

# NOAA IN THE CARIBBEAN



CONNECTING NOAA & PARTNERS ACROSS THE CARIBBEAN



Volume 1 | Issue 2

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## First Annual NOAA in the Caribbean Meeting NOAA Carib Host Regional Experts and U.S. Virgin Islands Congresswoman

The first annual meeting of the NOAA in the Caribbean (NOAA Carib) initiative was held May 15-16, 2012 at the University of the Virgin Islands, St. Thomas. Marine managers, politicians, conservationists and scientists from NOAA and partner agencies across the U.S. Caribbean met to discuss strategic priorities, challenges, needs and opportunities for greater collaboration.

In a plenary address Congresswoman Donna Christensen welcomed federal and local officials for the two-day meeting saying, "This gathering gives us an opportunity to be a part of a developing strategy for protecting and improving our ocean and coastal ecosystems, addressing climate change and ensuring

the economic viability of this region."

Initiated by NOAA's Southeast and Caribbean Regional Team, NOAA Carib is a forum to improve communication and coordination among NOAA and its regional partners. Meeting discussion centered around three main themes: (1) Improved conservation and management of ocean and coastal ecosystems and resources; (2) Strengthened understanding of, and adaptation to a changing climate; and (3) Enhanced multi-hazard monitoring, forecasting and risk management. Attendees heard from NOAA employees and local partners on the latest efforts in the region and followed on with roundtable discussions to identify needs and opportunities for future targeted collaborations. The meeting also served as a platform to provide information and gather input on NOAA's draft Caribbean Strategy and the Caribbean Regional Ocean Partnership initiative that has recently been endorsed by Governor's of both the U.S. Virgin Islands (USVI) and Puerto Rico (PR). It is intended that the Caribbean Strategy will form the agency's framework to coordinate and integrate the abilities of all NOAA line and staff offices to address regional needs and improve mission effectiveness and international cooperation in the Caribbean region.

With so many demands and pressures put on Caribbean marine ecosystems, enhanced marine stewardship through stronger partnerships, collaborative goal setting and community involvement will be crucial for the maintenance

of livelihoods in an ever-changing environment. As Christensen remarked, "Ours is always a quest to seek the right balance as we protect the beautiful and dynamic natural environment that we were blessed with, as we simultaneously work to preserve the cultural, recreational and economic development needs of the people who call these islands home." ■

*NOAACarib Steering Committee Members  
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*Congresswoman Donna Christensen addresses the NOAACarib meeting in St. Thomas.*

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# Six New Sites Added to the National System of Marine Protected Areas

## Additions Protect Key Areas in Puerto Rico and U.S. Virgin Islands

In July 2011, NOAA and the Department of the Interior invited federal, state, commonwealth, territorial and tribal marine protected area (MPA) programs with potentially eligible existing MPAs to nominate their sites to the National System of MPAs. A total of 58 nominations were received, including five from the



*St. Thomas East End Reserves. Credit: Renata Platenberg*

Puerto Rico Department of Natural and Environmental Resources (DNER) and one from the U.S. Virgin Islands Department of Planning and Natural Resources (DPNR). These include:

- Arrecifes de la Cordillera Natural Reserve (PR)
- Canal Luis Peña Natural Reserve (PR)
- Isla de Desecheo Marine Reserve (PR)
- Isla de Mona Natural Reserve (PR)
- Tres Palmas Marine Reserve (PR)
- St. Thomas East End Reserve (USVI)

After a public review process, the six Caribbean sites were officially added to the List of National System Sites in April 2012. The national system provides

a mechanism for MPAs managed by diverse government agencies to work together on common conservation priorities and objectives. The system is made up of member MPA sites, networks and systems that work collectively at regional and national levels to enhance conservation of the nation's most important natural resources and cultural marine heritage. For more information, visit, [www.mpa.gov](http://www.mpa.gov). ■

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## Building Green in the VI

### Promoting Green Design and Construction

The clear waters and marine ecosystems of the USVI support fisheries and tourism, as well as the construction and development community by drawing many people to the island. Monitoring studies in the USVI conducted by DPNR's Division of Environmental Protection, indicate that water quality is increasingly affected by pollution. The pollution is due in part to the failure, inadequacy, or absence of best management practices on construction sites.

