



REGIONAL DISTRICT
OF BULKLEY & NECHAKO

General Guidelines for Responsible Waterfront Development



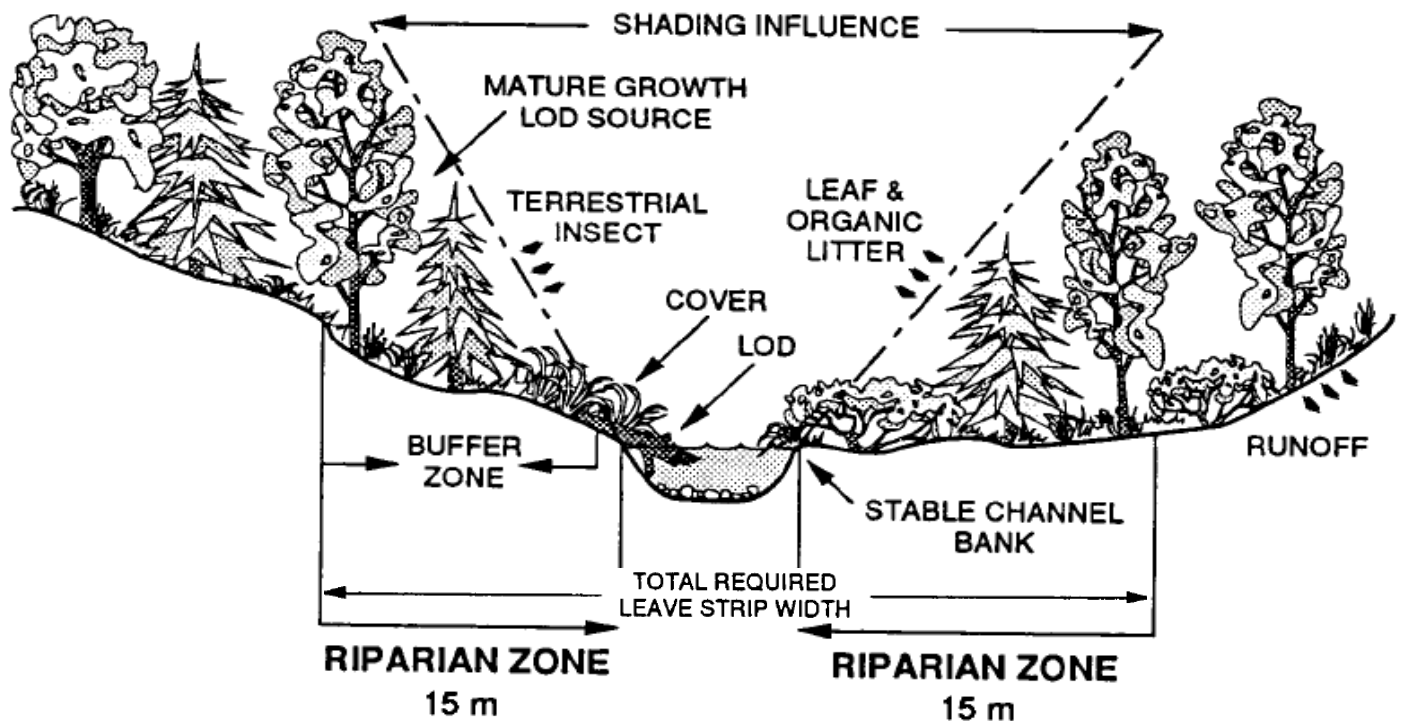
François Lake

“A WORLD OF OPPORTUNITIES
WITHIN OUR REGION”

Application forms, bylaws, brochures and other pertinent information are available on the Regional District's website: www.rdbn.bc.ca

This pamphlet is designed to provide information for responsible waterfront development and waterfront living.

Owners of waterfront property have a unique opportunity to serve as environmental stewards. By following simple guidelines these properties can become more enjoyable, see an increase in value, and be preserved for future generations. It is important to note that both the BC Ministry of Environment and the federal Department of Fisheries and Oceans (DFO) have legislation that restricts the modification of the natural environment in and near lakes and watercourses. These agencies should be contacted prior to the commencement of any works near a lake or watercourse.



