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# Coral Reef News



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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](#).

Volume 6, No. 7

April 2009

## From the Desk of the Program Manager



Hello Everyone! The CRCP is charged with implementation of the [Coral Reef Conservation Act of 2000](#) (CRCA) (pdf, 36 kb). A bill which would reauthorize the CRCA is now working its way through Congress; the [Coral Reef Conservation Act Reauthorization and Enhancement](#)

[Amendments of 2009](#) (H.R. 860) passed out of the U.S. House of Representatives' [Committee](#)

[on Natural Resources](#) on a voice vote. The next stop for the bill is the floor of the U.S. House of Representatives. If passed, the bill would increase protections for coral reefs, create a community-based grants program, allow NOAA to respond to vessel groundings, calls for the development of international strategy, and codifies the U.S. Coral Reef Task Force. It is expected that a companion bill will be filed soon in the U.S. Senate. The passage of this bill into law would be an important step to improve protection of coral reefs. For periodic updates on the status of reauthorization, check the [CRCP Web site](#) or future issues of this newsletter.

*-Kacky*

## Announcements

**Free Web Seminar on Coral Bleaching.** Join [Coral Reef Conservation Program](#) scientists and education specialists, along with staff from the [National Science Teachers Association](#) (NSTA) for a free Web Seminar on April 30. This is the second seminar in a series entitled 'The Heat is On!: Climate Change and Coral Reef Ecosystems.' This seminar will focus on the concept of coral bleaching and touch on cutting edge satellite technology. The presenters will share their science expertise, answer questions from the participants, and provide information regarding Web sites that students can use in the classroom. These Web Seminars are designed for educators of grades 5-12, but open to all. Click [here](#) to learn more, register for this seminar, or view archives of the Ocean Acidification seminar held on April 2. More information on the April 2

### Climate Change and Coral Reef Ecosystems



The Heat is On!

seminar can also be found in the 'Updates from Headquarters' section of this issue.

**Public Comment Opportunity Ending Soon: CRCP Roadmap Working Groups Draft Goals and Objectives.** In the Fall, the [Coral Reef Conservation Program](#) (CRCP) engaged its community of partners through the formation of three [threat-based working groups](#) to provide recommendations on the strategic goals and objectives the CRCP should work towards in the next 5-20 years in order to effectively address the top three threats of: Fishing Impacts, Land-Based Sources of Pollution, and Climate Change. 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 are available for public comment through April 24, 2009. For more information, directions on how to provide public comment, and to access the Draft documents, please visit the [Public Comment](#) page on the CRCP Web site. Comments received will be forwarded to the appropriate working group for consideration and incorporation into the final document, as appropriate. The final goals and objectives will be delivered in May 2009; (continued on page 2)

## UPCOMING EVENTS

### April

**24: Public Comment**

**Deadline: Draft**

[CRCP Goals and Objectives](#)

**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.

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

## Announcements continued...

they will drive the development of targeted projects to address each threat over the long term and will influence project funding decisions.

**Atlantic/Caribbean CREIOS Workshop.** The NOAA [Coral Reef Conservation Program](#) (CRCP) is reviewing its portfolio of monitoring and mapping activities, collectively called the Coral Reef Ecosystem Integrated Observing System (CREIOS). The CRCP will bring together coral reef ecosystem managers and CRCP scientists at a two-day workshop May 13-14 in San Juan, Puerto Rico. The geographic focus will primarily be on Florida, Puerto Rico, and the U.S. Virgin Islands, and to a lesser extent, Navassa Island and coral-dominated banks in the Gulf of Mexico. The workshop will be similar to the [Pacific CREIOS workshop](#) held in Honolulu last November. More details on the Caribbean workshop can be found in the March issue or [online](#).

