STEWARDS' GUIDE SERIES

MUSKOKA HERITAGE FOUNDATION

Muskoka WATERSHED COUNCIL

Photo by John McQuarrie

Restore Your Shore

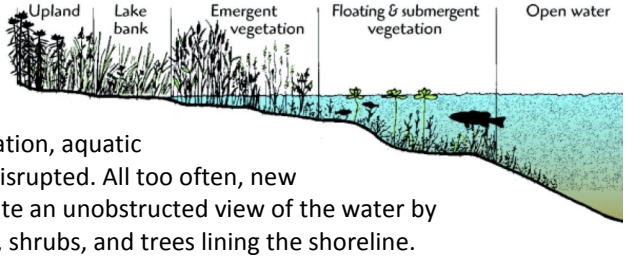
Softening a Hardened Shoreline in Parry Sound Muskoka

The waterfront area is crucial to your lake's health

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, and almost certainly the most complex piece of the earth that we will ever have the opportunity to live near and share.

Equally important, this waterfront area is crucial to your lake's health, providing oxygen, food, and cover for wildlife, a barrier to contaminants, as well as a living retaining wall for the shoreline. The nearshore area is where many fish species lay their eggs, feed and seek protection from predators.

Nature's Erosion Control: Natural Shorelines



When a natural shoreline is altered, often by well-intentioned projects meant to improve waterfront living, the intricate balance between vegetation, aquatic organisms, and the shoreline is disrupted. All too often, new waterfront property owners create an unobstructed view of the water by clearing out the thicket of plants, shrubs, and trees lining the shoreline.

However, once the trees and shrubs are gone, the soil that their roots held in place begins to erode, resulting in costly and ineffective fixes to slow down the erosion of their property such as installing a shorewall. By retaining the natural shoreline vegetation, their shoreline would enjoy the benefits of natural erosion control.

But what can you do when a shorewall is already in place? This guide will lead you through the process of softening a hardened shoreline.

Restoring a Hardened Shoreline: Step by Step

1. Plan your project by seeking professional advice and obtaining approvals (see Legislative Requirements, page 3). Depending on the agency and the permit, you will need to include specific information about your project, including but not limited to:

- ✓ Your contact information
- ✓ Why you are undertaking the project and using the method you have chosen
- ✓ Location of the property where the project is occurring and proof of ownership
- ✓ Detailed description of the work site including maps or sketches showing existing buildings, dimensions and high water mark
- ✓ Sketches of the proposed work
- ✓ List of heavy equipment to be used
- ✓ Proposed start and completion dates
- ✓ Description of the substrate and vegetation at the work site
- ✓ The sediment or erosion control plan for the site
- ✓ Photographs of the site
- ✓ A list of other agencies contacted about the project.

2. Once your application has been approved, implement your sediment or erosion control plan prior to beginning any work. This may include the use of a sediment or silt screen in the water around the entire work area, which must be installed correctly, inspected daily and maintained to prevent the spread of suspended sediments to adjacent water and fish habitat. Erosion control methods on slopes may include the use of biodegradable erosion control blankets, straw bales or wattles. Do not store materials directly beside the water.

3. Dig out the area behind the shorewall to create a maximum slope of 3:1 or 18° (1 meter in rise for every 3 metres in distance). Cover excavated soil to prevent sediment migration into the water.