Leave Strips

Leave strips are areas of undisturbed vegetation next to watercourses that are intended to protect the riparian zone, which is critical to the maintenance of a healthy aquatic environment. The required extent of a leave strip can vary depending on the nature of the lake or watercourse and surrounding land use. The Ministry of Environment and DFO recommend leave strips of a minimum of 15 metres from the high water mark of the watercourse. Leave strips do not only protect the environment, they also protect property from flooding and loss of land due to erosion and bank instability.

Erosion and Sediment Control

Increased sediment loads in lakes and watercourses are a significant contributor to the degradation of water quality and aquatic habitat. Many land development activities such as clearing land, grading slopes, road building, and excavation and stockpiling of materials can contribute to the erosion of sediments into lakes and watercourses. Simple methods can be employed to control erosion and sediment transport when developing land.

- Develop a detailed plan for your project before you start
- Maximize the distance between water features and accesses and construction sites, and retain as much vegetation as possible
- Minimize soil excavation and soil disturbance, and seed or re-vegetate bare soils as soon as possible
- When soils are exposed, use sediment control structures such as sediment traps and silt fences
- Schedule development during dry months of the year when possible
- Consider the topography of the site and its affect on the drainage of the property

SILT FENCE



Building Setbacks

Section 4.06 of RDBN Zoning Bylaw No. 700 prescribes setbacks for all buildings and structures except fences from the natural boundary of a lake or watercourse. Flood prone rivers and creeks are identified and prescribed a 30 to 45 metre setback, and unspecified watercourses are prescribed a 15 metre setback. Lakes, marshes, ponds and flood protection structures are prescribed a minimum 7.5 metre setback.

Although the Zoning Bylaw only requires a 7.5 metre setback from unspecified lakes, marshes or ponds, a 15 metre setback is preferable, and may be required to meet Ministry of Environment and DFO regulations. Locating a building or structure closer than 15 metres from the natural boundary of a lake may require approvals from the Ministry of Environment and DFO.

The RDBN Floodplain Management Bylaw No. 1300 also affects the siting of buildings and structures on waterfront properties. This Bylaw specifies both elevation and setback requirements for certain buildings, structures and equipment to protect them from flood damage.

ON-SITE SEWAGE DISPOSAL SYSTEMS

In the rural areas of the RDBN sewage disposal is most commonly treated on-site. The majority of existing residential lakeshore development occurs on small properties that were created without consideration for future on-site sewage disposal requirements. As these systems age and approach the end of their life-span, property owners may find replacing these systems to be challenging and expensive.

An appropriate and effective on-site sewage disposal system is very important for waterfront properties. Domestic sewage is an important contributor of phosphorous to lakes and watercourses because primary and secondary treatment removes only about 20 to 30% of the element from sewage. Excess phosphorous causes accelerated aquatic plant and algae growth, which degrades water quality and aquatic habitat.

Don't use toilets as trash cans!

Excess solids can clog your drain field which will cost you money for more frequent pumping. Items that should not be flushed include:

- coffee grounds
- disposable diapers
- sanitary napkins
- cigarette butts
- fat, grease or oil
- dental floss
- kitty litter
- tampons
- condoms
- paper towels and facial tissue

Signs of a Failing Septic System

Onsite sewage systems, when properly maintained and constructed in a suitable location can provide effective and affordable treatment of residential waste water.

The following signs can be an indication of a failing system:

- Unusually green or spongy grass over the system.
- Toilets, showers and sinks back up or take a long time to drain.
- Sewage surfacing on your lawn or in a nearby ditch.
- Sewage odours around your yard, especially after rain.

None of these warning signs can be considered a sure indication that a system has failed, but the appearance of one or more should prompt homeowners to have their system inspected. Septic system failures can also occur without any of these warning signs. For this reason, a yearly inspection of systems is recommended.

