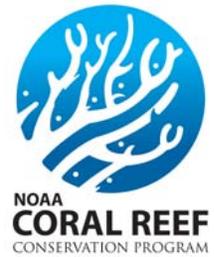


Coral Reef News

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FROM THE DESK OF THE PROGRAM MANAGER

This issue, I'd like to touch on some global reef-related updates and share a little bad news tempered with some good news. We'll start with the bad news. Despite the best efforts of supporters and sponsors, proposals to list red and pink corals, as well as several shark species and Atlantic bluefin tuna, were all rejected during the voting process at the 15th [Convention on International Trade in Endangered Species of Wild Fauna and Flora](#) (CITES) Conference of the Parties (CoP) in March. While each proposal earned a simple majority of votes, none of them met the two-thirds majority requirement that is part of the CoP operating principles. This disappointing resolution means that none of these species have gained increased protection against the threats posed by current international trade. See the 'Special Feature' section for more details.

Despite the disappointing outcomes of CoP 15, a large step was made towards conserving the Chagos Archipelago, the largest coral atoll in the world. These 55 islands are a British Indian Ocean Territory and form a nearly pristine archipelago in the middle of the Indian Ocean. On April 1, British Foreign Secretary, David Milliband, designated the Chagos Archipelago as the largest marine protected area in the world. The fully protected marine reserve contains 210,000 square miles (544,000 square kilometers), an area twice the size of the United Kingdom. All extractive activities, such as industrial fishing and deep sea mining, are prohibited. To learn more, read the British Foreign & Commonwealth Office's [press release](#) or visit the [Chagos Conservation Trust](#).

In the hot news department, we all are closely monitoring the events in the Gulf of Mexico. Our thoughts go out to our Gulf partners during this potentially disastrous environmental event.

-Kacky

SPECIAL FEATURES

Oil Spills and Corals. In response to recent concerned interest about oil spill impacts on corals and coral reefs, NOAA has put together a fact sheet of general information on coral values, impacts to coral from oil and dispersants, modes of potential exposure, response strategies, and data from some past oil spill events. This information has been provided by multiple NOAA sources and primarily pulls from "[Oil Spills in Coral Reefs: Planning and Response Considerations](#)," a 2001 report summarizing relevant research for spill response decision makers. The information appears on the Coral Reef Conservation Program's Web site as a [Featured Story](#). While no impacts to corals have yet been reported, the information now presented online addresses concerns and questions directed to NOAA in recent weeks as the Deepwater Horizon spill persists. To see the latest on specific response actions and impacts from this oil spill, click [here](#).

CITES Vote Falls Short for Corals and Sharks. The 15th Conference of the Parties (CoP) to the [Convention on International Trade in Endangered Species of Wild Fauna and Flora](#) (CITES) met in Doha, Qatar from March 13-25. While there were several marine species proposals submitted this year (the family Coralliidae, five shark species, and Atlantic bluefin tuna), unfortunately, none of the proposals were accepted. Below is a summary of the US-sponsored proposals and their outcomes.

Red and Pink Corals For the second time, the 175 nations participating in CITES failed to gather enough votes to implement increased protections for [red and pink corals](#). No countries currently have comprehensive management plans for these coral species and a CITES listing would have encouraged nations to develop these plans. In 2007 at the 14th CoP, the US had proposed listing *Corallium* species under Appendix-II. The proposal was initially adopted but then reopened for debate during the plenary session and narrowly defeated. This year, the US and Sweden (on behalf of the European Union) together submitted a [proposal](#) to provide greater protection to all species of the genera *Corallium* and *Paracorallium* (approximately 31 described species and several undescribed species) by listing them under CITES Appendix-II. Had it been successful, the proposal would have limited trade of red and pink coral to legally and sustainably harvested coral and coral products. Although the proposal received a simple majority of votes, it did not receive the two-thirds majority needed for adoption (64 votes in support, 59 votes in opposition, and 10 abstentions).

Jewelry and carved artwork made from red and pink coral have a prominent place in Mediterranean and other cultures. Found mainly in the seas of the Mediterranean and Pacific, these corals have been harvested for centuries; however with the development of technologies like SCUBA and remotely operated vehicles, coral beds that had previously been inaccessible are now being exploited at a faster rate than their populations can sustain. Increasing evidence is also showing that all corals, including Coralliidae, are vulnerable to the effects of climate change and warming ocean temperatures appear to be having a detrimental effect. These corals have many qualities that make them particularly vulnerable to over-exploitation. They are slow-growing, have long life spans, they are attached to the seafloor and are not mobile, and they take many years to reach reproductive maturity. Studies have shown that trade is having an adverse impact on red and pink corals' ability to maintain healthy populations and to reproduce. Since the 1980s, red and pink coral gardens have decreased in size, structure, and overall number of polyps by more than 60-70 percent.

Hammerhead and Oceanic Whitetip Sharks The US and Palau introduced two proposals to list several species of hammerhead sharks and the oceanic whitetip shark under Appendix II of CITES to ensure that the international trade of these highly threatened species is legal and sustainable.

The three sharks included in the first US/Palau [proposal](#) were the [scalloped hammerhead](#), [great hammerhead](#), and [smooth hammerhead](#). The US had amended this proposal to remove the sandbar shark and dusky shark. Although the proposal gained a simple majority, it did not receive the two-thirds majority needed for adoption (75 votes in favor, 45 votes in opposition, and 14 abstentions). Since the vote was close, a decision was made by the US to reintroduce the hammerhead proposal for another vote. Once again, the proposal garnered a simple majority but failed to acquire the two-thirds majority needed for adoption (76 votes in favor, 53 votes in opposition, and 14 abstentions). The second [proposal](#) submitted by the United States and cosponsored by Palau was for the listing of the [oceanic whitetip shark](#). The US amended this proposal to delay implementation for 24 months. Although the proposal received a simple majority, it also did not receive the two-thirds majority required for adoption (75 votes in favor, 51 votes in opposition, and 16 abstentions).

US Coral Triangle Initiative Launched. Recognized as the global center of marine biological diversity, the Coral Triangle is a geographic area encompassing almost 6 million km² of ocean and coastal waters in Southeast Asia and the Western Pacific. Within the Exclusive Economic Zones of six nations – Indonesia, Malaysia, Papua New Guinea, the Philippines, Timor Leste, and the Solomon Islands (CT6) – the region is home to some 363 million people, one-third of whom are directly dependent on coastal and marine resources for their livelihoods. The Coral Triangle is at immediate risk from a range of factors, including: unsustainable fishing, land-based sources of pollution, and climate change. To ensure long-term food security and to safeguard the region's extraordinary marine and coastal resources, in August 2007, Indonesian President Yudhoyono proposed the creation of the [Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security](#) (CTI), a multilateral partnership among CT6 countries. Twenty-one heads of state, including President Bush, welcomed the Initiative at the Asia-Pacific Economic Cooperation (APEC) Summit in September 2007. The CTI was officially launched in December 2007 during the 13th Conference of the Parties to the UN Framework



A map of the Coral Triangle region with priority geographies and target sites highlighted. Courtesy: US Coral Triangle Initiative Support Program

Convention on Climate Change in Bali. Reaching a major milestone in May 2009, the CTI's six heads of state [signed the declaration](#) launching the CTI and endorsed the Regional Plan of Action for the CTI.

