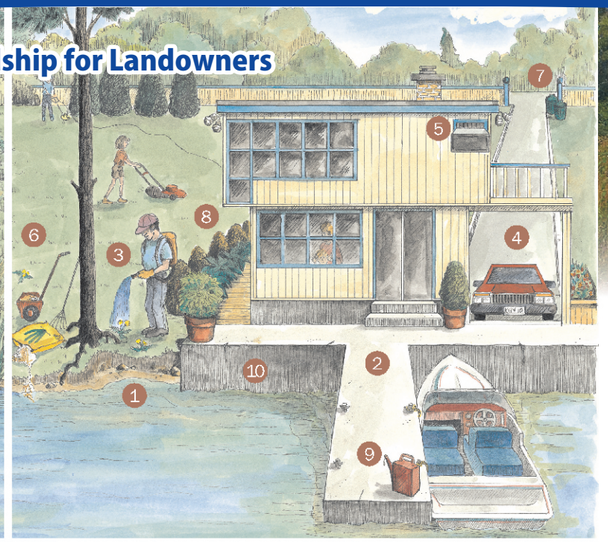
Shoreline Stewardship for Landowners



Let's Enjoy

1. Natural shoreline — great wildlife habitat.
2. Small floating dock — low impact on "ribbon of life."
3. Septic system far from the shore — reduces water pollution.
4. Narrow, gravelled footpath — less chance of erosion.
5. Trimmed trees and adjustable awnings — natural air conditioning with view maintained.
6. You work less — relax more!
7. Kitchen compost — improves your soil's quality.
8. Low-maintenance native plants — provide shoreline buffer.
9. Building — set back from shore and in character with setting.
10. Well-maintained motor — electric, or modern 4-stroke outboard, operated with low wake near shore.

Let's Talk

1. Bare shoreline — subject to erosion.
2. Solid dock — destroys wildlife habitat, alters currents, causes erosion elsewhere.
3. Fertilizer spills and chemical run-off from lawn — damage water quality.
4. Paved lane — pollution-laden runoff flows to water.
5. No shade trees — overworked air conditioner adds to electric bill.
6. Removal of natural vegetation — more work for you and more runoff.
7. Collecting lawn clippings — deprives soil of nutrients.
8. Ornamental shrubs — require chemicals and extra work.
9. Poor fuel management — spills are deadly.
10. Hardened shoreline — eliminates "natural filter," degrades water quality, and blocks wildlife access.

These images provided courtesy of the Living by Water project - Working towards healthier human and wildlife habitat along the shorelines of Canada. www.livingbywater.ca

building communities together

This brochure was developed in partnership by:

Cariboo Regional District 1-800-665-1636 www.cariboord.bc.ca

"Working in partnership with communities large and small, to make the Cariboo Chilcotin a socially, economically and environmentally desirable region to live, work and play."

Real Estate Foundation of British Columbia www.realestatefoundation.com

"To support sustainable real estate and land use practices for the benefit of British Columbians."

Department of Fisheries and Oceans www.pac.dfo-mpo.gc.ca

"Excellence in service to Canadians to ensure the sustainable development and safe use of Canadian waters."

Think Ahead

For septic and water quality issues, contact the Interior Health Authority.

Fisheries & Oceans Canada may also have jurisdiction if migratory salmon frequent lake waters or if the project could affect fish habitat.

How can you manage your shoreline?

Start at home – Plan your own property development carefully to conserve natural vegetation and consider replacing lost habitat where possible.

Observe, record and report – Notify the BC Ministry of Environment or Fisheries & Oceans Canada if you notice anyone carrying on work that could be harmful to the lake environment or fish habitat. You can call 1-800-465-4336 to report a violation.

Get involved or support a group like the BC Lake Stewardship Society.

Cariboo Regional District

Quesnel & Horsefly Lakes Lakeshore Development

- Fish habitats are increasingly threatened by lakeshore development and may be significantly impacted by poor development practices.
- Salmon stocks have declined significantly over the last decade.
- In recent years development pressures on Quesnel & Horsefly Lakes have continually increased.
- Sport and recreational fishing is a significant economic driver in the Quesnel & Horsefly Lakes area. Both lakes are critical to British Columbia's salmon and fresh-water fish stocks.
- As an owner of lakeshore property, you can protect the value and enjoyable aspects of your property, while helping sustain the local economy and protect fish habitat by becoming aware of proper shoreline management practices.

