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Coral Reef News



INSIDE THIS ISSUE:

From the Desk of the Program Manager	1
Of Special Note	1
Announcements:	2
Upcoming Events:	2
Updates:	
<u>Atlantic/Caribbean</u>	3
<u>Pacific</u>	4
<u>International</u>	4
New Data in CoRIS	5
Publications	8

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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January 2009

From the Desk of the Program Manager



The end of January finds me headed off to meet with our territorial partners in America Samoa, Guam, and the Commonwealth of the Northern Mariana Islands. The purpose of these visits is to better understand the on-the-ground issues, challenges and opportunities. The CRCP's primary objective is to support strategic management needs, so these visits are critical to ensuring we in NOAA know what our partners are hoping to achieve over the coming years.

The threat-based priority [working groups](#) continue their work to develop the CRCP's goals and objectives to address the priority threats of climate change, adverse impacts of fishing, and land-based sources of pollution. The working groups will be posting "drafts-in-progress" of their goals and objectives by mid-February, so please go to our website to check out their work. We will issue completed drafts for comment at the end of March, but you don't have to wait until then. I encourage you to comment on the "drafts-in-progress" so the working groups have some input before they conduct their face-to-face meetings in late February and early March. These goals and objectives will set the direction of the CRCP for at least the next five years; I urge you to get involved.

-Kacky

Of Special Note

CRCP Data and GIS Products Support Designation of Pacific Marine Monuments.

Data generated by the CRCP coral reef ecosystem mapping program and Pacific Reef Assessment and Monitoring Program (RAMP) significantly contributed to the designation of the Marianas Trench Marine National Monument, the Pacific Remote Islands Marine National Monument, and the Rose Atoll Marine National Monument by President Bush's proclamations on January 6, 2009. Since the beginning of the CRCP in 2000, scientists from NOAA's [Coral Reef Ecosystem Division](#) (CRED) of the [Pacific Islands Fisheries Science Center](#) and the [Biogeography Branch](#) of the [National Centers for Coastal Ocean Science](#), in collaboration with federal, state, and territorial partners from across the Pacific, have collected a wealth of data during biennial Pacific RAMP research cruises on NOAA vessels and from aerial and satellite remote sensing imagery. Collection, analysis, and publication of integrated biological (coral, fish, algae, and non-coral invertebrates), oceanographic, acoustic, and optical data sets

support critical ecosystem-based management needs for federal, state, regional and local management agencies.

The CRCP-generated data sets, which are the only recent information that exists for many of the coral reef ecosystems across the Pacific, demonstrates that the new marine monuments contain some of the largest areas of live coral cover, highest biomass, and greatest abundance of reef fish and apex predators in the country. This NOAA research highlights the need to preserve these large relatively "pristine" ecosystems due to their increased resilience to global climate change, particularly ocean warming and ocean acidification, and other anthropogenic threats. Scientists from the Biogeography Branch and CRED provided scientific information, photographic data, and extensive GIS map products to support the President's decision to establish the three Marine National Monuments, which will protect over 195,000 square miles of the ocean habitat across the Pacific Ocean.

UPCOMING EVENTS

February

23-27: [21st U.S. Coral Reef Task Force Meeting](#), Washington, D.C.

March

12-22: [National Science Teachers Association \(NSTA\) National Conference](#), New Orleans, LA.

April

2: NSTA Web Seminar: [The Heat is On!: Climate Change and Coral Reef Ecosystems](#)

30: NSTA Web Seminar: [The Heat is On!: Climate Change and Coral Reef Ecosystems](#)

May

11-15: [World Ocean Conference](#), North Sulawesi, Indonesia.

13-15: Caribbean Mapping & Monitoring Workshop, San Juan, PR. By invitation only; contact [Jenny Waddell](#) for details.

June

29-30: [National Marine Educators Association National Conference](#), Pacific Grove, CA.

July

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

Announcements

21st U.S. Coral Reef Task Force Meeting. During the week of February 23, the 21st meeting of the [U.S. Coral Reef Task Force \(USCRTF\)](#) will be held in Washington, D.C. The [U.S. Department of the Interior](#), as co-chair of the USCRTF, is serving as the official host of this meeting. The business meeting is open to the public and will be held Wednesday afternoon; associated side meetings are scheduled Monday through Thursday. This meeting, the first in the new administration, provides a unique opportunity to begin shaping the administration's coral reef conservation agenda and to foster a strong leadership presence for these issues.

