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# CAN A PORTAL FOR WATER QUALITY INFORMATION MAKE A DIFFERENCE?

Bev McNaughton  
Environment Canada  
Pacific and Yukon Region

Sharing Results and Successes  
National Monitoring Conference  
Chattanooga, Tennessee



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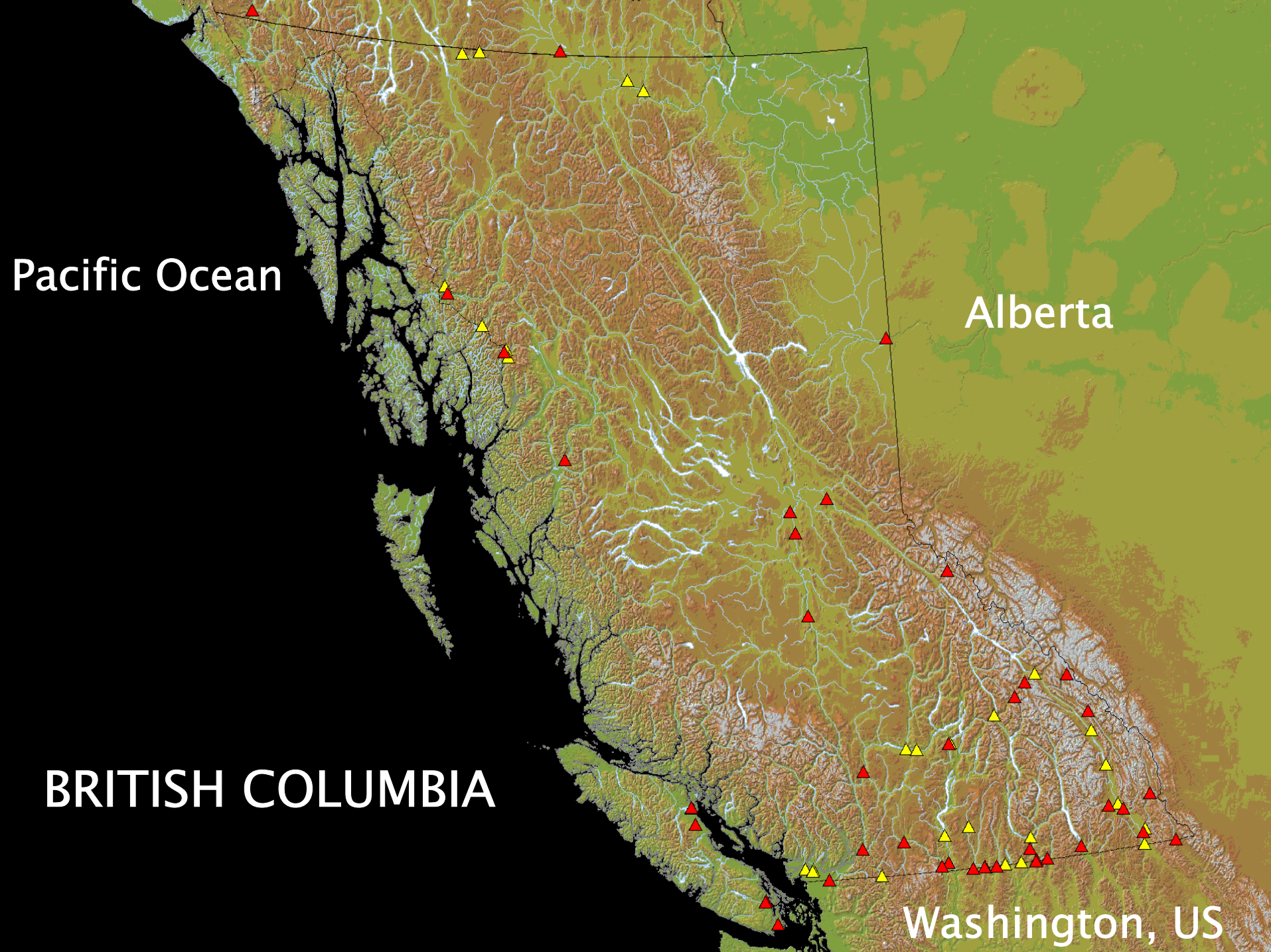


Pacific Ocean

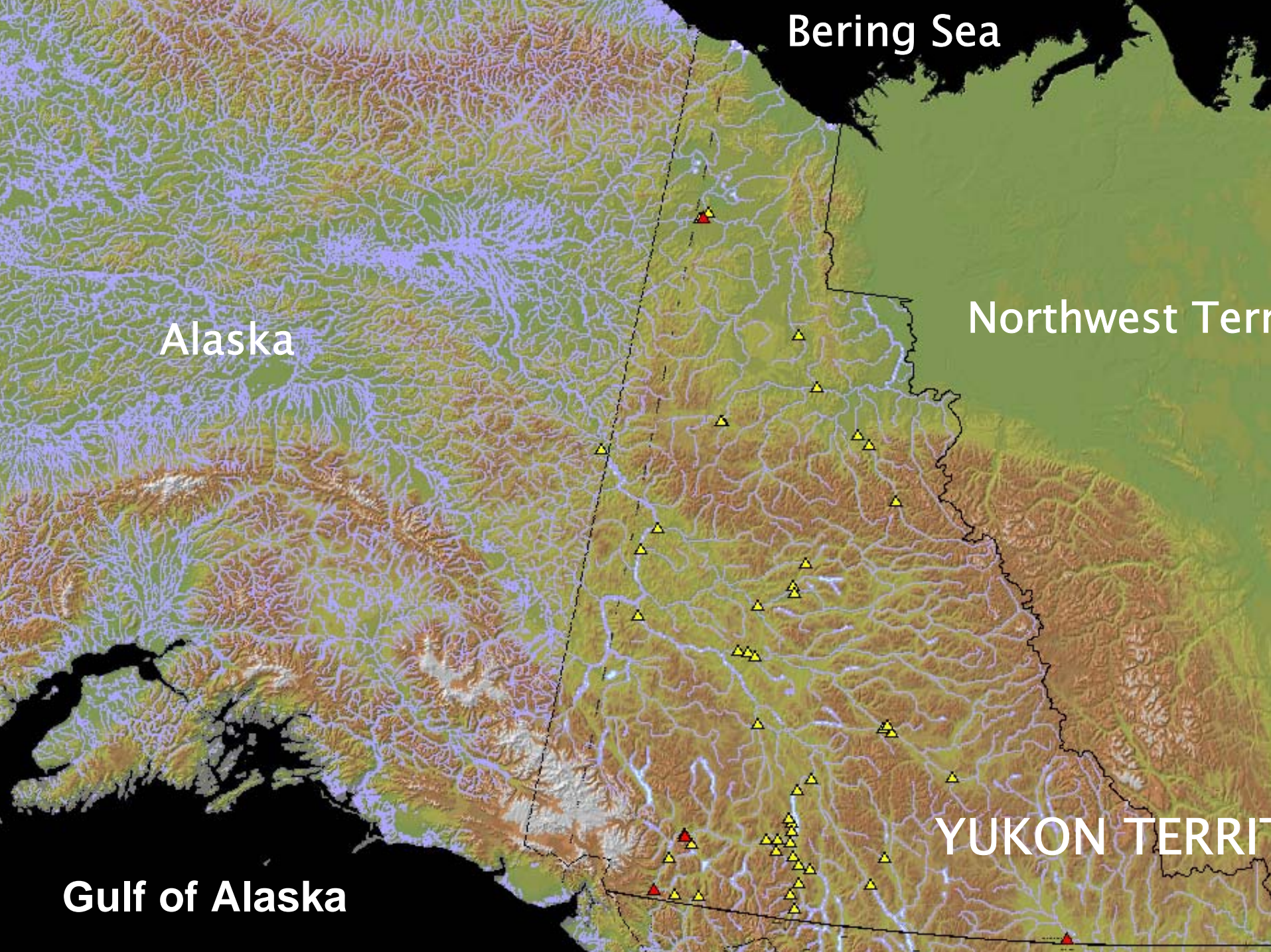
Alberta

BRITISH COLUMBIA

Washington, US







Bering Sea

Alaska

Northwest Terr

Gulf of Alaska

YUKON TERRIT



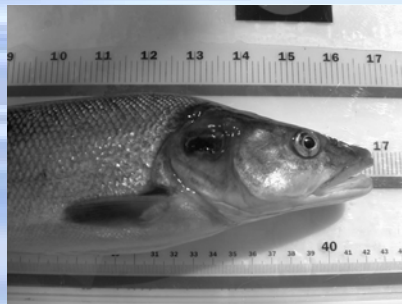


## Trend Assessment *changes in water quality over time*

### Information on the Health of Ecosystems *water chemistry and biological assessments*



*Water  
and  
sediment  
chemistry*



*fish health assessment*



*fish health condition*



*metals*



*organochlorinated pesticides*



## Trend Assessment

*changes in water quality over time*

### Information on the Health of Ecosystems

*water chemistry and biological assessments*

*Water  
chemistry*



*benthic macroinvertebrates*



*habitat*



*invertebrate sampling*



*substrate*





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WATER QUALITY  
MONITORING PROGRAM

