Mattagami Region
Conservation Authority

Guidelines: Shoreline Information

Shorelines

A naturalized shoreline rich in native trees, shrubs, grasses and wildflowers is generally considered the best multi-purpose approach to protecting the water's edge and maintaining a healthy lake ecosystem.

- Roots from shrubs and trees absorb wave and ice energy, stabilize soils and prevent erosion
- Plants along the shoreline slow surface runoff and filter contaminants before they reach the water
- Shrubs and trees discourage Canada Geese, preventing associated nuisance interactions with these birds
- Underwater logs and rock piles allow fish to rest, feed and spawn while providing protection from predators
- Naturalized shorelines provide food and shelter for fish, nesting birds, mammals and insects.

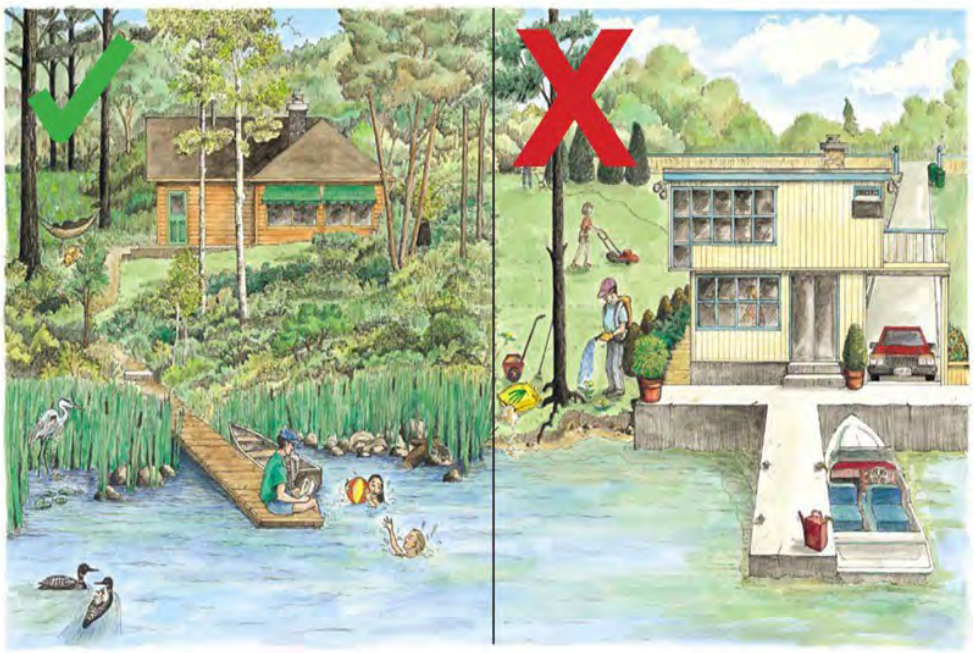


Figure 1. Shoreline Examples, Mattagami Region Conservation Authority

Tips for a Healthy Shoreline:

1. Don't mow right to the waterfront. Consider planting a buffer zone of native vegetation along the shoreline.
2. Limit development near the shoreline.
3. Restore developed or damaged shorelines.
4. Avoid fertilizers and pesticides.
5. Maintain septic systems.
6. Limit the hardening of shorelines.
7. Leave fallen trees and over-hanging branches, where necessary.

Buffer Zone

Leave a buffer between the shoreline and your lawn. A pathway can be maintained for access down to the water, but maintaining or planting a buffer zone of native vegetation along your shoreline will slow erosion, provide food and shelter for fish and wildlife species.

Surface water runoff can contain pollutants like fertilizers, soil particles, excess nutrients, bacteria, and chemicals. Planted shoreline buffers help to absorb and trap these pollutants before they enter lakes and rivers where they can cause poor water quality, excessive plant growth, and algae blooms.

