



Gray's Reef National Marine Sanctuary



Photo: Greg McFall, NOAA

Boaters, divers and fishermen enjoy the wonders of Gray's Reef National Marine Sanctuary.



Photo: Greg McFall, NOAA

More than 200 fish species seek shelter and food in Gray's Reef.



Photo: Greg McFall, NOAA

The threatened loggerhead turtle forages and rests among the rocky outcrops of Gray's Reef.

Gray's Reef National Marine Sanctuary (GRNMS) protects a vibrant hard-bottom area off the Georgia coast. The reef's scattered rocky outcroppings and ledges provide homes for an abundance of marine life. Crabs, lobsters, soft corals, sponges, sea stars and other organisms form a dense carpet of living creatures, covering the nooks and crannies of Gray's Reef and giving it the name "live bottom." The reef attracts more than 200 species of fish, including black sea bass, snappers, groupers and mackerels. Loggerhead sea turtles, a threatened species, forage and rest year-round at Gray's Reef, and the reef is within the critical habitat and only known winter calving ground of the highly endangered North Atlantic right whale. The 22-square-mile sanctuary is the only protected natural reef and one of a few natural marine protected areas in the Atlantic Ocean between Cape Hatteras, North Carolina and Cape Canaveral, Florida.

Gray's Reef also attracts people: recreational boaters, anglers and divers are among the sanctuary's user groups. However, given the sanctuary's remote location 19 miles east of Sapelo Island, Georgia, most people experience Gray's Reef through pictures or videos showing some of its colorful fish and benthic organisms. No need to get your feet

wet; Gray's Reef has exhibit partnerships with the Tybee Island Marine Science Center, Live Oak Public Libraries, the Fernbank Museum of Natural History, Georgia Southern University and South Carolina Aquarium, among others.

Research and Monitoring

GRNMS provides a living laboratory for study of this unique marine ecosystem. The sanctuary's research team, in partnership with scientists from other agencies and universities, undertake numerous investigations to understand the status and condition of marine life and habitats. Whether it is the study of coral settlement on the reef or research on native fish populations, science conducted in Gray's Reef National Marine Sanctuary helps NOAA make informed decisions that protect the sanctuary.

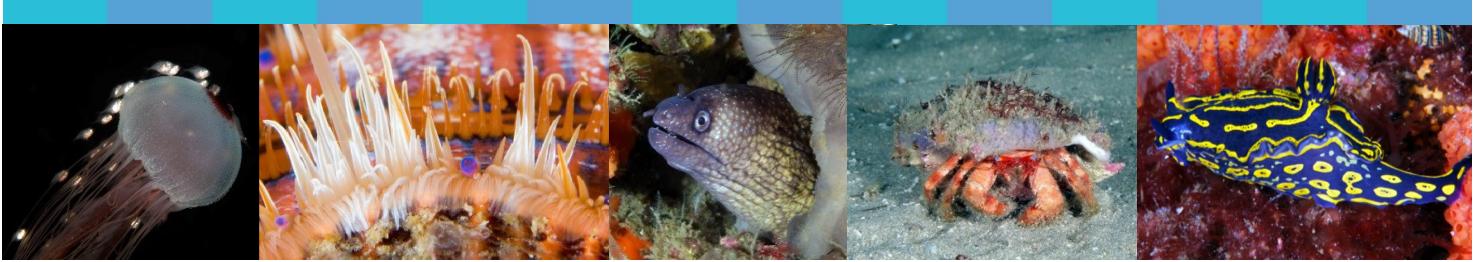
Education and Outreach

GRNMS invites Georgia residents and visitors to explore and learn about the sanctuary's delicate ocean ecosystems and how they can help protect and conserve the ocean. Exhibits are on display in a variety of locations, and the sanctuary hosts events for all ages, such as the Gray's Reef Ocean Film Festival and an exciting regional ROV team competition in which students create, launch and operate underwater robots.



