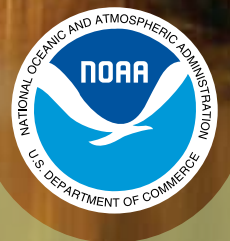


# *NOAA Fisheries Habitat Program*

2007 Accomplishments



***National Oceanic and Atmospheric Administration  
NOAA Fisheries Habitat Program***



# NOAA Fisheries Habitat Program

Message from the Director

In 2007, the NOAA Fisheries Service Habitat Program led national, regional, and community-based efforts to protect and restore habitat. These habitats are vital for healthy ecosystems and sustainable populations of protected and harvested fish and aquatic species. The program increases the capacity of communities to protect and restore coastal and marine habitats, promotes environmental stewardship, and supports sound management of coastal and marine resources. The geographic and programmatic breadth of our work is extensive and we continue to build upon this broad foundation to deliver technical expertise and coordinate efforts with a growing number of partners and constituents around the country. This report highlights some of our significant accomplishments in the last year.

In 2008 and beyond, new authorities and funding will enable us to advance our conservation efforts. The authorization of the Deep Sea Coral Research and Technology Program in the Magnuson-Stevens Reauthorization Act has generated additional support from constituents and internal partners to map, research, and protect deep coral ecosystems. The recently published *State of the Deep Coral Ecosystems of the United States* report brings together cutting edge research to paint a picture of the diversity and abundance of ecosystems at depths greater than 150 feet. The report is an excellent foundation for continued international and domestic work on deep sea corals.

Another area of significant growth is our work ensuring fish passage on river systems. Some of the nation's most prized fish species require access to upstream sections of rivers at some phase in their life. Our three-pronged approach focuses on negotiating fish passage at federally-regulated hydropower facilities, removing dams through the Open Rivers Initiative, and partnering to promote large scale river ecosystem restoration efforts.

Emerging issues such as renewable ocean energy development open the window to proactively engaging industry leaders in habitat protection strategies. With support from other NOAA programs, we are working closely with traditional and new energy sectors to help develop energy practices that minimize adverse effects to coastal and marine habitats. Our work will ensure that these technologies develop in environmentally sound ways while still providing benefits to the nation's society, security, and economy.

The loss of coastal habitat continues to be an urgent issue. Coastal development and environmental degradation are major pressures on coastal and marine habitats. There is a growing need for coordinated and strategic decisions that focus our work where it is most needed. To identify our national and regional goals, the Habitat Program kicked off a strategic planning process that will culminate in the release of a national strategic plan in late 2008. As this process moves forward, we will work with partners and constituents to inform these strategic priorities.

Our efforts to prioritize protection and restoration goals will also be a valuable asset as we work through new challenges associated with climate change.

Patricia A. Montanio  
Director, Office of Habitat Conservation  
NOAA Fisheries Service



**National Oceanic and Atmospheric Administration  
NOAA Fisheries Habitat Program**



# NOAA Habitat Program

The NOAA Fisheries Habitat Program works to protect and restore habitats that are the foundation of the nation's coastal, marine, and Great Lakes ecosystems. These habitats are essential to the health and sustainability of commercial and recreational fisheries, lessen the impact of coastal storms by reducing storm surge and flooding, and are used by the public for recreation and enjoyment.

Mark Ahmend



## Vision

Healthy and self-sustaining coastal and marine habitats that support vital ecosystem functions, services, and production.



Top:  
Deep-sea Christmas tree coral (*Antipathes dendrochristos*), viewed from a submersible during surveys of deepwater rocky banks off southern California.

Bottom:  
This marsh on the Bridge Creek in Staten Island, NY was degraded by an oil spill. NOAA monitored the site prior to efforts to re-establish the marsh habitat.



Students who participate in B-WET-funded educational programs connect with their watershed through restoration projects and hands-on science.

### *Evaluation Shows NOAA's Student and Teacher Education Program Improves Stewardship Ethic*

In early 2007, the NOAA Bay Watershed Education and Training Program (B-WET) for the Chesapeake Bay watershed completed an intensive multiyear evaluation of the program. The evaluation shows that students who participate in B-WET programs are more knowledgeable about the watershed and more likely to take action to protect the Bay. The study also demonstrated that teachers trained by B-WET are more confident in their ability to use field experiences to teach about the watershed and are thus more likely to do so. The Executive Summary of this evaluation is available online at <http://chesapeakebay.noaa.gov/educationmain.aspx>.

B-WET Chesapeake, coordinated through the NOAA Chesapeake Bay Office, has operated in the Chesapeake Bay since 2002 and has reached approximately 100,000 students and 12,000 teachers. B-WET supports the Chesapeake Bay Program's commitment to ensure that every student in the watershed has a meaningful watershed educational experience before graduation.

# *Protecting and Restoring Essential Fish Habitat across the United States*

Rivers, estuaries, and the open ocean provide important habitat for fish, allowing them to feed, grow, and reproduce. NOAA protects fish habitat from the growing threats of human activity by working with fishery management councils to identify those areas that are necessary for fish to perform their basic life functions and designate them as essential fish habitat (EFH).

Essential fish habitat regulations mandated by the Magnuson-Stevens Reauthorization Act require NOAA Fisheries to consult on projects that federal agencies fund or authorize, to ensure that these actions will not adversely affect EFH. A broad array of project types warrant review, including actions under fisheries management plans, wetlands development, and dredging projects. NOAA's recommendations on these projects range from technical advice on small activities to formal consultations on major federal projects that affect thousands of acres and millions of dollars of resources. The benefits are reduced impacts to valuable habitat and fishery resources.