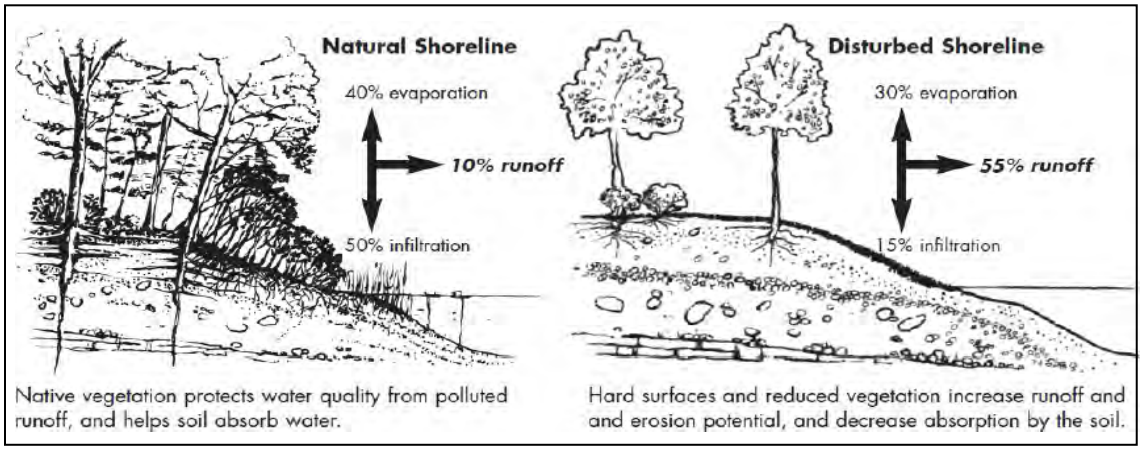


Figure 2. Natural vs. Disturbed Shoreline, Kipp, S & Callaway, 2003

Erosion

Shorelines erode due to various forces: natural wave and wind action, ice movement from freezing and thawing, fluctuating water levels, and other disturbances can accelerate this erosion leading to unstable slopes, loss of land, and excessive sedimentation into lakes and rivers.

Figure 3. Erosion, Mattagami Region Conservation Authority

Shoreline plants reduce this erosion by helping to keep soil in place, stabilizing banks, and absorbing wave energy. Deep rooted native trees and shrubs often provide the best protection.

When soil is exposed and vegetation is mowed to the water's edge, the stabilizing effect of root systems is lost, exposing the soil to the power of waves, ice and surface runoff. Sediment carried away by wind or waves reduces the size of waterfront properties and damages shoreline habitat by burying spawning beds and reducing water clarity.

Wildlife Habitat

Shorelines provide critical habitat for both aquatic and terrestrial wildlife. Natural shorelines provide food, shelter, and safe travel corridors for animals. Fallen trees provide basking logs for turtles and refuge for fish. Tree canopy and overhanging branches provide shade and help keep water cool creating a more favourable environment for many fish species. Where necessary, leave fallen trees along the shoreline as they create fish and insect habitats.

Hardened Shorelines

Despite their popularity in some areas, natural erosion can't be prevented by concrete walls or sloped rock. Major storms, ice damage and the effects of time eventually cause them to fail. Hardened shores in one place may also deflect wave and wind energy and cause more erosion problems at neighbouring shorelines. Shorelines that have been stabilized with rock 'rip rap', armour stone or gabion baskets can be modified to incorporate natural vegetation and extend the life of retaining structures. Consider assessing the site and the causes and types of erosion before starting a project.

Rip Rap

Loose rocks can be placed on a gradual slope/ lower banks and used to stabilize an eroding shoreline. Rip rap should include clean rock rubble (size range from 20 cm to 30 cm), be underlain by non-woven geotextile filter fabric, and placed no steeper than a 2:1 (H:V) slope following the contour of the existing shoreline. Native shrubs and vines should be planted among rocks and will provide natural protection to absorb and dissipate wave action.

Figure 4. Rip Rap, Mattagami Region Conservation Authority

Armour Stone or Retaining Walls

Armour stone is a natural quarry stone used for wave protection of shorelines and erosion protection. Retaining walls are not recommended as they deteriorate due to wave uprush and ice damage. The force of the expanding ice can easily damage or destroy these walls and cause more property damage. In addition, these walls eliminate fish habitat and can adversely affect the natural functions important to aquatic habitat. Rip rap is recommended and offers protection to the retaining wall.

Figure 5. Armour Stone Retaining Wall with Rip Rap (Left), Retaining Wall (Right), Mattagami Region Conservation Authority

Septic Systems

Septic Systems must be located a minimum distance from wells, property lines and other features to reduce the risk of affecting water quality. Maintenance and regular inspections should help optimize sewage treatment and reduce pollution. Consider advanced treatment septic systems with smaller distribution fields.

Docks and Boathouses

Docks or boathouses can provide many benefits to the enjoyment of your waterfront property. However, if not designed correctly, they can negatively affect shoreline habitat by:

- Covering fish spawning areas,
- Removing rocks and logs that provide shelter,
- Causing erosion from bank disturbance,
- Removing vegetation, and
- Introducing toxic substances if improper building materials are used.

Tips for Shoreline Construction Projects

1. Obtain approvals from the Conservation Authority and/or the City of Timmins before starting construction.
2. Avoid work during fish spawning times. Contact the Ministry of Natural Resources (MNR) for more information.
3. Avoid treated wood and Styrofoam docks.
4. Limit shoreline development.
5. Consider least impactful docks.

