

FOXBOROUGH CONSERVATION COMMISSION

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www.foxboroughma.gov/conservation
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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.

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 particular region. As a result, native plants form communities with other plants that provide habitat for a variety of local wildlife species such as songbirds and butterflies.

Why Use Native Plants?

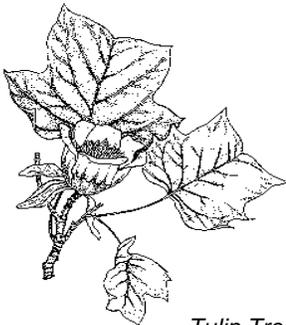
Because native plants are adapted to local conditions, they provide a beautiful, hardy, drought resistant, low maintenance landscape while benefiting the environment. Once established, they can save time and money by eliminating the need for fertilizers, pesticides, water, and lawn maintenance equipment.

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?

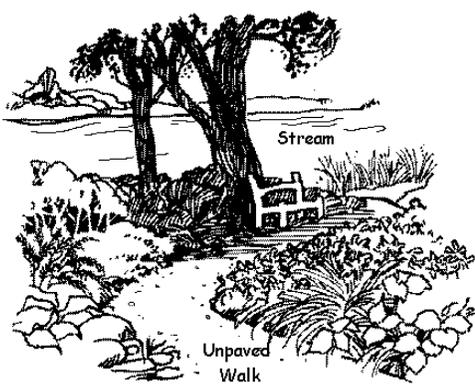
Wetlands, rivers, streams and ponds don't thrive in isolation, but depend on the land surrounding them to keep them healthy. Buffer Zones were set up by the State and Town to help keep wetlands healthy and do what they do best. Putting native plants back into the Buffer Zone helps to maintain ponds, streams and wetlands in their natural state by filtering out stormwater runoff pollutants, providing habitats for wildlife, and securing stream banks against erosion.



Tulip Tree

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 ("ConCom") requires landowners to restore at a ratio of at least 1:1 of altered area to native vegetation.

For example, if a homeowner wishes to construct a 10'x10' (100 square feet) shed *in an existing lawn area*, but 10 feet from a wetland edge, the ConCom *may* allow the shed if the home-owner agrees to restore 100 square feet of lawn to 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 that provides habitat for birds and shade for wetlands. Common native trees include red maple, oaks, white pine and tupelo.
- Shrubs are the middle story that feeds a variety of animals and prevents erosion. Common shrubs are witch hazel, azaleas, viburnum and blueberries.
- Herbaceous Plants inhabit the lower story and include ferns, wildflowers, and groundcovers.

The number of plants from each category (i.e. trees, shrubs and herbaceous plants) depends on the total square footage to be restored.

The ConCom's general rule requires plants from each category based upon total square footage as follows:

- One (1) 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.

Therefore:

If the proposed area to be restored equals 300 square feet, then the landowner should plant 2 saplings, 4 shrubs, and 12 ferns, wildflowers and/or groundcovers.

PUTTING A RESTORATION PLAN TOGETHER (continued)

3 - SELECT THE TYPE OF NATIVE PLANTS



Witch hazel

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

The way that plants reproduce is another consideration. Native plants that are annuals spread their seeds and 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. Witch hazel and Joe Pye weed are much better behaved.

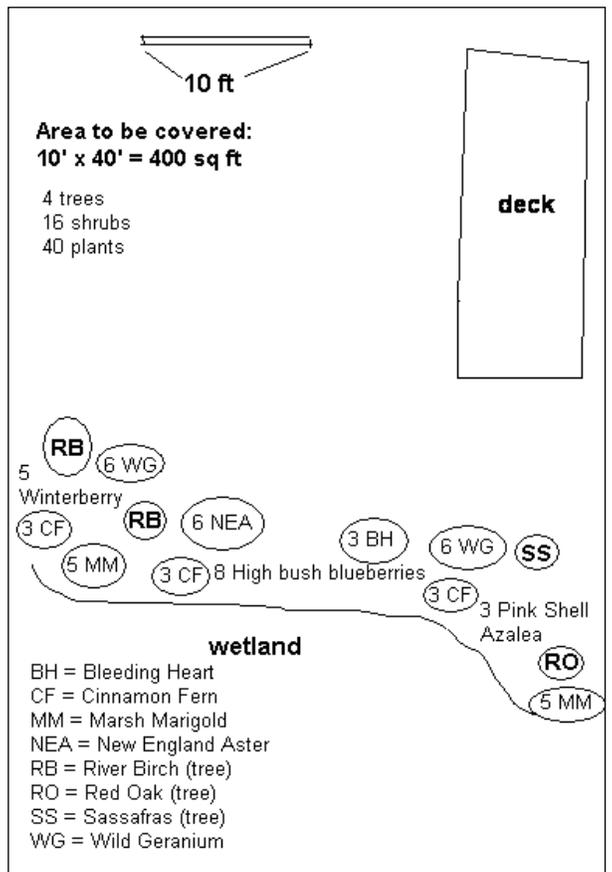
4 - SUBMIT A PLAN

After selecting your native plants, draw up an informal plan at a scale of 1"=10'.

