Gray's Reef National Marine Sanctuary

Invasive Species

Management Issue

Managers need information on the presence and impact of invasive species in Gray's Reef National Marine Sanctuary (GRNMS or Sanctuary).

Description

To date, at least three non-indigenous species are known to occur within the Sanctuary: red lionfish (either *Pterois volitans* or *P. miles*), the Asian green mussel *Perna viridis* and the titan acorn barnacle (*Megabalanus coccopoma*). Potential impacts of these and other organisms include competition with naturally occurring organisms, predation, and disease transmission. Managers need better information in order to understand the threats posed by these invasive species, the risks of additional non-indigenous species introductions and how to address such threats.

The indopacific lionfish is an invasive species which has recently been found in sanctuary waters. Photo credit: GRNMS

Questions and Information Needs

1) What are the species which represent the biggest threat to GRNMS?

2) What impacts are invasive species having on the resources of the Sanctuary?

3) From where are invasive species coming into GRNMS?

4) What effective controls of these marine invasive species are currently available?

5) Are the invasive species already established spreading, and if so, at what rate?

6) Do markers buoys increase the opportunity for invasive species introductions (by providing a direct route to the bottom for settling organisms)?

Scientific Approach and Actions

- Conduct monitoring activities to track the presence and distribution of lionfish, green mussel and titan acorn barnacle within the sanctuary
- Investigate feeding habits of lionfish in the Sanctuary to determine impacts to natural resources
- Investigate how various buoy anchoring materials/mechanisms affect the transport of invasive species

Potential Key Partners and Information Sources

National Centers for Coastal Ocean Research, Skidaway Institute of Oceanography, Reef Environmental Education Foundation, Team Ocean volunteer divers, Georgia Southern University, Georgia Aquarium

Management Support Products

- Draft scientific papers and reports
- Present at scientific meetings, workshops, symposia and conferences
- Develop education and outreach products to inform general public about research area issues

The invasive "Titan Acorn Barnacle" is most commonly found attached to the data buoy. Photo credit: GRNMS

Planned Use of Products and Actions

- Work with partners to develop lionfish removal procedures and protocols
- Use data collected on lionfish in the Sanctuary to develop and conduct education and outreach programs and products to inform the public about the impacts of invasive lionfish and the risks of other introduced fish on native populations
- Utilize buoy marker anchoring systems that are the least likely to be a vector for invasive species
- Develop rapid response protocols for future reports of additional invasive species

Program References –

GRNMS Management Plan

- Strategy RM-4: Maintain and Enhance Monitoring Programs

GRNMS Condition Report

- Questions 11

ONMS Performance Measures

- By 2015, 100% of the sanctuary system is adequately characterized
- Number of sites in which living marine resources, based on long-term monitoring data, are being maintained or improved