

Backyard Buffers



What are buffers and what do they have to do with me?

If you own property along a stream, river, lake, or wetland, then you could be the proud owner of a backyard buffer. These buffers of native plants (rather than lawn) create habitat for wildlife and improve water quality by filtering and slowing the water that drains off your property. Excess water that runs off lawns, adjacent roads and sidewalks during rain storms can pick up sediment (soil), toxics (pesticides) and nutrients (fertilizers) that may have been applied to the landscape. These three pollutants can impact the health of local waterways and, ultimately, a larger area such as the Chesapeake Bay.

■ To learn more about the benefits of backyard buffers check out <http://www.crjc.org/buffers/Introduction.pdf>.

What does a buffer look like and how does it work?

Visualize a buffer in three *zones*. This will help you with planning and long-term maintenance of the buffer.



Streamside is located from the edge of the water to the top of the bank. Trees and shrubs will help to control bank erosion and provide vital habitat for wildlife.

Middle is the zone that contains trees and shrubs plus wildflowers and grasses. This area can be great for wildlife habitat, or possibly alternative forestry products such as nuts, berries, fruit and mushrooms. Trees may be removed and replaced on occasion.

Outer is the area that adjoins the rest of your yard and functions best when planted with dense native grasses and wildflowers. This zone must be maintained to promote maximum nutrient uptake and sediment filtering.

The wider the overall buffer, the greater the benefits for wildlife and water quality.

■ To learn more about buffer zones and recommended widths visit <http://www.abe.msstate.edu/Tools/csd/NRCS-BMPS/pdf/streams/bank/riparianzone.pdf>

How do I get started?

First Step

If you are mowing to the edge of the waterway or wetland stop! Change your mowing line to begin fifteen feet back from the top of the bank and allow the grass to grow as a roughcut lawn (4 – 6”). You may want to check local weed ordinances and your homeowners association policy for rules about allowable height, especially if this area is in public view.

Determining Buffer Size

Next engage your family and/or your neighbors by taking a walk with them along the stream including above and below your property to see what may be growing in the buffer area and if the banks are eroded (exposed soil). If the banks are actively eroding then professional assistance will be needed for bank stabilization before any planting can be done.

After the walk, outline the proposed buffer area on your property with rope, flagging or spray paint. Ask the following questions:

- Will there be room for recreation outside of the buffer area for people and pets?
- Will the proposed area be manageable to maintain for the next three years until it is established? You can begin small and, in time, add on.



Finalize the area of your buffer, measure it and take note of plants and wildlife and its usage (i.e. birds and nests, animal tracks, butterflies, etc.). (Continues inside)

Planning Your Buffer

Using a piece of graph paper, hand draw the proposed area include the waterway and existing plants. It doesn't need to be fancy - just something to use as a tool to help finalize your buffer plan. Research the native plants that you would like in your buffer, the list in this document should get you started. You could also visit a local natural area or state park to see what is growing in the same conditions as your buffer (sun/shade, wet/dry, etc). Make a list of the plants that you like and determine where they should go using the drawing. You may want to use different sizes of circles to show trees, shrubs, grasses, flowers by using various coins. If you wish to maintain views of the water from the house, take into consideration the mature height, width and location of the plant.

A soil test done by Cooperative Extension (listed in the blue pages of the phone book) will also help in selecting the right plant for your buffer. This test will tell you if the soil is alkaline or acidic along with other nutrient information for your site. Your proposed buffer may have different soils in different locations because of imported fill so take samples from 2 or 3 areas.

During the planning process check the property map for public utility right-of-ways (sewer, electric, natural gas, etc.) in your proposed buffer zone. If this map is not available or you not sure of location, a good resource is PA One Call at 1-800-242-1776 . If utilities are present, you may need to plant wildflowers rather than trees or shrubs in the right-of-way.

If you purchased a piece of streamside property and plan to build a house on it, minimize the area to be cleared in the buffer zone. It will reduce the amount of soil exposed by construction that could wash into the waterway.

☛ For further information on planning your buffer go to www.environlandscaping.org.

What's next after planning?

After completing the planning process, you are ready to get "down and dirty." The key to a long-lived buffer is proper site preparation. First, identify and remove all invasive, non-native vegetation from the site. Common invasive plants in streamside sites are multiflora rose, mile-a-minute vine or Japanese honeysuckle. If a large expanse of soil is exposed after removing the weeds, you may want to plant a cover crop such as annual rye to help prevent growth of new weeds or use weed mats or landscape fabric.