## *Protecting and Restoring San Francisco Bay's Subtidal Habitats*

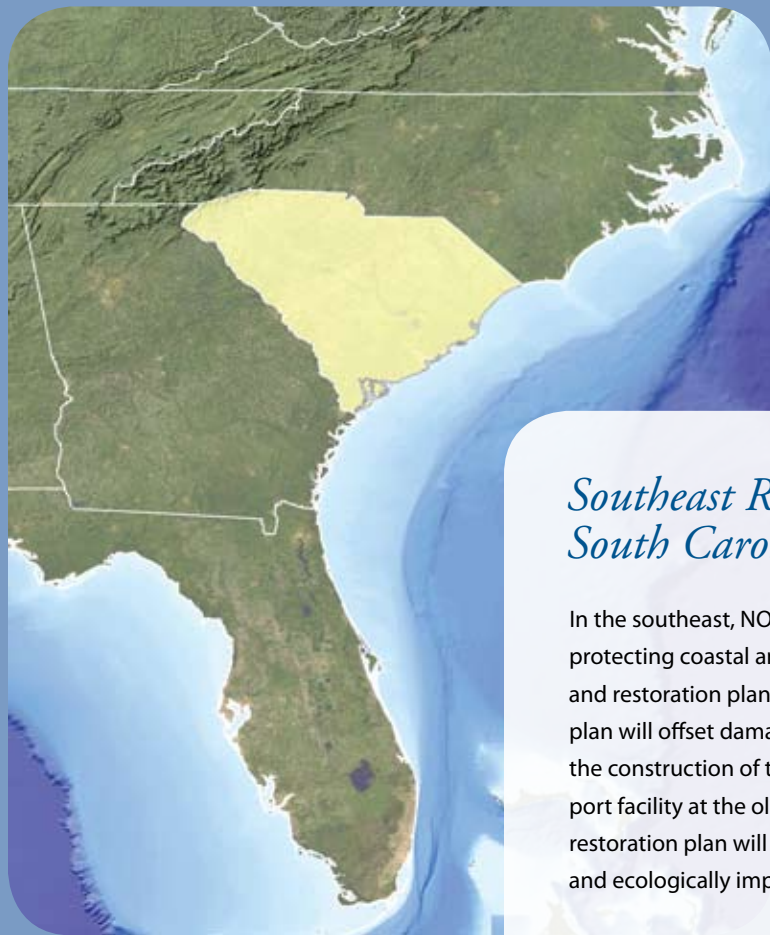
Subtidal habitats are located in shallow waters areas that are influenced by tides, but never completely drained at low tide. NOAA Fisheries participated in the Subtidal Habitat Goals Project for San Francisco Bay, an interagency project designed to provide recommendations and goals to improve the quality and quantity of species associated with subtidal habitats in the Bay. In September 2007, the Project released the report *The Subtidal Habitats and Associated Biological Taxa in San Francisco Bay*, which forms the scientific platform to achieve NOAA's vision of a net improvement in ecosystem function over the next fifty years. The report summarizes existing information on the historical and current state of San Francisco Bay subtidal habitats, including habitat distribution and abundance, and descriptions of the plants, invertebrates, fish, birds and mammals associated with the subtidal habitats.

The primary product of the Subtidal Habitat Goals Project will be a set of recommendations and goals to improve the quality, quantity and species associated with subtidal habitats in San Francisco Bay. The final Goals Report is scheduled for completion by mid-2009.

The Subtidal Habitat Goals Project is an interagency partnership between the San Francisco Bay Conservation and Development Commission, the California Coastal Conservancy, San Francisco Estuary Project, and the NOAA Fisheries Southwest Region Habitat Conservation Division, Fisheries Restoration Center, and NOAA's Ocean Service.







## *Southeast Region Mitigates Damage from South Carolina Port Development*

In the southeast, NOAA Fisheries accomplished a significant victory for protecting coastal and marine habitats by negotiating a mitigation and restoration plan with the South Carolina State Ports Authority. The plan will offset damage to Essential Fish Habitat that will occur during the construction of the South Carolina State Ports Authority's new port facility at the old Charleston Naval Complex. The mitigation and restoration plan will improve water quality and help preserve historically and ecologically important areas.

In Charleston Harbor, the mitigation plan will create 22 acres of salt marsh on the south end of Drum Island and will restore and enhance eight acres of oyster reef habitat. The South Carolina State Ports Authority will also provide for the long-term protection of several thousand acres of riparian buffer along the upper Cooper River, which feeds the Charleston Harbor. The Ports Authority will underwrite the acquisition of over 4,700 acres of riparian habitat, including more than 3,100 acres of wetlands, for The Nature Conservancy and the Lord Berkeley Conservation Trust.

The mitigation plan also calls for the South Carolina State Ports Authority to help preserve Morris Island, an undeveloped barrier island at the mouth of the Charleston Harbor that continues to experience pressure from private development. Accessible only by boat, Morris Island contains Fort Wagner, the site of the historic civil war battle led by the 54th Massachusetts Infantry, a black volunteer regiment depicted in the movie *Glory*.

The compensatory mitigation plan, begun in March 2005 and completed in 2007, is a product of coordination and cooperation among NOAA Fisheries Service, the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, S.C. Department of Natural Resources, S.C. Department of Health and Environmental Control, the Charleston District Corps of Engineers, and the S.C. State Ports Authority. These measures will improve water quality and help preserve historically and ecologically important areas.



