

Protecting and Enhancing Shorelands for Wildlife

What is a shoreland area?

Shorelands, often called riparian areas, refer to naturally vegetated areas bordering a lake, pond, stream, or other wetland. By nature of their close proximity to the water, riparian areas play an important role in maintaining the health of the surrounding environment. Land that is within 100 feet of the water body is of particular importance. This is considered the minimum distance needed to minimally protect water quality and provide some, but not all, habitat for wildlife. In addition, vegetated shoreland areas stabilize shorelines, reduce flood waters, moderate water temperatures, and filter sediment and nutrients.

Why are shorelands important to wildlife?

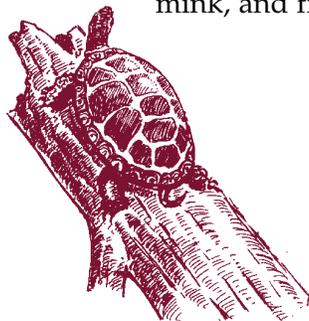
Many species of wildlife travel between the water and adjacent shoreland areas to find food, nest sites, or to escape from predators. Thus, the water and upland areas are inseparable as habitats.

For example, turtles spend summers in the water feeding on aquatic organisms and loafing in the sun on floating logs. They leave the water to find suitable nest sites to lay their eggs and sometimes to search for food. Vegetated shoreland areas provide safe passage for the turtles to reach their destination.

The diversity of plant life associated with shoreland areas supports a rich diversity of insects, amphibians, reptiles, birds, mammals, and other animals. The value and importance of maintaining a minimum 100 foot naturally vegetated shoreland area for wildlife is described below.

Shoreland areas provide food:

- Trees, shrubs, and vines produce a variety of berries, seeds, and nuts. Common shoreland shrubs and vines such as highbush blueberry, dogwoods, viburnums, shadbush, chokeberries, grape vine, and Virginia creeper yield berries eaten by many songbirds and mammals. Oaks, hickories, and hornbeams produce nuts that are eaten by squirrels, deer, black bear, grouse, blue jays, wood ducks, and wild turkeys.
- A diversity of shoreland plants attract insects which are critical food for birds and their young. Insects, such as dragonflies, that feed among the vegetation along the water's edge often lay their eggs in water producing aquatic larvae that are food for frogs, salamanders, snakes, turtles, herons, mink, and fish.



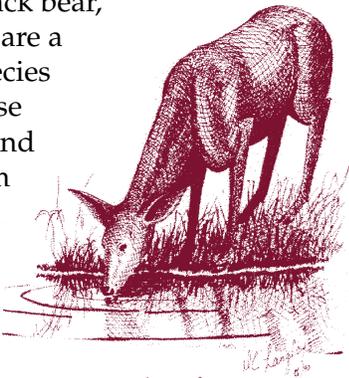
Shoreland areas shelter wildlife:

- Live trees and standing dead trees (snags) with cavities offer nest sites for wood ducks, mergansers, owls, woodpeckers, nuthatches, wrens, and bluebirds in shoreland areas. Squirrels, bats, fishers, porcupines, and gray foxes also use these cavities as resting areas. Kingfishers, swallows, ospreys, and hawks perch on and feed from the branches of snags that overhang water.
- Vegetation in shoreland areas provides safe cover for ground nesting mallards and black ducks. Warblers, flycatchers, blackbirds, and sparrows nest in the thick shrubby vegetation in shoreland areas. Wood, spotted, and Blanding's turtles spend much of the summer on dry land not far from shorelands seeking shelter from predators and severe temperatures. Thick vegetation in the shoreland area is critical to their survival.



Shoreland areas support wildlife travel corridors:

- Many animals travel far and wide in search of food and mates. Moose, deer, black bear, mink, and otter are a few wildlife species that regularly use forested shoreland areas to get from one place to another. These often linear corridors of vegetation enable wildlife to travel across the landscape relatively undisturbed by humans. Shoreland areas are most beneficial as travel corridors when they're connected to larger blocks of valuable wildlife habitat.



Are you a shoreland owner?

A landowner who is fortunate enough to enjoy a waterfront property also has the opportunity to help protect an important part of nature. Activities that occur within shoreland areas can affect water quality as well as the quality of habitat for wildlife. Fortunately, with a little planning, landowners can enjoy swimming, fishing, nature study, and boating as well as help maintain clean water and healthy surroundings for themselves and other creatures.

