



Buffer Zone Restoration Guidelines

“Wetlands are the kidneys of nature.”

The Framingham Conservation Commission, who created the majority of the following guidelines, have graciously allowed Wellesley’s Wetlands Protection Committee to revise and distribute their (this) document.

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.

Tulip Tree



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 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 often save time and money by eliminating the need for fertilizers, pesticides, water and lawn maintenance equipment.

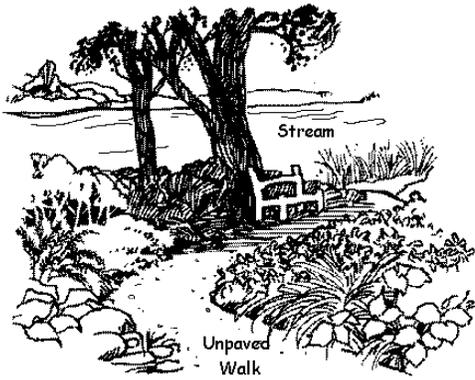
NATIVE PLANTS :
<ul style="list-style-type: none">▪ Do not require fertilizers▪ Require fewer, if any, pesticides than lawns▪ Require less water than lawns▪ Help reduce air pollution▪ Provide shelter and food for wildlife

What is a Buffer Zone and why should I “restore” it?

Wetlands, rivers, streams and ponds do not thrive in isolation; their health depends upon the upland areas that drain into them. State and Local laws protect buffer zones because scientific studies have demonstrated that vegetated buffers keep our wetlands healthy. Restoring buffer zones to their natural, vegetated condition can help our lakes, ponds, streams and wetlands because native vegetation by (1) filtering stormwater runoff’s pollutants, (2) providing wildlife habitat, and (3) preventing erosion by stabilizing stream banks.

PUTTING A RESTORATION PLAN TOGETHER

1. SIZE AND LOCATION OF THE 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 Administrator.

Generally, the Wetlands Protection Committee requires landowners to restore at a ratio of at least 1:1 of altered area to native vegetation.

For example, if a homeowner wanted to construct a 10 foot by 10 foot (100 sq. ft.) shed *in an area that is currently lawn*, but is close to a wetland edge, the Committee *might* allow the shed if the homeowner will restore 100 sq. ft. of lawn to native vegetation.

PREFERRED RESTORATION LOCATIONS:

- Areas that abut existing native vegetation
- Existing lawn areas that are located within Wellesley's 25-Foot No Disturbance Zone

2. CALCULATING THE NUMBER OF PLANTS NEEDED

CATEGORIES OF PLANTS USED FOR RESTORATION:

- **Trees** create an upper canopy that provides habitat for birds and other wildlife and shade for wetlands. Native trees include red maples, oaks, white pines and sycamore trees.
- **Shrubs** create the mid-story of vegetation that often provides food and cover for wildlife, and prevents erosion. Common shrubs include azaleas, viburnams and blueberries.
- **Herbaceous Plants** create the under story and include ferns, wildflowers, and various groundcover plants.

The number of plants from each category (i.e. trees, shrubs and herbaceous plants) depends upon the size (total square feet) of the area to be restored. The Committee's general 1:1 restoration rule requires the installation of plants (based upon total square feet) as follows:

One (1) tree sapling, 6'-8' tall, for every 100 square feet.

One (1) shrub, at least 24" tall, for every 25 square feet, or
Four (4) shrubs for every 100 square feet.

One (1) herbaceous plant for every 10 square feet, or
Ten (10) herbaceous plants per 100 square feet.

Clumps of two to three plants, **or** a native plant seed mixture (at the recommended coverage rate) may be used.

For Example:

If the proposed restoration area is 200 square feet in size, the landowner might plant:

Two (2) saplings,

Eight (8) shrubs, and

Twenty (20) ferns, wild flowers and/or groundcover.

PUTTING A RESTORATION PLAN TOGETHER (cont.)

