



Fraser River Water Quality

Why You Should Care About This Issue

The Fraser River is the largest river in British Columbia. The health of the Fraser River is important to the entire province. It is an estuary that provides habitat for many different aquatic species. It is also a major salmon producing river.

The river and surrounding areas are known as a watershed or a drainage basin. A watershed is an area that contains a common outlet into which water and anything dissolved or suspended in it drain. Water drains from the mountains through rural and urban areas to the Fraser River. Therefore, all the people and animals that live in the Fraser River watershed can have an impact on the water quality. Natural vegetation on shorelines can help water quality by filtering contaminants from runoff into water bodies. By removing this natural barrier, urban, rural and industrial runoff contaminates the water that eventually flows into the Fraser. Some other sources of pollution are dumping into storm sewers and sewage treatment plant effluent.

The two water quality parameters that are addressed in the 1998 State of the Environment Report are fecal coliform counts and dissolved oxygen. Fecal coliform bacteria in the water are a result of the presence of human and animal wastes. When the concentrations are elevated this could mean the presence of disease causing bacteria and viruses. Most aquatic organisms require dissolved oxygen to survive. The concentrations of oxygen in the water can vary. This variation can be caused by a number of factors including pollution. It is important that there are adequate amounts of dissolved oxygen for fish and other aquatic organisms.

What's Been Happening in Richmond

The Fraser River water quality monitoring in the Richmond area produced mixed results. Fecal coliform concentrations monitored from 1993 to 1997 often failed the water quality objectives set for the GVRD. During the same period dissolved oxygen concentrations consistently passed the water quality objectives. Upgrades to sewage treatment at Annacis Island and Lulu Island sewage treatment plants have significantly improved the quality of effluent flowing from these plants.

Benefits and Challenges

Abundant clean water is crucial to the survival of all living things.

Protecting our water resources benefits public safety and health by providing habitat for fish and other aquatic organisms. It also provides opportunities for recreational activities such as windsurfing, canoeing, and kayaking.

The biggest challenge involved in the projects in this section is to create awareness about water quality and what methods may be used to improve water quality. Water in the Fraser River may look muddy but, muddy water is not necessarily polluted. When we talk about water quality in the Fraser, we want the water to be free of toxins and disease causing bacteria, and high in dissolved oxygen to provide for the fish living in the river.

Projects that Make a Difference

1. Riparian Zone Plantings
2. Beach Clean-ups
3. Water Quality Education
4. Storm Drain Markings
5. Water Quality Monitoring Programs

Project Description

1. Riparian Zone Plantings

What You Can Do

Water quality is affected if streams that flow through urban, agriculture, and industrial land use collect pollutants from runoff and other sources. Improved water quality and fish habitat can be obtained through planting in the riparian zone along river banks. These plantings enhance fish habitat and protect water quality by helping to filter out sediments and pollutants before they enter the water.

One of the most important aspects of river conservation is fish and wildlife habitat. By creating a healthy riparian buffer your group can protect fish and wildlife habitat and water quality and help with flood control.

Remember to contact the Department of Fisheries and Oceans (DFO) and the City of Richmond Public Works Department and other City departments before beginning your project.

Level of Difficulty

- Medium

Resources Required

- Low

Liability Issues

- No, but make sure you have the necessary permission to do the project.

Where to get Help

- River Works!
- Department of Fisheries and Oceans (DFO)
- City of Richmond Public Works / other City Departments
- Fraser River Estuary Management Program (FREMP)
- Partners for Beautification
- *See Appendix A for contact information*

2. Beach Clean-ups

What Your Group Can Do

You can spend a day cleaning up a beach by removing litter and debris and enhancing wildlife habitat. River Works is a program in which your group may wish to take part, or you can begin your own clean-up.

Vancouver Aquarium’s River Works! has two existing projects in Richmond. Call them to get your group involved.

- London’s Landing is located at the south end of No. 2 Road on the South Arm of the Fraser River.
- The Britannia Heritage Shipyards is located on Westwater Road on the South Arm of the Fraser River.

Remember to contact the Department of Fisheries and Oceans (DFO) and the City of Richmond Public Works Department before beginning your own project.

Level of Difficulty

- Medium

Resources Required

- Low

Liability Issues

- No

Where to get Help

- River Works!
- Department of Fisheries and Oceans (DFO)
- City of Richmond Public Works
- Fraser River Estuary Management Program (FREMP)
- *See Appendix A for contact information*

3. Water Quality Education Program

What You Can Do

The Water Quality Education Program is designed to encourage people to learn about water quality and what can be done to protect it. This program can take place using all types of different media in several different settings. These presentations can be directed at the community at large or special target audiences such as specific school age groups, businesses, and neighborhood associations.

You may decide to coordinate these presentations with another environmental event or festival. You may wish to have a water quality education fair, a fair for a school, or organize a public presentation for one of the following groups.

Invite a spokesperson from one of the following organizations to make a presentation.

Department of Fisheries and Oceans (DFO)

- The Habitat Enhancement Branch offers guidance for community projects and educational programs for school children.

Greater Vancouver Regional District (GVRD)

- A guest speaker from the GVRD can attend your event and give a presentation or set up an informational display.
- For presentations, a minimum attendance of 20 people is recommended.

Level of Difficulty

- Medium

Resources Required

- Medium

Liability Issues

- Yes

Where to get Help

- River Works!
- Department of Fisheries and Oceans (DFO)
- City of Richmond Public Works
- Fraser River Estuary Management Program (FREMP)
- North Fraser Harbour Commission
- Partners for Beautification
- *See Appendix A for contact information*

4. Storm Drain Markings

What You Can Do

You could work with the City to paint yellow fish at the openings to all the storm drains to identify them as channels to fish habitat.

Remember to contact the City of Richmond Public Works Department before beginning your project.

Level of Difficulty

- Medium

Resources Required

- Low

Liability Issues

- No

Where to get Help

- River Works!
- Department of Fisheries and Oceans (DFO)
- City of Richmond Public Works
- Fraser River Estuary Management Program (FREMP)
- Partners for Beautification
- *See Appendix A for contact information*

5. Water Quality Monitoring and Inventory Programs

What You Can Do

You could participate in a water quality monitoring and inventory programs such as the Vancouver Aquarium's River Works program. River Works' volunteers conduct site inventories, water quality and habitat monitoring programs.

The following list presents the types of programs that River Works has to offer. Give them a call to find out how your group can get involved.

Level of Difficulty

- Medium

Resources Required

- Low

Liability Issues

- No

Where to get Help

- River Works!
- *See Appendix A for contact information*

Mapping

- Volunteers make an estuary map to monitor local plants and animals.
- Site boundaries and sampling areas are also mapped so they can monitor estuary habitats over time.

Water Quality Testing

- River Works volunteers monitor estuary health by testing water quality.

Bird Surveys

- River Works volunteers pull out binoculars and bird books to discover the types of birds that frequent the estuaries.

Bird Box Installations

- River Works provides, monitors and maintains bird boxes in the wetlands to create more homes for birds.

Fish Sampling

- Using beach seines and minnow traps, volunteers help survey and monitor fish populations at different sites along the Fraser River.

Vegetation Analysis

- Vegetation provides habitat for many animals and it also helps to protect against shoreline erosion and absorbs soil contaminants.
- River Works volunteers will identify plant species, their distribution and remove invasive species.

Marsh Clean-up

- Volunteers help with the removal of logs, woody debris and non-native plants.
- Marsh clean-ups help promote the re-establishment of native vegetation.