**Coral Reef Management Fellow Leads Award-Winning Coral Conservation Effort.** Each April, the [U.S. Environmental Protection Agency](#) (EPA) Region 2 honors individuals and organizations who have contributed significantly to improving the environment during the prior year. The [International Year of the Reef 2008](#) (IYOR) efforts in St. Croix, U.S. Virgin Islands (USVI) have been honored with an [Environmental Quality Award](#) (EQA). This award selection recognizes the significant contributions of the St. Croix IYOR Committee for improving environmental quality of local natural resources in the USVI, and for creating increased public involvement in environmental action. Karlyn Langjahr, a [Coral Reef Management Fellow](#) with NOAA's [Coral Reef Conservation Program](#), led the efforts and will accept the award for the St. Croix IYOR Committee at a ceremony in USVI this summer. The St. Croix IYOR Committee formed as a small, grass-roots group of environmental/marine professionals dedicated to bringing IYOR to the community at large. The overall goal was to raise community awareness about the various benefits of coral reefs to U.S. Virgin Islanders and to expose under-served youth and adults to the marine environment. In reaching community members with direct experiences to draw upon, the St. Croix IYOR movement shared the global IYOR vision of celebrating coral reefs for their human-associated values to the island community in order to foster stewardship to generate public action and advocacy for these natural resources. The Committee operated with little funding and relied on volunteer time, pursuing local donations and sponsor-



**Karlyn and the St. Croix IYOR Committee worked to expose under-served USVI youth to the marine environment during IYOR 2008.** Courtesy: Karlyn

ships to run 17 events during IYOR 2008. Events included snorkel clinics, free educational movie nights, beach and underwater cleanups, the St. Croix Reef Jam fundraiser, SCUBA certification for high school students, and media outreach campaigns through the production of radio public service announcements. They partnered with local government agencies, non-governmental organizations, and community groups. The members continue their efforts through St. Croix Reef Jam, beginning the process of establishing a 501-3(c) non-profit to raise funds annually to run local coral reef education and conservation efforts on the island of St. Croix.

**Hawai'i Launches LAS Web Site.** Hawai'i's [Division of Aquatic Resources](#) has launched its [Local Action Strategy Web site](#). The [Local Action Strategies](#) (LASs) are locally-driven roadmaps for collaborative and cooperative action among federal, state, territory and non-governmental partners, which identify and implement priority actions needed to reduce key threats to valuable coral reef resources. The goals and objectives of the LAS are linked to those found in the [U.S. National Action Plan to Conserve Coral Reefs](#), adopted by the [U.S. Coral Reef Task Force](#) (USCRTF) in 2000. The USCRTF prioritized six areas for immediate local action; a jurisdiction's strategies may address some or all of the six focus areas as well as additional locally relevant threats. Hawai'i used a stakeholder-driven planning process to develop its LAS, which includes some of the six focus areas as well as some locally relevant issues. Hawai'i's six selected focus areas are: Fishing impacts, Lack of awareness, Land-based sources of pollution, Recreational impacts to reefs, Climate change and marine disease, and Aquatic invasive species. The new Web site provides a short description of the LAS initiative, a review of the process used in Hawai'i, and links to the six selected threat areas.



## Updates from Headquarters

### NOAA/NSTA Web Seminar on Ocean Acidification an Unprecedented Success.

NOAA staff, in partnership with the [National Science Teachers Association](#) (NSTA), offered a free Web seminar on April 2 on the topic of ocean acidification. Presenting the topic was Dr. Dwight Gledhill, a chemist with NOAA's [Atlantic Oceanographic and Meteorological Laboratory](#) Ocean Chemistry Division, along with support from the NOAA National Ocean Service Education Office, NSTA staff, and other staff from the NOAA [Coral Reef Conservation Program](#). Dr. Gledhill focused the discussion on the basic carbon dioxide chemistry cycle of the oceans, changes to ocean chemistry caused by human activities linked to climate change, and how coral reefs and other marine organisms are being affected by it. NOAA studies have shown that a quarter of the carbon dioxide that humans place in the atmosphere each year ends up being dissolved into the ocean, resulting in the ocean

becoming more acidic. This change makes it harder for corals, clams, oysters, and other marine life to build their skeletons or shells. A number of recent studies demonstrate that ocean acidification is likely to harm coral reefs by slowing coral growth and making reefs more vulnerable to erosion and storms.

This Web seminar reached 83 teachers and other individuals from 26 states and four countries; the Web seminar format allowed Web participants to interact directly with the presenter in real time. Seminar participants received a one year subscription to one of NSTA's SciGuides. This was the first of two '[The Heat is On! Climate Change and Coral Reef Ecosystems](#)' Web Seminars scheduled as a follow-up to the symposium by the same name that took place at the NSTA [National Conference](#) in New Orleans last month. The second Web seminar will cover the topic of coral bleaching on April 30.

