

Fall
2009

Ecosystems Quarterly

NOAA Ecosystems Goal Team

About the Ecosystems Goal Team

The mission of the Ecosystems Goal Team (EGT) is to protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management.

Our Programs

EGT has nine programs each of which furthers the understanding and protection of our natural ecosystems.

The Habitat Program (HAB) works nationwide to protect and restore habitats that support NOAA trust resources that are essential to the long-term health and sustainability of coastal, marine, and Great Lakes ecosystems.



This Issue

NOAA Program Spotlight	P.1
NOAA Partner	
Program Spotlight	P.2
Trends in Research	P.3
Announcements	P.3
Migrations	P.4

Ecosystem Spotlights

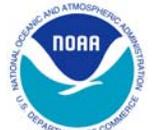
Habitat Program Funds 50 Recovery Act Coastal Restoration Projects

In June, Commerce Secretary Gary Locke and NOAA Administrator Dr. Jane Lubchenco announced 50 Recovery Act projects that will restore damaged wetlands, shellfish beds, coral reefs and reopen fish passages that boost the health and resiliency of our nation's coastal and Great Lakes communities. Under the American Recovery and Reinvestment Act, NOAA's [Habitat Program \(HAB\)](#) received \$167 million for marine and coastal habitat restoration.

"NOAA is investing in green jobs for Americans to restore habitat for valuable fish and wildlife and strengthen coastal communities, making them more resilient to storms, sea-level rise and other effects of climate change," said Lubchenco. "In addition to the immediate jobs created by the projects, stronger and healthier coastal communities will boost our nation's long-term economic health."

Most of these projects — in 22 states and two territories — are in areas with some of the highest unemployment rates, including California, Oregon and Michigan. The projects will employ Americans with a range of skills including construction crews, nursery workers, engineers, restoration ecologists, landscape architects and hydrologists. In addition, these projects will support indirect jobs in industries that supply materials and administrative, clerical, and managerial services.

By August, approximately 13 projects had begun, with 15 others slated for construction by winter. When complete, the projects will have restored more than 8,700 acres of habitat and opened more than 700 stream miles where fish migrate and spawn. The projects will also remove more than 850 metric tons of marine debris, rebuild oyster and other shellfish habitat, and



reduce threats to 11,750 acres of coral reefs.

The 50 projects were chosen from a pool of more than 800 proposals totaling \$3.2 billion in requests. The agency worked through a rigorous selection process to identify and prioritize projects meeting the Recovery Act's criteria.

For more information, visit:
www.noaa.gov/recovery.



Vents Program Celebrates 25 Years of Success

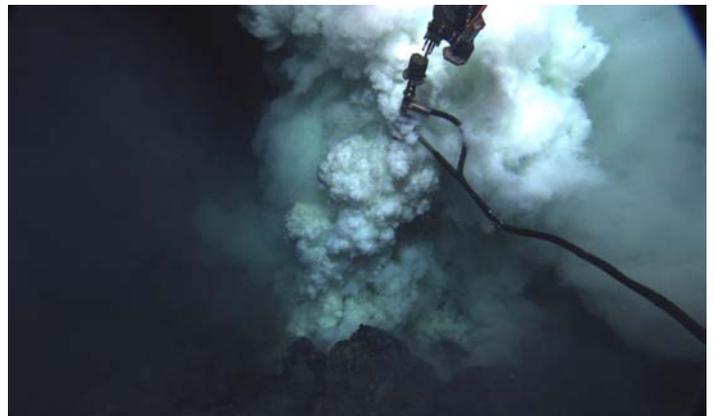
The [NOAA Vents Program](#) at the [Pacific Marine Environmental Laboratory \(PMEL\)](#) celebrates its 25th anniversary this month, marking a quarter century of research, discoveries, and technological innovations in some of the oceans most interesting depths. Started in 1984 with 4 personnel in Newport, Oregon the NOAA Vents Program has grown to a program with over 20 scientists and technical staff located in both Newport, Oregon and Seattle, Washington. Over the course of the past quarter century, the Vents team has made a host of fundamental discoveries and conducted research focused on understanding ocean environmental impacts of deep volcanic eruptions and their associated hydrothermal venting.

