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Coral Reef News, the monthly e-newsletter of NOAA's Coral Reef Conservation program.

# Coral Reef News



INSIDE THIS ISSUE:

**From the Desk of the Program Manager**

**Of Special Note:** 1

**Announcements:** 2

**Upcoming Events:** 2

**Updates:**

**Atlantic/Caribbean** 2

**Pacific** 3

**International** 4

**Publications** 5

**New Data in CoRIS:** 7

The Coral Reef Conservation Program (CRCP) is a partnership between the NOAA Line Offices working on coral reef issues, including the National Ocean Service ([NOS](#)), the National Marine Fisheries Service ([NMFS](#)), the Office of Oceanic and Atmospheric Research ([OAR](#)) and the National Environmental Satellites, Data and Information Service ([NESDIS](#)). From mapping and monitoring to managing reef resources and removing harmful debris, the CRCP addresses the priorities laid out in both the [National Action Plan to Conserve Coral Reefs](#) and the [National Coral Reef Action Strategy](#).

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June 2009

## From the Desk of the Program Manager



It's June in DC which means that Capitol Hill Ocean Week (CHOW) was on tap. CHOW is an event hosted by the National Marine Sanctuary Foundation that brings together a diverse cross-section of the marine community to discuss policy issues related to the marine environment.

The CRCP hosted a panel on the Coral Triangle in Southeast Asia, the global epicenter of marine biodiversity. The leaders of the six countries involved in the Coral Triangle Initiative (CTI) recently released a CTI Regional Plan of Action to safeguard the region's marine resources. NOAA is playing its part in this ambitious effort. NOAA

recently signed an agreement with the U.S. Agency of International Development to help increase the management capacity in the region. The CRCP is excited to be a part of this important effort to conserve coral reef ecosystems.

The CRCP's new Threat-based Goals and Objectives and the new International Strategy were released on June 29<sup>th</sup>. These publications involved a lot of people committing a significant amount of time since October; all their hard work has come to fruition and I would like to extend my gratitude to everyone involved. These Goals and Objectives will be one of the key drivers for the Program for FY 2010-2015, so I encourage you to read our special feature below, check the CRCP homepage, download the documents, and see what we have planned for the next five years.

-Kacky

## Of Special Note

**NOAA Boosts Effectiveness in Addressing Top Three Threats to Coral Reefs.** The decline and loss of coral reefs have significant social, cultural, economic, and ecological impacts on people and communities in the United States and around the world. However, with effective leadership and management, healthy, resilient reef ecosystems can continue to provide these valuable services to current and future generations. The primary objective of the CRCP is to address strategic coral reef management needs in a targeted, cost-effective and efficient manner.

The CRCP is committed to continually refining its performance and efficiency measures to improve program effectiveness and better evaluate overall CRCP performance. To make the most of limited resources and to have the largest impact to reverse general declines in coral reef health, the CRCP is narrowing the focus of its U.S. domestic program and shifting allocation of CRCP resources to taking on-the-ground and in-the-water



action. The CRCP is also expanding its international presence by becoming more actively involved in coral conservation efforts abroad, primarily in the Pacific, the Coral Triangle region, and the Caribbean. To narrow its range of activities, the CRCP will emphasize efforts on understanding and addressing the top three recognized global threats to coral reef ecosystems: climate change impacts, fishing impacts, and impacts from land-based sources of pollution. (continued on page 2)

## UPCOMING EVENTS

### July

**1-3:** [National Marine Educators Association National Conference](#), Pacific Grove, CA

**19-23:** [Coastal Zone 2009 - Boston, MA.](#)

**31:** Application deadline for 2010-2012 [Coral Reef Management Fellowship](#) positions

### September

**21-25:** [OceanObs'09 Conference: 'Ocean Information for Society: Sustaining the Benefits, Realizing the Potential'](#), Venice, Italy

### November

**2-5:** 22nd U.S. Coral Reef Task Force Meeting, San Juan, Puerto Rico



**Coral Reefs support more species per unit area than any other marine environment. Courtesy: Dave Burdick**

## Of Special Note continued...

On June 29th, the CRCP released [NOAA Coral Reef Conservation Program Goals & Objectives 2010-2015](#) (pdf, 2.52 mb) and [NOAA Coral Reef Conservation Program International Strategy 2010-2015](#) (pdf, 1.50 mb). These documents provide strategic guidance on the CRCP priorities for FY 2010-2015.

