

# Deep-Sea Coral Updates

The Bi-monthly Newsletter of the NOAA Deep-Sea Coral Program

September 2008



An Alaskan "coral garden" with several species of soft corals, hydrocorals, hydroids, and demosponges. Photo credit: Albert Lindner.

NOAA supports sound science and effective management for the conservation and sustainability of deep-sea coral and sponge ecosystems.

## NOAA's Fisheries Service Protects Bering Sea Habitat

NOAA's Fisheries Service has prohibited the use of bottom trawl gear in 130,000 square nautical miles of the Bering Sea, an area where the gear has not been used previously, to protect the sea bottom habitat. The agency received over 6,000 public comments on the proposed rule, which was released for review in March. The majority of comments supported the action. The new closure is in addition to about 290,000 square nautical miles of habitat in the North Pacific, including important deep-sea coral habitats that came under new protections in 2006.

Newly closed are the Bering Sea Habitat Conservation Area, the largest area covered by the new rule; the St. Lawrence Island Habitat Conservation Area; the St. Matthew Island Habitat Conservation Area; and the Nunivak Island, Etolin Strait, and Kuskokwim Bay Habitat Conservation Area. Closing waters around St. Matthew Island will protect habitat for blue king crab, a species with fishing closures in place since 1999. Closures around St. Lawrence Island and Nunivak Island and within Etolin Strait and Kuskokwim Bay support subsistence species such as halibut, which inhabit the sea floor, and walrus, which feed from the sea floor.

The new rule implements Amendment 89 to the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area. The closures apply to federally permitted fishing vessels. For maps of the new closed area, go to <http://alaskafisheries.noaa.gov/sustainablefisheries/amds/89/language.pdf>. The final rule and responses to public comments may be read at <http://alaskafisheries.noaa.gov/frules/73fr43362.pdf>. For more information, please contact John Olson, Marine Habitat Resource Specialist ([John.V.Olson@noaa.gov](mailto:John.V.Olson@noaa.gov)).

## Research Cruise off the Southeast U.S.

The NOAA's Fisheries Service's Southeast Fisheries Science Center (SEFSC) completed a research cruise to five proposed marine protected area (MPA) sites, which lie between Jacksonville, FL and Cape Fear, NC, during the week of July 21st. These MPAs are described in Amendment 14 of the South Atlantic Fishery Management Council's (SAFMC) Snapper-Grouper Fishery Management Plan, and will protect spawning aggregation sites and habitat of five species of grouper and two species of tilefish. The 2008 mission was conducted aboard the NASA ship M/V Liberty Star and utilized a remotely operated vehicle (ROV) and a stationary video camera array, both controlled by staff from the National Undersea Research Center at the University of North Carolina-Wilmington. Biological samples were collected with fishery-dependent and independent methods, and several physical oceanographic parameters were also measured. Samples, which were collected in control and experimental sites within each of the five MPA areas, are currently being analyzed. Upon completion, the results will be provided to the SAFMC along with comparisons to fish densities found in 2004, 2006, and 2007. Gorgonians and black corals were observed at a number of the sites. The order of magnitude increase in lionfish densities found between the 2006 and 2007 surveys appears to have abated this year; however, lionfish are still very numerous at sites along the continental shelf of the southeast U.S. between 50 and 100 m with deep reefs off South Carolina having the highest densities. Four of the seven grouper and tilefish species targeted by these MPAs were also observed on this mission. For further information, please contact Andy David, Research Fish Biology ([andy.david@noaa.gov](mailto:andy.david@noaa.gov)).