### Sample Feedback from Participants

*"I am a marine educator at an Aquarium developing a program on ocean acidification, so all of it was relevant!"*

*"I teach environmental science and this is very timely updated info for my lesson on climate change."*

## Updates from the Atlantic/Caribbean Region

### Larval Reef Fish Research Cruise Increases Scientific Knowledge, Documents Unusual Conditions.

The waters surrounding the Virgin Islands and Puerto Rico provide coral reef habitat for multi-species spawning aggregations of economically and ecologically important reef fish including yellowfin grouper, Nassau grouper, tiger grouper, and dog snapper. Fishing pressure at these sources of larval recruits prompted the [Caribbean Fishery Management Council](#) to close these reef banks yearly from February – April. The continued population decrease of ecologically important reef species has led to proposals for new, and more extensive, no-take coral reef reserves and fisheries closures. However, the scientific information available is insufficient to predict the adequacy of the current or planned management in terms of the long-term resiliency of coral reefs in the region. Thus, in 2007, NOAA's [Coral Reef Conservation Program](#) (CRCP) began conducting multidisciplinary research cruises aimed at understanding the biological and/or physical process(es) which drive vital reef fish production in the region, expanding the locations surveyed

each year. Initial results from these cruises indicate considerable variation in larval reef fish distribution and abundance, and variable current regimes, warranting further research. In example, 2007 data suggests transport of reef fish larvae from the west at an ecosystem-level and potential larval transport (continued on page 4)

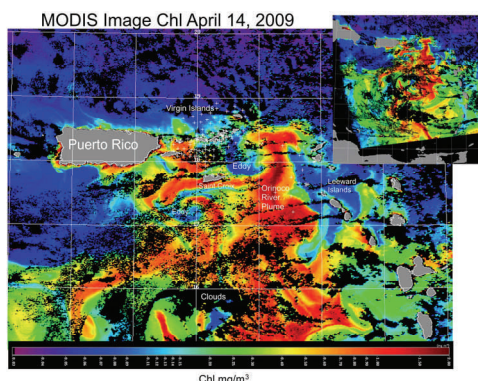


Image of the Orinoco River Plume; the highest concentrations of chlorophyll and CDOM are in red, with the lowest in blue. Courtesy: John Lamkin, SEFSC



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...I have the luxury of working directly with both people and the natural resources themselves. To me the Coral Fellowship is a proverbial 'dream job.'"  
—Karlyn Langhjahr (USVI 06-09)

## Atlantic/Caribbean continued...

from the deeper bank system onto the shallower reefs, indicating possible retention of reef fish larvae in the area.

From April 7-20, CRCP scientists from the [Southeast Fisheries Science Center](#) and [Atlantic Oceanographic and Meteorological Laboratory](#) conducted a reef fish larval dispersion cruise in the waters of the British Virgin Islands (BVI), U.S. Virgin Islands (USVI), and Puerto Rico. This year, at the request of the Caribbean Fisheries Management Council, activities were expanded to include the island of St. Croix in the USVI to assess the degree to which the reef fish populations at St Croix are connected with the rest of the USVI and BVI. The combination of larval fish distribution/abundance/transport data and tracking of physical oceanographic parameters will help to determine the location and relative importance of spawning sites and MPAs specific to coral reef fish, focusing on local economically and ecologically important fisheries and grazing species such as snapper/groupers, parrot fishes and wrasses. Cruise results will generate products that provide baseline population estimates, recruitment dynamics to coral reef MPAs, and an increased understanding of conditions necessary for long-term coral reef resiliency in the region. In addition, understanding the ability of the system to retain larval reef fish, the connectivity between reefs in the region, and the ecology of larval reef fish that depend on coral reefs for their adult habitat are important to effective fisheries management.

During the latter half of this cruise, the scientists encountered unusual conditions in the area around the USVI and Puerto Rico. The Orinoco river plume currently extends north of the USVI; this river plume water has decreased salinity and has a very strong chlorophyll and colored dissolved organic matter signature. The low salinity, high chlorophyll layer is present at the surface and extends approximately 20 meters in depth and plankton volumes are at least four times higher in the plume. The overall impact of this event is as yet unknown, but high chlorophyll levels and organic carbon loading are harmful to reef ecosystems.

