

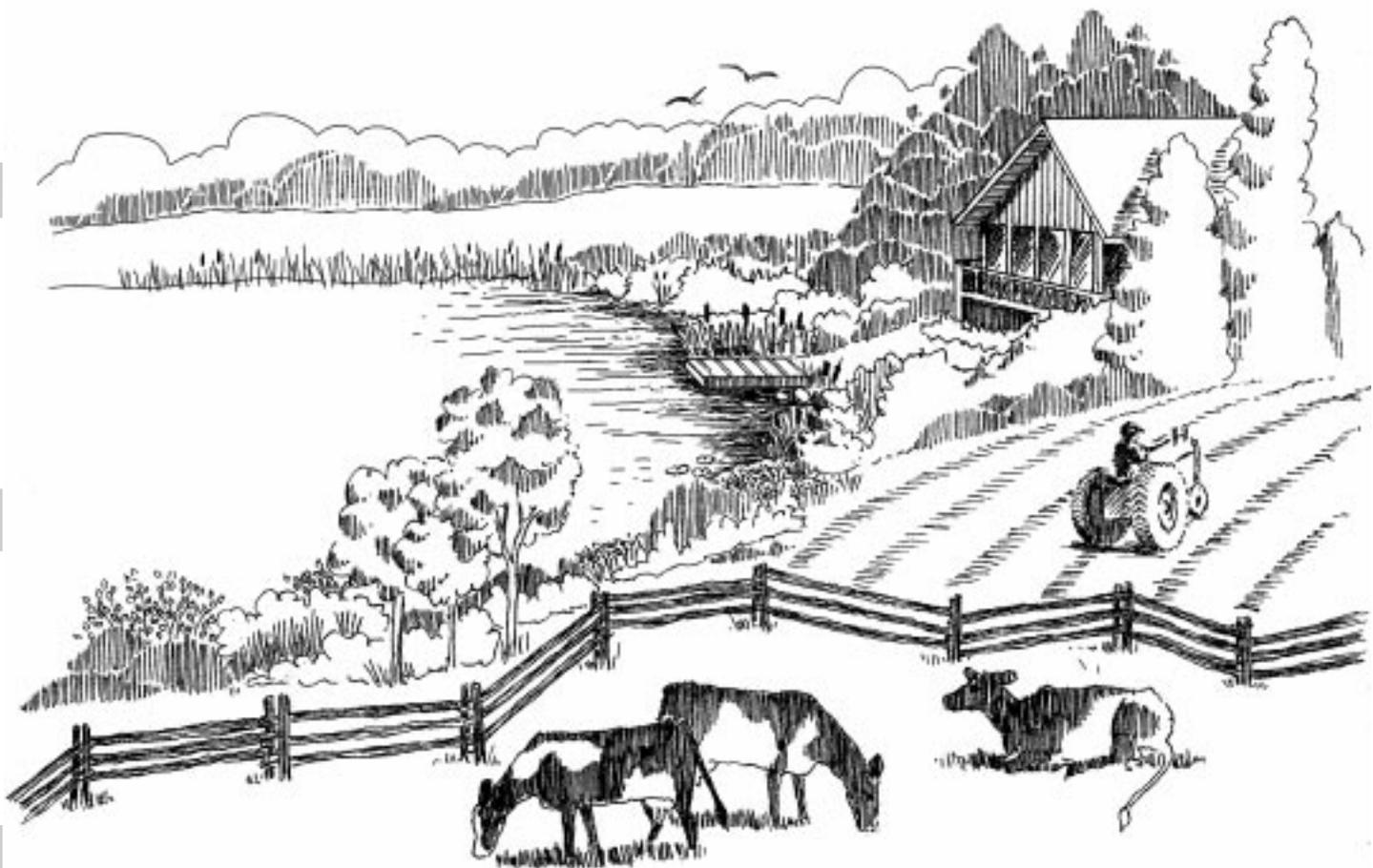
# EXTENSION NOTES



## PRESERVING AND RESTORING NATURAL SHORELINES

Natural vegetation along the shoreline of lakes and rivers plays a crucial role in protecting water quality, preventing soil erosion and preserving the ecological balance of aquatic environments. However, much of the natural vegetation around Ontario lakes and rivers has been cleared or replaced with non-native species, resulting in the loss of wildlife habitat and reduced water quality.

This fact sheet provides information on the importance of shoreline vegetation and where you can get help to restore your shoreline and others in your community.



Shoreline vegetation plays an important role in maintaining the quality of water in our lakes and rivers.

## THE RIBBON OF LIFE

Ninety per cent of all lake life is born, raised and fed in the area where land and water meet. The shallow water and the first 10 to 15 metres of shoreland forms a ribbon of life around lakes and rivers that is essential to the survival of many species. This rich and complex habitat supports plants, micro-organisms, insects, amphibians, birds, mammals and fish.