Atlantic Ocean Acidification Test-bed Established. On January 16, a team of NOAA scientists, divers and engineers together with colleagues from the [University of Puerto Rico at Mayagüez](#) successfully deployed a Moored Autonomous pCO₂ buoy at Cayo Enrique Reef near La Parguera, Puerto Rico. The NOAA team consisted of participants from across multiple NOAA Line Offices and labs, including the [Office of Oceanic and Atmospheric Research's Pacific Marine Environmental Laboratory](#) and [Atlantic Oceanographic Meteorological Laboratory Coral Health and Monitoring Program](#), and the [National Environmental Satellite, Data, and Information Service's Coral Reef Watch \(CRW\)](#). This CRCP project seeks to 1) establish a standardized approach and methodology for monitoring, assessing, and modeling the impacts of Ocean Acidification (OA) on coral reef ecosystems, 2) identify critical thresholds, impacts, and water chemistry trends necessary for developing ecological forecasts, 3) characterize the spatial and temporal variability in carbonate chemistry in coral reef environments to better characterize the threat of OA, and 4) provide data and

information necessary to facilitate an early alert system based on ecological forecasting for OA stress to coral reef ecosystems. The advanced mooring system is providing an important part of the geochemical observations necessary to meet these objectives. Together with weekly geochemical surveys and ancillary observations along Cayo Enrique Reef, the project will monitor community-scale metabolic performance along the forereef environment. For more information you can view the [deployment blog](#). CRW continues to play a crucial role in both strategic planning and product development related to ocean acidification; the products that result from this testbed will help resource managers to reduce stress to coral reefs and oversee their jurisdictions.

Invitation to Participate in the National System of MPAs. NOAA's [National Marine Protected Areas Center](#), together with the [U.S. Department of the Interior](#), recently launched the [National System of Marine Protected Areas](#), the first comprehensive tool for bringing marine protected areas (MPAs) across all levels of government together to work toward common conservation objectives. The launch completes a multi-year effort to define a system that will enhance the protection of the nation's natural and cultural marine resources.

The [Framework for the National System of Marine Protected Areas of the United States of America](#) (pdf, 2.98 mb) outlines key components of the national system, including national system goals and priority conservation objectives; MPA eligibility criteria; a nomination process for existing MPAs to be included in the national system; and a science-based, public process for identifying conservation gaps. The release of the Framework marked the start of the nomination process for eligible MPAs to be included in the national system. [Eligible MPAs](#) (pdf, 452 kb) are invited to [nominate](#) (pdf, 827 kb) their sites. The first round of nominations will be due February 13, 2009.

MPA Programs participating in the national system will benefit from the opportunity to work with other MPAs at the regional and national scale to address issues of common concern; increased recognition of MPAs and the resources they protect; and improved integration with other ocean management initiatives, such as ocean observing systems. The system will also ensure that representative examples of the nation's natural and cultural marine resources are protected, and provide a (continued on page 3)



MAPCO2 deployment at Cayo Enrique reef in the La Parguera embayment, Puerto Rico. Courtesy: Jim Hendee

Announcements continued...

collaborative process to assess gaps in protection. For more information on the [National System of Marine Protected Areas](#) and the nomination process, [contact us](#).

Award-Winning Video Promotes Collaborative Effort Assessing MPA Effectiveness.

A video produced by the NOAA Public Affairs Video Studio, in collaboration with scientists from the [National Centers for Coastal Ocean Science](#) and the [National Park Service](#), recently won a [CINE](#) Golden Eagle Award in the Non-Telecast, Professional Non-Fiction, Science and Technology category. This national honor acknowledges high quality production in a variety of content categories. The video, entitled "[Buck Island Reef National Monument/The National Park Service and National Oceanic and Atmospheric Administration: Partners for Protection and Resource Management](#)," illustrates the agency partnership and showcases cutting-edge technologies to map and monitor the marine environment in an effort to evaluate the effectiveness of the marine protected areas (MPAs). For further information or to request the DVD, [contact us](#).

