



GRAY'S REEF NATIONAL MARINE SANCTUARY SANCTUARY PROGRAM REPORT



REPORTING PERIOD SEPTEMBER-DECEMBER 2010

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Sapelo Island NERR

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RESOURCE PROTECTION & MANAGEMENT

Research Area

In October, Gray's Reef held three public meetings to take comments on the Proposed Rule for a research area within the sanctuary. In addition, comments were taken by letter, email and postings via the Federal eRulemaking Portal <http://www.regulations.gov>. The comment period began in September and closed December 13. Six comments were received from the public.



Photo: Greg McFall

A research area is a region specifically designed for conducting controlled scientific studies in the absence of certain human activities that could affect the results. NOAA believes a research area will help managers more accurately assess possible impacts from fishing — particularly bottom fishing — on the sanctuary's natural resources by providing an area relatively free of human activities and impacts that can be compared to the rest of the sanctuary. The research area would also allow scientists to assess the impact of natural events such as hurricanes and droughts on the sanctuary, and it could serve as a place to monitor and study impacts of climate change such as ocean acidification.

NOAA proposes to prohibit fishing and diving in the research area. Transit through the area would be allowed without stopping and if all fishing gear is stowed and not available for immediate use. The proposed boundary – encompassing 8.27 square miles, roughly the southern third of the sanctuary – is an area of lighter vessel traffic and fishing effort, but contains all habitats needed to conduct the necessary research.

Currently, only rod and reel and handline fishing gear are permitted at Gray's Reef. Although commercial fishing is allowed, only recreational fishing occurs in the sanctuary.

The idea for a research area was first raised by members of the public in 1999 at public scoping meetings during the early stages of the sanctuary's management plan review process. A working group composed of representatives from research, academia, conservation groups, sport fishing and diving interests, education, commercial fishing, law enforcement, and state and federal agency representatives subsequently endorsed the research area concept.

Copies of the Draft Environmental Impact Statement and Proposed Rule can be viewed online or downloaded at <http://graysreef.noaa.gov/>.

North Atlantic Right Whale Recovery

Education Coordinator Cathy Sakas participated in the North Atlantic Right Whale Recovery Plan Implementation Team public forum and meetings in Jacksonville, Florida.

Researchers presented findings from the summer field season and updated plans for the winter calving season now in progress. Expansion of the right whale critical habitat was also discussed during the meetings.



Photo: NOAA

Gray's Reef staff has stepped up outreach efforts to support right whale recovery. Information has been posted on our website and on our Facebook page. Laminated right whale information cards were distributed to 150 charter boat captains and marinas.

Socioeconomics

Gray's Reef staff and NOAA economists are developing a new socioeconomic study to begin in early 2011. The survey of users and non-users of the sanctuary is intended to assess knowledge, attitudes and perceptions of Gray's Reef management strategies and regulations, as well as larger ocean issues. The results will inform staff and NOAA during the upcoming management plan review and help guide future education and outreach efforts. Another targeted survey will follow in a few years to assess actual economic effects from prohibition of spearfishing and the research area (if designated).

Fishing Regulations Reminder

Outreach Coordinator Gail Krueger developed an ad on current Gray's Reef fishing regulations for the 2011 Georgia Sport Fishing Guide. A replica of the ad, which gives a brief outline of current regulations and directs readers to the website for additional details, was also sent to more than 150 charter fishing boat captains and marina operators.

OCEAN

SCIENCE & EXPLORATION

Fish Tagging

Graduate Research Assistant Catherine Carroll successfully defended her thesis, "Using Acoustic Telemetry to Track Red Snapper, Gag, and Scamp at Gray's Reef National Marine Sanctuary", at Savannah State University. Carroll reported the results of her two-year project in which she examined site fidelity and habitat use by three species of fish, focusing on whether habitat characteristics or other environmental factors affect fish movement.



Photo: Devin Dumont

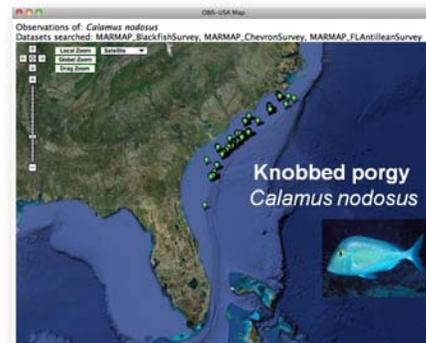
Fifteen fishes (seven scamp, five gag and three red snapper) were tagged with acoustic transmitters and tracked using 14 receivers. The volume of space beneath

undercut rock ledges, the presence of potential prey fish (tomtate and baitfish schools) resulted in significantly more detections of red snapper and the two grouper species. Site fidelity was strong for some individuals, with some fish remaining near a single receiver for one to three years; however, for most fish, site fidelity decreased with time. Superintendent George Sedberry and Deputy Superintendent/Research Coordinator Greg McFall served on Carroll's thesis committee.