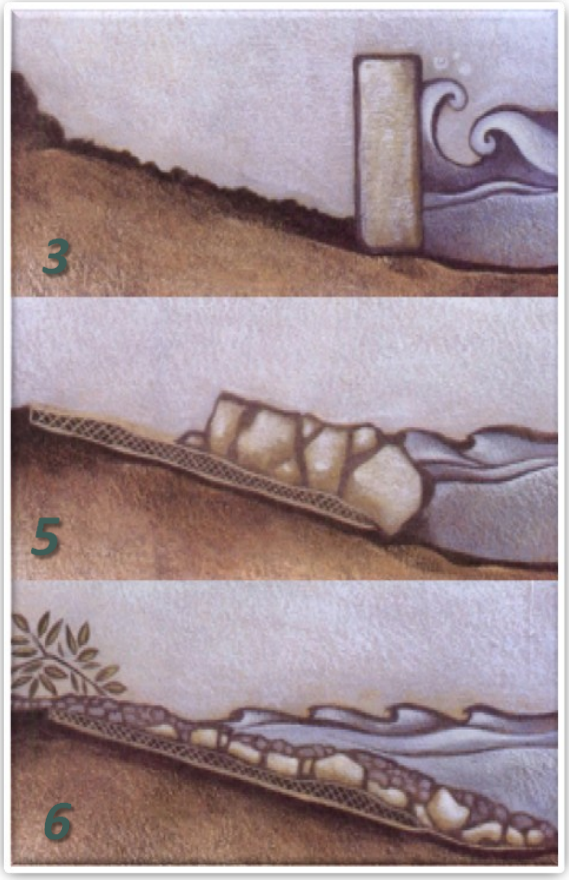
4. If the slope behind the shorewall is sufficiently steep or in an area prone to flooding, cover the soil with coir matting to hold the shoreline in place until vegetation is established. Otherwise, cover the area with a thick layer of newspaper to prevent erosion and the establishment of undesirable plant species.

5. Carefully break down the shorewall into dinner plate-sized pieces of rubble using a mini-excavator on tracks or hand tools such as a sledge hammer, jackhammer (if there's rebar), or concrete saw. Spread the rubble out over the landscape fabric and up the slope to above the high water level. The rubble will stabilize the slope, break up wave energy and prevent erosion until vegetation has established on the site.

6. Plant native vegetation suitable to the conditions on the site between pieces of rubble by cutting a hole in the landscape fabric or newspaper beneath. Plant vegetation along the slope above the rubble in greater densities and cover the area between plants with mulch. See the back page for a list of common native shoreline plants in Muskoka-Parry Sound.

7. Carefully remove the sediment and erosion control structures once the project has been completed and the sediment in the water has settled to the bottom.

8. Monitor the area and remove any undesirable plant species that try to establish. Water new plants during dry periods for the first two years. Look for signs of erosion and repair damaged areas as necessary.



The purpose of removing a retaining wall is to create a more natural shoreline that will be inviting to wildlife. Reducing the slope and planting native vegetation will reduce erosion while welcoming wildlife to your shoreline.

Drawing adapted from Cottage Life Magazine

Legislative Requirements

The primary pieces of legislation governing projects being carried out in or around water are the provincial *Public Lands Act* and the federal *Fisheries Act*.

Section 14 of the *Public Lands Act* requires you to obtain a Work Permit authorizing specific activities and works on public lands and shore lands. Contact your local Ministry of Natural Resources office (Bracebridge: 705-645-8747 Parry Sound: 705-746-4201) to make an appointment to speak with a Ministry staff person. Learn more about Work Permits at www.mnr.gov.on.ca/en/Business/CrownLand/2ColumnSubPage/STEL02_165786.html.

The *Fisheries Act* provides for the protection of fish habitat. Under this Act, no one may carry out any projects that result in the harmful alteration, disruption or destruction of fish habitat (HADD) unless authorized by Fisheries and Oceans Canada. The Act also prohibits the release of harmful substances into water containing fish. Learn more about the Fisheries Act at www.dfo-mpo.gc.ca/regions/central/water-eau-eng.htm.

For projects above the high water mark, municipal cut and fill by-laws or development permit by-laws may be applicable. Contact your local area municipality for more information.

