

FOXBOROUGH CONSERVATION COMMISSION

40 South Street, Foxborough, Massachusetts 02035
www.foxboroughma.gov/conservation
508-543-1251



Buffer Zone Restoration Guidelines

“Wetlands are the kidneys of nature.”

Maintaining or restoring a small living filter of native vegetation along wetlands will intercept pollutants, slow down runoff from adjacent land, provide some wildlife habitat, and reduce the need for watering, pesticides and herbicides.



Cinnamon Fern

What is a Native Plant?

Native plants (also called indigenous plants) are plants that have evolved over thousands of years to adapt to the geography, hydrology, and climate of a specific region. As a result, native plants form communities with other plants that provide habitat for a variety of wildlife such as songbirds and butterflies.

Why Use Native Plants?

Because native plants are adapted to local conditions, they provide a beautiful, hardy, drought resistant, low maintenance landscape while benefiting the environment. Once established, they can save time and money by eliminating the need for chemicals, water, and lawn maintenance equipment.

NATIVE PLANTS:

- Do not require fertilizers
- Require less chemicals (if any) than lawns
- Require less water than lawns
- Help reduce air pollution
- Provide shelter and food for wildlife

What is a Buffer Zone and why is “restoring” it so important?

Wetlands, rivers, streams and ponds don't thrive in isolation, but depend on the land surrounding them to keep them healthy. Buffer Zones were set up by the State and Town to help keep wetlands healthy and do what they do best.

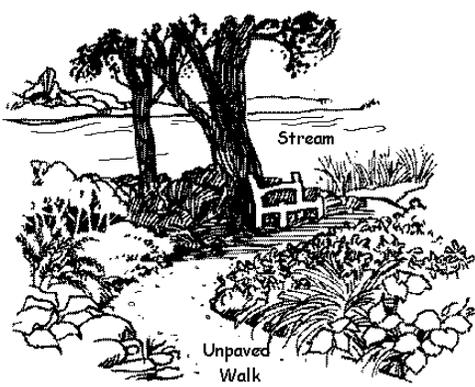
Adding native plants back to a Buffer Zone helps to maintain the water quality of ponds, streams and wetlands by filtering out stormwater runoff pollutants, providing wildlife food and habitat, and preventing erosion.

RESOURCES IN THIS GUIDE:

- **Appendix 1** lists Internet Resources;
- **Appendix 2** lists easy native trees, shrubs and groundcovers to use, based upon their moisture and light requirements; and
- **Appendix 3** lists local nurseries that may sell native plants.

PUTTING A RESTORATION PLAN TOGETHER

1 - DETERMINE SIZE AND LOCATION OF RESTORATION



A Buffer Zone does not need to look awful. It can be a relaxing, enjoyable space, as this picture demonstrates.

If your Order of Conditions requires buffer zone restoration, please discuss the Order's specifics with the Conservation Manager. Generally, the Conservation Commission (Commission) requires restoration areas at a ratio of at least 1:1 of the areas of proposed alteration to native replanting.

For example, if a homeowner wants to construct a 10'x10' (100 square foot) shed in an *existing* lawn that is only 10 feet from a wetland edge, then the Commission *may* allow the shed if the homeowner agrees to remove the lawn and restore a 100 square foot area (next to the wetland) with native vegetation.

Preferred Restoration Locations

- Areas that abut existing native vegetation
- Lawns that exist within the 25-Foot No Activity Zone

2 - CALCULATE THE NUMBER OF PLANTS NEEDED

Categories of Plants Used in a Restoration

- **Trees** create an upper canopy layer that provides wildlife habitat, as well as shade for wetlands. Common native trees include maples, oaks and pines.
- **Shrubs** make up the mid-story layer and help prevent erosion and provide food for wildlife. Common shrubs include azaleas, blueberries, viburnums and dogwoods.
- **Herbaceous Plants** inhabit the lower story/forest floor and help to cleanse stormwater runoff and prevent erosion; plants include ferns and wildflowers.

