

**CORAL REEF NEWS**  
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NOAA Coral Reef News is a monthly e-newsletter established to provide current information on the activities of the National Oceanic and Atmospheric Administration's (NOAA) Coral Reef Conservation Program (CRCP) and other relevant NOAA programs. The CRCP supports effective management and sound science to preserve, sustain and restore valuable coral reef ecosystems. Back issues are available at <http://www.coralreef.noaa.gov>.

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## OF SPECIAL NOTE

**Key Outcomes of the 15<sup>th</sup> U.S. Coral Reef Task Force Meeting.** At its semi-annual meeting on May 4<sup>th</sup>, the U.S. Coral Reef Task Force (USCRTF) announced a new coral reef conservation initiative aiming for stronger enforcement of aquarium reef fish trade harvesting regulations. Although illegal in most countries, the use of cyanide to capture reef fish alive is widespread. The U.S. is the number one market for coral reef fish for the aquarium trade. Previous studies estimate that most live reef fish entering into international trade and imported into the U.S. are collected with the use of cyanide, and thus are illegal. The proposed study will research field-based cyanide detection tests for use by enforcement authorities. Tests capable of producing reliable results several weeks after exposure to cyanide could also aid the U.S. in restricting suspected illegal imports. The Task Force panel also endorsed declaring 2008 “International Year of the Reef.” The year-long campaign would include events and initiatives hosted by a wide range of government and nongovernmental organizations. A range of significant international events are planned for 2008, including the quadrennial International Coral Reef Symposium, the release of global and U.S. reports on the condition of coral reef ecosystems, and the 10th anniversary of the USCRTF. USCRTF members dealt with a variety of other issues in the day-long meeting; they received results of the task force’s Local Action Strategy (LAS) initiative and findings of the international collaborative assessment of the 2005 Caribbean coral bleaching event. Additionally, they heard an update on the proposal to designate the Northwestern Hawaiian Islands Coral Reef Ecosystem as the nation’s 14<sup>th</sup> national marine sanctuary. At the meeting, NOAA also announced the listing of elkhorn coral and staghorn coral as threatened species under the Endangered Species Act (ESA). See the article below for more information on the ESA listing. For the full

NOAA press release on the outcomes of the USCRTF meeting, visit:

<http://www.publicaffairs.noaa.gov/releases2006/may06/noaa06-052.html>.

**NOAA Fisheries Lists Elkhorn and Staghorn Corals as Threatened Under the Endangered Species Act.** At the U.S. Coral Reef Task Force Meeting on May 4, NOAA’s National Marine Fisheries Service (NOAA Fisheries) announced its decision to list elkhorn (*Acropora palmata*) and staghorn corals (*Acropora cervicornis*) as threatened under the Endangered Species Act (ESA). The final rule was published on May 9, 2006 (71 FR 26852, <http://www.nmfs.noaa.gov/pr/pdfs/fr/fr71-26852.pdf>), and the listing will be effective 30 days after that date. This will be the first time a coral has been listed as endangered or threatened under the ESA. A species is considered threatened if it is likely to become an endangered species within the foreseeable future. The threatened status of these *Acropora* species is due to a combination of factors including diseases, hurricanes, and elevated sea surface temperatures. To provide for the conservation of these two species, NOAA Fisheries must develop special regulations to spell out prohibitions and exemptions, as well as designate critical habitat. Throughout May, the Fisheries Service hosted seven conservation workshops to gather information from the public, constituents, and resource users. The workshops were designed to seek input from participants to help identify programs and activities that may affect these species, physical and biological features essential for conservation, and possible areas to designate as critical habitat. For more information, visit <http://sero.nmfs.noaa.gov/pr/protres.htm> or read the NOAA press release at <http://www.nmfs.noaa.gov/docs/Coral%20Release.pdf>. See the ‘Coral Reefs in the News’ section for a sampling of media coverage that resulted from the ESA listing.

## ANNOUNCEMENTS

### **New NWHICRER Brochure Now Available.**

The Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve (NWHICRER) brochure was printed at the end of last April. The combined Reserve/Sanctuary Designation brochure highlights the special character of the NWHI, the National Marine Sanctuaries (NMS) designation process and how people can get involved. To request copies contact [Andy.Collins@noaa.gov](mailto:Andy.Collins@noaa.gov).

### **Five-Year Report on Protecting NWHI Coral Reefs Now Available.**

NOAA has released a five-year report outlining the status of efforts by NOAA and partners to protect, study and manage coral reef ecosystems in the Northwestern Hawaiian Islands (NWHI) since a marine reserve was established there in 2000. NOAA's *State of the Reserve: 2000-2005* reports that the NOAA-managed reserve has coordinated scientific studies at nearly 400 sites throughout the archipelago, helped remove more than 500 tons of marine debris from coral reefs, and engaged the public through education and outreach programs, public meetings and exhibits. In addition, there has been an extensive public process to consider designating the area as a national marine sanctuary. Over 52,000 public comments are now logged, and many stakeholder and constituent meetings have occurred. Covering 134,575 square miles of coral reef and deep water habitat, the reserve is the single largest conservation area — marine or terrestrial — in the United States. One in four species there are found nowhere else. Because of their isolation, the still-wild coral reefs are among the healthiest and most extensive reef ecosystems on the planet. Since its inception, the reserve and all of its operations have been funded by NOAA's Coral Reef Conservation Program. The report is downloadable from <http://www.hawaiiireef.noaa.gov/documents/welcome.html>. Contact [Stephanie.Lachance@noaa.gov](mailto:Stephanie.Lachance@noaa.gov) to request

hard copies. Read the NOAA press release on this report at

<http://www.publicaffairs.noaa.gov/releases2006/may06/noaa06-r448.html>.

