



# Puget Sound Georgia Basin Ecosystem Indicator Report

## Executive Summary



Jack Kintner Photo

## Shellfish

Insufficient Progress ■

The Puget Sound Georgia Basin Ecosystem Indicators give a glimpse into the health of our ecosystem, which includes the interactions among seven million people, their health, local economies and a complex system of water, land, plants, animals and microorganisms. This indicator describes status and trends in commercial shellfish growing areas in Puget Sound and direct-harvest closures in Georgia Basin. Shellfish growing area closures provide important information about water quality and human activities where the land meets the sea, or the *nearshore*. Shellfish are an economic mainstay of our rural communities; growers provide our homes and restaurants with the region's delicious clams, oysters and mussels. In the Pacific Northwest, shellfish are indelibly linked to our heritage, particularly those of First Nations and U.S. Tribes, which have harvested shellfish for more than 12,000 years.

### What Is Happening?

**In Puget Sound:** Since 1980, about 30,000 acres (~12,000 hectares) of commercial shellfish growing areas have been closed to harvest because of pollution. Between 1995 and 2004, more than 4,000 acres (~1800 ha) were downgraded to restricted classifications but more than 12,000 acres (~7,800 ha) were upgraded — a net upgrade of almost 8,000 acres (~3,100 ha). Clusters of closed areas are located in south Puget Sound, Kitsap Peninsula, Hood Canal and the Whidbey Basin.

Areas opened in 2003 include Dyes Inlet and Portage Bay, while closures occurred in Drayton Harbor and Dungeness Bay. By 2004, 23 areas were listed as threatened under the Washington State Department of Health's early warning system based on water quality from fecal coliform (bacteria associated with waste).



Shellfish Closure Areas: 2003-2004

**In the Georgia Basin:** Between 1989 and 2004, growing areas closed to commercial shellfish harvesting in BC rose from more than 79,000 ha (~195,000 acres) to almost 124,000 ha (~306,000 acres) – a 64 percent increase. This increase in closures is attributable more to expanded monitoring activities than degradation of water quality. During 2004, 58 percent of overall BC closures were located in the Georgia Basin, including urbanized areas such as Burrard Inlet, Fraser River Estuary, and Boundary Bay. Outside Vancouver, BC, Howe Sound is closed to all shellfish harvesting north to Squamish and east to Port Moody, as are many areas along the southeast coast of Vancouver Island.

### Why Is It Happening?

The health of shellfish and human safety in eating commercially grown shellfish is affected by:

- **Urbanization and polluted runoff from hard building/road surfaces:** The greater the degree of urbanization, the greater the threat to shellfish growing areas. Impervious surfaces act as super highways for oil, grease, chemicals, sediment and other water pollutants.
- **Sewage and septic:** Sewage from malfunctioning sewage treatment plants, weaknesses in aging sewage collection systems and failure of home septic systems release animal and human waste and other dangerous bacteria and pathogens to shellfish-growing waters.

- **Marinas and boaters:** There are 279,000 boats in the basin, some of which release untreated sewage to water.
- **Farms and domestic animals:** Manure and agricultural chemicals that are not appropriately treated or controlled can run off from farms during rain events and pollute shellfish growing areas. Domestic pet waste is also a problem if not picked up and disposed of properly.

### How Does This Affect Me?

- **Loss of tribal rights:** Shellfish closures impair thousands of years of First Nation and Tribal shellfish rights, which are crucial to these traditions and economies.
- **Economic effects in the community:** Every shellfish growing area closure means contract uncertainties for growers, and triggers losses for shellfish workers, super-

*continued*

<http://www.epa.gov/region10/psgb/indicators/shellfish/>

## How Does This Affect Me? *continued*

markets, restaurants, recreational equipment providers, lodging and others in rural affected communities.

- **Restaurant and consumer loss of shellfish:** This region is one of the largest producers of shellfish in North America. Tourists come to the Pacific Northwest in part to enjoy our shellfish traditions, which no longer exist in other parts of the continent.
- **Ecosystem effects:** Shellfish help improve water clarity, transfer energy into higher food webs, and allow greater light penetration for eelgrass to grow. Eelgrass is a crucial nursery for many animals.
- **Recreation:** In 2005, the Washington Department of Fish and Wildlife collected nearly \$1.5 million in licensing fees for shellfish and seaweed.



