

# VEGETATED PHOSPHORUS BUFFER STRIPS

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## **WHAT ARE THEY?**

Vegetated phosphorus buffer strips are areas of natural vegetation which have been left undisturbed or are replanted to naturally existing species. These vegetative buffer strips are composed of trees, shrubs, bushes and a thick duff layer (pine needles, bark mulch, etc.).

## **WHY DO WE NEED THEM?**

Where there are humans, there is nutrient pollution. The way we live tends to over-nourish and pollute our environment. Fertilizers wash down over our carefully graded lawns directly to the lake. The oils and greases from our cars are rinsed off our driveways and roads down to the lake. We rest and play along the lake and our foot traffic tramples the vegetation. We park our cars and launch our boats as close as possible to the lake - our heavy vehicles compact the earth until it's as hard and impenetrable as asphalt. Our lifestyles are hurting the lake.

Vegetated buffers provide a filter and percolation area for the runoff that comes from our home and play areas. The vegetation in the buffer uses the nutrients carried in the stormwater. If the nutrients reach the lake, the aquatic plants will use them and an algae bloom can occur.

Vegetated buffers are designed so that the nutrients are used by land vegetation rather than by lake algae.

If you own property on Damariscotta Lake, the water quality of the lake directly impacts you. If water quality deteriorates, the value of your property decreases. Boating and swimming becomes less attractive. Fish populations can decline or be killed off completely.

Most residents are also directly impacted by the water quality of lakes and their tributaries, which provide the supply of public drinking water. Algae growth causes taste and odor problems. Correcting such problems will require increased costs to consumers.

## **WHERE SHOULD BUFFERS BE LOCATED?**

Vegetated buffers need to be placed between people and the lake. We need to filter the stormwater runoff from our houses, garages, driveways, roads (both paved and gravel), and road ditches through flat vegetated areas. Lakeside parking areas and playing fields should drain through a buffer too.

Equally important are the streams and ditches which flow into the lake. They also need to be protected by leaving vegetated buffer strips between them and developed areas.

## **HOW TO MAKE A BUFFER**

### **TAKE ADVANTAGE OF NATURAL FEATURES.**

- Leave the depressions and irregularities in your lawn. Don't grade it to drain directly to the lake.
- Don't mow down to the edge of the lake.
- Leave as much shrub and tree growth as possible between the lawn and the lake.
- If you have flat wet spots on your property, use them. Deliberately filter roof, driveway or road runoff water through them. Don't mow these areas - let them grow up naturally.

### **REDUCE THE IMPACT YOU'RE MAKING NOW.**

- For new construction, minimize the amount of roof, driveway, and parking area (impervious surfaces).
- Minimize your lawn area (don't mow as much).
- Minimize bare areas by defining and limiting your parking area, beach area and foot paths. Be sure foot paths to the lake are kept narrow (6 feet or less) and winding (not a straight shot to the lake which could channel the water). Stabilize heavily trafficked areas with wood chips, bark mulch or some of the newer erosion control materials (some of these can support car traffic and still allow grass to grow up through them).
- Tell your family and visitors about why it's important to protect the vegetation (don't forget the kids!). Make them familiar with the recommendations from the brochure "For Your Lake's Sake," available from the DEP.

### **HELP NATURE OUT BY PLANTING A BUFFER.**

## **PLANTING A VEGETATED BUFFER**

**COMPOSITION:** Select a variety of trees, shrubs, and ground covers to be used in your buffers. All of these types of plants should be included because in combination they take up the most water and nutrients. To make the best choice, look at what is already growing in your area and try to replace it.

In areas where the view of the lake is desired, the predominant plantings can be shrubs. Keep the opening in the tree canopy small! Be aware that when you eliminate trees you also reduce the quality of the buffer for deflecting raindrops and taking up nutrients.

The natural duff layer that occurs in a forest needs to be replaced also. A thick layer of mulch material such as bark mulch can be used. In a pinch a grass mix with a good hay mulch will temporarily protect the area between trees and shrubs.