**USCRTF Presents Awards.** In recognition of significant contributions to the study or protection of coral reefs, the U.S. Coral Reef Task Force (USCRTF) presented seven awards during the recent USCRTF meeting. Awards were presented for four categories; Outstanding Advancement of Scientific Knowledge awards went to Dr. John Ogden and Dr. Joseph Connell, Outstanding Public Awareness and Education awards went to Mr. Paul Humann and Mr. Ned DeLoach, and Outstanding Management awards went to Dr. Al Strong and the Atlantic *Acropora* Biological Review Team. The latter is comprised of Mr. Rafe Boulon, Mr. Mark Chiappone, Dr. Bob Halley, Mr. Walt Jaap, Dr. Bill Kruczynski, Dr. Brian Keller, Dr. Margaret Miller and Dr. Caroline Rogers. In addition, Senator Daniel K. Inouye of Hawai'i was presented with a special Coral Champion award for lifetime contributions to the conservation and management of coral reefs. Congratulations to all of these outstanding stewards of coral reefs. Look for more specific details on the USCRTF Meetings Web page

(<http://www.coralreef.gov/taskforce/meetings.html>).

## UPDATES

### *Atlantic*

**Tortugas Monitoring Update.** Reef fish visual census sampling has begun in the upper Keys in support of the National Marine Fisheries Service (NOAA Fisheries) Southeast Fisheries Science Center (SEFSC) project, 'Assess and monitor coral reef MPAs.' Additionally, as part of the same project, considerable planning efforts are underway in preparation for two back-to-back sampling cruises to the Tortugas region in June. The data generated from the cruises will allow researchers to continue to assess the effects of MPA establishment on coral reef communities in

the Tortugas, as well as the effects of multiple hurricanes.

**Keys Study to Quantify Changing Conditions in Biscayne Bay.** Sampling has been completed for the first phase of the National Marine Fisheries Service (NOAA Fisheries) Southeast Fisheries Science Center (SEFSC) 'Reefs Revisited' study. An initial study was performed in the late 1970s and early 1980s examining reef fish and benthic community structure at eight coral reef sites in Biscayne National Park. In coordination with the National Park Service, SEFSC researchers are repeating the study more than 25 years later to assess changes that have occurred over time. For the first phase of sampling, they have collected comprehensive fish data during 84 50-minute surveys. The study is of particular interest because it will result in one of the few examples for the upper Keys in which quantitative comparisons can be made between present and past conditions.

**The First International Symposium on Mangroves as Fish Habitat (April 19–21, 2006).**

The National Marine Fisheries Service (NOAA Fisheries) Southeast Fisheries Science Center (SEFSC) and NOAA's Coral Reef Conservation Program, along with several other sponsors, hosted the First International Symposium on Mangroves as Fish Habitat at the University of Miami's Rosenstiel School of Marine and Atmospheric Science (RSMAS). Mangroves and adjacent seagrass beds provide critical habitat for coral-reef fish and invertebrates, many of which are of high commercial value. The symposium attracted over 160 scientists, managers, and educators from 25 countries; it was comprised of five sessions: (1) Nursery and trophic function; (2) Community ecology and connectivity; (3) Disturbance and restoration; (4) Mangrove-fishery linkages; and (5) Conservation, management, and socio-economics. Among the many highlights was the application of new and novel techniques and approaches towards issues of mangrove function and connectivity. These included

advanced molecular methods, stable isotope analyses, otolith microchemistry investigations, and the use of electronic tags. Also, the economic values of mangroves and the social dimension of mangrove fisheries were discussed using case studies from nations around the globe. A total of 38 manuscripts were submitted for the symposium proceedings; those that pass peer-review will be published in a special issue of *Bulletin of Marine Science* scheduled for publication in May 2007. The symposium's program can be found at: [http://www.rsmas.miami.edu/conference/mangrove-fish-habitat/pdf/Agenda\\_Final.pdf](http://www.rsmas.miami.edu/conference/mangrove-fish-habitat/pdf/Agenda_Final.pdf).

**Biogeographic Assessment of Reef Fish Communities in the Flower Garden Banks National Marine Sanctuary Launched.**

Scientists from the National Centers for Coastal Ocean Science's (NCCOS) Center for Coastal Monitoring and Assessment (CCMA) and the National Marine Sanctuary Program's (NMSP) Flower Garden Banks National Marine Sanctuary recently launched a collaborative biogeographic assessment of fish communities inside the sanctuary. Building upon a wealth of inventory work conducted to date, the project will result in a spatially-explicit quantitative assessment of reef fish resources on coral cap communities within the sanctuary. The completed assessment will be used by sanctuary managers, scientists and educators in efforts to understand, manage and provide outreach about the natural resources and habitats within the sanctuary, including future efforts to develop reef fish assessments in sanctuary waters deeper than 100 feet. The scientists met on May 11, 2006 in Galveston, Texas to launch this project, which is a part of a continuing CCMA partnership with the NMSP to help design a research strategy to address management needs for the Flower Garden Banks and provide scientific expertise nationwide. Starting the week of June 19, visit [http://ccma.nos.noaa.gov/ecosystems/sanctuaries/fgb\\_nms.html](http://ccma.nos.noaa.gov/ecosystems/sanctuaries/fgb_nms.html) for more information on this project.

### **Report on ICON/CREWS Science Meeting.**

During the week of April 24-27, 2006, more than 20 scientists, students, and colleagues met in La Parguera, Puerto Rico for a science meeting of the Integrated Coral Observing Network (ICON). The meeting was held to discuss plans for starting a climate change/ocean acidification program at the University of Puerto Rico (UPR) Department of Marine Science's Magueyez Island Marine Laboratory. This is also the site of the new NOAA/UPR collaborative Caribbean Coral Reef Institute (CCRI). Several scientists gave presentations on climate change and explained how the ocean's carbonate chemistry has changed over the millennia, and how it will likely change in the future. New efforts and collaborations began with the Caribbean Regional Association of the Integrated Ocean Observing System (IOOS). A discussion of ongoing collaborative research efforts in oceanography occurred as well. Additional discussion topics included ocean optics, coral bleaching and disease, hydroacoustics, and other projects. See the next article for an additional product of the meeting.

**Media Luna CREWS Station Update.** During the Integrated Coral Observing Network (ICON) science meeting in late April, plans were instituted to add an additional utility to the Coral Reef Early Warning System (CREWS) station at nearby Media Luna Reef. This additional utility, a calculation of the Saharan Dust Index, will make use of existing data and add new instrumentation to the station. Data from the underwater ultraviolet light sensors, as well as other instruments at the Magueyez Island Laboratory, will be utilized to calculate a Saharan Dust Index in near real-time, beginning just ahead of the June influx of Saharan Dust at La Parguera. These data are expected to give new insight into the effects the dust has on coral and other marine diseases. A pCO<sub>2</sub> sensor and water sampler will be installed during May and June to begin studies in ocean acidification.

