COASTAL MANAGEMENT NEWS

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A restoration project to remove a dike and restore tidal action to an areas previously used as farmland is underway along this stretch of the Little Nestucca River on the Oregon coast. Credit: Roy W. Lowe/U.S. Fish and Wildlife Service

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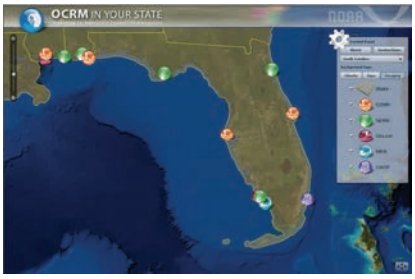

OCRM in Your State (page 5)

Oregon Inventorying Dikes, Levees to Aid Climate Change Planning

As part of its mission "to conserve and protect Oregon's outstanding coastal resources," the Oregon Coastal Management Program is helping coastal communities plan for sea level rise and other climate change impacts. Beginning in late 2009, with the assistance of a NOAA Coastal Management Fellow, the Oregon Coastal Management Program began developing tools for local governments and other stakeholders in coastal communities to help them identify critical infrastructure, like dikes and levees, vulnerable to sea level rise and other coastal hazards. These tools will also be used to identify areas where estuarine wetland restoration would be the most effective to prepare for sea level rise. The project is nearly complete and the tools should be available by late summer 2011.

The main tool is a geospatial database of all the dikes and levees in Oregon's major estuarine systems. Each structure is classified into one of six types: man-made dike, natural levee, breached dike, historical or removed dike, natural levee with man-made enhancements, or ditching spoils. The database also captures information on the structure's condition, its average elevation, and whether it exists within and is managed by a functioning diking district or a nonfunctioning diking district or whether it is privately managed.

The physical location and data accuracy for

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Oregon Climate Change Planning (Continued from pg. 1)

each dike and levee was verified using several methods including lidar, aerial photography, U.S. Geological Survey topographic maps, U.S. Department of Agriculture soil survey maps, and on-the-ground fieldwork. Fieldwork included using participatory mapping techniques with local experts to confirm and correct what the lidar data suggested.

Participatory mapping not only ensured the maps' accuracy, but also included members of the coastal communities in the process. By sharing their knowledge with the Oregon Coastal Management Program and with each other, the community members identified areas that may be vulnerable to sea level rise, specifically wetlands, agricultural land, and critical infrastructure that, without proper management of dikes and levees, could one day disappear.

In addition to the primary database, tools that show the location of tidegates, the boundaries of diking and drainage districts, and the tax lots that are protected by dikes and levees will also be available to coastal community stakeholders. Local planners and restoration managers will be able to use these tools to make more informed decisions about which dikes are worth strengthening and which dikes are worth breaching to allow wetland migration. The data will be an important contribution to Oregon's effort to create more resilient, climate-ready coastal communities.

Data and more information from this project will be made available on Oregon's Coastal Atlas later this summer at http://www.coastalatlas.net/. For more information, contact Laura Mattison at laura.mattison@state.or.us or Jeff Weber at jeff.weber@state.or.us.

New Hampshire Holds Climate Change Workshops

Recently, New Hampshire coastal communities have seen their share of extreme weather events, such as severe flooding. As the climate continues to change, extreme weather events are expected to become more frequent.

To help coastal communities prepare for and respond to these events and the impacts of climate change, the New Hampshire Coastal Program partnered with the Department of Environmental Services Air Resources Division, Great Bay National Estuarine Research Reserve, New Hampshire Sea Grant Program, Clean Air Cool Plant, two regional planning commissions, and ten other groups to form the New Hampshire Climate Adaptation Workgroup in 2010. The workgroup provides a coordinated, strategic approach to educate and provide technical assistance to improve the resilience of coastal communities to climate change and weather events.

The New Hampshire Climate Adaptation Workgroup helps communities prepare for more frequent extreme weather events, such as flooding. Credit: New Hampshire Coastal Program

The New Hampshire Coastal Program helped the workgroup sponsor three workshops in fall 2010 and spring 2011. One workshop, held in October in conjunction with the annual conference of the New England Chapter of the American Planning Association, helped link emergency management and hazard mitigation planning with coastal adaptation planning.

The other two workshops are part of a new series of community conversations about climate and community preparedness that are designed to bring together municipal staff and volunteer board members, other interested community members, organizations, and businesses. The workshop in November focused on the importance of preparing for severe weather events and climate change and included presentations about climate trends in New Hampshire and how to develop climate change adaptation plans. Through a facilitated discussion, the workshop also gave participants an opportunity to hear from other New Hampshire communities about what they are doing to prepare for climate change and severe weather and share stories and insights on how to address weather events.