Work Permit Application Process

Step 1: Complete the "Application for Work Permit – Part 1"

Step 2: Complete Part 2, 3, 4 or 5 of the "Application for Work Permit"

Step 3: Submit Complete Application (Part 1, other applicable Parts and site plan)

Step 4: MNR Review

Step 5: Work Permit Issuance or Refusal

Step 6: Project Implementation and Monitoring

If your project is located within the Trent-Severn Waterway, consult with Parks Canada (see Policies for In-water and Shoreline Works and Related Activities available at www.pc.gc.ca/eng/docs/r/poli/index.aspx).

It is your responsibility to contact all necessary agencies and comply with all existing laws and regulatory requirements. Approvals may be required from several agencies, including those not discussed above. Approval from one agency does not guarantee approval from another agency.

Signs of Erosion

Shoreline work should be proposed only when a problem exists and needs fixing – for instance, to stabilize identified erosion areas – not to decorate, landscape, or reclaim land.

Some signs of an erosion problem on your shoreline include:

- A large area of bare soil on a steep, high shoreline bank
- A noticeable recession of the shoreline over a period of time
- Numerous leaning or downed trees with exposed roots on the shoreline
- Large patches of muddy water near the lakeshore or unusually muddy streams during periods of high water or following a rainstorm
- Undercut banks
- Buckled or "ice shoved" shoreline banks

Common Shoreline Plants
in Parry Sound-Muskoka

Look around your lake or river and note how nature works to minimize erosion on healthy, more natural shorelines. Make note of what types of wildflowers, grasses, trees and shrubs you see in these areas. These are the plants you want to include in your planting plan.

The species you choose will depend on the specific light, moisture and soil conditions present on your property. Specific requirements for each species can be found using Evergreen`s Native Plants Database (nativeplants.evergreen.ca/) or a field guide such as *Forest Plants of Central Ontario* by Lone Pine Publishing.

Trees

Yellow birch (*Betula alleghaniensis*)
Red maple (*Acer rubrum*)
Black cherry (*Prunus serotina*)
White cedar (*Thuja occidentalis*)
White pine (*Pinus strobus*)
Eastern hemlock (*Tsuga canadensis*)

Sweet gale

Shrubs

Serviceberry (*Amelanchier sp.*)
Red osier dogwood (*Cornus stolonifera*)
Sweet gale (*Myrica gale*)
Willow species (*Salix* spp.)
Meadowsweet (*Spiraea alba*)
Steeplebush (*Spiraea tomentosa*)
Winterberry (*Ilex verticillata*)
Buttonbush (*Cephalanthus occidentalis*)
Nannyberry (*Viburnum lentago*)
Northern wild raisin (*Viburnum cassinoides*)

Northern wild raisin

Plants

Canada anemone (*Anemone canadensis*)
Swamp milkweed (*Asclepias incarnata*)
Canada blue-joint grass (*Calamagrostis Canadensis*)
Canada wild rye (*Elymus canadensis*)
Sedge species (*Carex* spp.)
Blue-flag iris (*Iris versicolor*)

Swamp milkweed
Credit: Edward Teune

Blue-flag iris
Credit: D. Gordon E. Robertson

Aquatic Plants

Pickerel weed (*Pontederia cordata*)
Broad-leaved arrowhead (*Sagittaria latifolia*)
Water smartweed (*Polygonum amphibium*)

Resources

Extension Note - Preserving and Restoring Natural Shorelines - www.lrconline.com/Extension_Notes_English/pdf/shrlns.pdf

Call your local Ministry of Natural Resources office (Bracebridge: 705-645-8747 Parry Sound: 705-746-4201) or the Natural Resources Information Centre at 1-800-667-1940

Visit the MNR website (www.mnr.gov.on.ca/en/Business/CrownLand/2ColumnSubPage/STEL02_165786.html) for information about Work Permits.

Visit the Fisheries and Oceans Canada website for information about *Working Around Water* and the federal Fisheries Act - www.dfo-mpo.gc.ca/regions/central/water-eau-eng.htm or call the Parry Sound office at 705-746-2196

Evergreen Native Plants Database - nativeplants.evergreen.ca/

The Stewards' Guide Series
is a collaborative project

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