Getting started

If you are a shoreland owner and want to maintain, enhance, or restore a shoreland area there are some simple and rewarding steps that can get you started.

1. Look at where your property is in relation to your neighbors, your community, and the surrounding area. One way to begin this search is to use maps. Tax maps available at your town hall show the property boundaries of all landowners in your community. Aerial photos (available from Natural Resource Conservation Service--see additional help) and topographic maps (call 1-800-USA-MAPS for information) offer great perspectives on the lay of the land. Your local Conservation Commission may have additional maps of the town's natural resources.
2. Discover what's on your property. Survey the unique features of your land such as kinds of plants (trees, shrubs, flowers, and vines), sights and sounds of wildlife (woodpecker holes, tracks, nests, bird songs and frog calls), and historical features (stonewalls, wells, old foundations).



3. Create a sketch or map of your property noting the unique features you've discovered. Keep a regular journal of your observations and to track your activities.
4. Develop some short and long term personal goals for you and your property. Long term planning is important to ensure that shoreland areas will be maintained into the future. Depending on the current condition of your shoreland property you may want to do one of the following:
 - maintain an existing shoreland area
 - restore an area that was deforested
 - enhance an area by planting trees, shrubs, vines, and other plants that have wildlife value.

How can you maintain or restore shorelands for wildlife?

1. Retain a buffer of natural vegetation including trees, shrubs, and other plants along the water's edge. This is the most effective method of protecting the shoreland area. A minimum 100 foot buffer is recommended. However, if 100 feet is not feasible, retain as much as possible since some is better than none. A buffer wider than 100 feet is of even greater value to wildlife.
2. Leave standing dead trees (snags) or live trees with cavities in the buffer area unless safety is a particular concern.
3. Leave fallen logs and "tangles" of shrubs and vines as they offer excellent feeding areas and shelter for many species of wildlife.

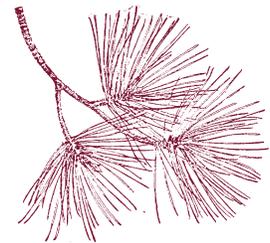


4. Retain a natural forest floor with its layer of fallen leaves and twigs. Raking or removing leaves and twigs is not recommended as it accelerates runoff into the water and degrades the habitat for small creatures that live amongst the leaf litter.
5. Reduce or minimize the amount of lawn near the water's edge. A lawn doesn't provide sufficient cover or food for most wildlife.
6. Prevent soil, chemicals and other pollutants from running off your property into the water.

What can be planted to enhance a shoreland area for wildlife?

Shorelands that have been deforested or that have minimal natural vegetation can be enhanced by supplemental planting. The table on page 4 should aid you in choosing the types of trees and shrubs to plant. See page 6 for other sources of information.

Before buying any plants, consider the soils and climate in your area. Check with local nurseries, your county UNH Cooperative Extension office, county Conservation Districts, and the State Forest Nursery for information on planting and for sources of plants.



Recommended Plantings and Their Wildlife Value

Trees

Balsam fir

- seeds eaten by grouse, blue jays, chickadees, and nuthatches
- foliage provides excellent winter cover and nesting sites for mourning doves, blue jays, and robins
- deer, moose, and grouse feed on needles in winter

White spruce

- seeds eaten by woodpeckers, chickadees, red-breasted nuthatch, thrushes, purple finch
- used by mourning doves, woodpeckers, robins, kinglets, warblers, chipping sparrow, and finches as nest sites.
- needles and twigs eaten by deer and snowshoe hare in winter

White pine

- grouse and turkey feed on the needles
- seeds eaten by mourning doves, woodpeckers, chickadees, nuthatches, cedar waxwings, cardinals, finches, sparrows, crossbills, grosbeaks, chipmunks, squirrels
- used as nest sites by woodpeckers, nuthatches, cardinals, grackles, finches, sparrows
- large pines used by hawks, eagles, and owls as roost and nest sites

Eastern hemlock

- seeds eaten by chickadees, goldfinches, crossbills, pine siskins, red squirrels
- used as nest sites by mourning dove, blue jay, boreal chickadee, robin, wood thrush, warblers, crossbills
- dense hemlock excellent winter cover for grouse, turkey, deer
- bark is favorite food of porcupine

Oak (red, white)

