

Protecting Michigan's Vanishing Native Lakeshore

Shoreline development along lakes often results in the “cleaning up” of the lot and alteration of the native vegetation. Trees are cut and pruned while dead trees and fallen limbs are chain sawed and burned. The forest undergrowth is often removed and replaced with a lawn. Herbicides are sometimes used to eliminate the shoreline plants. The wild native shoreline is replaced with a highly ordered “suburban lawn” setting. As a result, many lakes today have little or none of their original native shoreline remaining.



surface runoff and carry pollutants to the lake. On the suburban lawn, tree cover is often greatly reduced. The undergrowth might be completely removed and the leaf covered forest floor replaced with flat lawn. Under these conditions, very little water is intercepted or soaks into the ground. Most of it flows overland and picks up pollutants such as fertilizers, pesticides, sediments, oil, grease and pet waste. These pollutants are carried with the water and deposited in the lake.

What is lost with the wild shore?

The shoreline is a transition zone where aquatic species such as frogs, turtles and fish merge with land species such as minks, raccoons and blue herons. The wild lakeshore is one of the most biologically diverse, plant and animal rich environments on earth. As the environment transitions from water to land, it creates conditions for different plants to grow, offering a variety of habitats for many animals. The suburban lawn, however, is one of the least biologically diverse environments. Shoreline wildlife and birds generally cannot live or reproduce on the suburban lawn. They move out or are pushed to local extinction when development destroys their habitat.



Development along the lakeshore replaces the wild native environment with a highly ordered “suburban lawn” setting

Impacts of the “suburban lawn” on a lake

A native lakeshore is like a giant living sponge and filter. Nearly all the water that falls as rain is intercepted by the leaves and branches of the vegetation or soaks into the rich soils. Very little water is left to run across the land as

In addition to accelerating the movement of pollutants off the land, the suburban lawn introduces new sources of lawn maintenance fertilizers and pesticides. Excessive use of fertilizers can stimulate growth of nuisance aquatic plants, including filamentous and blue-green algae.

Another pollution problem associated with a suburban lawn is soil erosion. When a lawn is planted to the water's edge, the shallow grass roots are not able to withstand the forces of waves and ice. Over time, the lawn and land are eroded away and washed into the lake. The homeowner may resort to rocks and/or a seawall to stop the erosion and loss of land. This hard armoring of the beach further diminishes the native shore and wildlife habitat.



Excessive use of lawn fertilizers can stimulate growth of nuisance aquatic plants such as filamentous algae

Using the native shoreline to protect the land and water

When developing a lakefront lot, the lawn and buildings may be blended into an artistic natural setting rather than replacing the wild lakeshore with turf, rocks and steel. Through proper landscape design, it is possible to create a unique lakefront home instead of a typical subdivision house and yard. In addition to creating a unique lot, the

natural shoreline will minimize pollution, protect the shoreline from erosion and provide a home for the wildlife that live at the water's edge.



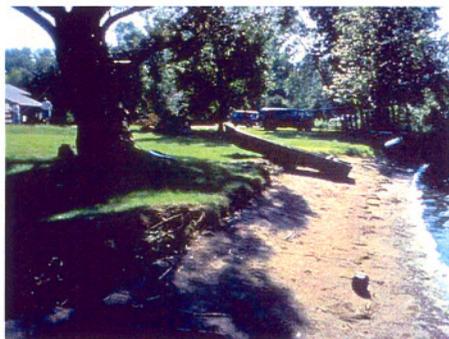
Use of the wild native shore can create a unique lakefront home

When constructing a distinctive waterfront home consider the following:

- Remove only those trees necessary to build and protect the house and open a view to the lake
- Keep the lawn away from the lake. Use plants that need little watering or fertilization
- Maintain brush cover on steep sloping lands
- Allow a buffer zone of native vegetation along the lakeshore
- Keep boating and swimming areas as small as possible to maintain the native shoreline
- Avoid retaining walls; instead use long-rooted native plants and shrubs or rock rip-rap to control erosion. Always line rock with geotextile fabric.

Restoring the native shoreline

If a lakefront home already has a suburban lawn to the edge of the lake, the wildlife habitat will be minimal and an erosion problem may already be present. The native shoreline can be reestablished by planting a lakeshore buffer zone. This zone might consist of low growing shrubs and flowers, with taller trees along the lot sides. This combination of plantings maintains the view of the lake and screens other lot development from view.



When a lawn is planted to the water's edge, the lawn and land are slowly eroded away and washed into the lake

When constructing the buffer zone and designing the plantings, the following guidelines should be considered:

- The buffer zone should extend 25 to 50 feet out into the water and up onto the land. It should occupy 60 to 80 percent of the lot's lake frontage
- The buffer zone can be divided into three planting areas: 1) aquatic plants which grow below the water surface; 2) moist-soil plants, such as cattail, bulrush, arrowhead and pickerelweed, growing in the wave-washed area; and 3) dry-soil plants, such as native grasses, wild flowers, shrubs and trees growing up slope from the waters edge
- Plants used in the buffer zone should be native plants that historically grew along the lakeshore in the local area. Native plants will be easier to establish, grow more luxuriously and require less maintenance. They also provide the structure, habitat and seed crop that local animals utilize in feeding, nesting and resting
- The lawn should be kept back from the lake's edge but may meander among the plantings as a pathway from the yard to the swimming and boating area

Creative use of the lawn and native plants in artistically designed assemblages can prevent erosion, restore wild native habitat and associated wildlife and protect the lake from surface runoff.



Islands of low growing shrubs and flowers can maintain the lake view

More information about native lakeshore management is available in the book

Lakescaping for Wildlife and Water Quality, written by C. Henderson, C. Dindorf and F. Rozumalski and published by the Nongame Wildlife Program, Minnesota Department of Natural Resources. It is available through the MSU Extension Bulletin Office, Agriculture Hall, Michigan State University, East Lansing, MI 48824; 517-353-6740 or order online at: web2.msue.msu.edu/bulletins/mainsearch.cfm. Request inventory number WQ 57.

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