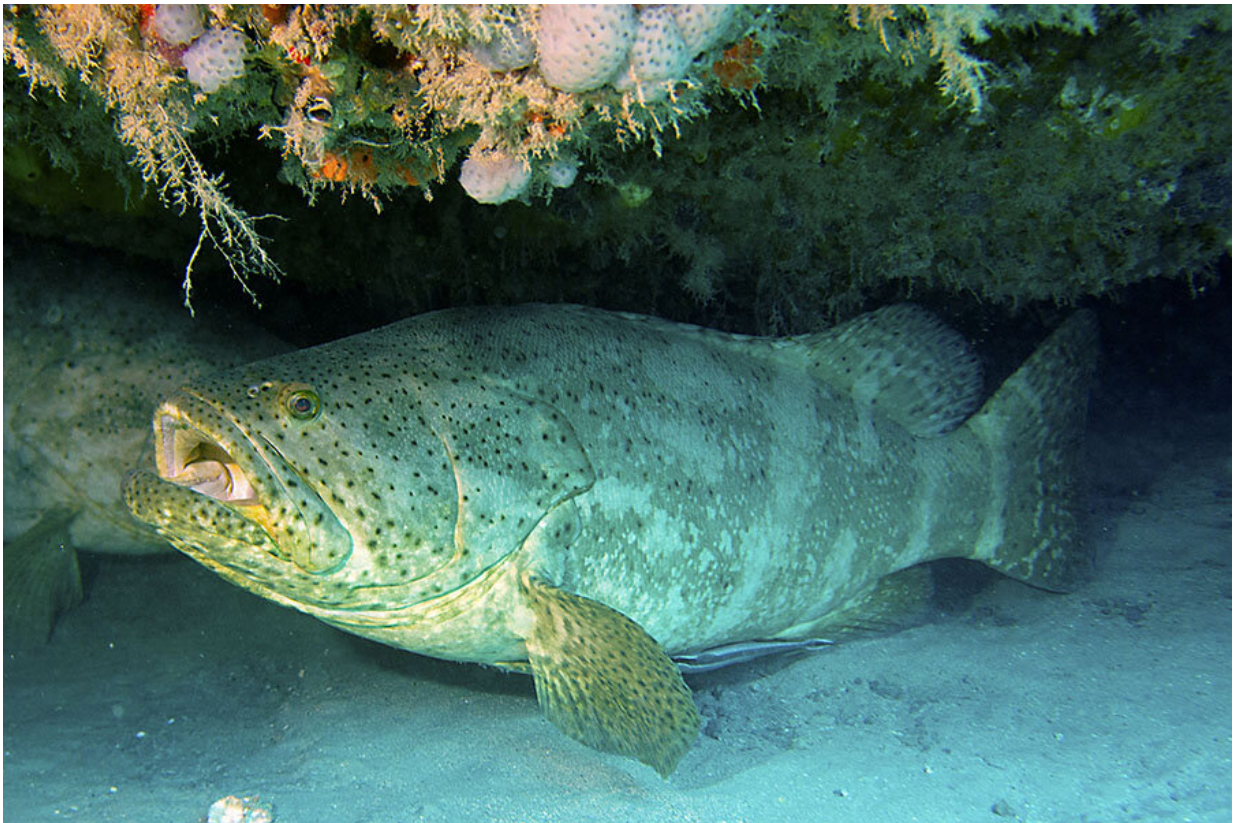


Researchers find risk in reopening Florida goliath grouper fishery

November 19 2019, by Kathleen Haughney



A goliath grouper off the coast of Jupiter, Florida. Credit: Gerald E. Carroll

A review of the iconic Atlantic goliath grouper by a team of Florida State University scientists revealed considerable downsides to proposals to reopen the fishery that has been closed for nearly 30 years.

In *Fisheries* magazine, FSU researchers explain that though the [species](#) has recovered to some extent in Florida waters since the closure, it is still vulnerable to rapid population declines that result from cold snaps and red tides. Those factors combined with the extensive loss of mangrove forests in South Florida—a critical habitat for juvenile grouper—result in an environment insufficient to support a fishery.

"These are a few reasons why goliath grouper in Florida is not a suitable fishery species," said Chris Koenig, a research associate at the FSU Coastal and Marine Laboratory. "Adult goliath grouper carry heavy loads of mercury in their muscles at levels known to be toxic to humans and capable of producing irreversible brain damage in young people. Basically, they are unsafe for human consumption."

Koenig co-authored the paper with Coastal and Marine Lab Director Felicia Coleman and former graduate student Chris Malinowski.

Koenig and Coleman have been studying the ecology and recovery of goliath grouper for nearly 30 years. With Malinowski, they examined multiple issues affecting goliath grouper productivity to provide the best available scientific information to resource managers faced with making decisions about whether to reopen the fishery.

Grouper, of which there are 163 distinct species, form an important part of reef communities and a major component of marine fisheries worldwide. In 2017, 462,000 tonnes of grouper were landed. However, the Atlantic goliath grouper, a large tropical fish, hasn't been commercially fished in nearly 30 years. With the goliath grouper facing extinction, federal and state officials intervened in 1990 and passed laws to protect the species by closing the fishery, which allowed a limited, slow population recovery in Florida waters.

Currently, federal and state agencies are debating re-establishing the

fishery, but scientists have found that they may pose [health risks](#) and other issues.

Goliath grouper off the coasts of Florida have the highest known concentrations of liver and muscle mercury of any commercially important shallow-water grouper species in Florida. They also are among the highest for mercury content of any commercial fish species monitored by the U.S. Food and Drug Administration.

About 96 percent of goliath grouper exceed the U.S. Environmental Protection Agency's risk level for human consumption of 0.3 micrograms per gram wet weight of total mercury. Some fish reach 25 times this amount.

The authors also suspect that high mercury levels are killing the older fish, limiting reproduction by harming the developing eggs and larvae, and making them more susceptible to disease.

They note, however, that despite the health risk to humans of consuming goliath grouper, that this species does have commercial value to the dive industry—an important contributor to Florida's economy.

These gentle giants grow to 7.5-foot-long and form spawning groups of up to 100 individuals. This makes them very attractive to divers seeking to add to their life's list of observed fishes and a valuable addition to the state's ecotourism industry.

"The economic value of this fish to Florida is far greater on the fin, if you will, than it is on a plate, where it is a significant threat to human health resulting from enormously high mercury levels," Coleman said.

Provided by Florida State University

Citation: Researchers find risk in reopening Florida goliath grouper fishery (2019, November 19)
retrieved 6 May 2024 from

<https://phys.org/news/2019-11-reopening-florida-goliath-grouper-fishery.html>

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