



Marine Science for Maine People

Working with Communities for Environmental Health

The rapid growth of Maine's coastal population has resulted in increased pressure on coastal ecosystems from a variety of marine resource users. The Marine Extension Team (MET), a collaboration of Sea Grant and University of Maine Cooperative Extension (UMCE), works with coastal communities to address issues concerning land use planning, environmental protection and management, coastal access, nature-based tourism, and use conflicts. Team members also facilitate citizen involvement in monitoring coastal resources and in environmental stewardship.

Maine Phytoplankton Monitoring Program

A collaborative project of UMCE, Maine Sea Grant, Maine Department of Marine Resources (DMR), Bigelow Laboratory for Ocean Sciences, and the U.S. Food and Drug Administration, the Maine Phytoplankton Monitoring Program is a citizen volunteer effort that provides a first-alert system to the DMR biotoxin monitoring program. This past year, the program expanded to include fish and shellfish aquaculturists who will use the site-specific, real-time data they collect to develop crop management strategies. An MET member is developing a quality assurance project plan and producing a field guide to Maine's common marine phytoplankton to help volunteers better identify these organisms and to ensure they collect high quality data.

Coastal Swim Beach Monitoring Program

The Coastal Swim Beach Monitoring Program enlists volunteers to help monitor for waterborne bacteria that cause illnesses and provides the public with information on how to prevent the spread of Recreational Water Illnesses. MET members are leading efforts to organize citizen groups to monitor the swim beaches in their towns. They have made presentations to town boards, state park staff, and volunteers and then provided training on how to

gather water samples for bacteria (enterococci) analysis, store them, and transport them to the lab. With 10 communities now participating, the program includes all coastal swim beaches where visitor numbers and local conditions warrant a testing program and where there are volunteers interested in participating.



Beach Profile Monitoring Program

For nearly four years, teams of volunteers have been measuring the erosion and accretion of sand on southern Maine beaches as part of the Beach Profile Monitoring Project. MET staff have trained teams of over 120 volunteers who monitor 16 beaches between Georgetown and York, Maine. The data generated by the profiling program is being widely used to enhance beach-planning efforts. Maine Geological Survey has used the data to determine the results of a harbor dredge and beach nourishment project in Wells, to assess appropriate activities in coastal sand dunes, and to inform the first state beach nourishment policy. The Maine Beaches Conference, an outgrowth of the beach profile monitoring project, has been held for the last three years and has become a model for similar events elsewhere in the country.



Gulf of Maine Expedition

The Gulf of Maine Expedition (GOMEX) was a five-month sea-kayaking journey (May to September 2002) organized to raise awareness about the ecology and cultural legacy of the Gulf of Maine and to promote low-impact, safe recreational practices and stewardship principles. A Marine Extension associate led the four-member expedition, which covered more than 1,000 miles from the tip of Cape Cod, Massachusetts, to Cape Sable Island, Nova Scotia. Over the course of the expedition, the GOMEX team stopped in 23 communities, meeting with local residents and leading workshops on topics such as kayaking safety and navigation, coastal ecology, and water quality/ phytoplankton monitoring.

The Ecosystem Assessment Project

Last year, MET launched a pilot project in Taunton Bay that could become a template for community-based groups throughout the coast of Maine to participate in inventorying the natural and human resources of nearshore estuaries. So far, local residents were surveyed to determine the issues of greatest concern to the Taunton Bay community. These data will be used to develop targeted training workshops and resources to enhance information transfer and partnerships between the scientific


community and local citizens. In bringing scientific research and information to bear on local questions, Maine Sea Grant hopes to encourage decision-making at the local level that is based on unbiased, science-based information.


Microbial Source Tracking in Two Southern Maine Watersheds

In this project, water quality and microbial source tracking (MST) analyses are used to identify the species that are the sources of fecal contamination in southern Maine's Webhannet and Little River watersheds. This persistent contamination has closed productive clam flats and poses a potential health risk at popular area swim beaches. The project field tests MST technology in Maine and uses results to reduce contamination. At the end of the project's first year, 24 trained volunteers have collected field samples and/or assisted with lab procedures, providing scientists with the material needed to conduct MST analyses. With a two-year grant from the Cooperative Institute for Coastal and Estuarine Environmental Technology, Maine Sea Grant directs the project in collaboration with several partners, including the Wells National Estuarine Research Reserve and the Jackson Estuarine Lab at the University of New Hampshire.



Did You Know?...

 The U.S. Department of Defense, along with port and harbor authorities and worldwide engineering firms, are now using a wave model, **CG-WAVE**, as a standard tool for planning operations in coastal embayments and for designing harbor layouts and facilities. The model was designed by a Sea Grant-supported civil engineer at the University of Maine.

 UMaine geologists, with long-term Sea Grant support, identified **sand budgets** for the Kennebec River Estuary, and Wells and Saco bays. Information from the projects has been used in decisions related to dredging, breaching of dams, and mapping essential fish habitat. The 1:100,000 scale maps of nearshore geological features, resulting from the three projects, have been used by state agencies and planners, and widely distributed by Maine Geological Survey.