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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 5, No. 11

August 2008

Announcements

20th Meeting of the U.S. Coral Reef Task Force. The 20th meeting of the [U.S. Coral Reef Task Force](#) (USCRTF) will take place from August 24 - 29 in Kona, Hawai'i. The Task Force's final meeting during [International Year of the Reef 2008](#) will highlight conservation strategies, successes, and challenges in Hawaii, as well as provide a forum to address threats to reefs, innovative solutions, and partnerships. Senior leaders from the Administration and in the Pacific region will share their vision for environmental leadership and stewardship including: Council on Environmental Quality Chairman, James Connaughton, EPA Secretary Johnson, Republic of Palau President Remengesau, and other traditional leaders from the Pacific. This year also marks the 10-year anniversary of the USCRTF; to mark this occasion, the USCRTF is considering a Renewed Call to Action and will discuss this topic during the meeting.

On Sunday and Monday, preceding the business meeting, there will be several workshops providing opportunities for more in-depth discussion on key issues such as Recreational Stewardship, Land-Based Sources of Pollution, Bridging Communities and Government, and Climate Change Responses. Thursday is set aside for field trips and other opportunities to learn first-hand about on-the-ground marine and coastal conservation issues and strategies being employed in Hawai'i.

The USCRTF is co-chaired by the [Departments of Commerce](#) and of the [Interior](#), and includes leaders of 12 federal agencies, seven U.S. states and territories, and three freely associated states. The mission is to lead, coordinate, and strengthen U.S. government actions to better preserve and protect coral reef ecosystems.

CRCP Brings Congressional Staff to Reef Resources. In celebration of [International Year of the Reef 2008](#), the [Coral Reef Conservation Program](#) (CRCP) and NOAA's [Office of Legislative Affairs](#) will be leading a group of nine Congressional staff to south Florida the week of August 18-22. The trip will offer a unique opportu-

nity for Congressional staff to experience the suite of efforts conducted in the area to understand, conserve and sustain these complex and sensitive marine ecosystems. Over the course of the tour, participants will meet with NOAA representatives and staff from partner agencies, academic institutions, and other organizations to learn about resource management challenges and successes in the region. Issues covered will include understanding and controlling land based pollution impacts, managing for resiliency in the face of climate change, implementing effective protected areas, and mitigating coastal development. Staff members include representation of the Senate Commerce Committee majority and minority, House Resources Committee majority, House Science Committee majority and minority, Senate Appropriations Committee and personal staff of Senators Shelby and Cochran. The trip will begin in Fort Lauderdale and continue south through the Florida Keys to the Dry Tortugas to highlight the capabilities of NOAA and its partners.



Congressional staffers will have a chance to visit reefs in the Dry Tortugas during the August trip. Courtesy: Abby Poray

The trip will raise visibility for NOAA and its partners' coral reef conservation efforts in Florida and reinforce the urgency for reauthorization of the Coral Reef Conservation Act of 2000. Hosts throughout the trip include staff from the [State of Florida](#), [National Coral Reef Institute](#), [National Park Service](#), (continued on page 2)

UPCOMING EVENTS

August 2008

25-29: 20th U.S. Coral Reef Task Force Meeting, Kona, HI.

September 2008

2-5: Responding to Climate Change Workshop, Kona, HI. Registration Now Closed.

October 2008

11-15: 4th National Conference on Coastal and Estuarine Habitat Restoration: *Creating Solutions Through Collaborative Partnerships.* Providence, RI.



Be a Reef-Hugger

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

Announcements continued...

[Southeast Fisheries Science Center](#), NMFS [Southeast Regional Office](#), [University of Miami](#), [Mote Marine Lab](#), [Broward County](#), [The Nature Conservancy](#), and many [Florida Keys National Marine Sanctuary](#) staff.

Coral Reef Management Fellows The annual [Coral Reef Management Fellowship](#) Retreat will be held the week after the U.S. Coral Reef Task Force Meeting in Kona, Hawai'i. From September 2-4, fellows will receive professional development training in social marketing and website design that will supplement their technical and professional skills. Fellows will also visit a local watershed management site as well as a cultural heritage site with a Hawaiian cultural expert. This will be an excellent opportunity for fellows to enhance their professional skills while learning more about each of their peers' projects in the islands. We look forward to gathering the [cohort](#) of fellows together for this event.