## *North Pacific Fishery Management Council Adopts New Precautionary Measures to Conserve Fish Habitat*

In Alaska, NOAA Fisheries made significant progress in protecting essential fish habitat in the Aleutian Islands and Gulf of Alaska. In 2006, NOAA closed substantial portions of the Aleutian Islands and Gulf of Alaska to bottom trawling, and closed high density coral areas and seamounts to all bottom-tending fishing gear. Those NOAA closures, however, do not apply to state managed fisheries that are conducted in state or federal waters. Working with the North Pacific Fishery Management Council and other state and federal organizations, in 2007 NOAA helped to persuade the Alaska Board of Fisheries to extend the closures to all state managed fishing vessels, increasing the protection of sensitive seafloor habitats.

In 2007, the North Pacific Fishery Management Council also recommended adopting new precautionary measures to conserve fish habitat on the seafloor of the Bering Sea. These measures included limiting the use of trawl gear only to those areas that have previously been trawled. If approved, the new measures would prohibit bottom trawling over 132,000 square nautical miles, consisting of a deep slope and basin area in the Bering Sea; the measures would also establish the Northern Bering Sea Research Area that includes the shelf waters to the north of St. Matthew Island.

The research area would be closed until a plan for evaluating the effects of bottom trawling on habitat is developed. Bottom trawling would then be allowed in designated areas to evaluate gear impacts, and could eventually be allowed in portions of the Research Area, depending on the results of the study. The Council recommended that some areas remain closed to bottom trawling regardless of the adaptive management design, including the nearshore areas of Nunivak Island and Kuskokwin Bay, and around St. Lawrence Island and St. Matthew Island. These closures will conserve blue king crab habitat, and address subsistence harvesting and small-scale local fisheries in these areas.



## *New England Fishery Management Council Approves New Essential Fish Habitat for 27 Species Throughout the Region*

In June, the New England Fishery Management Council recommended adopting new essential fish habitat (EFH) designations for the 27 marine species it manages in federal waters off the coast of the Northeast U.S. from Maine to North Carolina. The Northeast Regional Office provided technical support and guidance to the Council as they developed these new EFH designations.

In order to determine which areas are most important to these species, the New England Fishery Management Council developed new science-based tools to analyze a combination of fish abundance estimates with data on bottom temperatures, depth, and substrate types. The outcome will be a better understanding about environmental conditions and habitat areas important for fish to spawn, breed, feed, and grow to maturity.

The Council also recommended adopting a number of habitat areas of particular concern (HAPCs). HAPCs identify areas known to be ecologically important to the species, are vulnerable, rare or under imminent threat from human activities, or areas that need additional levels of protection from adverse impacts. These HAPCs include areas of the Gulf of Maine; inshore areas from Maine south to the Rhode Island/Connecticut border for juvenile cod; and eleven steep-walled submarine canyons and inter-canyon areas off the southern New England and Mid-Atlantic continental shelf to protect corals and other complex structures, such as sponges and sea pens.

These designations have been approved by the Council but will not take effect until the Council ultimately approves the EFH Omnibus FMP Amendment in 2009. These EFH and HAPC designations, as well as any management measures developed to minimize adverse effects of fishing on EFH, will be subject to additional public review and comment prior to implementation.



# *Empowering Communities to Protect and Restore Habitat*

Americans want to know what they can do to improve the health and resiliency of their communities. The Habitat Program has served as NOAA's arm to community-based organizations for more than a decade and is utilizing public momentum to expand habitat protection and restoration efforts. Around the country, Habitat staff members are offering technical skills; providing guidance through permitting processes; leveraging funding; forging partnerships; and helping community groups implement projects that improve the health and economic value of their local habitats.



Project partners, volunteers, and members of the community watch on as a channel is reconnected to tidal waters as part of a Community-based Restoration Program project in Bahia Grande, TX.

**“NOAA is focused on restoring critical coastal ecosystems whose natural beauty and complexity can be regularly appreciated, indeed discovered, by our citizens. I applaud their extensive program, which is substantially improving and preserving Florida’s precious and productive coastal environments.”**

**Dr. Peter Betzer**  
*Advisor to the Pinellas County  
Environmental Fund*



A volunteer in Maine learns monitoring techniques and practices "in the field" at a local marsh.

## *NOAA Community-based Restoration Program Completes 140 Projects, Receives Authorization from Magnuson-Stevens Act in 2007*

NOAA's Community-based Restoration Program completed the construction of 140 projects in 2007. Separately, each effort restored the ability of local habitats to support a larger number of fish and other aquatic species. As a whole, these projects restored 3,575 acres of fishery habitat, opened 421 stream miles for migratory fish, and added to a foundation of healthy marine and coastal ecosystems. Hundreds of volunteers contributed over 120,000 hours of their time and effort to implement these projects. These individuals are now equipped with restoration skills to continue expanding stewardship and conservation values about fisheries resources throughout their communities and around the country.

The Community-based Restoration Program has produced such substantial results over the last 10 years - restoring nearly 40,000 acres of fishery habitat and opening over 1,300 stream miles for migratory fish - that it was specifically authorized to implement and support the restoration of fishery and coastal habitats under a new provision in the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006. In response to this new provision, the program initiated 164 new projects in 2007 by awarding \$12.6 million to communities and providing technical expertise to innovative, grass-roots habitat restoration efforts that range from large-scale watershed restoration to small habitat improvement projects.



