

# Coral Reef News

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## FROM THE DESK OF THE PROGRAM MANAGER

Let me begin by saying "thank you" to the many friends and partners of the NOAA Coral Reef Conservation Program from across the globe for sending along your warm and welcoming messages to me as the new CRCP Program Manager. With two incredibly fast-paced weeks under my belt in this post, these notes of encouragement have certainly energized me! While I know a great many of you, there are still many more in the CRCP family and beyond whom I've not yet had the pleasure of working with. For those who don't know me, I've been with NOAA's National Ocean Service (NOS) for 16 years, and come to CRCP with a background in coastal research and monitoring, including 6 great years working closely with the CRCP from 2000-2006. During my 5-year hiatus from CRCP activities, I had the very good fortune of serving as manager for NOAA's National Status & Trends Program - the longest running annual coastal contamination monitoring program that is National in scope. I also had the distinct pleasure of serving as Deputy Director for NOS' National Centers for Coastal Ocean Science (NCCOS) from 2009 on. In all, it was truly a great run and an exceptional learning experience working with, and for, some of NOAA's finest scientific, administrative and technical staffs. I look forward to putting these experiences to work here at the CRCP, with the aim of advancing the Program towards achieving our 2010-2015 conservation goals and objectives. As we engage in this effort, I look forward to working with all of you to ensure that CRCP science, management assistance, coordination, and Program administration are efficient, disciplined, and conducted to the highest standards of excellence and service.



-John

## ANNOUNCEMENTS

**OPPORTUNITY: Professional Development Workshop on Coral Reefs and Climate Change for Teachers from Hawai'i.** This five day professional development workshop for Hawaiian teachers focuses on the science, research and cultural aspects of coral reefs and their susceptibility to climate change. The content of the workshop will follow the National Park Service and COSEE Coastal Trends' educational module on [Coral Reefs and Climate Change](#). Participating teachers will receive a \$600 stipend and some travel reimbursement. The workshop will run from June 20-24 at the [Hawaii Institute of Marine Biology](#), Coconut Island, Oahu (University of Hawaii, Manoa). Register [online](#).

**OPPORTUNITY: Educators' Professional Development Workshops on Coral and Ocean Acidification.** A professional development workshop is being offered to high school and middle school science teachers on three separate dates this June in three Florida locations. The workshop dates and locations are listed in the 'Upcoming Events' section of this newsletter.

## UPCOMING EVENTS

### June

8: [World Oceans Day](#)

14: [Teachers' Professional Development Workshop on Ocean Acidification](#), Ft. Lauderdale, FL. Register [online](#).

15: [Teachers' Professional Development Workshop on Ocean Acidification](#), Miami, FL. Register [online](#).

17: [Teachers' Professional Development Workshop on Ocean Acidification](#), Key West, FL. Register [online](#).

20-24: [Hawaiian Teachers' Professional Development Workshop on Coral Reefs and Climate Change](#), Oahu, HI. Register [online](#).

### July

17-21: [Coastal Zone 2011](#), Chicago, IL.

### August

14: [2011 Lionfish Derby](#), Key Largo, FL.

## CURRENT/UPCOMING MISSIONS

March 10-May 24: [Wake Atoll and CNMI Reef Assessment and Monitoring Program cruise, NOAA Ship Hi'ialakai](#).

## INTERNATIONAL CONFERENCES

April 2-7, 2012: [5<sup>th</sup> International Symposium on Deep-sea Corals](#), Amsterdam, The Netherlands.

July 9-13, 2012: [12<sup>th</sup> International Coral Reef Symposium](#), Cairns, Australia.

These workshops will introduce the new NOAA [Ocean Acidification \(OA\) Data-in-the-Classroom Module](#) to teachers, including how to incorporate it into their classrooms. Using integrated scalable lesson plans associated with the module, teachers will learn to use real data from NOAA to teach the concept of OA and how it affects coral reefs and other marine calcifiers. Each workshop will include demos and multimedia to use in the classroom, a background science presentation on ocean acidification, and a walk-through of the five scalable lesson plans and data exercises that are part of this Data-in-the-Classroom project. The workshop will also briefly present the [Water Quality Module](#), aimed at the middle school level, to introduce the topics of corals and watersheds, reading water temperature data, understanding dissolved carbon dioxide, and salinity. Participants will receive a \$75 teacher stipend provided for full-day participation, Master Plan Points/In-Service Points, the full printed OA Module Teachers' Guide, multimedia educational materials, beautiful coral reef posters, and more.

