SHORELINE MONITORING PROGRAM

2014 Water Quality Monitoring Report
Kitsap Public Health District
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BACKGROUND
Kitsap Public Health received a grant from the Environmental Protection Agency in 2010 for the Shellfish Restoration & Protection project. This four year project included shoreline surveys of approximately 90 miles of Kitsap County. As a result of the successful completion of this project, Kitsap Public Health received sustainable funding from Clean Water Kitsap to conduct an ongoing shoreline monitoring program.

PURPOSE
The purpose of the Shoreline Monitoring Program is to effectively monitor and sample shoreline areas in Kitsap County on a rotating basis for fecal pollution. This protects public health and shellfish growing areas. Kitsap County has 228 miles of shoreline and its beaches are an important resource. Residents use the marine beaches for recreation, shellfish harvesting, fishing, boating, and various other activities. Fecal waste from warm-blooded animals can contain pathogenic bacteria and viruses that cause disease in humans.

A shoreline survey is the inventory and bacterial assessment of all freshwater discharges to an area. If high bacteria counts are found in a discharge, Health District staff investigate, locate, and eliminate sources of contamination to protect public health. Closure of shellfish growing areas may also be required if nearby sources of pollution are impacting them.

For the purposes of the shoreline survey program, all freshwater discharges exceeding 406 colonies of *E. Coli* per 100 milliliters are resampled two times. If the geometric mean value of the three samples is greater than or equal to 406 colonies of *E. Coli* per 100 milliliters, the discharge is considered a confirmed source of bacterial pollution, or “hotspot,” and will be investigated using Kitsap Public Health District protocols.

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1 Stormwater management fees from unincorporated Kitsap County fund a unique multiagency program managed by Kitsap County Public Works. Programs are implemented by Public Works Stormwater Division and partner agencies; Kitsap Public Health District, Kitsap Conservation District and Washington State University Extension Kitsap.
Washington State Department of Health (DOH) is responsible for evaluating commercial shellfish growing areas to determine if the shellfish are safe to eat. DOH has designated 93.6 miles of Kitsap’s shoreline “Approved” for shellfish harvest, 4.1 miles “Conditionally Approved,” 43 miles “Prohibited,” and 1.4 miles “Restricted.” Documented fecal pollution or the threat of pollution has caused the closure and/or restricted use of commercial shellfish beds in Burley Lagoon, Dyes Inlet, Hood Canal, Liberty Bay, Port Orchard Bay, Port Gamble Bay, Sinclair Inlet, and Yukon Harbor. Monitoring has also provided a feedback mechanism for water quality projects, providing evidence of improvements, resulting in upgrades of shellfish harvest areas and removal of public health advisories.

**GOAL**
The goal of this program is to implement an ongoing marine shoreline survey program for unincorporated Kitsap County that will:

- Protect and preserve public health and the environment;
- Identify and correct sources of water pollution caused by human sewage and animal waste;
- Inform and educate the public, private industry, and governmental agencies on specific Kitsap County surface water quality issues;
- Provide the public, private industry, and governmental agencies with current surface water quality information in a timely and effective manner; and
- Promote stewardship of the County's waterways and their respective resources.
2014 SHORELINE SURVEYS

Three shoreline areas were surveyed during wet and dry weather in 2014. These areas were Hood Canal 1, Port Gamble Bay, and Liberty Bay. Investigations and source corrections are in progress for these three shoreline areas.

2014 SHORELINE SURVEY SUMMARY

<table>
<thead>
<tr>
<th>Shoreline Area</th>
<th>Approximate Distance</th>
<th>Number of Samples</th>
<th>Number of Hotspots*</th>
<th>Number of Properties Inspected</th>
<th>Number of Sources Identified</th>
<th>Number of Sources Corrected</th>
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</thead>
<tbody>
<tr>
<td>Hood Canal 1</td>
<td>15</td>
<td>416</td>
<td>6</td>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Port Gamble Bay</td>
<td>6</td>
<td>213</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Liberty Bay</td>
<td>9</td>
<td>303</td>
<td>18</td>
<td>27</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

*Hot spot is defined as a sampling station with a 3 sample geometric mean greater than 406 E.coli/100ml

2014 HOOD CANAL 1 SHORELINE SURVEY SUMMARY

The first shoreline area surveyed in 2014 was Hood Canal 1 from Foulweather Bluff to the Naval Base Kitsap-Bangor north fence (excluding Port Gamble Bay). The majority of this area is classified Approved for shellfish harvest by the Washington State Department of Health. The only exceptions are Driftwood Keys (Prohibited), the mouth of Kinman Creek (Prohibited), the mouth of Lofall Creek (Prohibited), the old mill site in Port Gamble (Prohibited) and the stretch of shoreline from Foulweather Bluff to Driftwood Keys (Unclassified). The map below shows the shoreline covered by Kitsap Health’s 2014 shoreline work.

In Hood Canal, two hotspots were identified during wet weather and four during dry weather. Pollution identification and correction work continues to identify the sources of the bacteria from these six drainages.
2014 PORT GAMBLE BAY SHORELINE SURVEY SUMMARY

The second shoreline area surveyed in 2014 was Port Gamble Bay. The area surveyed was the interior of the Bay, excluding the Port Gamble-Sklallam Reservation. Port Gamble Bay is Approved for shellfish harvest by the Washington State Department of Health. The map below shows the shoreline area surveyed by Health District staff during 2014.

One hotspot was identified in Port Gamble Bay. Dye testing is scheduled for early 2015 to identify the source of the pollution.

2014 LIBERTY BAY SHORELINE SURVEY SUMMARY

The third shoreline area surveyed was Liberty Bay. The Health District surveyed the bay from Naval Undersea Warfare Center-Keyport to the Suquamish Reservation, excluding the City of Poulsbo. The majority of Liberty Bay is Unclassified for shellfish harvest. A large section of the eastern shoreline in the city limits of Poulsbo is Prohibited and Lemolo Bay is Approved. The map below shows the areas covered by Kitsap Health’s 2014 shoreline surveys.

Three hotspots were identified during wet weather and fifteen during dry weather. Two of the wet weather hotspots were failing septic systems. One property repaired the septic and the other connected to public sewer. Work continues on identifying sources for the other sixteen hotspots.