

Puget Sound Georgia Basin Ecosystem Indicators Report

Technical Background Document

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

Population Health Indicator

Theme : Population/Human Health

Region : Georgia Basin/Puget Sound Bio-Region, in both British Columbia (BC) and Washington (WA)

Indicator Name

Population Health

- Population
- Life expectancy
- Infant mortality rate
- Average Family Income
- Income Dependence on Traditional Resource Sector (Forestry, Fishing and Mining)

Data Set Name

- *Total Population (2025)*; Growth and Growth rates for the entire region and sub-regions (BC regional districts; WA) within the Basin (BC 2003-2025); and average annual growth.
- *Distribution of Population by Age Group*
 - BC: (2003)
 - WA: Intercensal and Postcensal Estimates of County Population by Age and Sex: 1980-2004; Washington State Population Projection: Intermediate Series; Washington State Office of Financial Management, 2004.
- *Percentage of Population with Aboriginal Identity*
 - BC: (2001 Census)
 - WA: 2002 Total Population Estimates by Age, Gender and Race: Washington and Its Counties Revised estimates for 2002, Washington State Office of Financial Management, 2004.
- *Percentage of Population that is Visible Minority*
 - BC: (2001 Census)
 - WA: 2002 Total Population Estimates by Age, Gender and Race: Washington and Its Counties Revised estimates for 2002, Washington State Office of Financial Management, 2004.
- *Life Expectancy*
 - BC: (average 1998-2003)

- WA: WA State Life Expectancy at Birth, 2003: 05-10-2005 09:07:17 VistaPHw 4.0.2, Calculator Version 5.0.
- *Infant Mortality rate per 1,000 births*
 - BC: (average 1998-2002)
 - WA: WA State Infant Mortality, by County, 1999-2003: Combined 05-10-2005 09:35:27, VistaPHw 4.0.2, Calculator Version 5.0 Linked Birth/Death Certificate Data: Washington State Department of Health, Center for Health Statistics. 1990-2003 Population Estimates: Washington State Department of Health, Vista Partnership, Krupski Consulting; Washington State Population Estimates for Public Health. October 2004.
- *Average Family Income*
 - BC: (2001 Census for 2000)
 - WA: US Census 2000 Summary File 3; Median Household Income, Median Family Income, Median Non Family Income and Per Capita Income by Race; Median Household and Household Per Capita Income in 1999; State, County, and Places.
- *Income Dependencies*
 - BC: (data based on income data from 2001 Census for 2000)
 - WA: US Bureau of Economic Analysis: Regional Economic Accounts>Local Area Personal Income (2000); >CA05 - Personal Income by major source and earnings by industry. This data is available at <http://www.bea.doc.gov/bea/regional/reis/>.

Data Type

- Population estimates are modeled using indicators symptomatic of regional population change obtained from administrative files; population projections are modeled using historical trends and future expectations
- Life expectancy at birth using administrative records of deaths and population estimates.
- Infant mortality rate (per 1000) based on administrative records of births and infant deaths
- Aboriginal Identity and Visible Minority:
 - BC: Aboriginal Identity, Visible Minority and Income are self-reported in the 2001 Census of Canada. Questions were asked of a 1/5 sample of non-institutional households.
 - WA: "Native American" is self-reported for the 2000 US Census as "American Indian or Alaska Native." "Visible Minority" is calculated from total population minus self-reported "White, Non-Hispanic" from the 2000 US Census.
- Income Dependencies:
 - BC: Income Dependencies are modeled using 2001 Census income for 2000 by industry of employment.

- **WA:** Income dependencies information is from the U.S. Bureau of Economic Analysis.

SCOPE

1. Geographic Coverage

- **BC:** The data sets for each of the indicators have been developed to follow the boundaries of the Georgia Basin portion of the bio-region as closely as possible. Included are the Regional Districts of Capital, Cowichan Valley, Fraser Valley, Greater Vancouver, Nanaimo, Powell River and Sunshine Coast; and the Local health Areas of 48 Howe Sound, 71 Courtenay and 72 Campbell River.
- **WA:** The data sets for each of the indicators have also been developed to follow the boundaries of the Puget Sound portion of the bio-region as closely as possible. Included are the twelve counties that share the Puget Sound shoreline: Whatcom, Skagit, Snohomish, King, Pierce, Thurston, Mason, Kitsap, Clallam, Jefferson, Island, and San Juan.

2. Length of Data Series

- *Population* – estimates projected to 2025
- *Life expectancy*
 - BC: 1998-2003 (average)
 - WA: Estimated for 2003 based on 1990-2003 Population Estimates
- *Infant mortality*
 - BC: 1998-2002 (average)
 - WA: 1999-2003
- *Aboriginal Identity and Visible Minority*
 - BC: Aboriginal Identity, Visible Minority and Income are from the 2001 Census. Aboriginal Identity and Visible Minority are for May 2001, the time of the Census;
 - WA: "Native American" is estimated from the 2000 US Census as "American Indian or Alaska Native." "Visible Minority" is calculated from total population minus self-reported "White, Non-Hispanic" from the 2000 US Census.
- *Family Income*
 - BC: Family Income is for 2000, the previous calendar year as was income by industry used for the income dependencies.
 - WA: Family median income is from the 2000 census, the data for which is based on 1999.