The [US Agency for International Development](#) and the [US Department of State](#) are supporting the CTI with a \$40 million, five-year program implemented by NOAA, a consortium of nongovernmental organizations, and a Program Integrator. Collectively, this team is called the United States Coral Triangle Initiative Support Team (US CTI). NOAA, as one of the key partners in the [US Coral Triangle Initiative Support Program](#), serves as the US government agency providing technical assistance, and scientific and management capacity to the six Coral Triangle countries. The CRCP coordinates NOAA's involvement in the US CTI. NOAA activities include

technical support and capacity building in: marine protected areas (MPA); climate change adaptation; and ecosystem approaches to fisheries management (including [illegal, unreported and unregulated fisheries](#) (IUU), highly migratory fisheries observer programs, and live reef food fish trade). In example, NOAA will be training national level experts on coastal climate adaptation planning, enhancing management capacity of municipal level MPA managers, and the training of trainers to institutionalize training and curriculum. NOAA is also cooperating closely with the [International Monitoring, Control and Surveillance Network](#), as well as other domestic and international partners, to develop regional activities to address IUU fishing in the CT region. NOAA will provide assistance to Indonesia in developing its early action plan for Climate Change Adaptation and develop capacity on tools to implement the early action plan.

February 2010 marked a significant milestone in the US CTI, when, after nearly two years of planning, the Consolidated Work Plan for the US CTI Support Program was finalized, marking the official launch of the program.

ANNOUNCEMENTS

Applications Requested to Fill Immediate Opening for a Coral Reef Management Fellow in Florida. [I.M. Systems Group](#), a contractor to NOAA's CRCP, is seeking an individual to serve as a Coral Reef Management Fellow for Florida's Department of Environmental Protection as part of the [Coral Reef Management Fellowship Program](#). The Fellowship position, which is based in Miami, Florida, will begin as soon as the selected candidate is available, and will end in January 2012. To apply, click [here](#) and follow the instructions outlined in the posted statement of work. The statement of work also includes an overview of the goals, duties, and qualifications for the position. Applications will be accepted until the position is filled.

CHOW 2010: Clean Energy and a Healthy Ocean: Navigating the Future. As the premier ocean-focused conference held annually in Washington, DC, Capitol Hill Ocean Week (CHOW) brings together Members of Congress and Congressional staff; federal, state and local government institutions; and experts from industry, academia, and the nonprofit community in an effort to shape marine policy discussions and incite lively conversation about current ocean and coastal issues. Held in conjunction with [World Oceans Day](#) and anchored by the [National Marine Sanctuary Foundation's](#) annual [Leadership Awards Dinner](#), CHOW provides ocean policy professionals with unique opportunities to advance marine policy goals and interact with peers in the nation's capital.

[CHOW 2010](#) will focus on the intersection between ocean and energy issues, including the ocean's diverse abilities to supply energy through current and emerging technologies and the myriad ways in which energy production and consumption affect the ocean. Click the link above to see the agenda and additional information.

Keep the Sea Free of Marine Debris Children's Art Contest. Between Earth Day and June 1, [NOAA's Marine Debris Program](#) is running an art contest for students currently in Grades K-8. Titled 'Keep the Sea Free of Marine Debris,' the contest asks children to illustrate how marine debris affects them and what they are doing about it. For more details, instructions, and entry form, click [here](#). Winning artwork will be featured on the Marine Debris Program Website, newsletter, and in a 2011 calendar/planner.

Petition to List Bumphead Parrotfish Under the ESA. On April 2, NOAA's [National Marine Fisheries Service](#) (NMFS) announced a positive 90-day finding for a petition from WildEarth Guardians to list Bumphead Parrotfish as Threatened or Endangered under the [Endangered Species Act](#) (ESA). The petitioner also requested that critical habitat be designated for this species concurrent with listing under the ESA. The petition asserts that overfishing is a significant threat to the bumphead parrotfish and that this species is declining across its range and is nearly eliminated from many areas. The petition also asserts that degradation of its coral habitat through coral bleaching and ocean acidification is a threat to this species, as coral is its primary food source. The positive 90-day finding means that the petition listed enough substantial scientific or commercial information indicating that the petitioned actions may be warranted for NOAA to initiate a comprehensive status review of the best available scientific and commercial information for the species. Subsequently, a call for additional scientific and commercial information on the species was requested by May 3. NMFS has one year to complete the review and deliver a final finding for Bumphead Parrotfish. It should be noted that because the full status review is more comprehensive than the 90-day review, the 'may be warranted' finding in April does not guarantee that the species will be listed under the ESA. For full details, download the [Federal Register Notice](#) (Vol. 75, No. 63, pp 1671316716, *pdf 60 kb*).

New Coral Ecosystem Data RSS Feed. NOAA's [Coral Reef Information System](#) (CoRIS) is the repository for all data and products generated by the CRCP. In response to multiple requests from data providers and site users, CoRIS has made metadata records and publications recently posted in its catalogs more easily discoverable on the CoRIS Website. CoRIS has developed and launched a Coral Ecosystem Data Really Simple Syndication (RSS) feed. The RSS feed is a dynamic listing of the 50 most recently updated metadata records in the CoRIS repository. It is updated daily and is the first of three RSS feeds CoRIS will be developing. Visitors to the CoRIS Website can [subscribe](#) to the Coral Ecosystem Data RSS feed or simply view the listing. The feed is also accessible from the CoRIS homepage. User feedback is welcomed. Please send all questions and comments to coris.metadata@noaa.gov.

Launch of New Website Provides Access to Global Socioeconomic Information. The [Global Socioeconomic Monitoring Initiative for Coastal Management](#) (SocMon) works through regional and local partners to facilitate community-based socioeconomic monitoring. Household and community-level data are collected to inform a particular population's dependence on coral reef resources and their perceptions of resource conditions, threats to marine and coastal resources, and support for marine management strategies such as marine protected areas. To date, over 60 assessments have been completed in 30 countries; the majority of these reports have been funded through the NOAA International Coral Reef Conservation Grants. SocMon fills a critical need by advancing a global and regional understanding of human interactions with, and dependence upon, coastal resources. This information can be used by coastal managers to modify their activities to achieve more effective management. SocMon is coordinated and primarily funded through NOAA. On March 31, SocMon launched a redesigned Website that is hosted by [ReefBase](#). One major improvement found on the new site is the inclusion of access to the new SocMon database. The database has access to all of the SocMon site reports completed to date. The database is searchable by location, author, monitoring purpose, and other fields. The redesigned site also includes interactive maps depicting work done at specific sites around the world and improved access to SocMon data, publications, and images.

UPDATES FROM HEADQUARTERS

UPCOMING EVENTS

May

17-19: MPA Capacity Building and Mesoamerican Reef Connectivity Workshop, Chetumal, Mexico.

June

1-5: [Coral Disease Outbreak Rapid Response Training](#), Little Cayman, Cayman Islands.

8: [World Oceans Day](#)

8-10: [Capitol Hill Oceans Week](#), Washington, DC.

