

SECART Regional Facility Highlight: *Gray's Reef National Marine Sanctuary*

[Gray's Reef National Marine Sanctuary](#) off the coast of Georgia is one of the largest near-shore live-bottom reefs of the southeastern United States. Gray's Reef was designated as a sanctuary on January 16, 1981, and is the only protected natural reef area off the Georgia coast. The 22 square miles of the sanctuary protect an area that is recognized nationally and internationally. NOAA's challenge is to balance the primary purpose of resource protection at the sanctuary with other compatible commercial, recreational, cultural, scientific, and educational uses.

Gray's Reef is just one of the 14 national marine protected areas that make up the [National Marine Sanctuary System](#). The mission of NOAA's National Marine Sanctuaries is to serve as the trustee for the nation's system of marine protected areas and to conserve, protect, and enhance their biodiversity, ecological integrity and cultural legacy.



Diver visiting Gray's Reef National Marine Sanctuary.

Science Programs

Whether it's the study of coral growth, research on loggerhead sea turtles or the long term monitoring of fish populations, science conducted in Gray's Reef National Marine Sanctuary is intended to help make informed management decisions to ensure adequate protection of sanctuary resources.

The reefs of the sanctuary are located at a crossroads of convergent currents which, depending on the season, bathe the area with a varying supply of marine larvae. Gulf Stream filaments bring



sub-tropical species to local waters from farther south and some species find their way via the colder Western Boundary Undercurrent from farther north. The larvae which ultimately settle onto the limestone reefs and sand expanses will endure challenging environmental conditions throughout their lifetimes; survival of the organisms is largely dependent on their physical tolerance of ocean temperatures which range from 55-86 degrees Fahrenheit and violent undersea "sandstorms" associated with high wind and seas which scour the ledges every winter. These constantly changing conditions contribute to an incredible diversity of marine life which can be found nowhere else than the reefs of the [South Atlantic Bight](#) (the area between Cape Lookout, NC and Cape Canaveral, FL).



Divers install instruments on the seafloor in the sanctuary.

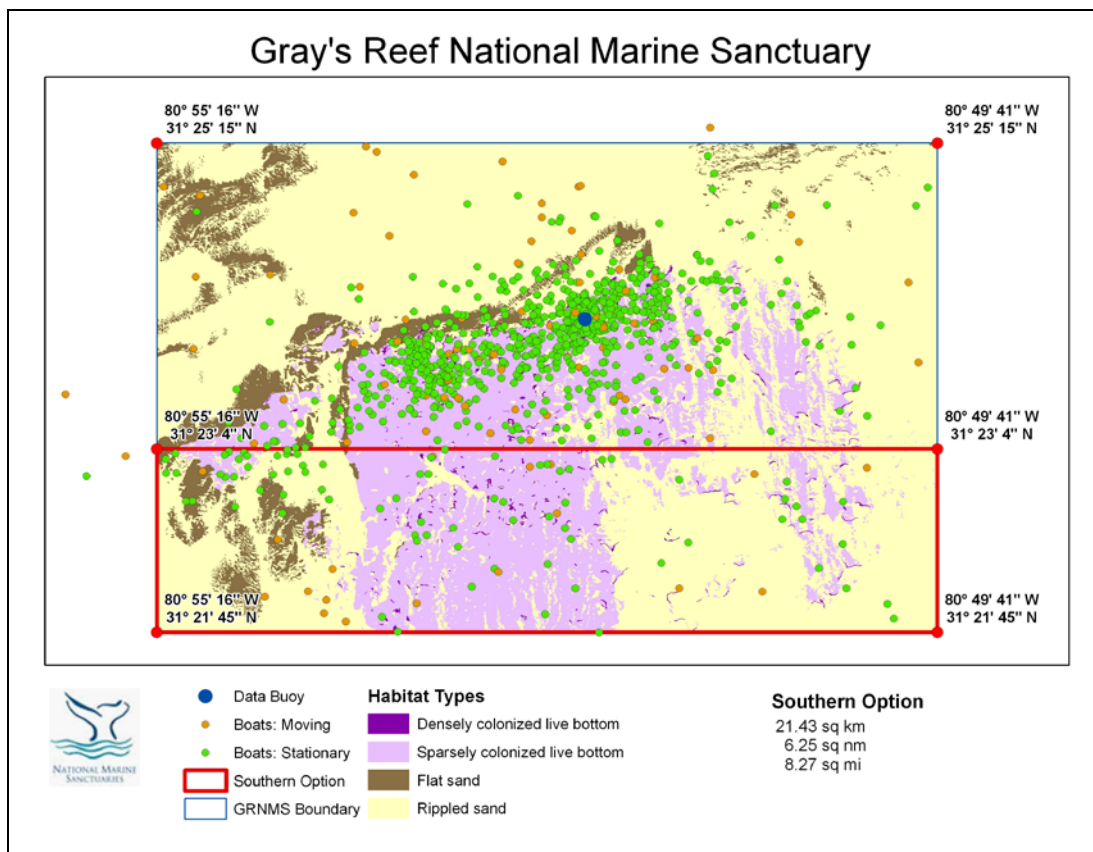
The science staff of Gray's Reef National Marine Sanctuary actively encourage scientists and students to engage in research and monitoring efforts that aid in the understanding of this unique marine ecosystem. Work at the sanctuary can be challenging due to sea conditions and visibility, however the rewards are worth the time spent interacting with this incredibly diverse environment. Budget constraints rarely allow Gray's Reef to directly fund research efforts but they do offer facilitated [research opportunities](#) which often includes [diving and boat support](#).