It is vital that owners of waterfront property install appropriate sewage systems that comply with Provincial legislation. All property owners must ensure that new on-site sewage disposal systems are designed and installed by an "Authorized Person" (a Registered On-site Wastewater Practitioner or engineer) in accordance with the *Sewerage System Regulation* and *Sanitary Regulations* under the *Health Act*. The Northern Health Authority is responsible for the enforcement of these regulations, and is available to advise and provide information to individuals about on-site sewage treatment.

The *Sewerage System Regulation* requires that on-site sewage disposal systems be set back a minimum of 100 feet (30 metres) from lakes and watercourses. The Regional District also has the authority to require additional setbacks. For example, for new subdivisions the RDBN Endako, Fraser Lake, Fort Fraser Official Community Plan requires septic fields to be set back 100 metres (328 feet) from any lake unless certain conditions are met.

Existing on-site sewage disposal systems should be continually monitored to ensure that they are functioning properly. Poorly maintained septic systems are more likely to fail than systems which are inspected regularly and pumped out as required. Septic tanks should have the accumulated solids pumped out by an approved sewage hauler every three to five years. The malfunctioning or failure of an on-site sewage system is usually not obvious until it is expelling untreated sewage, which can be catastrophic to the delicate waterfront ecosystem. This can also cause a significant health hazard, contaminate drinking water and reduce water quality.



The following Best Management Practices from the Environmental Protection Division of the Ministry of Environment are designed for homeowners and will help ensure that their systems function properly and maximize the lifetime of the system:

- Make sure that your system meets legal requirements before installing, repairing or upgrading an onsite sewage system. In BC, the Ministry of Health Planning is responsible for septic systems and installation is permitted under the *Sewage Disposal Regulation* of the Health Act. Contact your local public health authority for permits for repairs, improvements, installations and further information.
- Sketch a map of your septic system showing the location of all components and keep it with your maintenance and repair records. This will make maintenance easier and be useful to future owners.
- Keep your septic tank cover accessible for inspections and pumping. Install risers if necessary.
- Have your system inspected annually to ensure that it is working properly and to determine when it should be pumped out. By inspecting and pumping your system regularly you can prevent high repair or replacement costs. A professional can do a thorough inspection of the entire system including the disposal field and individual components of the system.
- Pump out the tank regularly to prevent accumulating solids and clogging the disposal field. The frequency of pump outs will depend on the size of your system, the number of people in the house and the habits of those individuals. A general rule is once every three to five years.
- Upgrade your system when you upgrade your home (i.e. when you add a bedroom or suite).
- Divert roof drains, surface water and sump pumps away from the disposal field. Don't saturate your disposal field with automatic sprinklers.
- Avoid using garburators - this will reduce the amount of solids and grease you put into the system.
- Don't put toxic chemicals (paints, varnishes, thinners, waste oils, photographic solutions, or pesticides) down the drain because they can kill the bacteria at work in your system and can contaminate water bodies.
- Use biodegradable household cleaners instead of bleach or other hazardous products (which will kill the good bacteria in your system), and do not use toilet cleaners that are placed in the tank.
- Don't drive, pave or put heavy objects or machinery over the septic system and disposal field. Don't cover the disposal field with a hard surface such as concrete or asphalt since evaporation will be prevented. This area should only have a grass cover which will prevent erosion and help remove excess water.
- Don't plant trees or shrubs near the drain field because their roots can damage or plug the pipes. Plant grass instead.
- Don't use septic tank 'starters', additives or similar products. These products usually do not help and can sometimes harm your system. Allow bacteria to act on their own.
- Use low-phosphate or phosphate free detergents.

Practice water conservation!

Continual saturation of the disposal field can affect the quality of the soil and its ability to naturally remove contaminants.

