

GOLIATH GROUPEL BIOLOGY - SCIENTISTS ARE NOW UNRAVELING SOME MYSTERIES

At a recent artificial reef workshop organized by Florida Sea Grant in Palmetto, world renowned fisheries biologist Dr. Chris Koenig (Florida State University) shared the results of the goliath grouper biology research he has recently completed. I know you will find these results to be fascinating.

What is juvenile goliath grouper habitat?

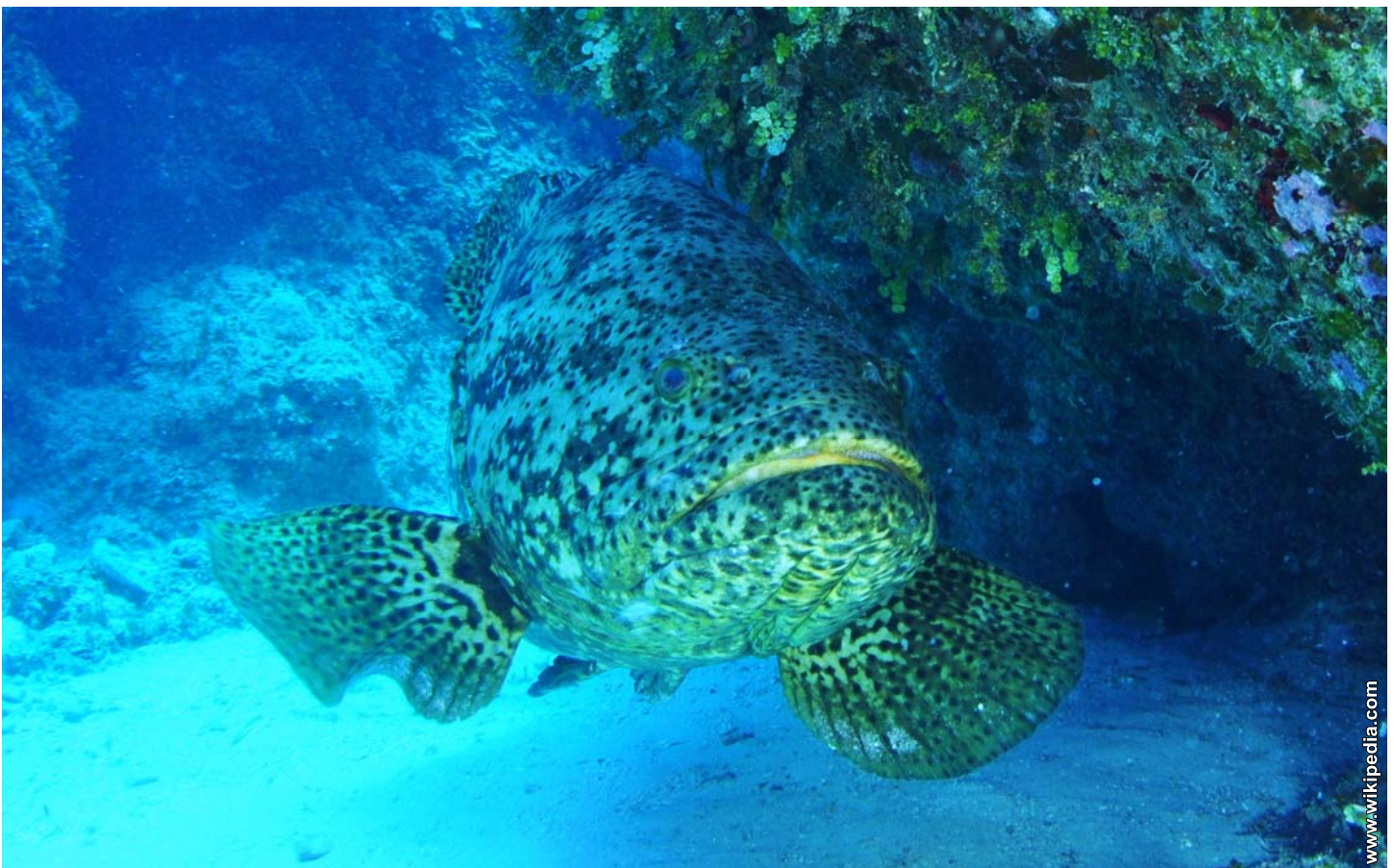
A variety of methods were used to study juvenile goliath groupers in mangrove habitat. Mangrove habitat is essential for juvenile survival and the Ten Thousand Islands and Everglades in southwest Florida is the most important source of juvenile recruitment, but other areas in Florida are

also important. Juveniles remain in mangrove habitat for the first five to six years of life and they move offshore when they reach about 36 inches 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 (meters) of the same spot.

What do goliath grouper eat?

Most local anglers and divers are convinced that this massive grouper (can weigh up to 800 lbs!) 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

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the 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.

How much do goliath grouper move around?

I already mentioned that juveniles don't move much. The same is true of adults with many tagged fish found gathered at the same spot. When juveniles move out of 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?

Most of the spawning aggregations found to date are off of southwest Florida, but additional aggregations have recently been found off of 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 10:00pm and 3:00am (so sometimes they are active at night). Such spawning behavior is likely an adaptation to avoid egg predation.

What is the status of the goliath grouper stock?

Goliath grouper were once very abundant; 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 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, there is a great deal of uncertainty in projecting when goliath grouper abundance will have fully recovered. Because of its demise in the past, my opinion is that fisheries scientists will want to have very good data before any type of harvesting is allowed. Stay tuned!

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