

# GRNMS National Marine Sanctuary

## Fish Spawning

### Management Issue

Gray's Reef National Marine Sanctuary (GRNMS) is home to many important commercial and recreational fish species. Managers need to understand the reproductive life cycles and the associated habitat needs of fish spawning aggregations within GRNMS in order to adequately protect those resources.

### Description

Currently sanctuary managers do not know what fish species are spawning in the vicinity of GRNMS or how the resulting larvae might utilize the sanctuary. Many of the 73 species of the Snapper-Grouper Complex managed by the South Atlantic Fishery Management Council are found within the boundaries of GRNMS and it is thought some of them may spawn within the sanctuary. The unique live-bottom habitats do attract larval fish, but which species are included in these schools are unknown. In order to ensure adequate protection for these important life history stages, managers need more specific information of spawning aggregation locations and identification of species composition and habitat utilization of larval fish schools within the sanctuary.



*Scamp (Mycteroperca phenax) surrounded by larval fish over live bottom ledge. Photo credit: NOAA*

### Questions and Information Needs

- 1) What fish species are known to spawn inside GRNMS?
- 2) What habitat types are used for spawning activities?
- 3) What habitats are important for larvae?
- 4) Are there important spawning areas that are particularly vulnerable and require special protection?
- 5) Are there "hotspot" areas for larvae that require special protection?

### Scientific Approach and Actions

- Conduct passive acoustic surveys to identify spawning activity in GRNMS
- Collect habitat data for areas found to be utilized for spawning activities
- Conduct literature search to investigate existing information on habitat needs for spawning and larval settlement
- Study larval preferences to determine where they go and what types of habitats/environmental features are important



*Large school of larval fish over sponge-and-invertebrate-encrusted ledge habitat. Photo credit: NOAA*

*Updated: 11/12/2014*

*For More Information -- <http://www.sanctuaries.noaa.gov/science/assessment>*

## Key Partners and Information Sources

NOAA's National Marine Fisheries Service, NOAA's National Centers for Coastal Ocean Science, South Carolina Department of Natural Resources, Georgia Department of Natural Resources

## Sanctuary Resources Available

- Two research vessels complete with captain and crew
- NOAA ship time
- Support staff for field operations and equipment deployment including science divers
- Habitat maps

## Resource Needs

- Financial support
- Partnerships for: grant application, project design, data collection and analysis, reporting, and monitoring

## Management Support Products

- Scientific papers and reports
- Presentations for scientific meetings, workshops, symposia and conferences
- Education and outreach products to inform general public about research area issues and research results
- Map of suspected and confirmed spawning aggregations including any temporal variations
- Map of suspected and confirmed locations important to larval fish
- Report outlining possible effects of climate change on current spawning aggregations and larval preferences within the sanctuary with inclusion as possible temperature induced migration of spawning aggregations northward
- Education and outreach materials to communicate the importance of GRNMS to spawning fish species

## Planned Use of Products and Actions

- Managers will evaluate whether certain important spawning or larval settlement areas require further protection
- Education and outreach materials to communicate the importance of GRNMS to spawning fish species

## Program References

### GRNMS Management Plan

Objective SR2, Activity SR2A; Objective SER3, Activity SR3B; Objective SR4, Activity SR4A

### 2008 GRNMS Condition Report and 2012 Addendum

- Question 12: What is the status of key species and how is it changing?
- Question 13: What is the condition or health of key species and how is it changing?
- Question 14: What are the levels of human activities that may influence living resource quality and how are they changing?

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