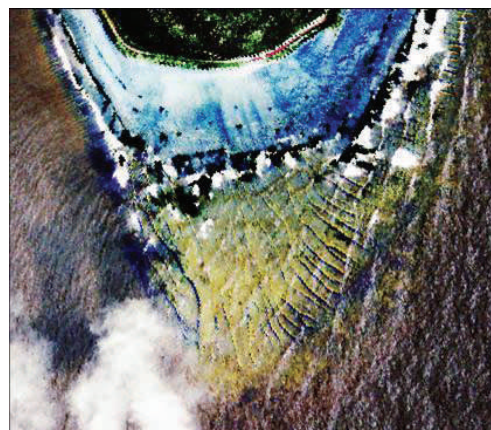
New GIS Tool Developed to Help Map Coral Reef Ecosystems. Scientists from NOAA's [National Centers for Coastal Ocean Science](#) have developed a new software extension that will help map benthic marine habitats, including coral reefs, by visually interpreting georeferenced images (e.g., aerial photographs, satellite images, and side scan sonar), and then applying a hierarchical classification scheme to delineate habitats. The Habitat Digitizer Extension can be used with the geographic information system (GIS) software ArcGIS9. The extension allows users to create, modify, and save custom habitat classification schemes and rapidly delineate and attribute polygons, lines, and points using simple menus. The software extension was demonstrated on July 12 at the [11th International Coral Reef Symposium](#) in Ft. Lauderdale, FL. The tool, step-by-step instructions, and descriptions of the various functions are available [online](#).

New Video Showcases Work at Buck Island Reef National Monument. NOAA's [National Centers for Coastal Ocean Science](#) and the [National Park Service](#) recently produced a video documenting the scientific work underway by the two agencies and their partners in support of marine resource management within and around the [Buck Island Reef National Monument](#) in St. Croix, U.S. Virgin Islands. The 17-minute video, entitled *Buck Island Reef National Monument: Partners for Protection and Resource Management*, illustrates the long-standing partnership

and showcases cutting-edge technologies to map and monitor the marine environment in an effort to evaluate the effectiveness of the marine protected area. The video is intended for visitors to the Monument, as well as middle and high school educators, resource managers, and a host of other audiences. [Contact us](#) for more information, or to request a copy of the video.

NOAA Unveils Children's Coral Activity Book. Staff from NOAA's [National Centers for Coastal Ocean Science](#) and [Coral Reef Conservation Program](#) Headquarters developed a new activity book for children about the importance of coral reefs. Pre-orders of this publication were taken during the [National Science Teacher's Association 2008 Annual Conference](#), the [11th International Coral Reef Symposium](#), and the Sally Ride Educator Conference, [Earth Then, Earth Now: Our Changing Climate](#). The new product was made available for the first time at the [National Marine Educators Association](#) meeting in Savannah, GA from July 20-25. The activity book, which includes fun facts, pages to color, and puzzles, is available [online](#); [contact us](#) for hard copies.

NGDC Announces a New Coral Reef Website. The NOAA [National Geophysical Data Center](#) (NGDC) has established a [Web page](#) with descriptive text and images showing the analysis of high resolution satellite imagery collected in response to suspected coral reef bleaching events. Pairs of high resolution color satellite images are co-registered, then radiometrically normalized and (*continued on page 3*)



A false-color difference image of a bleaching event relative to a reference image of Howland Island shows enhanced reflection of blue and green light (i.e. whitening) of the coral reef system. Courtesy: NGDC

Announcements continued...

differenced to enable the detection of coral bleaching. Color composites made with the images can be contrast enhanced to reveal the brightening of coral in blue and green wavelength regions. The technique was developed and described by Elvidge *et al.* [2004]. NGDC has applied the technique to five areas identified as probable coral bleaching events based on prolonged thermal anomalies detected in surface waters. The NGDC team is now reviewing the results obtained over the five test sites to see if a generalized coral bleaching index can be defined. This research is sponsored by NOAA [Coral Reef Watch](#).