The number of plants from each category (i.e. trees, shrubs and herbaceous plants) depends upon the size (total square footage) of the area that will be restored. The Commission generally recommends using plants from each category, based upon the total square footage, as follows:

- ❑ One (1) tree sapling, 6'-8' tall, for every 150 square feet.
- ❑ One (1) shrub, at least 24" tall, for every 80 square feet.
- ❑ One (1) herbaceous or groundcover plant for every 25 square feet, **OR** a native plant seed mix, applied at the recommended coverage rate.

In other words:

If the proposed restoration area is 300 square feet in size, then the homeowner should plant two trees; four shrubs; and 12 ferns, wildflowers and/or groundcovers plants.

PUTTING A RESTORATION PLAN TOGETHER (continued)

3 - SELECT THE TYPE OF NATIVE PLANTS



Jack in the Pulpit

When selecting your plants, keep in mind the amount of light and water that the restoration location receives, as well as soil type. A sunny, dry location with sandy soil will need different plants than a shady, wet one with acid soil. Also try to use plants that will provide food for wildlife, such as plants that have fruits, seeds, nuts, and/or nectar.

The way that plants reproduce is another consideration. Native plants that are annuals spread their seeds and die. Biennial plants grow foliage during the first year and flowers and seeds during the second year, and then die. Perennials can also spread by seed dispersal, but some can multiply by sending out underground runners. A runner plant like hay scented fern can quickly take over an area, while Jack in the Pulpit may be “better behaved.”

4 - SUBMIT A PLAN

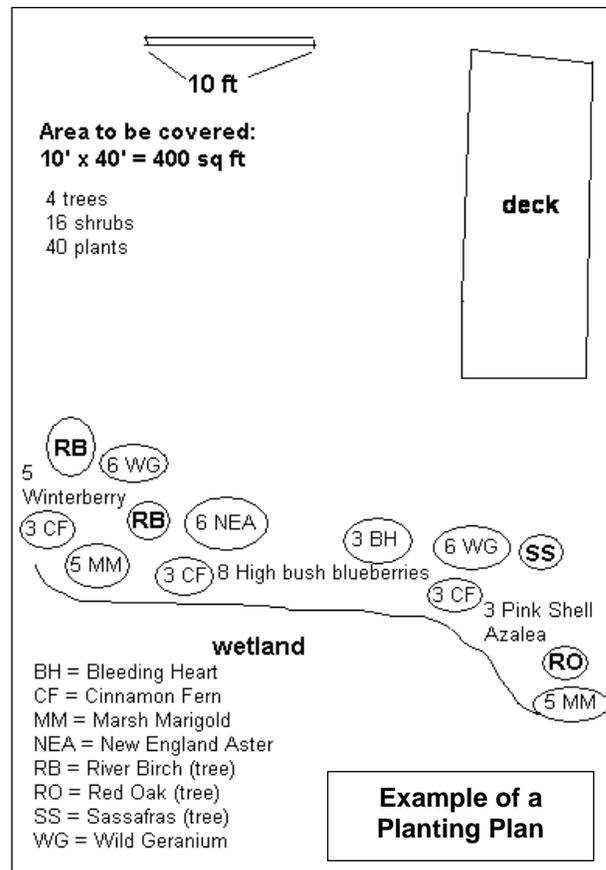
After selecting the native plants you would like to use, draw up an informal plan at a scale of 1”=10’, showing the approximate locations of where the plants should go.

Set the same species of plants in clumps to mimic nature, rather than planting all of your plants separately and equidistant from each other.

Remember that some plant varieties need more room to grow than others.

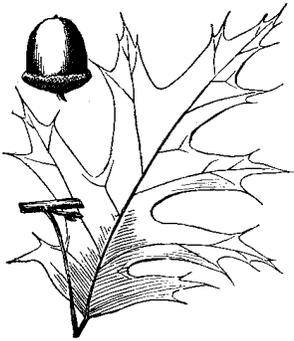


Witch Hazel



DOING THE WORK (after receiving the Commission's approval)

1 - WHEN TO PLANT



Planting should be done in early spring or late fall; at the beginning or the end of a growing season. The growing season for Norfolk County runs from around April 16 through October 18. Planting during hot, dry summer conditions may delay germination and plant growth, or require extensive watering for the plants to survive in the beginning.