☛ For additional information on invasive plants, www.bhwp.org/native/invasive_plants.

Where can I find the appropriate plants?

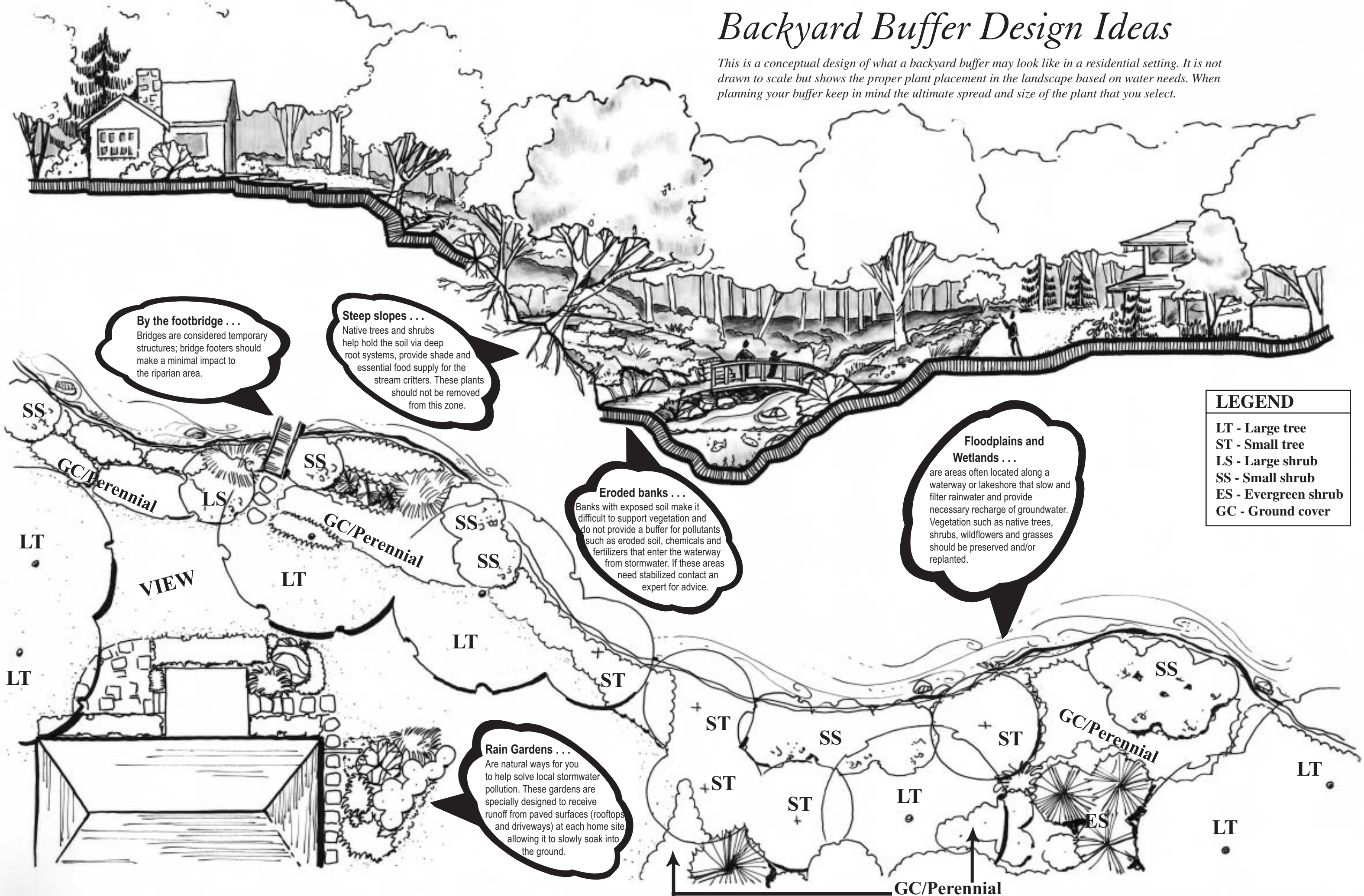
Local garden centers and retail nurseries should sell most of the plants listed in this document.

Now that the buffer is planted, will it take care of itself?