CRED Updates Web Site Data. The [Coral Reef Ecosystem Division](#) (CRED) has made several recent additions to information available on two Web sites that host its data. A descriptive outline summarizing CRED's coral disease work and findings to date is now available on the CRED [Web site](#). Processed multibeam sonar backscatter data from Guam, Saipan, Tinian, Aguijan, and Pagan are now available on the Pacific Islands Benthic Habitat Mapping Center's [Web site](#).

Updates from Headquarters

NOAA Hosts Educators Climate Change Conference. As announced in the July issue, Sally Ride, the first American woman in space, joined NOAA scientists in Silver Spring July 23-24 to teach K-12 educators how to integrate the science of earth's changing climate into their classroom lesson plans during "[Earth Then, Earth Now: Our Changing Climate](#)." The two-day event was co-sponsored by NOAA and the

[National Aeronautics and Space Administration](#) (NASA) in partnership with Ride's science education company, [Sally Ride Science™](#). [Webcasts](#) are now available online for those who were unable to attend. The [Coral Reef Conservation Program](#) participated in both the presentations and exhibit opportunities at this event; both were well-attended.

Updates from the Atlantic/Caribbean Region

Tortugas Cruise Continues Assessment of MPAs as Coral Reef Management Strategy. Scientists from NOAA's [National Centers for Coastal Ocean Science](#) conducted their eighth research cruise at the [Tortugas Ecological Reserve](#) (TER) to determine the ecological and economic consequences of establishing marine protected areas. This ecosystem management strategy was implemented in 2001 to protect and enhance coral reef and soft-bottom communities of the Dry Tortugas, FL. Baseline sampling for a before/after comparison of the TER ecology has been completed in both the TER North and South. This project will provide scientists, managers and the general public with a variety of data to evaluate the post-implementation effects of the TER. It will also evaluate a number of evolving technologies that can be applied to the evaluation of the long term effects of marine protected areas in general. Results to date show an increase in commercially important fish. An increased large predator population is expected to impact prey populations as well as the benthic habitat structure of the Tortugas. To further test these expectations, and to quantify

the efficacy of this ecosystem management tool, scientists aboard the NOAA Ship [Nancy Foster](#) conducted diver and remote sonar surveys of benthic habitat and fishes from July 25-August 5. A member of CRCP Headquarters' communications team participated in this cruise as author of the online [mission logs](#). (continued on page 4)



NOAA divers photograph coral habitat and count and identify fish along a permanent transect during this mission.
Courtesy: Lauren Chhay, CRCP



The International Year of the Reef (IYOR) 2008 is a worldwide campaign to raise awareness about the value and importance of coral reefs and threats to their sustainability, and to motivate people to take action to protect them.



TAKE ACTION! Sign the [International Declaration of Reef Rights](#) and the [pledge to Protect Ocean Life During International Year of the Reef](#).

While you're online, send your friends one of three free IYOR-themed [E-cards](#).

Are you or your organization participating in events for IYOR 2008?

Want to learn more about what you can do to support the goals of IYOR 2008?

Download free educational ads [here](#).

Be an agent of change: Every act counts.



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

Atlantic/Caribbean continued...

Oceanographic Equipment the Focus of Puerto Rico Field Work. The Unit Diving Supervisor for NOAA's Office of [Oceanic and Atmospheric Research](#) and [Atlantic Oceanographic and Meteorological Laboratory](#) (AOML), led field diving operations for two separate projects during an expedition to La Parguera, Puerto Rico, during the week of July 27. Scientists from NOAA Coral Reef Watch and AOML's [Integrated Coral Observing Network](#) (ICON), as well as the [Rosenstiel School of Marine and Atmospheric Science](#) (RSMAS) at the [University of Miami](#), participated in a final site survey for the deployment of an advanced ocean acidification (OA) mooring. The deployment of the Pacific Marine Environmental Laboratory (PMEL)-designed MAP-CO₂ buoy is part of a col-



NOAA divers conduct the site survey at Cayo Enrique reef in the La Parguera embayment, Puerto Rico .