"Green construction can save money and allow building in harmony with the natural resources of our islands. It's important to have tools to help Virgin Islanders make informed decisions before, during and after construction," Karen Vahling of the Island Green Building Association explained.

Working sessions for the construction and development community were held in partnership with DPNR, U.S. Green Building Council, Island Green Builders Association and federal regulatory agencies in St. John, St. Croix and St. Thomas. The sessions are part of the NOAA Coral Reef Conservation Program-funded Green Construction Program project.



*Discussion group at the St. John working session, Coral Bay. Credit: NOAA NMFS*

Based on input from stakeholders, training modules are being created for the following groups: (1) homeowners, property managers, and realtors; (2) design professionals; (3) implementation professionals (heavy equipment operators and contractors); and (4) agency personnel. The Green Construction Program's goal is to benefit the coastal and marine environment through the design and construction of projects in ways that avoid and minimize impacts to USVI's natural resources. Find information about the St. John working session [online](#). ■

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# News from Around the Caribbean

Connecting you with news and updates from NOAA and partners around the U.S. and international Caribbean

## U.S. Caribbean

### We've got you covered – land cover mapping in the Caribbean

NOAA's Coastal Services Center will update the high-resolution land cover maps for the USVI and will produce the first comprehensive land cover maps for the territory of Puerto Rico. These data will be produced through C-CAP, the Center's Coastal Change Analysis Program, using 2011 aerial imagery from the U.S. Army Corps of Engineers. Work will begin this fall, and the anticipated completion date is late 2013. Data will be available for download from the [Digital Coast web site](#). Contact the center for more information, or if you are interested in providing feedback during the development of these data. ■

NOAA Coastal Services Center  
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Existing 2007 Coastal Change Analysis Program land cover for the area surrounding Henry Rohlfsen Airport, St. Croix. Credit: NOAA Coastal Services Center

### USVI coral reef management capacity assessment

A strategic assessment is being carried out to help increase the effectiveness of management actions for coral reef ecosystems in the USVI. Consultants with SustainaMetrix in partnership with NOAA's Coral Reef Conservation Program have conducted interviews and led discussions with a wide range of local agencies involved in making management decisions for coral reef ecosystems as well as stakeholders and local partners working to conserve coral reef resources in the USVI. The assessment is aimed at

helping management agencies, partners and the NOAA Coral Reef Conservation Program better understand existing capabilities and capacity gaps, as well as barriers to implementing effective management actions. A report will be produced that highlights key gaps in coral reef management capacity in the USVI and provides strategic recommendations as to how these gaps might be addressed. A similar assessment is also planned for Puerto Rico to be conducted in the fall of 2012.

NOAA Coral Reef Conservation Program  
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### Mesophotic research cruise makes new discoveries in Caribbean

Mesophotic coral ecosystems (MCEs) are largely unexplored, yet are now known to be patchily distributed, directly connected to shallow ecosystems, and important for supporting valuable resources and biodiversity unique to the Caribbean region. A University of Puerto Rico cruise, April 25-May 10, sponsored by the National Centers for Coastal Ocean Science (NCCOS) Center for Sponsored Coastal Ocean Research, explored and mapped important new areas of the seafloor using remotely operated vehicles and divers using re-breathing equipment. The surveys resulted in detailed observations and discoveries of marine organisms that could be new to science. This multi-year study of MCEs within the U.S. Caribbean will aid in quantifying, understanding and eventually predicting their occurrence and understanding their resilience to environmental change and function as fish habitat. Because MCEs serve as essential habitat and refugia for threatened and overfished shallow species, this work is important to the Caribbean Fishery Management Council. A [photo gallery](#) and more information on MCEs is available on the Caribbean Coral Reef Institute website. ■

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### Living Oceans Foundation mission to Navassa

Scientists from the Southeast Fisheries Science Center (SEFSC) and the University of Miami participated in a reef assessment cruise to Navassa Island National Wildlife Refuge at the invitation of the Living Oceans Foundation Global Reef Expedition. The five-day cruise provided the opportunity to follow up data collection on benthic reef and fish communities at the uninhabited island from previous NOAA-sponsored cruises (2002-2009). After significant changes in reef condition observed in the mid-2000s due to coral bleaching and disease events and intensive fishing, observations from the current cruise suggest that reef condition has stabilized. Focal surveys of *Acropora palmata* also show stable populations while *A. cervicornis* remains extremely rare. ■

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Thriving elkhorn coral (*A. palmata*) growing on the wall of Navassa Island. Photo: NOAA NMFS

## Questions or Comments?

We want to hear from you! Please e-mail us to [subscribe/unsubscribe to the newsletter](#) or to [submit any questions, comments and story ideas](#) at: [CaribbeanNews@noaa.gov](mailto:CaribbeanNews@noaa.gov).