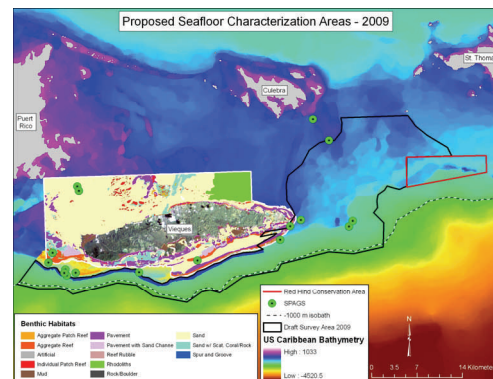
**NOAA Scientists and Crew Welcome Students Aboard the R/V Nancy Foster.** On March 28, researchers with NOAA's [National Centers for Coastal Ocean Science](#), partners and the ship crew took a break from collecting underwater data near Vieques, Puerto Rico to welcome a group of 30 local students for a science education program. Students and counsel-



Students tried on survival 'gummy' suits and learned about the ROV as part of the education day activities on the *Nancy Foster*. Courtesy: National Centers for Coastal Ocean Science

ors from Movimiento en Apoyo a Nuestros Tesoros Ambientales and Reach for Success boarded the docked ship to meet NCCOS scientists, learn about their work in the area, discover the tools used in underwater data collection, explore coral reef ecosystems, and experience life aboard a science research vessel. The education and outreach component of the mission was organized to build and strengthen ties with the local community. For more pictures and a detailed overview of the education day, visit [Day 2](#) of the mission logs.

**Scientists Explore the Underwater Habitats of Vieques, Puerto Rico.** From March 27 to April 3, scientists from NOAA's [National Centers for Coastal Ocean Science](#) and partners conducted a scientific expedition to explore and characterize nearshore habitats (10-300 m) off the coasts of Vieques. The week-long mission aboard the NOAA ship *Nancy Foster* marks the sixth year of the [mission](#). Scientists collected high-resolution bathymetry data; habitat hardness and habitat roughness; and complementary video data that will provide information about the characteristics of sea- (continued on page 5)



Project areas for the 2009 mapping effort off of Vieques. Courtesy: National Centers for Coastal Ocean Science

## Atlantic/Caribbean continued...

floor coral reef ecosystems. Data generated during this mission will support natural resource management in the federal and territorial waters of Puerto Rico. For additional information and daily mission updates, click [here](#). The mission was also highlighted in 'Making Waves Episode 21: Caribbean Research Cruise', a podcast by NOAA's [National Ocean Service](#).

**Lionfish Not Yet Observed on the Northern Side of St. Croix, USVI.** Scientists from NOAA's [National Centers for Coastal Ocean Science](#) (NCCOS) recently returned from their bi-annual research mission to St. Croix, U.S. Virgin Islands, March 1-14, to evaluate the health of coral reef resources both inside and outside [Buck Island Reef National Monument](#) (BIRNM) boundaries. NCCOS scientists, partner agencies and volunteers gathered information on fish, lobster, long-spined sea urchin and conch abundance and distribution, as well as benthic composition in and around the waters of BIRNM and [St. Croix East End Marine Park](#). Although five sightings of the Indo-Pacific invasive lionfish have been confirmed around St. Croix outside of the study area, none were seen during this mission.

These results suggest the geographic distribution of lionfish has not yet expanded into the BIRNM or adjacent coral reefs. For more information, click [here](#).

**NCCOS Develops Methods to Improve the Effectiveness of Marine Protected Areas.** Scientists from NOAA's [National Centers for Coastal Ocean Science](#) (NCCOS) have developed a method to prioritize habitats which will aid in the design of marine protected areas (MPAs). The method identifies a species as a surrogate for the resources to be protected. Selection of an appropriate species is based on its relative abundance and relationships to other parts of the ecosystem. Habitats utilized by the species are determined and critical habitat defined. Methods that incorporate an understanding of the ecological processes supporting MPA functioning will improve the design and management of new and existing MPAs. This method is also outlined in a recent publication detailing the life history of an abundant coral reef fish taxa relative to distribution of habitats in the Bay of La Parguera, Puerto Rico.