Show approximately where your plants will go.

Clump similar plants in your restoration area, rather than planting all of your plants equidistant from each other.

Keep in mind that some plants will need more room than others.

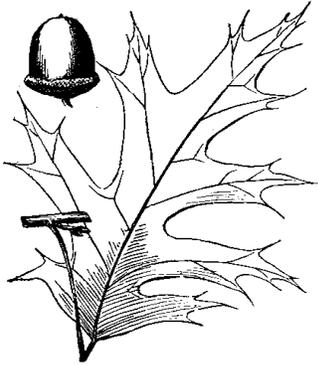


Resources in this Guide:

- **Appendix 1** is a list of Internet Resources for how-to's.
- **Appendix 2** is a list of native trees, shrubs and groundcovers, based on their moisture and light requirements.
- **Appendix 3** has a list of local nurseries that sell native plants.

DOING THE WORK (after Receiving ConCom Approval)

1 - TIMES TO PLANT



Planting is largely a late fall or early spring activity occurring at the beginning or the end of the growing season. The growing season for Norfolk County runs from around April 16 through October 18. Planting in hot, dry summer conditions may delay seed germination and plant growth, or require extensive watering.

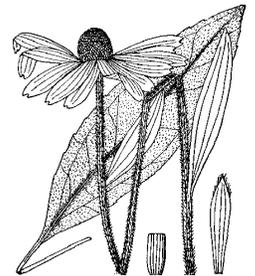
As with any planting, watering may be necessary while the plants are becoming established, especially during a drought or a heat wave. Watering seeded areas, however, is usually not mandatory, as native species will usually germinate when conditions are most appropriate. Adding a mulch of dead leaves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

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

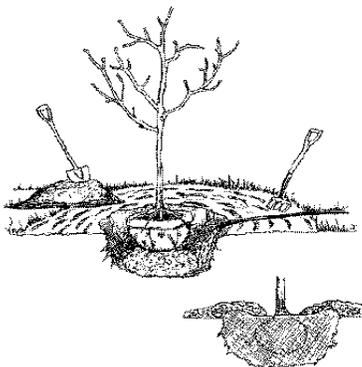
2 - REPLACING YOUR LAWN, IF NECESSARY

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. Disturbing the soil will expose weed seeds and encourage their growth. The 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 planting procedures to ensure that the tree has 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.

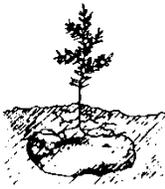
DOING THE WORK (continued)



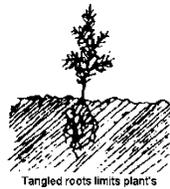
Air pockets leaves roots without soil



Uprturned 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 straighten them out or slice through them with a knife or shovel if they are circling around after having grown in the container.
- ❑ Place the tree in the hole, making sure the soil is at the same level on the tree as when the tree grew in the garden center. If your tree has burlap around the root ball, place the tree in the hole and then carefully untie the burlap. Leave the burlap lying in the bottom of the hole - this is okay - the burlap will simply turn into organic matter over a period of time.
- ❑ Fill the hole with water, then fill in around the root ball with soil and pack the soil with your hands and feet to make sure that there are no air pockets.
- ❑ Make a little dam around the base of the plant as wide as the hole with left over soil or grass clumps to hold in the water; water the plant
- ❑ Mulch with fine and coarse woody debris within the restored area. There should be logs, various sized branches, and even leaf litter placed in the area to provide these habitat features.

4 - MONITORING OF RESTORED AREA

Applications of fertilizers or pesticides should be avoided once the buffer is established. Maintenance should be limited to invasive species removal to maintain native plant diversity. It is the responsibility of the landowner to ensure that at least 75% of the surface area of the restoration area is reestablished with native plants within two (2) growing seasons. The landowner shall be responsible for removing invasive species that grow within the restoration area and replacing any trees and shrubs that do not survive.