- fruits (acorns) eaten by ducks, turkeys, grouse, woodpeckers, blue jays, crows, deer, bears, raccoons, squirrels, chipmunks
- deer feed on leaves and twigs

Maple (red, sugar)

- deer, moose, rabbit, and hare feed on twigs and bark
- good nest sites for robins, goldfinches, orioles, and grosbeaks
- seeds eaten by turkey, grouse, robin, cardinal, rose-breasted and evening grosbeaks, chipmunks, squirrels

Trees Continued

Shadbush

- June-August fruits eaten by grouse, woodpeckers, catbird, mockingbird, robin, thrushes, cedar waxwing, cardinal, Baltimore oriole, scarlet tanager, rose-breasted grosbeak, bear, chipmunk, squirrel

Birch (sweet, yellow, paper)

- buds eaten by grouse and goldfinches
- seeds eaten by ducks, turkey, blue jay, tufted titmouse, goldfinches, redpolls, pine siskins
- yellow-bellied sapsucker excavates nest cavities and probes for sap
- moose, hare, porcupine and beaver feed on twigs and bark

Shrubs

Alder (speckled, smooth)

- buds and seeds eaten by ruffed grouse; seeds eaten by redpolls, siskins, goldfinches
- provides nest sites and cover for willow and alder flycatchers, yellow warbler, red-winged blackbird, and woodcock

Dogwood (silky, gray, red-osier)

- fruits eaten by turkey, grouse, flicker, catbird, robin, wood thrush, bluebird, waxwings
- nest sites for catbirds and goldfinches
- buds eaten by grouse

Winterberry

- fruits persist into winter and eaten by flicker, crow, mockingbird, catbird, brown thrasher, robin, hermit thrush, cedar waxwing, red-winged blackbird

Elderberry and Blueberry

- fruits eaten by turkey, mourning dove, mockingbird, catbird, brown thrasher, robin, wood thrush, veery, bluebird, cedar waxwing, cardinal, rose-breasted grosbeak, bear, chipmunk, white-footed mouse

Viburnum (arrowwood, nannyberry, hobblebush, highbush cranberry)

- fruits eaten by robins, thrushes, bluebirds, cedar waxwings, vireos, chipmunks
- twigs and bark eaten by deer

Where to get additional help

There are a wealth of resources available to shoreland owners in New Hampshire. The best place to start is at the local level as this is the most accessible.

- Local community - (Conservation Commission and Planning Board)
- UNH Cooperative Extension (County offices - see page 7)
- County Conservation Districts (page 7)
- Audubon Society of New Hampshire (603) 224-9909
- NH Dept. Of Environmental Services (Shoreland Protection Act) (603) 271-3503
- NH Division of Forests and Lands (Forestry Laws) (603) 271-3456
- NH Division of Forests and Lands (State Forest Nursery) (603) 271-3456
- US Fish and Wildlife Service (603) 225-1411
- Natural Resource Conservation Service (NRCS) (603) 868-7581

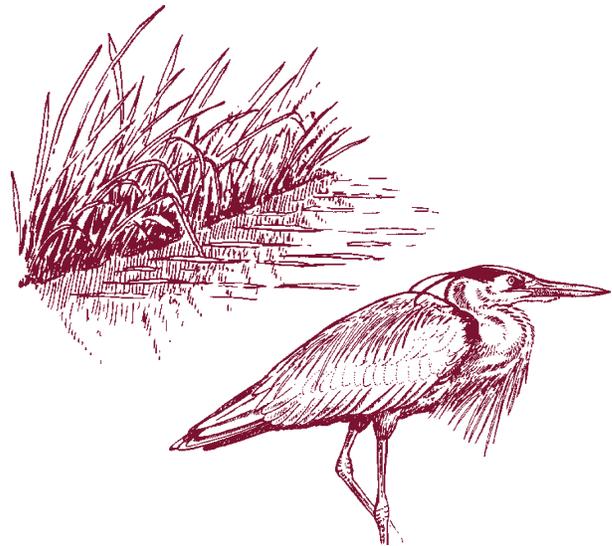
Additional References

- Chase, V.P. , L.S. Deming, and F. Latawiec. 1995. Buffers for Wetlands and Surface Waters: A Guide for New Hampshire Municipalities. Audubon Society of New Hampshire. Concord, NH. 80 pp.
- Healy, W.M., and J.D. Gill. 1974. Shrubs and Vines for Northeastern Wildlife. US Forest Service. 180 pp.
- Lobdell, Ray. 1994. Guide to Developing and Redeveloping Shoreland Property. North Country Resource Conservation and Development. Plymouth, NH. 38 pp.

