

CORAL REEF NEWS
Coral Reef Conservation Program
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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://coralreef.noaa.gov/news/welcome.html>.

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ANNOUNCEMENTS

FY07 Proactive Species Conservation Grant Announcement. The [National Marine Fisheries Service's](#) (NMFS) [Office of Protected Resources](#) announces the fiscal year 2007 competition of the Proactive Species Conservation Grant Program. Projects must support voluntary conservation efforts designed to conserve marine and anadromous species before listing under the [Endangered Species Act](#) becomes necessary. There are 42 'Species of Concern' (SOC) targeted for funding under this program, including numerous coral reef-related species. Eligible applicants are state, tribal, or local governments that have regulatory or management authority over one or more SOC or over activities that affect one or more SOC. Federal employees and others can be collaborators. The application deadline is February 12, 2007. A list of eligible species and further information are available upon request or by visiting the [Web site](#).

NWHI Monument Permit Applications Now Available Online. The staff of the [Northwestern Hawaiian Islands \(NWHI\) Marine National Monument](#) (Monument) has been working closely with representatives from the [Council on Environmental Quality](#), [Department of Interior](#), [Department of Commerce](#), and the [State of Hawai'i](#) to develop a single permit application and guidelines for conducting activities in the Monument. A final [permit application](#) with instructions has been approved and is now available online. A single unified permit system was a primary goal for the Monument and highlights the cooperative nature of management among the co-trustees. All Monument permit applications will be reviewed by all three co-trustee agencies, and final permits issued must be approved and authorized by each agency.

NSTA and NOAA Present New SciGuide for Exploring Coral Ecosystems. The [Coral Reef Conservation Program](#) (CRCP), the Communications and Education Division, and the [National Science Teachers Association](#) (NSTA) have unveiled the [Coral Ecosystem SciGuide](#), a new web-based 'science toolbox' for teachers and other educators. The Coral Ecosystem SciGuide pulls together internet resources on coral science and organizes them into three major theme areas for the classroom: coral reef biology, coral ecosystems, and coral conservation. This SciGuide is featured in the December issue of [NSTA Reports](#), the association's newspaper that reaches over 55,000 science teachers across the country.

UPDATES

Atlantic

Prediction of Coral Spawning in the Caribbean to Help Managers Reduce Human Impacts to Coral Recruitment. A comprehensive review of coral reproduction literature was undertaken by the [National Centers for Coastal Ocean Science \(NCCOS\)-sponsored National Coral Reef Institute \(NCRI\)](#) to identify predicted coral spawning and larval duration times in the Caribbean. The review will also help identify gaps in scientific knowledge in an effort to provide information to managers to help them reduce human impacts during the critical coral spawning window. Modification of the type or timing of activities that introduce nutrients, toxic chemicals, and suspended particles may lead to enhanced fertilization and coral recruitment success. For many of the main reef-building species, information on coral spawning times is known and can be predicted. However, in most locations this information has not been widely available or previously considered during planning and implementation of human activities. Compilation of this information by species and by region will give managers the information they need to help protect corals during a sensitive phase of their life history. This project directly supports the [Coral](#)

[Spawning Resolution](#) passed by the [U.S. Coral Reef Task Force](#). The [NCRI](#) funding is administered by the NCCOS' [Center for Sponsored Coastal Ocean Research](#), and is a core component of NOAA's [Coral Reef Conservation Program](#).

Caribbean Reef Fish Studies Demonstrate Importance of Ecological Criteria in Design of Marine Protected Areas. [National Centers for Coastal Ocean Science](#) (NCCOS) scientists and partners have completed a study, described in an article in the February issue of *Fisheries and Management Ecology*, of reef fish populations and habitats of the [Virgin Islands Coral Reef National Monument](#) (VICRNM). The study demonstrates the importance of ecological design criteria for establishing protected areas. The administrative process used to delineate the boundaries of the VICRNM, which was established offshore of St. John by a Presidential Proclamation in 2001, primarily used legal parameters, and did not include a robust ecological characterization of the area. Although the VICRNM prohibits almost all extractive uses, the scientists found that areas outside the monument had significantly more hard corals, greater habitat complexity, and greater richness, abundance and biomass of reef fishes than areas within the monument. Because of reduced habitat complexity within the VICRNM, the enhancement of the marine ecosystem through increases in economically important reef fishes may not be fully realized, or may take longer to detect. This study was based on surveys NCCOS and its partners conducted from 2002-2004 of habitats and fishes both within and outside the VICRNM and received funding from NOAA's [Coral Reef Conservation Program](#).