## *NOAA Fisheries Cooperative Habitat Protection Partnerships*

NOAA Fisheries Cooperative Habitat Protection Partnerships (CHPPs) established three community-based partnerships this year to supplement regulatory actions to protect fish habitat. The “Farming the Sea: A Hard-Shell Clam Mariculture Project,” is a hands-on high school marine education project in which students learn about the biology of clams and other bivalves, the importance of clams to the local marine ecosystem, and the role of clams in traditional cultures. At the end of the program, students construct mariculture rafts for growing clams from seed that will be restored to the Bluepoints Bottomland, a tract of underwater land in Great South Bay. The Nature Conservancy recently purchased the land and is working with the Western Suffolk (NY) Board of Cooperative Educational Services to lead the project.

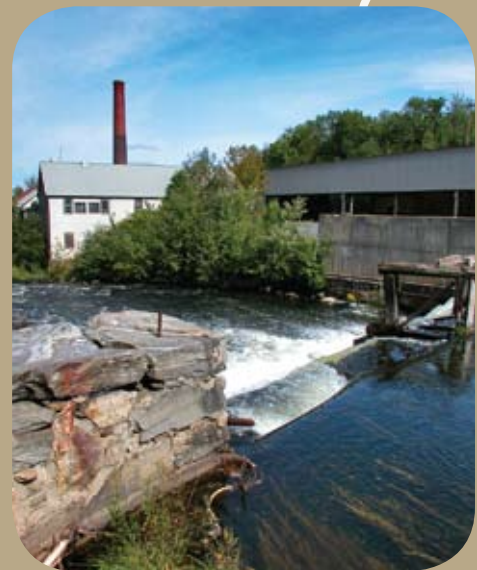
On the other side of the country, CHPPs provided critical impetus to form the Community Outreach Habitat Operation (COHO). COHO is protecting Little Campbell Creek, a popular urban stream for recreation in Anchorage, Alaska and an important overwintering habitat for adult salmon. The operation conducted a habitat, fish and benthic community analysis of the creek, and so far has identified vegetation along the streambank and quantified the in-water habitat types. This data were used in the Little Campbell Creek Watershed Management Plan, and will be shared with the public at a planned community creek clean-up in 2008. COHO is a partnership of NOAA Fisheries, the Municipality of Anchorage, the Anchorage Waterways Council and the U.S. Fish and Wildlife Service.

CHPPs also provided financial and technical assistance to Restore America’s Estuaries and The Chesapeake Bay Foundation to construct a self-guided exhibit that highlights the role of the oyster fishery in the Chesapeake Bay. The Oyster Interpretive Education Trail introduces the historic abundance of the Chesapeake Bay oyster population, and illustrates how restoration projects are being carried out in the Bay. The exhibit was installed at the Chesapeake Bay Foundation’s Shady Side, Maryland Oyster Restoration Center in August.



Mark Lasalle

On the Pascagoula River in Mississippi, a newly created marsh at Bennett Bayou is re-vegetated with sawgrass, a native tidal marsh plant.



A dam in Maine, slated to be removed as a part of NOAA’s Open Rivers Initiative.

## *National Fish Habitat Action Plan Gains Momentum*

In 2007, the leaders of the National Fish Habitat Action Plan moved to implement actions to protect, restore, and enhance fish habitat. To highlight on-the-ground activities around the country, the National Fish Habitat Board (composed of representatives from interested agencies and organizations, including NOAA Fisheries) designated a 2007 list of “10 Waters to Watch.” Each of the waters on this list exemplifies a regional partnership addressing the nation’s most significant fish habitat problems. Two of the projects involve coastal resources and NOAA Fisheries Service participation:

- The Matanuska-Susitna Basin Salmon Conservation Partnership is restoring stream habitat for salmon and other important species in Moose Creek, Alaska. The Moose Creek fish passage and restoration project will restore 3,450 feet of river channel and floodplain characteristics and provide five miles of improved fish access.
- The Southeast Aquatic Resources Partnership is working to repair sections of the Pascagoula River in Mississippi that were damaged by Hurricane Katrina and by urban development. By restoring six acres of tidal marsh habitat in the Bennett Bayou Marsh, this project will benefit multiple species in the Gulf of Mexico, including red drum, brown and white shrimp, Gulf sturgeon, speckled trout, and Atlantic croaker.



Alewives, one of a large variety of fish to benefit from the National Fish Habitat Action Plan.

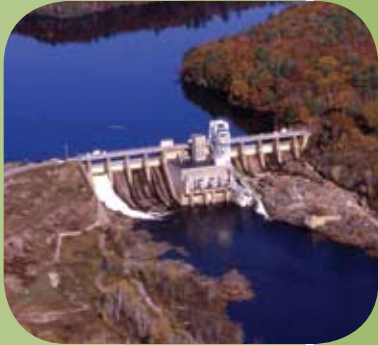
The partners in these two projects assess regional needs, plan and prioritize activities, and leverage resources to implement local projects. National efforts provide logistical and some financial support for the partnerships, but decisions are made at the regional level.

## *Beginning to Flow: First Projects Completed under NOAA’s Open Rivers Initiative*

NOAA’s Open Rivers Initiative restores free-flowing river systems and fish passage access to historic habitat by removing obsolete dams and other barriers on rivers of coastal states. There are an estimated 2.5 million dams across the country, many less than six feet tall and some up to 200 years old. Every dam was initially built to provide some service, but many have outlived their useful lives. These aging structures often pose a safety and liability risk, and the costs of maintaining or restoring a dam can far exceed the cost of removal. Removing dams and other blockages, however, opens habitat for migratory fish and can help boost local economies by increasing property values and enhancing recreational opportunities.

In the Open Rivers Initiative’s first year, Habitat staff collaborated with communities to complete three projects that restored over 30 miles of spawning and rearing habitat for migratory fish. The obsolete Brownsville Dam, located on the Calapooia River in Oregon, was removed in August 2007—effectively eliminating an obstruction to migratory fish and a safety hazard to the local human community. In California, two failing and undersized culverts were removed, allowing endangered salmon to reach their historic spawning and rearing grounds.

