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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](#).

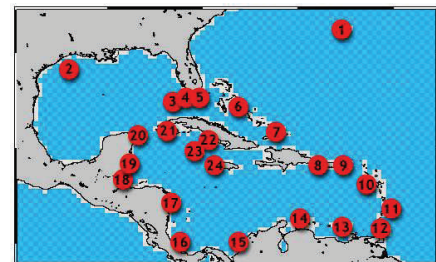
Announcements

Correction to Photo Credit in October Issue. External subscribers received the October issue of *Coral Reef News* electronically on November 2. A photo of the *Lady Basten* on page four was incorrectly attributed to NOAA Coral Reef Watch in that version of the newsletter. The citation should read, "Credit: R. McAllister © Australian Institute of Marine Science." The electronic version available [online](#) includes the corrected information. The editor apologizes for any inconvenience this error may have caused.

Draft Pacific Socioeconomic Monitoring Guidelines Released. After 2.5 years of discussion and collaboration, the Pacific region now has a draft set of socioeconomic monitoring guidelines that incorporates indicators used by the [Global Socioeconomic Monitoring Initiative](#) (SocMon) and the [Locally Managed Marine Areas](#) (LMMA) Network into a user-friendly format. The guidelines and associated initiative, co-led by NOAA and the [South Pacific Regional Environment Programme](#) (SPREP), are referred to as SEM-Pasifika. The draft guidelines were launched at the SPREP Conservation Conference on October 26 in Alotau, Papua New Guinea. This is an exciting milestone on the road to being able to collect comparative data on human use of coral reef areas in the Pacific region. The final SEM-Pasifika guidelines will be launched in January 2008 to coincide with the [International Year of the Reef](#). Following the Conference, NOAA and SPREP held a field test and train-the-trainers workshop. See the 'International' section of this issue for details on the training.

CRW Announces Experimental Expansion of Satellite Bleaching Alert System. NOAA [Coral Reef Watch](#) (CRW) is pleased to announce a new product, an [experimental expansion of the Satellite Bleaching Alert \(SBA\) system](#). Adding to the 24 operational SBA sites, 33 new experimental Virtual Stations have been implemented, including many locations in the Florida Keys, Caribbean and Gulf of Mexico. Special focus was given to the Centre of Excellence sites designated under the World Bank/[GEF Coral Reef Targeted](#)

Research Program: Zanzibar, Tanzania; Puerto Morelos, Mexico; Heron Island, Australia; and Bolinao, Philippines. Each of these sites now has its own Web page, with zoomed-in views of the CRW satellite bleaching data products and time series graphs. For all of the new sites, users can sign up for SBA e-mails, automatically warning them when bleaching conditions change in their chosen location (s). These new Virtual Stations are currently in an experimental phase while CRW continues to expand the network.



Virtual Stations of the greater Caribbean region: locations #1, 4, 6, 8, 9, and 18 are operational, the other 18 stations are the new experimental stations. Click [here](#) for more details. Courtesy: NOAA Coral Reef Watch

CRW Announces New Data Resource for Reef Managers. NOAA [Coral Reef Watch](#) (CRW) is pleased to announce a second new product now available on its Web site, a Web page that links to [remote sensing datasets for coral reef managers](#). This new Web page has been developed as a data portal to remote sensing datasets that are freely available over the Web, including data sets from other agencies, organizations, and educational institutions. The focus is on global, near-real-time data that would be useful for coral reef managers and researchers around the world: e.g. sea surface temperature and thermal stress, ocean surface winds, sea surface height anomalies, precipitation, sea surface currents, etc. The compilation includes a variety of data formats, including easy-to-use imagery, to meet a variety of user needs. This project is part of the World Bank/[GEF Coral Reef Targeted Research Program's](#) Remote Sensing Working Group.

UPCOMING EVENTS

December 2007

3 – 7: CLIOTOP (CLimate Impacts on Oceanic TOP Predators). La Paz, United Mexican States.

January 2008

24 – 25: Launch of International Year of the Reef. Washington, DC

February 2008

27 – 29: 19th U.S. Coral Reef Task Force Meeting, Washington, DC



The **11th ICRS**, with the theme of **Reefs for the Future**, will be held in **Ft. Lauderdale, FL, July 7-11, 2008**. The **11th ICRS** is also a key-stone event within the **International Year of the Reef (IYOR) 2008**.