- Welsch, D.J. 1991. Riparian Forest Buffers: Functions and Design for Protection and Enhancement of Water Resources. US Forest Service. 20 pp.
- Welsch, D.J., D.L. Smart, J.N. Boyer, P. Minkin, H.C. Smith, T.L. McCandless. 1995. Forested Wetlands: Functions, Benefits, and the Use of Best Management Practices. US Forest Service. 62 pp.
- Winslow, R., Jr. 1995. Planting Shoreland Areas. UNH Cooperative Extension fact sheet, Durham, NH. 4 pp.

Credits

Written by Rick Winne (UNH student intern), Frank Mitchell (UNH Cooperative Extension Water Resources Specialist), and Ellen Snyder (UNH Cooperative Extension Wildlife Specialist)



UNH Cooperative Extension County Offices

Belknap County
PO Box 368
Laconia NH 03247
524-1737 FAX: 524-2574

Carroll County
PO Box 367
Conway NH 03818
447-5922 FAX: 447-1035

Cheshire County
33 West Street
Keene NH 03431-3355
352-4550 FAX: 355-3026

Coos County
RR 2 Box 242
Lancaster NH 03584-9612
788-4961 FAX: 788-3629

Grafton County
RR 1 Box 65F
N. Haverhill NH 03774-9708
787-6944 FAX: 787-2009

Hillsborough County
Milford Office
468 Route 13, South
Milford NH 03055
673-2510 FAX: 673-0597
Goffstown Office
329 Mast Road, Unit 3
Goffstown, NH 03045-4518
624-9481 FAX: 624-9469

Merrimack County
327 Daniel Webster Highway
Boscawen NH 03303
225-5505 or 796-2151 FAX: 796-2271

Rockingham County
113 North Road
Brentwood NH 03833-6623
679-5616 FAX: 679-8070

Strafford County
259 County Farm Road Unit 5
Dover NH 03820-6015
749-4445 FAX: 743-3431

Sullivan County
24 Main Street
Newport NH 03773
863-9200 FAX: 863-4730

Conservation District Offices and Natural Resources Conservation Service

Belknap County Conservation District Office
Federal Building, 719 Main Street Room 203
Laconia NH 03246-2772
528-8713 FAX: 528-8783

Carroll County Conservation District & NRCS
44 Main Street, PO Box 533
Conway NH 03818-0533
447-2771 FAX: 447-8945

Cheshire County Conservation District & NRCS
Route 12 South, R 1 Box 315
Walpole NH 03608-9744
756-2988 FAX: 756-2978

Coos County Conservation District & NRCS
RR 2 Box 235
Lancaster NH 03584
788-4651 FAX: 788-2538

Grafton County Conservation District & NRCS
RFD 2 PO Box 148B
Woodsville NH 03785-0229
747-2001 FAX: 747-3477

Hillsborough County Conservation District & NRCS
Chappell Professional Building, 468 Route 13 South
Milford NH 03055-3422
673-2409 FAX: 673-0597

Merrimack County Conservation District & NRCS
10 Ferry Street Box 312
Concord NH 03301-5081
225-6401 FAX: 224-8260

Rockingham/Strafford County NRCS
243 Calef Highway, Telly's Plaza
Epping NH 03042
679-1587 FAX: 679-4658

Rockingham County Conservation District
118 North Road
Brentwood NH 03833-6619
679-2790 FAX: 679-2860

Strafford County Conservation District Office
259 County Farm Road Unit 3
Dover NH 03820-6015
749-3037 FAX: 743-3667

Sullivan County Conservation District Office
24 Main Street
Newport NH 03773-1500
863-4297 FAX: 863-4730



Visit Our Web Site at <http://ceinfo.unh.edu>

UNH Cooperative Extension programs and policies are consistent with pertinent Federal and State laws and regulations on nondiscrimination regarding race, color, national origin, sex, sexual orientation, age, disability or veteran's status. College of Life Sciences and Agriculture; County Governments; NH Department of Resources and Economic Development, Division of Forests and Lands; NH Fish and Game; US Department of Agriculture and US Fish and Wildlife Service cooperating.

August 1997