New NSF EPSCoR Award Tackles Problems Related to Closure of Shellfish Beds and Beach Advisories

Associate Professor of Sociology Thomas Safford will serve as co-principal investigator.

Thursday, July 25, 2013

-
-
-

by Evelyn Jones

With the value of coastal recreation estimated at some $20 billion nationally and $400 million in New Hampshire and Maine, coastal closures represent a significant sustainability problem with complex and interacting economic, social and environmental dimensions. As long-term trends indicate worsening coastal pollution, this research will inform choices and provide a promising model for interactions between science and decision-making. A team of researchers led by the University of New Hampshire and the University of Maine will conduct a three-year study of the many factors affecting the health of their shared coastal ecosystem. This collaboration, funded by a $6 million award from the National Science Foundation, aims to strengthen the scientific basis for decision making for the management of recreational beaches and shellfish harvesting.

The project, known as the New England SusTainability Consortium (NEST), is managed by the EPSCoR programs at UNH and UMaine in partnership with Great Bay Community College, Plymouth State University, and Keene State College in New Hampshire, and the University of Southern Maine, College of the Atlantic and University

of New England in Maine. Citizens interested in participating in the research will have an opportunity to join the New England Stewardship Network which will be developed by UNH Cooperative Extension to connect natural resource organizations, public agencies, scientists, and volunteers.

"This award is both a testament to the terrific work carried out by the talented researchers at New Hampshire's colleges and universities, as well as an important look at our state's coastline and ecosystem," said Senator Jeanne Shaheen (D-N.H.). "New Hampshire's coastline is critical to our economy and the Granite State's natural beauty, and this research will play a key role in efforts to protect these areas for future generations."

Coastal water assessment programs currently use the presence of fecal indicator bacteria and, more recently, pathogenic bacteria as risk assessment tools for managing recreational beaches and shellfish harvesting. However, these methods are poor predictors of risk. A better understanding of how environmental and climatic conditions affect the dynamics of potential pathogens is essential for informing public resource management decisions. For example, water temperature and water runoff from land both influence hazardous bacteria populations, and therefore risk to humans.

NEST will select a number of study sites in each state that differ in ecological and social attributes (e.g., closure frequency, watershed loadings, economic impact of coastal tourism or shellfish harvests). Researchers will investigate how natural processes (e.g. water flow in rivers) and human activities (e.g. land development) in coastal watersheds influence bacterial dynamics. A major focus of the work is to understand how scientific knowledge is used for making resource management decisions, such as decisions to close shellfish beds to harvesting.

"We are very excited about this opportunity to directly link policy and regulatory decisions around beach and shellfish bed closings with data in collaboration with our colleagues at the University of Maine," said Jan Nisbet, senior vice provost for research at UNH and NH EPSCoR state director. "We also need to better understand the response of the community and the impact on the Maine and New Hampshire economies when beaches and shellfish beds are closed. This grant will allow us to make this important connection as well as better understand the coastal ecosystems under stress from weather events such as excessive rainfall and polluted storm water runoff."

There is widespread agreement among resource managers and scientists in both states that current beach and shellfish management approaches are flawed; sustainability science research methods offer a means to address these flaws. NEST will use a collaborative process in which resource managers participate in defining problems, identifying research needs, interpreting results and designing solutions.

The mission of NH EPSCoR is to broaden and strengthen New Hampshire's research capacity and competitiveness through research, education and economic development. It's critical for the state to broaden and diversify the capacity to conduct research; to support business, industry and society with a workforce educated in science,

engineering and mathematics; and to improve communication between scientists and the public.

UNH Today is produced for the UNH community and for friends of UNH.
The stories are written by the staff of UNH Communications and Public Affairs.
Email us: unhtoday.editor@unh.edu.

MANAGE YOUR SUBSCRIPTION   **CONTACT US**

Like us on Facebook

Follow us on Twitter

Follow us on YouTube

Follow us on Instagram

Find us on LinkIn

UNH Today RSS feeds