



Seals and Water Quality in Henderson Inlet

April 2001

Shellfish Protection District

In November and December of 2000, the state Department of Health closed commercial shellfish harvesting in areas of Henderson Inlet and Nisqually Reach because fecal coliform bacteria levels in the water are unacceptably high. Under state law, Thurston County must now form a shellfish protection district to improve water quality in the two areas.

As Thurston County and local communities work to craft such a district, a common question surfaces: **“Is seal waste to blame for the high levels of fecal coliform bacteria in Henderson Inlet?”** Testing indicates that contaminated drainage from upland areas -- not seals -- is the most likely source of pollution.



Testing shows little correlation between high-pollution areas and seal populations

Pollution in Henderson Inlet starts off strong in the southern part of the inlet and gets weaker as it moves north, closer to open water. The most polluted testing stations in Henderson Inlet are located in the extreme southern portion of Henderson Inlet, closest to the mouth of Woodland Creek. There are few seals in this portion of the bay. Some of the *least* polluted stations are located to the north, adjacent to the seal haul-out areas near Chapman Bay. (Haul-out areas are those areas where seals haul their food and bodies out of the water.)



Tides, rainfall help spotlight location of pollution

During and after periods of rainfall, the marine waters in the southern inlet predictably fail state water quality standards. This demonstrates that rainwater is washing bacterial pollutants from the land into the inlet. Upland pollution can come from failing septic systems, contaminated stormwater runoff, and/or waste from pets, farm animals and wildlife.

Testing stations in the south inlet also show that bacteria levels are higher during ebb, or out-going, tides than during flood tides. This indicates pollution in the southern part of the inlet is probably heading out from the land, rather than coming in from deeper water where seals live.



State data shows deep haul outs do not contribute to shellfish bed pollution

Washington State Department of Health data shows that when seals haul out over deep water (such as rafts and booms), the seal waste is not likely to pollute shellfish growing waters. The deeper waters tend to dilute and disperse fecal matter and kill off bacteria before it reaches the shellfish beds. The seal haul outs in Henderson Inlet and Quilcene Bay are over deep water. Testing stations near the haul-out areas meet the shellfish growing standards.

Conversely, Department of Health data from other areas of Puget Sound show that seals *can* contaminate shellfish-growing waters if they haul out on nearby intertidal beaches. At these beach areas, wave and tidal action tend to keep the waste concentrated nearby, rather than dispersing it into more open waters. On the Dosewallips River Delta in Hood Canal, fences were used to discourage seals from using the intertidal area to haul out. Water quality improved and the Dosewallips State Park recreational beach was reopened to the public for recreational shellfish harvesting.

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