Photo: Greg McFall, NOAA

Gray's Reef National Marine Sanctuary is one of the largest near-shore live-bottom reefs off the southeastern United States.



Gray's Reef National Marine Sanctuary

Location

19 miles off the coast of Sapelo Island, Georgia

Protected Area

22 square miles

Designation

January 1981

Habitats

Flat bottom troughs
Flat top ridge
Ledges and crevices
Scarps
Slopes and sandy areas

Key Species

Black sea bass
Grouper
Hard and soft coral
Loggerhead sea turtle
North Atlantic right whale
Nurse shark
Red snapper
Sea whips
Tunicates
Vase sponge

NATIONAL MARINE SANCTUARY SYSTEM



Scale varies in this perspective. Adapted from National Geographic Maps.

Find Us

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Office of National Marine Sanctuaries

Network of marine protected areas
Encompasses more than 170,000 square miles
Established October 1972

On the Web

sanctuaries.noaa.gov
www.facebook.com/NOAAOfficeofNationalMarineSanctuaries
Instagram: [@noaasanctuaries](https://www.instagram.com/noaasanctuaries)
Twitter: [@sanctuaries](https://twitter.com/sanctuaries)
Tumblr: [@noaasanctuaries](https://noaasanctuaries.tumblr.com)



Photo: Greg McFall, NOAA

Gray's Reef researchers deploy monitoring equipment on the reef.



Photo: Greg McFall, NOAA

Divers enjoy the abundant marine life protected and conserved for present and future generations.



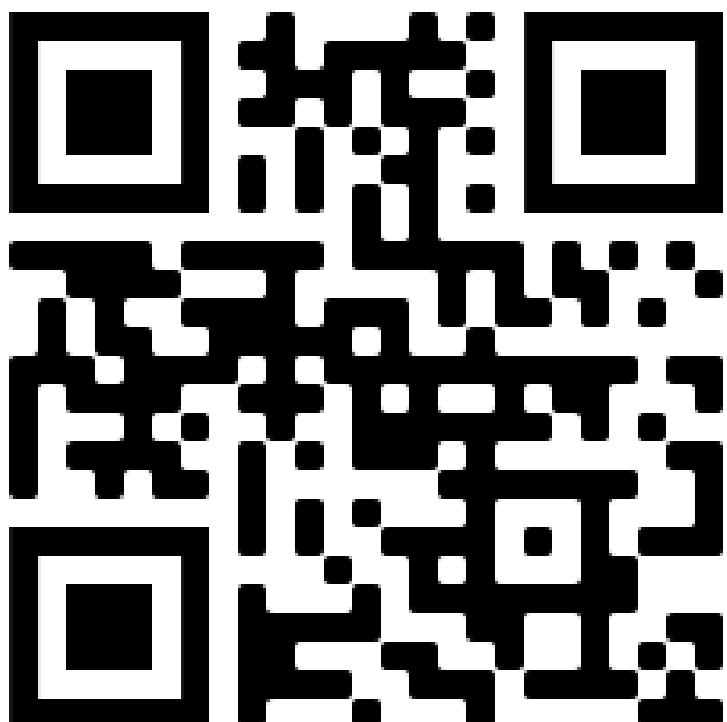
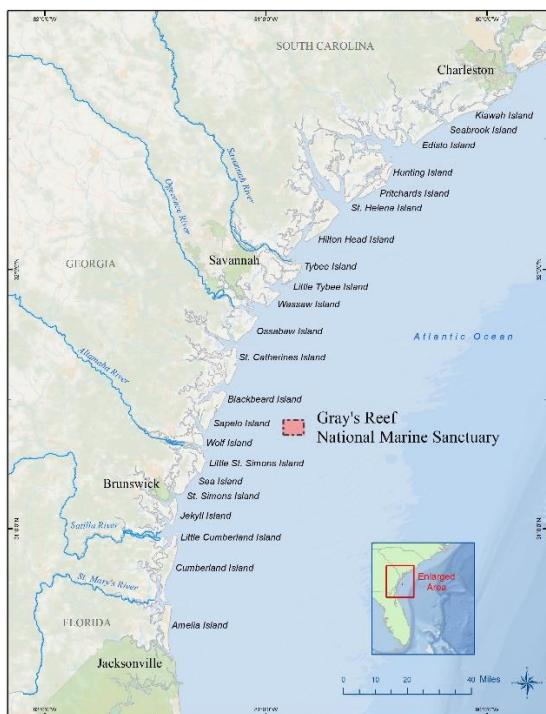
Photo: NOAA NMFS