Research Missions

May 10-June 3: [Papahānaumokuākea Marine National Monument Explorations 2010, NOAA Ship Hi'ialakai](#).

May 17-28: Flower Garden Banks Mapping Mission, [NOAA Ship Thomas Jefferson](#)

May 18-June 8: [Gray's Reef Expedition 2010, NOAA Ship Nancy Foster](#).

June 7-July 3: Deep Sea Coral Research and Technology Program West Coast Deep-Sea Coral Cruise, [NOAA Ship McArthur II](#).

June 26-July 2: Pulley Ridge Mapping Cruise, [NOAA Ship Nancy Foster](#).

NOAA Celebrates Earth Week at Coral Restoration Sites. In celebration of Earth Week, NOAA Administrator Dr. Jane Lubchenco, NOS Assistant Administrator (acting) David Kennedy and others visited the Florida Keys National Marine Sanctuary to highlight coral reef restoration projects that are employing local people.

NOAA also celebrated at eight of the 50 coastal and habitat restoration projects funded through the American Recovery and Reinvestment Act of 2009, including two coral reef restoration projects:

- [Threatened Coral Reef Recovery and Restoration](#), Florida Keys. NOAA was able to quickly hire people collect, rear, and ultimately transplant genetically diverse nursery-grown coral fragments to help replenish 34 degraded reefs in eight distinct areas of coral reefs in the Florida Keys and the US Virgin Islands
- [Maunalua Bay Reef Restoration Project](#), Maunalua Bay, Hawai'i. Mudweed is smothering shallow reef flats, killing off coral and native seagrass meadows. The effort will restore coral reefs through manual removal of invasive alien algae from 22 acres of nearshore waters



Dr. Lubchenco observes the transplanting efforts for staghorn colonies. The corals pictured are fragile and handled only by professionals. Courtesy: NOAA

Recovery Act efforts are helping to jump-start the nation's economy by supporting thousands of jobs as well as restore fish and wildlife habitat that people often take for granted. Not only do reefs play a critical role as habitat, they are also an integral part the economy. Reef-related

expenditures generate billions of dollars in sales in U.S. coral reef regions annually. Learn more by reading the feature stories on the [NOAA](#) and [CRCP](#) Websites.

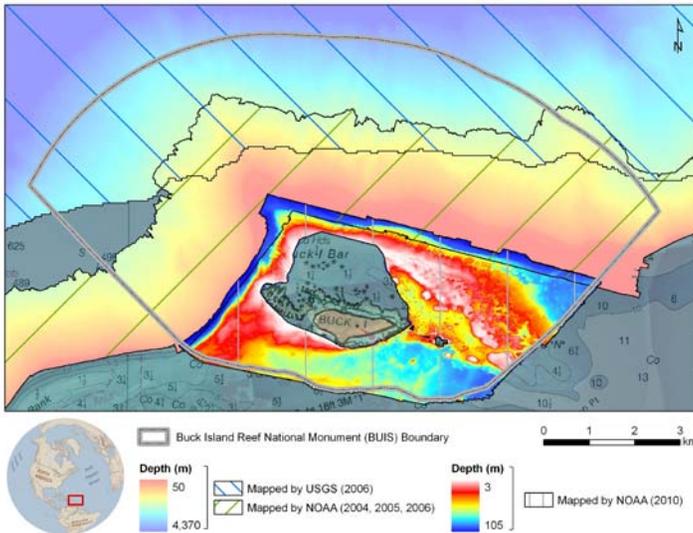
CRCP Educational Tools Shared During National Educators' Conference. The CRCP participated in the Climate Change symposium at the [National Science Teacher Association's \(NSTA\) 2010 national conference](#) in Philadelphia, PA from March 17-19. The half-day symposium brought together experts in climate change and education from various NOAA programs and the University of Texas. The CRCP sponsored nearly 80 educators in attendance by covering their symposium registration fee. The symposium covered global climate change; sea level rise; and bleaching and ocean acidification and coral reefs. A separate stand-alone presentation on corals and climate change was also well attended, with over 50 educators. NOAA had one of the most heavily trafficked booths at the conference, with many NOAA [Teacher at Sea](#) alumni present to talk to fellow educators. CRCP products were also present at the booth, including a coral ecosystem food web poster, coral educational CD, and the debut of the new [Project WET "Discover Coral Reefs"](#) activity booklet. In addition, NOAA Administrator and former university professor, Dr. Lubchenco, gave a plenary presentation that included several demonstrations related to teaching ocean science.

UPDATES FROM THE ATLANTIC/CARIBBEAN REGION

Cruise Assesses MPA Effectiveness in Restoring Seven Fish Species. The NOAA Fisheries [Panama City Laboratory](#) conducted a CRCP-funded cruise aboard the [M/V Spree](#) to several marine protected areas (MPAs) off the coasts of Florida and South Carolina from May 2-10. The goals of the cruise were to determine the presence and abundance (if present) of the seven reef fish species for which the MPAs were established to protect and to inform the [South Atlantic Fishery Management Council](#) of any changes in the fish assemblages over the past year. This mission is part of a project to characterize the resources of the South Atlantic Bight (SAB) closed areas and monitor the performance of the MPAs pre- and post-closure. Results from the cruise will help determine how effective the MPAs are in protecting the seven fish species. This project is also documenting the proliferation, spread, and ecosystem dynamics of invasive lionfish in the South Atlantic Bight.

Due to the water depths involved, a remotely operated vehicle (ROV) from the [University of North Carolina at Wilmington](#) was used to survey known and suspected areas of high relief habitat. Fifteen ROV dives were planned and seventeen were completed. Two collaborators from [Harbor Branch Oceanographic Institution / Cooperative Institute for Ocean Exploration, Research & Technology](#) also participated to assist with invertebrate identification and collect data for a separate NOAA-sponsored mesophotic coral project. Detailed analyses of the surveys and data on fish assemblages will follow in the months ahead. Other notable information collected include the observation of recreational fishing in some of the closed areas and data suggesting that invasive lionfish abundance is less than in previous years.

Mapping of BUIS Shows Shallow-water Topography for Ecosystem Management. A cross-agency team of scientists from NOAA's [Center for Coastal Monitoring and Assessment](#), in cooperation with the NOAA [Chesapeake Bay Office](#), and the [National Park Service](#) (NPS), collected acoustic imagery describing the depth and physical properties of shallow-water habitats in



[Buck Island Reef National Monument](#) (BUIS). These images were collected using a multibeam sound navigation and ranging sensor well suited for mapping marine environments between 5 and 75 m in depth. Mapping conducted on this mission fills in a critical information gap about the topography of BUIS's shallow-water areas. The 20 km² of imagery collected will be combined with previously collected imagery to create a seamless habitat map of the entire marine protected area. This final habitat map will be used by local NPS managers as a baseline for resource assessments, as a guide for present and future biological monitoring efforts, and as a tool to support spatially-explicit ecosystem management decisions.