(Continued on pg. 3)

New Hampshire Climate Change Workshop (Continued from pg. 2)

The second community conversation workshop was held in March and focused on how to conduct a community vulnerability assessment.

The New Hampshire Coastal Adaptation Workgroup was modeled after the state's successful Natural Resources Outreach Coalition, which was established to provide coordinated technical assistance to communities within New Hampshire's coastal watersheds on how to protect natural resources while accommodating growth. The workgroup is also working to develop a Climate Change Adaptation Plan in 2011 that will identify legislative as well as other needs for the state.

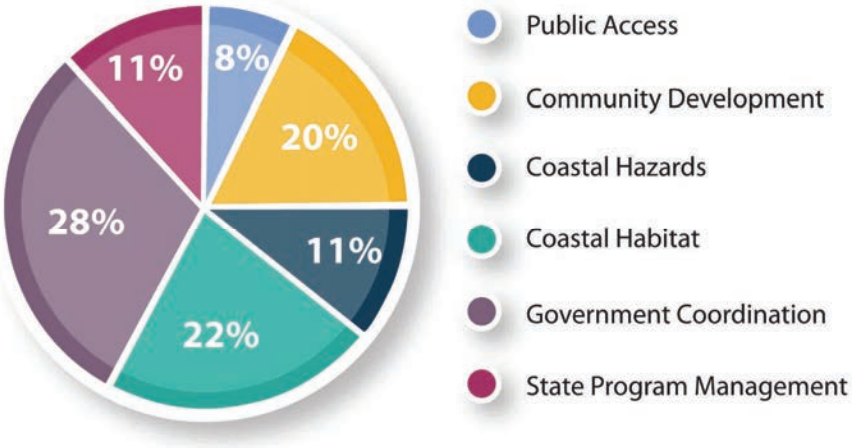
For more information about the New Hampshire Coastal Adaptation Workgroup, visit http://extension.unh.edu/CommDev/NROC/NHCoastalAdaptationWorkgroup.htm or contact Cathy Coletti at Catherine.Coletti@des.nh.gov.

Summary of FY 2010 CZM Funding

The National Coastal Zone Management Program, a partnership between NOAA's Office of Ocean and Coastal Resource Management and 34 coastal and Great Lakes states and territories, works to protect, restore, and responsibly develop the nation's coastal resources and communities. During FY 2010, the states received more than $67 million in federal funds to implement their federally approved coastal management programs. This funding leveraged more than $57 million in matching state and local funds to accomplish the goals of the Coastal Zone Management Program.

In FY 2010, the Coastal Zone Management Program directed more than $2.2 million in federal and matching funds to strengthen the ability of coastal communities to adapt to climate change and sea level rise. An additional $3.9 million supported ocean management and marine spatial planning activities to avoid use conflicts and protect important ocean, coastal, and Great Lakes natural resources.

For the full summary of FY 2010 Coastal Zone Management Program funding and examples of climate change and coastal and marine spatial planning activities that states are undertaking as part of the National Coastal Zone Management Program partnership, visit: http://coastalmanagement.noaa.gov/resources/docs/czmfy10funding.pdf.



Distribution of federal and matching FY 2010 CZM Program funding

Program Managers' Meeting Wrap-Up

NOAA's Office of Ocean and Coastal Resource Management, in partnership with the National Estuarine Research Reserve Association, hosted the annual Ocean and Coastal Program Managers' Meeting in downtown Washington, DC, March 2, 2011.

The meeting brought together state coastal zone and National Estuarine Research Reserve (NERR) managers from across the country and provided a forum for discussing key coastal management issues with their federal counterparts. This year's meeting kicked off with a joint coastal management and NERR session on climate change. The coastal management sessions that followed provided training on designating geographic location descriptions in federal waters to support ocean management and discussed innovative approaches and challenges in state coastal marine spatial planning and performance measures for the coastal management program. The sessions also included updates on national budget issues, the Section 309 Enhancement Program, and the Coastal and Estuarine Land Acquisition Program.

Presentations from the meeting are available online at http://coastalmanagement.noaa.gov/news/archives/archivedmeetings.html.

