



GRAY'S REEF NATIONAL MARINE SANCTUARY SANCTUARY PROGRAM REPORT



Reporting Period: February 2014 - May 2014

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Hot Off the Press

We are pleased to report a successful research cruise aboard the NOAA Ship *Nancy Foster* in Gray's Reef National Marine Sanctuary!

Our successes in this research began with a versatile platform, the NOAA Ship *Nancy Foster*, equipped not only with an array of oceanographic instruments and technologies for conducting research in the sanctuary, but also with a skilled and resourceful crew. We recognize the efforts of our Team Ocean volunteer divers coupled with the diverse skill sets of our own cohesive team. It is through the support and collaborative efforts of this network of people that we are able to accomplish our research goals. Finally, we are grateful for the calm seas and beautiful weather during our cruise that made it easy to get the work done.

An Open House event aboard the *Nancy Foster* kicked off our 2014 research cruise. While the ship was docked on River Street, she was opened to the community for guided tours. Guests touring the ship learned about the ship's capabilities, were introduced to NOAA and NOAA Corps, and were provided an overview of the research being conducted in Gray's Reef National Marine Sanctuary.

Our work in Gray's Reef originated with habitat mapping using multibeam sonar and covered all of the area within sanctuary boundaries. This mapping technology requires the ship to 'vacuum' the sea, sending sound waves to the bottom and back to the ship, ultimately producing a picture of the ocean floor. The result is then refined to distinguish between sandy bottom and rocky outcroppings and further teased out to denote areas of sparse and dense colonization.

Located 50 - 70 feet beneath the sea, our research in Gray's Reef is dive intensive. On this research cruise, our science dive team conducted visual fish, invertebrate, and habitat surveys and serviced our acoustic telemetry arrays by replacing underwater receivers. No lionfish were sighted on any of these dives. From the surface, we supported these dive efforts and recorded sightings of sea turtles.

The activities of our 2014 *Nancy Foster* expedition were logged and shared with our partners, colleagues, and constituents throughout our research cruise by maintaining an expedition website. Articles, blogs and photographs documenting these activities can be found at http://graysreef.noaa.gov/science/expeditions/2014_nancy_foster/welcome.html.



(Far left) The NOAA Ship *Nancy Foster* supports dive operations in Gray's Reef National Marine Sanctuary; (Left center) Divers are transferred from *Nancy Foster* to small boats for dive operations; (Right center) Divers prepare for a survey dive in Gray's Reef; (Far right) Observers support dive operations from small boats while divers are submerged. Photo credit: Amy Rath

Sanctuary Superintendent News



From left to right: Gray's Reef Acting Sanctuary Superintendent George Sedberry, Gulfstream Sustainability Manager Roger Bowman, Georgia Conservancy President Pierre Howard, and Rhode Island Senator Sheldon Whitehouse.
Photo: Reed Bohne

Acting Sanctuary Superintendent George Sedberry met with Senator Sheldon Whitehouse

George Sedberry (Gray's Reef National Marine Sanctuary) and Reed Bohne (Northeast and Great Lakes Region of National Marine Sanctuaries) joined with Kyle Ward of NOAA's Office of Coast Survey, local conservation leaders, private citizens, and University of Georgia research partners to help educate Rhode Island Senator Sheldon Whitehouse yesterday about coastal issues in Georgia. Senator Whitehouse visited Ft. Pulaski National Monument near Savannah to observe the NOAA tide gauge located at the fort which has shown a 10-inch rise in sea level since 1935. The Senator is concerned that extreme weather and rising seas may put coastal communities at risk. In a series of private meetings and public events in the southeast, he heard from local residents, business leaders, scientists, and elected officials who are dealing firsthand with the effects of carbon pollution on the ocean.

George Sedberry participates in meetings of the South Atlantic Fisheries Management Council throughout the month of April

Marine Operations

Gray's Reef tested unmanned aircraft for managing sanctuary resources

Gray's Reef partnered with other NOAA scientists and resource managers from the National Marine Fisheries Service to test an unmanned aircraft system in waters adjacent to the sanctuary that could allow researchers to monitor marine life at relatively close range with minimal disturbance. The test of the Puma system, which can fly lower, slower and quieter than manned aircraft, took place off the Georgia coast in March. During the test, the aircraft was launched and recovered from the sanctuary's research vessel *Joe Ferguson* and flew transects up to three miles. The test mission was meant to demonstrate the aircraft's camera resolution and to allow researchers to explore the aircraft's potential to support management of Gray's Reef National Marine Sanctuary.

The Puma is a 13-pound, battery-powered aircraft with a nine-foot wingspan, equipped with real-time video and still photo capability. The aircraft can be hand-launched from any location on land or at sea and is controlled remotely by a pilot. Durable and rugged, the aircraft can fly for up to two hours on a charge and cover a range of about 50 square miles.

If successful, unmanned aircraft technology could be used in marine research worldwide. Possible uses include wildlife surveys for seabirds, marine mammals and sea turtles, to locate and identify marine debris, and other scientific data collection.

(Top) The UAS is deployed and piloted from a vessel; (Center) Images viewed from the UAS are displayed on a screen onboard the vessel; (Bottom) The UAS is landed on water and retrieved by vessel operators. Photo credit: Reed Bohne



Outreach and Education

Education programs raise awareness of Gray's Reef and teach concepts in marine science, technology and engineering

Gray's Reef hosted the 11th annual Southeast Regional MATE ROV Competition in March. A technically challenging and engaging program provided by the Marine Advanced Technology Education (MATE) Center immersed participants in the science of sanctuaries. This STEM education event required student teams to build underwater robots capable of navigating to depth, mapping a shipwreck site, collecting water and microbial samples, assessing encrusting invasive species, removing marine debris and locating identifying features such as home port plates and cargo. Gray's Reef enlisted the support of professionals in the field to act as judges and to further inspire and enhance the educational experience for the participants.