Download the workshop [factsheet](#) (*pdf, 115 kb*) to learn more; view eligibility requirements and register [online](#).

## UPDATES FROM HEADQUARTERS

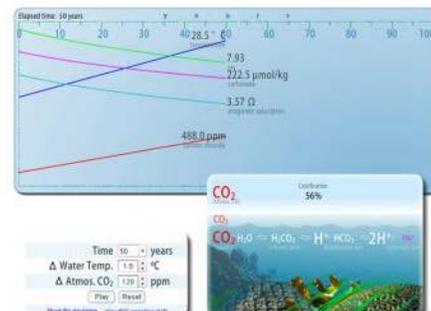
**“Coral Reefs in Hot Water” Visualization at the American Museum of Natural History.** The [American Museum of Natural History](#) (AMNH) in New York City is preparing to open a new public exhibit, entitled “Coral Reefs in Hot Water.” The exhibit consists of a visualization developed jointly by AMNH and the NOAA [Environmental Visualization Laboratory](#). The visualization, funded through a NOAA grant, will be displayed on computers at AMNH and will be distributed to its network of cooperating museums and outreach centers; it is also available [online](#) to the public. This new visualization introduces the concept of coral bleaching and discusses how climate change and warming oceans impact bleaching. It also focuses on elevated ocean temperatures and prolonged, accumulated thermal stress detected by NOAA satellites. The visualization uses NOAA [Coral Reef Watch's Degree Heating Weeks](#) product to identify reef sites around the world where corals were stressed by high

temperatures in 2010; it also shows reports of the resultant coral bleaching and mortality. It concludes with a message to the public about how reducing local threats can protect coral reefs in the short-term, but emphasizes that long-term coral reef protection will require substantial reductions in greenhouse gases in the atmosphere to reduce climate change impacts.

**New OA Educational Module Developed.** The CRCP developed a new Ocean Acidification (OA) Data-in-the-Classroom Module, as part of the [NOAA Ocean Data Education \(NODE\) Project](#) in partnership with NOAA's [National Estuarine Research Reserve System](#) and [National](#)

[Marine Sanctuaries](#). The new module incorporates real (and near-real time) OA data collected in the Caribbean region and maintained by the NOAA [National Oceanographic Data Center](#). These data sets support a collection of five scalable lesson plans with a Flash simulation of rising carbonate levels as well as other demos. A beta version of the module is available [online](#).

NODE modules were selected by a teacher/scientist network to be among the most effective web materials for building climate data literacy in the classroom. This curriculum contains five activities designed for grades 10-12, with lesson plans organized as a pathway with five levels of increasing sophistication and student engagement, starting from the simple science parameters and culminating in student-driven research.



The OA NODE Module carbonate saturation simulation tool allows users to select parameters of OA and see what they will do to a reef over time. Photo credit: NOAA

CRCP staff will be joined by curriculum developers and a third-party pedagogical evaluator in three training workshops for educators in south Florida from June 14-17. Teachers will learn to use real data from NOAA to teach OA and how it affects coral reefs and other marine calcifiers, using integrated scalable lesson plans associated with this module. The workshop will include demos and multimedia to use in the classroom, a background science presentation on OA, and a walk-through of the five scalable lesson plans and data exercises that are part of this Data-in-the-Classroom project. The workshop will also briefly present the Water Quality NODE module, aimed at the middle school level, that also helps build student data literacy and inquiry-driven learning. Teachers will receive a \$75 stipend for workshop participation and an additional \$25 stipend after they complete a follow-up survey. See the 'Upcoming Events' section of this newsletter and a [Featured Story](#) on our Website for more information and to download an informational flyer.