*Editorial Note: blue underlined text indicates a live hyperlink. When viewing pages in an Adobe PDF, click to open relevant web pages.*



# News from Around the Caribbean

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## U.S. Caribbean

(continued from page 3)

### St. Thomas East End Reserves land-based sources of pollution project

NCCOS scientists returned to the St. Thomas East End Reserves (STEER) in June 2012, for the second year of field work on the "Characterization of Land-Based Sources of Pollution and Effects in the STEER", a NOAA Coral Program-funded project. NCCOS researchers surveyed biological habitat, as well as collected coral, conch and fish for chemical contaminant analysis and histological evaluation. NCCOS and the University of the Virgin Islands are collaborating on the monthly monitoring of the reserves for nutrients, suspended solids, chemical contaminants and sedimentation that can impact human health and the health of coral reef ecosystems. The project was requested by the STEER Core Planning Group and will result in a detailed baseline assessment of the area. ■

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### NOAA wants your input on improved management of tuna, swordfish and shark fisheries

NOAA Fisheries is proposing measures that would amend the Highly Migratory Species (HMS) fishery management regulations for the U.S. Caribbean region to correspond with the traditional operation of the fishing fleet and to provide an improved capability to monitor and manage those fisheries. Proposed measures would: (1) create a HMS Caribbean Small Boat Commercial Permit allowing fishing for and sales of bigeye, albacore, yellowfin and skipjack tunas, Atlantic swordfish and Atlantic sharks within local Caribbean markets; (2) include specific authorized species and retention limits, modification of reporting requirements, authorization of specific gear, vessel size restrictions and consideration of mandatory workshop training; and (3) stipulate that this permit

could not be held in combination with other HMS permits. To read more, visit the [management plan amendment summary on the U.S. Federal Registry](#). ■

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### Specialist training in fish and coral ID for VI enforcement officers

By training enforcement officers in the identification of fishery species, the DPNR Division of Environmental Enforcement will be able to effectively investigate, document, and prosecute fishery and other violations in the USVI. The training of enforcement officers is part of the NOAA Coral Reef Conservation Program-funded project "Education and Outreach in USVI to Enhance Enforcement of Marine Protection Regulations". The project training plan focuses on the importance of effective marine enforcement to protect coral reef ecosystem resources. Scuba, field and classroom training are part of the training plan. ■

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Environmental Enforcement Officer during in-water training, Coki Beach, St. Thomas. Credit: NMFS

### Southeast Regional Acoustics Consortium highlights state-of-the-art science

The Southeast Regional Acoustics Consortium (SEAC) held a workshop in March 2012 to bring regional partners together and explore opportunities for using fisheries acoustics in the Southeast

Atlantic and Caribbean. The three-day workshop included presentations by leading scientists and demonstrations of acoustic technologies used to document fish behavior, coral reef ecosystems and shelf habitats including fish spawning aggregations. SEAC is a working group, including several NOAA scientists, that brings together academic institutions, federal and regional fisheries and environmental management agencies and private industry to advance the use of acoustic techniques for understanding the marine environment. ■

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### Mapping human activities in St. Thomas East End Reserves

In May 2012, a group of NOAA scientists traveled to the USVI to conduct the first coastal use mapping workshops on St. Thomas. The Coastal Use Mapping Project is designed to collect critical information on human activities in and around the STEER. Over 50 people, representing a wide range of user groups, attended the workshops. The project aims to improve understanding of the spatial range and intensity of key human activities and resource uses to better inform resource management. Later this fall, the team will return to present the outcomes of the workshops to the participants, managers and other interested parties. ■

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### Derelict fish traps: How big a threat are they?