**Summit-to-Sea Data Available to Coastal Managers Online.** Geospatial data from the National Centers for Coastal Ocean Science's (NCCOS) Summit-to-Sea project – a study of the linkages among terrestrial watershed characteristics, erosion, sediment delivery to coral reefs, and changes in the marine environment – are now available to coastal managers online. The data are available through NOAA's Coral Reef Information System (CoRIS), and include all of the inputs, derived products, and model results evaluating the land-based threats to coral reef ecosystems in Puerto Rico and the U.S. Virgin Islands. The watershed characterizations (<http://coris.noaa.gov/metadata/list/GeographicInformationWatershedCharacterization.html>) summarize physical and biological factors affecting soil erosion and land-based threats to marine ecosystems. They will help managers identify areas for improved watershed management as well as vulnerable coral reef ecosystems for monitoring and conservation efforts. Learn more about the project at [http://ccmaserver.nos.noaa.gov/ecosystems/coralreef/summit\\_sea.html](http://ccmaserver.nos.noaa.gov/ecosystems/coralreef/summit_sea.html). The data and associated metadata can be downloaded from the CoRIS website; links are listed in the table on page 14.

### *Pacific*

**Pacific Regional Monitoring Meeting Helps National Coral Reef Ecosystem Monitoring Program Refine Management Efforts.** Coral monitoring grant recipients from throughout the Pacific met in Honolulu, Hawai'i on April 27-28 to discuss work conducted with the support of NOAA's National Coral Reef Ecosystem Monitoring Program. Since inception of the program in 2000, grant recipients have focused their efforts on monitoring various aspects of coral reef ecosystem health, including parameters related to water quality, seafloor habitats, and fish and other reef inhabitants. Program participants collaborated with National Center for Coastal Ocean Science (NCCOS) scientists, other NOAA Coral Reef Conservation Program staff, and each

other to improve coordination related to grants management, present information about the direction and progress of monitoring activities, and plan for production of the next 'State of the Reefs' report, which will be released in 2008. The regional meetings are held every two to three years, and include representatives from Hawai`i, American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, Palau, the Marshall Islands, and the Federated States of Micronesia. The Pacific regional meeting was complemented by an Atlantic/Caribbean regional meeting May 18-19 in Miami, Florida.

**Marine Debris 'Hotspots' Mapped in Hawai`i.** NOAA's Marine Debris Program supports critical marine debris reduction and prevention efforts along the coasts, including the first-ever aerial survey and removal project being implemented by NOAA's Pacific Islands Fisheries Science Center (PIFSC) in Hawai`i. One of the most pervasive problems plaguing the world's oceans and coastal areas, marine debris threatens marine life, poses navigational hazards, and harms the aesthetic value of beaches. As part of a national effort to address the problem, NOAA staff were trained this year to work from helicopters to spot and survey debris around the treasured coastlines of the main Hawaiian Islands. The helicopter surveys are a key element of this new, comprehensive effort to determine the distribution, abundance and effects of marine debris, about which relatively little is known. Working with a broad-based partnership, NOAA designed a multi-step program that has included using survey information to create maps showing the distribution and abundance of debris. The surveys of Kaua`i, Moloka`i, Lana`i, Maui, O`ahu and the Big Island of Hawai`i are now complete. With over 650 debris sites reported, the marine debris problem has proven to be greater than expected. Statistical information derived from the surveys will aid communities and federal, state and local coastal managers to identify and

prioritize clean-up areas and target sites for future monitoring. For more information, visit [http://marinedebris.noaa.gov/about/main\\_hawaiian.html](http://marinedebris.noaa.gov/about/main_hawaiian.html).

**PIMPAC Develops Training at Yap Meeting.** NOAA Coastal Programs Division (CPD) staff held a meeting for the Pacific Islands Marine Protected Area Community (PIMPAC) on the Micronesian island of Yap from May 1-5. PIMPAC is a network of marine protected area (MPA) practitioners across the Pacific Islands and includes representatives from various NOAA offices, including the National MPA Center, the National Marine Sanctuaries Program, the National Marine Fisheries Service, and the Pacific Services Center. The main objective of the Yap meeting was to develop a regional training module for MPA practitioners that builds MPA management capacity in the region and supports local MPA initiatives. To do this, a small group of MPA experts from Palau, Hawai`i, the Commonwealth of the Northern Mariana Islands, the Marshall Islands, and the Federated States of Micronesia came together to develop the training module based upon their combined experience. The focus of the module is on stakeholder engagement and developing management plans for MPA effectiveness. The meeting was followed by a pilot testing of the newly developed module with a local community in Yap that is working to establish a new MPA. A larger regional training will be implemented in September.

**HCRI-RP Improves Student Awareness of Native Marine Life.** Understanding the importance of public education, the Hawai`i Coral Reef Initiative Research Program (HCRI-RP), sponsored by the National Centers for Coastal Ocean Science (NCCOS), is working towards the development of a comprehensive marine science curriculum that will be implemented throughout the State of Hawai`i. During a recent meeting of the Center for Sponsored Coastal Ocean Research (CSCOR) Program Managers, a class of 16 three-

year olds from the Wesley Enrichment Program in Honolulu, Hawai`i were treated to an engaging demonstration of just a few of the lessons currently being developed. The lessons focused on the physical and behavioral characteristics of sea turtles and of monk seals, one of the most endangered of all seals. The demonstration coincided with a class field trip to the Waikiki Aquarium the following week.

**NCCOS and Partners Identify Effects of Rotational Fishing Closures in Hawaiian Marine Protected Areas.** Rotational closures, as practiced in the Waikiki-Diamond Head Fishery Management Area (FMA), are not as effective as complete closure in conserving fish stocks and revitalizing public fishing grounds. The National Centers for Coastal Ocean Science (NCCOS) and its partners recently published this finding along with other results in *Marine Ecology Progress Series* in a study of the effects of fishing closures on coral reef fishes. The study describes how data from the State of Hawai`i's long-term reef monitoring program show that reef fish biomass increased during the one- to two-year closure periods, but declined during the open periods. The net effect was that total biomass, especially for large species targeted by fishing, declined by two thirds from 1978 to 2002. In 1988, a portion of the FMA was designated as the Waikiki Marine Life Conservation District (MLCD) and permanently closed to fishing, after which reef fish biomass within the permanently closed MLCD increased to a level twice as high as in the rotational closure FMA. Additional details can be found online at <http://ccma.nos.noaa.gov/ecosystems/coralreef/hirfh.html> , <http://www.cop.noaa.gov/ecosystems/coralreefs/current/hcri-factsheet-cr.html> , or <http://www.int-res.com/articles/meps2006/310/m310p139.pdf> .