Materials: Untreated/natural wood such as hemlock or cedar are good choices for docks because they are resilient to rot. Treated wood and wood preservatives, such as paint and stain, can contain chemicals that are harmful to fungi and insects and should be used with care. Styrofoam should also be avoided because as it deteriorates, the broken off bits create pollution and impacts fish and other wildlife.

Figure 6. Fisheries and Oceans Canada, 2005, The Dock Primer

Location: The structure should be placed where it will have the least impact on sensitive aquatic habitat. To minimize loss of natural shoreline area and riparian vegetation, orient the dock away from the shore, rather than extending the dock along the shore. Structures should also be placed well inside of your property lines to avoid impact on your neighbour's property or public lands (check municipal zoning requirements).

Design: The structure should be designed to limit contact with the lake bottom, allow for the free movement of water, and be only as large as needed for water access. Permanent shoreline structures can be susceptible to flood and/or ice damage, so removable structures are preferred because they are versatile in terms of location as well as eliminating the complication of ice and flooding damage.

Floating, pipe and cantilevered docks have the lowest overall impact while the level of impact increases for permanent post and crib docks. Solid designs made of concrete piers or abutments, vertical planking, or metal sheeting should be avoided as they cut off the movement of wildlife and increase erosion to the shore and lake bed by altering natural water currents and refracting waves.

Development projects including decks, boathouses, docks and alterations to watercourses, may require planning approval or permits. Before starting your project contact the Conservation Authority or municipality to learn what permits apply to your waterfront property.

Figure 7. Removable Floating Dock, Federation of Ontario Cottagers' Associations (FOCA)

Figure 8. Removable Pipe Dock, FOCA

Figure 9. Cantilever Dock, FOCA

Figure 10. Permanent Post Dock, FOCA

Figure 11. Open Crib Dock, FOCA

Permitting

All shoreline works require a permit from the Mattagami Region Conservation Authority under MRCA's Regulation Policies which are adopted from Ontario Regulation 41/24, Prohibited Activities, Exceptions and Permits. Planning approvals or other permits may be required from Fisheries and Oceans Canada (DFO), the Ministry of Natural Resources, and/or the City of Timmins.

Before starting your project contact your local Conservation Authority and municipality to learn what permits apply to your waterfront property. Violations of this regulation could result in fines and an Order to Remove the offending works or structures.

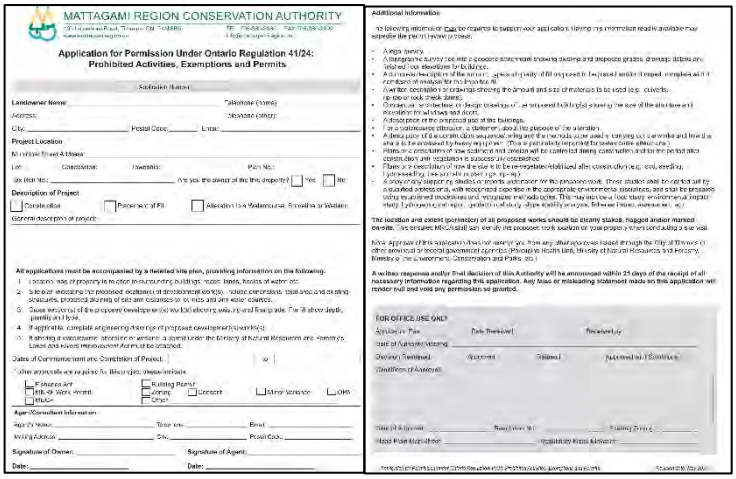
Pre-Consultation

Contact the Conservation Authority to begin a pre-consultation with Planning & Regulations staff. Site visits can be scheduled, where necessary.

Please be advised that shoreline hardening techniques are only considered where signs of active erosion are occurring.

Permit Application Form

Visit mattagamiregion.ca to complete a Permit Application Form. Save the completed application form as a PDF and email to info@mattagamiregion.ca.


MATTAGAMI REGION CONSERVATION AUTHORITY

Application for Permission Under Ontario Regulation 41/24:
Prohibited Activities, Exemptions and Permits

Figure 12. MRCA Permit Application Form

Description of Type of Development/Work(s) Proposed

A detailed project description must be included with the permit application. The description should include what is existing and what is being proposed.

Authorization

The permit application form must be signed by the owner of the subject property. Applicants/Contractors must be authorized by the owners in order to apply on their behalf. By signing the permit application form, you are permitting MRCA to undertake inspections of the work site.

Plans

Submitted with the permit application must include clear and detailed plans.