Coral Reef Fish-Habitat Modeling to Support Fisheries and Ecosystem Management. A successful interagency workshop was held on May 4th at the [University of Miami's](#) (UM) [Rosenstiel School of Marine and Atmospheric Science](#) to showcase the capabilities of the CRCP-funded Reef Visual Census Program (RVC), a reef fish monitoring program that supports fisheries management. The joint UM and NOAA program collects primarily fisheries data, along with some habitat data; it has already been adopted by the [National Park Service](#) in Florida.

The objectives of the workshop were to bring together management clients with scientists to discuss new reef fish-habitat utilization modeling capabilities, management implications and applications of these new modeling capabilities, and specific scientific products that would best fulfill management needs. Participants included seventeen scientists and managers from Federal, State, and local organizations, including representatives from NOAA, NPS, the state of Florida, the [US Fish and Wildlife Service](#), and the [Gulf of Mexico Fishery](#)

[Management Council](#). The workshop focused on management of Florida's coral reef resources, but included broader applications to the US Caribbean and Pacific. This workshop provided a direct line of communication between scientists and managers, allowing communication of the capabilities and products of the RVC from scientists to managers, and feedback regarding specific management needs from managers to scientists.

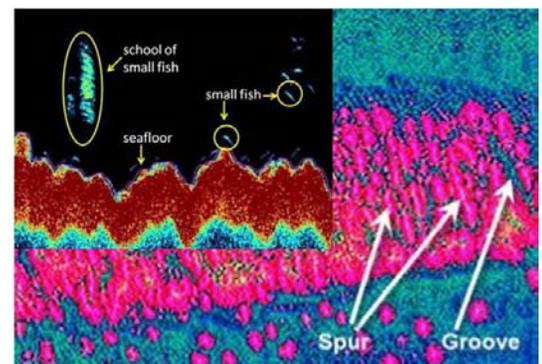
Deep-sea Coral Cruise to Inform Fisheries Management. From April 8-14, researchers aboard the [NOAA Ship Pisces](#) explored deep-sea coral habitats off the southeastern United States, including on the continental slope east of [Gray's Reef National Marine Sanctuary](#), in depths from 200-600 meters (650-2000 feet). The rugged bottom topography and the coral mounds in this region are attractive for deep-sea reef fish like wreckfish and blackbelly rosefish. In addition, large barrellfish and red bream shelter in the rugged bottom and coral mounds, and are thought to forage up in the water column at night. Wreckfish support an important and well-managed fishery off the coast of Georgia and South Carolina, and small amounts of barrellfish, red bream, blackbelly rosefish and other species are incidentally caught and landed in the wreckfish and other deepwater fisheries. In addition to the wreckfish fishery, the continental slope off the southeastern US is a trap fishery for golden crab and a trawl fishery for royal red shrimp. These fishing gears have potential to damage the fragile coral habitat where fish, crabs, shrimp and other animals live. In order to better manage the fisheries and their habitat for sustainable catches, more scientific information is needed regarding where the corals are found and how the harvested animals are associated with those corals.

The results of the research expedition, which employed the ME-70 fishery acoustic system to map fish distribution and abundance, combined with similar historical and future efforts, will result in mapping of high density coral areas and allowable fishing zones that minimize impacts on the habitat in which many important fish species live. Researchers also collected sediment samples and coral fragments with a remotely-operated vehicle (ROV). These samples will be used to evaluate man-made contaminants in these deep coral areas and to test a new isotopic aging technique. In spite of marginal weather conditions and uncommonly high currents, numerous ROV dives were made which provided approximately 15 hours of high resolution video imagery and over four gigabytes of still imagery. For ship photos and crew blogs please visit the mission's [Website](#).

Researchers from two [NOAA Fisheries Science Centers](#), [NOAA's Ocean Service](#), [NOAA's Office of National Marine Sanctuaries](#), the [University of Alabama](#), and the [College of Charleston](#) participated in this cruise, sponsored by [NOAA's Deep Sea Coral Program](#). This project was greatly aided by the participation of a deep ROV team from the [Southwest Fishery Science Center](#) in La Jolla, CA.

Seafloor Mapping Mission in the USVI. Scientists from NOAA's [National Centers for Coastal Ocean Science](#) (NCCOS) and partners completed a seafloor mapping mission off the southern coasts of St. Thomas and St. John in the US Virgin Islands (USVI). The scientists discovered an unexpectedly vast area of high coral cover southwest of St. Thomas, and several schools of relatively rare groupers and snappers at spawning aggregation sites at the shelf edge. The team also spotted roughly 26 derelict fishing traps on the seafloor, as well as coral formations entangled by marine debris.

During the 20-day mission, March 18-April 6, aboard the [NOAA Ship Nancy Foster](#), the team used various SONAR technologies and a remotely operated vehicle to better understand the physical characteristics of the seafloor, locate and explore important seafloor habitats, and study fish populations and distributions at suspected spawning aggregation sites. The data collected will paint a much clearer picture of the USVI's underwater habitats and the animals and plants inhabiting them. Local scientists and managers in the USVI can then use these data sets to make informed ecosystem-



*Main image: Seafloor mapping identified a spur and groove reef (coral depicted in pink, sand in blue) southwest of St. Thomas. Inset: Fish acoustic technology is used to determine the size of individual fish and of fish schools (circled) to help identify spawning aggregations.
Courtesy: NOAA NCCOS Biogeography Branch*

based management decisions to protect, conserve, and sustainably manage these marine resources. This expedition marks the seventh year of the project and included several outreach events attended by local students, partners and political representatives. The mission was led by NCCOS with support from the CRCP and the [Caribbean Fishery Management Council](#). For more details, see the [mission overview](#) and [daily logs](#).

Reef Connectivity Cruise in the USVI. On March 15, the NOAA [Southeast Fisheries Science Center's](#) (SEFSC) [Early Life History Team](#) completed the first leg of this year's US Virgin Islands (USVI) reef fish connectivity cruise, extended to include the coral reef ledges/banks around St. Croix and the south coast of USVI ecosystem. The results of the cruise will help explain how circulation patterns in the area affect local and regional transport as well as retention of ecologically and economically important reef fish species.

The team deployed several satellite-tracked drifters to follow the paths of circulation patterns. The team also completed dive operations to deploy substrate-mounted acoustic Doppler current profilers in the passages to the east of St. Thomas, between Vieques and Culebra, and between Culebra and St. Thomas to help determine long-term regional flow/transport patterns.

This year the circulation of the area was dominated by a southward flow from the Atlantic into the Caribbean, resulting in atypical flow patterns and easterly currents around St. Croix and south of St. Thomas. By contrast, in previous years average circulation was from east to west, then to the northeast through Virgin Passage into the Atlantic. The data collected by the team will help determine whether this is a typical flow pattern for this time of year or simply variance in the average flow. However, early analysis appears to indicate that the net result is transport to the east away from the Buck Island marine protected area toward Saba Bank, a local fishing area for the Leeward Islands. In addition, there appears to be a weak gyre formed between St. Thomas and St. Croix which may provide for larval reef fish retention.

This fisheries oceanography research cruise was a NOAA collaboration between [NOAA Fisheries](#) SEFSC and the [Office of Oceanic and Atmospheric Research's Atlantic Oceanographic and Meteorological Laboratory](#). Students from the [University of the Virgin Islands](#) (UVI) and the [University of Miami](#) participated as well as a researcher from UVI.