PROGRAMME DE SURVEILLANCE DE LA QUALITÉ DE L'EAU POUR  
LA RÉGION DU PACIFIQUE ET DU YUKON

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## Monitoring Information for ~

- Watershed and water resource planning initiatives
- Formulation of water quality guidelines and objectives
- Impact and trend assessments
- State of Environment reporting
- Water quality loadings
- Investigations on international rivers
- Detecting emerging issues
- Evaluating the effectiveness of government policies and programs



*for*

government decisions



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## Monitoring Information for ~

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- Detecting emerging issues
- Evaluating the effectiveness of government policies and programs



*for*

government and  
community decisions


**WATER QUALITY**  
MONITORING PROGRAM

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2003 United Nations  
International Year of  
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# Welcome to the Pacific and Yukon Region Water Quality Monitoring Program

Environment Canada and the BC Ministry of Water, Land and Air Protection have been monitoring surface water quality for many years throughout the province. This federal-provincial water quality monitoring program plays an important role in determining long term trends in water quality, identifying emerging aquatic ecosystem impacts and providing decision-making resource information to Canadians. The Canadian Information System for the Environment (CISE) provided regional funds for improving public access to our federal-provincial water quality data, information and program. Access to the water quality information will enable all of us to make informed decisions together about our water resources.

Find out more about water quality in your area by surfing the regional [monitoring program](#) pages, try obtaining technical water quality [data online](#), looking at the [guidelines](#) used to protect all the water uses and linking up with our regional [publications](#) and other related [online resources](#). If you have any questions or would like more information on regional water quality, please feel free to [contact us](#).

Have fun exploring the site and thanks to the CISE!







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## Office Locations

### Federal Government

Environmental Conservation Branch  
Environment Canada  
Pacific & Yukon Region  
201 - 401 Burrard Street  
Vancouver, British Columbia  
Canada V6C 3S5  
Telephone: 604.664.9100  
[www.waterquality.ec.gc.ca](http://www.waterquality.ec.gc.ca)

### Provincial Government

Water, Air and Climate Change Branch  
Ministry of Water, Land and Air Protection  
Government of British Columbia  
PO Box 9340 STN PROV GOVT  
Victoria, British Columbia  
Canada, V8W 9M1  
Telephone: 250.387.9500  
[wlapwww.gov.bc.ca/wat/](http://wlapwww.gov.bc.ca/wat/)

### Provincial Regional Offices

#### Vancouver Island

2080 Labieux Road  
Nanaimo, British Columbia  
Canada V9T 6J9  
Telephone: 250.751.3184

#### Cariboo Region

#400 640 Borland Street  
Williams Lake, British Columbia  
Canada V2G 4T1  
Telephone: 250.398.4544

#### Skeena Region

PO Box 5000  
3726 Alfred Avenue  
Smithers, British Columbia  
Canada V0J 2N0  
Telephone: 250.847.7251

#### Thompson and Okanagan Regions

870 A Camosun Crescent

#### Lower Mainland

2nd Floor, #10470 152nd Street  
Surrey, British Columbia  
Canada V3R 0Y3  
Telephone: 604.582.5216

#### Omineca and Peace Regions

3rd Floor 1011 Fourth Avenue  
Prince George, British Columbia  
Canada V2L 3H9  
Telephone: 250.565.6455

#### Kootenay Region

401-333 Victoria Street  
Nelson, British Columbia  
Canada V1L 4K3  
Telephone: 250.354.6750

#### Southern Interior Region

201-3547 Skaha Lake Road  
Pentstemon, British Columbia

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## What is the quality of our water... and how do we monitor it?

The Water Quality Monitoring Program in the Pacific and Yukon Region presently consists of 37 long-term ambient water quality monitoring stations on rivers in British Columbia, and four stations on rivers in the Yukon. These stations are primarily operated on rivers of federal interest (e.g. transboundary, national parks, major fisheries).

Of the stations operated in BC, 31 comprise the Federal-Provincial Water Quality Monitoring Program, and are jointly operated by Environment Canada and the BC Ministry of Water, Land and Air Protection on rivers of mutual interest. The remaining stations (six in BC and four in the Yukon) comprise the Federal Water Quality Monitoring Program, and are operated by Environment Canada alone.

Most sites are sampled every two weeks for a range of water quality variables, including trace metals, nutrients, major ions, fecal coliforms, and other parameters of site-specific importance. Provincial Monitoring Programs are additionally carried out within the region by the BC Ministry of Water, Land and Air Protection.

The program has been in operation since approximately 1975, but the present format of the network (i.e. long-term, routine monitoring), was adopted in 1985 to concentrate on assessing long-term changes in water quality (i.e. trend assessment). Although trend assessment is the primary objective of the network, the data are also used for a variety of other purposes. The information is



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# Federal-Provincial Water Quality Monitoring Program

The Canada-British Columbia Water Quality Monitoring Agreement was signed by Environment Canada and the British Columbia Ministry of Water, Land and Air Protection in 1985, for the purposes of coordinating and integrating federal and provincial water quality monitoring, and producing joint, comprehensive assessments of water quality.

The federal-provincial water quality monitoring program in British Columbia presently consists of 31 long-term ambient water quality monitoring stations operated on rivers of mutual interest.

Most sites are sampled every two weeks for a range of water quality variables including trace metals, nutrients, major ions, fecal coliforms, and other parameters of site-specific importance (e.g. CN, D.O., AOX). The sampling is carried out by contractors, or by provincial or federal staff.

Although the program is primarily designed to detect long-term changes in water quality (i.e. trend assessment), the data are used for a variety of other purposes. The information is used for watershed and water resource planning initiatives, the formulation of water quality guidelines and objectives, environmental assessments, the determination of and reporting on the state of water quality and ecosystem health, the assessment of compliance with existing guidelines and objectives and subsequent evaluation of the effectiveness of policies and programs affecting watershed uses, the calculation of loadings of contaminants to the environment, and the detection of emerging issues.





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# Federal Water Quality Monitoring Program

The Federal Water Quality Monitoring Program in the Pacific and Yukon Region presently consists of six long-term ambient water quality monitoring stations on rivers in British Columbia, and four stations on rivers in the Yukon Territory. These stations are primarily operated on rivers of federal interest (e.g. transboundary, national parks, major fisheries).



Most sites are sampled every two weeks for a range of water quality variables, including trace metals, nutrients, major ions, fecal coliforms, and other parameters of site-specific importance. Samples are collected by contractors, or by Environment Canada or Parks Canada staff.

Although the program is primarily designed to detect long-term changes in water quality (i.e. trend assessment), the data are used for a variety of other purposes. The information is used for watershed and water resource planning initiatives, the formulation of water quality guidelines and objectives, environmental assessments, the determination of and reporting on the state of water quality and ecosystem health, the assessment of compliance with existing guidelines and objectives and subsequent evaluation of the effectiveness of policies and programs affecting watershed uses, the calculation of loadings of contaminants to the environment, and the detection of emerging issues.

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## Quality Assurance Program

Water quality measurements are only meaningful in the context of where and how they are collected, by whom, how samples are handled and preserved before analysis, how they are analyzed, and how they are documented and verified. Serious error in any of these steps can result in data that are completely meaningless.

Therefore it is vital that a continuous process be in place to examine each step of the water quality monitoring process in detail to ensure any error is identified at an early stage and rectified. This process is called 'quality assurance' or 'QA'.