Gray's Reef lies within the calving grounds of the endangered North Atlantic right whale.

Best Fishing Practices Guide

Responsible recreation has kept Gray's Reef an ideal fishing destination for over 40 years. Use this guide to learn about the skills and mobile apps that can help you make the most of your trip to the sanctuary.

GRAYSREEF.NOAA.GOV/VISIT/FISHING/BEST-PRACTICES



Gray's Reef National Marine Sanctuary



Gray's Reef is located 19 miles off of Sapelo Island, Georgia.

Gray's Reef National Marine Sanctuary

With its headquarters located in the port city of Savannah, Gray's Reef National Marine Sanctuary is part of a network of 16 underwater parks that comprise the sanctuary system. At 22 square miles in size, Gray's Reef is the only natural protected reef area on the continental shelf off the Georgia coast, and one of only a few natural marine protected areas between Cape Hatteras, North Carolina and Cape Canaveral, Florida. It lies within the endangered North Atlantic right whale's critical calving grounds. Since 1981, NOAA has protected the quality of this unique and fragile ecological community as a national marine sanctuary, allowing recreational use by boaters, fishermen and divers. Teeming with marine life, Gray's Reef is also an important scientific study site and a success story for how we, as a country, protect our underwater treasures for future generations.

Advanced divers delight in Georgia's amazing underwater park

Explore a hidden wonder just off of the Georgia Coast

Advanced divers who make a trip to Gray's Reef National Marine Sanctuary will be shocked by the vivid colors of its soft corals and sponges. Just a short trip from Savannah, Georgia, named a "Best City" by "Condé Nast Traveler" and "Travel + Leisure" magazines, this natural live-bottom reef provides wonders for divers, boaters and fishermen.

Gray's Reef is teeming with marine life - from the loggerhead turtles that rest at the reef, to the more than 200 fish species identified by scientists. Additionally, sea stars, octopuses, crabs, lobsters, soft corals, sharks, whelks, dolphins and thousands of other animals live among the ledges and slopes of Gray's Reef.

The reef is located 70 feet below the surface, where divers may encounter strong currents, cold water at depth and occasional limited visibility.

In order to protect the reef, anchoring is not permitted, but divers may use a weighted marker buoy as reference to locate their dive site. Marker buoys can weigh up to 10 pounds with a buoy line up to $\frac{1}{4}$ inch. For a complete list of regulations, please contact the site's permit coordinator or visit the following link:

<http://graysreef.noaa.gov/newregs.html>

Protecting the reef while you dive

Divers are important stewards of Gray's Reef and we appreciate your help to protect this beautiful national treasure. Here are some tips to assist you:

- Control your buoyancy and streamline equipment to avoid bumping into marine life or touching the reef.
- Remember not to touch or take anything
- Keep a safe distance from marine animals
- Do not spearfish; it is prohibited at Gray's Reef National Marine Sanctuary
- Keep a watchful eye and have fun!



Photo: Greg McFall, NOAA

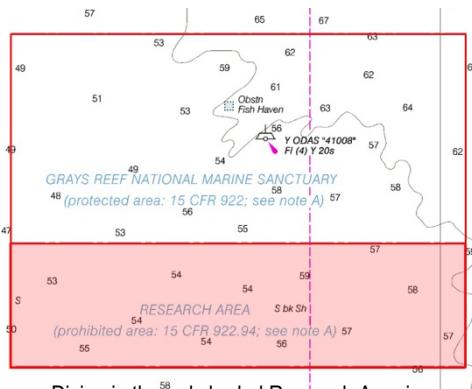
The spectacular colors of Gray's Reef await advanced divers.

