

Planting & Maintaining Vegetation Areas

Preventing erosion and stabilizing soils

Lake friendly living
means using lakeshore
BEST MANAGEMENT
PRACTICES

BMP

Planting and Maintaining
Vegetation Areas

STANDARDS

Recreation Area

- Minimal lawn area
- Minimum of 15 feet width of vegetation along the shore
- Soil erosion is not occurring on site (no eroding pathways, or exposed dirt)

LAKE BENEFITS

Planting and maintaining vegetation areas naturally stabilizes the shore, filters and cleans dirty runoff, maintains greater privacy, increases property value, enhances scenic beauty, prevents erosion and allows for healthy habitat for fish, birds, and other important species.

MATERIALS

Compost and soil from native nurseries. Spade shovel, rake, and small hand shovel. A diversity of native plants representing flowering and fruiting plants, all size classes, and those specific to moisture and light needs of your site.

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Description: A mix of trees, shrubs and un-mown groundcover along the lakefront.

Purpose: Restore the shoreline with vegetation of different types (groundcover, shrubs and trees) to stabilize the shore and prevent erosion.

How to: Lake access can be provided with a path and a small clearing at the lake's edge (leave a row of woody vegetation on the bank), and shrubs and trees can be carefully pruned to allow views from camp.

The following suggestions can be used in many shoreline areas to restore a more natural shoreline:

- Place angular stone (6-8 inch size) at the toe of the bank. Angular rocks lock in place better than rounded or flat stone, and larger rocks cause erosion by concentrating the wave and/or ice energy elsewhere. The stone should extend approximately six inches above the average summer water level so most of the waves hit the stone. Lay filter fabric between the rock and soil of the bank to prevent the washing out of soil from behind the rock.
- Grade bank back to no steeper than 2:1 (two horizontal feet to every one vertical foot). An erosion control fabric might be needed to hold seed in place until the vegetation becomes established.
- Plant a mixture of native groundcover, shrubs and trees and allow them to naturalize. Don't mow around the woody vegetation. Annual careful pruning can keep vistas open.
- Seek technical assistance to design shore restoration, as the above suggestion may not work for very steep slopes and all soil types.

Any work that occurs in the lake (beyond the average summer water level) requires a [Shoreland Encroachment Permit](#). See BMP supplement *Understanding the Shoreland Encroachment Permit*.

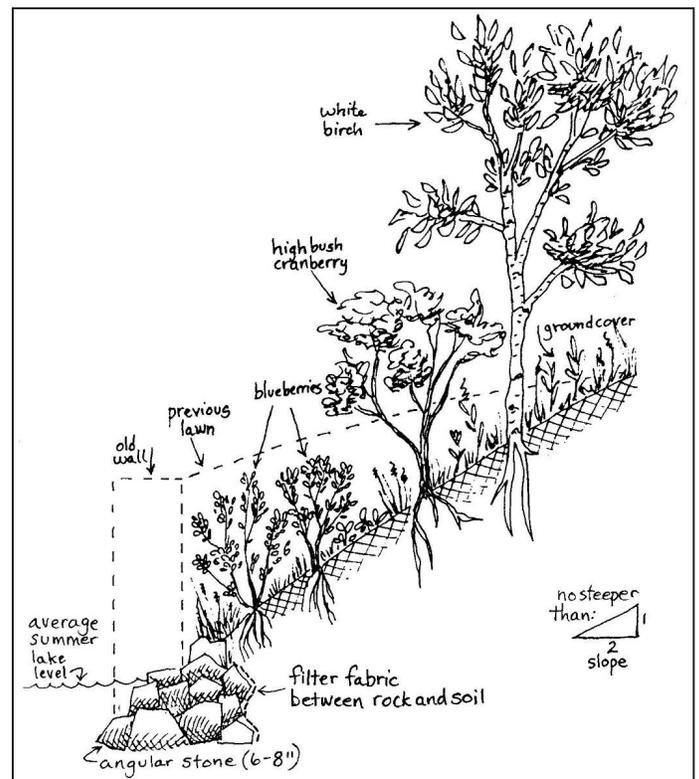


Illustration by Susan Warren.