Environmental data collected under the federal and federal-provincial programs are intended to serve as first-rate scientific data for use in identifying long-term changes in provincial and territorial surface water quality. The articles to the Canada-BC Water Quality Monitoring Agreement place some priority upon the implementation of a thorough program of quality assurance. The Quality Assurance Work Group has been assigned this responsibility.

Related Information:

- Learn more about [Quality Assurance Work Group](#)
- Read up on the various types of [Water Quality Monitoring Protocols](#) and [QA sampling](#)





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What is the quality of our water...  
and how do I get access to regional data?

## Welcome to Data Online

To access regional data you first must select a monitoring station. Access is provided through either a map search or text search. A map search will provide an inventory of all the water quality monitoring stations in British Columbia and the Yukon Territory. A text search will enable you to search for a station using the following options: River name, station number, or geo position coordinates.

Map Search		Text Search	
<b>British Columbia</b> 	<b>Yukon</b> 	<b>River Name</b> <input type="text" value="fraser"/>	
		<b>Station No</b> <input type="text"/>	
		<b>Sub Basin</b> <input type="text" value="--All--"/>	
		<b>Latitude</b> <input type="text"/> ° <input type="text"/> ' <input type="text"/> " N	
		<b>Longitude</b> <input type="text"/> ° <input type="text"/> ' <input type="text"/> " W	
		<input type="checkbox"/> Use Decimal Coordinates	
		<b>Results To Show</b> <input type="text" value="10"/>	
Click on a map to select a station.		<input type="button" value="Search"/>	

Results 1 - 4 of 4

Station No	Station Name	Data From	Data To
BC08KA0001	Fraser River at Hansard	1984-07-28	2002-03-19
BC08KA0007	Fraser River at Red Pass	1984-07-28	2002-03-26



The following operations are supported. For a formal definition, please review the [Service Description](#).

For the WSDL, please click [here](#).

- [StationSearchbyLatLong](#)
- [StationSearchbyStationNo](#)
- [DescribeMethod](#)
- [AssesmentInformation](#)
- [StationSearchbyBasin](#)
- [CreateSelectionList](#)
- [DownloadData](#)
- [CreateBasinList](#)
- [StationOverview](#)
- [ContactInformation](#)
- [StationSearchbyName](#)

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## New Water Quality Web Mapping Services

The Pacific and Yukon Water Quality Web is pleased to announce new functionality which now provides data through online, innovative mapping services which support the following endorsed specifications: OpenGIS Consortium (OGC) [1] and Canadian Geospatial Data Infrastructure (CGDI) [2]:

- OGC Web Map Service (WMS) Online Service URL:

<http://excise.pyr.ec.gc.ca/cgi-bin/mapserv.exe?map=/LocalApps/Mapsurfer/PYRWQMP.map&request=GetCapabilities>

- OGC Web Feature Service (WFS) Online Service URL providing Geography Markup Language (GML):

<http://excise.pyr.ec.gc.ca/cgi-bin/mapserv.exe?map=/LocalApps/Mapsurfer/PYRWQMP.map&request=GetCapabilities>

You can embed these services (as well as any OGC WMS or OGC WFS) in your application. These services are provided at no charge by the Pacific and Yukon Water Quality Web.

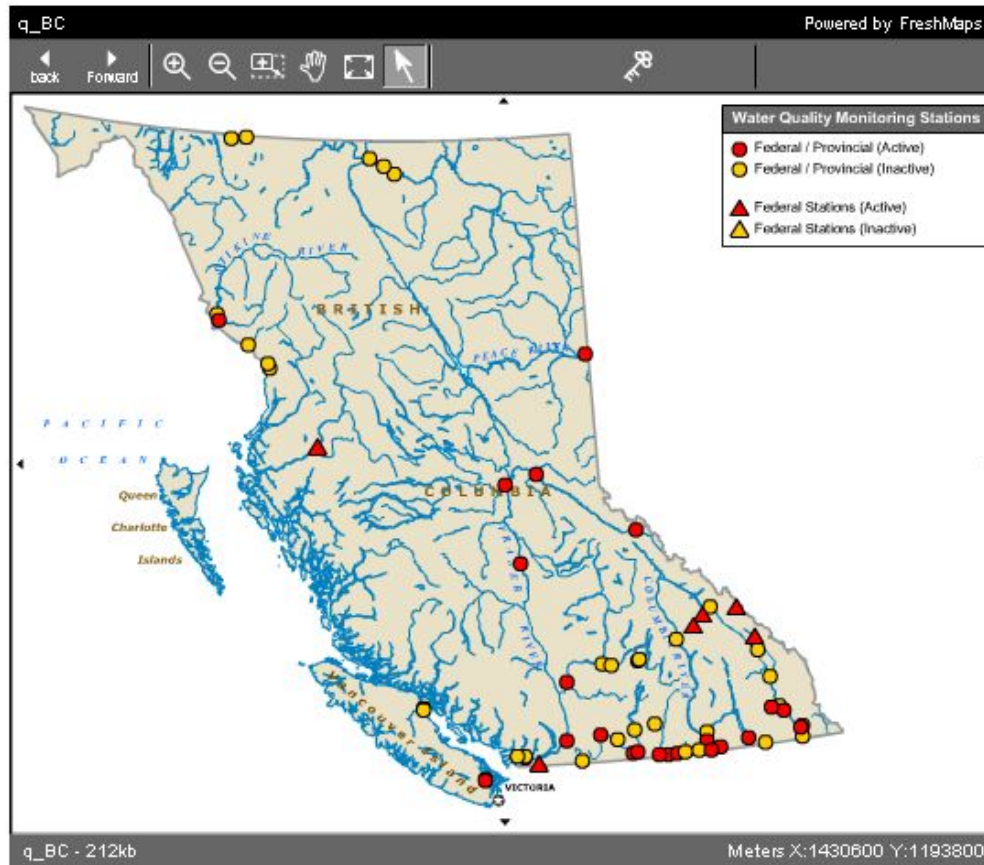
[1] <http://www.opengis.org/>

[2] <http://www.cqdi.ca/>

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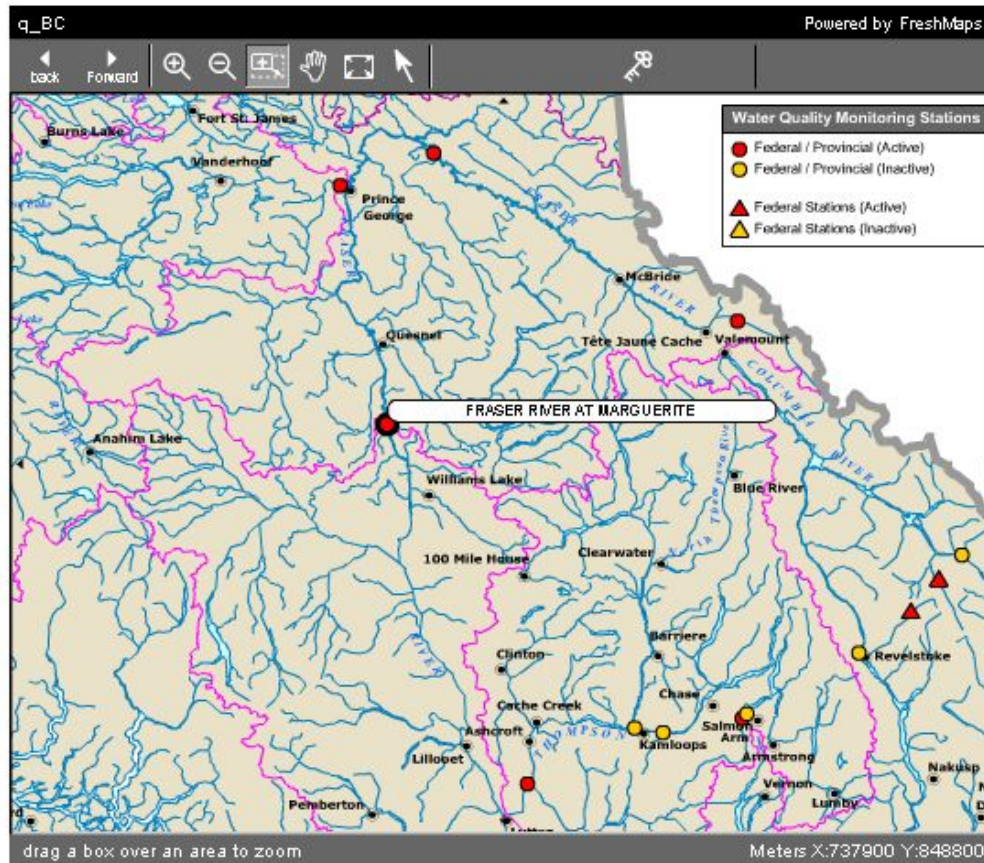
Change Maps:



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## Fraser River at Marguerite

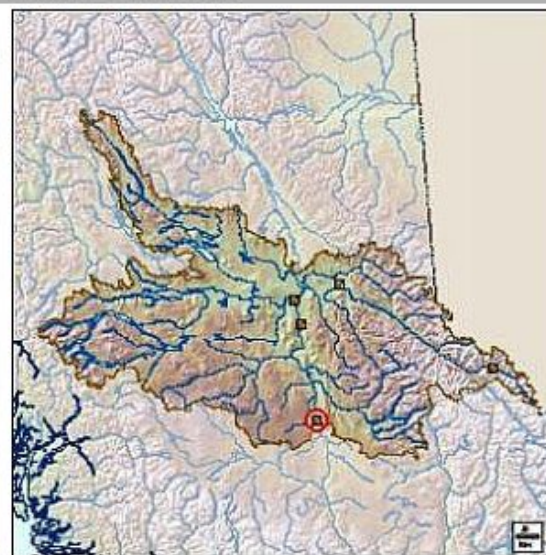
Federal-Provincial Monitoring Station



### Station Photo



### Station Basin Map



### Station Information

<b>Federal ID:</b>	BC08MC0001
<b>Provincial ID:</b>	0600011
<b>Location:</b>	North of Marguerite, British Columbia Water Survey 08MC018
<b>Latitude / Longitude:</b>	52.53N / 122.44W
<b>Ecoprovince:</b>	Central Interior
<b>Ecoregion:</b>	Fraser Plateau
<b>Ecozone:</b>	Montane Cordillera
<b>Basin Name:</b>	Pacific
<b>Sub-Basin:</b>	Fraser

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## Fraser River at Marguerite

Federal-Provincial Monitoring Station



### Trend Results

The Fraser River at Marguerite had improving trends in adsorbable organo-halides (AOX) a general measure of chlorinated organics, and chloride due to waste abatement at pulp mills along the Fraser River. There was also an improving trend in fecal contamination due to improved sewage treatment along the Fraser.

### Executive Summary

The Fraser River flows through a vast portion of the southern half of British Columbia, from the Rocky Mountains to the Pacific Ocean. Marguerite is the fourth of five major water quality trend monitoring stations on the Fraser River. Decreasing trends have been noted for AOX and chloride. The decline in AOX and chloride is due to pulp mill AOX effluent reduction. Fecal coliforms have declined significantly over time due to improvements in sewage treatment and disposal at Prince George and Quesnel. Summer water temperatures are generally warm enough for swimming, but the aesthetic drinking water guideline is often exceeded during summer. The salmonid guideline has almost always been met over the period of record (>99% of samples). Turbidity levels have been generally high, necessitating water treatment such as filtration prior to consumption to remove particulate matter. High metals concentrations (for example, aluminum, arsenic, cadmium, chromium, cobalt, copper, iron, lead, manganese, nickel, and zinc) are generally well correlated with high turbidity levels, suggesting that the metals are in a particulate form and therefore probably not biologically available. The river is well buffered against acidic inputs (as evidenced by relatively high alkalinity and calcium concentrations) and the water is fairly soft, but still well within the limits for good drinking water. The objectives for nitrate plus nitrite nitrogen, pH, and dissolved oxygen have been met.

### For More Information use the following contacts

**Type** Federal

**Name** Andrea Ryan

**Phone** 604.664.4004

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Fraser River at Marguerite  
Federal-Provincial Monitoring Station

## Graph Type

Graph Type

Line

This station is co-located with a hydrometric station

Select Discharge

## Series 1

Media Type

Water

Variable Group

Metals

Variable

barium total

## Series 2

Media Type

Water

Variable Group

Physical

Variable

discharge

## Date Range

Start Date

1994/07/24

End Date

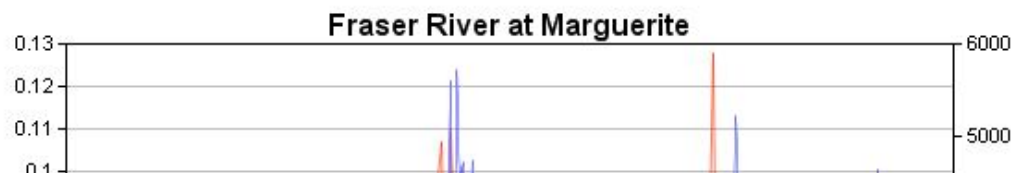
2001/01/24

## Guidelines

Guideline

☒ No Guidelines☐ [CCME] Drinking☐ [British Columbia] Aquatic Life

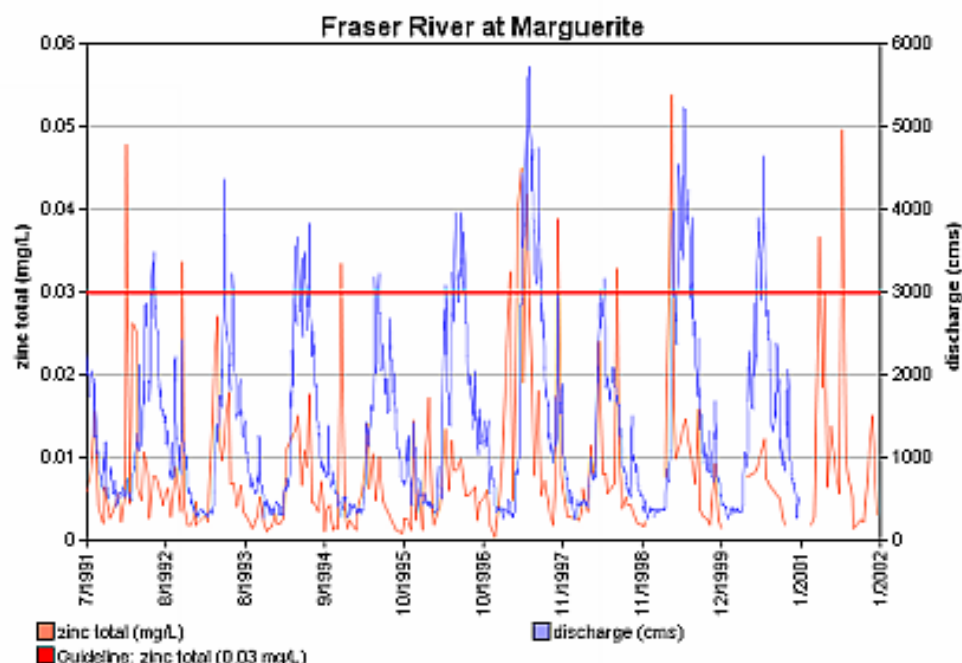
Draw Graph





## Guideline

- ☐ No Guidelines  
☐ [British Columbia] Livestock  
☒ [CCME] Aquatic Life  
☐ [CCME] Irrigation  
☐ [British Columbia] Drinking  
☐ [British Columbia] Recreation  
☐ [CCME] Drinking  
☐ [CCME] Livestock

**ZINC TOTAL:**

Zinc is a fairly common metal that can be found in the soil and in some mineral deposits. Zinc is used in a number of household products including utensils, cosmetics, ointments and varishes. It is also used to make metal alloys, rust-resistant coating

**Discharge or Flow or Streamflow (Q):**

The volume of water (including all suspended materials) that passes a point in the stream cross section during a specific time interval and is usually expressed in cubic metres per second.