New Educational Materials Available. The [National Marine Fisheries Service](#) (NMFS) Caribbean Field Office has completed a series of educational materials for several CRCP projects. One product is a poster summarizing dock construction guidelines and permit requirements in areas containing seagrass beds for Florida and the U.S. Caribbean; the poster complements efforts of NOAA's NMFS in collaboration with the [U.S. Army Corps of Engineers](#) to inform



The menu insert and dock guidelines poster products are pictured. Courtesy: NMFS Caribbean Field Office

homeowners and developers about existing regulatory guidelines to protect seagrass beds from impacts of dock construction. Another set of products, pamphlets regarding seabirds and sanctuaries in the U.S. Virgin Islands (USVI), are part of a collaboration with USVI enforcement officers to provide educational materials about important marine resources in USVI. Lastly, the office produced menu inserts for restaurants in Puerto Rico and USVI regarding the permanent prohibition on fishing and possession of Nassau and Goliath grouper and the closed season on fishing to protect the red hind spawning aggregations. The grouper menu insert is part of a larger project that also included workshops with restaurants to educate chefs and other who purchase seafood about closed seasons protecting certain grouper species. These products will soon be available on NOAA's [Coral Reef Information System](#), a repository of data and products resulting from CRCP-funded projects

Updates from the Atlantic/Caribbean Region

Shallow Benthic Habitats 'Re-mapped' in USVI. NOAA [National Centers for Coastal Ocean Science](#) (NCCOS) staff conducted a field mission from January 3-18 in St John, U.S. Virgin Islands (USVI) under a partnership project with the [National Park Service](#) (NPS) to 're-map' shallow water benthic habitats. This work will update the existing CRCP maps for the island with new remote sensing imagery, 4X greater spatial resolution of mapped features, and a new classification scheme that is less coral centric and focuses on the dominant habitats. This work will serve as a prototype for both CRCP/NCCOS and NPS for the next generation of benthic habitat maps. The results of this investigation will shape how all other NPS tropical

marine parks will be mapped in the future. Plans are to use the revised USVI map to support a wide array of management needs, including damage assessments from boat groundings, and structuring biological monitoring programs. In addition, NCCOS plans to conduct change analyses between the 2002 digital maps and the improved 2009 version.

First Invasive Lionfish Observed in the FKNMS. On January 6th, a recreational diver active in the [Reef Environmental Education Foundation's](#) (REEF) fish-identification program reported sighting an invasive Indo-Pacific red lionfish at a depth of about 20 m off Key Largo in the (continued on page 4)

Threat-based Working Groups

The primary objective of the CRCP is now to address strategic coral reef management needs; as such, the CRCP is narrowing its focus by emphasizing efforts on understanding and addressing the top three global and national threats to coral reef ecosystems:

- fishing impacts,
- land-based sources of pollution, and
- climate change.

In order to implement the proposed changes, the CRCP has put into place working groups to provide recommendations on the strategic goals and objectives the Program should work towards.

Click [here](#) to track the progress of the working groups.



Be a Reef-
Hugger

Long-lasting
light bulbs are a
bright idea.



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

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

Atlantic/Caribbean Continued...

[Florida Keys National Marine Sanctuary](#) (FKNMS). REEF and FKNMS staff had engaged in a year-and-a-half of pre-planning and outreach in anticipation of the highly likely spread of lionfish into the Keys. This preparation allowed a team of REEF and FKNMS divers to capture the fish the following day; it measured about 10 cm in length and had a relatively large unidentifiable fish in its gut. This was the first sighting of a lionfish in the FKNMS. A map of its spread in the western North Atlantic is available [online](#). In addition, the lionfish's capture and subsequent dissection was the focus of a [feature story](#) on the NOAA [National Ocean Service](#) home page which includes video and links for additional information.



The captured invasive lionfish is measured prior to dissection. Scientists use the data collected to learn how lionfish affect US waters. Courtesy: Florida Keys National Marine Sanctuary

Updates from the Pacific Region

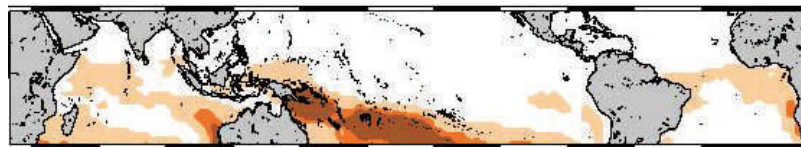
CRED Introduces Scientific Liasons to Two Pacific Jurisdictions. During the week of Jan 12th, five [Coral Reef Ecosystem Division](#) (CRED) staff had a series of successful meetings with resource managers and scientists in Guam and the Commonwealth of the Northern Mariana Islands (CNMI) to foster improved communications between the management and science communities. Meetings were held with key staff from Guam's [Coastal Management Program](#), [Environmental Protection Agency](#), and Division of Aquatic and Wildlife Resources, the [University of Guam Marine Lab](#), NOAA's [Pacific Islands Regional Office](#), and the CNMI's [Division](#)