200th Anniversary Open House at Historic Ft. Crockett Facility. Families in the Galveston-Houston area recently discovered oceans in a free Saturday of fun and education. Three hundred people attended the first annual NOAA Ocean Discovery Day in Galveston, Texas, where they

toured among the 20 activity stations representing NOAA programs. Visitors learned everything from how geographic information systems (GIS) are used to characterize habitats in NOAA Sanctuaries, to why wetlands are important and how NOAA Fisheries protects them, to how to tie knots that a NOAA Corps officer might use on a research vessel. NOAA [Southeast Fisheries Science Center](#) (SEFSC)-Fisheries Ecology Branch used the opportunity to highlight work supported by the CRCP, including reef fish and coral surveys by SCUBA divers and remotely operated vehicles (ROV), coral disease and coral restoration monitoring in Mona Island, Puerto Rico, and the recovery of conch populations in the U.S. Virgin Islands. The hands-on Conch Exhibit was a big hit and a great opportunity to educate visitors about the conch life cycle, fishery, and the tag-and-recapture and sonic tracking work that is underway. The event was organized and hosted by the [Flower Garden Banks National Marine Sanctuary](#) and by [NOAA Fisheries' Galveston Laboratory](#) to celebrate NOAA's [200th anniversary](#) and the Sanctuary's 15th anniversary.

Reef Fish Guide to Aid South Florida/Caribbean Monitoring and Management Available. The [National Centers for Coastal Ocean Science](#) (NCCOS), in collaboration with the [National Park Service](#), [U.S. Geological Survey](#), NOAA Fisheries [Southeast Fisheries Science Center](#) (SEFSC), the [University of Hawaii](#), and the [University of Miami](#), has developed a comprehensive [Guide to Monitoring Reef Fish in the National Park Service's South Florida/Caribbean Network](#). Based on fieldwork and reef fish data gathered over the past ten years, the guide details survey strategies that could be used to support management decisions on maintaining, enhancing, or restoring the ecological integrity of reef fish communities.

Pacific

NWHI Research Symposium Planned. On February 5-6, a joint symposium on recent Northwestern Hawaiian Islands research will be held at the [Northwestern Hawaiian Islands Marine National Monument's](#) Hawai'i Kai conference room. A majority of presenters will be from the [Hawai'i Institute of Marine Biology](#) (HIMB) and the NOAA Fisheries [Pacific Island Fishery Science Center](#) (PIFSC). Biologists from the State and [U.S Fish and Wildlife Service](#) have also been invited to present. It is hoped that the symposium will provide a forum for the review and synthesis of recent research, as well as a mechanism for identifying knowledge gaps and delineating future research needs.

International Forum to be Held in Honolulu.

The [Northwestern Hawaiian Islands Marine National Monument](#), in conjunction with many other NOAA agencies and the [UNESCO World Heritage Program](#), is holding a forum entitled, *Our Sea of Islands, A Regional Forum for Oceania on Marine Managed Areas and World Heritage*. The forum will take place in Honolulu between January 29 and February 2. Participants from over 20 Pacific nations will share knowledge and experiences in managing marine areas in Oceania and UNESCO will provide information on their World Heritage Programme.

National/Headquarters

House Staff Briefing on Ocean Acidification and Coral Reefs. NOAA [Coral Reef Watch](#) (CRW) staff were requested to brief the House Science Committee staff on the impacts of ocean acidification on coral reefs. The briefing focused on: how increasing atmospheric CO₂ is changing ocean chemistry; the impacts of ocean acidification on marine calcifying organisms such as corals; relevant ongoing and future research and monitoring efforts; and the importance of devising local actions that could help to reduce coral vulnerability. Important points were raised

regarding the rate at which oceanic pCO₂ is rising and how the resulting ocean acidification could exceed the adaptation rate of corals. Within a few decades, many tropical corals may no longer maintain sufficient calcification rates to sustain reef-building. Two staffers from the House Science Committee attended the briefing. House staff raised several issues of interest including NOAA funding needs to address the issue and potential for local responses to ocean acidification. Further requests for information are expected in response to the briefing. NOAA CRW is advancing the development of tools that couple satellite monitoring to *in situ* observations to track changes in coral reef ecosystems in response to ocean acidification.

CRW Scientists Edit and Contribute Chapters to Coral Reef Monograph.

NOAA [Coral Reef Watch](#) (CRW) staff contributed to three chapters in the newly published AGU Monograph [Coral Reefs and Climate Change: Science and Management](#). Two of the staff members also served as editors of the monograph. The CRW chapters covered coral paleoclimatology, the hydrodynamics of mass coral bleaching events, and CRW's satellite tools for coral bleaching monitoring. The monograph includes chapters on coral disease and bleaching management by other NOAA authors. This volume represents the state of science and management concerning coral bleaching prediction, monitoring, response, and adaptive management. See below for the citation.

