



“A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise.”

-Aldo Leopold

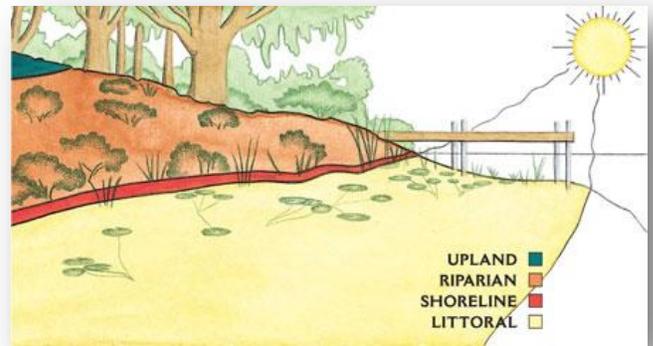
Your Shoreline

The quiet spot by the lake enjoyed by many cottagers and waterfront residents is also the richest natural environment that most of us will ever come into contact with. This waterfront area is crucial to your lake's health, providing oxygen, food, cover and a barrier to contaminants, as well as a living retaining wall for the shoreline.

The natural shoreline has four components, beginning underwater and extending upland. These four components are the littoral zone, the shoreline, the riparian zone, and the upland zone, and each plays a critical role in keeping your lake healthy.

As important as these separate zones are however, it is vital to remember that the shoreline is a natural progression - each area transforms into the next in a gradual, almost seamless transition. Altering any portion of this region affects the whole, diminishing its ability to support life on the lake.

- ❖ The **littoral zone** is the area from the water's edge to roughly where sunlight no longer penetrates to the lake bottom;
- ❖ the **shoreline** is the place where land and water meet;
- ❖ the **riparian zone** is the section of land closest to the shoreline; and
- ❖ the **upland zone** is the higher, drier ground found beyond the riparian area.



Natural vegetation in the shoreline area provides one of the world's most effective, least expensive erosion controls. The mix of plants, shrubs, and trees forms a complex web of roots and foliage that knits the waterfront together, holding the bank in place and fending off the impacts of wind, rain, waves, ice, and boat wake.

The shoreline provides a barricade against erosion. In its natural state, the shoreline is a profusion of stones, plants, shrubs, fallen limbs, and tree trunks. But it is also a busy intersection, with animals, insects, and birds traveling back and forth.

Overhanging vegetation shades and cools the water, and acts as a fast-food outlet for fish by producing a rain of aphids, ants, and other insects that slip from their perches above.

Maintain Your Shoreline

Things start to come apart when you remove the vegetation whose roots act as the glue that holds the shoreline together. The resulting erosion sends silt and sediment into the water where it damages spawning areas. For example, the eggs of northern pike cling to vegetation in the shallows. Water circulating around the spawning bed carries oxygen to the eggs, but when silt covers them, the unhatched fish are suffocated.

A method often used to protect against shoreline erosion is to replace the natural shoreline with a breakwall made of wood, rock, concrete, or steel. In environmental terms, this converts a lively waterfront into a sterile environment. By imposing a sharp vertical drop-off on the shoreline, a breakwall limits the ability of plants to re-root up or down the bank as water levels rise and fall, typically reducing waterfront vegetation by one-half to three-quarters.

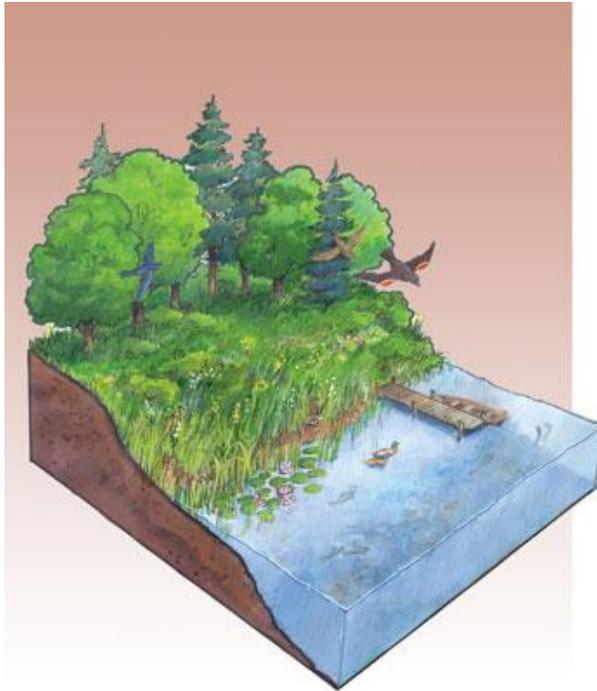
The decline in the number and diversity of aquatic plants has a ripple effect, reducing habitat for fish, birds, and amphibians. As well, this kind of erosion control is almost always an expensive temporary fix. Because artificial materials lack the resilience of the natural shoreline, a homemade vertical breakwall often lasts only a decade or so before cracking and falling apart.

To maintain a healthy shoreline:

- ❖ Leave the natural vegetation on the land and in the water.
- ❖ Don't replace your shoreline with a hardened surface like rip rap or breakwall.

- ❖ Never dump fill along your waterfront. Not only does this destroy part of the littoral zone where fish live, but it may alter water currents and increase erosion on adjacent properties.

Instead of working against nature, why not declare a truce and weave your cottage needs into the natural shoreline? By maintaining all four components of your shoreline in as natural a state as possible, you will be protecting your quiet spot by the lake for enjoyment into the future.



More Information

There are a number of resources available for waterfront owners wishing to protect their natural shoreline area.

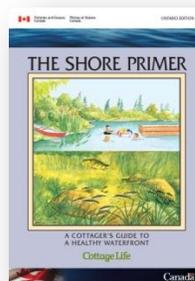
On the Living Edge: Your Handbook for Waterfront Living, published by the Living By Water Project, is available from the Muskoka Heritage Foundation at (705) 645-7393.

Muskoka Watershed Council

www.muskokaheritage.org/watershed

Muskoka Water Web

www.muskokawaterweb.ca



The Shore Primer, produced by Fisheries and Oceans Canada in association with Cottage Life, offers cottagers and other landowners constructive solutions for restoring an altered shoreline to its former health and beauty.