## UPDATES FROM THE ATLANTIC/CARIBBEAN REGION



The Salt River Bay CREWS station in USVI.  
Photo credit: Mike Jankulak

**NOAA Partners with UVSI DPNR to Maintain USVI CREWS Station.** During the week of May 23<sup>rd</sup> - 27<sup>th</sup>, staff from NOAA's [Integrated Coral Observing Network](#) and the [University of Miami's Cooperative Institute for Marine and Atmospheric Studies](#) traveled to St. Croix, US Virgin Islands (USVI). There, they met with personnel from the USVI [Department of Planning and Natural Resources](#) (DPNR) for collaboration on the annual swapout of all station instrumentation and, more significantly, training on how to conduct the monthly maintenance operations for the the [Coral Reef Early Warning System](#) (CREWS) station located within the [Salt River Bay National Historical Park and Ecological Preserve](#), on St. Croix.

Thanks to a new arrangement with the CRCP, DPNR will now be assuming responsibility to clean and maintain the station's underwater instruments and support structures throughout the year between visits by NOAA staff. This new relationship may foster a new era of scientific collaboration as other researchers can now bring

their projects to Salt River Bay and trust that their work will be supported by St. Croix's best scientific minds.

This station, whose NOAA [National Weather Service](#) designation is [SRBV3](#), reports meteorological and oceanographic measurements in near-real time, delivering hourly updates by [Geostationary Operational Environmental Satellite](#) and its data are uploaded to the [National Data Buoy Center](#) (NDBC). From NDBC the data are included in the [World Meteorological Organization's Global Telecommunications System](#), making them available for use by weather services all over the world. Learn more by visiting the station's [field log](#).

**Derby Removes Over 500 Invasive Lionfish From Florida Keys.** Lionfish are native to the western and central Pacific Ocean, but have established themselves from North Carolina to South America in recent years. They have no known predators in this region and consume commercially and ecologically important fish species. The most effective method of battling this invasive species currently is removal. The [Florida Keys National Marine Sanctuary](#) and the [Reef Environmental Education Foundation](#) (REEF) have teamed up for the second year in a row to coordinate Lionfish Derbies in the Florida Keys to enable mass removal of these invasive fish in a fun and competitive format.



First place winner for largest lionfish at the Long Key derby goes to Team "Full Circle." with their 14" lionfish. *Inset:* First place winner in the smallest lionfish category at the Long Key derby was Team "Key Lime Good Time." This little specimen is barely 2.5 inches in length. Photo credits: Celia Hitchins

"Anyone who appreciates the diversity of the Keys coral reef should be concerned about these invasive fish," said Sean Morton, sanctuary superintendent. "Divers have been actively engaged in lionfish removal in the Keys since 2009 and these tournaments are a way to reward them for their dedication to the reef."

The first derby of the [Second Annual Florida Keys Lionfish Derby Series](#) was held on May 14 in Long Key, Florida. Teams of divers successfully removed 531 invasive lionfish while competing for \$3,350 in cash and prizes for the most, largest, and smallest lionfish collected. Team "Strategery" of Key Largo netted \$1,000 for most lionfish with their haul of 158 fish collected in the single day event. Team "Full Circle," Islamorada, won \$500 for largest lionfish with a 14-inch fish, while Team "Key Lime Good Time" of Miami took home \$500 for the smallest lionfish at 2 1/2 inches. Many teams took prizes in multiple categories. Click [here](#) for complete derby results.

Researchers from the [US Geological Survey](#) collected tissue samples from lionfish caught at the derby to learn more about lionfish genetics,

growth and impacts to native marine life. "Fortunately for conservationists and resources managers, these fish also happen to taste great," said Lad Akins, special projects director for REEF." Restaurants in the Keys have begun to serve local Keys lionfish and patrons can feel

good that lionfish consumption benefits the environment." Derby attendees sampled cooked lionfish appetizers and viewed fillet demonstrations. The Long Key derby was sponsored by the City of Layton and Divers Direct. The August derby date and location is listed in the 'Upcoming Events' section of this newsletter. See our [Featured Story](#) for links to additional resources.