New Data in CoRIS. See page 9.

CORAL REEFS IN THE NEWS

Articles Mentioning NOAA

[“New Florida Keys Eco-Discovery Center Debuts” – January 14, 2007 \(www.flakeys.com, FL\).](#) “The \$6 million Florida Keys Eco-Discovery Center, a free-admission

environmental education facility, has formally opened to provide visitors a way to experience our underwater ecosystem before they get wet.”

[“All About Undersea Laboratory Aquarius”](#) – **January 8, 2007** (NASA press release on www.happynews.com, TX) “Aquarius is the only undersea laboratory in the world. It is owned by the National Oceanic and Atmospheric Administration, or NOAA, and administered by NOAA's National Undersea Research Program.”

[“A Struggle to Preserve a Hawaiian Archipelago and Its Varied Wildlife”](#) – **December 19, 2006** (*The New York Times*, NY). “...This national monument is so remote that only two dozen people at a time will be able to visit, and only here in Midway, one of two populated islands. Though the combined land surface of what some officials call the American Galápagos is a minuscule 3,328 acres...the coral surrounding them...stretch out for miles from each atoll and total more than 5,000 square miles, larger than Connecticut.”

Other Articles

[“Sustainability Plan to Help Filipino Fish and Fishermen”](#) – **January 25, 2007** (www.edie.net, UK). “Ecosystems and communities dependent on fishing should both benefit from a \$33.8m project aiming to make the management of the Philippines coastal resources more sustainable.”

[“Live-Fish Market Grows, Stripping Reefs”](#) – **January 24, 2007** (*Associated Press in The Los Angeles Times*, CA and approx. 2 other sources). “...[demand for live reef fish] has caused the populations of these predators to plummet around Asia as fishermen increasingly resort to cyanide and dynamite to bring in the valuable catch. Entire reef ecosystems, already endangered by pollution and global warming, are at risk.”

[“Increasing Appetite for Live Fish Stripping Asian Reefs Bare”](#) – **January 23, 2007** (*Associated Press in International Herald Tribune*, France and approx. 1 other source). “The rising demand for live reef fish by seafood-hungry diners in Greater China has for the first time been shown to have decimated endangered species around Asia, a study released Wednesday said.”

[“Israelis Raise Coral Out of the Blue”](#) – **January 21, 2007** (*Israel 21C*, Israel). “...In a secret location not far from the city of Haifa, Almalam and his partner Alon Efergan, a former engineer, are working around the clock raising coral for their new company - Advanced Coral Propagating Technology (ACP Tech). The coral they produce - about 8,000 pieces of 6 cm. coral a year - is living proof that coral can be cultivated in captivity and in a closed system. It is the first large-scale operation of its kind in the world where coral are reared with no connection to nutrients in the sea.”

[“Rebuilding Reefs”](#) – **January 20, 2007** (*The Miami Herald*, FL). “Artificial reefs are an important part of the ecosystems of Miami-Dade coast and a hot tourist attraction.”

[“Counting Coral”](#) – **January 19, 2007** (www.scienceline.org, NY). “Coral ecologist Lyndon DeVantier discusses ecological assessment and management of coral reef systems.”

[“Ancient Coral May Reveal Future of Stronger Monsoons and Harsher Droughts”](#) – **January 17, 2007** (*Scientific American*, US and approx. 2 other sources). “Coral cores stretching back more than 6,000 years reveal that climate change in the Indian Ocean may mean greater droughts in Indonesia and Australia.”

“Tourism Could Do More to Protect Marine and Coastal Environments | Greenhotelier Reports” – January 17, 2007 (greenhotelier press release on www.hospitality.net, The Netherlands). “The tourism industry could do more to help protect the marine and coastal ecosystems on which it relies according to the January edition of greenhotelier.”

“Coral Responses to Global Warming” – January 17, 2007 (CO₂ Science,). “...the two researchers found that adult corals, as they describe the situation, ‘are capable of acquiring increased thermal tolerance and that the increased tolerance is a direct result of a change in the symbiont type dominating their tissues from Symbiodinium type C to D,’ and they report that ‘the level of increased tolerance gained by the corals changing their dominant symbiont type to D is around 1-1.5°C.’”