The following points will help you to use water wisely:

- ⇒ repair any leaking faucets or running toilets;
- ⇒ use dishwashers and washing machines only when full;
- ⇒ avoid letting the water run when washing or brushing your teeth;
- ⇒ avoid taking long showers and install water-saving features in faucets and shower heads;
- ⇒ install low-flush toilets or put a toilet dam (e.g., brick) in the tank to reduce the capacity of the tank;
- ⇒ space out activities requiring heavy water use, like laundry, over several days;



DOCKS

Docks are a standard feature on many waterfront properties and are an important part of the recreational use of lakes. Docks and swimming platforms can be alternatives to creating a beach. The location and construction of docks must be done in compliance with all provincial and federal legislation, including legislation dealing with fish habitat, water quality and navigation.



In most instances in BC the area of land between the normal high and low water marks is owned by the Crown. Any permanent construction on Crown foreshore requires approval from the Crown Land Administration Division (CLAD) of the Ministry of Agriculture and Lands. CLAD has adopted a policy that permits lake and river docks of less than 20 m² in surface area without the need for an application. However, construction will be expected to adhere to best management guidelines relating to size, environmental impacts, and conflicts with neighbours, impediments to public access and navigation in order to be deemed authorized.

The Department of Fisheries and Oceans and the Ministry of Environment Water Stewardship Division require notification prior to the commencement of any foreshore construction activities. There are publications by both DFO and CLAD that describe dock construction requirements in detail.

Dock Construction Tips

- Use existing trails, roads, or cut lines wherever possible to avoid disturbance to the riparian vegetation. If removal of vegetation is necessary, keep it to a minimum.
- Avoid construction or placement of your dock or boathouse in areas of known fish spawning habitat.
- Locate your dock to avoid aquatic vegetation. Minimize disturbance to the lakebed and surrounding aquatic vegetation by positioning the dock in water deep enough to avoid grounding of the dock and/or impacts by prop wash.
- Use untreated materials (e.g. cedar, tamarack, hemlock, rocks, plastic, etc.) as supports for dock structures that will be submerged in water. Treated lumber may contain compounds that can be released into the water and become toxic to the aquatic environment.
 - Use only treated lumber that is environmentally-friendly (see definition below) for dock structures that are above water.
 - Cut, seal and stain all lumber away from the water using only environmentally-friendly stains.
 - Ensure plastic barrel floats are free of chemicals inside and outside of the barrel before they are placed in water.
 - Avoid the use of rubber tires or metal barrels as they are known to release compounds that are toxic to fish.
- Vegetate any disturbed areas by planting native trees, shrubs or grasses.
- Do not take materials (e.g., rock, logs) to build the dock from the shoreline, from below the high water mark or from any water body.
- Install effective sediment and erosion control measures before starting work to prevent the entry of sediment into the watercourse. Inspect them regularly during the course of construction and make all necessary repairs if any damage occurs. In addition, avoid doing work during rainy periods.
- Prevent deleterious substances such as uncured concrete, grout, paint, sediment and preservatives from entering the water body.

BOATING

The use of motorized boats is an integral part of common recreational activities such as fishing and swimming. In some areas of the RDBN they are also important for transportation. Motorized boats can have a number of negative impacts on a lake. These include oil and fuel leaks, spread of aquatic plants, dumping of litter, churning up of bottom sediments and shoreline erosion due to wave action. It is up to each boat operator to be aware of these impacts and act accordingly. Simple measures can prevent these impacts both on shore and on the water.

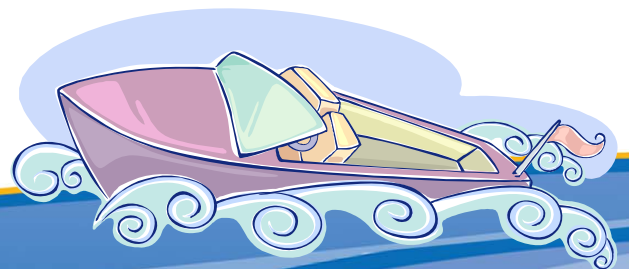


On Shore:

- * Fill fuel containers on shore if possible and clean up all leaks and spills with absorbent bilge pads
- * Keep motors well maintained and tuned to prevent fuel and lubrication leaks and conduct major maintenance chores on land.
- * Consider using four-stroke motors, which generally are quieter, have better fuel economy and have lower emissions
- * Use phosphate-free biodegradable products to clean your boat.
- * Use public boat launches and remove all vegetation from boat, trailer and other equipment when leaving a lake