Census of Marine Life

Superintendent George Sedberry attended the International Census of Marine Life Symposium and Finale in London, England. At the symposium, he presented a multi-authored poster on marine biodiversity in the US, and was co-author on a paper on marine biodiversity presented by Wes Tunnell (Harte Institute). The Census was a 10-year project aimed at documenting biodiversity throughout the world oceans, using exploration (over 900 days at sea) and existing databases.

One of the products of the Census of Marine Life is an internet map server that can be queried for distribution records of about 85,000 marine species in US waters.



<http://www.cml.org/>

The Census in the US included data from National Marine Sanctuaries and Fisheries

surveys, as well as new surveys, museum collections, and marine animal tagging projects.

Technical Diving on Cordell Bank

Greg McFall, who also serves as National Ocean Service Dive Officer, traveled to Bodega Bay, CA to participate in an historic technical diving mission to explore Cordell Bank National Marine Sanctuary. Since the bank was first described by pioneering divers in the 1970s, few divers have frequented the banks and no NOAA divers have ever been there. The six-day mission was conducted from Monterey Bay NMS' Research Vessel *Fulmar* based out of the Bodega Bay Marine Lab.



Photo: Joe Hoyt/CBNMS/NOAA

Divers collected samples, took quadrant and qualitative photos and collected video of the bank's flora and fauna down to around 200 feet using technical diving equipment and protocols.

Photo Analysis

George Sedberry served on the thesis committee of Dawn Glasgow, a graduate student at the College of Charleston. Glasgow successfully defended her thesis, "Photographic Evidence of Temporal and

Spatial Variation in Hard Bottom Habitat and Associated Biota of the Southeastern U.S. Atlantic Continental Shelf".

She examined underwater photographs taken from cameras mounted on fish traps used in an annual reef fish assessment survey that samples from North Carolina to south Florida, including Gray's Reef. She developed a scheme for classifying habitat types based on geomorphology, and examined some index stations for changes that may have occurred since 1993. She found that shallow reefs (around 20 m depth) showed significant changes in percent biotic cover over time, which she attributed to hurricane effects. She also examined the frequency of invasive Indo-Pacific lionfish in the images and found that lionfish were observed in depths ranging from 30 -55 m and temperature ranges from 17.9 °C to 27.2 °C. Most of the sightings occurred over areas with rocky substrate (85%) while the remainder occurred over a mixed rock/fine sediment substrate. Vertical relief was statistically associated with the presence of lionfish with a higher percentage of lionfish observed in areas of low to moderate relief and areas with covered pavement and rock outcrops.

Sea Star Poster

A poster on echinoderms (sea stars, sea urchins, etc), authored by Dave Pawson (Smithsonian), George Sedberry and Susan DeVictor (SC DNR), and presented recently at the 7th European Conference on Echinoderms in Goettingen, Germany, recently, won second prize at the conference.



The poster shows an aggregation of cidaroid sea urchins (*Stylocidaris lineata*) at 218 m depth. The aggregation is believed to be a spawning aggregation, rather than the more commonly-observed feeding aggregation, as the oral surfaces of the urchins are facing away from the bottom on which they feed.

“Images of echinoderms from 200 meters, off South Carolina, USA: Some sidelights on seasonal cidaroid sex in the sea,” was based on echinoderms observed by ROV off Georgia and South Carolina during a NOAA cruise to deep-sea coral banks in April 2010.



Coelopleurus floridanus, described by Alexander Agassiz in 1888 as “most brilliantly colored”. Photographed at 169 m depth.

OUTREACH AND EDUCATION

Spectrum Achievement Award

Education Coordinator Cathy Sakas received the Equal Employment Opportunity (EEO)

and Diversity Award from the National Ocean Service. Sakas and several others in the program, were recognized for their organization of and participation in the National Association of Black Scuba Divers’ Youth Education Summit (NABS-YES).

Marine Science Day Open House

Gray’s Reef staff and volunteers took part in the annual Skidaway Marine Science Day, Oct. 16. Visitors were invited to pilot a remotely operated vehicle (ROV), learn about endangered species off our coast, and sample water at depth from the pool.

The North Atlantic right whale was showcased by the life-size inflatable right whale calf, Wendy, and a poster created by Administrative Coordinator Jody Patterson. Jody compiled over flight observations of North Atlantic right whales off the Georgia and South Carolina coasts from last years’ calving season. Many visitors were amazed to see that these massive mammals are so close to shore.

Lots of children took turns piloting the same kinds of ROVs that are built in Gray’s Reef workshops for teachers and students. By letting children use these ROVs, staff hopes to encourage the formation of local teams to participate in the annual competition.