Unfortunately, no landscape is maintenance-free. The first year is the most critical. To ensure plant establishment and long-term survival, watering is key as well as keeping tall grass and weeds away from the new plants. An application of composted mulch four-inches deep will help retain moisture and hinder weed growth. Keep mulch from touching the base of the plant. Continue weed control by hand pulling and mowing, until the trees and shrubs are established in approximately three years. Over time, trees and shrubs will grow tall and wide to form a canopy that will shade out most of the grass and weeds underneath. In the long run, the least care is the best care for this landscape. You may want to avoid working in the buffer zone between mid-April to mid-August if wildlife is using the buffer to mate and raise young. Disturbance during this time can be detrimental.

Backyard Buffer Design Ideas

This is a conceptual design of what a backyard buffer may look like in a residential setting. It is not drawn to scale but shows the proper plant placement in the landscape based on water needs. When planning your buffer keep in mind the ultimate spread and size of the plant that you select.



By the footbridge . . .
Bridges are considered temporary structures; bridge footers should make a minimal impact to the riparian area.

Steep slopes . . .
Native trees and shrubs help hold the soil via deep root systems, provide shade and essential food supply for the stream critters. These plants should not be removed from this zone.

Eroded banks . . .
Banks with exposed soil make it difficult to support vegetation and do not provide a buffer for pollutants such as eroded soil, chemicals and fertilizers that enter the waterway from stormwater. If these areas need stabilized contact an expert for advice.

Floodplains and Wetlands . . .
are areas often located along a waterway or lakeshore that slow and filter rainwater and provide necessary recharge of groundwater. Vegetation such as native trees, shrubs, wildflowers and grasses should be preserved and/or replanted.

Rain Gardens . . .
Are natural ways for you to help solve local stormwater pollution. These gardens are specially designed to receive runoff from paved surfaces (rooftops and driveways) at each home site allowing it to slowly soak into the ground.

LEGEND	
LT	- Large tree
ST	- Small tree
LS	- Large shrub
SS	- Small shrub
ES	- Evergreen shrub
GC	- Ground cover

Beneficial Plants for Backyard Stream Buffers

This plant list is a guide to help you install your landscape plan. There are many more native plants that are suitable for Backyard Buffers. Be careful to avoid invasive plants. Consult native plant lists for your region or your local nursery or agricultural extension agent for additional plants which may fit into your landscape.