On the Water:

- * Do not throw trash overboard, including waste fishing line, or use lakes or other water bodies as toilets
- * Reduce your speed when boating in shallow areas and along shorelines
- * Avoid waterfowl breeding or staging areas as boating activities can reduce their success



LANDSCAPING AND LAWN CARE

The enjoyment of one's property and the protection of the natural environment do not have to be two separate things. However it is important to recognize that traditional landscaping with large manicured lawns that extend to the shore or an erosion protection structure can cause serious problems for the adjacent lake. Many of the pleasurable aspects of lakeshore living are dependent on a healthy, well- vegetated shore.



Shorelines that remain in a natural state should be protected by a leave strip of natural vegetation at least 15 metres wide. Shoreline buffers have the added benefit of deterring Canada Geese from lawns. If a view to the lake is desired, consider selectively removing a small width of the tops of vegetation only. Minimize the area required to be cleared for beach access and keep disturbances near the water to a minimum. Also, please consult the BC Ministry of Environment and the federal Department of Fisheries and Oceans (DFO) before undertaking any works near or in a lake.

Maintaining a natural landscape can be esthetically pleasing and require less maintenance. Consider smaller lawns with shrub borders or native plantings. Lawn height should be maintained to about 2.5 to 3 inches and mowing should only be done when necessary. Longer grass requires less watering and can be self-fertilizing by leaving grass clippings on the lawn. The application of fertilizers and pesticides should be limited or eliminated altogether. Fertilizers are easily transported into the lake from runoff where they fertilize aquatic plants and algae. Pesticides can be toxic to people, wildlife and fish.

A well vegetated waterfront can:

Prevent erosion

- ⇒ Plant roots stabilize the soil
- ⇒ Plants absorb and dissipate wave energy from wind and boat wakes

Filter contaminants

- ⇒ Shoreline and wetland plants absorb and retain compounds that are toxic to other forms of life.
- ⇒ By slowing the flow of runoff they allow sediments to deposit before entering the water

Prevent flooding

- ⇒ Plants slow down the passage of water over land

Provide habitat

- ⇒ Plants provide food, shelter and nesting materials to a variety of birds, mammals, and fish.
- ⇒ Plants provide shade which cools the shallow areas of the lake for fry

Protect privacy

- ⇒ Plants provide a screen from public view
- ⇒ Plants buffer noise from boats and personal watercraft



SHORELINE REHABILITATION

The shorelines of many lakeshore properties have already been significantly altered from their natural state. The important habitats that were lost can be rehabilitated through careful planning and planting. The primary goal of shoreline rehabilitation is to reestablish a natural vegetated buffer between the terrestrial and aquatic ecosystems. The easiest and least expensive method of rehabilitation is to simply stop mowing along the shoreline. If you wish to replant native vegetation, consult with DFO or the Ministry of Environment to determine which plants are suitable.



1. Cleared, manicured lot
 2. Runoff
 3. Chemical fertilizers and pesticides
 4. Lawn to the water's edge
 5. Hardened shoreline
 6. Artificial beach
 7. Old 2-stroke engine
 8. Solid crib dock
 9. Malfunctioning septic system
 10. Harmful household chemicals and cleaners
- (from www.livingbywater.ca)

1. Prune trees and plant native trees and shrubs
2. Replace solid surfaces with porous materials
3. Mow it high and let it lie - mow 8 cm high & mulch
4. Buffer of uncut grass and replanted native plants
5. Softened shoreline with native plants
6. "Dry land" beach above the high water mark
7. Well maintained 4 or 2-Stroke engine
8. Cantilevered or floating dock
9. Properly installed and maintained septic system
10. Environmentally friendly products

RESOURCES

There are a vast number of resources available to property owners that are interested in protecting water quality and aquatic habitat. The organizations listed below provide detailed information that is available online free of charge.