# Protecting Habitat for Future Generations



FPL Energy

## *Cooperative Approach Expands Fish Passage on the Feather and Saco Rivers*

In 2007, NOAA Fisheries successfully worked with energy companies, conservation groups, other federal agencies, and state resource agencies to develop a consensus approach—neither prescriptive nor litigious—for providing both migratory fish passage and energy generation at hydropower dams on the Feather River in California and the Saco River in Maine.



On the Saco River, a dam at mile 17 (top) has had a fish lift operational since 2001. The lift helps species such as steelhead (bottom) pass the barrier as they migrate upstream.

Through the Feather River Habitat Expansion Agreement, two species listed under the Endangered Species Act (Central Valley spring-run Chinook salmon and Central Valley steelhead) will have more habitat for spawning, rearing, and other critical life functions. The agreement was created to collectively resolve blockages to migratory fish passage at the Oroville, Poe, Upper North Fork Feather River, and Rock Creek-Cresta hydropower dams.

The 2007 Saco Fisheries Assessment Settlement Agreement will enhance access for migratory fish at multiple hydropower dams spanning approximately 80 river miles on the Saco River, from its mouth to the Maine-New Hampshire border. The agreement concludes two and half years of negotiations and creates a science-based watershed approach that will achieve both upstream and downstream fish passage for Atlantic salmon, American shad, alewife, blueback herring, and American eel in the Maine portion of the watershed. The Agreement also provides for further efforts such as outreach and education, addressing management concerns, assessing resident species populations, and potentially addressing habitat protection and restoration needs.

## *DOC Gold Award for Hydropower*

NOAA's National Hydropower Team was recognized by the Department of Commerce in November 2007 with a Gold Award for efforts to sustain habitats and stocks harmed by dams. Working with industry, federal, state and non-government partners, the team convinced regulators to accept NOAA's prescriptions on three priority hydropower projects blocking 800 river miles in the southeast, southwest, and New England. Setting important legal precedents, the three projects demonstrate first-ever successes under the Energy Policy Act to increase access to historic habitat, rebuild listed and harvested fish stocks, avoid costly litigation, and prompt major investments by dam owners to enhance fish stocks and protect habitat for many decades.



## *Negotiations Bring Down Marmot Dam in Oregon*

After 95 years, the Sandy River in Oregon is flowing freely once again. NOAA Fisheries worked during a 10-year period with a diverse group of 23 stakeholders to reach a negotiated decommissioning settlement with Portland General Electric, the owner of the Marmot Dam.

The 47-foot-high hydropower project is the largest dam ever removed in Oregon and the tallest removed in the Pacific Northwest in 40 years. The removal will open roughly 90 miles of previously inaccessible fish habitat for three Endangered Species Act species: Lower Columbia River Chinook

salmon, Coho salmon, and steelhead. An extensive monitoring program will help biologists and hydrologists across the country better understand the changes to habitat that take place after dam removal. The Little Sandy Dam, slated for removal in 2008, is part of the same project and will benefit from monitoring the Marmot Dam removal.

Decommissioning will make the Sandy River free-flowing from its glacial source to its mouth on the Columbia River and onward to the Pacific Ocean, with multiple benefits to fish, wildlife and public recreation.

Find out more at [http://www.marmotdam.com/marmot\\_home.htm](http://www.marmotdam.com/marmot_home.htm).



Demolition of the Marmot Dam on the Sandy River, Oregon, 2007.



View of Brandywine Creek, Delaware.

## *The Rebirth of Brandywine Creek in Delaware*

On April 24, 2007, more than 70 people gathered at the Hagley Museum in Wilmington, Delaware to release 8,000 juvenile shad into the Brandywine Creek. If current plans are successful, these same shad will have free passage back to the upper reaches of this creek in five years, when they are ready to return from the ocean to spawn.

Hundreds of thousands of American shad likely swam the Brandywine creek in the 18th century. Today more than 20 dams, created to power historic paper mills and other industries, block access to upstream spawning habitats. Now only a handful of shad pass through these waters each year. In fact, as the event proceeded, several dozen frustrated hickory shad tried unsuccessfully to jump over the river's lowermost dam.

Based on a 2003 NOAA-funded feasibility study, project partners are already removing several dams on the Delaware portion of the creek. NOAA is funding a second engineering analysis to examine fish passage options at the remaining blockages throughout Pennsylvania. Once fully implemented, this project will restore fish passage for migratory fish at more than 20 dams throughout the Brandywine Creek watershed, at a cost of about \$3.5 million.

# *Accelerating Habitat Restoration*

## *NOAA Builds Its Largest Barrier Island Project*

In the largest barrier island restoration project ever designed and built by NOAA, 2.6 miles of Gulf of Mexico shoreline—including dune, swale, and beach habitats—was restored at the Chaland Headland restoration site in Louisiana’s Plaquemines Parish. Despite delays and damage caused by Hurricanes Katrina and Rita, NOAA completed the first phase of this 800-acre barrier island project, pumping over 1.7 million cubic yards of sand from offshore to reconnect three island fragments that had been breached by storms and erosion. The project, authorized under the Coastal Wetlands Planning, Protection and Restoration Act, also provided over 250 acres of coastal wetland, and was conducted in partnership with the Louisiana Department of Natural Resources.