To get to this point, the CRCP engaged a community of experts to help identify the twenty-year strategic goals and five-year objectives the CRCP will work towards to effectively address each of the top three threats to coral reef ecosystems, in both domestic and international

arenas. An International Working Group was also established to focus on international efforts to alleviate all three major threats to reefs. Each working group delivered draft goals and objectives on March 27<sup>th</sup>, a culmination of six months of work. These draft goals and objectives were available for public comment through April 24, 2009. Comments received were forwarded to the appropriate working group for consideration and incorporation into the final document, as appropriate. To learn more about the process utilized to develop these reports, visit the [Threat-based Working Groups](#) page on the CRCP Website.

## Announcements

**TNC Launches New Toolkit for Marine Conservation Agreements.** The Nature Conservancy (TNC), with the assistance of partners, has just launched the new [Practitioner's Toolkit for Marine Conservation Agreements](#). The new toolkit has expanded its substantive and geographic scope to include: an Overview, which answers basic questions, dispels myths and defines terms; a downloadable Field Guide that walks practitioners through a four phase process to: 1) analyze the feasibility of MCAs, 2) identify and engage stakeholders, 3) design agreements, and 4) implement agreements; Field Projects, which provides 20 in-depth case studies and inventories over 100 projects; Country and U.S. State Analyses that assess the legal and policy frameworks for MCAs in specific geographies; U.S. State Maps that identify where relevant spatial data can be accessed; and Resources, which provides information on contacts and funding, publications and presentations, related tools, sample agreements and conferences.

Please update any old bookmarks or hyperlinks you may have that point to the previous version.

### New "Education and Outreach" Search Tool on CoRIS.

The purpose of this tool is to facilitate retrieval of items in the [Coral Reef Information System](#) (CoRIS) Library that are useful for education and/or outreach purposes. Records for CRCP education and outreach materials in the NOAA Library and the CoRIS Virtual Library were recently updated with education and outreach tags. The CoRIS advanced search web page was enhanced in order to search through these records. To use this tool, go to <http://coris.noaa.gov/library> and click on "Advanced Search". Then select "Education and Outreach" under "Publication Type," enter other search terms as needed, and click "Submit." Alternatively, all of these materials can be retrieved by clicking on the "Education and Outreach" link under "Browsable Collections" on the left side of the Library Webpage.

## Updates from the Atlantic/Caribbean Region

**Identification of Key Fish Habitat Helps Make Case for Prioritizing Hard Bottom Areas.** Scientists conducting a collaborative study have identified correlations between fish communities and seafloor features at [Gray's Reef National Marine Sanctuary](#) (GRNMS). The study quantifies specific factors, such as ledge height and colonization by corals and sponges, that link fish to limestone ledges, a rare bottom type in the southeastern U.S. that supports high biomass and diversity of fish and invertebrates in the region. [National Centers for Coastal Ocean Science](#) and GRNMS scientists worked together

on this research. Understanding the links between fish and their habitats is essential for NOAA to make informed decisions regarding fish and fish habitat.

**Study Evaluates Agricultural Best Management Practices in Jobos Bay, Puerto Rico.** Scientists from the [National Centers for Coastal Ocean Science](#) (NCCOS) recently completed a field mission designed to help determine the impacts of agricultural pollution on corals near the [Jobos Bay National Estuarine Research Reserve](#). Working in (continued on page 3)

## Atlantic/Caribbean continued...

collaboration with the Reserve and the Puerto Rico [Department of Natural and Environmental Resources](#), scientists sampled 16 sites for coral tissues. The samples will be analyzed for a suite of contaminants, including major and trace elements, including heavy metals; selected pesticides; polychlorinated biphenyls, which are better known as PCBs; polycyclic aromatic hydrocarbons; and polybrominated diphenyl ethers, which are flame retardants. This field work is a component of a [larger cooperative](#) to assess the effectiveness of agricultural best management practices in the watershed.