USVI Law Enforcement Training. On March 9-10, [NOAA Fisheries](#) Caribbean Field Office conducted training workshops with officers from the US Virgin Islands (USVI) [Department of Planning and Natural Resources' Division of Environmental Enforcement](#). A NOAA [Office of Law Enforcement](#) agent trained USVI officers in evidence collection techniques and Caribbean Field Office staff provided participants with information regarding identification of listed species, managed fishery species, and marine habitats. The training is part of a project funded by the CRCP to create a guide for USVI law enforcement officers entitled: [Regulations & Biology of Marine Ecosystems in U.S. Virgin Islands: A guide for law enforcement officers](#). The purpose of this type of training and the guide is to promote the conservation of coastal and marine resources by informing law enforcement officials about the biology and importance of these resources and the reason laws and regulations exist for their protection. Such educational tools for law enforcement help them more effectively complete their duties and assist them in educating the public about regulations during their outreach or intervention activities.

Reef Fish Spawning Aggregation Research in the Florida Keys. Field work was conducted during the first week of March in support of the reef fish spawning aggregation project in the Florida Keys. NOAA [Southeast Fisheries Science Center](#) researchers, in close coordination with researchers and managers from NOAA [Center for Coastal Fisheries and Habitat Research](#), the [Florida Keys National Marine Sanctuary](#), and the [Florida Fish and Wildlife Conservation Commission](#) are continuing work in the Keys focusing on reef fish aggregation sites. The purpose of the research is twofold: to characterize potential similarities in aggregation site geomorphological characteristics, with a goal of identifying geomorphological "signatures" that could be used to identify other potential aggregation sites; and to determine the extent to which fish are currently utilizing these sites. Some of these sites were reported by commercial fishers to have been "fished out" decades ago.

Mapping work, completed in previous years at upper Keys sites, is underway at sites off Key West. Surveys utilizing split-beam acoustics and scuba divers in 2009 indicated positive signs of aggregating snapper species at several upper Keys sites, and winter surveys are in progress at several upper Keys sites to assess potential grouper utilization. Acoustic and diver surveys for the lower Keys sites are planned for this summer.

UPDATES FROM THE PACIFIC REGION

Coral Ecosystem Conditions in American Samoa from 2010 ASRAMP Observations. The 2010 [Coral Reef Ecosystem Division](#) Reef Assessment and Monitoring Program (RAMP) [cruise](#) to American Samoa and the Pacific Remote Islands Areas provide valuable updates on the conditions of Central Pacific coral reef ecosystems. In late February and March the cruise visited all islands of American Samoa and South Bank. At Rose Atoll, the lasting effects of a 1993 shipwreck can still be seen in the coral reef ecosystem, with up to 50 percent less coralline algae than in other parts of the atoll and only 1 percent coral cover in the immediate area of the wreck, despite the removal of major portions of the rusting vessel by the [US Fish and Wildlife Service](#). However, overall there were no immediately obvious changes at Rose this year compared to previous RAMP surveys in 2008.

At the request of local agencies, South Bank, a popular fishing area 37 miles south of Tutuila, was mapped using the [NOAA Ship *Hi'ialakai's*](#) multibeam sonar systems; the resulting maps show that South Bank is a sunken coral atoll surrounded by a submerged barrier reef. These maps also enabled divers to conduct [Rapid Ecological Assessment](#) and [towed-diver surveys](#), resulting in observations of a scoured rubble surface with low coral cover.

At Ta'u Island, RAMP divers revisited some of the world's largest ancient *Porites* coral formations—one measures 7 m in height and 41 m in circumference! Along the north side of Ta'u Island there has been a dramatic increase in the same invasive tunicate that was recorded at in high levels at Swains Island during the 2008 RAMP cruise. Upon returning to Swains, surveys revealed that the tunicate is no longer present in invasive amounts and the benthic cover has changed to crustose coralline algae. At a site on northeast Ta'u, two survey teams recorded the presence of a 6 ft Giant Grouper. On northwest Tutuila, divers reported a rare sighting of a 4ft-long Whitespotted Guitarfish.

This cruise marked the fifth biennial RAMP surveys to provide an on-going overview of coral reef ecosystem conditions in American Samoa and included six weeks of work in the territory. On-going monitoring of coral reef ecosystems provides a continuous record of how coral ecosystems change over time and how they respond to various stressors and changing environmental conditions.

Post-Tsunami Report on Coral Ecosystem Conditions in American Samoa. On September 29, 2009 a devastating tsunami struck American Samoa and neighboring islands. The deadly waves killed more than 170 people, caused severe property damage, and swept villages out to sea. In addition, they deposited a great deal of debris on the reefs in the territory; [marine debris](#) can cause damage to reefs as it is moved around by waves and currents. In December 2009, as part of a marine debris [project](#), NOAA's [Coral Reef Ecosystem Division](#) (CRED) marine debris personnel participated in [post-tsunami surveys](#) in the waters around the island of Tutuila, helping to remove 8000 lbs. of debris from the coral reefs, and identifying 253 additional targets for later marine debris removal.

The 2010 Reef Assessment and Monitoring Program (RAMP) [cruise](#) to American Samoa provided an opportunity to observe any continued impacts to the territory's coral reefs five months after the tsunami. [Towed divers](#) specifically noted any evidence of coral reef damage caused by the tsunami during their surveys at 40-60ft depth around several of the territory's islands. The condition of the reefs around Tutuila was observed to be good with little evidence of tsunami impacts; coral damage in surveyed areas appeared minor overall. Some

evidence of damage was seen on all sides of the island; however, localized areas of damage were most often observed just offshore of the villages on the southwest, west, and northwest coasts. Localized areas of coral damage consisting of overturned *Acropora* tables and broken/scattered plating colonies were noted, including one instance of a large *Porites* colony that had been toppled by tsunami waves but was still alive. No noticeable damage attributable to the tsunami was recorded by the benthic towed-divers around the other islands of the territory visited during this cruise.

This cruise marked the fifth biennial RAMP surveys to provide an on-going overview of coral reef ecosystem conditions in American Samoa and included six weeks of work in the territory. On-going monitoring of coral reef ecosystems provides a continuous record of how coral ecosystems change over time and how they respond to stressors, such as tsunami-related damage.

2010 RAMP Cruise Results from PRIMNM. On April 24, a CRCP-funded Coral Reef Ecosystem Division (CRED) monitoring [cruise](#) aboard the [NOAA Ship *Hi'ialakai*](#) returned to Honolulu from its last cruise leg—conducting Reef Assessment and Monitoring Program (RAMP) surveys in the Pacific Remote Islands Marine National Monument (PRIMNM). Biennial RAMP cruises have monitored conditions in this region since 2000.