**Maui Students Perform *Heart of Honu* Play.** Kalama Intermediate School teacher Maggie Prevenas was so inspired by her participation in last year's Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve (NWHICRER) sponsored Education Expedition to the NWHI that she wrote a play entitled *Heart of Honu*. 'Honu' is the Hawaiian word for sea turtle. On Earth Day and the following Sunday, Maggie and her students performed the play in their school cafeteria. The play was a big hit in the small Makawao community, and even received media coverage in the Maui newspaper (<http://www.mauinews.com/story.aspx?id=18710>). Several of the other participants in last year's expedition flew over to Maui to enjoy the performance and re-lived their life changing experience from last year. National Marine Fisheries Service's (NOAA Fisheries) acclaimed sea turtle biologist, George Balazs, attended the Sunday performance, as did Reserve Education Coordinator, Andy Collins. The reaction of the community, and the in-depth learning about the NWHI acquired through the staging of the performance was a crowning moment in the cumulative achievements of the participants from last year's Education Expedition.

**PIFSC Completes Hawai`i Mapping Cruise.** Scientists from NOAA's Coral Reef Ecosystem Division (CRED) of the Pacific Islands Fisheries Science Center (PIFSC), the National Marine Sanctuaries Program (NMS), and the Office of Coast Survey (OCS) participated in a multibeam mapping cruise from April 19 to May 11, 2006 aboard the NOAA Ship *Hi'ialakai* and the NOAA launch *AHI*. The primary mission goal was multibeam mapping in the Main Hawaiian Islands (MHI) on Penguin Bank, around Moloka'i and Lana'i, and on the northwest coast of the Big Island of Hawai'i. These areas are located primarily within the Hawaiian Islands Humpback Whale National Marine Sanctuary. During 19 operational days, 1379 km<sup>2</sup> of seafloor were mapped. Secondary goals for mapping Essential

Fish Habitat near the Big Island were also met. In addition, OCS personnel worked with CRED scientists, who are the primary users of the multibeam mapping systems on the *Hi'ialakai* and *AHI*, to re-calibrate all three multibeam systems aboard the vessels. During three days of the cruise (April 24-28), NMSP and CRED scientists conducted an education and outreach activity for high school students from Oahu and Kaua'i.

**Integrated Summit-to-Sea Research in Hawaii LAS for Hanalei River.** Studies on the influence of Hanalei River runoff on Hanalei Bay coral reefs is continuing this year. The Hanalei Watershed Hui (HWH) has been coordinating federal, state, university, and non-profit research, monitoring, and management efforts since the river's designation in 1998 as an American Heritage River. NOAA's Coral Reef Ecosystem Division (CRED), a division of the Pacific Islands Fisheries Science Center (PIFSC) in Honolulu, will attempt to fill gaps in the multibeam bathymetry of Hanalei Bay during passage to the Northwest Hawaiian Islands this summer. U.S. Geological Survey (USGS) scientists from Santa Cruz will be returning to Hanalei Bay this summer for studies of ocean circulation and sedimentation. Last year's findings on waves, currents, temperature, salinity and turbidity: June – August, 2005, are available online (<http://pubs.usgs.gov/of/2006/1085>), and a related report on toxicity of bay sediments is available upon request. This group will be working in collaboration with Stanford University scientists who are studying nutrient and pathogen loads entering Hanalei Bay directly through subaqueous groundwater discharge. This project is funded in part by a National Fish & Wildlife Foundation grant to HWH. USGS-Hawai'i scientists will be monitoring Hanalei River flow and sediment loading into Hanalei Bay. HWH scientists and volunteers will be monitoring fecal indicating bacteria, nutrients, and turbidity in conjunction with these studies. See [www.hanaleiwatershedhui.org](http://www.hanaleiwatershedhui.org) for details.

### International

**NCCOS-sponsored Scientists Lead Effort to Improve Knowledge and Management of the Shallow Marine Habitats of Saudi Arabian Marine Park.** The Living Oceans Foundation selected three National Center for Coastal Ocean Science (NCCOS) scientists to serve as members of a remote-sensing and ground-truthing team. The team, including the Associate Director of the National Coral Reef Institute (NCRI) at Nova Southeastern University (NSU), and a Research Scientist and graduate student of the same institution, will collect data for the production of a high-resolution habitat atlas of the Farasan Islands Marine Park in Saudi Arabia. Research results and the atlas will provide marine ecosystem, biodiversity and conservation management guidance to the Saudi Arabian Government. The NCRI is a Congressionally mandated program administered by NCCOS and is a core component of NOAA's CRCP. NCRI's primary objective is the understanding, protection, and preservation of coral reefs through applied and basic research on coral reef diversity, assessment, monitoring, and restoration coupled with education and training of scientists, managers, and educators.

### National/Headquarters

**CRW Scientist Trains Conservationists on Satellites and Coral Bleaching at "Climate Camp."** On April 24-25, the coordinator of Coral Reef Watch (CRW) gave presentations on the 2005 Caribbean mass coral bleaching event and how to use NOAA's satellite data for coral reefs at the first "Climate Camp." The camp was sponsored by the World Wildlife Fund (WWF) in conjunction with Conservation International (CI) and the Nature Conservancy (TNC). Held in WWF's Washington, DC headquarters, the training explored various aspects of changing climate as it influences ecosystems. The goal is to better understand current and potential climate impacts on ecosystems and how conservation agencies might work to address these issues. The



2.5 hours of training focused on the use of National Environmental Satellite and Data Information Service (NESDIS) satellite products to address coral reef conservation issues. It was a shorter version of a two-day training program that CRW has developed and provided through the World Bank/Global Environment Fund Targeted Research Programme on Coral Reefs.