“16 - 30 Artificial Coral Reefs to be Set Up in Tayabas Bay” – January 16, 2007 (*Bayanihan, Philippines*). “Some 30 artificial coral reefs will be set up to restore the fish sanctuaries in various parts of Tayabas Bay in this capital city of Quezon province....A few years ago, before the onset of illegal fishing activities, Tayabas Bay was a rich source of fish and other marine products.”

“Legendary Ocean Conservationist Offers Warning” – January 12, 2007 (*The Baltimore Examiner, MD*). “More than a thousand people crammed into the National Aquarium in Baltimore to listen to famed ocean conservationist Jean-Michel Cousteau’s words of advice for saving coastal waters....‘We have an immense responsibility of what it is we pass on to the new generation,’ he said.”

“Smells Like Home: For Fish, Reefs Are Unique” – January 11, 2007 (*All Things Considered, D.C.*). “Coral reefs may all smell the same to humans. But to some fish, reefs’ smells have distinct qualities — even when they’re

several hundred miles away. A new study in the Proceedings of the National Academy of Sciences argues that some reef fish use smelly ocean currents the way New Yorkers use their subway lines — as the quickest way home.”

“All 30 Chinese Poachers Out on Bail” – January 11, 2007 (*The Philippine Star, Philippines*). “...The 300 surviving Napoleon wrasse, locally known as *Mameng*, were released temporarily into the Santa Lucia sea pens of the BFAR near Puerto Princesa City. Of the 359 Napoleon wrasse inventoried in the hold of the Hoi Wan, 59 died over the weekend, while a number of Lapu-Lapu (grouper) also died, purportedly due to starvation. ‘As of now, it has been suggested that we schedule the release of the Napoleon wrasse in Tubbataha around the end of March, when ocean conditions should be better.’”

“Unique Coral Found off Norway” – January 10, 2007 (*FishUpdate, Scotland*). “Coral reefs are normally associated with tropical waters, but maritime researchers have found unique forests of it in deep and cold seas off the northern Norwegian coast. Efforts are being made to protect it....Over the past few years, researchers have been diving to the deep in mini-subbs to chart it and photograph it. They’ve found one reef after another and want to make sure that oil exploration efforts don’t damage it.”

“Encroaching and Destroying Reefs: Three Trawlers Held” – January 7, 2007 (*Daily Express, Malaysia*). “The Terengganu Fisheries Department on Friday detained three trawlers for encroaching the marine parks off Pulau Kapas, Marang and destroying about 50 artificial reefs costing more than RM250,000 as well as coral reefs in the area.”

“Troubled Waters” – January 7, 2007 (*Daytona Beach News-Journal Online, FL*). “...Today, though parts of the *Oculina* coral reefs between Daytona Beach and Fort Pierce have been

protected for 20 years, much has been obliterated. And the destructive bottom trawling for shrimp and fish that's blamed for the damage still may happen on some areas of the reef."

"No-entry Zones Key to Shark Conservation" – **January 5, 2007** (*Practical Fishkeeping, United Kingdom*). "...New research by scientists at James Cook University's School of Marine and Tropical Biology, which has recently been published in the journal *Current Biology*, says that an order of magnitude fewer sharks are found on fished reefs compared to those where fishing is banned."

"Geological Approaches to Coral Reef Ecology" – **January 5, 2006** (*Dauphin Island Sea Lab press release on www.eurekalert.com, D.C.*) "Coral reefs around the world are sustaining massive damage at an alarming rate. 'Geological Approaches to Coral Reef Ecology' provides a uniquely historical perspective on the destruction--through both natural and human processes--of coral reef ecosystems."

"Ocean's 30: Poachers Arrested in Philippine Marine Park" – **January 5, 2007** (*WWF press release on www.panda.org*). "A fishing vessel carrying tonnes of illegally caught fish was seized by Filipino officials off the waters of the strictly protected Tubbataha Reef National Marine Park in the Sulu Sea."

"Mesoamerican Reef at Risk" – **January 3, 2007** (*Associated Press in The Globe and Mail, Canada*). "Fertilizer and sediment runoff from sugar-cane, banana and pineapple plantations are threatening tourism by damaging a coral reef stretching along the Caribbean coasts of Mexico, Belize, Guatemala and Honduras, according to a recent report."

"John Schubert: Don't Let Our Corals Lose Their Colour" – **January 2, 2007** (*The Australian, Australia*). "...The Great Barrier Reef is now experiencing coral bleaching events more frequently. Apart from this year's blow to the Keppel Island reefs, the most recent serious bleaching event was in 2002 when the Great Barrier Reef Marine Park Authority estimated that 60 to 95 per cent of reefs were affected to some extent. Climatologists are predicting weather conditions this summer that are conducive to another significant bleaching event."