Louisiana has the highest rate of shoreline erosion in the country, with retreats ranging from 20 feet to more than 100 feet per year. Rebuilding and maintaining the extensive system of wetlands historically nourished by the Mississippi Delta is essential for the future health of estuarine-dependent fish populations. The restored habitat will help protect the nation’s energy infrastructure as well as Louisiana’s coastal communities from the devastating effects of wind, waves, and flooding associated with storms.

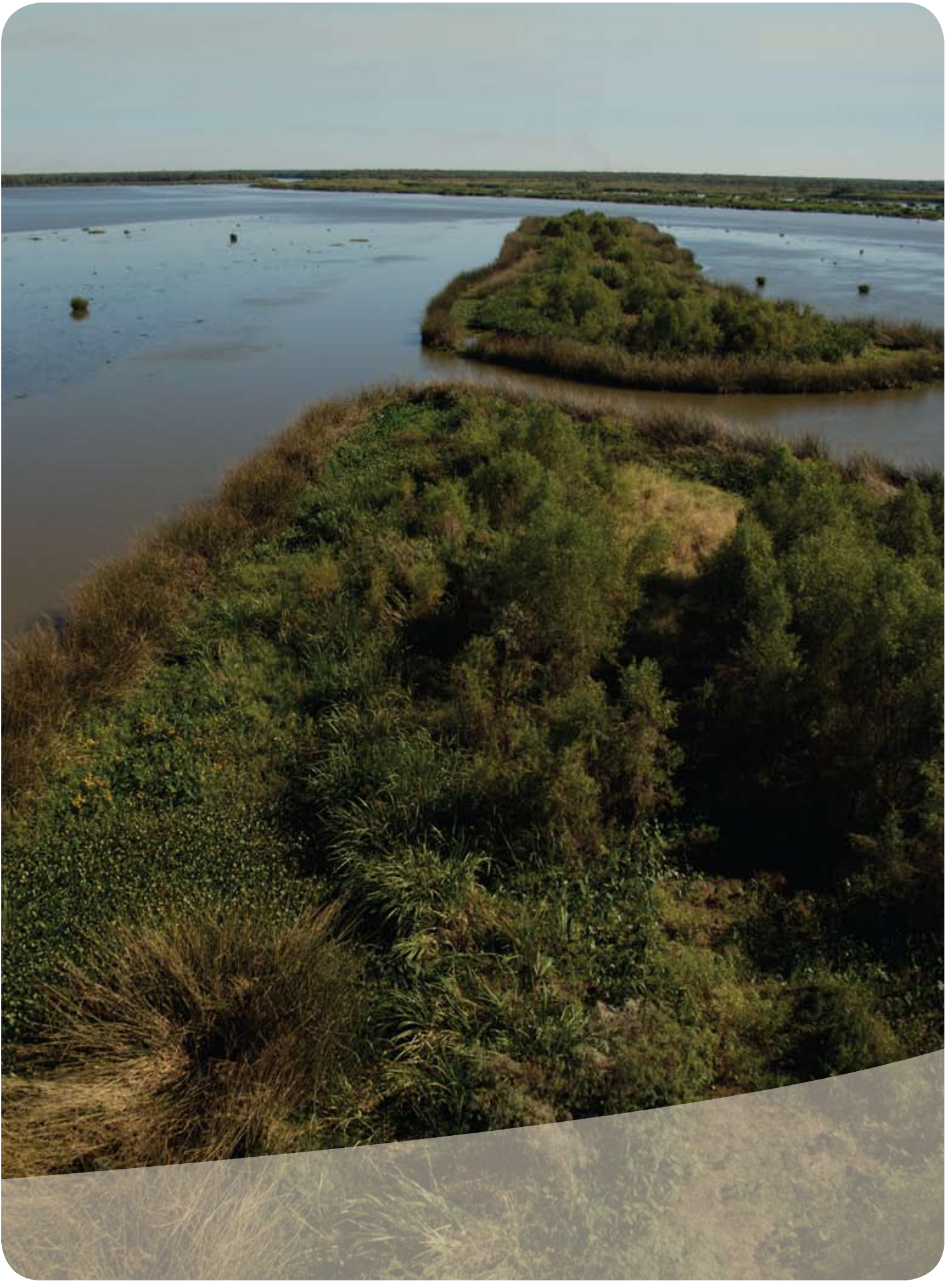
## *Chaland Headlands Restoration Project Named One of America’s Top Restored Beaches*

In May, on the eve of the summer beach season, the American Shore and Beach Preservation Association (ASBPA) named the Chaland Headland Restoration Project in Louisiana one of America’s Top Restored Beaches. Chaland Headland received the award following successful efforts by NOAA’s Restoration Center, in cooperation with local, state and national authorities, to restore more than 400 acres of barrier island habitat.

America’s Top Restored Beaches are selected based upon three criteria: the economic and ecological benefits the beach brings to the local community; the short and long-term success of the project; and the challenges each community overcame during the course of the restoration project.

Barrier islands in Louisiana’s Plaquemine marsh help slow erosion and maintain important wetland areas.









A diver sets nails to reattach corals as part of a restoration project on Puerto Rico.

### *Coral Reattached Through Restoration Work in Puerto Rico after Margara Tanker Grounding*

In the early morning of April 27, 2006, the 748-foot Cayman Island-flagged tanker Margara ran aground on a shallow coral reef located approximately one mile south-southeast of the entrance into Bahia de Tallaboa and approximately 2.5 miles southeast of the entrance into Bahia de Guayanilla. Emergency restoration efforts reattached over 9,500 specimens of hard and soft coral within a seventy-five day period, including over 900 fragments of staghorn coral (*Acropora cervicornis*), a recently listed threatened species. Teams also worked to stabilize reef debris and remove vessel paint.