**CRW Scientists Pursue Collaboration with Cornell, Princeton, and GFDL.** On April 26-28 Coral Reef Watch (CRW) scientists gave seminars and carried out discussions with scientists at Cornell University, Princeton University, and NOAA's Geophysical Fluid Dynamics Laboratory (GFDL). Cornell is the home of the lead for one of the world's foremost groups researching coral disease. CRW is working with the Coral Disease working group of the World Bank/Global Environment Fund Targeted Research Programme on Coral Reefs to develop a National Environmental Satellite and Data Information Service (NESDIS) satellite product to understand the relationship between sea surface temperature and coral disease. The eventual goal is an operational product that provides coral disease outlooks as a part of the CRW product suite. At Princeton and GFDL, discussions focused on the use of global climate model data to understand the past frequency of coral bleaching and develop scenarios of future bleaching potential under different scenarios of future climate.

**CoRIS Presents at the Regional Coral Monitoring Meetings.** On April 27-28 at the Pacific Regional Coral Monitoring Meeting, a presentation was given to inform the monitoring grantees how to submit data to the Coral Reef Information System (CoRIS) and the benefits associated with it. CoRIS also presented this information at the Atlantic/ Caribbean Regional Coral Monitoring Meeting in Miami, May 18-19.

## CORAL REEFS IN THE NEWS

### *Articles mentioning NOAA*

**“Coral crisis: U.S. to Protect Stressed Species” -- May 4, 2006 (MSNBC, United States and approx. 1 other source).** “Elkhorn and staghorn coral in Florida and Caribbean waters — ecosystem anchors for nearly 500,000 years — are at risk of extinction due to warmer waters and other factors, and thus merit Endangered Species Act protection, the Bush administration said Thursday.”

<http://msnbc.msn.com/id/12631773/from/ET/>

**“US to Protect Two Coral Species as Caribbean Warms” – May 4, 2006 (Reuters Newswire).**

“The U.S. government said on Thursday it would list two coral species as ‘threatened’ under federal species protection laws after damage to them increased last year as the Caribbean warmed to record levels.”

<http://today.reuters.com/News/CrisesArticle.aspx?storyId=N04435662>

**“Coral Species Put on 'Threatened' List” – May 5, 2006 (Associated Press in the Washington Post and approx. 56 other sources).**

“...The elkhorn and staghorn coral species have suffered a 97 percent decline in areas off the Florida Keys and in the Caribbean since 1985 and must be protected, National Marine Fisheries Service biologist Stephania Bolden said Friday.”

<http://www.washingtonpost.com/wp-dyn/content/article/2006/05/05/AR2006050500994.html>

**“How You Can Protect Coral Reefs” – May 5, 2006 (ABC News, United States).**

“Even if you don't live near a reef, you can help protect coral reefs in the United States and around the world. The federal Coral Reef Conservation Program offers...tips...”

<http://abcnews.go.com/US/story?id=1927103&page=2>

**“Two Rapidly Vanishing Corals to Receive Federal Protection” – May 5, 2006 (*Miami Herald*, FL).** “Two disappearing corals, once so common they formed thick forests on Florida Keys reefs, are the first corals named to the federal protection list.”

[http://www.miami.com/mld/miamiherald/news/local/states/florida/counties/monroe\\_county/cities\\_neighborhoods/florida\\_keys/14505155.htm](http://www.miami.com/mld/miamiherald/news/local/states/florida/counties/monroe_county/cities_neighborhoods/florida_keys/14505155.htm)

**“Federal Officials Agree Global Warming Threatens Florida’s Coral Reefs, Provide Protection Under Endangered Species Act” – May 5, 2006 (Center for Biological Diversity press release on *Environmental News Network*).**

“... ‘Federal officials have acknowledged that global warming is an engine driving our coral reefs toward extinction,’ said Brent Plater of the Center for Biological Diversity. ‘Today’s announcement is a victory for sound science and coral reef conservation, but we must act quickly to reduce global warming emissions before it is too late to recover our corals.’”

<http://enn.com/aff.html?id=1277>

**“Feds Place Two Corals on Threatened List” – May 8th 2006 (*The Virgin Islands Daily News*, U.S. Virgin Islands).** “Two coral species common in shallow waters around the Virgin Islands have been added to the federal threatened list because of dangers posed by disease, high water temperatures and human damage - marking the first time any type of coral has been protected under the Endangered Species Act.”

<http://www.virginislandsdailynews.com/index.pl/article?id=16881648>

**“Carrier Will Sink to Serve” – May 10, 2006 (*Los Angeles Times*, CA).** “The *Oriskany* will be submerged in the Gulf of Mexico to fulfill the Navy's cost-cutting aims and the dreams of anglers and divers.”

<http://www.latimes.com/news/nationworld/nation/la-na-oriskany10may10.0,111870.story?coll=la-home-headlines>

**“Monsters from Beneath the Bermuda Triangle” – May 10, 2006 (*London Telegraph*, United Kingdom).** “...The Census of Marine Life initiative will shed light on some important global ecosystem processes, including the impact that ocean acidification may have on sea life.”

<http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2006/05/05/wsea05.xml>

**“Summer Camp for Marine Science” – May 12, 2006 (*Cayman Net News*, Cayman Islands).**

“...This year, the activities are based on a new education program developed by the National Oceanographic Atmospheric Administration (NOAA) called Coral Reef Conservation. Coral reefs are under enormous stress around the globe and the NOAA program was developed to emphasize the importance of healthy coral reefs.”

<http://www.caymannetnews.com/cgi-script/csArticles/articles/000020/002026.htm>

**EPA lauds NMI Coral Reef Task Force” – May 14, 2006 (*Saipan Tribune*, Commonwealth of Northern Mariana Islands).**

“The CNMI's Coral Reef Task Force was singled out for praise during the recently concluded U.S. Coral Reef Task Force meeting held in Washington D.C., with Environmental Protection Agency Region IX representatives commending the CNMI's efforts to preserve its coral reefs.”