### **Study Establishes Environmental Baseline in Puerto Rico to Support Watershed Restoration.**

Scientists with the [National Centers](#)

[for Coastal Ocean Science](#) recently completed contaminant sampling in and around Guanica Bay, Puerto Rico. As part of a [NOAA Restoration Center](#)-lead watershed restoration project, these data contribute to a baseline assessment of the bay and the adjacent coral reef ecosystem. Restoration activities would seek to reduce the impact of land based sources of pollution on the bay and on the coral reef ecosystems outside the bay. Coral and sediment samples will be analyzed for a suite of contaminants, including major and trace elements, including heavy metals; selected pesticides; polychlorinated biphenyls, which are better known as PCBs; polycyclic aromatic hydrocarbons; and polybrominated diphenyl ethers, which are flame retardants.

## Updates from the Pacific Region

**Final Annual Coral Fellowship Workshop for 2008-2010 Fellows.** The [Coral Reef Management Fellowship](#) was established to respond to the need for additional coral reef management capacity in the U.S. Flag Pacific and Caribbean islands. The Fellowship program provides the state and territorial coral reef management agencies with highly qualified candidates whose education and work experience meet each island's specific coral reef management needs, while providing the individual fellows with professional training and experience in coastal and coral reef resource management. Fellows spend two years working on specific projects determined by each island's coral reef management agencies. NOAA maintains six two-year fellowships; fellows are located in American Samoa, Commonwealth of the Northern Mariana Islands (CNMI), Hawai'i, Guam, Puerto Rico, and U.S. Virgin Islands (USVI). The program will be expanded to include Florida in 2010.

The Fellowship program held its final training workshop for the 2008-2010 cohort of fellows on the island of Guam from June 15-20. The annual retreat is conducted to provide training that will benefit the fellows in their positions, help them meet needs in their jurisdiction, as well as to allow fellows to share successes and lessons learned. The fellows gave presentations on the work they have done during the course of their fellowship, which includes: RARE Pride Environmental Campaign (Elaina Todd, Guam); Population policy development (Alyssa Edwards, American Samoa); Watershed restoration (Kathleen Hermann, CNMI); Guanica Water-



**The fellows during one of the workshop's site visits. L to R: Karlyn Langjahr, Kathleen Hermann, Petra MacGowan, Alyssa Edwards, Elaina Todd, and Raimundo Espinoza.** Courtesy: Karlyn Langjahr

shed & Lagoon rehabilitation (Raimundo Espinoza, Puerto Rico); and island-wide International Year of the Reef campaign (Karlyn Langhar, USVI). Fellows took part in leadership training courses where they discussed methods for enabling change and managing conflict. They were also able to visit several field sites to see how conservation management is addressed in Guam. In addition, they visited the Talakhaya Watershed Revegetation project, which has successfully reduced sediment flow through the watershed and into the adjacent coral reefs on the island of Rota, CNMI. This workshop provided professional development and allowed the fellows to share their success stories with one another and brainstorm ideas on methods to better transfer knowledge and experience between the U.S. states and territories that are tasked with coral reef conservation.

(continued on page 4)



**As part of SeaWeb's Too Precious to Wear Campaign, top New York and Los Angeles designers created an ocean-inspired jewelry collection that celebrates the ocean without harming it. This collection launched in NYC in February.**



**Be a Reef-Hugger**

**Corals are already a gift. Don't give them as presents.**

## DID YOU KNOW...

**Recruitment for the 2010-2012 term of NOAA's Coral Reef Management Fellowship will begin in June 2009.**

Learn more by visiting the Fellowship's [Web page](#).

"There is truly no other job out there like the Coral Management Fellowship....] have the luxury of working directly with both people and the natural resources themselves. To me the Coral Fellowship is a proverbial 'dream job.'"