3. SELECTING 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/or nectar.

The way that plants reproduce or spread is another thing to take into consideration. Native plants that are annuals spread their seeds and then die. Perennials can also spread by seed dispersal, but some can multiply by sending out underground runners. A runner plant like hayscented fern can quickly take over an area. Witch hazel and Joe pye weed are better behaved.

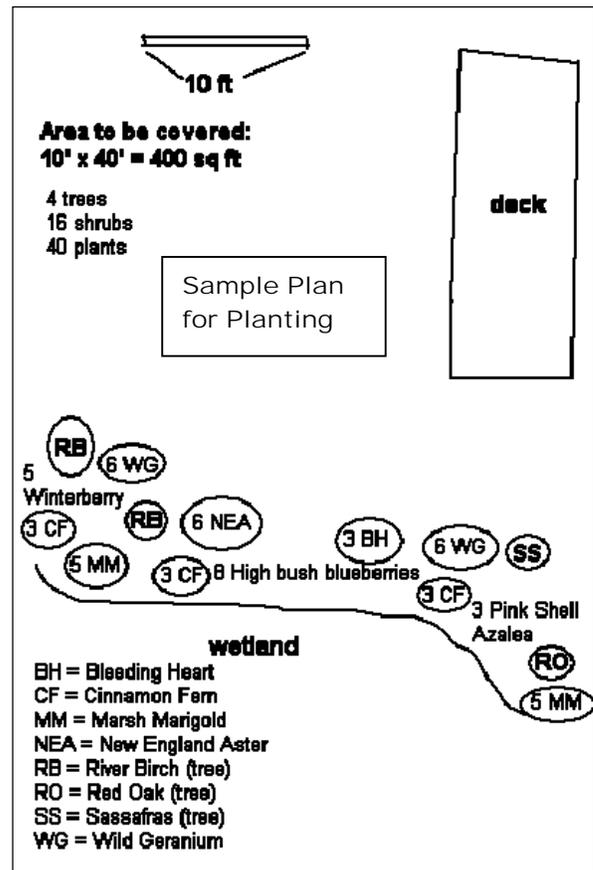
4. SUBMITTING A PLAN

After selecting the plants, draw up a sketch plan at a scale of 1" = 1'. Show approximately where the plants will go. Put the plants in clumps in your restoration area rather than planting them equidistant from each other. Some plants need more room than others.

Submit your proposed plan to the Committee's office.

RESOURCES IN THIS GUIDE:

- Appendix 1: List of Internet Resources for how-to's, local nurseries, suggested native plants, and information about invasive plants.
- Appendix 2: List of native trees, shrubs and groundcovers, based on their moisture and light requirements.
- Appendix 3: List of local nurseries.



DOING THE WORK

1. WHEN 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 during hot, dry summer conditions could 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 will help 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 15, weather permitting, however, some plant species are ill suited to fall planting.

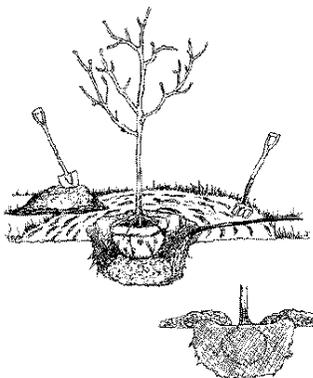
2. REPLACING YOUR LAWN, IF NECESSARY

Proper soil preparation is the most important factor for a successful native planting restoration 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 rootstock by digging a hole large enough to prevent constricting root systems. Mulching is often necessary to ameliorate soil and moisture conditions and ensure successful seed germination and early growth. You should follow proper tree planting procedures to make sure 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 and, if it is, loosen it up a bit with the shovel.

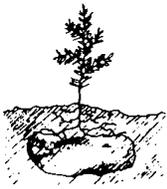
DOING THE WORK (cont.)