NATIONAL MARINE SANCTUARY SYSTEM



Scale varies in this perspective. Adapted from National Geographic Maps.

Gray's Reef Research Area



Diving in the red shaded Research Area is prohibited.

Sanctuary Dive Area Coordinates

- Northwest: 31°25.264'N (31.421064°N)
80°55.272'W (80.921200°W)
Northeast: 31°25.264'N (31.421064°N)
80°49.689'W (80.828145°N)
Southwest: 31°23.067'N (31.384444°N)
80°55.272'W (80.921200°W)
Southeast: 31°23.067'N (31.384444°N)
80°49.689'W (80.828145°W)



Photo: Greg McFall, NOAA
Gray's Reef is an important and rare example of a live-bottom habitat.



Photo: Greg McFall, NOAA
The threatened loggerhead turtle forages and rests among the rocky outcrops in Gray's Reef.

Find us

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www.facebook.com/graysreesanctuary
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www.twitter.com/graysreefnms



Photo: Greg McFall, NOAA
Regal sea goddess nudibranch is one of the many colorful animals living in Gray's Reef.

2022 NOAA Ship *Nancy Foster* Research Expedition



The 13-member science team used scuba diving, surface surveys, and ocean mapping to study the sanctuary for ten days.

Photo: NOAA

Project Overview

From July 6-16, a NOAA-led research team continued long-term monitoring at the sanctuary and undertook a variety of research missions to collect information necessary to help make informed management decisions within Gray's Reef National Marine Sanctuary. The expedition utilizes a large research vessel — the NOAA Ship *Nancy Foster* — to conduct research projects. The projects explored questions related to habitat mapping, bottom-dwelling animal coverage, fish abundance and distribution, algae diversity, single-celled organism assessments, microplastics, and microbial communities that live symbiotically with the reef's resident corals. Scientists also surveyed the sanctuary for invasive lionfish and removed lionfish they found.

Habitat Mapping

Expedition scientists and data analysts worked with a team of experienced survey technicians and NOAA Corps officers to produce a fine-scale habitat map for Gray's Reef. In May, they explored four offshore areas between Ossabaw Island, GA and St. Mary's, GA. They used multi-beam sonar technology and other survey systems on the ship to map and explore areas of potentially similar natural hard bottom. The scientists used specialized software that can project the data points into a 3D image of the ocean floor. Gray's Reef staff and partners will make more corrections to the data and ensure that the final products will be available to the public.



An uncrewed *Saildrone* collected ocean data for NOAA hurricane models while the *Nancy Foster* expedition conducted other research at Gray's Reef National Marine Sanctuary. Photo: Ben Prueitt/NOAA

Research Area Monitoring

In late 2011, NOAA established a research area in Gray's Reef to increase the opportunity to scientifically discriminate between natural ecological changes within the sanctuary versus changes caused by humans. This year, conducted benthic habitat and fish community surveys at numerous sites located within and outside the research area. At each site, they measured ledge characteristics such as ledge height and determined the benthic habitat community (sponges, sea squirts, sea urchins, algae) present with a series of stationary photo quadrats.



Algae species were displayed and pressed, and photographed to archive the diversity of species found in the sanctuary.

Photo: Ben Prueitt/NOAA

Algae Diversity

Dr. Craig Aumack and Dr. Risa Cohen of Georgia Southern University collected samples of macroalgae — algae that can be seen with the eye, such as seaweed — from Gray's Reef in order to provide data about the different algae found within the sanctuary. Algae are vital producers in the food webs of marine ecosystems because they produce oxygen through photosynthesis and fishes are their primary consumers. More studies about algae is key to understanding the ecology of Gray's Reef.

