

THE MAINE HEALTHY BEACHES PROGRAM: INTEGRATING SCIENCE AND EDUCATION FOR BETTER WATER QUALITY

Peter Slovinsky, Maine Geological Survey

Paula Thomson, Maine Coastal Program

Todd Janeski, Virginia Commonwealth University

Esperanza Stancioff, University of Maine Cooperative Extension

KEYWORDS: water quality, healthy beach, pollution, bacteria, swimming, recreation

The Maine Healthy Beaches (MHB) Program monitors water quality at 37 public swimming beaches on a weekly basis during the summer months. MHB is part of a national initiative of the U.S. Environmental Protection Agency under the BEACH Act to monitor public health threats due to coastal water quality and to improve recreation at beaches around the United States. The MHB educates the public about potential health risks, and employs a public notification program with participating communities when high bacteria levels are recorded that may pose a health risk.

Beginning in the summer of 2005, several communities in southern Maine were experiencing repeated exceedances of bacterial levels at their public coastal swimming areas prompting the Program to work with them to identify potential sources. The communities suffering from repeated closings of their swimming beaches saw significant economic losses to their tourism industry. Data indicated that the potential pollutant sources to the beaches were adjacent rivers but typical source tracking provided no strong leads. Daily monitoring of the beaches provided water quality data that were from the preceding day following the standard EPA protocol for monitoring for *Enterococcus* spp. bacteria. As part of the source identification, Program partners undertook alternative approaches to understanding the flow and distribution of pollution at these coastal areas to assist in the development of a management plan.

In support of the program, the Maine Geological Survey (MGS) conducted Acoustic Doppler Current Profiler surveys of nearshore currents and interpreted water quality monitoring data to better understand and predict coastal circulation in and around the study areas. Subsequently, current surveys captured nearshore circulation at these rivers and along the beaches in order to characterize flow during different tidal regimes – especially during an ebbing tide - when currents near river inlets are expected to be strongest.

Water quality data from the MHB program was analyzed in relation to observed circulation patterns, offshore waves, tidal conditions, and precipitation amounts in an attempt to characterize the triggers of high bacteria counts, and develop a generalized predictive capability for potentially hazardous water quality at these study areas.

As part of the source tracking and subsequent management plan, significant education and outreach was conducted to the communities informing them of the study results, the

predictive nature of the data and the steps necessary to remediate the problem at the beach.

We will share the experiences at Goose Rocks Beach in Kennebunkport, and Ogunquit Beach in Ogunquit. We will share the methodologies, results, data interpretations, and discuss our experiences in educating and interacting with the study communities. Results from the studies are transferable to other coastal areas, and could be employed by other State water quality monitoring programs for their swimming beaches.

Peter A. Slovinsky
Maine Geological Survey
22 State House Station
Augusta, ME 04333
Peter.A.Slovinsky@maine.gov
(207) 287-7173