"Deepwater Reefs off S. Florida's Coast May get Protection From Council" – **January 1, 2007** (*South Florida Sun-Sentinel, FL*). "...Deepwater coral reefs, virtually unknown to scientists until the past few years, cover thousands of square miles of ocean floor off Boca Raton and Fort Lauderdale, the Carolinas and Georgia, Norway, Great Britain and other countries....The South Atlantic Fishery Management Council, which sets fishing rules for federal waters in the Southeast, has proposed protecting about 23,000 square miles of these reefs by prohibiting anchoring, bottom-fishing and other destructive activities."

"Environmentally Important Underwater Grass Beds Facing Global Crisis" – **December 28, 2006** (*Bay Journal, PA*). "...'Seagrasses are the coal mine canaries of coastal ecosystems,' said Bill Dennison, of the University of Maryland Center for Environmental Science. 'The fate of seagrasses can provide resource managers with advance signs of deteriorating ecological conditions caused by poor water quality and pollution.'"

"Education, not Mangroves" – **December 27, 2006** (*Daily News & Analysis, India*). "...Research suggests that the level of protection offered by green belts has been exaggerated. And by diverting resources from more effective measures like education campaigns and

evacuation plans to well-meaning but misguided reforestation, we may even contribute to a greater loss of life in future tsunamis.”

“Nature May be Best at Reef Repair”

December 25, 2006 (*Honolulu Advertiser*, HI).

“...Australia coral reef scientist Terry Hughes, writing with co-authors in the journal *Trends in Ecology and Evolution*, makes the point that coral reefs everywhere are in trouble, and that it's mainly because of people.”

“Even on Christmas Patrols Guard Tubbataha Reef” – **December 24, 2006** (*The Philippine Daily Inquirer* on <http://newsinfo.inquirer.net>,

Philippines). “...Located at the heart of the Sulu Sea, the Tubbataha Reef is the largest offshore marine park in [the Philippines]. It is home to 396 species of corals, or half of all the coral species in the world, according to the World Wide Fund for Nature. In 1993, it was made one of nine protected World Heritage Sites. Healing the damage caused by poaching and dynamite fishing, the atoll is closely guarded by park rangers like Calderon all year round. But unlike ordinary sentinels, park rangers work in three-month shifts.”

“Would You Have Gussed That One Shy Fish May Play A Crucial Role In Bringing Some Coral Reefs Back To Life?” **December 22, 2006** (*Science Friday* news on

www.sciencefriday.com, NY). “An article in the journal *Current Biology* this week reported that biodiversity may not provide security for complex ecosystems such as coral reefs: one particular species can make or break its regeneration.”

“Marine Ecosystems Important to Hazard Management” – **December 21, 2006** (*The Barbados Advocate*, Barbados).

“Marine ecosystems are important when dealing with hazard management. This is according to Angelique Brathwaite, Marine Biologist at the

Coastal Zone Management Unit (CZMU), in her presentation on ‘The Role of Marine Ecosystems in Hazard Management.’”

UPCOMING EVENTS

February 2007

1 – 2: **Our Sea of Islands – A Regional Forum for Oceania on Marine Managed Areas and World Heritage**. Honolulu, HI.

15 – 19: **AAAS Annual Meeting**.

http://www.aaas.org/meetings/Annual_Meeting/

26 – 28: **17th U.S. Coral Reef Task Force Meeting**. Washington, D.C.

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

March 2007

1 – 2: **17th U.S. Coral Reef Task Force Meeting**. Washington, D.C.

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

29 – 31: **NSTA National Conference**. St. Louis, MO.

http://www.nsta.org/conferencedetail&Meeting_Code=2007STL

April 2007

1: **NSTA National Conference**. St. Louis, MO.

http://www.nsta.org/conferencedetail&Meeting_Code=2007STL

New Data in CoRIS.

CoRIS now has 1603 metadata records that refer to over 18,000 data and data products.

Product Name	Description
CRED REA Algal Assessments, Guam and Northern Marianas 2003; Northwest Hawaii Islands 2003, 2004 and 2005; American Samoa 2004; and PRIA 2004. Assessment and Monitoring Program Cruises	Twelve quadrants were sampled along 2 consecutively-placed, 25m transect lines as part of Rapid Ecological Assessments conducted at 2 sites. Raw survey data included genus presence and relative abundance, and voucher specimens. Detailed taxonomic analyses of voucher specimens are presented.

Link: <http://www.pifsc.noaa.gov/cred/algae.php>

Sample Metadata Link:

http://coris.noaa.gov/metadata/records/html/cred_rea_algal_assessment_agrihan_2003.html

