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## Restoring Shorelands: A Growing Solution

By Carmen Wagner

When natural shorelands are replaced with traditional suburban landscaping, a myriad of problems can arise. The good news is that from the Chesapeake Bay, to the Rock River in Wisconsin, to shores of the Pacific in Washington, people and communities are recognizing the benefits of natural shorelands and actively restoring them. So, how do natural shorelands benefit the natural world? (And yes, that includes humans.)

### Water Quality

Native shoreland vegetation traps and filters sediment and debris from rainfall and snow melt. Depending on a variety of factors, 50% - 100% of the solid particles can settle out as plants slow sediment-laden run-off. In general, deeper shorelands (in terms of distance between plant-life and water), are more effective than shallow shorelands, and trees, shrubs, and grasses are more effective than grass alone. On slopes of less than 15%, most sediment settling occurs within the first 35 feet. Greater distances are needed on steeper slopes or where sediment loads are particularly high. To

filter fine-grained sediments, such as silt or clay, more depth may also be needed.

### Aquatic Habitat

Shorelands protect aquatic habitat by improving the quality of adjacent waters through shading, filtering, and moderating water flow. On cold-water fisheries (such as trout streams), trees and tall grasses shade the stream channel, maintaining cooler, more constant water temperatures, especially on small streams. Cooler water holds more oxygen and reduces stress on fish and other aquatic creatures. A few degrees difference in temperature can have a major impact on their survival. Warm-water fisheries do not require as much shade, but the fish [continued on page 2]



Allowing native plants to grow along the shoreline provides privacy for humans, habitat for birds and animals, slows run-off, and stabilizes the shoreline.



[continued from page 1] and aquatic insects still benefit from the cleaner water filtered through natural shorelands.

Leaves, twigs, and other organic matter from shoreland vegetation are both lunch and breeding grounds for aquatic insects. These insects in turn feed many others farther up the food chain. Besides providing insects with the food and cover they need, trees supply woody cover in lakes and streams. For example, fallen logs and branches provide places for fish to rest and hide from predators. Birds and turtles also use the woody cover along the shore as resting places and basking spots.

The rich diversity of emergent, floating, and submergent plants found just offshore provide important habitat for aquatic animals. Some fish, such as bluegills, graze directly on the leaves and stems of these aquatic plants, while ducks and other animals feed off the bugs and other delicacies found living on or beneath the plants. These shallow plant beds are also important spawning areas for a number of species of fish including bass, bluegills, and northern pike.

#### **Wildlife Habitat**

Shorelands have the unique ability to support species from both adjacent uplands and waterways. As roads and houses creep into shoreland areas, the behavior, reproduction, and survival of animals can be affected as human activities and structures degrade the surrounding wildlife habitat. Although researchers have estimated that animal habitat can be affected as far as up to 1,500 feet away from human activities and structures, it may not be realistic to expect to provide such a wide berth. But preserving and restoring shoreland vegetation can help limit the impact of these disturbances, which might include subtle changes in vegetation and animal travel patterns. In other words, how you manage your shoreline will determine how attractive it is to birds, frogs, turtles and other wildlife.

Wood ducks, for example, use trees with a minimum diameter of 14 inches (at breast height) for nesting, but prefer trees between 24 and 30 inches in diameter. Kingfishers use shrub cover along the water to conceal their broods and common loons rely on shoreland vegetation to build their mounded nests. If these vital shoreland habitats are not protected, many shoreland-dependent species including birds, frogs, mammals, and reptiles, will disappear and may eventually be lost from entire lake and river systems.

#### **Property Values**

Restored shorelands not only provide habitat, but may also increase property values. One study found that home values near stream restoration projects were worth 3% to 13% more than similar homes on unrestored streams. The perceived value of the restored streams included the enhanced shoreland buffer, wildlife habitat, and recreation opportunities resulting from the restoration. Another study found that good water quality, which natural shorelands help to protect, added as much as \$200 per frontage foot to the value of shoreland properties.

#### **A Vision for the Future**

Lakes, rivers, and shorelands provide us with many benefits. Some are as simple as enjoying the view from the end of a pier, while others are more complex and less apparent, like protecting water quality and preventing shoreline erosion. Next time you take a trip to the water's edge, take a moment to appreciate the diversity and beauty found there. Whether we enjoy fishing, water-skiing, or the simple beauty of a white water lily, by protecting and restoring our shorelands, as individuals, we can help to ensure that clean water, abundant fish and wildlife, and beautiful vistas are enjoyed for many years to come.

#### **Additional Resources**

Lakescaping for Wildlife and Water Quality, Minnesota Department of Natural Resources, 1-800-657-3757 or [www.comm.media.state.mn.us/bookstore/](http://www.comm.media.state.mn.us/bookstore/)

Wetland and Stream Corridor Restoration Update, U.S. EPA, [www.epa.gov/owow/wetlands/restore/update/](http://www.epa.gov/owow/wetlands/restore/update/)

Chesapeake Bay Riparian Handbook: A Guide for Establishing and Maintaining Riparian Forest Buffers, USDA, [www.chesapeakebay.net/pubs/subcommittee/nsc/forest/handbook.htm](http://www.chesapeakebay.net/pubs/subcommittee/nsc/forest/handbook.htm)

*Carmen Wagner works for the Wisconsin Department of Natural Resources. Artwork, © Sheri Snowbank, Barronett, WI, 54813.*

For more information about native shoreline plants suitable for your ecoregion, contact the local office of your state's department of natural resources, your lake association, or, if there is one, your state's native plant society.

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