Unaware of the importance of shoreline vegetation, many landowners clear their shorelines and transform them into urban landscapes. They destroy the cattails, bulrushes and other native species, and replace them with lawns and non-native species. They also build retaining walls, docks and boathouses. These changes destroy the balance of the aquatic and shoreline ecosystems. They also alter the wildlife habitat, natural beauty and character of our lakes and rivers.

Natural shoreline vegetation plays an important role in preventing soil erosion. Plant roots anchor the soil, preventing shoreland from being washed away by currents, waves and rain. The roots of mature trees reach down to the upper levels of the water table. Dogwood and meadowsweet roots form a web that extends a half-metre downward, these native species are far more effective in protecting properties from erosion than the roots of grasses, which only reach eight centimetres below the surface.

By preventing erosion and runoff, natural shoreline vegetation also improves water quality. When soil and excess nutrients are washed into the water, fish spawning

beds can be destroyed, dissolved oxygen is depleted and the growth of algae and aquatic plants is encouraged. Shoreline vegetation also improves water quality by shading and cooling shallow water.

All of these changes in water quality can lead to rapid eutrophication — the aging of a lake. Eutrophication of a lake ultimately changes the kinds and numbers of species that can live there.

## SHORELANDS ARE PROTECTED BY LAW

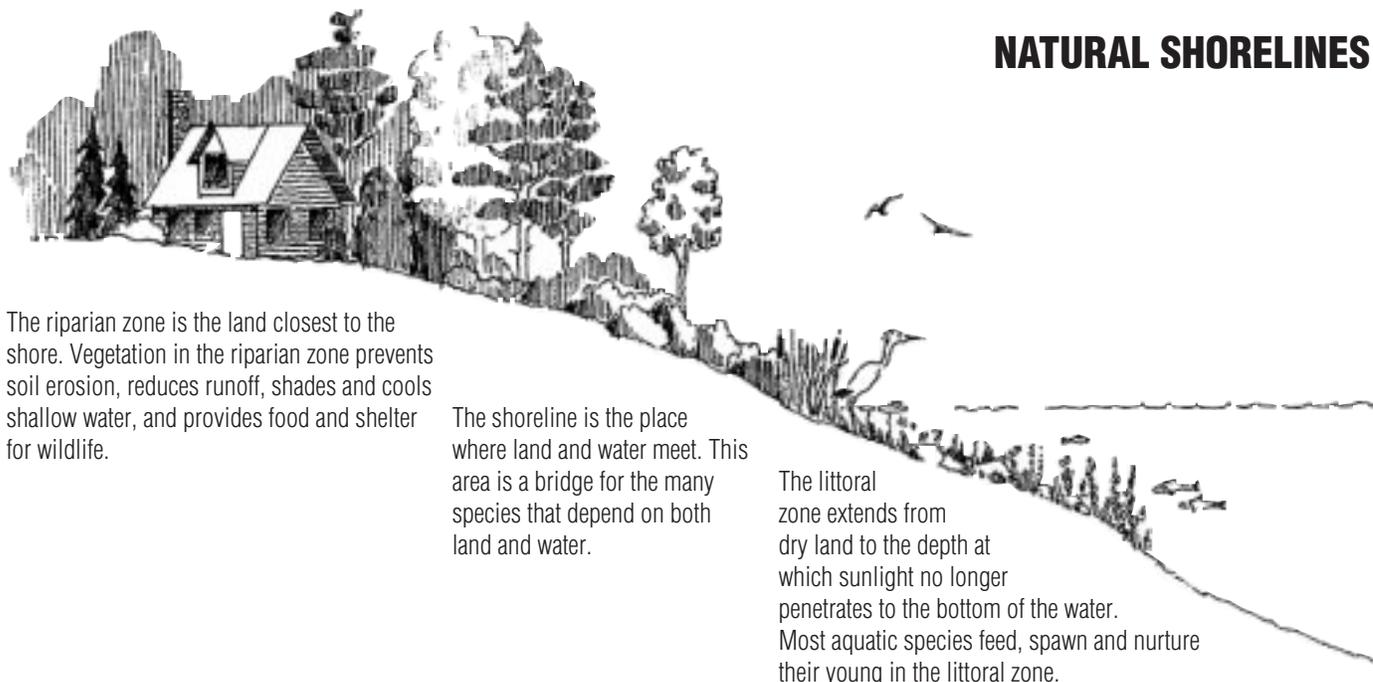
Conservation Authorities, the Ontario Ministry of Natural Resources and Parks Canada have laws and regulations governing docks, boathouses and other shoreline structures.