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Planting a New Buffer: Choosing the Right Plants

Use native species. Many trees, shrubs and herbaceous plants used in landscaping are exotic or non-native species. A number of these plants have escaped from cultivations and threaten native species and diversity. In particular, avoid multi-flora rose, honeysuckles, and purple loosestrife. A complete list of species to avoid is available from the Watershed Management Division.

Trees and shrubs that are native to the northeast are resistant to most diseases and insects and provide good



food and habitat for wildlife. They are low maintenance and have the same landscape values of cultivated

species. Many nurseries will carry at least some native species.

To be sure you are getting native species, you need to know the scientific (Latin) name. Often the same common name is used for several varieties.

The best clue to what will grow well on your lakeshore is to look at undeveloped stretches of the lake and observe what is growing there. If you own land uphill of the lake you can transplant some species down to the lakeshore.

The following three tables list trees, shrubs and groundcover plants that grow well on lakeshores in Vermont. Note some species do better in either dry or wet soils, or acidic or alkaline soils. **A more complete description of plants for buffers can be found in “Native Vegetation for Lakeshores, Streamsides, and Wetland Buffers” available from the Watershed Management Division.**

| Trees | Soil Conditions | Mature Height | Aerial Spread | Comments |
|---|---|---------------|---------------|---|
| Red Maple (<i>Acer rubrum</i>) | Wet to dry | 75-100 ft | 50-75 ft | Bright red fall foliage, fast growing |
| Shadbush or Serviceberry (<i>Amelanchier canadensis</i>) | Drier soils | 10-15 ft | 8-10 ft | Lovely early spring flowers and fruits, (a favorite of birds), colorful foliage |
| Paper birch (<i>Betula papyrifera</i>) | Well-drained soil, tolerant of less well-drained situations | 75+ ft | n/a | White attractive bark, small cones are good winter bird food |
| Green ash (<i>Fraxinus pennsylvanica</i>) | Moist, tolerant of periodic flooding | 60-80 ft | 35-50 ft | Relatively rapid growth, attractive branching |
| White pine (<i>Pinus strobus</i>) | Moderately well-drained, creates acidic soils | 75-100 ft | 20-40 ft | Long-lived evergreen, good for wildlife, little grows under mature trees |
| Red oak (<i>Quercus rubra</i>) | Drier soils | 70-90 ft | 60-75 ft | Grand tree with reddish-brown bark, dark leaves, good for wildlife |
| Northern white cedar (<i>Thuja occidentalis</i>) | Moist, intolerant of acidic soils | 25-50 ft | 10-15 ft | Can be maintained as a hedge, easily shaped |



