



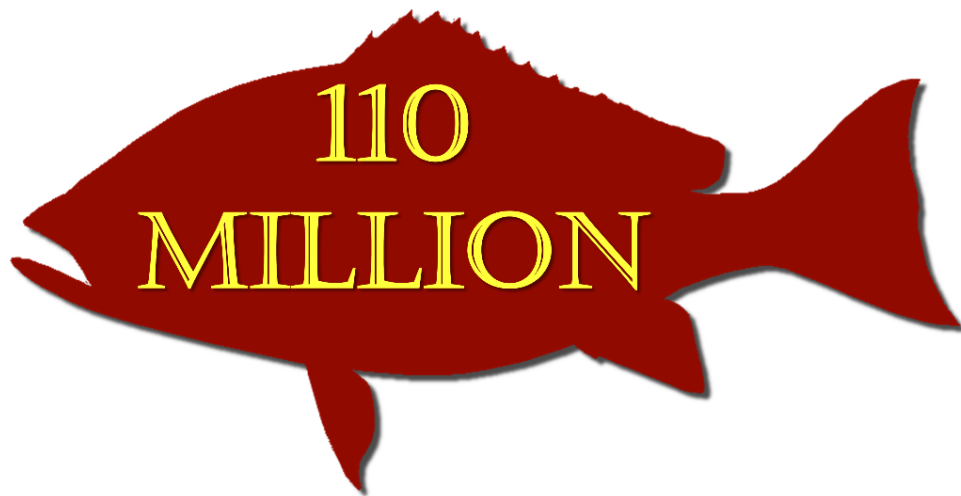
Issue 22, Summer 2022

MASGP-21-001-02

The Great Red Snapper Count

In 2017, a Gulf-wide team of fisheries experts was tasked with estimating the absolute abundance (i.e., population size) of red snapper in the U.S. Gulf of Mexico through an unprecedented \$12 million project called the “Great Red Snapper Count.” The scientists used a variety of methods across the Gulf of Mexico to accomplish this ambitious goal. Recently, after years of hard work, the team finished the project and revealed the results to the public. Below, we report on the final numbers and discuss their context and potential implications.

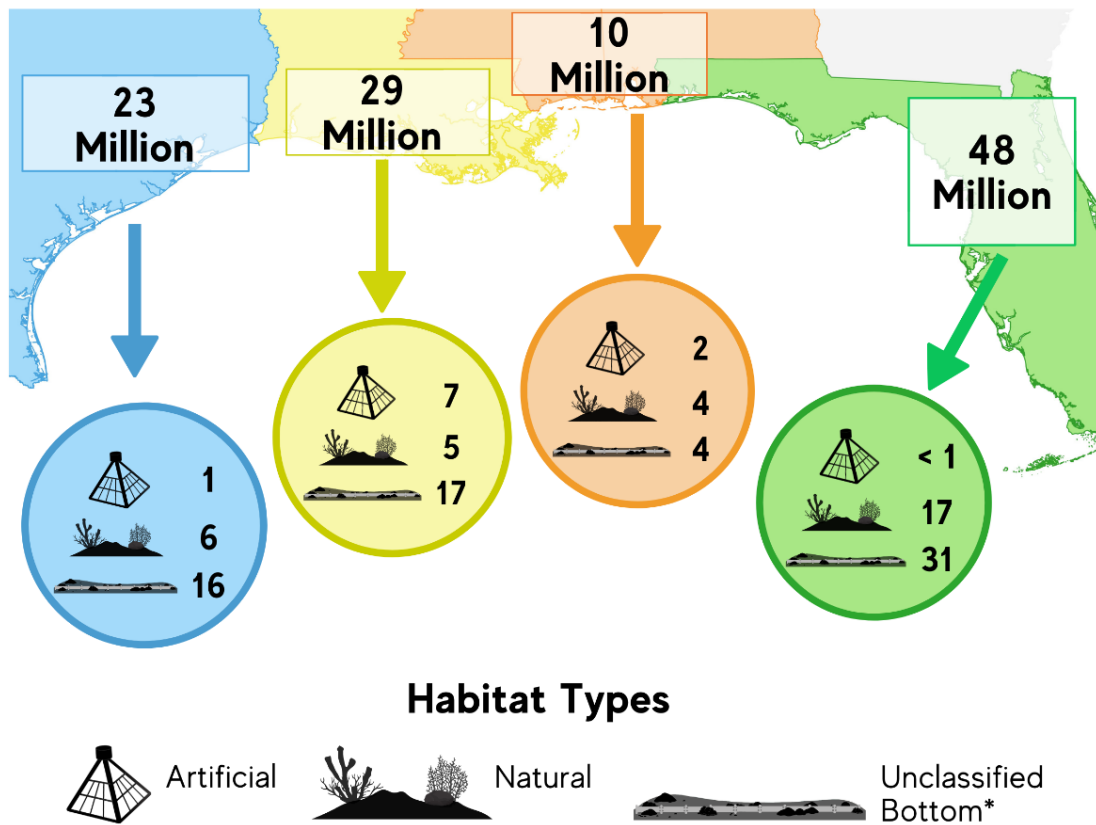
The Results are in!