LARGE TREE-LT	BOTANICAL NAME	REGION	HEIGHT	BLOOM/FRUIT	SUN/SHADE	DRY/WET	VALUE
Red maple	<i>Acer rubrum</i>	all	75' – 100'	red bloom	sun – ps	w – d	very high wildlife, buffer
River birch	<i>Betula nigra</i>	piedmont & coastal	50' – 75'	catkin flower	ps – fs	w – m	wildlife, buffer, ornamental
Red or green ash	<i>Fraxinus pennsylvanica</i>	piedmont & coastal	50' – 75'		sun	m	buffer
Tuliptree	<i>Liriodendron tulipifera</i>	all	75' – 100'	yellow-green bloom	sun	d – m	buffer, ornamental
Black gum	<i>Nyssa sylvatica</i>	all	50' – 75'		sun – ps	d	ornamental, high wildlife
American sycamore	<i>Platanus occidentalis</i>	all	75' – 100'	ball-shaped fruit	sun – ps	w – d	ornamental
Pin oak	<i>Quercus palustris</i>	all	50' – 75'	acorn fruit	sun	w – d	very high wildlife
Northern red oak	<i>Quercus rubra</i>	all	75' – 100'	acorn fruit	sun – ps	m – d	very high wildlife
SM. TREE-ST/LG. SHRUB-LS	BOTANICAL NAME	REGION	HEIGHT	BLOOM/FRUIT	SUN/SHADE	DRY/WET	VALUE
Pawpaw	<i>Asimina triloba</i>	mountains & piedmont	20' – 35'	yellow edible fruit	sun – ps	m	ornamental, wildlife
Red chokeberry	<i>Aronia arbutifolia</i>	all	6' – 12'	red-berried fruit	sun – ps	w – d	ornamental, wildlife
Buttonbush	<i>Cephalanthus occidentalis</i>	all	6' – 12'	white ball-like flower	sun	w	ornamental
Red-osier dogwood	<i>Cornus sericea (stolonifera)</i>	mountains & piedmont	6' – 12'	dull white fruit	sun	w – m	ornamental, v. high wildlife
Shadblow serviceberry	<i>Amelanchier canadensis</i>	all	20' – 30'	deep black, edible fruit	sun – ps	d – m	very high wildlife, buffer
Eastern redbud	<i>Cercis canadensis</i>	mountains & piedmont	20' – 30'	pinkish bloom	fs – sun	d – m	ornamental
Winterberry holly	<i>Ilex verticillata</i>	all	6' – 12'	red-berried fruit	ps	m – w	wildlife, ornamental
Witch hazel	<i>Hamamelis virginiana</i>	all	20' – 35'	yellow bloom-in fall	sun – ps	d	ornamental, borders
Common elderberry	<i>Sambucus canadensis</i>	all	6' – 12'	white bloom/purple fruit	fs – sun	w – d	very high wildlife
Highbush blueberry	<i>Vaccinium corymbosum</i>	all - acid soil	3' – 10'	dark blue fruit	fs – sun	d – m	high wildlife, ornamental
Southern arrowwood	<i>Viburnum dentatum</i>	piedmont & coastal	6' – 12'	bluish-black fruit	fs – sun	m – w	wildlife, buffer, ornamental
EVERGREEN TREE-ET/SHRUB-ES	BOTANICAL NAME	REGION	HEIGHT	BLOOM/FRUIT	SUN/SHADE	DRY/WET	VALUE
American holly	<i>Ilex opaca</i>	coastal	30' – 50'	red berry	sun – ps	m	cover, high wildlife, orn.
Eastern white pine	<i>Pinus strobus</i>	mountains & piedmont	75' – 100'	five-needled bundle	sun	d	high wildlife, buffer
SMALL SHRUBS-SS	BOTANICAL NAME	REGION	HEIGHT	BLOOM/FRUIT	SUN/SHADE	DRY/WET	VALUE
Fothergilla	<i>Fothergilla gardenii</i>	all	3' – 5'	white bottlebrush flowers	fs – sun	m – w	ornamental
Inkberry holly	<i>Ilex glabra "Shamrock"</i>	all	4' – 6'	black berry	ps	d – w	evergreen, cover
Pinxterbloom azalea	<i>Rhododendron periclymenoides</i>	mountains - acid soil	6'	pink bloom	ps	m – w	ornamental
PERENNIAL-P	BOTANICAL NAME	REGION	HEIGHT	BLOOM/FRUIT	SUN/SHADE	DRY/WET	VALUE
Wild columbine	<i>Aquilegia canadensis</i>	all	8" – 24"	red & yellow flowers	fs – sun	d – m	wildlife, ornamental
Swamp milkweed	<i>Asclepias incarnata</i>	all	2' – 5'	pink-red flowers	fs – sun	m – w	wildlife, buffer
New England aster	<i>Aster novae-angliae</i>	all	3' – 4'	pink to violet flowers	sun	m	wildlife, ornamental
Wild bleeding heart	<i>Dicentra eximia</i>	mountains & piedmont	8' – 12'	pink flowers	ps – fs	m	ornamental
Joe-pye-weed	<i>Eupatorium fistulosum</i>	all	5' – 10'	pink-purple flowers	sun	m – w	wildlife, buffer, ornamental
Wild geranium	<i>Geranium maculatum</i>	mountains & piedmont	1' – 2'	rose-purple flowers	sun	m	ornamental
Gayfeather	<i>Liatris spicata</i>	all	2'	purple flower spikes	sun	d	ornamental, wildlife
Cardinal flower	<i>Lobelia cardinalis</i>	all	30" – 40"	scarlet flower	sun – ps	w – m	wildlife, ornamental
Great blue lobelia	<i>Lobelia siphilitica</i>	mountains & piedmont	30"	blue flowers	sun – fs	w – m	wildlife, ornamental
Virginia bluebell	<i>Mertensia virginica</i>	mountains & piedmont	18"	pale blue flowers	fs – ps	m	ornamental
Bee balm	<i>Monarda didyma</i>	mountains	2' – 4'	scarlet flowers	sun – ps	w – m	wildlife, ornamental
Black-eyed susan	<i>Rudbeckia fulgida</i>	all	2' – 3'	yellow flowers	sun	d	wildlife, buffer, ornamental
Goldenrod	<i>Solidago rugosa</i>	all	2' – 7'	yellow flowers	sun – ps	d – m	wildlife, buffer
New York ironweed	<i>Vernonia noveboracensis</i>	all	Up to 7'	deep purple flowers	sun	m – w	wildlife, buffer, ornamental
GROUNDCOVER-GC	BOTANICAL NAME	REGION	HEIGHT	BLOOM/FRUIT	SUN/SHADE	DRY/WET	VALUE
Green and gold	<i>Chrysogonum virginianum</i>	all	4" – 12"	yellow-green flowers	ps – fs	m	ornamental
Woodland phlox	<i>Phlox divaricata</i>	mountains & piedmont	6" – 18"	blue flowers, semi-evergreen	ps	m	wildlife, ornamental
Christmas fern	<i>Polystichum acrostichoides</i>	all	up to 2'	evergreen	ps – fs	m	ornamental
Sensitive fern	<i>Onoclea sensibilis</i>	all	18" – 24"	dried brown spore-stalks	ps – fs	m – w	ornamental
Foamflower	<i>Tiarella cordifolia</i>	mountains & piedmont	6"	white flower	ps	m – w	ornamental
GRASS-GR/GRASSLIKE-GL	BOTANICAL NAME	REGION	HEIGHT	BLOOM/FRUIT	SUN/SHADE	DRY/WET	VALUE
Soft rush	<i>Juncus effusus</i>	all	2' – 3'		sun – ps	w – m	wildlife, ornamental
Cinnamon fern	<i>Osmunda cinnamomea</i>	all	2' – 3'		fs – sun	w – m	ornamental
Little bluestem	<i>Schizachyrium scoparium</i>	all	up to 3'	seeds	sun	d	wildlife, ornamental
Indian grass	<i>Sorghastrum nutans</i>	all	5' – 6'	seeds	sun	d – m	wildlife, ornamental