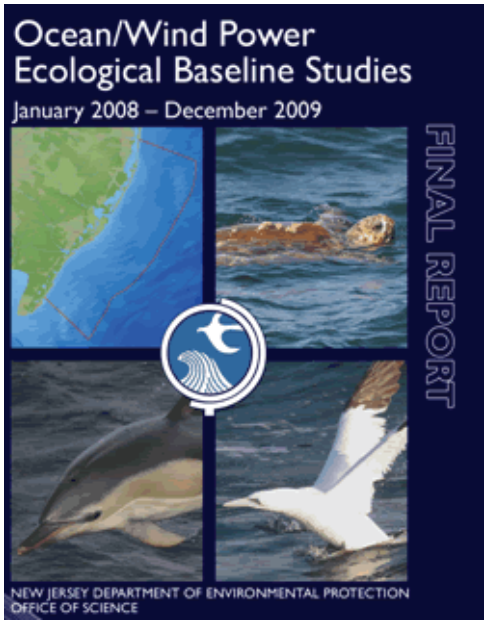
Ecological Study Informs Offshore Wind Siting in New Jersey

In July 2010, the New Jersey Department of Environmental Protection (DEP) completed a two year $7 million dollar study investigating the anticipated impacts of offshore wind energy structures on birds, marine mammals, fish, and other groups. The study, "Ocean/Wind Power Ecological Baseline Studies," looked at waters up to 20 miles off the New Jersey coast (approximately the 100-ft. contour) along the southern half of the state from Toms River in the north to Stone Harbor in the south, covering approximately 1,360 square nautical miles.

The purpose of the study was to determine the current distribution, abundance, resource usage, and migratory patterns of avian species, fish, marine mammals, and sea turtles. The study also factored in shipping lanes, pipelines, and undersea utility lines and mapped artificial reefs, fishing areas, and marine protected areas.

Staff from the New Jersey Coastal Management Program helped design the study and participated on the technical review committee for the report. Coastal Management Program staff also served on the state's Blue Ribbon Panel on Development of Wind Turbine Facilities in Coastal Waters, which provided policy recommendations on the appropriateness of developing wind facilities off the coast of New Jersey in 2006. The ecological baseline study grew out of one of the panel's recommendations, which noted the need for baseline ecological and natural resource data.

The New Jersey administration views renewable energy as a high priority and strongly supports wind energy development. The state's Master Energy Plan seeks to decrease energy use overall and to increase the proportion of energy from renewable energy sources—wind energy in particular. The state has passed legislation that will provide up to $100 million in tax credits to offshore wind developers and has also funded a rebate program for the construction of offshore meteorological towers.



A recently completed ecological study that examines the effects of offshore wind energy on wildlife was developed with help from the New Jersey Coastal Management Program.

The New Jersey Coastal Management Program is working with others in the state to use the study to help identify optimum sites for offshore wind energy projects that would have the least impact on the environment. The study showed there would be negligible impacts to bird, fish, and marine mammal life caused by offshore wind turbines located 3-20 miles out to sea from Barnegat Bay to Hereford Inlet.

The baseline study has been cited by project proponents to support the approval of several proposed pilot projects. One pilot wind turbine project is proposed for three miles off the coast. The federal government has also approved leases for three other private companies to conduct further meteorological studies at sites 8 miles, 16-18 miles, and 20 miles off the coast.

Some key findings of the baseline study as stated by the DEP's Office of Science are:

- Bird density significantly decreases as you move further offshore.
- Of all birds visually recorded, the study observed only a small percent flying in the potential turbine rotor swept zone. Geese, herons, dabbling ducks, osprey, and common loons were the predominant species found in those zones.
- Dolphins are the most common marine mammal in the study area. The densities of other marine mammals, including whales and seals, are low throughout the study area.
- There were low sightings of sea turtles with just two species found and only during summer months.
- Mitigation procedures could be used to limit negative impacts on birds and marine mammals, including brief turbine shut downs during peak avian migration seasons and noise reduction techniques during construction to ease the strain on hearing-sensitive dolphins.

The baseline study is available online at http:www.nj.gov/dep/dsr/ocean-wind/. For additional information, contact Kevin Hassell at Kevin.Hassell@dep.state.nj.us.

Connecticut and New York Partner on Benthic Mapping

In response to new needs and changing uses, the Connecticut Department of Environmental Protection and New York Department of State Coastal Management Programs are partnering with others in the region to acquire benthic habitat data and maps for Long Island Sound. Mapping these habitats will provide a management framework to help guide infrastructure development within the sound while protecting sensitive areas. It will also prove useful as coastal and marine spatial planning advances and the need for good benthic data for the sound becomes even more important.