### NATURAL SHORELINE VEGETATION

- provides shelter and food for wildlife
- supports spawning beds for fish
- enhances water quality
- traps runoff and excess nutrients
- shades and cools water
- discourages growth of algae and aquatic plants

### NO SHORELINE VEGETATION

- does not provide shelter and food for wildlife
- degrades spawning beds for fish
- decreases water quality
- increases runoff and excess nutrients
- warms water
- encourages growth of algae and aquatic plants

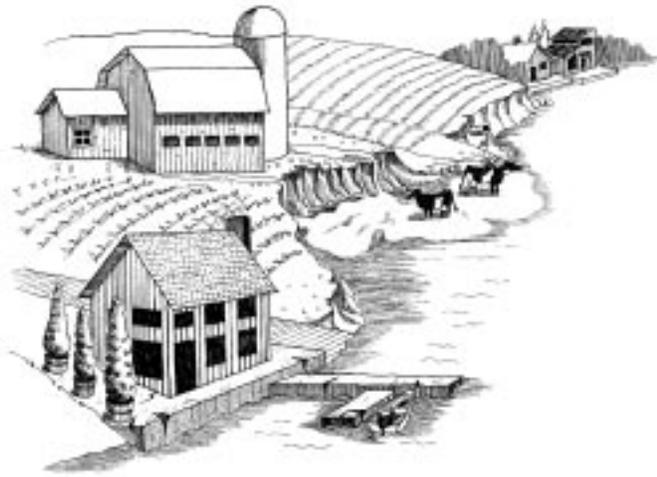


## NATURAL SHORELINES

The riparian zone is the land closest to the shore. Vegetation in the riparian zone prevents soil erosion, reduces runoff, shades and cools shallow water, and provides food and shelter for wildlife.

The shoreline is the place where land and water meet. This area is a bridge for the many species that depend on both land and water.

The littoral zone extends from dry land to the depth at which sunlight no longer penetrates to the bottom of the water. Most aquatic species feed, spawn and nurture their young in the littoral zone.



Many municipalities are also taking steps to protect shorelines through their official plans and zoning bylaws, which limit the type and location of shoreline structures.

Failure to comply with these laws can be expensive for owners and developers, who may face fines and be required to return areas to their natural states if they make changes to structures without permits.

*Canada Fisheries Act*, it is illegal to alter or destroy fish habitat. This could lead to fines of up to \$1 million or three years' imprisonment as well as court orders to return areas to their natural states.

## WHAT CAN BE DONE TO RESTORE SHORELINES?

Shoreline alterations can devastate aquatic life found in the littoral zone.

Fortunately, the degradation of shorelines can be reversed. More cottagers and landowners are learning about the value of natural shorelines. They are leaving the lawnmower at home, planting native plants and restoring shorelines.

How you protect or restore a shoreline depends on the conditions of the site and the energy and resources of the owner. There are four main strategies to choose from:

### 1 PRESERVATION

When purchasing a lakefront property, a natural shoreline is retained and access to the lake is designed to avoid shoreline damage.

### 2 NATURALIZATION

Degraded shorelines are left alone to return to their natural state.