Shortly after its creation, the Vents program [discovered the first megaplume in 1986](#), the very first acoustic detection, location, and study of an active deep sea volcanic eruption in 1993 and established the first deep seafloor volcanic observatory, [New Millennium Observatory \(NeMO\)](#) in 1999 located on the Juan de Fuca Ridge off the coast of Oregon at Axial Seamount. News was made in 2004 when scientists discovered both gaseous and liquid CO₂ gushing from a volcano crater in 1600m of water at Eifuku volcano in the Mariana Volcanic Arc. Also discovered in 2004 at the Mariana Volcanic Arc was an active deep eruption at Rota which is was still active when visited in 2009, along with volcanoes such as Daikoku and Nikko that have lakes of molten

sulfur at their summits. All of these never before observed phenomena have profound marine ecosystem impacts including effects attributable to ocean acidification.

In 2009, scientists caught another deep volcano in eruption. This eruption is producing lava flows and spectacular explosions which project quickly cooled lava meters upward in to the water column. Video and photos from both the 2004 and 2009 expeditions can be found at the [2009 Lau Basin Eruption Exploration Expedition blog](#) and [2009 Mariana Arc Expedition website](#).

The Vents program is a partner with the [Office of Ocean Exploration and Research](#). Together they are making discoveries that have important implications for marine ecosystems as well as global budgets and cycles of CO₂ and ocean nutrients.



Ecosystem Trends

Climate Change & Coral Reefs

Climate change and [ocean acidification](#) (OA) have been identified as the most urgent global threat to coral reefs, causing mass [coral bleaching](#) events and slowing the growth of coral skeletons, among other impacts.

NOAA's Coral Reef Conservation Program (CRCP) and its partners have made important strides toward monitoring, understanding, and predicting climate change, OA, and their impacts on coral reef ecosystems. Activities include:

- Coral Reef Watch (CRW), a component of the CRCP, produces a series of bleaching monitoring and forecasting [tools](#) for reef managers. These tools allow reef managers to take local actions to lessen other threats and stressors to their reefs when bleaching is observed or predicted in their region.
- CRW and partners have presented a series of [workshops](#) to teach coral reef managers how to prepare for and respond to bleaching, incorporate resilience into management and MPA design, and how to use the [tools](#) above. To date, over 200 coral reef experts and managers have been trained during seven workshops; these individuals are able to apply what they learned to their local reefs in over 20 nations around the world.
- In January 2009, NOAA and partners established an OA test bed in Puerto Rican waters. This project is an important tool in NOAA's ability to monitor OA using *in situ* and remotely sensed data and will improve CRW's [OA Product Suite](#).

With the recent release of new program [goals and objectives](#), the CRCP is committed to continuing and expanding its work to address the impacts of climate change on reefs.

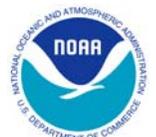
New Model to Improve Prediction of Algal Bloom Response to Environmental Change

A new plankton growth model developed by scientists from the [National Centers for Coastal Ocean Science](#) is the first based entirely on measured empirical data, which should greatly strengthen our ability to forecast algal blooms and predict their impact on climate change or other environmental stresses. Marine microscopic plants support world fisheries and help regulate climate; but can also cause harm by overgrowing corals, shading seagrasses, cause water to become oxygen depleted, or grow toxic species that cause illness or death in humans and marine organisms. Predicting blooms of specific algal species are dependent on sub-models that simulate complex relationships for competing algal species. Since there have been no experimental data for such relationships for the major nutrients that limit microalgal growth rates in most of the ocean, previous models have been based largely on guesswork. This paper was described in the July issue of [Marine Ecology Progress Series](#).