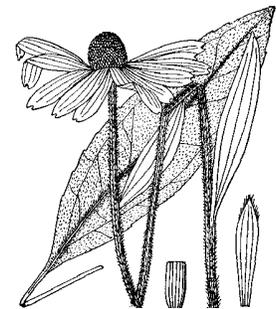
As with any planting, watering may be necessary while the plants are becoming established, especially during a drought or a heat wave. Watering seeded areas is often not necessary, as native species will usually germinate when conditions are most appropriate. Adding a mulch of dead leaves or compost helps to retain moisture in the soil for young plantings.

Fall plantings should occur before the first frost, which is usually around October 18. Some shrubs and trees may be planted up to November 15, weather permitting, but some plant species are ill-suited to fall planting.

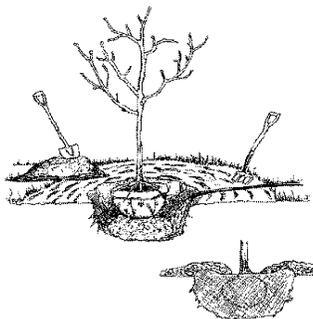
2 - REPLACING YOUR LAWN; A VERY GOOD CHOICE

Proper soil preparation is the most important factor in the success of a native planting project.

Use a sod cutter (which can be rented), to remove sections of your existing lawn. Do not turn over the exposed soil, since disturbing the soil will expose weed seeds and encourage their growth. Weeds, especially non-native ones, will compete with new native seedlings for nutrients, water, and sunlight.



3 - PLANTING TREES AND SHRUBS

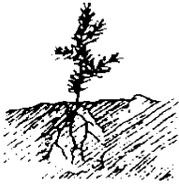


Native plants are installed the same way as any other potted or bare root stock, by digging a hole large enough so that it will not constrict root systems. Mulching is often necessary to ameliorate soil and moisture conditions and ensure successful seed germination and early growth. You will want to use proper tree / shrub planting procedures to ensure that your new plant will get a good start and have the best chance for a long life.

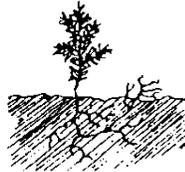
- ❑ Dig the hole as deep as the root ball and twice as wide.
- ❑ Check to see if the soil around the hole is too hard - if it is, loosen it up a bit with the shovel.

DOING THE WORK (continued)

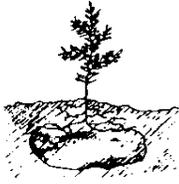
3 - PLANTING TREES AND SHRUBS



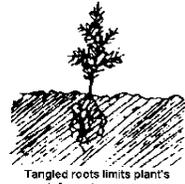
Air pockets leaves roots without soil



Upturned roots leaves plant without water and soil



Rock blocks plant's growth



Tangled roots limits plant's reach for water



Too shallow planting leaves roots exposed



Too deep planting strangles the plant

- ❑ Remove the root ball from the container. The roots are like the plant's blood vessels and they work best if they are not all twisted and knotted up, so you might need to loosen roots on the bottom or make a 2-inch vertical slice with a knife or shovel if the roots are very dense.
- ❑ Place the plant in the hole, making sure the soil is at the same depth as container or up to the level it had grown in the nursery. If your plant has burlap around the root ball, place the wrapped plant in the hole and then carefully untie the burlap. You can leave the burlap lying in the bottom of the hole; it will simply turn into organic matter over time.
- ❑ Fill the hole with water, let it drain down a bit, and then evenly distribute soil around the root ball and hand pack the soil to get rid of any air pockets.
- ❑ Make a dam around the base of the plant, as wide as the hole, with left over soil or grass clumps to hold in water.
- ❑ Water thoroughly, and remember to water two to three times a week during hot weather.
- ❑ Mulch with 1-2 inches of organic matter (don't pack mulch tightly around plant base).
- ❑ Logs, various sized branches, rocks, or leaf litter can be scattered around the new area to further naturalize the area.