3. Smallest Geographic Units

- BC: Regional District/Local Health Area
- WA: County

RELIABILITY

1. Assumptions and Caveats

- **BC:** Population estimates are benchmarked to Census data and rely on the accuracy of administrative records that serve as indicators. Population projections rely on assumptions made on levels of births, deaths and migration with the latter being the most difficult to forecast. Projections should be used with the understanding that presently unknown factors may influence future behavior.

Life expectancy and infant mortality, which use administrative records of births and deaths, rely on the accuracy of the geographic coding on the documents as well as their completeness. Births and deaths of residents of British Columbia while outside the province are not included. Data are provided by the BC Vital Statistics Agency which registers births and deaths.

The 2001 Census of Canada had a net undercoverage rate of 4 percent in British Columbia. See URL references under Quality Assurance Procedures.

WA: Income dependencies: Note that the U.S. Bureau of Economic Analysis does not report some sub-category detail amounts to avoid disclosure, usually of single employers. Therefore, Jefferson and Skagit county figures exclude "forestry" and "mining of non-metallic minerals, except fuels." Island County figures exclude "mining" and include some "other" with "forestry" and "fishing."

2. Quality Assurance Procedures

BC: In developing the population projections a series of what-if scenarios are modeled and results compared with other known data.

2001 Census: "Throughout the census-taking process, every effort was made to ensure high-quality results. Rigorous quality standards were set for data collection and processing, and the Public Communications Program assisted in minimizing non-response. A Data Quality Measurement Program was established to provide users with information on the quality and limitations of census data."

Source:

http://www12.statcan.ca/english/census01/Products/Reference/tech_rep/coverage/data_quality.cfm#3.1

Further information on Sampling and Weighting in the 2001 Census can be found at:
http://www12.statcan.ca/english/census01/Products/Reference/tech_rep/sampling/index.cfm

WA: U.S. Census data is used by the Washington State Office of Financial Management Forecasting Division to prepare demographic data by county (<http://www.ofm.wa.gov>). This information is supplemented by vital statistics data from the Washington State Department of Health. Each agency uses established data checking procedures before data are published. This report uses extracts from their data.

3. Data Confidence Limits

Not available

COLLECTION INFO

1. Data Methodology

BC:

- Population estimates and projections are prepared by BCStats' Population Section. Births and deaths information is obtained from the BC Vital Statistics Agency. More detail on the estimates methodology can be seen at <http://www.bcstats.gov.bc.ca/data/pop/pop/methges.pdf> . For further information on projections methodology see <http://www.bcstats.gov.bc.ca/data/pop/pop/methpeop.pdf> . Migrations estimates are provided by Statistics Canada. In addition a variety of data sets from other sources including economic development initiatives are used in the model.
- Life expectancy is calculated in accordance with life table methodology, using age-specific death rates with population.
- Infant mortality is the number of infant deaths per 1,000 live births.
- Average family income is provided by Statistics Canada from the 2001 Census. A family is a husband and wife or same sex couple without or with their children (by blood, marriage or adoption but without children or spouses of their own), living in the same household.
- Income dependencies methodology are discussed in the following document http://www.bcstats.gov.bc.ca/pubs/econ_dep.htm

WA:

- Population estimates and projections are the official April 1, 2005, estimates prepared by the Forecasting Division of the State of Washington Office of Financial Management, based on the 2000 Federal Census, and an annual survey of population and housing. For details, see <http://www.ofm.wa.gov/pop/april1/index.htm>
- Life expectancy is from Washington State Population Estimates for Public Health. October 2004, based on 1990-2003 Population Estimates: Washington State Department of Health, Vista Partnership, Krupski Consulting.

- Infant mortality is based on linked birth and death certificate data from the Department of Health. The County identification is based on residential address, not hospital location.
- Income dependencies data by county is based on U.S. Bureau of Economic Analysis information.

2. Collection Frequency

- **BC:** Population is annually updated. Census data based series are updated every five years.
- **WA:** Population is annually updated. The population data series are based on the 2000 federal census results or special censuses conducted by cities.

NOTICE OF PROPRIETARY DATA: Acknowledgement Requested

- **BC:** Permission is not required but acknowledgement should be given to BCStats. Census series except for income dependencies and the Georgia Basin aggregations should be attributed to Statistics Canada. Modeling to develop income dependencies was value-added by BCStats. Georgia Basin aggregations were calculations done by BCStats.
- **WA:** Permission is not required but acknowledgement should be given to the OFM Forecasting Division. Income dependencies data should acknowledge the U.S. Bureau of Economic analysis. Infant mortality data should acknowledge the Washington State Department of Health.

DATA SOURCES & CONTACTS

1. Data Sources

- BC: BCStats
- WA: Washington State Office of Financial Management Forecasting Division:
<http://www.ofm.wa.gov/Forecasting/>

2. Contact Names

BC: BC Provincial Government

- BCStats – Karen Calderbank, (250) 356-7870
- Ministry of Community Services – Brent Mueller, (250) 387-2540 and Brent.Mueller@gov.bc.ca

WA: Washington State

- Washington State Office of Financial Management Forecasting Division: Mike Mohrman. Email Mike.Mohrman@ofm.wa.gov.
- Washington State Department of Health: Phyllis Reed (360) 236-4324.

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- **Department of Ecology: John Erickson. Email jeri461@ecy.wa.gov and (360) 407-7042**