## Updates from the Pacific Region

**MARAMP 2009: Legs 1-2.** [Coral Reef Ecosystem Division](#) scientists have completed the 2009 Marianas Archipelago Reef Assessment and Monitoring Program (MARAMP) expedition at Wake Atoll aboard the NOAA Ship [Hi'ialakai](#). This was the first leg of a 66-day research cruise. During the five-day deployment at Wake, in addition to Rapid Ecological Assessments (REA) at all previous sites, 17 new fish REA sites were established. Towed-diver surveys encircled the island with considerable overlap at multiple depths. Autonomous Reef Monitoring Structures (ARMS) were deployed at four new sites. In addition to successful recovery and replacement of all existing long-term oceanographic monitoring instrumentation, nine new oceanographic instruments were deployed for an intensive short-term study with the University of Hawaii. Both shallow and deep hydrographic surveys and water quality surveys were completed around the island. Inter-observer calibration surveys, where two divers conduct the same reef survey at the same time and compare results to test their accuracy, were conducted with local partners while the ship was in port in Guam from April 1-4. While the ship was docked in Guam, the National Broadcasting

Company (NBC) took footage of the ship for a documentary about the Friends of the Mariana Trench Marine National Monument that they are currently working on. You can see the footage [online](#).

The second leg of the MARAMP expedition, conducted April 5-14, included ecosystem surveys around Guam, Rota, Tinian, and Aguijan Islands in partnership with colleagues from Guam resource management agencies and the University of Guam. Full Rapid Ecological Assessments (REA) teams monitored two sites in front of Managaha Island. An independent REA Team also surveyed a deep reef site and two shallow sites. Initial observations include characterization of habitat along the northwestern end of the island as pavement and walls, where a few large fish were seen. Observed coral cover was better along the central west coast of the island. The Oceanography Team exchanged a sea surface temperature mooring on the southwest side of Managaha Island. In addition, a deep water conductivity, temperature, depth (CTD) test was conducted about 25 miles north of Saipan. In spite of some challenging sea conditions, this leg of the cruise (*continued on page 6*)

## 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.

The working groups have delivered their draft goals and objectives. The [public comment period](#) is open until April 24th.

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





### Be a Reef-Hugger

As you do your Spring yard work, please fertilize less and use eco-friendly fertilizer or alternatives to fertilizer.

**ALWAYS** dispose of household, yard, and garage chemicals properly.



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

## Pacific continued...

was completed successfully. The third leg of the MARAMP cruise is now underway and it will survey in the northern islands of the Mariana Archipelago, including the three islands of the island unit of the new Mariana Trench Marine National Monument, before concluding on May 7. Learn more about this cruise by visiting its [blog](#) or the NOAA [Coral Reef Ecosystem Division Facebook page](#).

### Coral Fellow Offers Social Marketing Training to Influence Behavior Change.

The goals of the [Coral Reef Management Fellowship](#) are twofold; to build the skills of emerging environmental professionals and to build the management capacity within U.S. coral reef jurisdictions. Each fellow receives training at annual retreats and is expected to take what they learn back to their places of work to help with efforts locally. American Samoa's Fellow, Alyssa Edwards, recently helped to do just that by replicating a social marketing training she received through the fellowship program for local environmental conservation workers. The two hour workshop trained representatives from AmeriCorps Invasive Tree Removal Program, American Samoa Community College Land Grant program, administrative staff from the [Coral Reef Advisory Group](#), and representatives from the [American Samoa Department of Commerce](#), to expand education and outreach programs to engage in behavior change efforts. Participants learned that while education is important, it

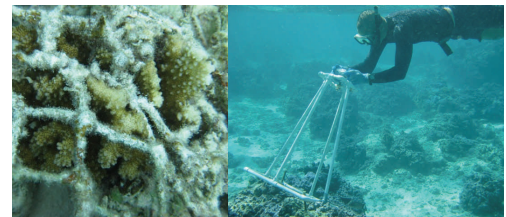


Alyssa Edwards replicated a social marketing training for colleagues in American Samoa. Courtesy: Alyssa Edwards

## Publications

**Pacific CREIOS Workshop Report Available.** The CRCP is reviewing and revising long-term plans for its monitoring, mapping, and assessment activities, collectively known as the Coral Reef Ecosystem Integrated Observing System (CREIOS), to ensure they are cost-effective,

often is not enough to change behaviors. The workshop looked at targeting audiences and using marketing principles to change behaviors in a measurable way that has a direct impact on the environment. The culmination of the workshop included teams devising social marketing campaigns to address the environmental problems they tackle in their daily work. The workshop received rave reviews and plans are already underway to replicate it for other agency staff. In addition, an [article](#) on the training ran in a local news outlet.