4 - MONITORING YOUR RESTORED AREA



Applications of fertilizers and/or pesticides should be avoided after your naturalized buffer has been planted. Maintenance should be limited to invasive species removal to maintain native plant diversity. Within two growing seasons, at least 75% of the restoration area should be reestablished with native plants. To ensure the success of your restoration area, you will need to remove invasive plants (weeds) that grow within the restoration area and replace any plants, trees or shrubs that do not survive.

Summary

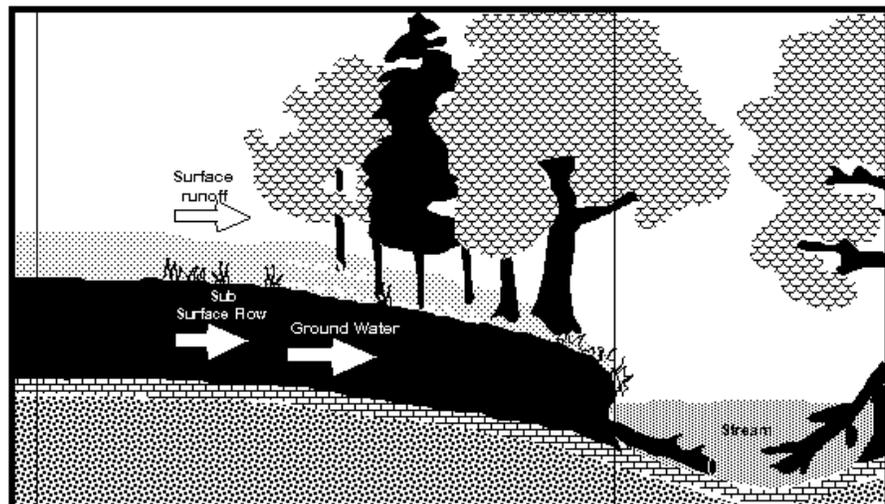
By choosing native plants that are suited to your site's conditions, minimal maintenance, chemical fertilizers, herbicides, or watering will be necessary for the plants to thrive (after they become established). This all adds up to time and cost savings, as well as a healthier environment for you, your family and the many types of wildlife species that live on or near your property.

INTERNET RESOURCES

- ❑ **UMass Extension** – Landscape, Nursery and Urban Forestry Information
<http://ag.umass.edu/resources/home-lawn-garden>
- ❑ **New England Wetland Plants** – Wholesale native plants, seed mixes and erosion controls
<http://newp.com/>
- ❑ **Wild Ones** – Preservation and Restoration of Native Communities
<http://www.for-wild.org/native.html>
- ❑ **Greenscapes Massachusetts** – Landscaping practices with less impact on the environment
<http://greenscapes.org/your-yard/>
- ❑ **Mass. Natural Heritage** – Native Shrubs for Plantings as Wildlife Food
<https://www.mass.gov/guides/native-shrubs-for-plantings-as-wildlife-food>
- ❑ **New England Wildflower Society Plant Nursery** – Framingham’s Garden in the Woods is a great place to see how native plants can be used in landscaping:
<http://www.newfs.org/grow>
- ❑ **New England Wildflower Society; Invasive Plant Control** - what to avoid planting!
<http://www.newfs.org/conserve/controlling-invasives>
- ❑ **Invasive Plant Atlas of New England** - invasive and potentially invasive plants database
<http://www.eddmaps.org/ipane/>

Vegetated Buffer Strips
help keep our ground and surface waters clean by:

- ***slowing down***
stormwater runoff,
- ***preventing*** *erosion,*
- ***promoting*** *groundwater recharge,*
- ***allowing*** *plants to uptake nutrients and pollutants, and*
- ***filtering*** *stormwater before it empties into a stream or a wetland.*



←----- Vegetated Buffer Strip ----->

SUGGESTED NATIVE PLANTS

Easy Plants for Dry Soils

Trees

Acer saccharum – Sugar Maple
Pinus strobus – Eastern White Pine
Quercus alba – White Oak
Quercus rubra – Northern Red Oak
Betula lenta – Black Birch
Sorbus americana - American Mountain-Ash

