

Puget Sound Georgia Basin Ecosystem Indicators Report
Technical Background Document
<http://www.epa.gov/region10/psgb/indicators/>

Shellfish Indicator

Indicator Name

Annual net change in commercial shellfish area (combined commercial and recreational areas in British Columbia).

Data Set Name

Commercial shellfish area reclassifications.

Data Type

Indicator data – estimates of reclassified commercial shellfish area calculated by Washington Department of Health and documented in sanitary survey reports for individual shellfish growing areas. In Canada, shellfish growing area classification is performed by the Marine Water Quality Monitoring Unit (MWQM) of Environment Canada (EC).

SCOPE

1. Geographic Coverage

All classified commercial shellfish growing areas in the Puget Sound basin, which includes the waters of the Strait of Juan de Fuca and Strait of Georgia within the boundary of the United States. The total classified shellfish area currently covers approximately 165,000 acres, of which approximately 80% is approved for harvest. All other marine waters not officially classified are closed to commercial shellfish growing and harvesting. In Canada, the Georgia Basin is comprised of the area in the Strait of Georgia south to the US border. The total classified area is approximately 140,000 hectares, of which roughly 50% is approved for direct harvest.

2. Length of Data Series

1995 to present.

3. Smallest Geographic Units

Shellfish areas are measured in acres in the United States and hectares in Canada

RELIABILITY

1. Assumptions and Caveats

Commercial shellfish reclassifications are documented in sanitary survey reports produced by the Washington Department of Health (DOH) and Environment Canada's Marine Water Quality Monitoring Unit for individual shellfish growing areas. Net change in shellfish area is based on change in classification status and estimated size of reclassified area.

2. Quality Assurance Procedures

Classification decisions are based on evaluations of growing area conditions using guidelines of the National Shellfish Sanitation Program or the Canadian Shellfish Sanitation Program in British Columbia. Estimates of total and reclassified shellfish area based on GPS coordinates and GIS calculations. National Shellfish and Sanitation Program (2002). Model Ordinance; 2002 Revision. Department of Health and Human Services. Washington D.C.. Canadian Shellfish Sanitation Program, Manual of Operations, Chapter 2, (July, 2004).

3. Data Confidence Limits

Calculations of total and reclassified shellfish area continue to gain accuracy with improvements in Geographic Information System (GIS) mapping systems.

COLLECTION INFO

1. Data Methodology

The Washington, DOH uses surveys of pollution sources and water quality data collected using a systematic random sampling strategy based on the most recent revision of the Model Ordinance of the National Shellfish Sanitation. For a **copy of this ordinance, please contact: Office of Food Safety and Shellfish Programs, Washington State Department of Health, P.O. Box 47824, Olympia, WA 98504-7824.**

Sampling methods conform to Standard Methods for the Examination of Water and Wastewater, 20th Edition (APHA 1999).

2. Collection Frequency

In Washington, sampling frequencies are based on those specified in the Model Ordinance (referenced above). Pollution source surveys are completed at least once every 12 years. Generally speaking, Approved areas (and some Restricted areas) are sampled six times a year. Conditionally Approved areas are sampled 12 times a year.

In British Columbia, Environment Canada (EC) uses surveys of pollution sources and water quality data collected using a systematic random sampling or adverse pollution condition sampling strategy depending upon potential or real pollution sources. Sampling frequency and collection details are as specified in the most recent version of the Canadian Shellfish Sanitation Program Manual of Operations available at:

<http://www.inspection.gc.ca/english/anima/fispoi/manman/cssppccsm/toc tdme.shtml>.

NOTICE OF PROPRIETARY DATA

All water quality data collected by DOH as a result of routine monitoring are available upon request. There are no proprietary data sets. All water quality data collected by Environment Canada as a result of routine monitoring are available upon request .

Acknowledgement

All reports or additional products using DOH data should acknowledge Food Safety and Shellfish Programs of the Washington State Department of Health. All reports or additional products using Environment Canada data should acknowledge the Marine Water Quality Monitoring Unit of Environment Canada.

DATA SOURCES & CONTACTS

1. Data Sources

Reclassifications are documented in sanitary survey reports for individual growing areas produced by the Washington Department of Health. Reclassifications are also listed in the department's *Annual Inventory of Commercial and Recreational Shellfish Areas of Washington State*, available at <http://www.doh.wa.gov/ehp/sf/sfpubs.htm>.

Classification water quality data for British Columbia is maintained and archived in a database and documented in sanitary survey reports for each growing area. Contact the Regional Headquarters of Environment Canada, Marine Water Quality Monitoring Unit for any specific information.

2. Contact Name

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