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## Fraser River at Marguerite

Federal-Provincial Monitoring Station

**Start Date**

1984/07/24

**End Date**

2002/01/24

**File Format**

HTML

[Download Data](#)

Project code filter

☒ None ☐ Routine ☐ Replicates ☐ Blank ☐ Custom: [Select Everything](#)[Deselect Everything](#)[Select All](#)**Acid/Base Chemistry**☐ ALKALINITY TOTAL  $\text{CaCO}_3$ ☒ HARDNESS TOTAL (CALCD.)  $\text{CaCO}_3$ ☐ PH[Select All](#)**Carbon**☒ CARBON DISSOLVED INORGANIC[Select All](#)**Carbon-Nitrogen Compounds**☐ CYANIDE TOTAL☐ CYANIDE, WEAK ACID DISSOCIABLE[Select All](#)**Major Ions**☐ BROMIDE DISSOLVED☒ CHLORIDE DISSOLVED☐ FLUORIDE☐ FLUORIDE DISSOLVED

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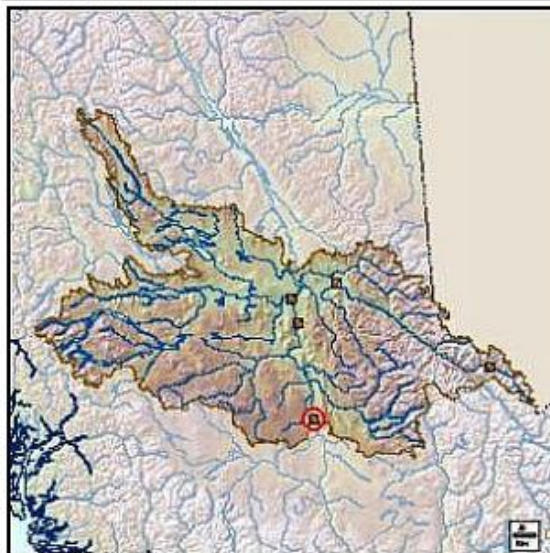
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## Fraser River at Marguerite

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### Integrated Data



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- ☐ Topography
- ☐ Biogeoclimatic
- ☐ Ecozones
- ☐ Surficial Geology
- ☐ Hydrometric Stations
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The Green Lane™, Environment Canada's World Wide Web site

Last updated: 2003-03-13

Last reviewed: 2003-03-30

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URL of this page: [http://www.waterquality.ec.gc.ca/WaterQuality/Web/Integrated\\_Data/integratedData.aspx?stationId=BC08MC0001](http://www.waterquality.ec.gc.ca/WaterQuality/Web/Integrated_Data/integratedData.aspx?stationId=BC08MC0001)





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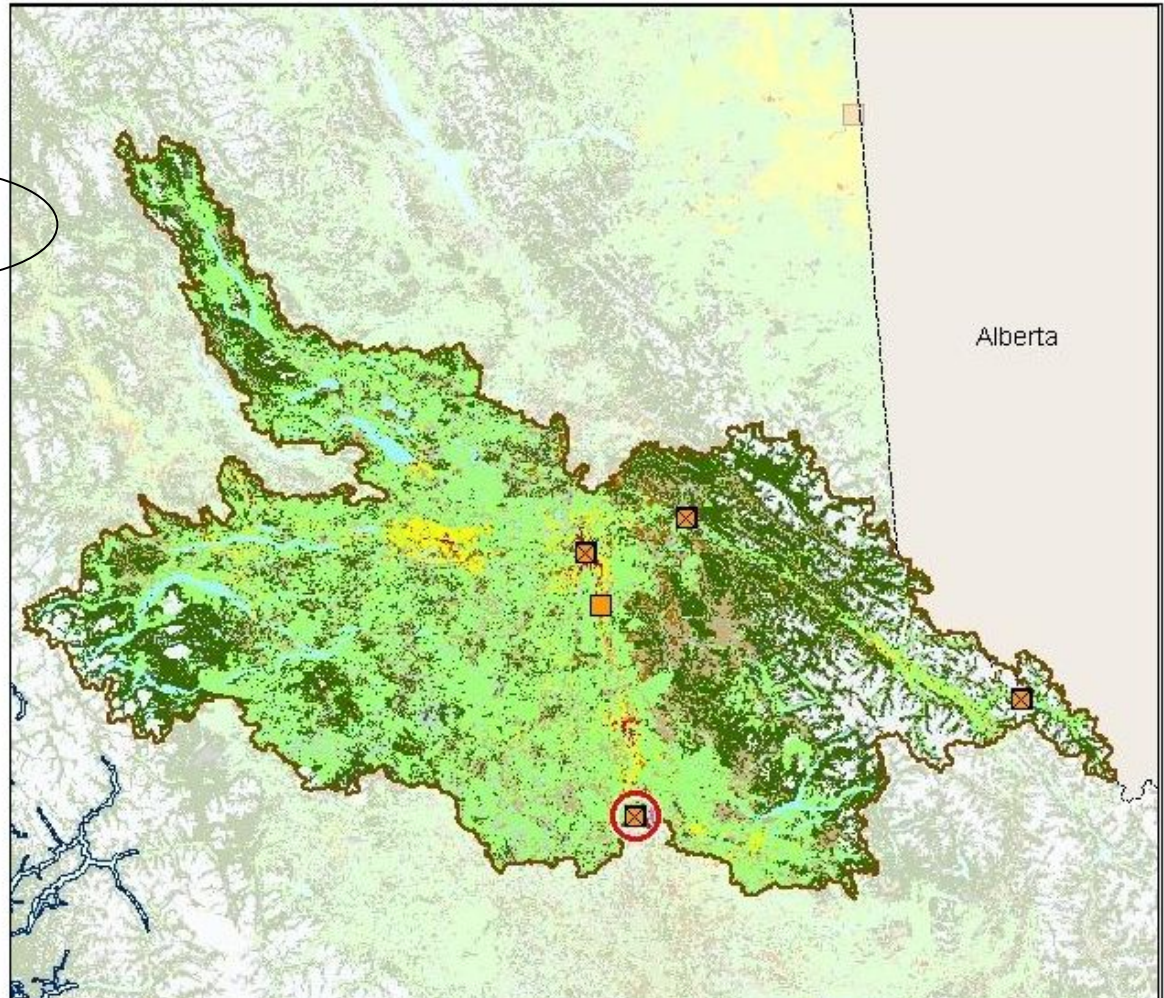


# Fraser River at Marguerite

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## Integrated Data - Landuse





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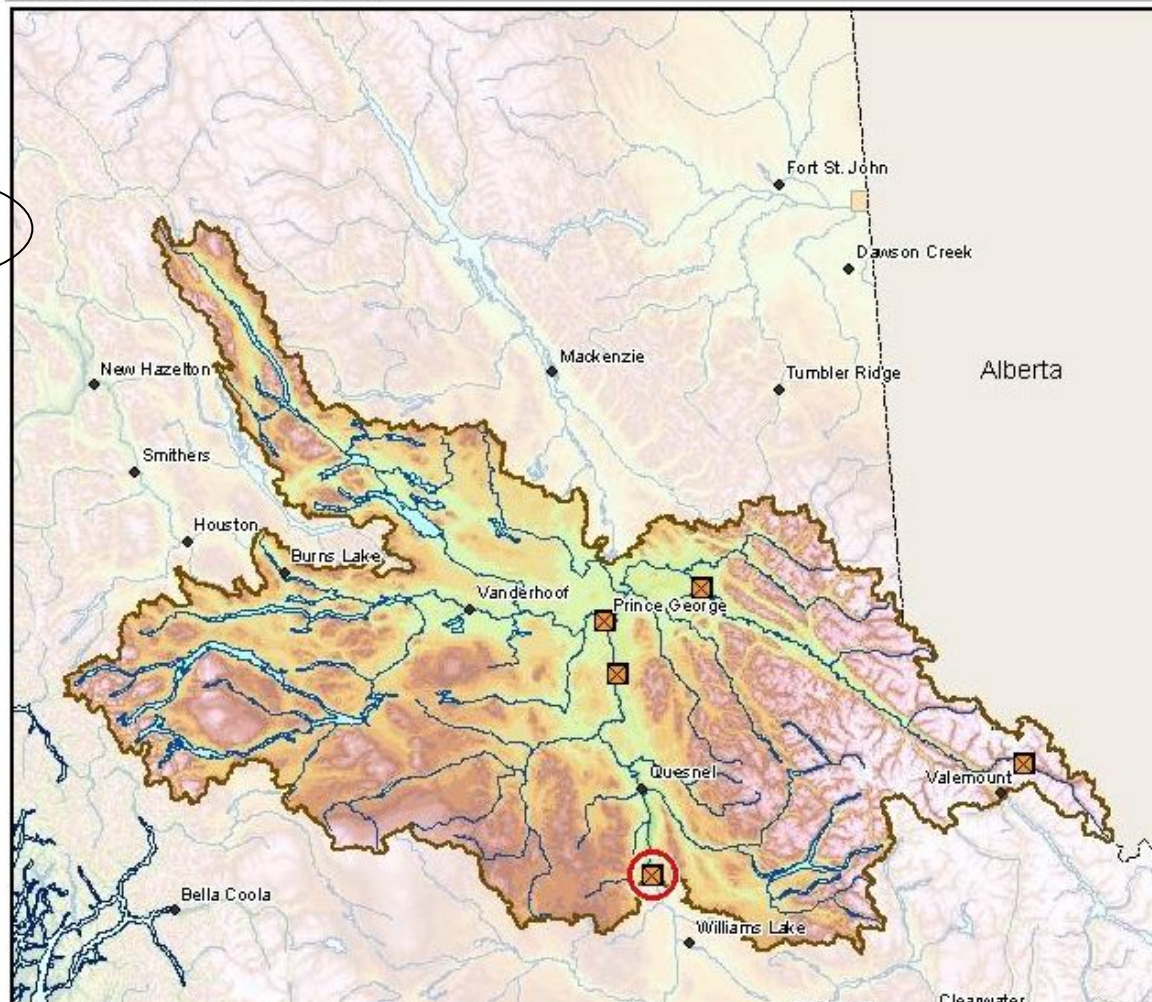
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### Integrated Data - Topography