At the request of USVI commercial fishermen, NOAA scientists created a novel collaboration with U.S. Navy's Surface Warfare Center, National Park Service, University of the Virgin Islands and VI Division of Fish and Wildlife to assess the impact from missing and abandoned fish traps around St. Thomas and St. John. The study tested autonomous underwater vehicles with onboard sonar mapping usually used for mine detection



## U.S. Caribbean

*(continued from page 4)*

purposes to instead search for derelict fish traps. Researchers also used long-term diver observations and remote underwater video surveillance cameras to monitor fish movements in and out of derelict traps and to quantify impacts from ghostfishing with some unexpected results. The full report funded by NOAA Marine Debris Program was released this June.

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## International Caribbean News

### Coral Program collaborates with the Government of Belize

NOAA's Coral Program sent their climate coordinator to Belize in March to discuss the challenge of addressing issues surrounding climate change, coral reefs and fisheries as part of the [Academic and Professional Programs for the Americas Change Professional Fellows Program](#). Discussions focused on the impacts of climate change and ocean acidification, available and upcoming tools to

effectively plan for climate impacts and improve reef resilience and lessons learned from efforts in the Pacific. Belizean organizations expressed an interest in assistance from NOAA with water quality monitoring, best management practices for shoreline protection and updating coastal management plans. ■

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### International Summit of Marine Protected Agencies

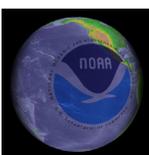
In February 2012, officials from MPA agencies of 16 nations gathered in California, to discuss how to use their combined influence and efforts to increase the value and success of MPAs worldwide. The participating agencies committed to becoming a permanent informal group, and to finding ways to share their experience and lessons learned. NOAA invited 23 nations to send an MPA representative, and 16 were able to attend: Australia, Bahamas, Canada, Chile, Dominican Republic, France, Italy, Korea, Mexico, New Zealand, Palau, Saudi Arabia, South Africa, Tanzania, United Kingdom and the U.S. A second summit is anticipated to be held in conjunction with the 3rd International Marine Protected Area Congress in 2013. ■

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### Tracking queen conch movements in Columbia

In March, researchers with NOAA's SEFSC-Galveston, joined scientists, fisheries managers and fishermen in Providencia, San Andrés Islands (Columbia) to assist with rebuilding queen conch populations in no-take areas within the [Seaflower Marine Protected Area](#). The team relocated 10,000 queen conch from remote parts of the archipelago to repopulate their marine reserve in hopes of restoring surrounding populations; another 5000 are to be transplanted this year. NOAA scientists taught attachment techniques for both numbered and sonic tags and developed sonic tracking procedures to enable project personnel to: (1) determine movement patterns and survival rates; (2) learn whether conch are staying within the boundaries of the marine reserve; and (3) determine whether conch are successfully reproducing. The Columbian project team has adopted techniques developed during SEFSC's [queen conch population studies in the USVI](#).

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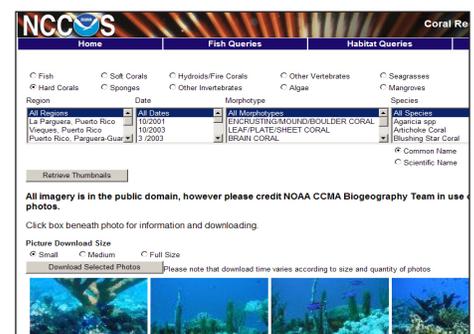
## Data Zone

Here we connect you with NOAA data portals and datasets for the Caribbean that are easily accessible via the internet

### NCCOS Coral Reef Ecosystem Assessment and Monitoring database

With the acronym CREAM it had better be good! And it doesn't disappoint. This database from [Biogeography Branch's Caribbean Coral Reef Ecosystem Monitoring Project](#) (a component of the National Coral Reef Monitoring Program) represents some of the most intensively surveyed areas of the Caribbean. Using a consistent and quantitative sampling protocol for more than a decade, the project has collected biological community data on coral reef ecosystems along 5,764 underwater transects from

seven regions of the U.S. Caribbean (3 in USVI and 3 in PR). Via a queryable online database, they also make available almost 2,000 underwater photographs. Survey data and photographs are all open access on the internet and have so far been used in over 30 published papers and reports. The data still provide a substantial opportunity for data mining to gain insights on spatial and temporal patterns of marine communities, individual species and on species-habitat associations. Relevant metadata for all data requests is also provided in the zip file with each download. ■



*This page provides access to the main query engine for the Coral Reef Ecosystem Assessment and Monitoring database. Photos can be viewed as thumbnails and downloaded at multiple resolutions.*