Announcements

New Direction for the CRCP

Guided by the [results](#) of an [external review](#), the [Coral Reef Conservation Program](#) (CRCP) is narrowing the focus of its US domestic program and shifting allocation of CRCP resources to better understand and address the top three threats to coral reef ecosystems: climate change impacts, fishing impacts, and impacts from land-based sources of pollution. The CRCP is also expanding its international presence by becoming more involved in coral conservation efforts abroad. Two new [reports](#) provide strategic guidance on its priorities for FY 2010-2015.



Coral Bill Passes House

HR860, the [Coral Reef Conservation Act Reauthorization and Enhancement Amendments of 2009](#), was passed by the House of Representatives on September 22 and is the most recent progress in the effort to reauthorize the [Coral Reef Conservation Act of 2000](#). Rep. Bordallo (D-Guam), Rep. Brian Baird (D-WA), and Rep. Ros-Lehtinen (R-FL) spoke on behalf of the bill, which would bolster US coral reef conservation efforts. HR 860 received bipartisan support and has been endorsed by the Administration, three governors, and marine conservation interests.

Oceans and Human Health Initiative (OHHI) PIs Meeting

[OHHI](#) will host their 3rd biennial Principal Investigators (PI) Meeting, October 6-8th, 2009, with the previous day including a Traineeship and Graduate Student Seminar. The goals of the meeting are to: (1) Foster scientific exchange and communication; and identify opportunities to enhance collaboration, integration and coordination across OHHI projects, investigators and partners and (2) Advance discussions on developing, delivering and communicating OHH-related products and services as they relate to OHHI's goals. The meeting will have over 120 participants along with 40 scientific presentations from PIs, including invited partners and panelists covering topics such as "Making the Public Health and Ocean Health Connection" and "Injecting Ocean and Health Science into Climate Change Policy". For more information contact Juli.Trtnanj@noaa.gov or Carolyn.Sotka@noaa.gov.

Migrations

Coral Program Transitions & Openings

While Beth Dieveney is on a one-year detail at the Program Coordination Office, Lynne Mersfelder-Lewis is detailed to the [Coral Reef Conservation Program](#) headquarters office through November to assist with US Coral Reef Task Force (USCRTF) business. Additional detailees

are needed between November and July 2010. Duration of detail and start/end dates are flexible; contact Steven.Thur@noaa.gov.

The [Coral Reef Conservation Program](#) (CRCP) is placing management liaisons in its jurisdictions to better meet management needs. Dana Wusinich-Mendez relocated to Florida and the CRCP is hiring liaisons for the Commonwealth of the Northern Mariana Islands, Guam, and the US Virgin Islands. Janna Shackeroff, the International Coordinator, will help increase international efforts.

Dr. Gary Matlock transitions to PPI

After a decade helping the [National Centers for Coastal Ocean Science](#) (NCCOS). Dr. Gary Matlock tackles new challenges in [NOAA's Policy, Planning, and Integration Office](#) (PPI). His leadership enhanced NCCOS research diversity through partnerships, and established an award-winning Environmental Management System.

New Acting Director & Deputy for NCCOS

Dr. Russell Callender is the new Acting Director of the [National Centers for Coastal Ocean Science](#) (NCCOS). He previously served NCCOS as the Director for the [Center for Coastal Monitoring and Assessment](#) (CCMA). Joining Dr. Callender in NCCOS HQ is John Christensen, serving as NCCOS' Acting Deputy Director. John has been with NOAA for 15 years and most recently served as Branch Chief for [CCMA's Coastal Oceanographic Assessments, Status and Trends \(COAST\) Branch](#).



For Further Information Please Contact:

Laura Wittman
Ecosystems Goal Team
Laura.Wittman@noaa.gov
<http://ecosystems.noaa.gov/>