## Pacific continued...

### Hawai'i Workshop on Managing Stormwater Thru Low Impact Development.

The CRCP sponsored a free one-day workshop on "Managing Stormwater Thru Low Impact Development" on May 21<sup>st</sup> at NOAA's [Office of National Marine Sanctuaries](#) at Hawai'i Kai, Oahu. Low Impact Development (LID) is an approach to sustainable land use planning that aims to reduce the footprint of development and reduce impacts to sensitive coastal resources such as coral reefs. The Horsley Witten Group trained 46 participants from federal, state

and county agencies, watershed groups, environmental consultancies, and land owners. Participants learned about LID practices for stormwater management and how to integrate them into new and existing development. They also applied their knowledge by investigating three field sites for stormwater retrofit options and LID implementation. This workshop directly supported ongoing efforts of Hawai'i's Local Action Strategy to Address Land-based Pollution Threats to Coral Reefs, and one of their community partners, [Malama Maunalua](#).

## International Updates

**First International Coral Genomics Workshop Equips Coral Scientists for Genomics Era.** The [Coral Disease and Health Consortium](#) (CDHC) was created in 2002 in response to the [U.S. Coral Reef Task Force's](#) (USCRTF) National Action Plan to Conserve Coral Reefs. It is now also a working group of the USCRTF. Its goal is to provide coastal and ocean managers with scientific understanding and tools to protect healthy coral reef ecosystems and restore degraded ones. The CDHC is a network of field and laboratory scientists, coral reef managers, and agency representatives devoted to understanding coral health and disease. Currently, over 150 partners contribute their time and expertise to the CDHC, while organizational infrastructure is supported by the CRCP.

The CDHC, the [National Coral Reef Institute](#), and the [National Centers for Coastal Ocean Science](#) co-convened a five-day training course on coral genomics from June 21-26 at the [U.S. Fish and Wildlife Service's National Conservation Training Center](#) in Shepherdstown, WV.



Coral Genomics workshop participants and instructors. Courtesy: U.S. Fish and Wildlife Service

The workshop brought together 20 trainees from seven countries that included a diversity of government scientists, university professors, post-doctoral fellows, and graduate students. "[Coral Genomics for the Non-Genomics Scientist](#)" introduced the tools and language of genomic science and guided the trainees in the use of genomic tools using available coral data sets to identify protein coding sequences among libraries of cDNA sequences, explore microbial communities through their DNA, annotate a gene and delve into the world of microarrays. The course used practical problem sets to illustrate each of the types of data available to today's coral researcher and provided the participants with practical experience.

**NOAA Team Conducts International Workshop on Climate Change for Coral Reef Managers in Bonaire.** The United States is one of many nations around the world working to halt the coral reef crisis and protect, restore and sustainably use coral reef ecosystems for current and future generations. Abnormal sea surface temperatures, in conjunction with natural and anthropogenic stressors are causing the delicate balance of these magnificent ecosystems to be disrupted thus increasing the frequency of bleaching events. In 2005, the Caribbean experienced a severe mass coral bleaching event that left over half of all corals dead in some parts of the eastern Caribbean.

Coral reef managers from around the Caribbean participated in the training workshop "Reef Resilience and Climate Change: A Workshop for Coral Reef Managers," held June 9-12 in Kralendijk, Bonaire, Netherlands Antilles. This workshop provided reef managers with the tools they need to (continued on page 5)

## International continued...



**Bonaire bleaching workshop participants and instructors. Courtesy: NOAA Coral Reef Watch**

understand coral bleaching, know when bleaching is likely to occur, and take actions to protect their valuable coral reef resources. More than 25 international experts in coral reef management from Bonaire, Curaçao, Sint Eustatius, Sint Maarten, St. Kitts/ Nevis, St. Vincent/Grenadines, Grenada, Antigua/ Barbuda, and Mexico met to learn about climate change impacts on coral reefs, responding to coral bleaching, resilience, incorporating resilience into management and marine protected areas (MPA) design, early warning tools available for managers to use, and ways to communicate about threats to coral reefs. Participants were taught to use NOAA satellite tools to predict bleaching and ways to respond to these events. They shared strategies and local management actions