Department of Fisheries and Oceans

Proponent's Guide to Information Requirements for Review Under the Fish Habitat Protection Provisions of the *Fisheries Act*

DFO Pacific Region Operational Statements:

- Aquatic Vegetation Removal in Lakes
- Dock and Boathouse Construction in Freshwater Systems
- Small Moorings



Legislation:

Fisheries Act

Canadian Environmental Assessment Act

Species at Risk Act

BC Ministry of Environment

Water Act: Section 9 Approvals and Notifications for “Changes In and About a Stream”

Water Rights in British Columbia

User Guide to Working In and Around Water

Water Quality Protection Documents

Legislation:

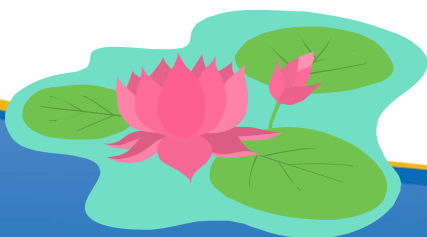
Water Act and Water Regulation

Water Protection Act

Fish Protection Act

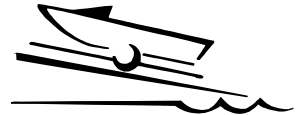
Environment Canada - Freshwater

Water - Dos and Don'ts



Agriculture Canada

Water Quality Protection



Transport Canada: Safe Boating Guide

The Stewardship Centre for British Columbia:
The Stewardship Series

- Access Near Aquatic Areas: A Guide to Sensitive Planning, Design, and Management
- Community Stewardship: A Guide to Establishing Your Own Group
- Green Legacies: A Donor's Guide for B.C.
- Land Development Guidelines for the Protection of Aquatic Habitat
- Landowner Contract
- Naturescape: British Columbia: Caring for Wildlife Habitat at Home
- Stewardship Options: For Private Land Owners in British Columbia
- The Streamkeepers Handbook: A Practical Guide to Stream and Wetland Care
- Stream Stewardship: A Guide for Planners and Developers
- Watershed Stewardship: A Guide for Agriculture
- Wetlandkeepers Handbook: A Practical Guide to Wetland Care
- Protecting British Columbia's Wetlands: A Citizen's Guide

The Living By Water Project: working towards healthier human and wildlife habitat along the shorelines of Canada

BC Lake Stewardship Society

CONTACTS

Regional District of Bulkley-Nechako

Planning Department

Phone (250) 692-3195 or 1-800-320-3339

Fax : (250) 692-1220

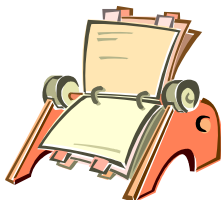
Website: www.rdbn.bc.ca

Email: Inquiries@rdbn.bc.ca

Address: 37 3rd Avenue

PO Box 820

BURNS LAKE, BC V0J 1E0



Department of Fisheries and Oceans

www.pac.dfo-mpo.gc.ca/

Smithers Office

Box 578, 3177 Tatlow Road

Smithers, BC V0J 2N0

Phone: 250-847-2312 Fax: 250-847-4723

(Skeena River Watershed:

Bulkley Lake west to Moricetown)

Prince George Office

3690 Massey Drive

Prince George, BC V2N 2S8

Phone: 250-561-5366 Fax: 250-561-5534

(Fraser River Watershed:

Rose Lake east to Cluculz Lake)

Ministry of Environment

www.gov.bc.ca/env/

Skeena Region

Bag 5000, 3726 Alfred Avenue

Smithers, BC V0J 2N0

Phone: 250-847-7260 Fax: 250-847-7591

(Endako west to Moricetown)

Water Stewardship Division Office

Phone: 250-847-7334 Fax: 250-847-7556

Omineca and Peace Regions &

Water Stewardship Division Office

325 - 1011 Fourth Avenue

Prince George, BC V2L 3H9

Phone: 250-565-6135 Fax: 250-565-6629

(Endako east to Cluculz Lake)

ENQUIRY BC

Toll free provincial government information and phone transfer

1-800-663-7867



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