Jarvis Island 2010: Montipora aquituberculata, left panel; *Sinularia* dominance on the western side of the island, upper right panel; Broken *Pocillopora* colonies, lower right panel. Courtesy: CRED

Formal data analysis will begin shortly and will further clarify these early reports, but preliminary outcomes include observations of dominant coral species and overall hard coral cover on each island and comparisons of various populations with previous RAMP surveys. For instance, on Jarvis island, hard coral dominated the reefscape and shark populations appear to have returned to normal since the 2008 cruise, but macroinvertebrate counts were lower than normal. Low-level coral bleaching was observed at Palmyra Atoll and macroinvertebrates were nearly absent from survey results. Kingman Reef had a dramatic increase in cyanobacteria near a shipwreck but continues to harbor the highest concentration of giant clams observed in any of the Pacific regions surveyed by CRED.

Monitoring of coral reef ecosystems in the islands and banks of the PRIMNM—which are some of the last near-pristine, unpopulated coral reefs in the world—provides a baseline metric for ecosystem function. These remote areas are almost ideal

laboratories to study the effects of global threats on coral reef ecosystems, such as climate change and ocean acidification, because they lack the numerous local anthropogenic impacts found in coral ecosystems closer to human populations.

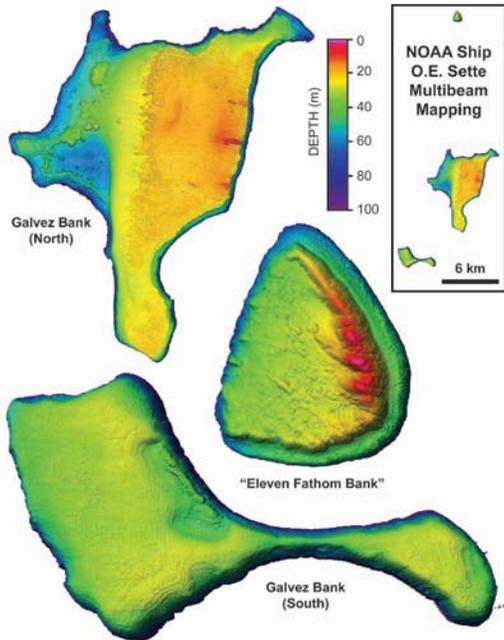
Mariana Mission Provides Maps and Fisheries Information. During a 30-day [cruise](#) around Guam and the Commonwealth of the Northern Mariana Islands (CNMI), the [NOAA Ship *Oscar Elton Sette*](#) completed mapping and deployed four different types of instruments to monitor fish abundance and composition around six banks and islands. A video overview is available [here](#). Three popular fishing banks south of Guam, Galvez Bank, a small bank to the south of Galvez, and 11-Mile Reef, were completely mapped using a pole-mounted multibeam sonar provided by the [NOAA Coral Reef Ecosystem Division](#) (CRED). Following mapping, two types of baited camera stations—CRED's BotCam and Baited Remote Underwater Video Stations (BRUVS) from the University of Guam and University of Western Australia—a towed camera system, and a SeaBed autonomous underwater vehicle (AUV) were



A rare and protected coral, Euphyllia paraancora, was photographed on West Saipan. Courtesy: Pacific Islands Benthic Habitat Mapping Center, CRED

tested to compare non-extractive methods for fish observations. During this cruise, AUV capabilities were enhanced by adding the capability to transmit data to the surface during deployment.

Operations then moved to Rota, CNMI, where the ship mapped in 40-300 m depths to add to previous multibeam coverage; additional BRUVS and AUV operations were also completed. After a mid-cruise stop in Saipan, mapping of Farallon de Medinilla was completed and revealed the previously unknown extent of this large underwater feature that is of interest to CNMI fisheries management agencies. During the final segment



of the cruise, BRUVs and towed camera operations were conducted on the extensive banks west of Saipan. BRUVS data from 123 deployments at Galvez Bank, Rota, and West Saipan will be used by researchers from the University of Guam and University of Western Australia to compare fish populations and habitats in these three areas. Towed camera operations west of Saipan confirmed the existence of a rare and protected coral, *Euphyllia paraancora*, in that area. Education and outreach activities were conducted in Saipan and Guam and a [NOAA Teacher at Sea](#) participated in the cruise.

The [Pacific Islands Fisheries Science Center](#), in response to requests from management agencies in Guam and CNMI made during the [2008 Pacific Coral Reef CREIOS workshop](#), initiated a series of four fisheries cruises in the western Pacific in 2010. Data from these cruises enhance the valuable on-going data set from biennial CRCP Reef Assessment and Monitoring Program (RAMP) cruises. Fisheries-related issues have been identified as one of the three major threats to coral reef ecosystems. Creating maps of important fisheries banks and islands and collection of fisheries data using non-extractive methods aids jurisdictional managers in making important fisheries decisions.

*Map of fishing banks south of Guam.
Courtesy: [Pacific Islands Benthic Habitat Mapping Center](#), CRED*

INTERNATIONAL UPDATES

MPA Capacity Building and Mesoamerican Reef Connectivity Workshop. An international workshop was held from May 17-19 in Chetumal, Mexico at the El Colegio de la Frontera Sur (ECOSUR) campus. This workshop promoted a better understanding of the bio-physical connectivity along the Mesoamerican Reef (MAR) and its potential role in ecosystem-scale management of associated protected areas. An exchange of experiences and ideas between management and scientific personnel at the workshop will be used to identify long-term common goals of the participating organizations. Resource managers, scientists, and other stakeholders from Belize, Guatemala, Honduras, Mexico and the US were invited to participate in this regional workshop; many of the invitees work with/in prioritized marine protected areas in the MAR.

Goals of the workshop included enhancing regional capacity by creating a MAR Connectivity Coalition of managers and scientists; providing a mechanism for on-going communications/ collaborations between participants, setting ecosystem-scale connectivity research priorities and identifying the priority regional connectivity goals; and identifying data sources that can be shared. A summary report will be provided to participants after the conclusion of the workshop.

CRW Participates in Australian Research Expedition. As a part of continuing collaborations between NOAA's [Coral Reef Watch](#) (CRW) and the [Australian Institute of Marine Science](#) (AIMS) in the southern Great Barrier Reef, NOAA staff participated in a research expedition in March 2010. The field study deployed oceanic drifters in the vicinity of Heron Island to monitor currents. Drifters were fitted with GPS trackers that

communicate position via satellite SMS approximately every 10 minutes. The fieldwork was greatly hindered by a series of inclement weather conditions; however, subsequent to the expedition, the deployment of drifters was continued in late April 2010. This work is part of the ongoing collaboration between NOAA, AIMS and other Australian partners to study links between climate change and coral health, and is part of the [Great Barrier Reef Ocean Observing System](#) within the Australian [Integrated Marine Observing System](#).

CRW Hosts International Workshop on Reef Remote Sensing. NOAA [Coral Reef Watch](#), in collaboration with the [University of Queensland Centre for Marine Studies](#), hosted an international workshop entitled “Satellite monitoring of coral reef vulnerability in a changing climate”. Held in the [Lamington National Park](#) near Brisbane, Australia, from February 15-18, the workshop reviewed current satellite and ground-based coral reef environmental monitoring capabilities. It also reviewed the current coral reef management and science needs, from the perspective of environmental satellite data. Via a series of invited talks and group discussions, the workshop then investigated possible solutions to meet the identified needs, such as development of tools to monitor water quality, reef use, oil slicks, and others.