Shrubs

Amelanchier arborea – Tall Shadbush
Comptonia peregrina – Sweet Fern
Cornus racemosa - Gray Dogwood
Gaylussacia baccata - Black Huckleberry
Ilex glabra - Inkberry Holly
Kalmia angustifolia - Sheep Laurel
Kalmia latifolia - Mountain Laurel
Moella pennsylvanica - Bayberry
Rhododendron periclymenoides - Pink Azalea
Rosa carolina – Carolina Rose
Vaccinium angustifolium – Lowbush Blueberry
Vaccinium palladium – Hillside Blueberry

Herbaceous Plants / Groundcovers

Antennaria species - Pussy-Toes
Aquilegia species - Columbine
Arctostaphylos uva-ursi – Bearberry
Asclepias syriaca – Common Milkweed
Asclepias tuberosa - Butterfly Weed
Baptisia australis – Wild Blue False Indigo
Echinacea purpurea – Purple Coneflower
Epigaea repens – Trailing Arbutus, Mayflower
Gaultheria procumbens – Wintergreen, Teaberry
Leucanthemum vulgare – Daisy
Lupinus perennis – Wild Blue Lupine
Maianthemum canadense - Canada Mayflower
Monarda fistulosa – Bee Balm
Rudbeckia hirta – Black-Eyed Susan
Schizachyrium scoparium - Little Bluestem Grass

Ferns

Onoclea sensibilis – Sensitive Fern
Thelypteris noveboracensis – New York Fern

Easy Plants for Moist Soils

Trees

Acer Rubrum - Red Maple
Betula nigra - River Birch
Cercis canadensis - Eastern Redbud
Nyssa sylvatica – Black Gum/Tupelo
Platanus occidentalis - Sycamore
Sorbus americana – American Mountain Ash

Shrubs

Amelanchier canadensis – Thicket Shadbush
Clethra alnifolia - Sweet Pepperbush
Cornus amomum - Silky Dogwood
Cornus sericea – Red-Osier Dogwood
Hamamelis virginiana – Witch Hazel
Lindera benzoin - Common Spicebush
Myrica gale - Sweet Gale
Rosa palustris - Swamp Rose
Sambucus canadensis - Elderberry
Vaccinium corymbosum - Highbush Blueberry
Viburnum cassinoides – Wild Raisin
Viburnum recognitum - Arrowwood
Viburnum lantanoides - Hobblebush

Herbaceous Plants / Groundcovers

Actaea pachypoda – White Baneberry, Doll's-Eyes
Arisaema triphyllum - Jack-in-the-Pulpit
Cornus canadensis – Bunchberry
Eutrochium maculatum – Joe Pye Weed
Mertensia virginica – Eastern Bluebells
Maianthemum - *Smilacina stellatum* - Star Flower
Penstemon digitalis – Foxglove Beardtongue
Podophyllum peltatum - Mayapple
Symphotrichum novae-angliae – New England Aster
Trillium erectum - Red Trillium
Uvularia sessilifolia – Sessile-Leaved Bellwort
Vaccinium macrocarpon – Large Cranberry

Ferns

Adiantum pedatum - Maidenhair Fern
Dennstaedtia punctilobula – Hay-Scented Fern
Polystichum acrostichoides – Christmas Fern
Osmunda cinnamomea - Cinnamon Fern

SUGGESTED NATIVE PLANTS

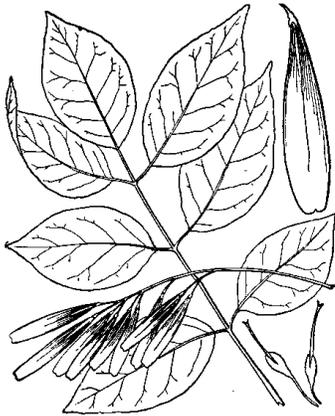
Easy Plants for Wet Soils

Trees

Platanus occidentalis - American Sycamore
Acer Rubrum - Red Maple
Fraxinus Pennsylvania - Green Ash
Nyssa sylvatica - Black Gum/Tupelo