Visits to local schools get students excited about careers in marine science

Gray's Reef staff visited Benedictine Military Academy, Georgetown Elementary School, Bartlett STEM Academy, and Coastal Middle School to share information with students about Gray's Reef, to encourage conservation of marine resources, and to introduce students to careers in marine science.

(Top) A team of students conduct a final 'splash down' test of their ROV design before the competition begins; (Bottom) ROV's are built and piloted by student teams in the MATE ROV Competition. Photo credit: Amy Rath



ENTANGLED at the Gray's Reef Farewhale Festival

Gray's Reef hosted a festival at the Tybee Island Pier and Pavilion to mark the northward migration of North Atlantic right whales. Mother and calf right whales return to the cool waters off New England after spending several months in the warmer waters of the Georgia-Florida coasts, their only known calving grounds. The festival was a collaborative effort of local marine conservation-focused agencies and centers which hosted informational and educational exhibits, booths, and activities for the local community. An "Entangled!" obstacle course was designed to educate participants about common hazards encountered by right whales and other marine mammals along the eastern coastline of the U.S. The exhibit included vertical lines and nets from fishing gear, ship propellers, and marine debris. This educational exhibit and activity was informative while providing a hands-(and knees)-on experience to demonstrate challenges faced by these endangered marine mammals.

Outfitted as right whale calves, children climbed through the "Entangled!" obstacle course. Photo credit: Amy Rath

Gray's Reef staff move forward in planning for education-outreach workgroup

Through a series of regular meetings and discussions, and with the help of a process-oriented facilitator, the structure of this workgroup is beginning to take shape. The next important step ahead is to hold a staff workshop for evaluating our existing programs.

COMING SOON: Gray's Reef local chapter of National Marine Sanctuaries Foundation

With direction provided from the National Marine Sanctuaries Foundation, we are moving toward our goal of creating a 'friend's group', but in this case a local chapter, to help manage fundraising efforts for future programs.

Poster sessions provide opportunities for networking

Gray's Reef staff presented in poster sessions at the Jekyll Island Green Screen event and at the Southeastern Estuarine Research conference in Savannah. Casual sessions such as these can provide opportunities to meet and speak not only with students but also with professionals in the field and even local industry representatives.



Gray's Reef congratulates new Team Ocean divers Sarah Webb and Hampton Harbin

We recognize that it is through the efforts of our dedicated volunteer divers that we are able to meet the demand of our research goals in the sanctuary. Our volunteer divers lend their time, energy and knowledge to our programs and for that we are grateful. Team Ocean diver Sarah Webb was also awarded Gray's Reef 2013 Volunteer of the Year.



(Left to Right) Team Ocean divers Hampton Harbin and Sarah Webb. Photo credit: Amy Rath

Gray's Reef partners with the Savannah College of Art and Design (SCAD) in marine-themed art festivals

Gray's Reef supports SCAD's annual Sidewalk Arts Festival and Sand Arts Festival through awards for Best Underwater Creature. These festivals draw the community out to experience the work of talented artists, showcased in unusual ways, along the sidewalks of Forsyth Park and along the shoreline of Tybee Island's North Beach.



(Left to Right) Winners of the Gray's Reef Best Underwater Creature Award. Photo credit: Amy Rath
1st Place - Giant Hermit Crab, 2nd Place - Nautilus, 3rd Place - Wind Fish

(Right) 1st Place Winner of the 2014 Sidewalk Arts Festival. Photo credit: Jody Patterson



Resource Protection

Emergency Response Training ensures a better prepared staff in a worst-case scenario

Gray's Reef staff attended a seminar led by NOAA's Emergency Response Division. While this particular seminar was focused primarily on oil spill response, procedures were introduced for all serious hazards. We were challenged as a team to apply what we have learned to the complexities of our unique site.

Other Noteworthy Mentions

Check out our new digs!

While our offices were in disarray during the painting of the walls, we worked offsite for a week but returned to a template for new, fresh ideas. We look forward to pruning our spaces and our programs and to watching the resulting transformations.

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The Office National Marine Sanctuaries

The Gray's Reef National Marine Sanctuary is one of 14 marine protected areas in the National Marine Sanctuary System. The Office of National Marine Sanctuaries (ONMS) was established under the National Marine Sanctuaries Act of 1972 which authorizes the Secretary of Commerce to designate as national marine sanctuaries areas of the marine environment or Great Lakes with special national significance due to their conservation, recreational, ecological, historical, scientific, cultural, archeological, educational, or aesthetic qualities. Visit the ONMS web site at: <http://www.sanctuaries.nos.noaa.gov/>

Learn More about Your Sanctuary

To learn more about the sanctuary please visit our web site at:
<http://graysreef.noaa.gov/>.

To learn more about the Sanctuary Advisory Council please visit:
<http://graysreef.noaa.gov/management/sac/welcome.html>

Visit Your Sanctuary!

For information on visiting Gray's Reef National Marine Sanctuary please see:
<http://graysreef.noaa.gov/visit/welcome.html>

This page has information about visitor centers, sanctuary regulations, and recreation in the sanctuary, and about the sanctuary's unique resources and how you can help protect them.