## UPDATES FROM THE PACIFIC REGION

**Watershed Management Project Kicks off in American Samoa.** The Faga'alu Watershed Management project started on May 16<sup>th</sup> and 18<sup>th</sup> with its Watershed Education & Awareness Campaign to youth groups from two village church organizations. The project is a collaborative effort among the different resource agencies that participate in American Samoa's Land-based Sources of Pollution (LBSP) [Local Action Strategy](#) (LAS). The goal is to work with the village community of Faga'alu to understand the issues impacting its watershed and how to better manage it through education and outreach, collaboration and partnership, and the development of a village watershed management plan. The main groups that were targeted in the education campaign were the youths from the village church groups, additional participants included other interested members of the churches. The total number of participants from the church groups was about 89 from ages 5 to 65 years old.

The LBSP-LAS watershed working group has developed a process to target Faga'alu village in this project using the Participatory, Learning and Action (PLA) approach. PLA is a bottom-up community approach that engages all sectors of a community and guarantees



Participants in the Watershed Education & Awareness Campaign from Faga'alu. Photo credit: Fatima Sauafea-Leau, NOAA CRCP

the sustainability of development by ensuring wider participation and capacity-building at the community level. It aids in gathering information and sharing local knowledge using a diverse range of tools and activities. In addition, it helps to raise awareness of the environmental issues and to assist the community in developing best management approaches. The next component of the Faga'alu project will be a PLA watershed workshop in June that will assist the village community to identify key issues impacting their watershed and resources, develop resource maps of the watershed, obtain information on the historical profile of developments within the watershed and also on past, present and future usage of the resources within the village. The working group is also in collaboration with [The Nature Conservancy](#) staff in Palau to conduct the Conservation Assessment Program (CAP) process in this watershed in July. These events will assist in collecting information and working with the community in developing a watershed management plan for Faga'alu.

In September 2010, the LBSP LAS Watershed working group used the PLA approach to assist the community of Nu'uuli in assessing potential strategies to better manage and conserve the village watershed and the resources found in it. The Nu'uuli project has demonstrated that collaboration among local and federal resource agencies in planning and facilitating projects, and

the engagement of local community in a top-down approach to take ownership and responsibility in managing resources—as well as promoting their stewardship—is a successful one.

### **Saipan and Guam Residents Tour NOAA Ship, Learn About Coral Reef Monitoring.**

Scientists from the [Coral Reef Ecosystems Division](#) (CRED), NOAA [Pacific Islands Fisheries Science Center](#), and the crew of the NOAA Ship *Hi'ialakai* hosted 246 visitors in successful education and outreach events in Saipan on April 28 and Guam on May 10 and 11. These [outreach events](#) occurred near the end of five weeks of field operations in the Mariana Archipelago during the latest Pacific Reef Assessment and Monitoring Program (Pacific RAMP) [cruise](#). Visitors included government officials, students, teachers, and members of the public from Guam and the Commonwealth of the Northern Mariana Islands (CNMI).



During an outreach event on May 10 at Apra Harbor in Guam, Daniel Merritt of CRED talks about how sea-surface temperature buoys allow for long-term, *in situ* monitoring at several mooring locations in the Mariana Archipelago. Photo credit: NOAA photo by Annette DesRochers

Tours of the *Hi'ialakai* included the bridge and dive chamber. CRED scientists briefed visitors on Pacific RAMP activities conducted from the ship. Topics covered included explaining how sea-surface temperature buoys, [autonomous reef monitoring structures](#) (ARMS), and [ecological acoustic recorders](#) (EARs) work and how [towed-diver surveys](#) are conducted around islands. In addition, CNMI and Guam officials were briefed on the goals of Pacific RAMP and the methods employed to achieve them. Such events help to strengthen existing relationships and information exchange with local resource managers and government policymakers, create new opportunities for building relationships and exchanging information, and educate the general public about the importance of coral reef conservation and monitoring.