Courtesy: Derek Manzello, AOML ICON

laborative project involving scientists from PMEL, RSMAS, the Coral Reef Conservation Program, and others. The OA project seeks to 1) establish a standardized approach and methodology for monitoring, assessing, and modeling the impacts of OA on coral reef ecosystems, 2) identify critical thresholds, impacts, and water chemistry trends necessary for developing ecological forecast, 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. Once deployed, the advanced mooring system will provide an important part of the requisite geochemical observations necessary for meeting these objectives. The site was selected near to Cayo Enrique reef and will allow for monitor water chemistry reflecting the community-scale metabolic performance of the forereef environment. Survey data was collected in support of deployment logistics planning and site permitting. In addition, a preliminary carbonate chemistry survey across the reef was conducted to evaluate the scientific appropriateness of the site. This ongoing field project is chronicled [online](#). The other project involved swapping out old instruments with new ones at the La Parguera ICON station, which has been operating continuously since October, 2005. ICON staff led the effort on station electronic upgrades and conducted a field biological survey of the biota. A [blog](#) for this ICON station is also available online.

Updates from the Pacific Region

Mesophotic Coral Cruise to Au'au Channel Completed. On August 8th researchers from the NOAA [Pacific Islands Fisheries Science Center](#) completed an 8-day cruise aboard the [Oscar E. Sette](#) to study mesophotic, or deeper light-dependent, reefs in the Au'au Channel between the islands of Maui and Lana'i. Large colonies of light-dependent corals extend to depths of greater than 130 m and form a complex structure that provides habitat for significant reef fish populations. During the cruise 29 camera sled tows were completed to map the distribution and composition of benthic communities and associated reef fish populations. Light profiles, CTD casts, and instrument moorings were also done. Results will enable researchers to develop a (continued on page 5)



Mesophotic reef fish and corals from the Auau Channel in Hawai'i. Courtesy: Hawaii Undersea Research Laboratory

Pacific continued...

better understanding of these little-known ecosystems, enhancing our ability to manage and preserve them. This work is part of a three-year collaboration with the [Bishop Museum](#), [University of Hawaii](#), and [Hawaii Department of Land and Natural Resources](#) which is funded by NOAA's Coral Reef Ecosystem Studies Program.

PIFSC Completes Main Hawaiian Island Surveys. The [Pacific Islands Fisheries Science Center's Coral Reef Ecosystem Division](#) and [Protected Species Division](#) have completed aerial marine debris and monk seal surveys around Hawaii, Maui, Lana'i, Moloka'i, O'ahu, and Kaua'i as of August 1. During these surveys, 40 monk seals and 1086 derelict fishing gear accumulations were located. Clean-up efforts on Oahu are now complete; 107 marine debris accumulations were located during the survey around Oahu and 98 of these were removed during the clean-up. Permission has also been received to conduct surveys around Kaho'olawe Island on Sept 5.

OCNMS Partners with Canadian Coast Guard for Deep Coral Cruise. [Olympic Coast National Marine Sanctuary](#) (OCNMS) staff completed a deep sea cruise aboard the [Canadian Coast Guard](#) vessel, *John P. Tully*, equipped with the [Canadian Scientific Submersible Facility](#) remotely operated vehicle and a high-definition video camera.

The cruise consisted of two legs, one in Dixon Entrance at the border between Alaska and British Columbia, to document corals, sponges and other benthic fauna. The second leg brought the vessel back to U.S. waters to conduct benthic recovery monitoring along the trenched telecommunications route in the northern portion of OCNMS, to map corals in areas around the trough of the Juan de Fuca Canyon and to conduct one dive in the Juan de Fuca Canyon.

The participants documented large sponge fields in Dixon Entrance as well as an area where current patterns possibly caused an accumulation of rounded dead sponges. The survey along a portion of the cable route went smoothly; the trench was evident without the use of a cable tracker, and several additional potential coral sites were surveyed in the sanctuary. Corals were documented at several of these sites, including *Primnoa*, *Paragorgia*, *Swiftia*, *Plumarella* and *Stylaster* species. Fields of glass sponges were also documented at one site. The canyon dive documented at least three species of black corals as well as other corals, and interesting species such as stalked sponges. OCNMS staff participated on the cruise, providing expertise in invertebrate and fish identifications as well as techniques in recording video data. This was OCNMS's first cruise to utilize cutting-edge high-definition video.