Updates from Headquarters

CRW Products Highlighted in SeaCAMEL Live Broadcast from Aquarius. In mid-November, the Living Oceans Foundation and partners, including NOAA, broadcast six live “underwater classrooms” which took place sixty feet below the surface of the Atlantic Ocean on the coral reefs of the Florida Keys. [Project Sea-CAMEL: Classroom Aquarius Marine Education Live](#) was particularly targeted at schools and is being used in classrooms across the country and internationally. The broadcasts ran over a period of three days while scientists and videogra-



A bunkroom porthole on Aquarius offers a Aquanauts a view of Conch Reef. They must spend 16-17 hours in decompression following any Aquarius missions to avoid decompression sickness. Courtesy: Annelise Hagan

phers lived submerged underwater in NOAA’s [Aquarius Undersea Laboratory](#), America’s “inner space station.” While SeaCAMEL was not directly involved with NOAA’s [Coral Reef Conservation Program](#), “Module 3: Reefs Under Siege” highlighted the NOAA [Coral Reef Watch](#) (CRW) coral bleaching products, including several minutes of description of NOAA’s Coral Bleaching HotSpot and Degree Heating Week Products and a tour of these products using the

Google Earth interface. The demonstration was conducted live from the Aquarius habitat with a real-time internet feed to NOAA’s coral bleaching products. See the ‘Atlantic/Caribbean’ section of this issue for further details on the mission.

CRW Attends Ocean Acidification Workshop.

[Coral Reef Watch](#) (CRW) scientists participated in the Ocean Carbon Biogeochemistry (OCB) Scoping Workshop on Ocean Acidification Research held October 9-11 at the [Scripps Institution of Oceanography](#) in California. The [National Science Foundation](#) (NSF)-sponsored workshop sought to make significant progress toward specific implementation strategies addressing the many gaps and unknowns about ocean acidification that have been identified in previous workshops. A CRW scientist moderated a session examining the implications of ocean acidification for ecosystems and the use of remote sensing to assess ocean acidification on particulate inorganic carbon. In addition, a poster was offered entitled the “Ocean Acidification of the Greater Caribbean Region 1996 – 2006.” The poster presented findings following a retrospective analysis of sea surface pCO₂ in the Greater Caribbean Region characterizing the changes in surface ocean carbonate chemistry that have transpired over the past decade in this region. The surface pCO₂ was modeled by coupling satellite remote sensing and *in situ* datasets. A major outcome of the workshop will be a forthcoming report describing these implementation strategies. Among the key recommendations put forward, the community cited a need for a coordinated interagency program on ocean acidification and identified critical technology gaps that still remain.

Updates from the Atlantic/Caribbean Region

SEFSC Research Presented at GCFI Meeting in Punta Cana. [Southeast Fisheries Science Center](#) (SEFSC) coral reef research was the topic of eight presentations at the **60th International Gulf and Caribbean Fisheries Institute** (GCFI) meeting, held November 5-9 in Punta Cana, Dominican Republic. Staff presented at an international [symposium on goliath grouper](#) at the GCFI meeting and participated in a region-wide priority setting meeting for the species. Nassau grouper and spawning aggregations were the topics of two additional symposia that were attended by SEFSC scientists. Abstracts for all

meeting presentations are available in the Final Program on the meeting Web page.

Benthic Habitat Maps Support Development of Biological Monitoring Program in Palau. Digital maps of Palau’s seafloor and coral reef habitats recently completed by researchers from NOAA’s [National Centers for Coastal Ocean Science](#) will serve as a key tool in establishing a biological monitoring program in Palau. This product will support Palau in meeting the goals of the Micronesia Challenge. In addition, the data and maps will be (*continued on page 3*)

Atlantic/Caribbean continued...

used to evaluate the effectiveness of local marine conservation areas and will identify new areas for protection. The maps and geospatial data were developed in cooperation with NOAA's [Coral Reef Conservation Program](#) and the Republic of Palau; they are the result of the first comprehensive assessment of the extent and types of Palau's coral reefs. The study reveals that live coral covers approximately 35 percent of Palau's shallow-water sea floor, a high percentage relative to other areas that NOAA has mapped. The maps, data, and associated information are available [here](#).

Sediment Contamination Report to Enhance Management of a Natural Reserve Area in Southwest Puerto Rico. NOAA's [National Centers for Coastal Ocean Science](#) recently released a report on sediment contamination for Southwest Puerto Rico that provides important baseline data to support the sustained management of local marine resources. The report, [An Assessment of Chemical Contaminants in the Marine Sediments of Southwest Puerto Rico](#) (pdf, 3.83 MB) presents the first in-depth characterization of chemical contamination for this part of Puerto Rico. The report also provides a preliminary analysis of the association between sediment contaminants and coral species richness; it supplies an assessment framework that can be used to determine linkages between chemical contaminants and the condition of coral reefs. In this phase of the project, over 120 organic and inorganic contaminants were analyzed in the sediments collected. This popular tourist area has also been designated a Natural Reserve by the Puerto Rico Department of Natural and Environmental Resources.