**WIDTH:** Buffers range in width from 25 feet to 250 feet. Do the best you can to make it as wide as possible.

**GRADING:** In general, leave the buffer as irregular as possible. However, if water is channelizing through it in a small stream or ditch, this should be changed. Water must

flowthrough the buffer as sheet flow (think of it as a thin film of water only about 1/4 an inch deep at most) for the buffer to be able to treat stormwater runoff.

If the site previously had a lot of foot or vehicle traffic, the soil will need to be loosened up before planting can occur. Plants can't grow in soil that is too compacted.

**PLANTING INFORMATION:** For general information about planting, refer to the fact sheet entitled "TREES, SHRUBS, VINES AND GROUND COVERS - GENERAL PLANTING GUIDELINES".

**SOURCES OF PLANT MATERIAL:** Area Nurseries, Soil Conservation Districts.

**FOOTPATHS:** Foot traffic to the lake through the buffer should be limited to a winding path 4 to 6 feet wide at the maximum. Stabilize the footpath with bark mulch, etc.

### **PROTECTION AND MAINTENANCE**

- **Don't** allow vehicles to cross the buffer.
- Restrict cutting and thinning of vegetation in the buffer as much as reasonably possible. Some cutting is vital to preserve the health of the forest. Contact a local forester and use the standards from the new Shoreland Zoning Ordinances.
- Inspect the buffer annually and repair channelization and erosion problems.
- Don't rake the duff layer - leave it undisturbed.

## **TREES**

### **Deciduous**

*Acer rubrum* ' Red Maple (wet areas)  
*Acer saccharum* ' Sugar Maple  
*Acer saccharinum* ` Silver Maple (fast growing, messy)  
*Acer platanoides* ' Norway Maple  
*Tilia cordata* ` Littleleaf Linden  
*Fraxinus pennsylvanica* ' Green Ash  
*Malus species* ' Crabapple  
*Quercus rubra* ' Red Oak  
*Betula papyrifera* ' Paper Birch  
*Gleditsia triacanthos* ' Honey Locust (messy fruit)

### **Evergreen**

*Pinus resinosa* ` Red Pine (well drained soil, full sun)  
*Pinus strobus* ' White Pine (intolerant of salt or pollutants)  
*Pinus strobus* ' Austrian Pine (sandy sites)  
*Thuja occidentalis* ` White Cedar  
*Tsuga canadensis* ' Eastern Hemlock

## **SHRUBS**

*Viburnum dentatum* ' Arrowwood  
*Viburnum carlesii* ' Korean Spice Viburnum  
*Viburnum lonicifolium* ' Doublefile Viburnum  
*Viburnum plicatum trilobum* ` Cranberry Bush  
*Forsythia x Intermedia* ' Forsythia  
*Lonicera tatarica* ' Honeysuckle  
*Vaccinium corymbosum* ' High Bush Blueberry  
*Cornus sericea* ' Red Twig Dogwood (wet areas)  
*Cornus racemosa* ` Gray Dogwood  
*Amelanchier laevis* ' Serviceberry  
*Rosa rugosa* ' Rugosa rose (dry & sandy soil)  
*Elaeagnus umbellata* ' Autumn Olive (dry sites)  
*Ilex verticillata* ' Winterberry  
*Myrica pennsylvanica* ' Bayberry (slow growing)  
*Spiraea species* ' Spiraea

Syringe species' Lilacs  
Potentilla fruticosa' Potentilla (sun loving)  
Juniperus species' Juniper  
Berberis species' Bayberry  
Euonymus alatus ` Burning Bush  
Rhododendron species ' Rhododendrons and Azaleas

### **VINES AND GROWDCOVERS**

Ferns  
Vaccinium angustifolium ` Lowbush Blueberry  
Lonicera sp.' Honeysuckle  
Celastrus scandens ' Bittersweet (invasive)  
Parthenocissus quinquefolia' Virginia Creeper  
Hemerocallis' Daylily  
Hosta ` Plantain Lily  
Coronarius sp.' Crown Vetch