

BREMERTON-KITSAP COUNTY HEALTH DISTRICT  
ENVIRONMENTAL HEALTH DIVISION  
WATER QUALITY PROGRAM

**1996-1998 SHELLFISH MONITORING  
DATA SUMMARY  
FOR  
KITSAP COUNTY**

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By

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**1996-1998 SHELLFISH MONITORING DATA SUMMARY**  
**FOR KITSAP COUNTY**

**EXECUTIVE SUMMARY**

Kitsap County, Washington is located on the northern portion of a large peninsula in central Puget Sound. Except for its southern boundary, Kitsap County is bordered entirely by marine water, and includes several large embayments and islands. With approximately 228 miles of marine shoreline, shellfish harvesting is a popular and readily accessible activity for local residents.

The Washington State Department of Fish and Wildlife (WDFW) has identified 115 beaches in Kitsap County as publicly-owned tidelands. Based on aerial surveys, WDFW estimates that each year more than 22,000 people harvest shellfish on these public beaches. Many of these people are harvesting shellfish from areas where no tissue sampling has been conducted to assess potential health risks.

Although other agencies have conducted studies to assess the quality of shellfish in Puget Sound, these studies did not include many of the public shellfish beaches in Kitsap County. As the local health agency, the Bremerton-Kitsap County Health District is responsible for protecting public and environmental health within the county. The goals of the Health District's shellfish monitoring project are to assess the affects of water quality and human activities on shellfish, evaluate the adequacy of current health advisories, and determine the potential health risks of consuming shellfish from public beaches in Kitsap County.

In this study, shellfish samples were collected from 29 beach sites around Kitsap County over a three-year period. Composite samples of either oysters or clams were taken from each site, depending on what species was most common on that beach. Sampling was conducted in 1996 and 1997 to determine which areas had elevated levels of potentially harmful chemicals, and needed further study. In 1998, multiple samples were collected from those areas where higher levels had been found.

Shellfish samples collected under this study were analyzed for lipids and solids, fecal coliform bacteria, metals, PCBs and some pesticides. These results were compared to screening values, reported background levels, and a health assessment conducted by the federal Agency for Toxic Substances and Disease Registry (ATSDR) on shellfish harvested from Keyport, Washington.

Using the ATSDR methodology, recommended consumption frequencies were calculated for subsistence harvesters based on the highest detected concentrations of each chemical. Due to the maximum detected concentration of cadmium found in this study, pregnant women of a subsistence population should not consume oysters more than 45 days per year, or clams more than 167 days per year. However, these shellfish should be safe to eat for other adults who harvest and consume clams or oysters recreationally if other advisories are followed, and shellfish are harvested, handled and cooked properly.

**FIGURE 1**  
**PROJECT AREA AND MONITORING STATION LOCATIONS**  
**KITSAP COUNTY SHELLFISH DATA SUMMARY REPORT**