A Site Plan should be included with any permit application. Dimensions of the shoreline and distance from reference structures/property lines should be included. The Site Plan should clearly demonstrate what is currently existing and what is being proposed. It is encouraged that these plans are drawn to scale.

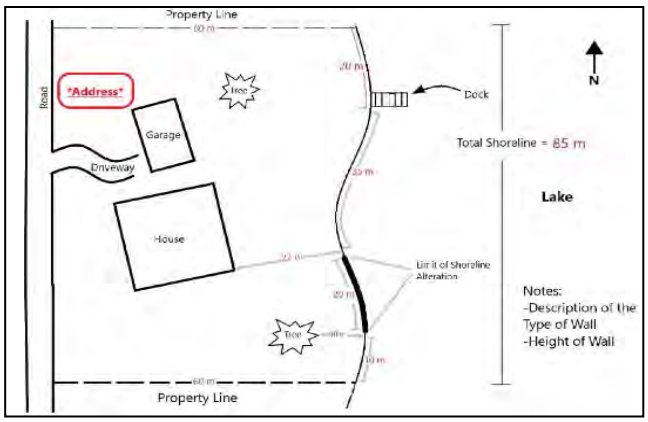


Figure 13. Conceptual Drawing of Site Plan

A Cross-Sectional Plan may be required with the permit application. Dimensions of the shoreline development including length, width, and depth of interference must be included.

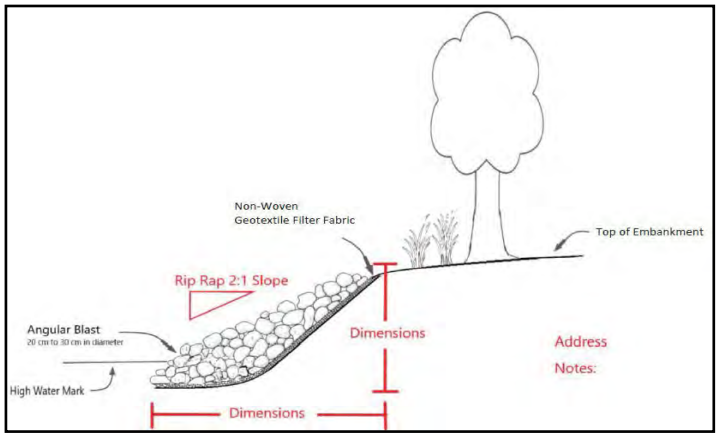


Figure 14. Cross Section of Rip Rap Erosion Protection

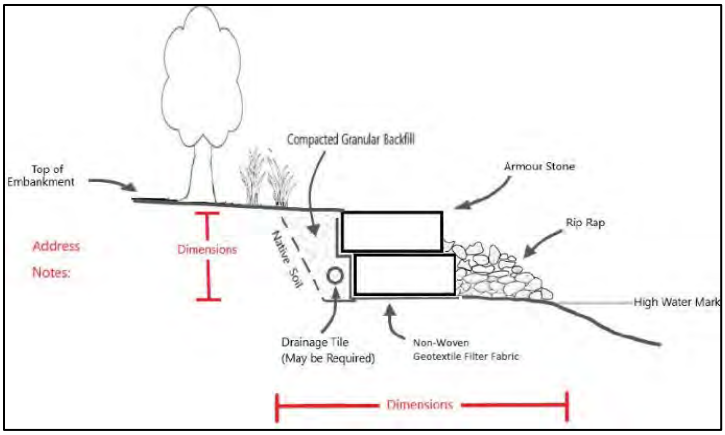


Figure 15. Cross Section of Armour Stone Retaining Wall

Fees

Permit fees are depending upon the current Fee Schedule. Shoreline permit fees are based on the length of shoreline disturbance and/or the area of the works.

Completed Permit

MRCA permits are valid for up to 2 years of the date of issuance. A posting of the permit must be displayed during construction. Compliance inspections may be required.

Resources:

Fisheries and Oceans Canada, 2005, The Shore Primer

Fisheries and Oceans Canada, 2005, The Fish Habitat Primer

Fisheries and Oceans Canada, 2005, The Dock Primer

FOCA, A Shoreline Owner's Guide to Healthy Waterfronts

Federation of Ontario Cottagers Associations, 2015, A Shoreline Owners Guide to Healthy Waterfronts, revised edition.

Fisheries and Oceans Canada, 2022, Projects near water - https://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html

Ontario Ministry of Agriculture, Food and Rural Affairs, (nd), Septic Smart - https://www.ontario.ca/page/septic-systems#section-1

Kipp, S. & Callaway. 2003. On the Living Edge: Your Handbook for Waterfront Living.

Mississippi Valley Conservation Authority, Guidelines: Shoreline Information, April 2025