NOAA scientists are tracking the health of coral colonies impacted by derelict nets on Midway atoll. Courtesy: Elizabeth Keenan

**NOAA Assesses Impact of Derelict Fishing Nets on the Coral Reef Habitats of Midway Atoll.** A successful trip to Midway atoll to resurvey marine debris study sites was recently conducted and led by staff from the [Papahānaumokuākea Marine National Monument](#), along with partners from NOAA Fisheries, including staff from the [Pacific Islands Fisheries Science Center's Coral Reef Ecosystem Division \(CRED\)](#). The study looks at the long term impact of derelict fishing nets on coral reef habitats by tracking health and survival of coral colonies associated with the nets. In this second resurvey, divers photographed twenty nine marked coral colonies. The photographs will be analyzed to determine the extent of damage and rate of any recovery. In addition to the primary debris study, the team also recovered three CRED oceanographic instruments which have been collecting data on water movement around Midway for the last several months. More information on the marine debris study can be found [online](#).

aligned with management needs, and allow for the timely delivery of required products and services to all essential users, given funding constraints. As a first step in a strategic planning effort to strengthen the link between science and management goals, the *(continued on page 9)*

## New Data in CoRIS

Product Name	Description
Hawaii Coral Reef Assessment and Monitoring Program (CRAMP): Benthic Data from 2002-2004  <a href="#">Sample link to metadata for this product</a>	This dataset consists of CRAMP surveys taken in 2002-2004 and includes quantitative estimates of substrate and species type. From the data percent coverage of a given species can be estimated. The types and coverages were derived objectively from photographic images using PhotoGrid.
2004 Digital Still Transect Images from the Hawaii Coral Reef Assessment and Monitoring Program (CRAMP)  <a href="#">Sample link to metadata for this product</a>	This dataset consists of video transect images (JPG files) from CRAMP surveys taken in 2004.
Hawaii Coral Reef Assessment and Monitoring Program (CRAMP): Benthic Data from Digital Still Images made in 2007 on Maui, Molokai, and Kauai  <a href="#">Sample link to metadata for this product</a>	This dataset consists of CRAMP surveys taken in 2007 from 9 sites on Maui, 3 sites on Molokai, and 1 site on Kauai. Sites typical have two transects along different isobaths, shallow (~3m) and deep (~10m) lines. Quantitative estimates of substrate type and species were derived objectively from photographic images using PhotoGrid.
Photographic Images of Benthic Coral, Algae, and Invertebrate Species in Marine Habitats and Subhabitats around Offshore Islets in the Main Hawaiian Islands 2007  <a href="#">Sample link to metadata for this product</a>	The marine algae, invertebrate and fish communities were surveyed at ten islet or offshore island sites in the Main Hawaiian Islands in the vicinity of Lanai, (Puu Pehe and Poo Poo Islets), Maui (Kaemi and Hulu Islets and the outer rim of Molokini), off Kaulapapa National Historic Park on Molokai (Mokapu, Okala and Namoku Islets) and Oahu (Kaohikaipu Islet and outside Kapapa Island) in 2007. This dataset consists of the photographic images from this project. In a separate National Oceanographic Data Center (NODC) Accession, 0042684, quantitative results in spreadsheets are provided.
2007 Survey of the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve: Benthic Data from Digital Still Images  <a href="#">Sample link to metadata for this product</a>	Rapid Assessment Transects were conducted in 2007 along various depth contours at 7 unique atolls or islands in the Papahānaumokuākea Marine National Monument of the Northwest Hawaiian Islands Coral Reef Ecosystem Reserve. The data are quantitative estimates of substrate type and species provided in spreadsheet format (comma-separated version, CSV, text files).
Acropora Presence/Absence in Surveyed Waters of Puerto Rico and US Virgin Islands 2001-2006 and Florida 1996-2008  <a href="#">Sample link to metadata for this product</a>	These data represent the potential locations of presence or absence for elkhorn coral ( <i>Acropora palmata</i> ) and staghorn coral ( <i>A. cervicornis</i> ).
Conductivity-Temperature-Depth (CTD) Hydrocast Data from 10 Select R/V Hi'ialakai and Oscar Elton Sette Cruises in the main Hawaiian Islands, Northwest Hawaiian Islands, Guam, and the Commonwealth of the Northern Mariana Islands 2007-2008  <a href="#">Sample link to metadata for this product</a>	Conductivity-Temperature-Depth (CTD) Hydrocast Data from 10 Select R/V Hi'ialakai and Oscar Elton Sette Cruises comprising 200 profiles are included. Finalized data include the profiles of temperature, salinity, oxygen saturation, and fluorescence. Most hydrocast stations are near atolls and islands and typically reach to 500 m.