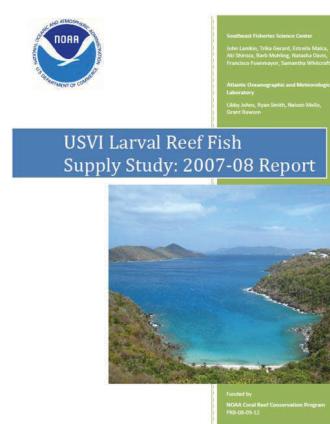
and participated in exercises that planned draft coral bleaching response plans and hypothetical MPAs that emphasize resilience to climate change. Unique to this workshop was an open discussion between participants and stakeholders who work within the [Stichting Nationale Parken Bonaire \(STINAPA\)/Bonaire National Marine Park \(STINAPA\)](#) to look at the issues of fishing and tourism.

Workshop trainers came from NOAA [Coral Reef Watch](#), STINAPA, [The Nature Conservancy \(TNC\)](#), and the [International Union for the Conservation of Nature \(IUCN\)](#). The meeting was hosted by NOAA, TNC, the [Dutch Caribbean Nature Alliance \(DCNA\)](#), and STINAPA in conjunction with the 30<sup>th</sup> Anniversary celebration of the Bonaire National Marine Park. It was funded primarily by the CRCP, TNC, DCNA, and STINAPA. There was also funding from [EarthEcho International](#) and Dr. George Buckley of Harvard University's Environmental Management Extension Program.

The workshop was the sixth in a series, which includes workshops in Australia (two), American Samoa, the Florida Keys, and Hawai'i. To date, over 175 coral reef experts and managers have been trained; these individuals are able to apply what they learned to their local reefs in over 20 nations around the world. The next workshop will be held in Guam in September.

## Publications

**U.S. Virgin Islands Larval Reef Fish Supply Study 2007-08 Report.** Prepared by NOAA's [Early Life History Unit](#) at the [Southeast Fisheries Science Center](#) and the [Physical Oceanography Division](#) at the [Atlantic Oceanographic and Meteorological Laboratory](#), the U.S. Virgin Islands Larval Reef Fish Supply Study 2007-08 Report is the first of many products that will assist managers, particularly the [Caribbean Fisheries Management Council](#), in better understanding coral reef larval fishes transport and connectivity at an ecosystem-scale in support of managing sustainable fisheries and healthy coral reef habitats. The report details specific quantifiable data that has been lacking for this region. Specifically, the report analyzes the abundance and composition of coral reef fish larvae around the U.S. and British Virgin Islands and along the Leeward Islands, with particular focus on Grammanik and Red Hind Banks, marine protected areas (MPAs)



that are known spawning aggregation sites for economically and ecologically important species of snappers and groupers. Additionally, the report details the region's physical oceanographic processes such as upper level ocean currents, salinity, and sea surface chlorophyll measurements via satellite imagery and seawater flow through system. These (continued on page 6)

**Even if you don't live near a reef, you can [help protect coral reefs](#) in the U.S.A. and around the world**



**Be a Reef-Hugger**

As the Summer boating and diving season begins, please make a point to **ALWAYS** use a mooring buoy or anchor away from reefs and sea grass beds.

## Publications continued...

### Every Act Counts

**Don't drag the reef into this.**

**Use reef mooring buoys when available. Or, anchor in sandy areas away from coral and sea grasses so that anchor and chain do not drag on nearby corals or tear-up sea grass beds. Once broken, corals can take decades or longer to re-develop, and a damaged reef is less able to provide food, habitat and shoreline protection.**

**Whether you live one mile or one thousand miles from a coral reef, your actions affect the reefs' future – and the reefs' future affects yours. As the natural guardians of our shores, reefs play a vital role in our global ecosystem. With climate change, pollution, and overfishing contributing to coral reef degradation, we can all play a role in protecting our land, sea and sky. And all it takes is a few simple changes to your daily routine.**

data are being correlated and mapped with larval distributions to determine specific transport between coral reef habitats and specific MPAs. This on-going, comprehensive, fisheries-independent data-set provides information on critical factors for managing both local reef fish fisheries and the function of MPAs.