Fisheries and Oceans Canada | Pêches et Océans Canada

real estate foundation BRITISH COLUMBIA

Planning for a Sustainable Future

Development pressures on recreational lakeshore properties are affecting Quesnel & Horsefly Lakes. There is a complex relationship between development pressure, the natural environment and social, economic and cultural values. The Cariboo Regional District (CRD) and Department of Fisheries and Oceans (DFO) are working to balance these values.

The DFO has implemented foreshore habitat inventory mapping (FHIM) to identify critical environmental features of the lakes. This map-based information will enable resource managers to incorporate the information into land use planning decisions, to monitor shoreline changes over time and to measure whether land use decisions are protecting the natural environment.

What is Fish Habitat?

Habitat needs of local fish are varied by species and life stage. In the spawning phase, salmon and trout require swift flowing water and clean cobble or gravels in a stream or river to lay their eggs. The young fish then require shaded, covered shoreline, before migrating to the ocean. Freshwater fish species may spawn in streams, rivers and lakes and may spend the remainder of their lives growing and maturing in these environments.

Most fish species depend heavily on cover for food and for safety. They are also constantly on the move. Even though we often see fish jumping in open areas of rivers or lakes, fish spend most of their time in the vicinity of the shoreline.

Alteration of a shoreline or introducing changes to lakes or streams can significantly impact the survival rate of these fish.

Protecting Sensitive Fish Habitats on Quesnel & Horsefly Lakes

Property owners can learn more about the locations of sensitive habitats by contacting either their local Fisheries and Oceans Habitat Biologist or a provincial Fisheries Biologist and by contacting the British Columbia Integrated Land Management Bureau at 1-800-663-7867.

Types of Habitat

Riparian Vegetation
Aquatic ecosystems are dependent on surrounding lands. Trees, shrubs, grass and other plants around the edges of lakes and on the banks of rivers and streams are important fish habitat. There are many reasons why both fish and the rest of the ecosystem benefit from this fringe of vegetation:

- Vegetation roots stabilize banks and prevent erosion
- Roots absorb septic field nutrients and runoff, improving water clarity and quality
- Overhanging vegetation provides shade and stabilizes water temperature
- Plants provide a source of food (land based insects)
- Roots, partially submerged vegetation, overhanging or fallen trees and shrubs provide cover for fish
- Rotting wood, leaves and pine needles add nutrients to the water

Vegetated Shoal Areas
The most productive parts of rivers and lakes are shallow, protected shoreline areas, including areas that are only wet in high water. Nutrients collect on the shoreline, providing sites where plants can grow. These plants provide food and living areas for important fish food sources. They also provide protective cover in which many fish live, feed and reproduce. The plants help stabilize soils and reduce waves and currents. The greatest biodiversity of any aquatic environment is present in these vegetated shoals.

Rocky Stream and Shore Areas
Eggs are laid in gravel, cobble or large stones along the shoreline or in stream and river systems. Clean gravel and flowing cool water is essential to productive spawning habitat.

By removing, adding or changing the rocks that exist in a system you could:

- Change the flow downstream of the works
- Flush out fish eggs or young fish
- Reduce water quality or quantity
- Reduce essential spawning habitat

Tips for Managing Your Shoreline

As a lakeshore property owner you can protect the riparian zone on your property by undertaking the following actions:

- Protect or replant native plants that naturally stabilize the shoreline
- Create narrow paths for access to water
- Build a small floating dock for swimming and/or lake access
- Use public beaches and/or boat launches
- Minimize lawn size and watering, maximize distance of lawn from lakeshore and refrain from using fertilizers, herbicides and pesticides

Consult with your local government before undertaking activities such as dangerous tree removal, erosion control, and placing or installing water intakes.

Government Guidelines

The CRD has a Shoreland Management Policy in place that regulates development on the shoreland of all lakes in its jurisdiction. Contact the Planning Services department prior to development for more information.

Fisheries and Oceans Canada and the BC Ministry of Environment have developed Land Development Guidelines for the Protection of Aquatic Habitat. These guidelines provide alternatives to altering aquatic areas and promote the protection of natural vegetation adjacent to any river, stream, lake or wetland.

It is an offence under the Fisheries Act to harmfully alter, disrupt or destroy fish habitat unless authorized by Fisheries & Oceans Canada. It is also an offence to deposit a deleterious substance into water frequented by fish or at a place where it may enter such fish-bearing water.