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| Shrubs | Soil Conditions | Light Tolerance | Mature Height | Comments |
|---|--|---|--|---|
| American hazelnut (<i>Corylus americana</i>) | Drier soils | Adapted to shade but does well on an edge or more open situations | 8-12 ft | Reddish and ornamental |
| Silky dogwood (<i>Cornus amomum</i>) | Wet to dry | Full sun but has fair shade tolerance | 6-8 ft | Relatively rapid growth, good food and cover for birds |
| Red-osier dogwood (<i>Cornus stolonifera</i>) | Moist to wet | Fair shade tolerance | 6-10 ft | Bright red stems that are especially distinct in winter, spreads rapidly by underground stems |
| Witch hazel (<i>Hamamelis virginiana</i>) | Moist | Shade tolerant | 8-16 ft | Delicate clusters of yellow flowers in the fall after leaves fall off, good as an understory species in moist areas |
| Winterberry (<i>Ilex verticillata</i>) | Wet to moist | Full or partial sun | 6-8 ft | Bright red berries persist into winter |
| Highbush or lowbush blueberry (<i>Vaccinium corymbosum</i> and <i>angustifolium</i>) | Acid, wet soils to drier conditions | Sun or shade | Up to 10 ft or 6-18 in. | Attractive form, edible berries |
| Nannyberry (<i>Viburnum lentago</i>) | Drier soils but tolerant of wet conditions | Sun or shade | Up to 20 ft | Spreads relatively aggressively, retains berries into late winter and thus good for birds |
| Groundcovers | Site Conditions | Height | Comments | |
| Cinnamon fern (<i>Osmunda cinnamomea</i>) | Wet soils, mostly shady | 2-4 ft | Vase-shaped clumps, attractive fertile fronds | |
| Interrupted fern (<i>Osmunda claytonia</i>) | Wet to somewhat dry soils, mostly shady | 2-3 ft | Vase-shaped clumps | |
| New England aster (<i>Aster novae-angliae</i>) | Fertile soil, adequate moisture, full sun | 4 ft | Attractive dark purple late summer flowers, will spread by rhizomes | |
| Bunchberry (<i>Cornus canadensis</i>) | Cool and shady, adequate moisture, acid soil | 6 in | Spreading groundcover of attractive leaves, white flowers, red berries | |
| Blue flag iris (<i>Iris versicolor</i>) | Wet soil, full sun | 1-3 ft | Spreads well, avoid the invasive yellow iris | |
| Partridgeberry (<i>Mitchella repens</i>) | Shady, acid soils | 1-2 in | Dark green attractive leaves, red berries, trailing plant | |
| Cardinal flower (<i>Lobelia cardinalis</i>) | Wet to moist soils, sun and shade | 2-4 ft | Brilliant red flowers loved by hummingbirds | |

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Planting & Caring for a Vegetation Area

1. Early spring or fall are the optimum times to plant.
2. Dig a hole twice as big as the root ball, and partially fill the hole with existing soil. If the soil is poor, compost or topsoil can be mixed in.
3. Be sure the plant is placed in the hole so that the original soil level on the stem matches the new soil level.
4. Press the fill around the plant using your hands, not feet. If the roots are bare, carefully spread them out in a natural shape and gently press soil in around them.
5. Water but don't fertilize the plants at planting time. Continue to water often so that the soil remains moist for at least 6 weeks. If planting has occurred in the summer, plan on watering the plant every other day for 8 weeks.
6. Pruning should not occur until the plant has had one or two full growing seasons (with the exception of removal of broken branches). Pruning too early will weaken the plant. When pruning do so lightly so as not to stress the plant. Eventually you can prune regularly and selectively, keeping hedges low and encouraging trees to grow tall.
7. Make sure you always have plenty of young "replacement" trees on the way. Either allow saplings to grow naturally, or occasionally plant new small trees in your buffer.
8. Do not mow or otherwise maintain a lawn under your buffer's trees and shrubs. The spongy duff layer of fallen or rotting plant material is critical to the water-cleansing function of a buffer.
9. Fertilize plants with composted vegetation or manure rather than chemical fertilizer.
10. Leave dead, dying or down trees unless they threaten to fall on structures; they are important habitat for numerous species of birds. If a tree right on the lake bank is dying and needs to be removed, cut it in the winter and leave the roots and stump in place. Note that a tree fallen in the water makes great fish habitat, so its OK to leave them there.



When planting a "bare root" tree or shrub, spread the roots out carefully and fill in soil by hand, pressing gently but firmly to avoid leaving air holes. Mulch around the newly planted tree or shrub to keep competition down while it gets established. Don't pile up the mulch around the stem. The mulch should be shallow right at stem so that the correct ground level is maintained.

A SWEET OPPORTUNITY FOR PLANTING BUFFERS

The Federation of Lakes and Ponds (FOVLAP) **Buffers for Blue Lakes Program** encourages land owners to plant blueberries on their properties. Planting native blueberries and other native fruits is sure to provide you a sweet treat every year.



Source: vermontlakes.org

You can choose from low bush, half-high and high-bush blueberries and plant them directly into your bank or add amended soil to encourage dense fruiting and vigor.

Elmore roots nursery is a great source for obtaining both soils and plants. For a guide on choosing the right blueberries for your buffer visit: www.vermontlakes.org/wp-content/uploads/pdfs/BFBL_Planning.pdf