### Public Hearings on Deepwater Coral HAPCs in the South Atlantic

Two rounds of public hearings are being held to refine a proposal to establish five Deepwater Coral Habitat Areas of Particular Concern (C-HAPCs) in the South Atlantic to protect deepwater corals. Public hearings were held May 7-15, 2008 to obtain public input and feedback from advisors in the golden crab and royal red shrimp fisheries. The South Atlantic Fishery Management Council (SAFMC) selected preferred management alternatives for analysis in June 2008, including establishment of “Allowable Golden Crab Fishing Areas” and a “Shrimp Fishery Access Area” within the proposed C-HAPCs. A second round of public hearings is scheduled for October 27-November 3, 2008. The SAFMC is scheduled to approve the designation of the deepwater C-HAPCs at their December meeting in North Carolina. For more information, please contact Myra Brouwer ([myra.brouwer@safmc.net](mailto:myra.brouwer@safmc.net)).

### Florida Reporter Wins Grantham Merit Award

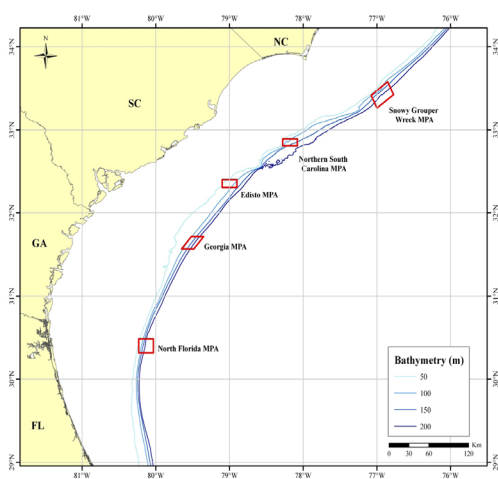
Dinah Voyles-Pulver, a writer for the Daytona Beach News-Journal, was one of four individuals to receive a Grantham Merit Award for excellence in environmental journalism. Voyles-Pulver authored a series of articles call “Our Natural Treasures: Are we losing our way?” Each part of the series, which ran over a 12-month period, focused on the degradation of Florida’s environment and natural beauty within the ocean, beaches, wetlands, springs, longleaf pine forests, scrub lands, and the Indian River Lagoon.

In Part 1 of the series, Voyles-Pulver worked with John Reed, a senior scientist at Harbor Branch Oceanographic Institution in Fort Pierce, to highlight the expansive deep-sea coral reefs off Florida known as the Oculina Banks. Voyles-Pulver illustrates the beauty that once existed in the banks 25 years ago, the current state of the coral, the importance of these habitats, and what is currently being done to protect these communities.

To find out more on the Grantham Prize, go to [www.granthamprize.org](http://www.granthamprize.org).

### Canada-U.S. Research Cruise Documents Deep-Sea Corals

Staff from the Olympic Coast National Marine Sanctuary (OCNMS) collaborated with Canadian colleagues for a joint remotely operated vehicle (ROV) survey for deep-sea coral and sponge communities in a July 2008 cruise conducted aboard the Canadian Coast Guard vessel John P. Tully. The cruise consisted of two legs, one in Dixon Entrance at the border between Alaska and British Columbia, and the other at the border between Washington and British Columbia, including within the OCNMS. Surveys used the Canadian Scientific Submersible Facility ROPOS ROV. Corals were documented at several new sanctuary sites around the trough of the Juan de Fuca Canyon, including *Primnoa*, *Paragorgia*, *Swiftia*, *Plumarella* and *Styaster* species and fields of glass sponges were documented at one site. *Lophelia pertusa* was documented at two additional sites in the sanctuary. In the Juan de Fuca Canyon at depths between 1000 to 1300m, at least three species of black coral were documented, including *Chrysopathes* and *Bathypathes*. Coral and sponge samples have been sent to taxonomists for identification and video and still footage are being processed. For further information, please contact Ed Bowlby, OCNMS Research Coordinator ([ed.bowlby@noaa.gov](mailto:ed.bowlby@noaa.gov)).



Map showing Marine Protected Areas (MPAs) in the Southeast Atlantic with depths ranges between ~60 and ~400 m.