International Updates

Workshop Begins Development of Research Strategy for Deep Light-dependent Coral Ecosystems. National and international scientists and resource managers recently gathered to help develop the first comprehensive strategy to identify and prioritize research and management needs of mesophotic (deeper light-dependent) coral ecosystems. These relatively pristine coral ecosystems are typically found in tropical and sub-tropical regions between 30-100+ meters in association with algal and sponge communities. Mesophotic coral ecosystems (MCEs) can serve as refugia for shallow water species, and may warrant special resource man-

agement attention. This protection will help maintain local and/or regional biodiversity under increasing threats from both natural and anthropogenic sources such as bleaching, disease, harmful fishing practices, overfishing, and climate change. NOAA's [National Centers for Coastal Ocean Science](#) and [National Undersea Research Program](#), in partnership with the [U.S. Geological Survey](#), sponsored this first-ever MCE workshop. The research strategy will guide NOAA, other governmental agencies, and academia as they explore these relatively unknown coral ecosystems.

IYOR PSAs

A free [IYOR PSA](#) related to the U.S. Messaging Campaign's main message was added to the national broadcast rotation for all Discovery TV Networks on June 19; it will run through the end of 2008.

The English version is 15 seconds; the 30 second Spanish version is in national broadcast rotation on the Discovery Channel Latina.

PSAs for each of the five action messages are also available on the [Web page](#) listed above.

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

New Products in CoRIS

New Publications Available From CoRIS.

The *Implementation of the National Coral Reef Action Strategy: Report to Congress (2008)* is now available from the [Coral Reef Information System](#) (CoRIS). The full report or individual chapters can be downloaded. CoRIS has also added *The State of Coral Reef Ecosystems of the*

United States and Pacific Freely Associated States: 2008, and the *Coral Reef Ecosystem Monitoring Report for American Samoa: 2002-2006*; links to these documents can also be found on the CoRIS home page under 'New Publications.' For each document, users have the option to download the full report or individual chapters.

Publications

Published Proceedings of 2007 AMLC Meeting Highlights NCCOS Coral Ecosystem Research as Critical for Understanding Valuable Coral Ecosystems. In support of disseminating research and encouraging more effective collaboration, NOAA's [National Centers for Coastal Ocean Science](#) (NCCOS) funded the publication of the 2007 Meeting of the [Association of Marine Laboratories of the Caribbean](#) (AMLC) Proceedings as a dedicated issue [Vol. 56 (Suppl. 1)] of the *Journal of Tropical Biology*. The meeting has served as the main venue to disseminate results of research conducted in the Caribbean Basin, including research funded through NCCOS' [Coral Reef Ecosystem Studies](#) (CRES) research program. CRES projects in the Caribbean seek to understand how coral ecosystems respond to multiple threats in order to assess alternative management strategies by local and regional resource managers. The Proceedings underscore the need for comprehensive research programs, such as CRES, to increase our knowledge of poorly understood, yet valuable, coral ecosystems. Access to the proceedings will be available in the coming weeks.

Press Release on Ocean Acidification and Coral Reefs. [Coral Reef Watch](#) contributed to a study entitled [Reefs may "unglue" in Oceans with High Carbon Dioxide](#) that was featured in the News from NOAA section of the NOAA home page in late July. The study, released in the July 28 issue of the *Proceedings of the National Academy of Sciences*, found that the coral reefs of the eastern tropical Pacific provide a real-world example of the challenges all reefs will face due to ocean acidification. Dr. C. Mark Eakin of CRW was one of the co-authors of the study led by Dr. Derek Manzello of NOAA's [Atlantic Oceanographic and Meteorological Laboratory](#) in Miami, FL. This was the first attempt to characterize the impacts of ocean acidification on coral reef ecosystems by examining naturally occurring, high CO₂ reef environments. The impact of ocean acidification seems to be the drastic reduction in the production of the cement that allows reefs to grow into large, sturdy structures and thus reefs in the future may be much more susceptible to erosion.

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.