Educational Campaign with the Puerto Rico Tourism Company Completed. The [National Marine Fisheries Service's](#) Caribbean Field Office has completed a project with the Puerto Rico Tourism Company culminating in the production of educational pamphlets about the importance of seagrass, mangroves, and corals and best practices tourists should follow when visiting areas containing these important habitats. Information from the pamphlets has been placed on the Tourism [Web site](#), and a conservation message was published in the October issue of the *¡Qué Pasa!* tourism magazine. In addition, as part of the campaign a full-page color announcement promoting beach clean up and protection of marine resources was published in *El Nuevo Día*, a local newspaper with the highest circulation in Puerto Rico.

NOAA Scientists Document Unique Deep-water Coral Mortality Event. NOAA scientists and their partners from the [U.S. Geological Survey](#) and [National Park Service](#) have shared information about a substantial coral decline on a deep reef in the U.S. Virgin Islands. The information is presented in an article entitled '[A deep reef in trouble](#)' in the October 1st issue of the journal *Continental Shelf Research*. The scientists estimated a coral cover decline of 25 percent based upon photos taken using a remotely operated vehicle during a sea floor mapping mission in 2005, funded by NOAA's [Coral Reef Conservation Program](#). Deeper coral colonies were more affected than shallower colonies on the same reef. This is the first discovery of such a pattern of coral loss on a deep reef in the Caribbean. The extensive loss of deep reef coral is especially noteworthy as these corals could serve as a source of future recruits for shallow reefs during times of stress. NOAA and its partners are continuing their research efforts to fill critical information gaps about the condition of deep coral reefs and the possible ecological linkages with shallow reefs. Please see the [press release](#) for more information.

Project SeaCAMEL: Education Under the Sea. NOAA, the [Virginia Institute of Marine Science](#) (VIMS), and the [Living Oceans Foundation](#) recently teamed up to study the health of Conch Reef in Key Largo, Florida. The mission, [Project SeaCAMEL: Classroom Aquarius Marine Education Live](#), was an educational outreach effort by the Living Oceans Foundation, a non profit organization dedicated to ocean research and conservation. Six classroom modules geared towards college (*continued on page 4*)



A reef has grown on the underbelly of the Aquarius Undersea Laboratory in the Florida Keys National Marine Sanctuary. Courtesy: Annelise Hagan



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.

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



NOAA celebrates 200 years —Read the [CRCP Foundations, Visions, and Feature story](#) articles.

Protect Reefs

If you snorkel or dive, don't touch!

Take only pictures and leave only bubbles. Keep your fins, gear, and hands away from the reef, as this contact can hurt you and will damage the delicate coral animals. Stay off the bottom because disturbed sediments can smother the corals.



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

Check it Out!

CRCP coral reef health monitoring is highlighted in the [Earth Observation Feature](#) on NOAA's home-page.

Atlantic/Caribbean continued...

students were presented online and via satellite broadcasts live from 60 ft beneath the sea, November 12-14. More than 30 elementary and middle schools, universities, museums and aquaria around the country and in Mexico and the United Kingdom participated in Project Sea-

CAMEL's interactive sessions, which are now [archived online](#). In December, a lesson plan and assignments for Grades 8 - 12 will be available free from project partner [Immersion Presents](#). For photos, videos, Webcasts, press releases and more, please visit the Web site.

Updates from the Pacific Region

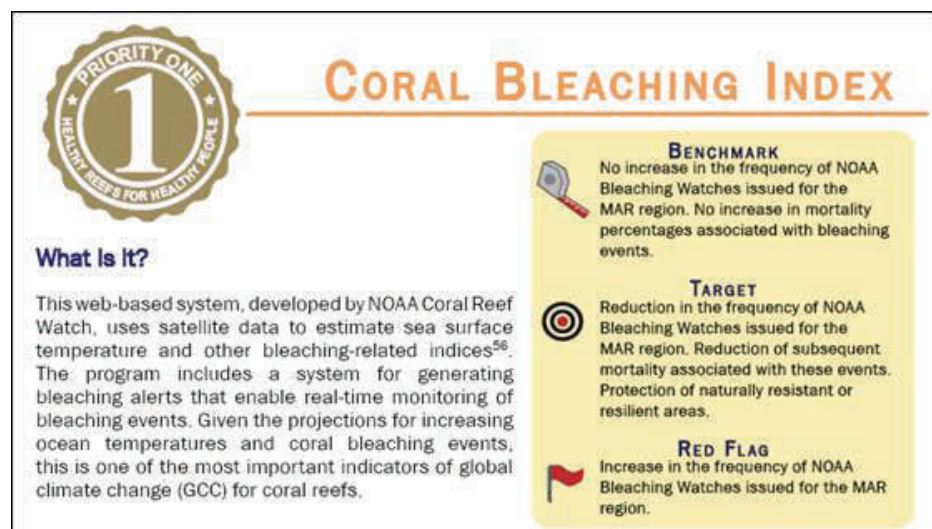
Monument Managers Seek Comments on Natural Resources Science Plan. Building upon previous efforts to develop research priorities for the [Papahānaumokuākea Marine National Monument](#), Monument scientists are working to develop a Natural Resources Science Plan for the ecosystems of the Northwestern Hawaiian Islands. The plan will guide research priorities in the Monument for the next five

years. A review of the plan's proposed research framework was presented at a public scoping meeting November 15 and initiated a two-week comment period that will run until November 30, 2007. Following the public comment period, a draft plan and a supplemental environmental assessment will be developed. Visit the Science Plan [Web page](#) for more information and instructions for submitting comments.