More can be learned about the science conducted in Gray's Reef National Marine Sanctuary by exploring the [researchers](#) who have worked there and the [publications](#) that have been produced. Because of the volume of work resulting from science conducted in and around the sanctuary, Gray's Reef has been dubbed the "most intensively studied patch of 'live-bottom' reef anywhere in the South Atlantic Bight" yet many mysteries remain.



Research Area

NOAA is proposing to establish a research area in Gray's Reef National Marine Sanctuary. The purpose of a research area would be to increase the opportunity to discriminate scientifically between natural and human-induced change to species populations in the sanctuary. Although allowable fishing gear is limited in the sanctuary, recreational fishing continues to impact the resources of the sanctuary. Without having an area of the naturally-occurring live bottom devoted to research and devoid of direct human impacts, it becomes very difficult to scientifically understand how these reefs function. The research area would also allow researchers to more accurately determine the effects of natural events (e.g., hurricanes) and to study impacts of climate change, including ocean acidification, which can be better determined in the absence of additional factors like fishing and diving.



Proposed research area in Gray's Reef National Marine Sanctuary (red box).

NOAA's proposal is to designate an area in the sanctuary where fishing and diving activities are prohibited and vessel transit is allowed without interruption (stopping). The preferred boundary encompasses 8.27 square miles (21.43 square km), roughly the southern third of the sanctuary. The preferred boundary option is expected to displace a minimal number of sanctuary visitors.



Education and Outreach Programs

Gray's Reef National Marine Sanctuary offers numerous [education and outreach opportunities](#). Many education publications are available to educators at no cost. The educational posters are loaded with fascinating information and are available to teachers in hard copy (supplies are limited). The Gray's Reef education staff also works closely with their science team to translate research data and findings into meaningful and useful information specifically for educators; and have developed [Classroom Activities](#) just for the classroom.

A great way to learn more about Gray's Reef National Marine Sanctuary is to attend one of the many ocean-themed events in which Gray's Reef staff participate with their various partners. These include the Savannah International Boat Show, CoastFest and Beach Week, Marine Science Day and Earth Day among others. In addition to these events, Gray's Reef staff members organize a film festival in Savannah, GA each fall, with a weekend of free ocean-themed films.



Example of a Gray's Reef National Marine Sanctuary poster.



Volunteer diver assisting with data collection.

Public involvement with Gray's Reef National Marine Sanctuary is at an all-time high, with sanctuary volunteers clocking in 2,601 hours for 2010. Volunteer opportunities range from Team Ocean volunteer divers, ocean film festival support, to fishing for bait and for gag and snapper to tag during research expeditions. Gray's Reef was the first NOAA office to promote stewardship volunteer activities through volunteer.gov. The website featured Gray's Reef Ocean Film Festival as a volunteer opportunity on its home page. Gray's Reef National Marine Sanctuary staff continue to encourage volunteer participation in the sanctuary both at events and through citizen-conducted science. Citizen scientists can use on-line forms from the sanctuary website to report data on everything from lionfish to whales to sea birds.