**Study Published to Help Scientists and Managers Choose Appropriate Sensor.** In order to allow scientists, resource managers, and surveyors to objectively assess the strengths and weaknesses of each sensor for mapping structurally complex shallow-water environments, [National Centers for Coastal Ocean Science](#) researchers recently published a study comparing two types of Sound Navigation and Ranging (SoNAR): airborne light detection and ranging (LiDAR) and ship-based multibeam (MBES). Two important findings originate from this study: (1) LiDAR was found to be more time- and cost-efficient than MBES, although MBES collected data at higher spatial resolutions; and (2) LiDAR was found to have the ability to identify similar seafloor features as MBES systems, although the LiDAR seafloor intensity algorithm needs to be improved before being used for habitat mapping. The study appears in the April 2009 issue of *Remote Sensing of Environment*.

**Coral Reef Watch Co-authors International Coral Reef Report.** Two Coral Reef Watch scientists, Dr. Mark Eakin and Tyler Christensen, contributed to a report titled [The Coral Triangle and Climate Change: ecosystems, people, and societies at risk](#). This comprehensive study was led by scientists at the [University of Queensland](#) and [World Wildlife Fund-Australia](#). The report details the potential impacts of climate change on the marine ecosystems and human communities of the Coral Triangle, the world's hotspot for coral reef biodiversity, concluding that "If the world does not take effective action on climate change, coral reefs will disappear from the Coral Triangle by the end of the century, the ability of the region's coastal environments to feed people will decline by 80 per cent, and the livelihoods of around 100 million people will have been lost or severely impacted." The report was launched at the [World Ocean Congress](#) in Indonesia, and led to more than 900 media stories around the world. Electronic copies of the executive summary and full report are available online.

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## New Data in CoRIS

Product Name	Description
2007 Multibeam Mapping of Pulley Ridge, southwest Florida  <a href="#">Sample link to metadata for this product</a>	These datasets contain high-resolution multibeam and backscatter maps of the south-western corner of the Pulley Ridge Area, near the Tortugas, in the Gulf of Mexico.
2006 Multibeam Mapping of cross-shelf corridor, North of Madison-Swanson - Florida  <a href="#">Sample link to metadata for this product</a>	This dataset contains high-resolution multibeam and backscatter maps of an area North of Madison-Swanson (29.1667N, 85.6667W), in the West-Florida shelf, not included in a previous mapping expedition to the area.
2006 Multibeam Mapping of along-shelf corridor, between Madison-Swanson and Steamboat Lumps Florida  <a href="#">Sample link to metadata for this product</a>	This dataset contains high-resolution multibeam and backscatter maps of a long thin corridor at the shelf edge near the 74-m isobath spanning from Madison-Swanson (29.1667N, 85.6667W) in the north to Steamboat (28.1667N, 84.6667W), in the West-Florida shelf.
Northern Mariana Islands Marine Monitoring Team Sea Temperature Measurements  <a href="#">Sample link to metadata for this product</a>	Site specific monitoring of sea temperature is conducted using submersible temperature dataloggers at selected sites and depths around the islands of Saipan and Rota.
Northern Mariana Islands Marine Monitoring Team Reef Flat Surveys  <a href="#">Sample link to metadata for this product</a>	The Commonwealth of the Northern Mariana Islands' (CNMI) interagency marine monitoring team conducts surveys on reef flat areas on the islands of Saipan, Tinian and Rota in an effort to assess change in benthic communities over time.
BioSearch Marine life Observer Program for the Northern Mariana Islands  <a href="#">Sample link to metadata for this product</a>	BioSearch is a volunteer monitoring program targeting recreational divers and boaters and designed to gather information about occurrences of large or rare vertebrates and unusual environmental events.
Saipan and Tinian Gridded Geomorphology data files  <a href="#">Sample link to metadata for this product</a>	The geomorphological data layers of substrate, slope, rugosity, and bathymetric position index (BPI) produced at the Pacific Islands Benthic Habitat Mapping Center (PIBHM) are derived from multi-beam bathymetry. These data sets are for the shelf and slope environments of Saipan and Tinian.

We value your feedback. Feel free to [email us](#) comments .

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*The CRCP supports effective management and sound science to preserve, sustain and restore valuable coral reef ecosystems.*