[of Environmental Quality](#), [Coastal Resources Management Office](#), and [Division of Fish and Wildlife](#). As part of these efforts, [Oliver Vetter](#) was introduced as the CRED Scientific Liaison to Guam and [Jacob Asher](#) was introduced as the CRED Scientific Liaison to CNMI. Discussions focused on current management issues, suggested improvements for the *Coral Reef Ecosystem Monitoring Report for the Mariana Archipelago: 2003-2007*, and planning for the upcoming Mariana Archipelago Reef Assessment and Monitoring Program (MARAMP) deployments in April, May and June, 2009.

International Updates

One photo CRW Predicts Bleaching in the Great Barrier Reef. The NOAA [Coral Reef Watch](#) (CRW) [Seasonal Coral Bleaching Thermal Stress Outlook](#) continues to indicate that the greatest chance of bleaching during the upcoming austral summer will be in the region bounded by Papua New Guinea, the Solomon Islands, the northern Great Barrier Reef (GBR), and New Caledonia. Model runs now suggest that all of the GBR may experience some degree

of bleaching this year. Currently, the forecast system suggests that thermal stress with a high potential for bleaching possible in that region with thermal stress in a band stretching from the Coral Triangle region southeast beyond Fiji and perhaps to French Polynesia. For more information, click [here](#). This bleaching outlook product is one of many tools produced by CRW to assist coral reef managers and scientists.



Potential Bleaching Potential Widespread Bleaching Potential Severe Bleaching

Global 15 week Coral Bleaching Thermal Stress Outlook for Jan-Apr 2009. Courtesy: NOAA Coral Reef Watch

New Data in CoRIS

Product Name	Description
<p>NOS/NCCOS Seafloor Characterization of the U. S. Caribbean USVI 2007 Multibeam Bathymetry, Rugosity and Slope products</p> <p>Link to sample metadata for this product</p>	<p>The multibeam data was collected as IOCM (Integrated Ocean and Coastal Mapping) project NF-07-06 during the fourth year of an ongoing NOAA scientific research mission in the US Caribbean to characterize nearshore to deep water coral reef habitats at depths down to 1,000 meters. The mission purpose is to better understand the resources within the surveyed reef habitats, and ultimately develop species utilization models linking physical habitats with biological information. The multibeam backscatter, multibeam bathymetry, and ground truth video footage collected during the 2007 mission will be used internally to characterize sea floor topography and to create benthic habitat maps, helping NOAA meet its mapping commitment to the US Coral Reef Task Force.</p>
<p>NOAA Coastal Change Analysis Program (C-CAP) products for the South Atlantic and Southern United States</p> <p>Link to sample metadata for this product</p>	<p>The Coastal Change Analysis Program (C-CAP) is a nationally standardized database of land cover and land change information, developed using remotely sensed imagery, for the coastal regions of the U.S. C-CAP products inventory coastal intertidal areas, wetlands, and adjacent uplands with the goal of monitoring these habitats by updating the land cover maps every five years.</p>
<p>CRED REA Coral Population Parameters at Wake - 2007</p> <p>Link to sample metadata for this product</p>	<p>Belt transects along 2 consecutively-placed, 25m transect lines were surveyed as part of Rapid Ecological Assessment. Raw survey data included species presence and relative abundance, colony counts and size classes by genus, and determination of benthic cover using the line-intercept method.</p>
<p>NCCOS Fish Assessment and Monitoring Data, Puerto Rico, St Croix and St John (2008 Update)</p> <p>Link to sample metadata for this product</p>	<p>This dataset includes information on fish distribution, abundance and size; benthic habitat composition; coral bleaching; and macroinvertebrate (conch, lobster, Diadema) abundance and distribution.</p>
<p>CRED REA Invertebrate Assessment at Howland and Johnston Atoll (2008)</p> <p>Link to sample metadata for this product</p>	<p>Quantitative assessments for specific target marine invertebrates were conducted along two consecutively-placed 25m long and 2m wide belt transects, as part of Rapid Ecological Assessments (REA). Based on data from previous assessments, a group of target species was chosen for quantitative counts. The species in the list were chosen because they have been shown to be common components of the reef habitats and they are species that are generally visible (i.e.; non-cryptic) and easily enumerated during the course of a single 50-60 minute SCUBA survey.</p>

Every Act Counts

Long-lasting light bulbs are a bright idea.