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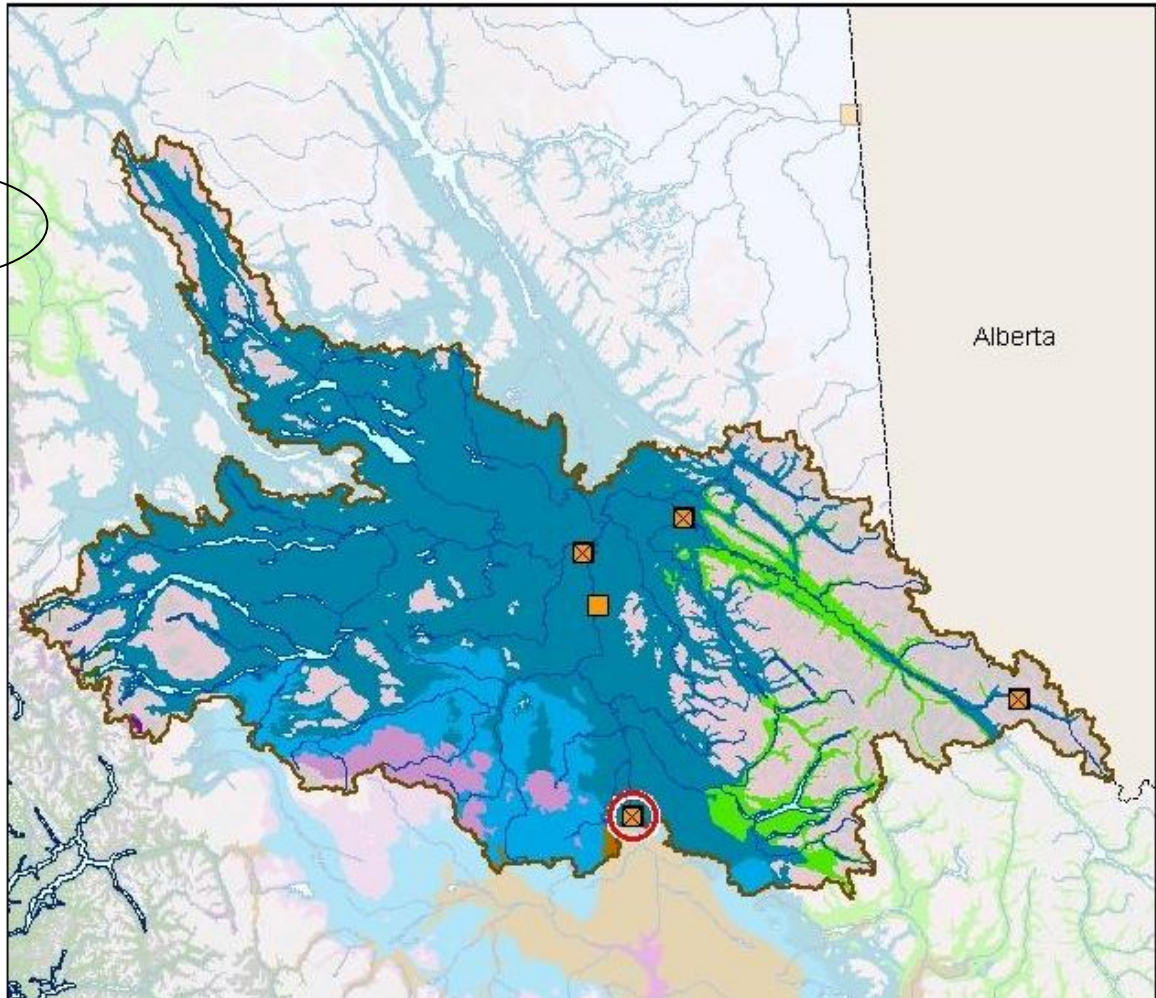


# Fraser River at Marguerite

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## Integrated Data - Biogeoclimatic Zones







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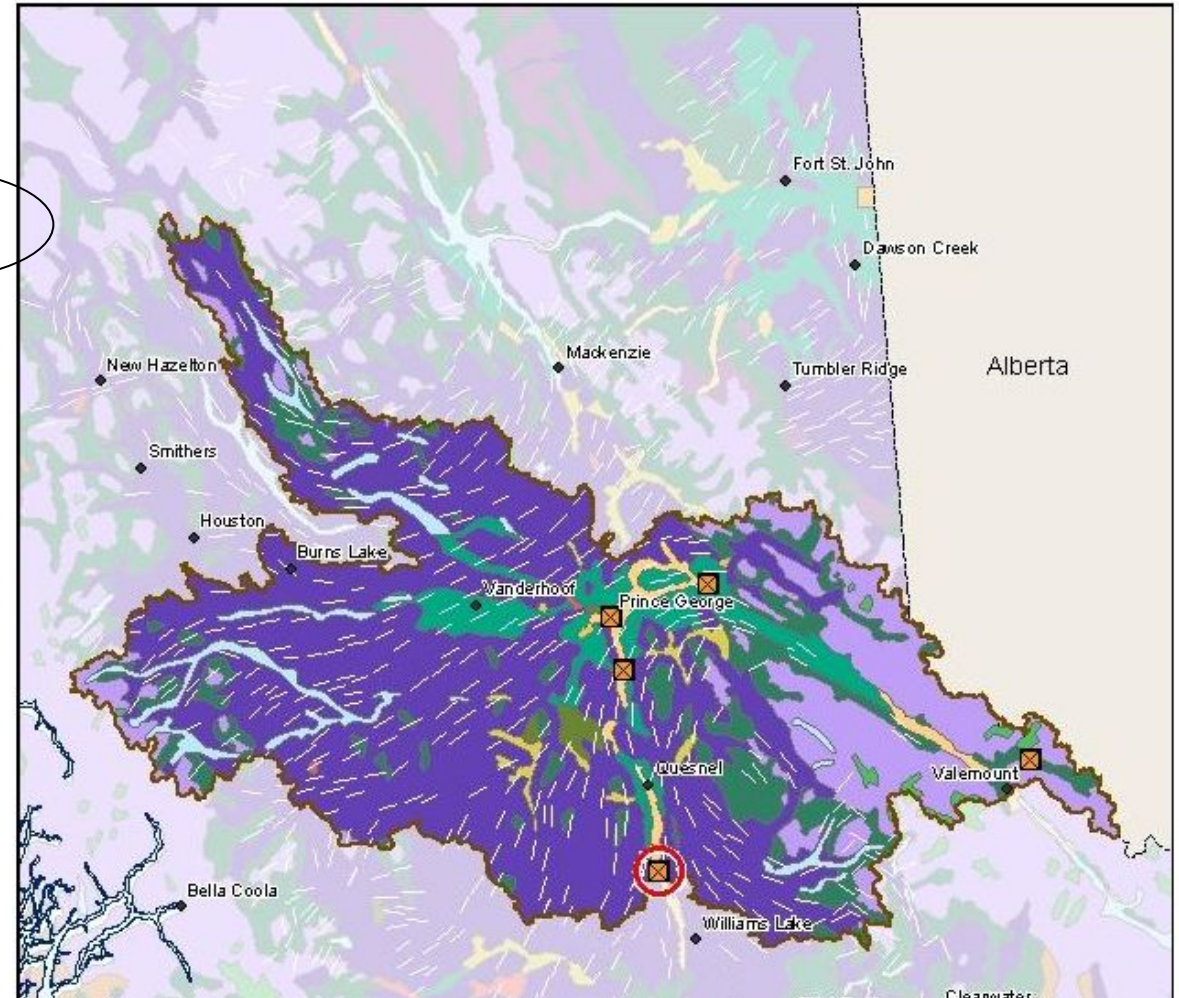