Photo: Celita K. Johnston

## What Are We Doing About It?

Regional (state or provincial) agencies monitor marine water quality and survey the shoreline and adjacent uplands for pollution sources before shellfish harvesting can occur. Washington has an early warning system. Where water quality problems do arise, shellfish protection districts are created, which provide funding for targeted restoration work to fix the underlying problem (e.g. sewage, farm runoff). Regional (state or provincial) and local agencies, First Nations and Tribes and other affected parties partner to design and carry out programs to locate and correct pollution sources (sewage or farm runoff). In both countries, active shellfish trade associations foster environmental responsibility and codes of practice.

## What Can I Do?

### Your Tool Box

- Plant native vegetation and minimize grass and other impervious surfaces. Be a steward of the shoreline! Download the Puget Sound Shoreline Stewardship Guidebook [www.dnr.metrokc.gov/wlr/watersheds/puget/puget-sound-guidebook.htm](http://www.dnr.metrokc.gov/wlr/watersheds/puget/puget-sound-guidebook.htm)
- See *A Primer on Habitat Project Costs* at Puget Sound Action Team | Marine and Freshwater Habitat [www.psat.wa.gov/Programs/Habitat.htm](http://www.psat.wa.gov/Programs/Habitat.htm)
- Check out the information on natural lawn care at King County | Yard and Garden Topics [dnr.metrokc.gov/topics/yard-and-garden/](http://dnr.metrokc.gov/topics/yard-and-garden/) or Go for Green [www.goforgreen.ca/gardening/index.html](http://www.goforgreen.ca/gardening/index.html)
- Take classes in natural lawn care: Call (206) 296-8360
- Check out Department of Fisheries and Oceans Shorekeepers Program [www.keepersweb.org/Shorekeepers](http://www.keepersweb.org/Shorekeepers) or call (250) 756-7265 for South Coast
- Get septic savvy: Maintain your septic system well. Host a septic social through Washington State University Cooperative Extension, Marine Advisory Services [wsg.washington.edu/outreach/mas/water\\_quality/septicsense/1\\_sense\\_main.html](http://wsg.washington.edu/outreach/mas/water_quality/septicsense/1_sense_main.html) or call (360) 427-9670 x496; Washington State Department of Ecology | Shorelands Program [www.ecy.wa.gov/programs/sea/pugetsound/tips/septic.html](http://www.ecy.wa.gov/programs/sea/pugetsound/tips/septic.html) or (360) 407-6000; Washington On-Site Sewage Association [www.wossa.org](http://www.wossa.org)
- Use Low Impact Development (LID) techniques. LID mimics nature by slowing polluted runoff, using good soils and plants to detoxify pollutants, and using porous paving materials and green roofs. Read Seattle Public Utilities | Natural Drainage Overview [www.seattle.gov/util\\_old/about\\_spu/drainage\\_&\\_sewer\\_system/natural\\_drainage\\_systems/natural\\_drainage\\_overview/index.asp](http://www.seattle.gov/util_old/about_spu/drainage_&_sewer_system/natural_drainage_systems/natural_drainage_overview/index.asp) or call (206) 684-3000. Read the Puget Sound Action Team *Low Impact Development Technical Guidance Manual for Puget Sound* [www.psat.wa.gov/Publications/LID\\_tech\\_manual05/lid\\_index.htm](http://www.psat.wa.gov/Publications/LID_tech_manual05/lid_index.htm)
- Build Green: Learn more at Green Buildings BC | Guide to Green Building Resources [www.greenbuildingsbc.com/new\\_buildings/resources\\_guide/index.html](http://www.greenbuildingsbc.com/new_buildings/resources_guide/index.html)

Learn more <http://www.epa.gov/region10/psgb/indicators/shellfish/>  
Share what's important to you and your community  
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The Puget Sound Georgia Basin Ecosystem Indicators Report is a collaborative effort brought to you by Federal, State, Provincial and Local partners from the United States and Canada.