If every household in the U.S. replaced a burned-out bulb with an energy-efficient, ENERGY STAR-qualified compact fluorescent bulb, it would prevent greenhouse gas emissions equivalent to that from at least 800,000 cars. Climate change is one of the leading threats to coral reef survival, so let your conservation light shine.

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.

(continued on page 6)

New Data in CoRIS Continued...

Product Name	Description
CRED Fish Biomass Estimates at Pearl and Hermes Atoll, 2003 and 2004 Link to sample metadata for this product	Fish biomass data were collected using a Towed Optical Assessment Device (TOAD), an underwater sled equipped with an underwater digital video camera and lights.
CRED Geomorphology data for the French Frigate Shoals and American Samoa Link to sample metadata for this product	Datasets include gridded 5 m slope and rugosity, bathymetric position index (BPI) structures and BPI zones.
Hawaii Ocean Time-series (HOT) program (1999-2003) data Link to sample metadata for this product	The HOT program makes repeated observations of the physics, biology and chemistry at a site approximately 100 km north of Oahu, Hawaii. Two stations are visited about once a month: Kahe Point (Station 1: 21.34N, 158.27W) and Station ALOHA (Station 2: 22.75N, 158W).
Hawaii Coral Reef Assessment and Monitoring Program (CRAMP): Benthic Data from Rapid Assessment Transects 2001-2004 Link to sample metadata for this product	This dataset consists of CRAMP Rapid Assessment Transect surveys taken in 2001-2004 and includes quantitative estimates of substrate type and species. The types and coverages were derived objectively from photographic images using PhotoGrid. This dataset does not include the images from the transects, which have been provided to NOAA separately.
Assessment of Economic Benefits and Costs of Marine Managed Areas in Hawaii 1998-2003 Link to sample metadata for this product	This dataset combines the research results from a number of papers carried out under the study "Assessment of Economic Benefits and Costs of Marine Managed Areas in Hawaii".
Assessment of Invasiveness of the Orange Keyhole Sponge <i>Mycale Armata</i> in Kaneohe Bay, Oahu, Hawaii Based on Surveys 2004-2005 Link to sample metadata for this product	A study was conducted in 2004-2005 to determine <i>Mycale armata</i> 's distribution, abundance throughout the bay, its growth rates on permanent quadrats, and whether mechanical removal would be an effective management technique for its control.
Sediment Monitoring Adjacent to the Barbers Point Ocean Outfall, Oahu, Hawaii, 1986-2002 Link to sample metadata for this product	To assess the environmental quality, sediment samples in the vicinity of the Barbers Point (Honouliuli) ocean outfall were collected from 1986-2002. Sediment grain size and sediment chemistry were measured. Stations were located both within and on the boundary of the zone of initial dilution (ZID) and at distances of 1.2 to 2 km from the ZID boundary.

Publications

Report Evaluating Regulatory Guidelines for the Construction of Docks in Seagrass Available. Employees from NOAA's [National Marine Fisheries Service's](#) (NMFS) [Southeast Regional Office Habitat Conservation Division](#) and [Protected Resources Division](#) collaborated with the [U.S. Army Corps of Engineers](#) (USACE), the [U.S. Fish and Wildlife Service](#), and local resource protection agencies in Florida and Puerto Rico to evaluate the efficacy of guidelines developed

by NMFS and the USACE related to dock construction in areas containing seagrass beds. The USACE has published a [report](#) summarizing some of the study results. The study found that strict adherence to all the guidelines significantly reduced losses of seagrass but, as compliance with permit conditions that included the guidelines was problematic, dock construction overall led to losses of seagrass habitat in study areas in Puerto Rico and Florida.

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

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Attn: Outreach and Education
NOAA Coral Reef Conservation Program, N/OCRM
1305 East West Highway, 10th Floor
Silver Spring, MD 20910-3281
Phone: (301) 713-3155
Fax: (301) 713-4389
E-mail: coralreef@noaa.gov

We're on the Web!
<http://coralreef.noaa.gov>

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