In recent years, both coastal programs have received several proposals for large-scale infrastructure projects (telecom and electric cables, gas pipelines, liquid natural gas platforms, etc.) in the sound. The programs are responsible for reviewing projects to ensure they are consistent with their coastal policies and that use conflicts are minimized, water dependent uses are protected, and important natural resources are preserved. Although Long Island Sound encompasses a wide range of benthic habitats—from shallow and sandy to deep and rocky—the data available for evaluating projects in the sound can be sparse or of insufficient quality compared to similar upland projects.

The mapping is being funded through the Long Island Sound Research and Restoration Fund. The fund was established in 2004 as the result of a settlement agreement between Connecticut and several power and cable installation companies to resolve a permit violation for two electric cables crossing the sound. The fund, which totals roughly $7 million, is intended to support new projects and activities that enhance the sound, promote improved scientific understanding of potential energy infrastructure effects and mitigation of their impacts, and emphasize benthic mapping as a priority need for improved management decisions.

The Long Island Sound Study, a partnership between Connecticut and New York, administers the fund through a steering committee, which includes representatives from the Connecticut and New York Coastal Management Programs, the U.S. Environmental Protection Agency (Regions I and II), the New York Department of Environmental Conservation, and the Connecticut and New York Sea Grant programs. Connecticut's Coastal Management Program also funds staff to help administer the fund as part of an ocean resources strategy under Section 309 of the Coastal Zone Management Act.

The steering committee has held several workshops to bring together state, federal, and nongovernmental stakeholders to further identify needs facing Long Island Sound and how a mapping program might address those needs. Based on the feedback from the workshops and responses they received to their "Request for Qualifications and Interest" last spring, the committee developed a strategy to create a project partnership team that combines the expertise of the NOAA Biogeography Branch and two regional academic consortiums led by the University of Connecticut and Columbia University's Lamont Doherty Earth Observatory.

The committee, in coordination with NOAA and with input from the academic consortia and select stakeholders, is developing a spatial prioritization process to help identify priority areas within Long Island Sound to map and specific data needs. The partnership team will use these results, in conjunction with the outcomes of the previous workshops, to develop a workplan that will initiate and guide data collection, analysis, and dissemination. For more information, visit http://longislandsoundstudy.net/research-monitoring/seafloor-mapping/ or contact Kevin O'Brien at Kevin.obrien@ct.gov.

New OCRM Web Page Tracks Coastal Investments, Successes

In March, the Office of Ocean and Coastal Resource Management (OCRM) launched a new interactive web page that, with the click of a mouse, shows the scope of coastal program investments and successes in OCRM's 34 partner states and territories. *OCRM in Your State* uses the latest GIS/web technology to give partners, Congress, state and local governments, and other stakeholders easy and quick access to up-to-date information on funding and coastal management projects and issues.

Users can click on a state to see current federal funding and state matching funds for coastal programs administered by OCRM: Coastal Zone Management (CZM), National Estuarine Research Reserves (NERR), Marine Protected Areas, Coral Reef Conservation, and the Coastal and Estuarine Land Conservation Program. *OCRM in Your State* also highlights recent success stories that demonstrate results of these investments and links to OCRM's *My State* pages, which provide additional state-specific program information.

The launch of the page also coincided with the debut of a new OCRM homepage and a new website feature, *Stories from the Coast*, which showcases more in-depth accounts of how OCRM investments are helping the

(Continued on pg. 6)

Minnesota City Puts New Development Chapter into Effect

After nearly three years of work, new rules regulating how land is developed and used in the City of Duluth, the fourth largest city in Minnesota, have gone into effect. The Minnesota Lake Superior Coastal Program worked with the city throughout this process to help make it a success. The Coastal Program awarded Duluth competitive grant funds in two separate years to support development of a new Unified Development Chapter (UDC), which overhauled the city's 50-year old zoning ordinance, to incorporate contemporary approaches to neighborhood revitalization, sustainability, mixed use development, and natural resource protection. Also, as part of the project's Technical Advisory Committee, Coastal Program staff reviewed the city's geographic information systems (GIS) data to ensure consistency with the state's shoreland rules and shared existing GIS data to assist with GIS analysis.

Duluth (population 85,530) sits at the westernmost tip of Lake Superior. The 23-mile long city has 43 streams, nearly 28-square miles of forests, and 129 municipal parks. These natural areas abut bustling commercial, residential, and industrial areas, including the largest volume shipping port on the Great Lakes. Duluth's natural setting, coupled with its expected growth and development, compelled city planners to establish a Natural Resources Overlay District within the UDC. The Natural Resources Overlay District ensures the city's ordinance is consistent with federal and state requirements; provides protection for sensitive coastal resources such as wetlands, floodplains, and shorelands; and outlines new requirements to reduce stormwater runoff and sediment transport.