# Data Zone

(continued from page 5)

## Marine Ecosystem Geodatabase for the National Park Service

The Gap Analysis of Marine Ecosystem Data project is a NOAA-led compilation and review of best available geospatial data to assist in marine natural resource management for eight park units. The project supported implementation of the Ocean Park Stewardship Action Plan objective to discover, map, and protect ocean parks. The focus of partnership activities was to identify, obtain, synthesize and evaluate all relevant ecological, oceanographic, socio-economic, cultural, and remote sensing datasets available for several National Park Service managed Pacific and Caribbean marine Park Units. In the USVI, spatial data are available for two National Parks and two National Monuments including habitat maps, hydrology data; terrestrial zones; monitoring sites; human uses; surveyed areas (aerial photography/bathymetry) and management boundaries. A total of 42 individual datasets are provided for the VI National Park and the St. John region and 54 for the Buck Island National Monument and the St. Croix region. The data are now available online via a [mapping portal](#). A full [report](#) is also available. ■



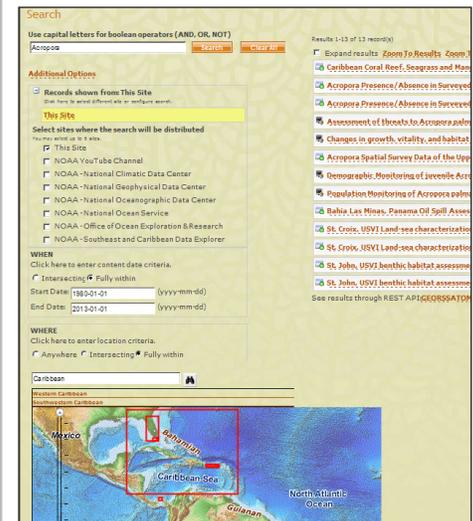
*The Marine Ecosystem Geodatabase is the most comprehensive compilation of spatial data ever undertaken for St. Croix and St. John.*

## Sea level and coastal flooding impacts for the Caribbean islands

NOAA's Coastal Services Center will be expanding its [Sea Level Rise and Coastal Flooding Impacts Viewer](#) to Puerto Rico and the USVI in 2013. This viewer uses nationally consistent data sets and analyses to provide a preliminary look at sea level rise and coastal flooding impacts. Maps can be adjusted to show impacts from various amounts of sea level or coastal flooding. Features of this viewer include: (1) displays potential future sea levels; (2) provides simulations of sea level rise at local landmarks; (3) communicates the spatial uncertainty of mapped sea levels; (4) models potential marsh migration due to sea level rise; (5) overlays social and economic data onto potential sea level rise; and (6) examines how tidal flooding will become more frequent with sea level rise. ■

## Coral Reef Information System Geoportal

NOAA's [Coral Reef Information System \(CoRIS\)](#) is designed to be a single point of access to NOAA coral reef information and data products, especially those derived from NOAA's Coral Reef Conservation Program. CoRIS has now developed a [geoportal](#) with an interactive map to help you find products within a user-defined geographic area. The new geoportal application provides centralized access to publications, geospatial data, tools and applications. ■



*The CoRIS geoportal makes locating region-specific publications and detailed metadata easier! It is regularly updated with new information.*

# Profiles in Partnership

Research highlights from the Caribbean with a focus on collaborations between NOAA and partners

## NOAA Supports University of the Virgin Islands Ciguatera Poisoning Study

Tyler Smith, a scientist with the University of the Virgin Islands Center for Marine and Environmental Studies in St. Thomas, was recently awarded a National Ocean Service NCCOS grant to study ciguatera poisoning. Smith is partnering with colleagues from around the Caribbean, Gulf of Mexico and Florida on a five-year NOAA Ecology and Oceanography of Harmful Algal Blooms study to put the microscope on the toxin that affects tens of thousands of people each year. He

discusses this collaborative effort with the editors of NOAA in the Caribbean.

