 1-800-FWC-ALERT.



Sources:

Florida Museum of Natural History Ichthyology Department

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

Florida State University, Coleman and Koenig Laboratory

http://www.bio.fsu.edu/coleman_lab/goliath_grouper.php

Bryan Fluech

Collier County Sea Grant Extension Agent

(239) 417-6310 x204

fluech@ufl.edu

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