<http://www.saipantribune.com/newsstory.aspx?cat=1&newsID=57495>

**“Rising Sea Temperatures Threaten Florida's Coral” – May 22, 2006 (*New York Times News Service* in the *Bradenton Herald*, FL and approx. 2 other sources.)**

“If global warming summons images of polar bears clinging to shrinking ice floes, this is its face in the Florida Keys: a sun-dappled stretch of shallows along the turquoise reef line, where scientists painstakingly attach russet polyps of regenerated coral to damaged reefs.”

<http://www.bradenton.com/mld/bradenton/news/local/14636365.htm>

**“Feds Hear Feedback on Coral Protection” – May 24, 2006** (*Virgin Islands Daily News, Virgin Islands*). “Representatives from the National Oceanic and Atmospheric Administration's Fisheries Service collected input Tuesday from St. Croix environmental managers, activists and others as they begin to fashion protection and recovery plans for two species of coral recently added to the threatened species list.” [http://www.virginislandsdailynews.com/index.pl/article\\_home?id=17590986](http://www.virginislandsdailynews.com/index.pl/article_home?id=17590986)

#### Other articles

**“Heterotrophic Plasticity and Resilience in Bleached Corals” – April 27, 2006** (*Nature, Issue 440, pp. 1186-1189*). “Bleached and recovering *Montipora capitata* (branching) corals met more than 100% of their daily metabolic energy requirements by markedly increasing their feeding rates and CHAR (per cent contribution of heterotrophically acquired carbon to daily animal respiration), whereas *Porites compressa* (branching) and *Porites lobata* (mounding) corals did not. These findings suggest that coral species with high-CHAR capability during bleaching and recovery...will be more resilient to bleaching events over the long term....” <http://www.nature.com/nature/journal/v440/n7088/full/nature04565.html>

**“Divers Find Lionfish Off the Bahamas” – May 5, 2006** (*Boston Globe, MA*). “A juvenile lionfish, which is native to the Pacific and Indian Oceans, was found by divers recently off the coast of the Bahamas, a sign that the venomous fish may now be breeding in the Atlantic Ocean, according to a spokesman from the New England Aquarium.” [http://www.boston.com/news/local/massachusetts/articles/2006/05/05/divers\\_find\\_lionfish\\_off\\_the\\_bahamas/](http://www.boston.com/news/local/massachusetts/articles/2006/05/05/divers_find_lionfish_off_the_bahamas/)

**“Divers Invited to Work with a Scientist” – May 5, 2006** (*Cayman Net News, Cayman Islands*). “Advanced SCUBA divers can now assist scientists in one of several marine research projects at the Little Cayman Research Centre (LCRC), following a successful pilot programme in 2005.” <http://www.caymannetnews.com/cgi-script/csArticles/articles/000017/001783.htm>

**“UK. Proposed Habitats Directive Could Protect Marine Life Beyond 12 Mile Limit” – May 9, 2006** (press release on *BYM News, Spain*). “Two Government consultations announced today will look at amending the transposition of the Habitats Directive in England and Wales, and the transposition of the Wild Birds Directive and Habitats Directive beyond UK territorial waters...which would help protect offshore marine habitats like cold water coral reefs, as well as species of European importance.” <http://www.bymnews.com/new/content/view/2879/6/82/>

**“VP Killion Calls For Concerted Efforts On Environmental Issues” – May 9, 2006** (*Pacific Magazine, HI*). “The meeting on Friday, April 28, with the Environmental and Sustainable Development Unit was the Vice President's follow through on the role of the Federated States of Micronesia in the Micronesia Challenge that was recently issued in Brazil during the United Nation's Convention on Biological Diversity.” <http://www.pacificislands.cc/pina/pinadefault2.php?urlpinaid=21880>

**“Coaxing Corals to Grow” – May 9, 2006** (*The Star, Malaysia*). “...Coral fragments which he had transplanted onto the cement mounds in September as part of his masters research programme, have grown between 1mm and 8mm. A few have sprouted an impressive 2cm.” <http://thestar.com.my/lifestyle/story.asp?file=/2006/5/9/lifefocus/14152726&sec=lifefocus>

**“Pros and Cons” – May 9, 2006 (*The Star, Malaysia*).** “Artificial reefs may have proven their worth in restoring ailing coral reefs but they are not always the best remedy for marine conservation – not when expenses remain high.”  
<http://thestar.com.my/lifestyle/story.asp?file=/2006/5/9/lifefocus/14162883&sec=lifefocus>

**“Mercure Sanur Bali Helps Rescues Coral Reef” – May 9, 2006 (Mercure Sanur press release on *e-Travel Blackboard, Australia*).** “Mercure Resort in Sanur, Bali has joined a small but dedicated group determined to reverse the damage caused by years of neglectful practices, to re-plant and revitalize five hectares of coral reefs around Sanur, over a five year programme.”  
<http://www.etravelblackboard.com/index.asp?id=50850&nav=1>

**“Oil Threat a Potential ‘Disaster’” – May 10, 2006 (*Florida Keys Keynoter, FL*).** “...A no-drilling campaign, mounted to protest plans to lease ocean bottom near the Keys reef tract to oil drillers, drew inspiration from the Exxon Valdez disaster that coated the shores of Alaska's Prince William Sound with a thick film of spilled oil in March 1989.”  
[http://www.keynoter.com/articles/2006/05/10/key\\_wes\\_t\\_news/news03.txt](http://www.keynoter.com/articles/2006/05/10/key_wes_t_news/news03.txt)

**“What Price Nature? Bogs \$6,000, Reefs \$10,000” – May 10, 2006 (*Reuters, United Kingdom and approx. 5 other sources*).** “...The estimates from United Nations-backed studies are part of a fledgling bid to put a price on nature's bounties, from the production of crops, fish or timber to clean water supplies or the prevention of erosion.”  
[http://today.reuters.co.uk/news/NewsArticle.aspx?type=scienceNews&storyID=2006-05-10T010446Z\\_01\\_L20346902\\_RTRIDST\\_0\\_SCIENCE-ENVIRONMENT-VALUE-DC.XML](http://today.reuters.co.uk/news/NewsArticle.aspx?type=scienceNews&storyID=2006-05-10T010446Z_01_L20346902_RTRIDST_0_SCIENCE-ENVIRONMENT-VALUE-DC.XML)