# Fraser River at Marguerite

Federal-Provincial Monitoring Station



## Integrated Data - Surficial Geology





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Fraser River at Marguerite  
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Integrated Data - Climate Stations







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Fraser River at Marguerite  
Federal-Provincial Monitoring Station



Integrated Data - Hydrometric Stations







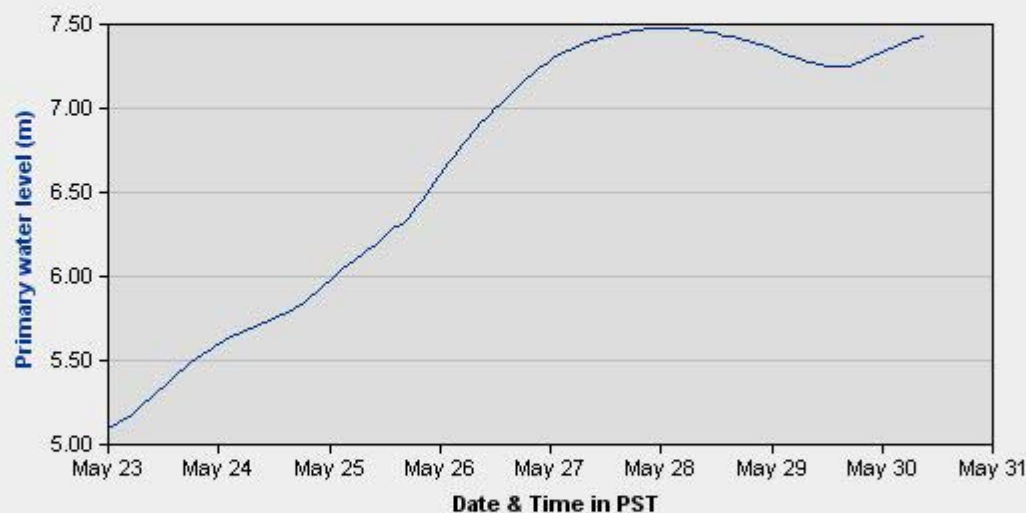
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## FRASER RIVER AT SOUTH FORT GEORGE (08KE018)

Data Category:

Parameter Type:  (Second Parameter)



Y-Axis View

Min  Max

Start Date

May 23 2003

End Date

May 31 2003

### Station Information:

Station ID: 08KE018  
Latitude / Longitude: 53° 54' 3" N / 122° 43' 59" W

### Station Navigation



Text Search



Map Search

### Customization



Hydrometric  
Portfolio

In partnership with



British Columbia



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### British Columbia Guidelines

Water Quality Guidelines

Site-Specific Objectives

### Canadian (CCME) Guidelines

Protection of  
Aquatic Life

Protection of  
Drinking Water

Protection of Wildlife  
Consumers of  
Aquatic Biota

Protection of  
Recreational Activities

Protection of  
Agricultural Uses

# What is the quality of our water... and is it safe?

## What are Guidelines and Objectives?

When we analyze water quality, we test and determine the concentration of many substances. These concentrations or numbers alone do not mean very much. What levels are normal? What levels are natural? What levels are safe?

To make our water quality data meaningful it is necessary to use a set of science-based benchmarks that provide a point for comparison; for each substance, they tell us how much is too much. The [Canadian Council of Ministers of the Environment \(CCME\)](#) has developed a set of national water quality guidelines to serve this purpose.

Guidelines are specific concentrations (or narrative statements, when appropriate) for specific substances that are recommended as either the upper or the lower limit to protect a given water use. Some guidelines protect human health, such as Health Canada's guidelines for [drinking water quality](#) and the CCME water guidelines for [recreational use](#). There are also guidelines for [agricultural uses](#), to help protect crops and livestock from contaminants. Other guidelines are meant to minimize the effects of human activities on the environment. Plants and animals that live in our waters are protected by the guidelines for [aquatic life](#). The animals that hunt in rivers and streams, such as bears and eagles, are protected by guidelines for [wildlife consumers of aquatic biota](#).

The Canada-wide CCME guidelines are considered our national guidelines. In British Columbia, the [Ministry of Water, Land and Air Protection \(BCWLAP\)](#) has developed [regional guidelines](#) along with watershed-based or site specific guidelines referred to as [water quality objectives](#). The development of these objectives takes into account the natural water quality conditions (background levels) and local water uses in a given watershed or at a specific location within the province. The CCME national guidelines, BCWLAP provincial guidelines and site-specific objectives provide us with answers to our questions: What levels are normal? What levels are natural? What levels are safe?



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## Guidelines

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## Canadian (CCME)

## Guidelines

Protection of  
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# British Columbia Water Quality Guidelines

The BC Ministry of Water, Land and Air Protection has set up general water quality guidelines for the province with regard to a number of variables. The Ministry's Approved Guidelines are the ones that have been approved by the Province and are already in use to assess water quality in BC. There is also a set of Working Guidelines, which are guidelines that have not yet been formally approved by the Province of British Columbia. They are used as interim guidelines, and are usually based on national guidelines such as the Canadian Council of the Ministers of the Environment water quality guidelines.



The following lists show substances that have Approved Guidelines or Working Guidelines in the province of British Columbia. For more information on these guidelines and for tables of the specific guidelines values, please visit the [BC Ministry of Water, Land, and Air Protection's Water Quality website](#).

The guidelines on this list apply to one or more water use: **D** - Drinking Water ; **R** - Recreation ; **AL** - Protection of Aquatic Life ; **W** - Protection of Wildlife ; and **AG** - Agricultural Uses

## Approved British Columbia Water Quality Guidelines:

- Aldicarb (total) **D**
- Aldrin + Dieldrin (total) **D**
- Aluminum **D, R, AL, W, AG**
- Ammonia Nitrogen **AL**
- Antimony **D**
- Arsenic **D**
- Atrazine (and its metabolites) **D**
- Azinphos-methyl **D**
- Barium **D**
- Bendiocarb **D**
- Benzene **D**
- Benzo [a] pyrene **D**
- Boron **D**
- Bromoxynl **D**
- Cadmium (total) **D**
- Lead **D, R, AL, W, AG**
- Lindane (hexachlorocyclohexane) **D**
- Magnesium (dissolved) **D**
- Malathion **D**
- Manganese **D, AL**
- Mercury **D, R, AL, W, AG**
- Methoxychlor **D**
- Methyl tertiary-butyl ether (MTBE) **D, R, AL, AG**
- Microbiological indicators **D, R, AL, AG**
- Molybdenum **D, AL, W, AG**
- Monochlorobenzene **D**
- Nitrate **D, R, AL, W, AG**
- Nitrilotriacetic acid **D**
- Nitrite **D, R, AL, W, AG**





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Recreational Activities

Protection of  
Agricultural Uses

# CCME Guidelines for the protection of aquatic life

The CCME Guidelines for the Protection of Aquatic Life have been developed to reduce the effects that human activities have on aquatic plants and animals. Chemical inputs and changes in the physical qualities of the water can put a strain on some aquatic organisms, making them more susceptible to disease or injury.