### International Guidelines for the Management of Deep-Sea Fisheries in the High Seas

In August, a United Nations Food and Agriculture Organization (FAO) Technical Consultation adopted International Guidelines for the Management of Deep-Sea Fisheries in the High Seas. The Guidelines are intended to support efforts by flag States and regional fisheries management organizations (RFMOs) to address significant adverse impacts due to fishing on vulnerable marine ecosystems as called for in the 2006 United Nations General Assembly sustainable fisheries resolution (A/Res/61/105). The effort builds on FAO initiatives begun in 2001 to develop technical guidelines on the management of deep sea fisheries. The guidelines include standards and criteria for identifying vulnerable marine ecosystems and significant adverse impacts to them due to fishing. The Guidelines identify that certain cold-water corals, sponge-dominated communities and other communities dominated by dense emergent fauna represent examples of species groups and communities that often display characteristics consistent with possible vulnerable marine ecosystems. The guidelines will guide efforts by RFMOs to protect these ecosystems. For further information, please contact Tom Hourigan (Tom.Hourigan@noaa.gov).



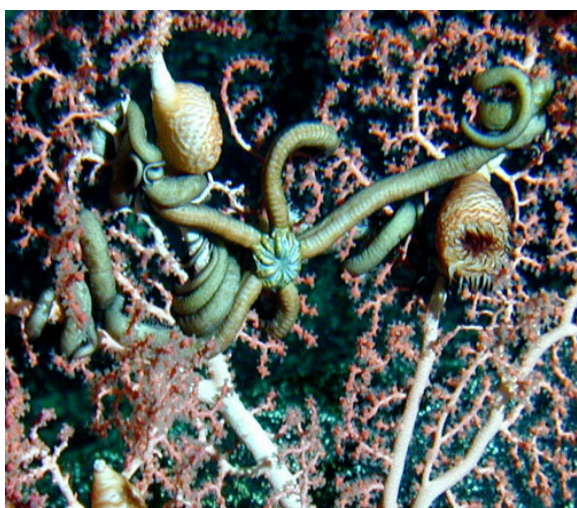
### NWFSC to Receive New AUV in December 2008

The North West Fishery Science Center (NWFSC), in collaboration with the Pacific Islands Fishery Science Center (PIFSC) and Woods Hole Oceanographic Institute (WHOI) continue to develop an AUV for monitoring “untrawlable” habitats off the west coast. The AUV is very similar to the Seabed AUV developed by Hanumant Singh’s group at WHOI ([www.whoi.edu/DSL/hanu/](http://www.whoi.edu/DSL/hanu/)). Seabed is a hover-capable vehicle that performs optical sensing with a 12bit 1280x1024 monochrome CCD camera. Acoustic high resolution mapping is achieved using a MST 300 kHz sidescan sonar with a swath width of 400 m. A Seabird conductivity and temperature sensor, RDI ADCP and Acoustic Modem are also present. The AUV is designed for operations from small vessels with minimal support equipment. It has an operational depth of 2000 meters and at 1 m/s can run for up to 10 hours and survey 36 km per mission. Navigation is performed with standard long baseline (LBL) acoustic nets and a Doppler Velocity Log (DVL), which also performs water column current measurements. Update rates are in the order of 5 Hz, allowing closed loop control of position. Depth is measured from a Paroscientific pressure sensor while altitude is obtained from the DVL. A Crossbow AHRS provides heading, pitch and roll readings. Current capabilities allow positioning accuracy on the order of 0.1 meters (Singh, H., A. Can, R. Eustice, S. Lerner, N. McPhee, O. Pizarro, and C. Roman (2004), Seabed AUV Offers New Platform for High-Resolution Imaging, *Eos Trans. AGU*, 85(31)). The NWFSC expects delivery of the AUV in December of 2008 and anticipates sea trials to begin in January or February of 2009. The AUV will be used for monitoring by Elizabeth Clarke’s group at the NWFSC and Scott Ferguson’s group at the PIFSC. For more information, please contact Elizabeth Clarke NWFSC Supervisory Research Fish Biologist ([Elizabeth.clarke@noaa.gov](mailto:Elizabeth.clarke@noaa.gov)).