Summary

By choosing native plants suited to the site conditions, little maintenance, chemical fertilizers, herbicides, or additional watering will be necessary for the plants to thrive. This all adds up to time and cost savings as well as a healthier habitat for you, your family and the many kinds of wildlife that inhabit your yard.

INTERNET REFERENCES

- ❑ **New England Wildflower Society Plant Nursery** – Framingham’s Garden in the Woods is an excellent place to go to see how native plants can be used in landscaping:
<http://www.newfs.org/grow>
- ❑ **New England Wetland Plants** – Wholesale native plants, seed mixes and erosion control materials
<http://www.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://www.greenscapes.org/home-owners/greenscaping/>
- ❑ **Natural Heritage** – Native Shrubs for Plantings as Wildlife Food
<http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/rare-plants/native-shrubs-for-plantings-as-wildlife-food.html>
- ❑ **UMass Extension** – Landscape, Nursery and Urban Forestry Information
<http://ag.umass.edu/landscape>
- ❑ **New England Wild Flower Society's Native Plant Conservation Program**
[http://www.newfs.org/conservesaving-imperiled-plants/necop.htm/?searchterm=Native Plant Conservation Program](http://www.newfs.org/conservesaving-imperiled-plants/necop.htm/?searchterm=Native%20Plant%20Conservation%20Program)
- ❑ **Invasive Plant Information and Resources** for Massachusetts Conservation Commissions
http://maccweb.org/resources_invasive.html
- ❑ **Invasive Plant Atlas of New England** - database of invasive and potentially invasive plants
<http://www.eddmaps.org/ipane/>

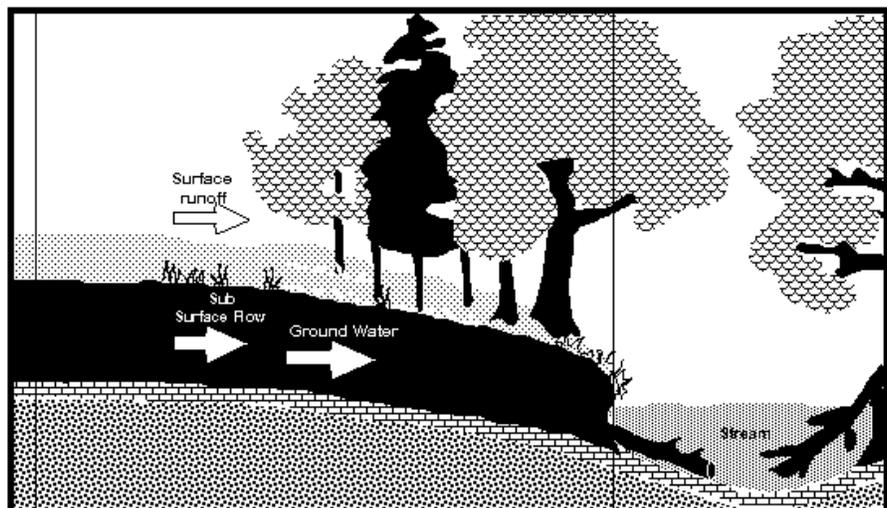
A Vegetated Buffer Strip:

(area between vertical lines)→

- > **slows** storm water runoff,
- > **prevents** erosion,
- > **promotes** groundwater recharge,
- > **allows** for plant uptake of nutrients and pollutants, and
- > **filters** storm water

before the storm water empties into a stream or a wetland.

This process helps to keep our groundwater and surface waters clean.



SUGGESTED NATIVE PLANTS

Easy Plants for Dry Soils

Trees

Sassafras albidum - Sassafras
Quercus alba - White Oak
Quercus rubra - Northern Red Oak
Pinus strobus - Eastern White Pine
Sorbus americana - American Mountain-Ash

Shrubs

Amelanchier arborea - Tall Shadbush
Cornus racemosa - Gray Dogwood
Gaylussacia baccata - Black Huckleberry
Ilex glabra - Inkberry Holly
Kalmia angustifolia - Sheep Laurel
Kalmia latifolia - Mountain Laurel
Myrica pensylvanica - Bayberry
Prunus maritima - Beach Plum
Rhododendron vaseyi - Pink-Shell Azalea
Rosa virginiana - Virginia Rose
Spiraea alba var latifolia - Meadowsweet
Vaccinium angustifolium - Lowbush Blueberry
Vaccinium vacillans - Woodland Blueberry