**Q: Why is understanding ciguatera poisoning important to the people who live in the Caribbean, specifically in the U.S. Virgin Islands?**

Ciguatera Fish Poisoning is a debilitating and common affliction in the USVI. Fish become toxic by grazing on surfaces where toxic microalgae, *Gambierdiscus*

spp., grow and produce gambiertoxins. These microalgae and their toxins are ingested and incorporated in the flesh and then passed along to predators as they consume the grazing fish. Many of these predatory fish--snappers and groupers-- are the fish that humans love to eat. It is estimated that thousands of cases of ciguatera occur in the USVI, primarily from fish taken from the south coast of St. Thomas and St. John. People suffer intense pain and lose productivity



when afflicted, and symptoms can last for weeks or even months.

**Q: Please tell our readers about the questions this project seeks to answer.**

The Ecology and Oceanography of Harmful Algal Blooms Project, which we call **CiguaHAB**, can increase understanding of the ecology and oceanography of *Gambierdiscus* populations, leading to a predictive capability for CFP in the region. Our objectives are to look at a number of *Gambierdiscus* characteristics including environmental factors that affect growth and toxicity, regional population diversity and connectivity, and the fate of ciguatera toxins and metabolites in the coral reef food web. These data will then be used to model the population dynamics and toxin production under different environmental scenarios, including those associated with natural and human-induced perturbations such as pollution, reef destruction and climate change.

**Q: Who are your partners in this collaborative effort and what skills and expertise do they bring to the table?**

The major strength of this project is the team of experts that have been put together by Michael Parsons, who is the project lead based at Florida Gulf Coast University. He is leading fieldwork in Florida and will be leading the development of the predictive model. Other partners from Woods Hole Oceanographic Institution, the



*A Bigeye (Priacanthus arenatus) hovers above a hanging frame of tiles used to collect toxic dinoflagellates (Gambierdiscus spp.), the causative agent of Ciguatera Fish Poisoning. Credit: Tyler Smith*

University of Texas, the Food and Drug Administration, Dauphin Island Sea Lab, and the University of Veracruz, Mexico are actively involved in everything from culturing, genetics, and physiology of *Gambierdiscus* to field sampling and analysis.

**Q: How will project leads share the findings from this study with the public?**

One of the main objectives of this project are to communicate project results and discuss applications to resource management with stakeholders in the greater Caribbean region, including medical personnel, natural resource officials, fisherman and other interested parties, and develop a web site to serve as an information clearinghouse for information on ciguatera. ■

Tyler Smith

University of the Virgin Islands

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## Fisheries Outreach And Education “Island Style”

New initiatives are underway to build community awareness, understanding and ownership of sustainable fisheries management in the USVI. NOAA's Fisheries Liaison for the USVI, Lia Ortiz, is working in partnership with the St. Thomas and St. Croix Fishermen's Associations and staff from USVI DPNR on four new projects that are uniquely tailored to island ecology, community and culture. With funding from NOAA's Coral Reef Conservation Program, a series of projects has been developed under the brand of “Outreach and Education USVI Style”.

The Marine Environmental Community Awareness Project, spearheaded by the St. Croix and St. Thomas Commercial Fishermen's Associations, will provide a unique insight on the community education needs and provide the groundwork for long-term community engagement, education and outreach initiatives.

The Commercial Fishers' Training and New Fishing License and Boating License Protocol, led by the USVI DPNR, will create an effective and efficient process for building fisher awareness and knowledge of fisheries management rules and regulations.

The “Don't Stop Talking Fish” Workshop and Family Fun Day will be organized by the USVI DPNR and NOAA's Coral



*Lia Ortiz, NOAA Fisheries Liaison, meets Gerson “Nikki” Martinez who is a commercial fisher on St. Croix and a member of the St. Croix Fishermen's Association.*

Reef Conservation Program to build community awareness and knowledge of the fisheries management process, the roles of management agencies, and the most recent fisheries rules and regulations.

The Virgin Islands Territorial Fisheries Stakeholder Engagement Initiative will address needs identified in the USVI's Coral Reef Management Priorities and Phase II Local Action Strategies. Workshops will focus on achieving sustainable fishing and will include discussion of a community led sustainable seafood program and on identifying and promoting educational and professional opportunities for members of the fishing industry. A media campaign will document the project and communicate messages to the wider community. ■

Lia Ortiz

Coral Reef Conservation Program

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# NOAA Reef Smart

## Reaching out to the Community to Conserve Coral Reefs

Conserving coral reefs for future generations isn't just the job of scientists and managers. It's something every member of a community can join. In April, NCCOS teamed with the Coral Reef Conservation Program and local partners to launch a series of unique community outreach activities in Puerto Rico aimed

at increasing public awareness about coral reefs and efforts to conserve and study them.