Preliminary estimates indicate the total area of impact was approximately two acres. Because injuries resulted from response actions taken to address the substantial threat of an oil discharge, the natural resource damage assessment is being pursued under the Oil Pollution Act of 1990 and under a Commonwealth of Puerto Rico statute. The Puerto Rico Department of Natural and Environmental Resources and NOAA are now working to assess the full extent of injury and to evaluate a range of additional primary and compensatory restoration activities.

## *Derelict Fishing Gear Project Estimates 42,000 Ghost Pots in Maryland Portion of Bay*

Work on NOAA Chesapeake Bay Office's (NCBO) Derelict Fishing Gear Study continued in 2007. Building on habitat survey work started in 2005, a comprehensive side-scan sonar survey of the Maryland portion of the Bay revealed that at least 42,000 derelict crab traps lay on the bottom. Research continues into the effects of these "ghost pots." With support from the NOAA's Marine Debris Program, the Derelict Fishing Gear Program simulates ghost fishing *in situ* and also determines trap fouling and degradation rates. NOAA is also conducting similar work in the Virginia portion of the Bay. Estimates of mortality attributable to ghost fishing will inform blue crab management, allowing managers to use refined stock assessments to examine possible changes in fishing effort and techniques.

The NOAA Chesapeake Bay Office Field Operations Team monitors its crab pots as part of its study on how derelict pots might affect the blue crab population.



# *Ecosystem-based Approaches Expand Habitat Conservation*

## *Coral Reef Conservation Program Prompts Action in American Samoa*

The Governor of Samoa announced a fishing ban on all large fish (humphead wrasse, bumphead parrotfish, giant grouper, giant trevally, and shark) within territorial waters in response to NOAA research and monitoring that was reported at the U.S. Coral Reef Task Force's 2007 fall meeting.

During the meeting in Pago Pago, American Samoa, two expert panels—one on coral reef ecosystems in a changing climate and the other on conserving coral reef ecosystems using a regional approach—presented key findings. The Governor took further action by committing to develop a network of protected areas, in cooperation with regional partners, to help protect coral reef ecosystems.

Also at the meeting, a U.S. Coral Reef Task Force Climate Change Working Group was established, and the Governor announced an American Samoa Territorial Executive Order to address the adverse impacts of global warming and resulting climate change. NMFS scientists, participating through the Coral Reef Conservation Program, are currently researching climate-related issues such as coral diseases, coral bleaching, coral habitat alteration, and the implications of such problems to fish populations and local human communities that depend on these resources.

NOAA Deputy Assistant Secretary Tim Keeney presents a coral reef conservation grant to the Governor of American Samoa Togiola Tulafono, and DOI Director of the Office of Insular Affairs Nioklao Pula.



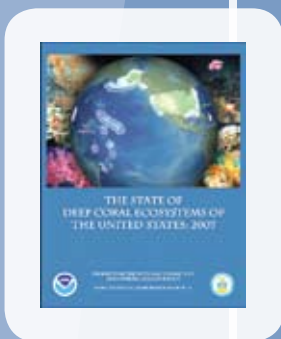
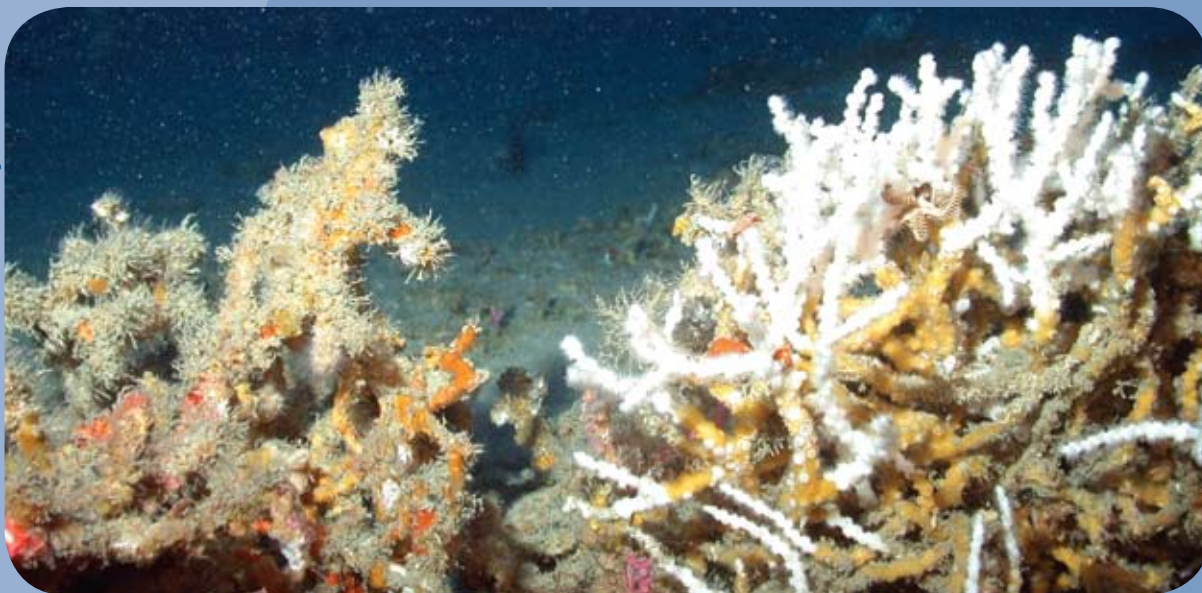


## *NOAA Chesapeake Bay Office Deploys Three “Smart” Buoys*

The NOAA Chesapeake Bay Office deployed three buoys in 2007 to begin development of the Chesapeake Bay Interpretive Buoy System (CBIBS). The buoy system marks significant points along the Captain John Smith Chesapeake National Historic Trail. CBIBS buoys are now operational off Jamestown, Virginia, in the James River; at the mouth of the Potomac River; and at the mouth of the Patapsco River near Baltimore, Maryland. In addition to providing real-time meteorological, oceanographic, and water quality information at different points along the trail, CBIBS buoys promote awareness of the Bay’s condition and support stewardship efforts dedicated to the preservation of the Bay and its natural environment. Real-time data from the buoys, historical and cultural content related to buoy locations, and educational applications are available online at [www.buoybay.org](http://www.buoybay.org) or by calling 877-BUOY-BAY.