For example, within shoreland areas (areas within 1,000 feet of Lake Superior and 300 feet of rivers, streams, and their tributaries), the UDC requires vegetative buffers, prohibits impervious surfaces within the "shore impact zone" (50-100 feet, depending on shoreland class), and limits impervious surfaces to 25 percent of the lot area unless water quality measures can treat the first one-inch of runoff. Permits are required for structures, grading, filling, excavating, adding impervious surfaces, and removing natural vegetation within the shoreline area. Furthermore, runoff rate controls and a site-specific stormwater pollution prevention plan are required for new or redeveloped impervious areas that exceed 3,000 square feet.

In addition to the Natural Resources Overlay District, the UDC creates special purpose districts for parks, open space, and industrial waterfronts. These special districts protect Duluth's open spaces and water-dependent and port-dependent industrial uses that are an important part of the city's character.

These changes were a significant step forward to protect the city's environmentally sensitive lands and ensure Duluth develops in a sustainable way. To view a complete copy of Duluth's UDC, visit http://www.duluthmn.gov/planning/zoning_regulations/. For more information, contact Clint Little at clint.little@state.mn.us.

The Minnesota Lake Superior Coastal Program contributed to a new city planning strategy in Duluth, Minnesota, that helps ensure that natural areas, such as the Lester River pictured above, are protected as the city continues to grow. Credit: Clint Little, Minnesota Lake Superior Coastal Program

OCRM in Your State (Continued from pg. 5)

nation's coastal communities, economies, and ecosystems thrive. *OCRM in Your State* was developed in consultation with state CZM and NERR programs. It will be updated regularly to report new funding and success stories. A future phase of the page is planned that will allow users to access this information by region and congressional district.

Access the page at http://coastalmanagement.noaa.gov/inyourstate/. To see the new homepage or read *Stories from the Coast*, visit http://coastalmanagement.noaa.gov/. For more information, contact Michele Winowitch at michele.winowitch@noaa.gov.

CELCP Updates

NOAA's Coastal and Estuarine Land Conservation Program

FY 2011 Appropriations

Congress passed a budget for NOAA on April 14, 2011. NOAA is currently working to allocate this funding among its programs, including CELCP. CELCP should receive its budget from NOAA shortly.

FY 2011 Funding Competition

As reported previously, the National Ocean Service's deputy assistant administrator approved the competitively ranked list of projects eligible for CELCP funding for FY 2011 (available on the CELCP funding opportunities page http://coastalmanagement.noaa.gov/land/celcp_fundingop.html). NOAA will use this list as a guide in selecting projects for funding under both CELCP and the Great Lakes Restoration Initiative. Once again, the projects were very competitive and keep getting better every year.

FY 2012 President's Budget Request

The President's FY 2012 budget request for CELCP is $25 million, the same as FY 2011, which is $5 million above the FY 2010 enacted level. NOAA's announcement of the FY 2012 budget, as well as links to more information, can be found at http://www.noaanews.noaa.gov/stories2011/20110214_fy2012budget.html.

FY 2012 Funding Competition

The Federal Funding Opportunity notice for the FY 2012 CELCP funding competition, which contains the full details of the competition is posted on the Funding Opportunities page of the CELCP website, http://www.coastalmanagement.noaa.gov/land/celcp_fundingop.html, as well as at http://grants.gov/. State CELCP leads must submit proposals through Grants.gov (not by mail or delivery service). The deadline for this competition was extended to 6:00 p.m. Wednesday, May 11, 2011, to provide applicants an opportunity to resubmit FY 2011 proposals that were not selected for funding in FY 2011.

Climate Considerations in Land Acquisition Meeting

OCRM convened members of the coastal management and land conservation communities on Tuesday, March 1, 2011, to provide an overview of NOAA's land acquisition programs' efforts to plan for climate change and to solicit recommendations for NOAA as it develops land acquisition climate guidance. OCRM is developing climate change guidance for CELCP and may be contacting state staff to find out how states are considering climate change in conservation planning.