Photo: Jody Paterson

Exhibit & Visitor Center Strategy

Consultants have submitted a draft report for an exhibit and visitor center development plan for Gray's Reef. The report includes a market analysis, suggestions for possible outreach venues, and a roadmap for developing the program. The plan recommends a three-phase outreach program that moves from working with existing exhibit partners, to expanding to new partners and/or expanded exhibits, to possible development of a stand-alone visitor center for the sanctuary. Much of the recommended work is already underway, but funding will determine the next steps. The final revision of the plan is being completed.

Public Forum on Sanctuaries and Economics

George Sedberry, Regional Director Billy Causey, and Office of National Marine Sanctuaries Chief Economist Bob Leeworthy were invited by the Friends of Matanzas, a northeast Florida citizens group, to participate in a "Discussion on The Economic Benefits of National Marine Sanctuaries" in St. Augustine FL. They gave presentations on the sanctuary system, its governing legislation, and on case studies of socioeconomic effects from sanctuary designation.

Science Education Excellence

Cathy Sakas serves as the Georgia director of the Center for Ocean Science Education Excellence Southeast (COSEE SE) and has helped develop a plan that details the work COSEE SE is proposing for the next three years. The focus is on best practices for scientists to interpret their work to, and how to interact with, the general public and educators.

Sidewalks to the Sea

Cathy Sakas worked with partner Tybee Island Marine Science Center to add supplemental information for a grant proposal for their *Sidewalks to the Sea* education program. The program will be taught to 60 classes of third grade inner city students. The program's content is about coastal and ocean habitats and how students living on land impact those habitats. Gray's Reef's role is to provide training for the center's staff in the natural history and resource protection of Gray's Reef and how the watersheds influence the sanctuary and other offshore habitats. Gray's Reef will also provide each teacher with a *Rivers to Reefs* education module that focuses on the impacts of watersheds on the ocean.

VOLUNTEERS & COMMUNITY

Thank you!

Gray's Reef volunteers were honored with a recognition picnic prior to the Skidaway Marine Science Day in October. Individuals were presented with sanctuary pins for tenured service, logo water bottles, film festival t-shirts and reusable shopping bags.

Volunteer Participation Up

The sanctuary racked up a record number of volunteer hours this year, reporting 2,601 hours. Team Ocean volunteers and film festival volunteers accounted for the majority of those hours.

HOMEPORT

NOAA Corps Officer Rotations

Vessel Operations Officer LTJG Chad Meckley completed his billet with Gray's Reef in December. Chad's next station is with the west coast NOAA Ship *McArthur II*.

Meckley and his wife Nicole are expecting their first child in the spring. They will be missed.

We welcome ENS Christopher J. Briand who joined the Gray's Reef staff in January. ENS Briand grew up around Boston, MA and joined the U.S. Air Force right out of high school. After almost 5 years serving as an F-15 Crew Chief around the world, Chris attended UMASS Boston and graduated with a BS in Earth & Geographic Science with a GIS certificate. After a tour in Iraq with the U.S. Army National Guard, Chris joined the NOAA Corps. He comes to Gray's Reef after completing a tour on the NOAA Ship *Delaware II*.

Marine Operations

From September through December, boat operations included pCO₂ water quality operations on the *R/V Joe Ferguson* with scientists from the University of Georgia (UGA). Samples were taken on a transect from Wassaw Sound to Gray's Reef and back to Wassaw Sound. Operations also included deployment of three new receivers in Gray's Reef to detect the movements of tagged groupers and snappers as part of the ongoing fish tagging study.

During this period, the vessels transported UGA scientists and a Team Ocean volunteer diver to replace bottom-package sensors at the data buoy. In addition, the scientists resurveyed a site at J-Y Reef where a five-foot-long jaw bone from an extinct Atlantic gray whale was discovered by UGA researchers. More whale bone fragments were recovered in the vicinity of the previous finds.

For fiscal year 2010, sanctuary vessels and staff spent 70 days on the water; for

calendar year 2010, 64 days were spent on the water.

Training

Vessel Operations Officer LTJG Chad Meckley received training at the United States Merchant Marine Academy and Captain Todd Recicar trained for a week on vessel electronics.

Sustainability Audit

Two walk-through audits were conducted in March 2010 by the Center for Sustainability at Georgia Southern University. The results were reported to the sanctuary in December. The sanctuary office and staff received high marks for recycling, use of task lighting in individual offices and water conservation. The audit also recommends reduced lighting improvements to be made in general use areas like the halls and kitchen, as well as reducing use of copy paper, fans and space heaters.

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**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/sac.html>.

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/>

VISIT YOUR SANCTUARY!

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