WHOI’s Autonomous Underwater Vehicle (AUV), the Autonomous Benthic Explorer (ABE) being deployed.

### Specimen Collection through Regular Monitoring along the West Coast

The Northwest Fishery Science Center (NWFS) continues to collect coral and sponge specimens from various monitoring activities including an annual bottom trawl survey of groundfish resources and through the West Coast Groundfish Observer Program (WCGOP). The trawl survey encompasses shelf and upper slope depths off the coasts of Washington, Oregon and California where over 750 randomly-placed 30-minute tows will be completed this year. The survey utilizes four west coast commercial trawlers over two passes travelling from north to south. Pass 1 began in mid-May and was completed in the end of July. Pass 2 will begin next week and run through mid-October. All fish and invertebrate species are identified to the lowest possible taxonomic level by onboard biologists. For specimens that cannot be identified (e.g., corals and sponges), photos are taken and tissue samples are collected for our Genetic Program and/or expert taxonomic review. Fishery observers have also been trained to preserve tissue samples from corals brought up during commercial trips targeting groundfish. Specimens collected from both our research surveys and by observers are brought back to Ewann Berntson (NWFS Genetic Program) for development of sequencing techniques to more rapidly identify species. Some specimens will be sent to expert taxonomists. For more information, please contact Curt Whitmire ([curt.whitmire@noaa.gov](mailto:curt.whitmire@noaa.gov)).



Ophiuroid found among and associated with deep-sea corals. Photo credit: Amy Baco-Taylor, WHOI.

### NWFS Collaborates with The Nature Conservancy

The Northwest Fishery Science Center (NWFS) is collaborating with the Active Tectonics and Seafloor Mapping Lab at Oregon State University and the Nature Conservancy on a project to deploy seafloor mapping technology on a commercial trawler operating out of Morro Bay, CA. The technology developed by Questar Tangent Corporation (Sydney, BC) was deployed in May 2008 aboard the F/V South Bay to collect bottom-type data using the vessel's existing echosounder. The short-term goals of the project are to 1) evaluate the efficacy of mobilization and data acquisition with a QTC seafloor classification system aboard a typical west coast commercial trawler; 2) use a QTC system to quantify physical characteristics of the seafloor during bottom trawling operations for the purpose of comparing seafloor characteristics to overall trawl catch and bycatch. A mid-term goal is evaluation of the data and derived products in collaboration with the Active Tectonics and Seafloor Mapping Laboratory at OSU and the Center for Coastal and Ocean Mapping at the University of New Hampshire. A long-term goal would be to examine further applications of the QTC system(s) or other normal incident seafloor classification systems (e.g., Olex) to research on bycatch reduction, NMFS bottom trawl surveys, and groundtruthing of ongoing west coast seafloor mapping projects. For more information, please contact Curt Whitmire ([curt.whitmire@noaa.gov](mailto:curt.whitmire@noaa.gov)).

### PFMC Officially Forms EFH Review Committee

The Pacific Fishery Management Council (PFMC) Essential Fish Habitat Review Committee (EFHRC) officially formed in June. This committee was mandated as part of Amendment 19 to the Groundfish Fisheries Management Plan with the general duty of reviewing and recommending modifications in the designation of groundfish EFH and habitat areas of particular concern (HAPC). The committee will review proposed changes to groundfish EFH in the future. We anticipate that one of the first agenda items of the committee will be to review discoveries in 2006 of corals and sponges in the Olympic Coast NMS. Some of these corals and sponges were located outside EFH conservation areas implemented in June 2006. For more information and a complete list of the appointees, please contact Curt Whitmire ([curt.whitmire@noaa.gov](mailto:curt.whitmire@noaa.gov)).