"An informed public is key to conserving coral reef ecosystems across the U.S.," John Christensen, program manager for the Coral Reef Conservation Program, said. "And that includes everyone from citizens working in the highest levels of local government to young students and their parents and teachers."

Representatives from the governments of Puerto Rico and the U.S. Virgin Islands, scientists and managers from local natural resource agencies and nongovernmental organizations, as well as leadership from the U.S. Coast Guard Sector San Juan participated in Reef Smart events. Additionally, a group of 40 students, teachers and parents came aboard the ship for interactive classes covering coral reef ecosystems, the research tools scientists use to study them and a ship tour. Read more about Reef Smart on [Ocean Exploration: 2012 Nancy Foster Mission blog](#) key words "Nancy Foster". ■

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Managers, researchers and local government officials gather around the remotely operated vehicle during one of the Reef Smart events aboard the NOAA Ship Nancy Foster. Credit: NCCOS/CCMA Biogeography

A three-week expedition aboard the NOAA Ship Nancy Foster to map Puerto Rico's coral reef ecosystems within the Northeast Great Reserve offered the perfect platform for NOAA to host Reef Smart Events. Hands-on demonstrations during ship tours, a day at sea for policy and decision makers and educational activities helped illuminate how data is collected and improve awareness of NOAA research in the area.

## SHARE YOUR Underwater Photos & Artwork

A picture is worth a thousand words, so we want to hear from you! Share your best Caribbean underwater and science-in-action stories captured through a camera's lens or an artist's pen. Two images will be featured in each issue. Please e-mail your photo or artwork to [CaribbeanNews@noaa.gov](mailto:CaribbeanNews@noaa.gov). Be sure to include your full name, affiliation, a one or two sentence description and the date the image was made.



**Photographer:**  
Lisamarie Carrubba,  
NMFS

**Description:** Can you spot the octopus trying to hide from a NOAA Fisheries scientist during a dive in Thatch Cay, St. Thomas, U.S. Virgin Islands?

**Date:** April 2011



**Photographer:**  
Margaret W. Miller,  
NMFS

**Description:** Lush, mostly encrusting elkhorn coral growing on the cliffs around Navassa.

**Date:** March 2012



# Upcoming Events & Announcements

A preview of upcoming important events and happenings around the Caribbean and beyond

## Events & Announcements

### August 2012

**28-29:** 143rd Caribbean Fishery Management Council Regular Meeting, Puerto Rico

### October

**23-26:** Workshop on Telepresence-Enabled Exploration of the Caribbean Sea, Rosenstiel School of Marine Science, University of Miami, Florida.  
<http://oceanexplorationtrust.com/2012workshop.htm>

### November 2012

**5-9:** 65th Gulf and Caribbean Fisheries Institute Annual Conference, Santa Marta, Colombia

**12-16:** Urban & Regional Information Systems Association's Caribbean GIS Conference, Montego Bay, Jamaica

### December 2012

**15-17:** Caribbean Renewable Energy Forum, San Juan, Puerto Rico

### February 2013

**2-8:** 33rd Annual Symposium on Sea Turtle Biology and Conservation, Baltimore, Maryland, USA

## Funding Opportunities

2012 NOAA Sea Grant Aquaculture Research Program  
[http://www.seagrant.noaa.gov/funding/rfp.html#aq\\_research](http://www.seagrant.noaa.gov/funding/rfp.html#aq_research)

Marine Fisheries Initiative Program FY12 Federal Funding Opportunity  
<http://sero.nmfs.noaa.gov/grants/mar-fin.htm>

NMFS Cooperative Research Program  
<http://sero.nmfs.noaa.gov/grants/crp.htm>

Gulf of Mexico Foundation Community-Based Restoration Partnerships  
<http://www.gulfmex.org/find-funding/>

The NOAA Coral Reef Management Fellowship is now recruiting for the 2013-2015 cycle.  
Applications due by August 15, 2012.  
<http://coralreef.noaa.gov/aboutcrmp/fellowship/>

FY13-14 Coral Reef Conservation Program State and Territorial Coral Reef Conservation Cooperative Agreements  
Applications due February 15, 2013  
<http://www.grants.gov/>

## NOAA in the Caribbean Newsletter Editorial Team

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