The guidelines are aimed to protect even the most sensitive organism in its most sensitive lifestage from any ill effects over the long-term. They are based on current research and our best understanding of aquatic toxicology. As our knowledge of aquatic ecosystems grows, the guidelines can be changed to reflect that better understanding. The information on these tables was taken from the [CCME website](#). Please visit it for more information [about the guidelines](#) and for the [original guidelines tables](#).

Variable	Freshwater (µg/L)	Marine (µg/L)
Aldicarb	1	0.15
Aldrin + Dieldrin	No EQG <b>a</b>	
Aluminum	5–100	
Ammonia (total)	see CCME site <b>b</b>	
Ammonia (un-ionized)	19 <b>b</b>	
Aniline	2.2	
Arsenic	5	12.5
Atrazine	1.8	
Benzene	370	110
Bromacil	5	

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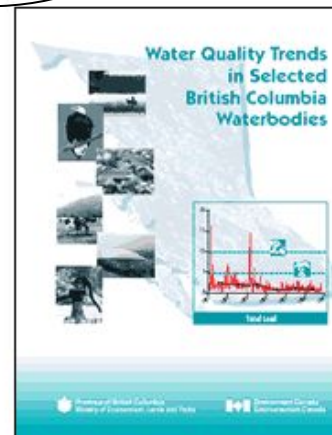
Regional

National

# What is the quality of our water... and how can I learn more?

Regional

Water Quality Trends in Selected  
British Columbia Waterbodies



Clean, healthy and safe land, water and air for all living things and provision of social, economic and outdoor recreational opportunities consistent with maintaining a naturally diverse and healthy environment are goals of the Ministry of Water, Land and Air Protection and Environment Canada. This report examines the trends in water quality at our federal-provincial monitoring stations over the last 10 to 20 years, as an indicator of our progress in achieving these goals for water.



For a more technical review of the rivers mentioned within the report, click the icon on the left to be taken to the BC Ministry of Water, Land and Air Protection's website on water quality.



View the  
PDF version  
(3MB).



View the  
HTML  
version.



You will need Acrobat Reader installed on your computer to read the PDF version of the document. Please click the icon on the left to download the latest version from Adobe's website.

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[Pesticides and Toxics](#)
[Climate Change](#)
[Pollution](#)

# What is the quality of our water... and where can I get more information online?

Be informed about regional, national and international water quality issues. Online resources include these topics plus a gateway to water resource information and water quality concerns.



Please note that links to sites external to Federal Government of Canada are provided as an online water quality resource, and their inclusion in no way implies that Environment Canada endorses or accepts any responsibility for the content or use of these sites. As the organizations that maintain these sites may not be subject to the Official Languages Act, information found on these sites may be presented only in the language in which it was written.

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The Green Lane™, Environment Canada's World Wide Web site

Last updated: 2003-03-13

Last reviewed: 2003-03-30

[Important Notices and Disclaimers](#)

URL of this page: <http://www.waterquality.ec.gc.ca/WaterQuality/Web/relatedSites/index.aspx>





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## Online Resources

## Regional Water Quality



British Columbia



Yukon Territory

The following cities, towns, or regions in British Columbia have online sites dedicated to local water and water quality:



Abbotsford

Maple Ridge



Abbotsford - Sumas Aquifer



Nanaimo



Belcarra

New Westminister



Burnaby

North Vancouver



Campbell River



Central Okanagan Regional District

Cariboo Regional District



North Okanagan Regional District



Castlegar



Okanagan - Similkameen Regional District



District of Central Saanich



Oliver

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Pollution

## Online Resources

EN English Available

FR French Available

### Water Resource Information: How-To Guides for Volunteers



#### Sampling Manuals EN

A list of links to various water quality sampling manuals; provided by the BC Ministry of Water, Land and Air Protection.



#### Freshwater Biological Sampling Manual EN

An online freshwater sampling manual published by the Resources Inventory Committee of the government of British Columbia.



#### US EPA Volunteer Monitor Newsletter EN

Issues of the US EPA's *The Volunteer Monitor* available online, focussing on issues and information related to water quality monitoring.



#### USGS: Water Science for Schools EN

A clear and simple explanation of what water quality is and why it's important. Key terms are defined and explained. There are also links to other water-related topics.



#### Volunteer Monitoring Groups Online – United States EN

A fairly extensive list of American volunteer monitoring sites, compiled by the Kentucky Water Watch.



#### Water Quality Monitoring: A How-To Guide EN

A step-by-step water quality monitoring guide designed for volunteers and published by the

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## Online Resources

EN English Available  
FR French Available

### Water Resource Information: Maps and Data



#### Geobase EN FR

GeoBase is a federal, provincial and territorial government initiative that is overseen by the Canadian Council on Geomatics (CCOG). It is undertaken to ensure the provision of, and access to, a common, up-to-date and maintained base of quality geospatial data for all of Canada. Through the GeoBase portal, users with an interest in the field of geomatics have access to quality geospatial information at no cost and with unrestricted use.



#### GeoConnections Canada EN FR

GeoConnections Canada coordinates the creation of the Canadian Geospatial Data Infrastructure (CGDI), which is a project aimed at making Canadian geospatial databases, tools and services available online. An atlas, discovery portal, and links to other databases are already available.



#### National Water Data Archive EN FR

Access to water quality data as well as climate and hydrometric archives.



#### Atlas of Canada EN FR

Natural Resources Canada presents the Atlas of Canada. It provides free online national and regional maps showing many different topics and themes, including environment, people and society, economy, history, freshwater, and climate change.



#### Global Pesticides Release Database (GloPeRD) EN FR

This site provides background and usage information about a number of specific pesticides (the focus is on organochlorine pesticides), as well as emission and residue data presented in either grid or map format. Some recent pesticide-related research results are



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## Online Resources

EN English Available  
FR French Available

### Water Quality Concerns: Drinking Water Quality



#### Health Canada - Drinking Water Guidelines EN FR

A summary of the current guidelines for Canadian drinking water quality and links to the supporting documents that were used to establish many of the chemical, physical and microbiological guidelines.



#### British Columbia Health Services - Safe Drinking Water Action Plan EN

A PDF document of the BC government plan to protect drinking water by improving standards for monitoring, treatment, reporting, and accountability to the public.



Ontario

#### Ontario Ministry of the Environment - Drinking Water Protection Regulation EN FR

Links to a series of documents relating to Ontario's Drinking Water Protection Regulation, which is part of an Ontario government plan called Operation Clean Water.



Centre for Water Quality

#### Walkerton Centre for Water Quality EN

The Centre for Water Quality is dedicated to ensuring safe and secure drinking water for Ontario and the world. The site includes information about the Centre, its current initiatives, downloads, and related links.



#### US EPA - Drinking Water EN

The Office of Ground Water and Drinking Water protects public health by protecting ground water and by implementing the Safe Drinking Water Act, a national law to safeguard American tap water.



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# Version 1.0

## Get The Data and Information Out....

- WQ Data, Reports and Program Information
- Contact Information for Regional WQ Questions
- Updates on Regional Water Quality Issues
- Guideline and Parameter Information
- Links to other Water Quality Information
  - Web Services
  - Map Server (open source)
  - Content Management System

sharing results



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# Show me the difference.... Federal and Provincial Governments

- Data Approval Process
- Data Interpretation/Assessment
- Data/Information Requests
- Safety and Station Information
- Program Awareness

sharing results and successes





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- Program Awareness

sharing results and successes



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# Show me the difference....

## Local Governments and Communities

- Dialogue on Water Quality
- Resource Information
- Decisions/Resource Management
- Water Management Strategies
- Community Programs
- Regional Drinking Water

sharing results and successes



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# Show me the difference.... Industry, Consultants & Businesses

- Environmental Data/Assessments
- Legislation
- Pollution Control Methods
- Contact Information who's who/where

sharing results and successes





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# Show me the difference....

## Educators, Students and the General Public

- Environmental Data, Maps and Reports
- Educational Tools
- Understanding Water Chemistry
- Water Quality Concerns
- Community Groups, Projects
- Local Watershed Water Quality

sharing results and successes



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## Version 2.0 Community Watershed Focus....

- Watershed Information Network
- Water Quality Index
- How to ...Community Monitoring
- Add Biological Monitoring/Groundwater
- Add more publications/reports
- EC more of a regional resource –dialogue

sharing more results



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