LEGEND

VALUE: Wildlife = provides food and/or shelter
 Buffers = for streamside or riparian areas
 Ornamental = attractive, decorative plant

SUN/SHADE: sun = sun
 ps = partial shade
 fs = full shade

DRY/WET: w = moisture
 m = moderate
 d = drought tolerant

Backyard Buffer Resources

General Buffer Information

Forest Buffer Toolkit: Replanting Pennsylvania's Streamsides. The purpose of this toolkit is to provide information for planning, design, establishment and maintenance of a streamside forest buffer. A copy of the Toolkit can be viewed at www.dep.state.pa.us/dep/deputate/watermgt/wc/subjects/StreamReLeaf/tkit_TOC.pdf

Riparian Buffer Systems is a series of 10 fact sheets that includes plant lists, maintenance, and benefits and costs of a buffer. The fact sheets can be found at www.riparianbuffers.umd.edu/.

Plants and Landscaping Information

BayScaping Homeowners Guides. For more information about conservation landscaping, check out BayScaping on the Alliance for the Chesapeake Bay web site at www.AllianceChesBay.org.

Invasive Plant Identification and Control

The Nature Conservancy's website gives an excellent overview of the harmful invasive plant species threatening wildland biodiversity, many coming from our own backyards. This site has extensive resources on weed control plus a photograph archive. <http://tncweeds.ucdavis.edu/>

Invasive Plants in Pennsylvania (brochure) describes the characteristics and impacts of invasive plants and provides tips to minimize their impact. Contact PA DCNR-Ecological Services at (717) 787-3444.

Rain Gardens

Virginia Department of Forestry has an excellent web page on rain gardens. http://www.dof.state.va.us/rfb/riparian/rain_gardens

Plant Identification

Three good plant identification web sites are: <http://plants.usda.gov>; www.hcs.ohio-state.edu/plants.html; and www.bcpl.net/~cadavis/cmapig/initialpage.html

Plant Sources

A list of Garden Centers and Nurseries that carry a large selection of native plants can be found in the "resources" section at www.envirolandscaping.org or contact Audubon Pennsylvania at (717) 213-6880.

Technical Assistance

Soil Test Kits can be purchased at your county Cooperative Extension office. The phone number can be found in the blue pages of your telephone directory under 'County Government'.

Streambank Stabilization - Contact your local county conservation district office. The phone number can be found in the blue pages of your telephone directory under 'County Government'.



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<http://www.alliancechesbay.org>
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The Alliance for the Chesapeake Bay is a regional nonprofit organization that builds and fosters partnerships to protect and restore the bay and its rivers.