International Updates

CRW Bleaching Products are a Featured Indicator of Coral Reef Health. The [Healthy Reefs for Healthy People](#) initiative is an international, multi-institutional effort that tracks the health of the Mesoamerican Reef, the human choices that shape it, and progress in ensuring its long-term integrity. The founding members are the [World Wildlife Fund](#) (WWF), the [Mesoamerican Barrier Reef System Project](#) (MBRS),

the [World Bank](#), the [Summit Foundation](#), and Perigee Environmental. One of the initiative's priorities is to define what a healthy reef is and improve tracking of reef health through common indicators. To that end, the initiative has just published [A Guide to Indicators of Reef Health and Social Well-being in the Mesoamerican Reef Region](#). This guide gives a special highlight to 20 "highest priority indicators" of (continued on page 5)



An excerpt from page 116 of the [Guide to Indicators of Reef Health](#) shows Indicator D14, the coral bleaching index. Courtesy: Healthy Reefs for Healthy People Initiative

International continued...

healthy reefs. The NOAA [Coral Reef Watch](#) (CRW) satellite data products, and especially the automated Satellite Bleaching Alert e-mails, are included as "one of the most important indicators of global climate change (GCC) for coral reefs." This publication is especially designed to maximize the limited monitoring resources available in the Mesoamerican Reef regions of Mexico, Belize, Guatemala, and Honduras, so the free global data products from NOAA are especially valuable to this effort. Visit the Healthy Reefs for Healthy People site for more information on the initiative or to download a pdf copy of the indicators guide.

Field Test of Draft SEM-Pasifika Guidelines. On October 29-November 2, NOAA and the [South Pacific Regional Environment Programme](#) (SPREP) co-organized a training on socioeconomic monitoring in the Pacific region (SEM-Pasifika). The training workshop also served as a field test of the draft SEM-Pasifika guidelines. The workshop was held in Galahi, Papua New Guinea (PNG), following a regional conference on marine conservation. Attendees hailed from Palau, Federated States of Micronesia, Hawaii, Fiji, Tuvalu, Vanuatu, PNG, Solomon Islands, and Indonesia. Seven local community members also joined the training from the field sites of Bwasitau, Sawasawaga, and Sunaleilei villages. After a day and a half of learning background information in the classroom, the participants split into three groups and each group was turned loose on a local community to practice the skills they had learned. The participants provided a great deal of constructive criticism to streamline and improve the draft guidelines. This input will be incorporated in the coming months before finalization of the SEM-Pasifika



Workshop participant Frieda Paiva interviewing community members in Bwasitau village, Papua New Guinea.
Courtesy: Mike Guilbeaux

guidelines. The workshop was filmed by a local videographer and will be made into a regional training video for conducting socioeconomic assessments. To learn more, visit the [Global Socioeconomic Monitoring Initiative](#) Web site.

CRW Presents Bleaching Training Workshop Tanzania. [Coral Reef Watch](#) (CRW) scientists conducted a training workshop for coral reef managers in Zanzibar, Tanzania, from Sept 15 - 16. The training was hosted by the [Institute of Marine Sciences, University of Dar es Salaam](#), and was attended by approximately 30 coral reef managers and scientists from Tanzania, Kenya, the Comoros, the Seychelles, Uganda, and Mozambique. The workshop, funded under the World Bank/[GEF Coral Reef](#)



Workshop attendees pose during a field training exercise at Chumbe Island Coral Park. Courtesy: NOAA Coral Reef Watch

[Targeted Research Program](#), was designed to build capacity with reef managers for the utilization of CRW's satellite remote sensing tools that warn of regions at risk for coral bleaching. Lectures on remote sensing and CRW's suite of sea surface temperature data products were followed by hands-on exercises to give the audience practical experience with using the data to find areas at risk for coral bleaching. The goal of the workshops was to build an informed and active user community who will incorporate CRW's satellite data into their reef management protocols and provide feedback to improve CRW's products. The two-day CRW workshop was part of a larger training session in geographic information system (GIS) and remote sensing for marine scientists and resource managers from the Western Indian Ocean Region.

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.