Air pockets leaves roots without soil



Upturned roots leaves plant without water and soil



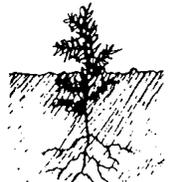
Rock blocks plant's growth



Tangled roots limits plant's reach for water



Too shallow planting leaves roots exposed



Too deep planting strangles the plant

- ❑ Remove the plant's root ball from the container. The roots are like the plant's blood vessels, so they work best if they are not all twisted and knotted up; you might need to straighten them out if they are circling around inside the container, slicing through the outer layer of dense roots can also help.
- ❑ Place the tree's root ball in the hole, making sure the soil is at the same level as when the tree grew in the garden center. If the root ball is covered with burlap, place the tree in the hole and then carefully untie the burlap covering. Leave the burlap lying in the bottom of the hole; it will turn into organic matter over time.
- ❑ Fill 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.
- ❑ Place fine and coarse woody debris and leaf litter within the restored area, including logs, various sized branches to provide wildlife habitat features.

4. MONITORING THE RESTORED AREA



Applications of fertilizers or pesticides are not necessary, and should be avoided, once the buffer has become 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 restored area is reestablished with native plants within two (2) growing seasons. The landowner shall remove any invasive plant species that try to grow in the restored area, and replace any plants that do not survive.

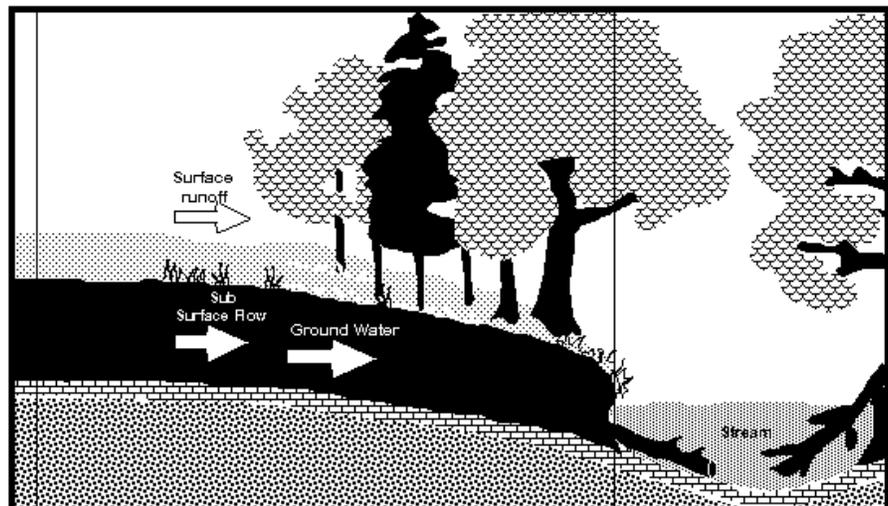
Summary

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 and the wildlife that inhabit your yard.

INTERNET REFERENCES

- ❑ **New England Wildflower Society Plant Nursery** - Framingham's Garden in the Woods, an excellent place to go to see how native plants can be used in landscaping:
<http://www.newfs.org/nursery.htm>
- ❑ **New England Wetland Plants** - Wholesale native plants, seed mixes and erosion control materials
<http://www.newp.com/index.htm>
- ❑ **Wild Ones** - Preservation and Restoration of Native Communities
<http://www.for-wild.org/native.html>
- ❑ **Native Plant Guide** - Ladybird Johnson Wildflower Center:
http://www.enature.com/guides/select_lbjnative.asp?
- ❑ **Natural Heritage** - Native Shrubs for Plantings as Wildlife Food
http://www.mass.gov/dfwele/dfw/nhesp/conservation/plants/native_shrubs.htm
- ❑ **Umass Extension** - Landscape, Nursery and Urban Forestry Information
<http://www.umassgreeninfo.org/>
- ❑ **New England Wild Flower Society's Native Plant Conservation Program**
<http://www.newfs.org/conserve/index.htm>
- ❑ **Invasive Plant Information and Resources** for Massachusetts Conservation Commissions
http://maccweb.org/resources_invasive.html
- ❑ **Invasive Plant Atlas of New England**
<http://nbii-nin.ciesin.columbia.edu/ipane/>

A buffer zone (between the two vertical lines) allows water to slow down and be filtered before it empties into the stream or wetland. This process helps keep our groundwater and surface waters cleaner.