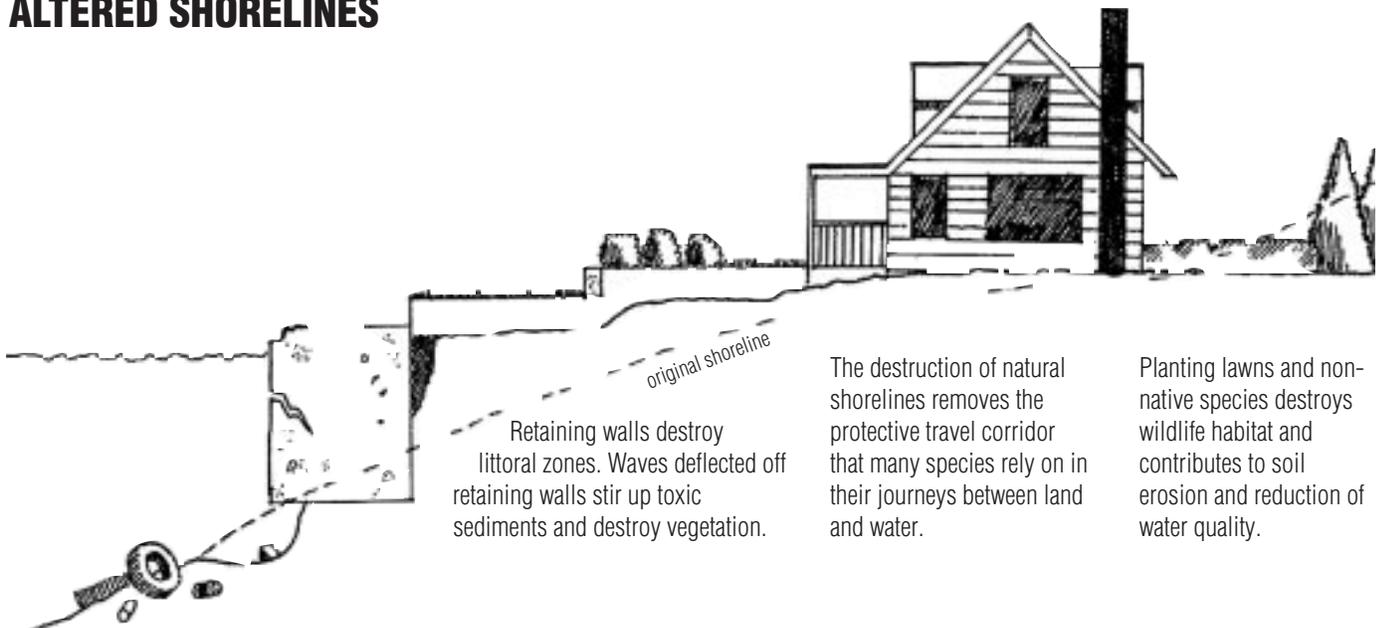
### 3 ENHANCEMENT

Native species are planted and non-native species are removed.

### 4 RESTORATION

Cleared areas are planted with native species.

## ALTERED SHORELINES



Retaining walls destroy littoral zones. Waves deflected off retaining walls stir up toxic sediments and destroy vegetation.

The destruction of natural shorelines removes the protective travel corridor that many species rely on in their journeys between land and water.

Planting lawns and non-native species destroys wildlife habitat and contributes to soil erosion and reduction of water quality.

## WHERE TO GET HELP

There are several sources of help for restoring shorelands in Ontario. In eastern Ontario, contact the Mutual Association for the Protection of Lake Environments in Ontario Inc. (MAPLE), a nonprofit organization dedicated to the preservation and restoration of natural shorelines and wetland. MAPLE works with individuals, lake associations, environmental groups, businesses and government agencies that want to improve lake environments. In recent years, MAPLE has co-ordinated several shoreline restoration projects in eastern Ontario.

MAPLE operates a nursery where it grows native Ontario plants for shoreline planting. MAPLE provides plants and technical assistance to local cottage associations. A MAPLE manual will soon be available. This manual will provide guidelines on classifying shorelines according to vegetation. Instruction on shoreline restoration, planting shoreline shrubs and sowing herbaceous plants will also be included.

To get in touch with MAPLE, write to:  
Mutual Association for the Protection of Lake Environments in Ontario Inc.  
P.O. Box 271  
Perth, Ontario  
K7H 3E4

Other sources of assistance are:

- Your local lake association or the Federation of Ontario Cottagers Association Inc. at (416) 284-2305
- The Muskoka Heritage Foundation at (705) 645-7393
- The Ontario Federation of Anglers and Hunters at (705) 748-6329
- Local conservation authorities

For more information on the preservation and restoration of shorelines, ask for the following publications from MAPLE or your local office of the Ontario Ministry of the Environment and Energy or the Ontario Ministry of Natural Resources:

- *The Lure of the Lake*, MAPLE Inc.
- *MAPLE 10, An Immediate Start to Shoreland Restoration*, MAPLE Inc.
- *The Self Help Shoreland Classification Survey for Lake Associations in Ontario*, MAPLE Inc.
- *Protecting the Environment When Building or Buying Your Dream Cottage*, Environmental Living, Volume 3, Ontario Ministry of Environment and Energy
- *Protecting the Environment at the Cottage*, Environmental Living, Volume 4, Ontario Ministry of Environment and Energy
- *Working Around Water*, Fact sheets, Ontario Ministry of Natural Resources

### WHAT ARE NON-NATIVE OR ORNAMENTAL SPECIES?

Native species are plants that grow naturally in a particular region. They are an important part of the ecology of an area. They feed and give shelter to wildlife.

Non-native or ornamental plant species are plants that were introduced from other parts of the world. They alter the natural ecology of the area, and do not support the same wildlife communities as native species. For instance, many birds do not feed on fruit produced by non-native plants. The introduction of non-native plants into areas can result in the loss of native vegetation.

#### Native Species

Virginia Creeper  
Red-osier Dogwood  
Native Willow

#### Non-native Species

Tatarian Honeysuckle  
European Buckthorn  
Purple Loosestrife

### NATIVE SPECIES

Shrub willow  
*Salix eriocephala*



Red osier dogwood  
*Cornus stolonifera*



Virginia creeper  
*Parthenocissus vitacea*



For more information contact:

#### LandOwner Resource Centre

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