### **DIVE DEEPER: DEEP-SEA CORALS**

**Deep-Sea Coral Research Expedition off Florida.** The [NOAA Ship \*Pisces\*](#) departed on May 31 to study unexplored deep-sea coral ecosystems off southeast Florida. Over the subsequent twelve days, a multidisciplinary team of scientists and educators will survey coral habitats inside and outside the Deepwater Coral Habitat Areas of Particular Concern established in 2010 by the [South Atlantic Fishery Management Council](#) and [NOAA Fisheries](#). [Daily logs](#) will be posted by the resident Teacher-at-Sea for the mission. The cruise, led by the [Southeast Fisheries Science Center](#), will use the [Southwest Fisheries Science Center's](#) remotely operated vehicle to conduct video and photographic transects and collect samples of deep-sea corals. The research expedition, named "[Extreme Corals 2011](#)," is part of a three-year research effort by [NOAA's Deep Sea Coral Research and Technology Program](#) in partnership with the NOAA [Cooperative Institute for Ocean Exploration, Research and Technology](#), NOAA's [Center for Coastal Ocean Science](#), [Harbor Branch Oceanographic Institute](#), [Florida State University](#), the [University of Louisiana at Lafayette](#), and NOAA's [Teacher-at-Sea Program](#).

**Company Pleads Guilty to Illegal Trade in Deep-Sea Coral.** The [US Department of Justice](#) (DOJ) announced that a company in the US Virgin Islands plead guilty in federal court to falsely labeling internationally protected black coral. The case pertains to black coral in the form of jewelry, artistic sculptures, and 13,600 pounds of raw black coral that was shipped into the US in violation of the [Endangered Species Act](#) (ESA). The ESA is the US domestic law that implements the [Convention on International Trade in Endangered Species of Wild Fauna and Flora](#) (CITES).

Black corals occur throughout the world's oceans, but are patchily distributed and generally occur in low abundance. They are also slow growing (on the order of  $\mu\text{m}$  to mm per year) and long-lived (recent carbon dating estimated the age of one colony to be over 4,000 years old). Black coral is commercially harvested primarily for the jewelry trade. To ensure that international black coral trade is not detrimental to the survival of wild populations, all species of black corals were listed in Appendix II of CITES in 1981.

According to the DOJ, the aggregate financial penalty for this case of \$4.59 million in fines and forfeited items would be the largest for the illegal trade in coral or non-seafood wildlife trafficking financial penalty, and the fourth largest for any US case involving the illegal trade of wildlife. Learn more by reading the DOJ [press release](#).

## PUBLICATIONS

**Climate Change Tool for Socioeconomic Monitoring.** A new tool is available for assessing social vulnerability to climate change. The new guidelines, "[Indicators to Assess Community-level Social Vulnerability to Climate Change: An Addendum to SocMon and SEM-Pasifica Regional Socioeconomic Monitoring Guidelines](#)" are now available for download. The purpose of this addendum is to provide a minimum set of socioeconomic indicators related to climate change. These can be included in a socioeconomic assessment of any site for which climate change impacts are an important issue. The resulting information can then inform coastal management needs and adaptive management. This document is being added to regional socioeconomic monitoring guidelines produced by the [Global Socioeconomic Monitoring Initiative for Coastal Management](#) (SocMon) and its Pacific counterpart, SEM-Pasifika, which aim to improve site management of coastal and marine areas by providing simple, user-friendly guidelines on how to conduct a socioeconomic assessment. Such assessments help coastal managers incorporate community views into adaptive management of marine resources.

Funding for this publication was provided by the [Secretariat for the Pacific Environment Programme](#) through the [Coral Reef Initiatives for the Pacific](#) and the [International Union for Conservation of Nature](#). In-kind support was provided by [The Nature Conservancy](#) and CRCP.

### *Citations for Additional Publications:*

Pacific Islands Fisheries Science Center. 2011. Cruise report, NOAA Ship *Hi'ialakai*, cruise HA-11-01, Leg I, 10 March–2 April 2011, Wake Atoll. Pacific Islands Fisheries Science Center, PIFSC Cruise Report, SP-11-004, 35 p.