Workshop participants and leaders. Courtesy: Mark Eakin, CRW

Thirty-four participants from the US, Mexico, and Australia attended. The participants, most of whom are world leaders in their respective fields, included a mixture of coral reef managers and scientists from relevant fields such as satellite remote sensing, coral physiology, coral reef monitoring, oceanography, computer learning and informatics, and database management.

The workshop noted the importance of CRW’s suite of satellite products to the management and science of coral bleaching. CRW’s continued partnerships with Australian scientists and government agencies in coral reef research and protection have already leveraged Australian funds to help promote these collaborations that will ultimately help make our domestic activities more efficient. This workshop will help NOAA develop coral reef remote sensing products and use international expertise to improve our understanding and management of coral reef resources.

DIVE DEEPER: DEEP-SEA CORALS

Recent emphasis on the conservation of deep-sea corals and the associated new legislation have elevated awareness to the presence of these unique deep-ocean habitats. Deep-sea corals have been the focus of dozens of large-scale expeditions, but comparatively little attention has been given to deep-sea sponge fauna.

The first dedicated collections of deep-water (> 50 m) sponges from the central Aleutian Islands revealed a rich fauna including 28 novel species and geographical range extensions for 53 others. Based on these collections and the published literature we now confirm the presence of 121 species (or subspecies) of deep-water sponges in the Aleutian Islands. Clearly the deep-water sponge fauna of the Aleutian Islands is extraordinarily rich and largely understudied. Submersible observations revealed that sponges, rather than deep-sea corals, are the dominant feature shaping benthic habitats in the region and that they provide important refuge habitat for many species of fish and invertebrates including juvenile rockfish and king crabs. Examination of video footage collected along 127 km of the seafloor further indicate that there are likely hundreds of species, still uncollected from the region, that are unknown to science. Furthermore, sponges are extremely fragile and high rates of fishery bycatch clearly indicate a strong interaction between existing fisheries and sponge habitat.

Bycatch in fisheries and fisheries independent surveys can be a major source of information on the location of the sponge fauna but current monitoring programs are greatly hampered by the inability of deck personnel to identify bycatch. Help is on the way. A Guide to the Deep-water Sponges of the Aleutian Island Archipelago

by Robert Stone, Helmut Lehnert, and Henry Reiswig is scheduled for publication sometime this summer. The main purpose of the guide is to provide fisheries observers and scientists with the information necessary to adequately identify sponge fauna so that areas of high abundance can be mapped and the locations of indicator species of vulnerable marine ecosystems can be determined. The guide is also designed for use by scientists making observations of the fauna *in situ* with submersibles including remotely operated vehicles and autonomous underwater vehicles.

The guide will be published as a NOAA Professional Paper and contains detailed species descriptions with photographs for more than 110 sponges found in Alaskan waters. [NOAA's Deep Sea Coral Research and Technology Program](#) is providing funding for publication of the guide.

NEW DATA IN CoRIS

Product Name	Description
C-CAP Land Cover Data, Hawaii	This data set consists of land cover derived from high resolution imagery and was analyzed according to the Coastal Change Analysis Program (C-CAP) protocol to determine land cover. These datasets utilized Quickbird multispectral scenes. All scenes were processed to detect C-CAP land cover features.
Sample Link: http://coris.noaa.gov/metadata/records/html/ccap_2006_lanai_land_cover.html	
C-CAP Land Cover Data, American Samoa	This data set consists of land cover derived from high resolution imagery and was analyzed according to the Coastal Change Analysis Program (C-CAP) protocol to determine land cover. These datasets utilized IKONOS and Quickbird multispectral scenes. All scenes were processed to detect C-CAP land cover features.
Sample Link: http://coris.noaa.gov/metadata/records/html/amer_samoa_swains_2002_ccap_hr_land_cover.html	
Synoptic Bi-monthly and Storm Response Water Quality Sampling in Southern Kaneohe Bay, HI November 2007 - April 2009 (NODC Accession 0062644)	Synoptic sampling including water column profiles and collected surface water samples was conducted on a bi-monthly basis throughout the rainy season (October-May) and on a monthly basis in the dry season (June-September) at nine locations in southern Kaneohe Bay in support of the Coral Reef Instrumented Monitoring Platform (CRIMP) program. Another dozen or so ancillary stations were also monitored selectively. This is the second set of data provided to NODC. The first set encompasses 2005 - October 2007 and is stored in NODC Accession 0060061.
Sample Link: http://coris.noaa.gov/metadata/records/html/nodc_fgdc_metadata_0060061.html	
US Environmental Protection Agency National Coastal Assessment for American Samoa 2004: water quality, sediment grain, and chemistry data (NODC Accession 0000455)	The survey sampled 49 stations on the islands of Tutuila, Aunu'u Ofu, Olosega, Ta'u during April and August, 2004. The water quality measurements data set contains two types of data: hydrologic profile water quality information resulting from in-field observations of physical data and water quality information resulting from laboratory examination of water quality samples for nutrient analyses. The sediment chemistry data set reports the contaminant name and its associated measured concentration, date site was visited, and the group that collected the data. The sediment grain size data set contains sediment grain analyses information resulting from laboratory examination of samples collected at sites visited during probability surveys.
Sample Link: http://coris.noaa.gov/metadata/records/html/nodc_fgdcmetadata_0000455.html	

