Maine Healthy Beaches Program: Working Together to Improve Coastal Water Quality (2010 State of the Bay Presentation)

Mark Margerum  
Department of Environmental Protection

Sarah Mosley  
University of Maine Cooperative Extension

Keri Lindberg  
University of Maine Cooperative Extension

Follow this and additional works at: https://digitalcommons.usm.maine.edu/cbep-presentations

Recommended Citation  
Maine Healthy Beaches Program:
Working Together to Improve Coastal Water Quality

State of the Bay Conference
October 21, 2010

Sarah Mosley &
Keri Lindberg
UMaine Cooperative Extension

Mark Margerum
Maine Department of Environmental Protection

Funding provided by US EPA
Maine Healthy Beaches Program

Program Elements:

- 28 towns/state parks, 60 beach management areas
- Monitoring, Assessment and Notification
- Special Studies & Sanitary Surveys
- Partners - local, state and federal level
Winslow Park, Freeport, ME

Number of Exceedances per Year
(monitoring 2x per month)

WP-1

K. Lindberg
Potential Bacteria Sources:

- Stormwater runoff
- Boats/moorings
- Bathers
- Wildlife
- Pet waste

Winslow Park, Freeport, ME

K. Lindberg
Willard Beach, South Portland, ME

Number of Exceedances per Year
(monitoring 2x per week)
Potential Bacteria Sources:

- Storm drain outfalls
- Impervious surfaces/runoff
- Boats/moorings
- Bathers
- Wildlife
- Pet waste
Willard Beach, South Portland, ME
East End Beach, Portland, ME

Number of Exceedances per Year

(monitoring 3x per week)

S. Mosley
East End Beach, Portland, ME

Potential Bacteria Sources:

- Combined sewer overflows
- Storm drains
- Impervious surfaces/runoff
- STP outfall
- Marinas/moorings
- Presumpscot River mouth
- Bathers
- Wildlife
- Pet waste

S. Mosley
Beyond the Shoreline: areas identified as needing special studies/sanitary surveys

- Biddeford
- Camden
- Kennebunk
- Kennebunkport
- Lincolnville

- MDI
- Ogunquit
- OOB/Saco
- Popham
- Portland

- Rockport
- Scarborough
- South Portland
- York
Watershed Health = Beach Health

Fecal Contamination = Guts of warm-blooded animals
Sanitary Survey

Explore ALL Bacterial Pathways

- Malfunctioning septic systems
- Leaky sewers/cross connections
- Stormwater runoff
- Domestic and wild animals
- OBD’s, POTW outfalls
- Boats dumping sewage
- Beach activities/characteristics
Ogunquit River = primary source of contamination

Rainfall > 1 in. within 5 days of monitoring increases bacteria levels

Night time ebb tide = entrainment outside surf zone

Day time flood + wind + waves can bring bacteria back to beach
Pinpointing Sources
### Fluorometry

<table>
<thead>
<tr>
<th>Potential sources based on bacteria and optical brightener levels</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High Optical Brightener</strong></td>
</tr>
<tr>
<td>- <strong>High Bacteria</strong></td>
</tr>
<tr>
<td>- Black water (e.g. human sources - malfunctioning septic system, sanitary sewer cross connection)</td>
</tr>
<tr>
<td>- <strong>Low Bacteria</strong></td>
</tr>
<tr>
<td>- Grey or Gray water (e.g. laundry, wash water)</td>
</tr>
<tr>
<td><strong>Low Optical Brightener</strong></td>
</tr>
<tr>
<td>- <strong>High Bacteria</strong></td>
</tr>
<tr>
<td>- Human or non-human sources</td>
</tr>
<tr>
<td>- <strong>Low Bacteria</strong></td>
</tr>
<tr>
<td>- Potentially low or no fecal contamination</td>
</tr>
</tbody>
</table>
Within 75’ of a Stream
Within 250’ of an Impervious Surface
Within 250’ of a coast/river/tidal zone
Slope > 20%
Within 250’ of a waterbody/wetland

Watershed Risk Analysis

Monitoring data

Maine Healthy Beaches
Ogunquit River Watershed Special Study
Leavitt Stream Watershed Risk Analysis
Septic System Risk Analysis

Maine Healthy Beaches
Ogunquit River Watershed Special Study
Leavitt Stream Watershed Risk Analysis
Septic System Properties

Data Source: MHB, MEGIS, GIS Mapping & Analysis
Coordinate System: NAD83, UTM, Zone 19N
Created By: Sarah Mosley, August 2010
Surveying Properties

Lincolnville Beach, Maine (K. Lindberg)
Promoting Best Practices

What you can do as a CITIZEN:

- Maintain and routinely pump out your septic system.
- Report any illicit or questionable discharges to your local CEO/LPI.
- Properly dispose of pet waste and/or livestock manure.
- Maintain appropriate vegetative buffers along waterways.
Municipal Guide To Clean Water: Conducting Sanitary Surveys to Improve Coastal Water Quality

Maine Healthy Beaches Program
March 2010
Questions?