

## Water Quality and Residential Development

Excessive amounts of nutrients such as nitrogen and phosphorus, in either groundwater or surface runoff, can promote excessive growth of dense algae blooms or aquatic weeds.

*We all have a role to play in protecting water quality and riparian areas*

Too many nutrients can advance eutrophication or the aging of a lake. Sources of nitrogen and phosphorus include lawn fertilizers and septic systems. Other contaminants can be found in runoff from residential or other lakeshore/streamside development, such as traces of petroleum products, herbicides, and sediments.

Water quality in our lakes can deteriorate as a result of how we develop our land and carry out our lakeshore activities.

*Blue-green algae bloom*

Photo by: C. Swan, Ministry of Environment

## Tips For Protecting Water Quality

- Maintain a minimum 15m riparian buffer strip between development and the lake or stream – buffer strips are filters for nutrients and other contaminants
- Use phosphate free detergents for both laundry and dishwashing even if your septic system is located well back from the lake, as these phosphates can migrate to the lake via groundwater
- Avoid the use of lawn fertilizers which can end up in the lake via surface runoff – use a mulching lawnmower to return nutrients to your lawn
- Maintain your septic system and locate it at a distance greater than the minimum required setback distance if possible
- Develop small swales to capture and filter runoff from driveways and other areas



Photo by C. Collier

## Lake Monitoring

You can initiate a lake monitoring program which can provide valuable data on present water quality conditions and help ensure existing water quality is maintained. Another way to protect your lake and monitor activities on it is to form a lake stewardship group. The BC Lake Stewardship Society will assist lakeshore residents in organizing a group and starting a monitoring program. Contact BCLSS at [www.bclss.org](http://www.bclss.org) or 1-877-BCLAKES.

## Would you like more information?

There is a large volume of information available on protecting water quality and shorelines. Following are some selected references on these topics that you are encouraged to review.

### On the Living Edge:

#### Your Handbook for Waterfront Living

By Sarah Kipp & Clive Callaway 144pp.

Published by the Federation of BC Naturalists

[www.livingbywater.ca](http://www.livingbywater.ca) (250) 832-7405

#### Lakekeepers: A Lakeshore Resident's Guide to the Stewardship and Monitoring of Lakes

Available from The BC Lake Stewardship Society at [www.bclss.org](http://www.bclss.org) or 1-877-BCLAKES

#### Cariboo Regional District

##### Shoreland Management Policy

[www.cariboord.bc.ca](http://www.cariboord.bc.ca)

#### Plants of the Southern Interior British Columbia

Edited by Roberta Parish, Ray Coupè, & Dennis Lloyd. 463pp. Published by Lone Pine Publishing. ISBN 1-55105-057-9



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## Cariboo-Chilcotin Lakes: Protecting Water Quality and Shorelines

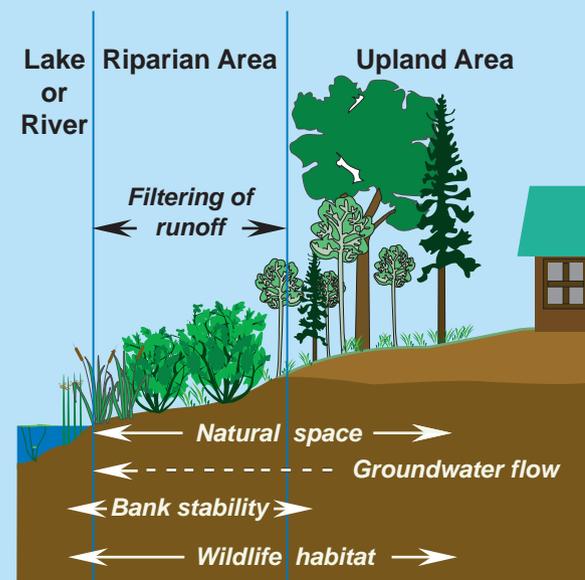
### Did you know...

- Cottage and residential development on lakeshores can be detrimental to the environmental values that attract us to lakes: good water quality, wildlife, birds, and natural space
- Many wildlife species considered vulnerable or endangered by the Ministry of Environment depend upon or utilize shorezone areas. Some examples in the Cariboo-Chilcotin include Great Blue Heron, Fisher, Sandhill Crane, American Bittern, Trumpeter Swan, Sharptailed Grouse and Spotted Bat
- There are ways to develop your lakeshore lot while protecting natural shorelines, increasing the value of your property, and enhancing your enjoyment of your cottage or residence

Photo by: R. Brundrige

## Shoreline Buffer Strips

The term shoreline buffer strip or riparian zone describes land adjacent to streams and lakes where vegetation is strongly influenced by water. A shoreline buffer strip is the vegetated area between a lake (or river) and a residence, driveway, or other human development. Buffer strips are considered transition zones between aquatic and terrestrial ecosystems.



