Decision-making processes for beach and shellfish management: A scoping analysis for NEST's Safe Beaches and Shellfish Project

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Key Insights

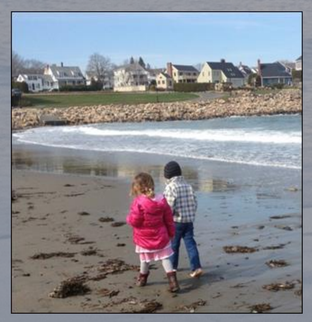
Several key insights emerged from our scoping. Differences in the goods and services and the mix of agencies and institutions associated with beaches and shellfish create important distinctions in decision-making. Notably, shellfish consumption inspires more formal guidelines and greater standardization in management across states. Second, we found similarities and differences in how decisions about beach advisories/closures and shellfish classifications and status determinations are made. Both states do marine water quality testing and have processes in place to interpret these tests and inform advisories and closures. In addition, both states focus on fecal indicators of water quality contamination. While Maine and New Hampshire both rely on federal guidelines, the states have different on-the-ground decision making for beaches and shellfish management. Beach and shellfish growing area monitoring and decision-making are more decentralized in Maine than in New Hampshire. These findings, among others, inform the design of future decision-support tools and research activities. For the Safe Beaches and Shellfish Project.

Purpose & Aims

The vision of the New England Sustainability Consortium (NEST) is to mobilize the collective capacity of New England universities and colleges to strengthen connections between science and decision making.

The Safe Beaches and Shellfish Project is the consortium's first research initiative. The over-arching goal is to understand and improve the scientific basis for decision-making to support safe beaches and shellfish consumption.

Maine and New Hampshire's coastal tourism and shellfish industries contribute millions of dollars annually to the regional economy. These industries depend on a coastal environment that is vulnerable to changing biophysical and social systems.



The Safe Beaches and Shellfish Project's research design supports scientific study of interactions between watershed processes and human activities that contribute to increased risk from exposure to microbial pathogens in coastal waters. It also advances scientific research to strategically lessen these risks by changing aspects of relevant and diverse decision-making contexts. Key to these activities is strengthening partnerships among scientists, managers, and communities.

Method

Using Maine and New Hampshire as our study regions, we synthesized information from:

- interviews with key decision makers and from analysis of resource management and outreach documents and websites;
- content analysis of management documents and websites;
- survey responses from the project team.

Partners & Stakeholders

Partners involved in project administration:

- UMaine
- UNH
- College of the Atlantic
- Keene State College
- Maine Sea Grant
- New Hampshire Sea Grant
- Plymouth State University
- University of New England
- University of Southern Maine
- Wells National Estuarine Research Reserve

Priority Partners and Stakeholders

Fellow researchers in NEST
Sea Grant
State agencies
Municipal officials
Cooperative Extension
Tribal communities
Federal agencies
Environmental groups
NGOs
Private sector
Individual citizens
K-12 schools

Table 1. Response to survey question which asked respondents (faculty and grad students on NEST) to rate the preferred level of involvement for identified stakeholders and partners.

Beach Advisories & Closures

Beach advisories & closures share a common goal of protecting public health & use a common set of federal recreational water quality criteria.

17 beaches along 18 miles of coastal line.

46 beaches along 230 miles of coastline.

All coastal beaches monitored, closures rare.

Federal guidance and funding: EPA's BEACH Act

37 of 46 coastal beaches monitored, advisories more common than NH.

Monitoring: NH Department of Environmental services

Environmental factors:
- High rainfall
- Known pollution events

Monitoring: Maine Healthy Beaches

Use fecal indicators for water quality

Closure and Advisory Decision Making: State, Centralized

Closures based on water quality exceedance

Closure and Advisory Decision Making: Municipal, Voluntary, De-Centralized

Enforcement: State

Advisory compliance: Municipal, Beach Managers

Shellfish Management

ME and NH classify, close, and open shellfish growing areas to protect public health and facilitate commerce. Management includes conservation of growing areas, harvesting, processing, labeling, handling, and transport of shellfish.

63,377 acres of shellfish growing areas (11,590 acres estuarine, 51,787 acres coastal)

214,760 acres of shellfish growing areas

Growing area classification: Coastal growing areas approved; only closed for "red tide" and 2.5 in >24 hr. rainfall

Federal regulatory guidance: National Shellfish Sanitation Program (NSSP)

Growing area classification: 174,936 acres prohibited; 11,652 acres restricted or conditionally restricted ; 28,172 acres conditionally approved

State programs must perform sanitary surveys and water quality testing systems that meet NSSP requirements.

Monitoring: NH DES and Department of Health and Human Services

Monitoring: Maine Department of Marine Resources (DMR), Bureau of Public Health

Shellfish management:
- NH DES and DHHS
- Licenses by NH Fish and Game

Shellfish management: Maine DMR, Municipal shellfish programs

Next Steps

Use a mix of social science methods to:

- study and promote cross cutting collaboration among disciplines and with stakeholders;
- strengthen partnerships with key stakeholders to better understand their preferences for collaboration and needs for information;
- study and improve uses of science in decision making about beach and shellfish safety.

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