The CBIBS buoy at the mouth of the Patapsco River near Baltimore relays real-time observations via wireless technology.





## *NOAA Unveils Inaugural Deep Sea Corals Report*

The *State of Deep Coral Ecosystems of the United States: 2007* report reveals, for the first time, the astounding abundance and variety of life that deep coral ecosystems support in U.S. waters, at depths greater than 150 feet. The peer-reviewed report, prepared by NOAA's Fisheries Service and Coral Reef Conservation Program, provides a baseline for future research and management of these unique and vulnerable ecosystems and will be useful as NOAA launches a new Deep Coral Research and Technology Program. The report also documents recent management actions that have been taken by NOAA, other federal partners and regional Fishery Management Councils to protect deep coral habitats.

The report, which was requested in the President's Ocean Action Plan, presents a national overview and separate regional assessments on the biology of deep corals and their associated species, spatial distribution of deep corals, stressors that may threaten their survival, current management measures, and regional priorities for future research. Conservation concerns led Congress to include measures in the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 to enhance research and protection of these remarkable habitats.

The United States has become a world leader in efforts to conserve deep ocean habitats. This report provides a basis for continuing efforts by NOAA and its partners to discover, understand, and protect these unique ecosystems. The report is available online at [www.nmfs.noaa.gov/habitat/dce.html](http://www.nmfs.noaa.gov/habitat/dce.html).

Top:  
*Oculina varicosa* from the  
Oculina Habitat Area of  
Particular Concern.

Bottom:  
The 2007 report on  
The State of Deep Coral  
Ecosystems of the  
United States.

# Contact the NOAA Fisheries Habitat Program

## **Office of Habitat Conservation**

1315 East-West Highway  
Silver Spring, MD  
(301) 713-2325  
[www.nmfs.noaa.gov/habitat](http://www.nmfs.noaa.gov/habitat)

## **Northeast Regional Office**

National Marine Fisheries Service  
One Blackburn Drive  
Gloucester, MA 01930-2298  
(978) 281-9300  
<http://www.nero.noaa.gov/nero/>

## **Southeast Regional Office**

National Marine Fisheries Service  
263 13th Avenue South  
St. Petersburg, FL 33701  
(727) 824-5301  
<http://sero.nmfs.noaa.gov/>

## **Northwest Regional Office**

National Marine Fisheries Service  
7600 Sand Point Way, NE  
Bin C 15700, Bldg. 1  
Seattle, WA 98115-0070  
(206) 526-6150  
<http://www.nwr.noaa.gov/>

## **Southwest Regional Office**

National Marine Fisheries Service  
501 West Ocean Blvd., Suite 4200  
Long Beach, CA 90802-4213  
(562) 980-4000  
<http://swr.nmfs.noaa.gov/>

## **Northwest Fisheries Science Center**

National Marine Fisheries Service  
2725 Montlake Blvd. East  
Seattle, WA 98112-2097  
(206) 860-3200  
<http://www.nwfsc.noaa.gov/>

## **Southwest Fisheries Science Center**

National Marine Fisheries Service  
8604 La Jolla Shores Drive  
La Jolla, CA 92037-1508  
(858) 546-7000  
<http://swfsc.noaa.gov/>

## **Alaska Fisheries Science Center**

National Marine Fisheries Service  
7600 Sand Point Way, NE  
/building 4  
Seattle, WA 98115-0070  
(206) 526-4000  
<http://www.afsc.noaa.gov/>

## **Pacific Islands Fisheries Science Center**

National Marine Fisheries Service  
2570 Dole Street  
Honolulu, HI 96822-2396  
(808) 983-5300  
<http://www.pifsc.noaa.gov/>

## **Alaska Regional Office**

National Marine Fisheries Service  
P.O. Box 21668  
Juneau, AK 99802-1668  
(907) 586-7221  
<http://www.fakr.noaa.gov/>

## **Pacific Islands Regional Office**

National Marine Fisheries Service  
1601 Kapiolani Blvd., Ste. 1110  
Honolulu, HI 96814  
(808) 944-2200  
<http://www.fpir.noaa.gov/>

## **Northeast Fisheries Science Center**

National Marine Fisheries Service  
166 Water Street, Rm. 312  
Woods Hole, MA 02543-1097  
(508) 495-2000  
<http://www.nefsc.noaa.gov/>

## **Southeast Fisheries Science Center**

National Marine Fisheries Service  
75 Virginia Beach Drive  
Miami, FL 33149  
(305) 361-4200  
<http://www.sefsc.noaa.gov/>

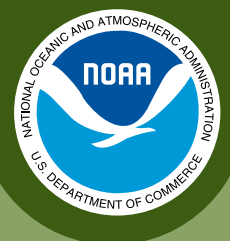


**NOAA National Marine Fisheries Service  
Office of Habitat Conservation**

1315 East-West Highway  
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NOAA Fisheries Habitat Program***