**“Zooxanthellae Responses to Bleaching in Great Barrier Reef Corals” – May 10, 2006 (*CO<sub>2</sub> Science*).** “...it is clear that ‘symbiont shuffling,’ either in anticipation of bleaching or after the fact, represents a viable mechanism by which coral colonies may adapt to rising temperatures and maintain their existence in the face of global warming and the higher base level it provides for periodic El Niño-driven temperature spikes.”  
<http://www.co2science.org/scripts/CO2ScienceB2C/articles/V9/N19/B1.jsp>

**“Photosymbiosis and the Evolution of Modern Coral Reefs” -- May 12, 2006 (*Science, Vol. 312, no. 5775, pp. 857 – 858*).** “...Recent studies on global change, coral degradation, and the future of coral reefs highlight the relevance of photosymbiosis to reef evolution (1-3).”  
<http://www.sciencemag.org/cgi/content/full/312/5775/857>

**“Limestone Industry Destroys Coral” – May 15, 2006 (*Daily News and Analysis, India*).** “Huge quantities of coral were being collected illegally from Gulf of Mannar Marine National Park and ferried off for use in the limestone industry.”  
<http://www.dnaindia.com/report.asp?NewsID=1029506&CatID=2>

**“A Study of Young Coral Could Assist Efforts to Protect Reefs” – May 15, 2006 (*Voice of America, United States*).** “...The researchers studied free-swimming young coral. The goal was to learn if these coral larvae could help repopulate damaged reefs...They found that some coral collected between two kilometers and one hundred kilometers apart were related. But samples collected one hundred to five hundred kilometers apart were unrelated...Their swimming distance is not enough to repopulate damaged reefs.”  
<http://www.voanews.com/specialenglish/2006-05-15-voa5.cfm>

**“Endangered Coral Reefs Topic of Talk in Lewes” – May 16, 2006 (UDaily, DE).** “At 7 p.m., Thursday, May 18, at UD's College of Marine Studies in Lewes, Mark Warner, assistant professor of marine biology-biochemistry, will present “Coral Reefs: Trouble in Paradise?” The lecture is part of the Ocean Currents Lecture Series, which is held on the third Thursday of the month, from April through September, at the Hugh R. Sharp Campus.”  
<http://www.udel.edu/PR/UDaily/2006/may/reefs051606.html>

**“Global Warming Has Devastating Effect on Coral Reefs, Study Shows” – May 16, 2006 (National Geographic News, United States).** “Eight years after warming seas caused the worst coral die-off on record, coral reefs in the Indian Ocean are still unable to recover, biologists say.”  
<http://news.nationalgeographic.com/news/2006/05/warming-coral.html>

**“Freighter Left 600-foot Scar on Reef After Going Aground off Fort Lauderdale” – May 19, 2006 (South Florida Sun-Sentinel, FL).** “Nature gave a lift early Thursday to a cement-laden freighter grounded on the sea bottom about a mile off Fort Lauderdale, but only after paying the price of a scarred reef.” <http://www.sun-sentinel.com/news/local/broward/sfl-cfreighter19may19.0.4187820.story?coll=sfla-news-broward>.

**“Brazil Creates Buffer Zone Around Coral Reefs Off Atlantic Coast” – May 22, 2006 (Conservation International press release on [www.conservation.org](http://www.conservation.org)).** “The Brazilian government has created an official buffer zone around the Abrolhos National Marine Park to protect the biologically richest coral reefs in the South Atlantic.”  
[http://www.conservation.org/xp/news/press\\_releases/2006/052206.xml](http://www.conservation.org/xp/news/press_releases/2006/052206.xml)

**“10 Nabbed for Illegal Extraction of Corals” – June 1, 2006 (ABC-CBS News, Philippines).** “What happens when officials and workers who are supposed to protect Sarangani’s coral reefs become the culprits themselves? Punish them heavily, Governor Miguel Dominguez of Sarangani said after one government official and nine of her workers were arrested by the members of the provincial mobile group for extracting corals in Maasim.” <http://www.abs-cbnnews.com/storypage.aspx?StoryId=40564>

**“Scallop Fishermen Fight to Keep Rights to Prize Hunting Ground as Environmentalists Fear for Coral Reefs” – June 3, 2006 (The Guardian, United Kingdom).** “...English Nature, the powerful advisory body, has written to the government asking it to use emergency powers to shut down 60 square miles of prime scallop ground off Brixham and Lyme Regis. It says the scallop fishermen are causing serious damage to protected species such as the pink sea fan...”  
<http://www.guardian.co.uk/fish/story/0,,1789620,0.html>

**“Coral Reef to Thrive in City: Science Academy Re-creates Nature’s Diversity in Tank” – June 3, 2006 (San Francisco Chronicle, CA).** “...The new coral colonies mark a unique effort by the California Academy of Sciences in San Francisco to re-create an entire coral reef similar to the living reef systems of the tropics that are among the world’s most extraordinary examples of biological diversity – and among the most environmentally threatened.”  
<http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2006/06/03/BAG9OJ7E7S1.DTL>

**“Illegal Fishing Killing C. Visayas Marine Life” – June 4, 2006 (Philippines Daily Inquirer, Philippines).** “Ornamental and tropical fish and other marine species thriving in the seas of Central Visayas are slowly disappearing. The culprit, warned the Bureau of Fisheries and Aquatic

Resources (BFAR) in the region, is the prevailing use of destructive fishing methods....Joezen Corales, chief of the project development section of BFAR regional office, said the use of cyanide, dynamite, push-nets and other destructive methods in fishing caused ornamental and marine aquarium fishes to seek safer habitats.”

[http://news.inq7.net/regions/index.php?index=1&story\\_id=77980](http://news.inq7.net/regions/index.php?index=1&story_id=77980)

**“Map Will Help ‘Protect Southern Gulf’s Coral Reefs’” – June 5, 2006 (AME Info, United Arab Emirates and approx. 1 other source).** “The first ever map of southern Gulf coral reefs was presented on Sunday in Abu Dhabi, a venture undertaken by research teams in the UAE and Qatar....“The project has shown most Gulf coral reefs are in good health .... With the help of this coral reef map, future protection measures will be made much easier,” said Al Mansouri [secretary-general of the Environment Agency-Abu Dhabi].”  
<http://www.ameinfo.com/87902.html>

**“A Move to Save Coral Reefs” – June 5, 2006 (The New York Times, NY and approx. 1 other source).** “Anyone who has given thought to the pitifully fragile state of the oceans' coral reefs should have been heartened by the recent classification of two kinds of coral as threatened under the Endangered Species Act.”