Shrubs

Aronia arbutifolia - Red Chokeberry
Ilex glabra - Inkberry Holly
Ilex verticillata - Winterberry Holly
Lindera benzoin - Common Spicebush
Myrica gale - Sweet Gale
Rhododendron viscosum - Swamp Azalea
Rosa palustris - Swamp Rose
Salix discolor - Pussy Willow
Sambucus canadensis - Common Elderberry
Vaccinium corymbosum - Highbush Blueberry
Viburnum cassinoides - Wild Raisin



Green Ash

Herbaceous Plants / Groundcovers

Anemone Canadensis - Canada Anemone
Asclepias incarnata - Swamp Milkweed
Caltha palustris - Marsh Marigold
Camassia species - Camas Lily
Carex vulpinoidea - Fox Sedge
Chelone glabra - White Turtlehead
Eupatorium perfoliatum - Boneset
Iris versicolor - Blue Flag Iris
Liatris spicata - Marsh Blazing Star
Lilium canadense - Canada Lilly
Lobelia cardinalis - Cardinal Flower
Rubus hispidus - Dewberry
Symphotricheum puniceum - Swamp Aster
Symplocarpus foetidus - Skunk Cabbage
Vaccinium macrocarpon - Cranberry
Verbena hasata - Blue Vervain

Ferns

Osmunda cinnamomea - Cinnamon Fern
Osmunda claytoniana - Interrupted Fern
Osmunda regalis - Royal Fern

LOCAL NURSERIES THAT MAY SELL NATIVE PLANTS

<p>New England Wetland Plants, Inc. http://newp.com/ 820 West Street Amherst, MA 01002 Phone: (413) 548-8000</p>	<p>NE Wetland Plants propagates and grows over 150 different species of native trees, shrubs, grasses, and forbs at their nursery in Amherst; they also offer a variety of:</p> <ul style="list-style-type: none"> • Conservation Seed Mixes, and • Soil Erosion Control Products.
<p>New England Wild Flower Society http://www.newfs.org <i>Garden in the Woods</i> 180 Hemenway Road Framingham, MA 01701 Phone: 508-877-7630 <i>Nasami Farm</i> 128 North Street Whately, MA 01373 Phone: 413-397-9922</p>	<p>NEWFS runs two nurseries, specializing in native plants. The <i>Garden in the Woods</i> in Framingham is the Society’s museum and garden idea center for wildflowers and other native plants.</p> <p>Their second nursery, <i>Nasami Farms</i>, is in Whately.</p> <p>http://www.newfs.org/visit/Garden-in-the-Woods http://www.newfs.org/visit/nasami-farm https://www.facebook.com/NewEnglandWildFlowerSociety</p>
<p>Bigelow Nurseries http://www.bigelownurseries.com/ 455 West Main Street Northboro, MA 01532 Phone: 508-845-2143</p>	<p>A large nursery with a good selection of native trees and shrubs in larger sizes. Many are grown locally in their own fields. They also offer a good selection of native perennials, ferns, and grasses.</p>
<p>Sudbury Nurseries West, LLC http://www.sudbournurserieswest.com/ 81 Ben Hale Road, Gill, MA 01354 Phone: 413-863-9898</p>	<p>Sudbury Nurseries’ native container shrubs, herbaceous perennials and willow tubelings are used in restoration and riverbank stabilization projects for private, commercial and municipal purposes; they deliver throughout New England.</p>
<p>Blue Moon Farm http://bluemoonfarmperennials.com/ 173 Saugatucket Road Wakefield, RI 02879 401-284-2369</p>	<p>Blue Moon Farm is the largest supplier of native plants in Rhode Island.</p>
<p>Fred’s Wild Sod, Inc. http://www.freds-wild-sod.com/ Blue Hill, ME Phone: 207-460-6917 (cell)</p>	<p>Fred’s Wild Sod is a wholesale business that specializes in low maintenance native sods including ferns, blueberry, bunchberry, mosses and many more hand dug plants. Contact: fred@freds-wild-sod.com</p>

(The above listed resources are suggestions, only, and not recommendations.)