Easy Plants for Dry Soils

Trees

Sassafras albidum - Sassafras
Quercus prinoides - Dwarf Chinkapin Oak
Quercus rubra - 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
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
Viburnum cassinoides - Wild Raisin

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
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

Easy Plants for Moist Soils

Trees

Acer Rubrum - Red Maple
Betula nigra 'Heritage' - River Birch
Cercis canadensis - Eastern Redbud
Liriodendron tulipifera - Tulip Tree
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
Kalmia latifolia - Mountain Laurel
Lindera benzoin - Spicebush
Myrica gale - Sweet Gale
Rosa palustris - Swamp Rose
Sambucus canadensis - Elderberry
Taxus canadensis - Eastern Yew
Vaccinium corymbosum - Highbush Blueberry
Viburnum cassinoides - Wild Rasin
Viburnum recognitum - Arrowwood
Viburnum lantanoides - Hobblebush

Groundcover and Herbaceous Plants

Arisaema triphyllum - Jack-in-the-Pulpit
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



Jack-in-the-Pulpit

Trillium grandiflorum - Showy Trillium
Vaccinium macrocarpon - Cranberry

Ferns

Athyrium filix-femina - Lady Fern
Matteuccia struthiopteris - Ostrich Fern

Appendix 2

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
- Rhododendron viscosum - Swamp Azalea
- Vaccinium corymbosum - Highbush Blueberry

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

Ferns

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



Green Ash



Cinnamon Fern

LOCAL NURSERIES THAT SELL NATIVE PLANTS

<p>Bigelow Nurseries, Inc. 455 West Main Street (NOT Rt. 20) P.O. Box 718 Northboro, MA 01532 Phone: 508-845-2143 Fax: 508-842-9245</p>	<p>A semi-local nursery that has a standard variety of native and non-native plants. http://www.bigelownurseries.com/</p>
<p>New England Wetland Plants, Inc 820 West St. Amherst, MA 01002 Phone: 413-548-8000 Fax: 413-549-4000</p>	<p>This nursery sells seed mixes for a variety of conditions and will ship seed and plants, but encourage you to pick them up. These experts in wetland plants will answer questions. About 2 hours from Wellesley. http://www.newp.com/</p>
<p>New England Wild Flower Society 180 Hemenway Road Framingham, MA 01701 Phone: 508-877-7630 TTY: 508-877-6553</p>	<p>NEWFS runs 2 nurseries specializing in native plants of all kinds. One is in Framingham at the <i>Garden in the Woods</i>, the Society's museum and garden idea center for wildflowers and other native plants. Their other nursery, <i>Nasami Farms</i>, is in Whately, Mass. If you want to get creative, this is the place for you. http://www.newfs.org/nursery.htm</p>
<p>Russell's Garden Center 397 Boston Post Rd (Rt. 20) Wayland, MA 01778 Phone: 508-358-2283 Fax: 508-358-2473</p>	<p>A semi-local nursery that has a standard variety of native and non-native plants. A treat to walk in the greenhouses in winter. http://www.russellsgardencenter.com/index.htm</p>
<p>Weston Nurseries of Hopkinton 93 East Main Street (Rt. 135) P.O. Box 186 Hopkinton, MA 01748 Phone: 508-435-3414</p>	<p>A semi-local nursery that does some of its own hybridizing. It has a variety of native - and non-native plants. http://www.westonnurseries.com/</p>