Microplastics

Divers and surface teams collected microplastic samples for Savannah State University Master's fellow, Savannah Geiger. Geiger analyzed the samples, which come from the water and sediment of Gray's Reef. Microplastics are sesame-seed-sized pieces of plastic that break off from larger items or come from health products such as face cleansers and toothpaste. Little is known about the effects of microplastics on marine life, but this research will help scientists better understand their presence in our waters.

Survey and Remove Invasive Lionfish

The Gray's Reef team dove to document and if seen, remove lionfish in the sanctuary. Lionfish are an invasive species with no known predators in the South Atlantic, other than man. Lionfish were first seen at Gray's Reef in 2007.



The science team used smaller boats to navigate around the sanctuary. Two teams of divers will be analyzed for microplastics. Photo: Name/Affiliation

Expedition Team

Participating institutions in this year's *Nancy Foster* cruise include Gray's Reef National Marine Sanctuary; Georgia Southern University; Appalachian State University; Savannah State University; NOAA National Centers for Coastal Ocean Science (NCCOS); NOAA LMRCSC (Living Marine Resources Cooperative Science Center).

NOAA Ship *Nancy Foster*

The NOAA Ship *Nancy Foster* is named for Dr. Nancy Foster, in tribute to her outstanding contributions in advancing NOAA's mission through her leadership within the National Marine Fisheries Service and National Ocean Service from 1986 until 2000. *Nancy Foster* supports applied research with operations including the characterization of habitats and fauna in our nation's National Marine Sanctuaries and coastal waters, bathymetric seafloor surveys, physical and chemical oceanography studies, maritime heritage surveys, and pollution assessments.



Sediment samples collected throughout Gray's Reef National Marine Sanctuary will be analyzed for microplastics. Photo: Justin Miyano/NOAA

About Gray's Reef

Gray's Reef National Marine Sanctuary. With its headquarters located in the port city of Savannah, Gray's Reef is one of 15 special marine protected areas in NOAA's National Marine Sanctuary System. At 22 square miles in size, Gray's Reef is the only natural protected reef area on the continental shelf off the Georgia coast and one of only a few natural marine protected areas between Cape Hatteras, North Carolina and Cape Canaveral, Florida. It is a UNESCO International Biosphere Reserve and lies within the critical calving grounds of the endangered right whale. Since 1981, NOAA has protected the quality of this unique and fragile ecological community as a national marine sanctuary allowing recreational use by boaters, fishermen and divers. Teeming with marine life, Gray's Reef is also an important site for scientific study and a success story for how we, as a country, protect our significant underwater resources for future generations.



Chief Scientist Kim Roberson checks the scuba gear of her buddy, Cristin Alexi Archer, before a research dive. Photo: Ben Prueitt/NOAA

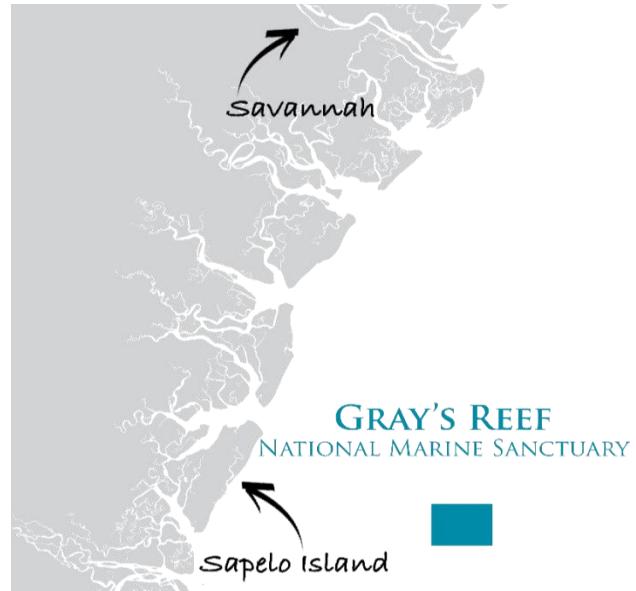


Gray's Reef National Marine Sanctuary Accomplishments

Fiscal Year 2022 (October 2021-October 2022)