Groundcover and Herbaceous Plants

Antennaria species - Pussy-Toes
Aquilegia species - Columbine
Arctostaphylos uva-ursi - Bearberry
Asclepias tuberosa - Butterfly Weed
Carex pensylvanica - Pennsylvania Sedge
Gaultheria procumbens - Wintergreen
Heuchera cultivars - Alumroot, Coralbells
Houstonia caerulea - Bluets, Quaker Ladies
Iris verna v. smalliana - Clumping Dwarf Iris
Maianthemum canadense - Canada Mayflower
Potentilla tridentata - Three-toothed Cinquefoil
Rudbeckia fulgida v. sullivantii - Black-eyed Susan
Schizachyrium scoparium - Little Bluestem
Waldsteinia fragarioides - Barren Strawberry

Ferns

Dennstaedtia punctilobula - Hayscented Fern
Polystichum acrostichoides - Christmas Fern
Thelypteris noveboracensis - New York Fern

Easy Plants for Moist Soils

Trees

Acer Rubrum - Red Maple
Betula nigra 'Heritage' - River Birch
Liriodendron tulipifera - Tulip Tree
Nyssa sylvatica - Black Gum/Tupelo
Quercus palustris - Pin Oak

Shrubs

Alnus serrulata - Common Alder
Amelanchier canadensis - Thicket Shadbush
Clethra spp. - Sweet Pepperbush
Cornus amomun - Silky Dogwood
Hamamelis virginiana - Common Witchhazel
Ilex verticillata - Winterberry
Lindera benzoin - 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

Groundcover and Herbaceous Plants

Arisaema triphyllum - Jack-in-the-Pulpit
Cornus canadensis - Bunchberry
Eupatorium Eupatoriadelphus - Joe-Pye Weed
Lobelia cardinalis - Cardinal Flower
Maianthemum - Smilacina
stellatum - Star Flower
Phlox divaricata - Wood Phlox
Podophyllum peltatum - Mayapple
Symphyotrichum novae-angliae -
New England Aster
Trillium grandiflorum - Showy
Trillium
Uvularia sessilifolia 'Variegata' - Wild Oat Lily
Vaccinium macrocarpon - Cranberry



Jack-in-the-Pulpit

Ferns

Athyrium filix-femina - Lady Fern
Polystichum Acrostichoides - Christmas Fern

Easy Plants for Wet Soils

Trees

- Platanus occidentalis - American Sycamore
- Quercus palustris - Pin Oak
- Acer Rubrum - Red Maple
- Fraxinus Pennsylvania - Green Ash

Shrubs

- Aronia arbutifolia - Red Chokeberry
- Ilex glabra - Inkberry Holly
- Ilex verticillata - Winterberry
- Lindera benzoin - Spicebush
- Myrica gale - Sweet Gale
- Rhododendron viscosum - Swamp Azalea
- Vaccinium corymbosum - Highbush Blueberry
- Viburnum cassinoides - Wild Raisin



Green Ash

Groundcover and Herbaceous Plants

- Asclepias incarnata - Swamp Milkweed
- Caltha palustris - Marsh Marigold
- Camassia species - Camas Lily
- Iris versicolor - Blue Flag Iris
- Liatris spicata - Marsh Blazing Star
- Lobelia cardinalis - Cardinal Flower
- Rubus hispidus - Dewberry
- Symplocarpus foetidus - Skunk Cabbage
- Vaccinium macrocarpon - Cranberry

Ferns

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



Cinnamon Fern

LOCAL NURSERIES THAT SELL NATIVE PLANTS

<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>
<p>New England Wetland Plants, Inc. http://www.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. Their second nursery, <i>Nasami Farms</i>, is in Whately. http://www.newfs.org/visit/Garden-in-the-Woods http://www.newfs.org/visit/nasami-farm https://www.facebook.com/NewEnglandWildFlowerSociety</p>
<p>Sudbury Nurseries West, LLC http://www.sudburynurserieswest.com/ 81 Ben Hale Road Gill, MA 01354 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>Weston Nurseries https://www.westonnurseries.com/ 93 East Main Street - Rte. 135 Hopkinton, MA 01748 Phone: (508) 435-3414 160 Pine Hill Road Chelmsford, MA 01824 Phone: (978) 349-0055</p>	<p>Weston Nurseries is located in Hopkinton and Chelmsford. This semi-local nursery does some of its own hybridizing but also has a wide variety of native and non-native plants to choose from.</p>