

Water Quality in the Fraser River Basin

Water Quality Index

- The Water Quality Index (WQI) is an indices derived from the amount of water quality objectives not met for a particular surface water body based on a multi-year sampling program.
- Water bodies are ranked, from better to worse, as Excellent, Good, Fair, Borderline, or Poor.
- There are 18 water bodies within the Fraser River Basin that have had WQI values summarized for at least two out of three time periods: 1985-1995, 1992-1997, 1999-2000. Of these 18 water bodies, 11 have shown no change, 3 have shown improved WQI rankings, and 4 have shown declining WQI rankings.^a
- Parameters that have exceeded criteria in Fraser River Basin surface water bodies during at least one sampling period between 1985 and 2000 include: water temperature, dissolved oxygen, turbidity, suspended solids, phosphorus, ammonia, fecal coliforms, chloride, dioxins/furans, heavy metals (copper, zinc, aluminum, arsenic, iron, chromium, nickel, mercury, cadmium), AOX, PAHs, DDT, 2,3,4,8-TCDD, PCBs, and benzo(a)pyrene.^{a,b}

Water Quality Index Trends for Water Bodies in the Fraser River Basin Showing Improving or Declining WQI Trends.^a

Water Body	1995 ¹	1997 ²	2000 ³
Improving			
Fraser River Main Arm	Fair	Fair	Excellent
Fraser River Hansard to Hope		Fair	Good
Williams Lake	Borderline	Borderline	Fair
Declining			
Fraser River Lower Main Stem	Good	Fair	
Loon Lake	Borderline	Poor	
Loon Creek	Good	Fair	
Stuart River	Excellent	Fair	

¹ 2000 rankings are based on two years of data collected in 1999 and 2000.

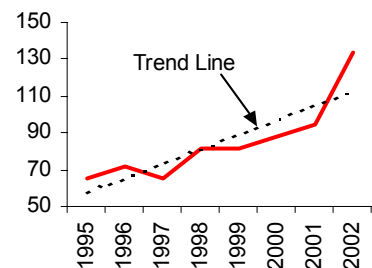
² 1997 rankings are based on at least three years of data collected between 1992 and 1997.

³ 1995 rankings are based on at least three years of data collected between 1985 and 1995.

Boil Water Advisories

- Boil water advisories are issued when there is either a known contamination or a known risk of contamination to the water supply that has the potential to cause human health effects.
- The number of boil water advisories issued in the Fraser River Basin has more than doubled between 1995 and 2002, increasing from 65 to 134.^c

Number of Boil Water Advisories in the Fraser River Basin 1995 to 2002^c



Ground Water Contamination

- Groundwater is of vital economic and social importance to much of BC, and is used heavily for industry, agriculture, and drinking water. Approximately 17% of people living in the Fraser River Basin are dependant upon groundwater sources for their only source of drinking water. ^d
- Contamination of ground water supplies often occurs through runoff or leaching of such contaminants as fertilizers, pesticides, hydrocarbons, and industrial chemicals.
- As of 2002, of the 16 heavily used aquifers located within the Fraser River Basin, 8 of them (50%) have either reported contamination concerns or are considered vulnerable to contamination. Of these, 5 are in the Lower Fraser Region, 2 are in the Cariboo/Chilcotin Region, and 1 is in the Nechako Region. ^a

Heavily Used Aquifers in the Fraser River Basin with Either Reported Contamination Concerns or are Considered Vulnerable to Contamination (2002).^a

Region	Aquifer
Lower Fraser	Vedder River Fan Aquifer
Lower Fraser	Abbotsford-Sumas Aquifer
Lower Fraser	Hopington Aquifer
Lower Fraser	South of Hopington Aquifer
Lower Fraser	Langley/Brookswood Aquifer
Cariboo/Chilcotin	Merritt Aquifer
Cariboo/Chilcotin	Red Bluff (Quesnel) Aquifer
Nechako	Lower Nechako River Aquifer

Source:

- BC Ministry of Water, Land and Air Protection, 2002. Environmental Trends in British Columbia 2002. Victoria, BC. <http://wlapwww.gov.bc.ca/soerpt>*
- Gray, C., Tuominen, T.(editors), 1999. Health of the Fraser River Aquatic Ecosystem: A Synthesis of Research Conducted under the Fraser River Action Plan. Environment Canada and the Fraser River Action Plan. Vancouver, BC.*
- Fraser Basin Council, 2003. A Snapshot on Sustainability: A State of the Fraser Basin Report. Vancouver, BC. http://www.fraserbasin.bc.ca/publications/fbc_reports.html*
- Municipal (Water) Use Database (MUD). Environment Canada. http://www.ec.gc.ca/water/en/manage/use/e_data.htm*