Designated in 1981, 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 National Marine Sanctuary is currently the only protected natural reef area on the continental shelf off the Georgia coast. The approximately 22-square-mile sanctuary (about 14,000 acres) is teeming with marine life and is part of the endangered North Atlantic right whale's calving ground. Loggerhead turtles rest at the reef, where scientists have identified more than 200 fish species.

Visit graysreef.noaa.gov for more information.



Establishing the Gray's Reef Ocean Discovery Center

Gray's Reef Ocean Discovery center was the main focus sanctuary education and outreach efforts in FY22, completing a number of feats to create a public, free visitor center in downtown Savannah, Georgia. Throughout the year, sanctuary and ONMS staff completed a site interpretive plan, center bubble plan, and designed promotional giveaway items for the October open house. During the first year of a 10-year lease in partnership with the National Marine Sanctuary Foundation, a retail space was transformed into an undersea oasis. The Gray's Reef Ocean Discovery will significantly change how the public explores and connects with their offshore sanctuary providing space and programs to understand, appreciate, and conserve the country's ocean resources.



The NOAA Ship Nancy Foster served as a research platform for the sanctuary.
Photo: NOAA

Completing the 2022 NOAA Ship *Nancy Foster* Expedition

In 2022, the sanctuary was able to utilize the NOAA Ship *Nancy Foster* as its research platform. Sanctuary scientists and partners mapped 13 square miles of high-priority ocean habitats outside the sanctuary. This research filled gaps in mapping the U.S. Exclusive Economic Zone. Working with Georgia Southern University and Savannah State University researchers and in collaboration with NOAA Fisheries, dive teams completed more than 200 dives that collected microplastics, surveyed macroalgae for genetic analysis, and studied almost two dozen biodiversity hotspots.



The seafloor of Gray's Reef National Marine Sanctuary. Credit: NOAA

Awarding the contract for a new Class III research vessel

The contract—awarded to All American Marine of Bellingham, WA—will build an aluminum hull catamaran approximately 52' in length. The capabilities of the new vessel will transform coastal and ocean monitoring in the South Atlantic bight by providing mapping and benthic characterization capabilities, a versatile scuba dive platform, an A-frame and winch for lifting and towing scientific equipment, and on-board bunks for overnight expeditions. The new vessel can accommodate 18 passengers with sleeping for six. The vessel will be similar to the R/V Storm Petrel of Olympic Coast National Marine Sanctuary with building in FY23 and completion in early FY24. The research vessel will join the existing vessel fleet at Gray's Reef that includes the R/V *Sam Gray* and replace the R/V *Joe Ferguson*.