Quarterly Closings

On March 18, 2011, the State of Hawai'i, Department of Land and Natural Resources, Division of State Parks closed on a property that adds 17 acres to Lapakahi State Historical Park in North Kohala on the Island of Hawai'i. The Lapakahi project ranked first in CELCP's FY 2010 competition, and CELCP was part of a diverse partnership to complete the acquisition. The purchase protects significant aesthetic values, including breathtaking coastline, lava rock, coves of boulder, pebble, and coral beach. It also protects dozens of significant Hawaiian cultural sites, as well as provides access to the adjacent Lapakahi Marine Life Conservation District, which is habitat for over 116 marine species.

Lapakahi State Historical Park. Credit: Kirk Lee Aeder, courtesy of Honolulu Magazine

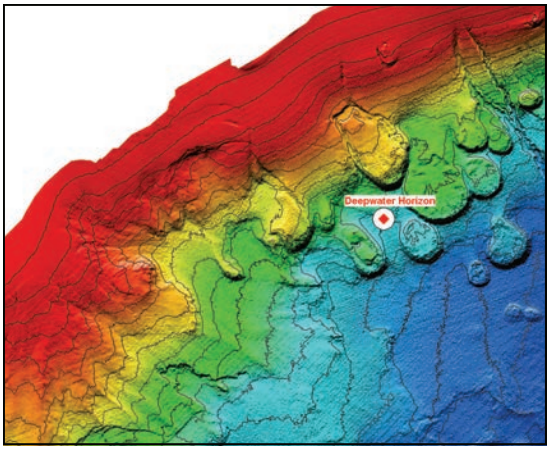
– Spotlight on NOAA Resources –

NOAA's Navigation Services Provide Useful Data and Products for Coastal Management

NOAA's navigation services aren't just for mariners anymore. As government agencies try to do more with less, people are finding innovative ways to share data and services beyond traditional uses. NOAA's providers of traditional navigation products—nautical charts, tide forecasts, and maritime positioning—are testing the waters, so to speak, with coastal managers and exploring new possibilities.

People, both at sea and on land, would be lost without NOAA's navigation services, which are provided by the Office of Coast Survey, National Geodetic Survey, and Center for Operational Oceanographic Products and Services. These services determine locations for the nation: land elevations, ocean depths, sea levels, and latitude and longitude. Seafarers and surveyors use the maritime applications of these observations, and now NOAA is working to make navigation information more accessible to coastal applications.

Storm Surge and Sea Level Rise Modeling: NOAA's navigation services combine ocean floor data with land-based elevations to improve simulations of storm surge. In modeling scenarios for sea level rise, they recently downscaled a regional model to give locally relevant data to planners in North Carolina.



NOAA's bathymetry, used primarily to build navigational charts, can also be used to develop ocean terrain models that improve accuracy of contaminant trajectories.

Coastal Ecosystem Restoration: NOAA's navigation services provide the spatial and water-level information so marsh restoration managers can predict salinity and inundation. They help determine whether the water is rising or land is subsiding. Several restoration projects use their geospatial data in restoration planning.

Coastal and Marine Spatial Planning: NOAA's navigation services collect the bathymetry and seafloor composition images that help characterize benthic habitats. Ongoing research examining the relationship between ocean bottom characteristics and essential fish habitats could provide more help in coastal and marine spatial planning activities.

Emergency Response Assistance: NOAA's ships, planes, and other equipment collect data to assess and assist in emergencies. For instance, they collect seafloor measurements and tidal current data for ocean circulation models. In the case of an oil spill, modelers use the data to forecast oil dispersion. Coastal managers use navigational charts and data terrain models to decide where to place their containment booms.

In short, marine-based measurements and observations provide actionable information that, until now, was in the purview of the maritime community. With help from the coastal management community, NOAA is transforming navigational data to information that supports coastal management efforts to improve coastal resiliency and economic vitality.

This spring, NOAA's navigation services will be asking coastal managers to participate in a survey to help them understand how they can better serve the coastal community. Coastal Zone and National Estuarine Research Reserve managers will be surveyed directly. To request a survey, or for more information about NOAA's navigation services, e-mail Dawn Forsythe at CoastSurveyCommunications@noaa.gov. For links to the Office of Coast Survey, National Geodetic Survey, and Center for Operational Oceanographic Products and Services websites, visit http://oceanservice.noaa.gov/programs/.

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The quarterly *Coastal Management Program Newsletter* was developed in response to state requests for assistance in improved communication/lesson sharing among the state and territory coastal management programs. Please let us know about interesting things going on in your coastal zone you would like to share with others. If you have any projects that you would like to highlight, please send a brief description to Allison.Castellan@noaa.gov. The submission deadline for the next newsletter is June 15, 2011.