(continued on page 9)

## Every Act Counts

It stinks to send chemicals into our waterways.

Whether you live one mile or one thousand miles from a coral reef, the chemicals we use to clean our houses and beautify our lawns end up in our waterways and are carried to the oceans. Just one pound of phosphorus in water produces an estimated five hundred pounds of algae, blocking sunlight and starving coral reefs.

Do your part by using naturally-derived and biodegradable detergents and cleaning products. Outside the house, minimize the impacts of fertilizer by using zero-phosphorus products or no more than one pound per 1,000 square feet of turf area for nitrogen (you need just half that amount in shade).

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.

## New Data in CoRIS Continued...

Product Name	Description
CRED Gridded Bathymetry - Swains Island <a href="#">Sample link to metadata for this product</a>	Multibeam bathymetry collected by the Coral Reef Ecosystem Division (CRED)/Pacific Islands Benthic Habitat Mapping Center (PIBHMC) at Swains Island - American Samoa has been processed and is available for download as 40-m grids. Bathymetric data files are available in NetCDF/GMT and Arc ASCII format.
CRED Reson 8101 and Simrad em300 multi-beam backscatter data from the islands and banks in the Mariana archipelago, 2007 <a href="#">Sample link to metadata for this product</a>	Multibeam backscatter imagery extracted from gridded bathymetry of the Mariana archipelago between the U.S. Territory of Guam and Uracas Island in the Commonwealth of the Northern Mariana Islands. These data provide coverage between 0 and -300 meters. The backscatter dataset includes data collected using the Reson 8101 and Simrad em300 multibeam sonar.
CRED 1 meter resolution Reson 8101 multi-beam backscatter data of Wake Island, West Central Pacific, 2007 <a href="#">Sample link to metadata for this product</a>	Multibeam backscatter imagery extracted from gridded bathymetry of Wake Island, West Central Pacific. These data provide coverage between 0 and 200m meters. The backscatter dataset includes data collected using the Reson 8101 multibeam sonar.
Significant Wave Heights, Periods, and Directions, and Air and Sea Temperature Data from a Directional Waverider Buoy off Diamond Head, Oahu during March-April 2000 <a href="#">Sample link to metadata for this product</a>	A directional waverider buoy located about one nautical mile south of Diamond Head, Oahu, provided an approximately 10-day time series of wave characteristics and temperatures. The waverider was destroyed by a tug.

## Publications continued...

[Pacific CREIOS workshop](#) was held in Hawai'i last November to address needs of coral reef managers in the U.S. Pacific States and Territories. A similar workshop will take place in May 2009 examining the mapping, monitoring, and data needs of reef managers in the Atlantic/Caribbean region.

The Pacific workshop was successful in determining priority information needs for reef managers, and highlighted important issues of concern for the Pacific jurisdictions, including the need for increased technical capacity, improved information and data dissemination, and improved communication of scientific information to general audiences. The outcomes of the workshop were compiled into a [Workshop Report](#), which is now available. The report will be used by the CRCP in examining its portfolio of mapping, monitoring, and assessment activities, and will also be used as a preamble to the identification of priorities and the capacity assessments for each location.

**Marine Sediment Contamination in Southwest Puerto Rico.** NOAA's [National Centers for Coastal Ocean Science \(NCCOS\)](#) recently published the results of a study of trace and major element contamination in the marine sediments of southwest Puerto Rico. The article, '[Chemical contamination in southwest Puerto Rico: An assessment of trace and major elements in nearshore sediments](#)', appeared in the November issue of *Marine Pollution Bulletin* and follows one on organic contamination published in the same journal last March. The article is part of an effort by NCCOS to assess the effects of land-based sources of pollution on coral reefs. The results indicated somewhat elevated levels of chromium, nickel and copper adjacent to the town of La Parguera, and toxicologically significant concentrations of chromium and nickel in the sediments at the two sites sampled in Guanica Bay, which may be related to past industrial activities in the Guanica watershed.

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

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