A new research vessel will improve continental shelf research. Photo: NOAA

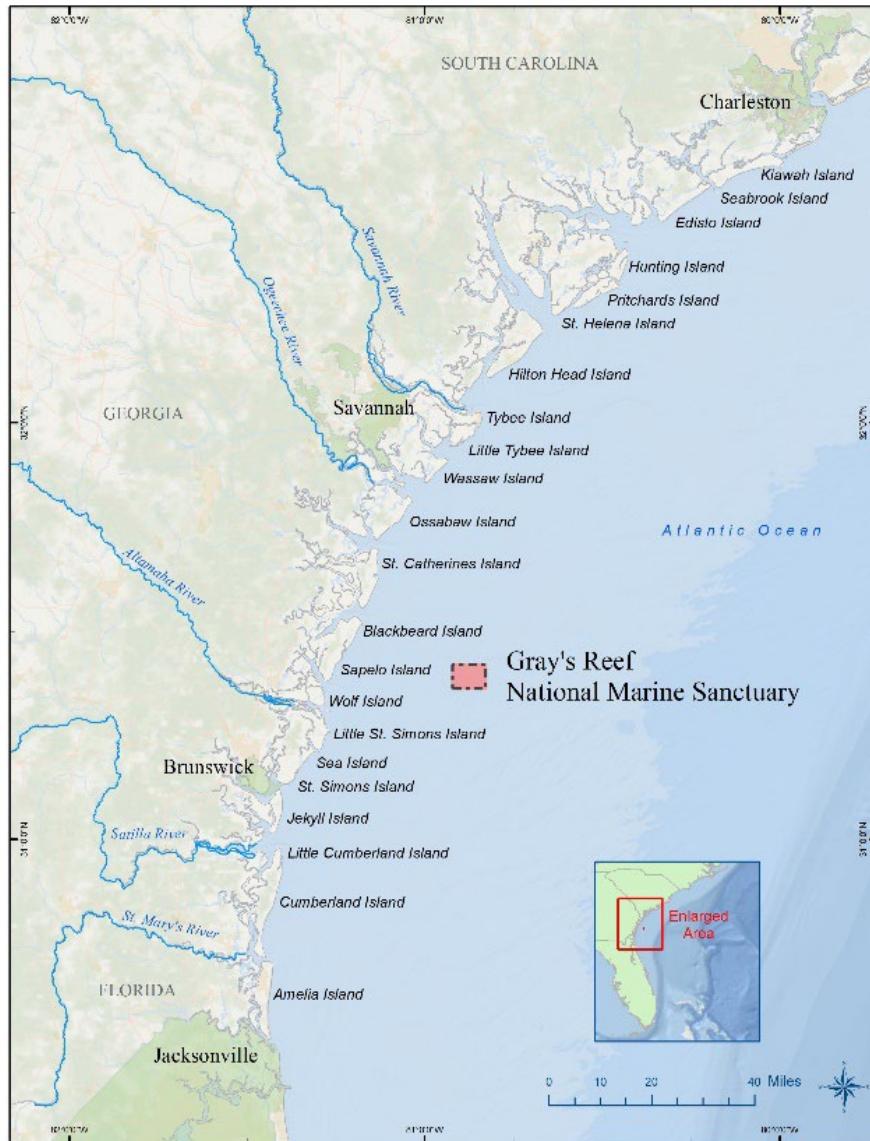
Looking Ahead

- Gray's Reef is reviewing and updating the sanctuary's management plan. The next step of updating the condition report will be completed in FY23 working with researchers and other stakeholders to compile health indicators including water quality, habitat, and living resources.
- The Grand Opening of the Gray's Reef Ocean Discovery center in downtown Savannah, Georgia will invite the public to explore, connect and discover the wonders of the ocean. Staffed mainly by volunteers, major milestones planned for FY23 are the design and completion of exhibits interpreting the sanctuary's connection with the coastal southeast.
- Gray's Reef will facilitate meetings of the Sanctuary Advisory Council discussing opportunities for the sanctuary to support the Biden administration's *America the Beautiful* initiative.



The National Marine Sanctuary System is a network of underwater parks encompassing more than 620,000 square miles of marine and Great Lakes waters. The network includes a system of 15 national marine sanctuaries and Papahānaumokuākea and Rose Atoll marine national monuments.

GRAY'S REEF NATIONAL MARINE SANCTUARY



Gray's Reef National Marine Sanctuary is located **19 miles** east of Sapelo Island, GA.
The closest city to sanctuary is Darien, GA in McIntosh County.
Charleston, SC is 100 miles northeast of the sanctuary.
Savannah, GA is 35 miles northwest of the sanctuary.
Jacksonville, FL is 75 miles southwest of the sanctuary.

More maps available at

[HTTPS://GRAYSREEF.NOAA.GOV/MULTIMEDIA/MAPS](https://graysreef.noaa.gov/multimedia/maps)