

Buffer Zones

The goal of creating a buffer zone is to restore the shoreline - both on shore and in the water - with vegetation and other natural materials that occurred there originally.

How Buffer Zones Can Help Homeowners

- ◆ Emergent vegetation, like bulrushes and cattails, reduces shoreline erosion caused by wind and boat traffic.
- ◆ Natural vegetation serves as a filter strip helping prevent lawn fertilizer and pesticide runoff from reaching the lake.
- ◆ Aquatic vegetation helps purify lake water by removing contaminants and calming water, which allows suspended soil particles to settle to the lake bottom.
- ◆ Buffer zones reduce the amount of fertilizer and herbicides needed on a lakeshore property because the resulting lawn is smaller, and native plants in the buffer zone do not need fertilizer or herbicides.
- ◆ Buffer zones reduce the acreage of lawn and the amount of time needed for mowing and lawn maintenance.
- ◆ Unmowed wildflowers, grasses, and sedges along the shore create a biological barrier that will deter Canada geese from loitering on the lawn.
- ◆ Buffer zones provide habitat for numerous wildlife species such as birds, butterflies and dragonflies.



Some Additional Resources/Websites:

- ◆ Riparian Buffer - http://dnr.wi.gov/topic/shorelandzoning/documents/lit_review.pdf
- ◆ Shoreline Vegetation Protection - dnr.wi.gov/topic/shorelandzoning/documents/WT54200/chapter10.pdf
- ◆ UW-Extension publications
 - ◇ *GWQ038 - Protecting and Restoring Shorelands* - <http://learningstore.uwex.edu/>
 - ◇ *GWQ039 - Protecting Our Living Shores* - <http://learningstore.uwex.edu/>
- ◆ Lakeshore Woody Habitat in Review - <http://dnr.wi.gov/topic/fishing/documents/outreach/litwoodyhabreviewwolver2012.pdf>
- ◆ Your local Library.
- ◆ Your local Department of Natural Resources.
- ◆ Your local Land and Water Conservation Department office.



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The Value of Woody Habitat on Lake Shorelines

Why is Wood Good?

For all who use and enjoy
the lakes of Oneida County
and surrounding areas.



Woody Habitat on Lakes

Shorelines and shallow waters are the most ecologically important zones of a lake. Nearly every type of wildlife spends part of its life cycle feeding, spawning, nesting, or finding shelter along the shore interface. Unfortunately, these areas are at risk as:

- ◆ lakes become more settled.
- ◆ new development leads to unnatural docks and buildings.
- ◆ aquatic plants, important for wildlife, are removed.

When shorelines are cleared or developed, they offer much less natural structure for wildlife. This “tidying up” reduces nesting potential for popular species like loons. One of the most damaging results of shoreline development is fallen trees and branches prevented from becoming important, submerged woody habitat. Fallen trees are one of the most valuable habitat structures on shorelines.

This **Coarse Woody Habitat (CWH)** (*less than 4 inches*) is lost as humans remove fallen trees and cut others from the shore. Lakes that use to have 800 fallen trees per mile, now show fewer than 10; a loss of habitat for fish, frogs, turtles, nesting water birds, and mammals like beaver and muskrat.

Other than vegetation buffers, restoring woody habitat along shorelines is the most important thing for lake health!



This fallen tree was left on the shoreline to provide a feeding perch for water birds like herons.

Which Species Benefit?

Coarse Woody Habitat (CWH) offers positive effects in an ecosystem. Thousands of aquatic insect species thrive, providing a food source, and resulting in spawning grounds and nurseries for fish.

FISH: Studies have demonstrated that:

- ◆ Up to 16 species utilize CWH in a single lake.
- ◆ Valuable prey species (like Yellow Perch) will decline in lakes without sufficient CWH to allow them to deposit their eggs on a woody surface.
- ◆ Newly-hatched Large and Smallmouth Bass use woody structure for refuge, and adults display overall increased growth rates.
- ◆ Bluegill are consistently found using CWH and have been observed shifting to small nooks and crannies to avoid predation.

AMPHIBIANS /REPTILES: Coarse structures contain key habitats that amphibians use year-round for foraging, cover, or over-wintering. Shorelines with more CWH in a lake are known to have greater survival rates of salamander and frog larvae.

BIRDS/MAMMALS: Wood ducks, trumpeter swans, Blue Heron, common mergansers and coots use CWH for nesting and brood habitat, where below lies an abundance of tadpoles, fish and insect larvae. CWH also provides above water nesting supports for red-winged blackbirds, marsh wrens, and black crowned night-herons. Small mammals lodge in the shallows, and lakeshore vegetation provides burrows and nesting sites for mink and otter.



Shoreline Structures

TREE DROPS

Tree Drops are typically single trees that are partially submerged and anchored to the shore, intended to restore woody habitat to the lake.

HALF LOGS

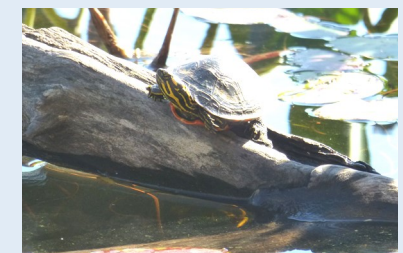
Half Logs are aimed at increasing suitable nesting areas for nest-building fish like Smallmouth Bass.

FISH STICKS

Fish Sticks are large, woody structures intended to restore woody habitat in lakes by adding trees to the shore area. They are structures consisting of whole trees grouped together or single trees close together, anchored to the shore, and partially or fully submerged.



Shoreline Structures can unite lake users by offering both shoreline protection AND increased fishing opportunities. Before creating your own shoreline structure or any woody habitat on your lakeshore, check with your local Department of Natural Resources (DNR) or your county's Zoning Department for the most up-to-date local ordinances.



Reptiles, like this painted turtle, perch on logs to absorb the sun's warmth.