<http://www.nytimes.com/2006/06/05/opinion/05mon3.html>

**“Step Closer to Gazetting Marine Park” – June 6, 2006 (Daily Express, Malaysia).** “The State Government hopes to complete the management plan for the proposed one million hectare Tun Mustapha Park by the end of the year.”

<http://www.dailyexpress.com.my/news.cfm?NewsID=42429>

Puerto Rico	
data	<a href="ftp://ftp.nodc.noaa.gov/pub/outgoing/CoRIS/data/nos/Summit2Sea/PuertoRico/summittoseaPR.zip">ftp://ftp.nodc.noaa.gov/pub/outgoing/CoRIS/data/nos/Summit2Sea/PuertoRico/summittoseaPR.zip</a>
metadata	<a href="http://www.coris.noaa.gov/metadata/records/txt/characterization_of_watersheds_puerto_rico_2004.txt">http://www.coris.noaa.gov/metadata/records/txt/characterization_of_watersheds_puerto_rico_2004.txt</a>
USVI	
data	<a href="ftp://ftp.nodc.noaa.gov/pub/outgoing/CoRIS/data/nos/Summit2Sea/USVI/Summit2SeaUSVI.zip">ftp://ftp.nodc.noaa.gov/pub/outgoing/CoRIS/data/nos/Summit2Sea/USVI/Summit2SeaUSVI.zip</a>
metadata	<a href="http://www.coris.noaa.gov/metadata/records/txt/characterization_of_watersheds_us_virgin_islands_2005.txt">http://www.coris.noaa.gov/metadata/records/txt/characterization_of_watersheds_us_virgin_islands_2005.txt</a>

## UPCOMING EVENTS

If you have events you would like listed in future newsletters, please contact [coralreef@noaa.gov](mailto:coralreef@noaa.gov).

### May 2006

18 – 19: **NOAA National Coral Reef Ecosystem Monitoring Program Atlantic Regional Meeting.** Miami, FL. Attendance by invitation only.

23: **NOAA Fisheries *Acropora* Conservation Public Workshop.** Christiansted, St. Croix, USVI.  
<http://sero.nmfs.noaa.gov/pr/protres.htm> .

23 – 26: **American Geophysical Union – Joint Assembly.** Baltimore, MD. [www.agu.org/meetings](http://www.agu.org/meetings)

24: **NOAA Fisheries *Acropora* Conservation Public Workshop.** Charlotte Amelie, St. Thomas, USVI.  
<http://sero.nmfs.noaa.gov/pr/protres.htm> .

25: **NOAA Fisheries *Acropora* Conservation Public Workshop.** Rio Piedras, Puerto Rico.  
<http://sero.nmfs.noaa.gov/pr/protres.htm> .

29 – 31: **3<sup>rd</sup> International Symposium on Networks in Bioinformatics.** Amsterdam, The Netherlands.  
<http://isnb.amc.uva.nl/>

### June 2006

4 – 9: **2006 ASLO Summer Meeting.** Victoria, British Columbia. Abstracts due January 20, 2006.  
<http://www.aslo.org/meetings/victoria2006/>

8: **World Ocean Day.**

13 – 14: **Capitol Hill Oceans Week 2006.** Washington, D.C. <http://www.nmsfocean.org/chow2006/>

18 – 24: **Asia Pacific Coral Reef Symposium.** Hong Kong SAR, China. Abstracts due February 15, 2006.  
<http://www.cuhk.edu.hk/bio/APCRS/index.htm>

24 – 28: **Society for Conservation Biology: 20th Annual Meeting – Conservation Without Borders.** Abstracts due Oct. 15, 2005. San Jose, CA. <http://www.conbio.org/2006/>

### July 2006

17 – 21: **National Marine Educators Association (NMEA) Conference 2006.** New York, NY.  
<http://nysmea.org/con06/>

### September 2006

10 – 14: **American Fisheries Society 136<sup>th</sup> Annual Meeting.** Lake Placid, NY.  
<http://www.afslakeplacid.org/>

17 – 20: **California and World Oceans Conference.** Long Beach, CA.  
<http://resources.ca.gov/ocean/cwo06/>

18 – 22: **Marine Technology Society and IEEE Oceanic Engineering Society Oceans Conference 2006.** Boston, MA. <http://www.oceans2006americas.org/>

19 – 22: **European Coral Reef Conference 2006.** Bremen, Germany. Abstracts and early registration due by May 15<sup>th</sup> . <http://isrs2006.zmt-bremen.de>

22 – 24: **MACNA XVIII: Futures in Reefkeeping.** Houston, TX. <http://www.macnaxviii.com/>

October 2006

15 – 20: **ITMEMS 3: Global Problems, Local Solutions.** Cozumel, Mexico. <http://www.itmems.org>

30 – 31: **Coral Reef Ecosystems Biodiversity Forum.** Noumea, New Caledonia.

[http://www.ird.nc/biodec/english/home\\_page.html](http://www.ird.nc/biodec/english/home_page.html)

November 2006

1 – 4: **Coral Reef Ecosystems Biodiversity Forum.** Noumea, New Caledonia.

[http://www.ird.nc/biodec/english/home\\_page.html](http://www.ird.nc/biodec/english/home_page.html)

6 – 10: **59<sup>th</sup> Meeting of the Gulf and Caribbean Fisheries Institute (CGFI).** Belize City, Belize.

[www.gcfi.org](http://www.gcfi.org)

December 2006

9 – 13: **Restoring America's Estuaries (RAE) – Forging the National Imperative.** New Orleans, LA.

<http://www.estuaries.org/?id=4>

**Questions, comments?**

Contact [coralreef@noaa.gov](mailto:coralreef@noaa.gov), NOAA Coral Reef Conservation Program.

Access to NOAA's coral reef data and information is provided through NOAA's Coral Reef Information System at <http://www.coris.noaa.gov>. Current news on NOAA's coral reef activities can be found on the NOAA Coral Reef Conservation Program Web site, <http://www.coralreef.noaa.gov>.