Benthic Habitat Mapping off St. John, U.S. Virgin Islands National Park and Virgin Islands Reef National Monument project.	Benthic habitats of the shallow-water and moderate-depth marine environment in and around the Virgin Islands Coral Reef National Monument were mapped using a combination of semi-automated classification and visual interpretation of remotely sensed imagery and acoustic imagery. The objective of this effort, conducted by NOAA's Center for Coastal Monitoring and Assessment - Biogeography Branch in partnership with the U.S. National Park Service (NPS), was to provide spatially-explicit information on the habitat types, biological cover and live coral cover of the shallow-water and moderate-depth area south of St. John.
Sample Link: http://coris.noaa.gov/metadata/records/html/metadata_stjohn_moderatedepth_benthic_habitats.html	
2005 Oahu/Maui LiDAR Mapping Project	LiDAR data are remotely sensed high-resolution elevation data collected by an airborne collection platform. These data were collected over a portion of Maui and Oahu, Hawaii with a Leica ALS-40 Aerial Lidar Sensor. Multiple returns were recorded for each pulse in addition to an intensity value.
Sample Link: http://coris.noaa.gov/metadata/records/html/hi2005_template.html	
2003 Oahu Coastline LiDAR Mapping Project	LiDAR data are remotely sensed high-resolution elevation data collected by an airborne collection platform. These data were collected over a 100 meter swath of the Oahu, Hawaii coastline with a Leica ALS-40 Aerial Lidar Sensor. Multiple returns were recorded for each pulse in addition to an intensity value.
Sample Link: http://coris.noaa.gov/metadata/records/html/hi2005_template.html	
CRED Towed-Diver Benthic Characterization Surveys	Towboard surveys are a good method for obtaining a general description of large reef areas, assessing the status of low-density populations of large-bodied reef fish, large-scale disturbances (e.g., bleaching), general distribution and abundance patterns of macro-invertebrates (e.g., COT, giant clams), and for assessing trends in these populations and metrics. The benthic diver records percent cover of coral and macroalgae, estimates benthic habitat type and complexity, and censuses a suite of benthic macroinvertebrates including Crown of Thorns sea stars and sea urchins. The benthic towboard is equipped with a downward-facing digital still camera which images the benthos at 15 second intervals. These images are analyzed for percent cover of coral, algae, and other benthic components.
Sample Link: http://coris.noaa.gov/metadata/records/txt/cred_towboard_benthic_rose_atoll_2006.txt	
CRED Towed-Diver Fish Biomass Surveys	Towboard surveys are a good method for obtaining a general description of large reef areas, assessing the status of low-density populations of large-bodied reef fish, large-scale disturbances (e.g., bleaching), general distribution and abundance patterns of macro-invertebrates (e.g., COT, giant clams), and for assessing trends in these populations and metrics. The fish diver records, to the lowest possible taxon, all large-bodied reef fishes (>50cmTL) seen within 5m either side and 10m in front of the towboard. Length of each individual is estimated to the nearest cm. The fish towboard is also outfitted with a forward-facing digital video camera to record the survey swath.
Sample Link: http://coris.noaa.gov/metadata/records/txt/cred_towboard_fishbiomass_asuncion_island_2009.txt	
Impervious Surfaces, Island of Saipan, Commonwealth of the Northern Mariana Islands	This is a final impervious surface layer ready for distribution through NOAA CSC. The data set is an inventory of impervious surfaces for Saipan, Commonwealth of the Northern Mariana Islands for the year 2005. Impervious surfaces include manmade features such as building rooftops, parking lots and roads consisting of asphalt, concrete and/or compacted dirt. This data set utilized Quickbird multispectral scenes which were processed to detect impervious features on the Commonwealth of the Northern Mariana Islands.
Sample Link: http://coris.noaa.gov/metadata/records/txt/cnmi_saipan_2005_ccap_hr_impervious.txt	

C-CAP Land Cover, Jobos Bay, Commonwealth of Puerto Rico 2007	This data set consists of land cover derived from high resolution imagery and was analyzed according to the Coastal Change Analysis Program (C-CAP) protocol to determine land cover. This data set utilized 31 ADS40 digital orthophotos. The imagery was flown between November 2006 and March 2007. There are no cloud obscured areas within the base imagery. The scene was processed to detect C-CAP land cover features within the Jobos Bay watershed located on the southeastern coast of the Commonwealth of Puerto Rico.
Sample Link: http://coris.noaa.gov/metadata/records/txt/pr_jobosbay_2007_ccap_hr_land_cover.txt	

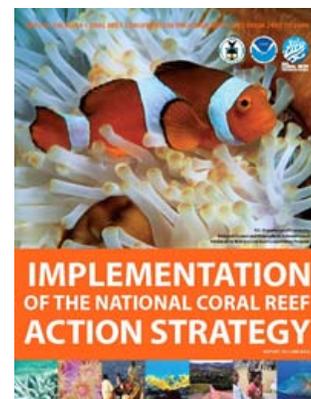
PUBLICATIONS

US Reef Jurisdictions Articulate Priority Reef Management Goals and Objectives. In May, the CRCP released seven strategic planning documents. These [seven documents](#) respectively articulate a set of strategic coral reef management priorities developed in consensus by the coral reef managers in each of the seven US coral reef jurisdictions. The CRCP provided support to the jurisdictions to coordinate with the broader management community in each place to determine strategic goals and objectives. NOAA will use these documents in conjunction with its [2010–2015 Coral Reef Conservation Program National Goals and Objectives](#) to direct its investment in each jurisdiction through grants, cooperative agreements and internal funding. NOAA will also make the document available to other potential funders, such as non-governmental organizations and federal partners, and encourage leveraging and new or expanded partnerships to achieve common coral reef conservation goals.

This priority setting process stems from an [external review](#) of the CRCP conducted in 2007 to independently assess how effectively the program has met its goals. The review included recommendations for future improvements. In response to the review, the CRCP developed a *Roadmap for the Future*, laying out new principles and priorities. A key part of this [Roadmap](#) includes facilitating the development of management priorities for each of the US state and territorial coral reef jurisdictions and conducting capacity assessments to help achieve these priorities.

The next step in the process is to complete a capacity needs assessment in each jurisdiction. These assessments will help identify where gaps may exist in a jurisdiction's ability to achieve its management priorities. Outcomes from the capacity assessments will also be used to inform future funding decisions. A capacity assessment will be conducted for one jurisdiction by the end of fiscal year (FY) 2010. The remaining assessments will be conducted in FY2011.

CRCP Delivers Report on 2007-2009 Activities. On April 12, 2010, the CRCP delivered the [Implementation of the National Coral Reef Action Strategy: Report on NOAA Coral Reef Conservation Program Activities from 2007 to 2009](#) to Congress. It is the third of the biennial progress reports to Congress required by the Coral Reef Conservation Act of 2000. The report provides summaries and examples of the activities conducted by the CRCP and its extramural partners between 2007 and 2009 to implement the thirteen goals addressed in the [National Coral Reef Action Strategy](#). The report also describes the Program's reorganization to focus its efforts to understand and address the three major threats to reefs; impacts from climate change, fishing, and land-based sources of pollution. During the period covered by this report, the CRCP operated pursuant to thirteen program goals organized under two themes: Understanding Coral Reef Ecosystems and Reducing the Adverse Impacts of Human Activities. The report presents activities undertaken for each of these goals, including mapping, assessment, monitoring, partnerships, socioeconomic research, and restoration, among others. It also includes summaries of some major reports produced by, or in partnership with, the CRCP during this time period as well as the outcomes of an external review and subsequent shifting of focus for the Program.



NOAA Delivers Deep-sea Coral Report to Congress. On March 3, NOAA delivered to key members of Congress a report on the [Implementation of the Deep Sea Coral Research and Technology Program 2008-2009](#). The report, prepared in consultation with the Regional Fishery Management Councils, summarizes activities initiated with fiscal year 2009 Deep Sea Coral Research and Technology Program funding. It also presents a brief synopsis of additional conservation actions that have taken place since the first Report to Congress was submitted in 2008.

Proceedings from Second International Workshop on Red Coral Science Released. The family Coralliidae, consisting of the genera *Corallium* and *Paracorallium* and commonly known as pink and red corals, contains the most valuable and rarest taxa of precious corals in commerce. Seven species in this family have been intensively fished for use in jewelry, amulets, art objects, and homeopathic medicines. In March, NOAA released a new technical memorandum, [Proceedings of the International Workshop on Red Coral Science, Management, and Trade: Lessons from the Mediterranean](#). Hosted by the Italian Ministry of Agriculture and Ministry of Environment and the CRCP in September of 2009, the second international red coral workshop provided an opportunity to discuss the best available science on the natural history of Mediterranean red coral (*Corallium rubrum* L.) and how it is managed throughout the region and utilized around the world. Attendees included scientists, managers, representatives of the coral fishery and manufacturing industries, policy makers, and environmental organizations from Europe, Africa, Asia, and North America.

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