The vegetation in the buffer strip acts as a filter for runoff water by trapping and settling sediments that might otherwise reach the lake and reduce water quality. This vegetation also reduces the forces of erosion along the shoreline. The diverse vegetation in these areas provides unique habitat characteristics, especially for species that depend on both aquatic and terrestrial environments.

Riparian buffer strips provide food, nesting areas, as well as cover and shelter for wildlife to move safely from one area to another. The vegetation in these shore zone areas also provides a cooling effect on the water which is a benefit to fish, and provides habitat for insects; a major food source for fish.

## Geese Barriers

Canada Geese have become a major nuisance in many areas adjacent to lakes or rivers. Shoreline buffer strips can deter Canada Geese as they like to have a wide, unobstructed view and need to have close and easy access to the water to escape predators. Although lawns are very attractive to geese, dense vegetation and tall grasses between the water and lawn are an effective way to keep them away.

## Protecting Riparian Areas

If your shoreline is in a natural state, minimize your disturbance of it by:

- Leaving the buffer strip undisturbed
- Opening up only a small area for beach access and a view
- Not planting a lawn immediately next to the lake
- Not mowing any natural grass that may exist in the strip
- Developing your lawn or other cultural landscaping a minimum of 15m back from the natural high water line

The Cariboo Regional District (CRD) suggests that lakeshore residents review the literature listed on the back of this publication for methods of developing your lot for your enjoyment while maintaining or enhancing shoreline buffer strips. There are also ways to re-establish these natural areas if yours is already developed. One way is to plant native vegetation such as Red-Osier Dogwood, Willow, Cottonwood, Aspen and Birch. Due to the numerous microclimatic zones found throughout the Cariboo-Chilcotin, it is recommended that you consult a local nursery for the most appropriate plants for your shoreline. It is very important not to plant any invasive or nuisance plants.

## CRD Lakeshore Management Policy

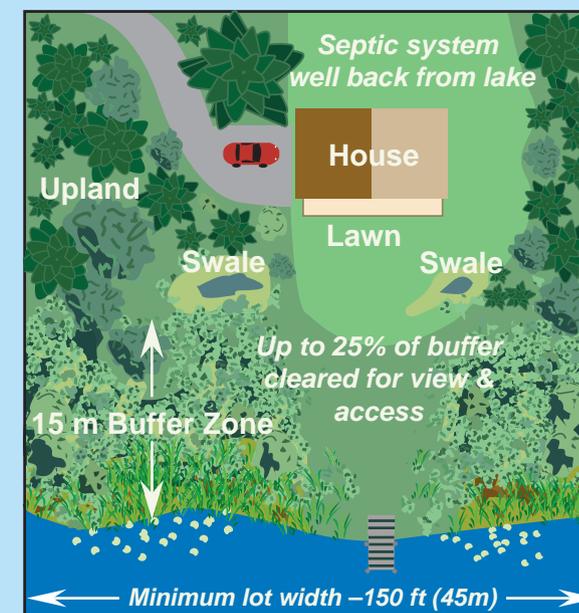
The CRD believes our lakes are valuable resources worth protecting. It is important to take a preventative approach to prevent damage to these ecosystems. Remember, it is often much more difficult to take corrective action after environmental damage has occurred than to prevent it from happening in the first place.

## The Cariboo-Chilcotin has 4000 lakes greater than 5 hectares (12.5 acres)

The CRD Lakeshore Management Policy stipulates protective requirements as conditions of rezoning land for subdivision development. Some key elements of the policy are:

- Larger minimum lot sizes on lakes with longer frontages to reduce density and allow more room for minimizing environmental impacts
- A minimum 15m riparian buffer strip from the natural boundary of a lake along the shores of new subdivisions, greater in sensitive habitat areas
- Up to 25% of the vegetation in the buffer strip may be removed for beach access, yard development, or a building as approved by zoning
- More stringent septic system setbacks for high sensitivity lakes

The complete policy can be viewed at [www.cariboord.bc.ca](http://www.cariboord.bc.ca) or contact the CRD at 392-3351 or 1-800-665-1636.



*Idealized Lakeshore Development*

## Benefits of Protecting Riparian Areas

- Protection of water quality
- Erosion and flood protection because of better shoreline stability
- Provision of wildlife and bird habitat
- Deterrence of Canada Geese
- Shading and cooling of water
- Food sources for fish
- Privacy and aesthetically pleasing natural surroundings

## Aquatic Plants

Aquatic plants in shore zone areas are an integral part of lake and river ecosystems and the majority of them are not weeds as many people believe. They provide valuable habitat for fish and the aquatic organisms on which they feed.



Photo by C. Collier