Yes, you read that number correctly! The Great Red Snapper Count results indicate an overall population size of 110 million red snapper in the U.S. Gulf of Mexico! In comparison, the most recent National Oceanic and Atmospheric Administration (NOAA) assessment, which was completed in 2018, estimated a population size that would be equal to about 36 million fish.

Unclassified Bottom

The difference noted above was driven primarily by the Great Red Snapper Count team's ability to survey large portions of the U.S. Gulf of Mexico not previously surveyed by NOAA given limited resources. These areas are known as unclassified bottom and consist of vast expanses of sand and mud, along with features like extensive, partially buried oil and gas pipelines that hadn't been studied by fisheries scientists. When the Great Red Snapper Count team tallied the red snapper residing over unclassified bottom, they learned that these areas actually contain a massive "cryptic biomass" of red snapper estimated at 68 million fish! This was most apparent in the Florida region, where unclassified bottom supports about 31 million, or nearly two-thirds, of the region's 48 million red snapper.



Above: Region- and habitat-specific red snapper population estimates resulting from the Great Red Snapper Count. Each circle contains a breakdown (in millions) of the regional estimate by habitat type. Graphic by Emily Seubert and Catherine Cowan.

Artificial and Natural Habitats

In addition to areas of unclassified bottom, the Great Red Snapper Count team also investigated artificial and natural habitats – locations where red snapper aggregate and are commonly targeted by commercial and recreational fishermen. The estimates from these areas are in close agreement with NOAA's assessment.

One of the four main methods used during the Great Red Snapper Count was a Gulf-wide high-reward tagging study. During this study, scientists tagged and released thousands of red snapper across the U.S. Gulf of Mexico at artificial and natural habitats and relied upon fishermen to report the capture of tagged fish. The results of the tagging study were surprising – approximately 30% of tagged red snapper were recaptured! To put this quantity into context, scientists consider a recapture rate of 10% to be excellent, and anything higher is very unusual. The 30% tag return rate signifies impressive fishermen involvement in the Great Red Snapper Count, but it also illustrates high fishing effort for red snapper at artificial and natural habitats.



Above: Alabama, Mississippi, and Texas anglers proudly display their tagged and recaptured red snapper. Top photos courtesy of Merritt McCall; bottom photos courtesy of Andy Venables (left) and Brian Fore (right).

Current Status of the Fishery

Gulf of Mexico red snapper are presently classified as neither overfished nor undergoing overfishing, yet the stock remains under a rebuilding plan. Simply put, the quantity of red snapper in the water and the harvest rate of red snapper are both at healthy levels, but the stock hasn't quite recovered from historical overfishing and bycatch. This is primarily attributed to two factors: 1) the severity of the depletion from historical overfishing and bycatch, and 2) the long lifespan of the species. Gulf of

Mexico red snapper were severely overfished in the late 1900s. Very little spawning was occurring because many of the larger, older fish responsible for reproducing were being harvested. Meanwhile, a large proportion of the successfully spawned juveniles ended up dying as shrimp trawl bycatch. Fortunately, as a result of management actions, today's Gulf of Mexico red snapper are more numerous than in previous decades. However, the lifespan of the species is very long – up to 57 years! – meaning we haven't yet reached a point when enough red snapper have grown large and old enough to become big-time spawners and maintain the circle of life.

Implications for Management

The Great Red Snapper Count results reveal that there may be roughly three times more red snapper in the U.S. Gulf of Mexico than we once thought. This is great news! Moreover, the impressive number of red snapper residing over unclassified bottom represents an important discovery. It's possible that these fish may help to replenish the reef aggregations so that those areas of artificial and natural structure can continue to sustain high levels of harvest. Future studies will likely investigate the ecological roles of the red snapper inhabiting unclassified bottom, as well as their specific contributions to the Gulf of Mexico red snapper stock.

The findings from this project may fundamentally change the way the Gulf of Mexico red snapper fishery is assessed by federal and state officials. For example, the Great Red Snapper Count results will be incorporated into the next Gulf of Mexico red snapper assessment, which is currently in progress. The results of the Great Red Snapper Count are clearly impressive, but exactly how these results will impact commercial and recreational fishermen is less apparent. In particular, it's unlikely that quotas or bag limits will be tripled. Since Gulf of Mexico red snapper are still under a rebuilding plan, and harvest from artificial and natural habitats is very high as confirmed by the Great Red Snapper Count team, more red snapper doesn't necessarily mean more harvest. One thing is for certain: fisheries managers responsible for making decisions about Gulf of Mexico red snapper will move forward cautiously to ensure that the results of decades of diligent rebuilding efforts are preserved.

Additional Resources

For more information about the Great Red Snapper Count, please visit the project [website](#) or click on the links below to access an assortment of fact sheets and whiteboard videos. If you have any questions, please reach out to us at marinefisheriesecology@gmail.com.

Fact sheets:

[Project Overview](#)
[Habitat Classification](#)
[Direct Visual Counts](#)
[Depletion Studies](#)
[Tagging Study](#)
[Project Results](#)

Videos:

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