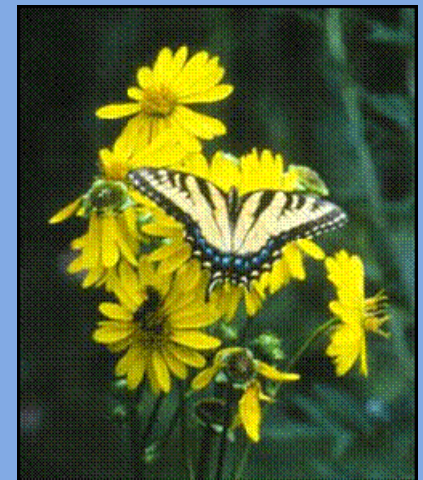


NOTES

Growing Solutions

Resource Protection Areas (RPAs),
Buffer Plantings, Virginia Native Plants,
the Chesapeake Bay and You....

A Homeowners Guide to Protecting the Environment



"When one tugs at a single thing in nature, he finds it attached to the rest of the world."~John Muir

The Chesapeake Bay Watershed

Nearly 16 million people live within the Chesapeake Bay watershed with the majority clustered around the Bay and its tidal rivers. Over the next 30 years, the basin's population is expected to increase by 3.7 million people, or nearly 25 percent. No matter where you live in eastern Virginia, you are part of a watershed that effects the Chesapeake Bay. Population growth and development, as well as point and non-point source pollution all have seriously impacted the Bay's health. In the Chesapeake Bay Region, it is estimated if current trends continue developed land will increase by 60% over the next 20 years.

The Chesapeake Bay Preservation Act, adopted by the state in 1988, recognizes that “state and local economies are integrally related to each other and the environmental health of the Chesapeake Bay”. Local governments have adopted their own Chesapeake Bay ordinances to balance development and natural resources. The goal is to control and regulate runoff at the source to protect against and minimize pollution and sediment in wetlands, streams and lakes which are tributaries of the Chesapeake Bay.

This booklet provides a list of suggested local native plants particularly suited for restoring environmentally sensitive lands that lie along shorelines, streams, or rivers also known as Resource Protection Areas (RPAs). The law encourages the use of native plants since they are better adapted to local climate and soil conditions, require less maintenance and have a greater survival rate. Local codes and ordinances that promote reduced developmental impacts on local water resources are critical to future sustainability. The information in this booklet should be helpful to property owners, developers, landscape professionals, and local nurseries in their efforts to diversify landscapes, promote habitats, and help to sustain the Chesapeake Bay and its tributaries.

John Clayton Chapter, VNPS	www.claytonvnps.org
Virginia Native Plant Society	www.vnps.org
Digital Atlas of Virginia Flora	www.biol.vt.edu/digital_atlas/
U.S. Dept. of Agriculture Plants List	http://plants.usda.gov
Native Plant Database (LBJ Wildflower Center, TX)	http://wildflower.utexas.edu/plants/
Virginia Society of Landscape Designers	www.vslld.org

Acknowledgements

Written by:

Leanne DuBois, Extension Agent, Horticulture

Virginia Cooperative Extension , James City (JCC)/New Kent Counties

Special Acknowledgment:

Susan Voigt, JCC/Williamsburg Master Gardener Association

Virginia Native Plant Society (VNPS), John Clayton Chapter

Additional Contributors:

Helen Hamilton, VNPS and JCC/Williamsburg Master Gardener Association

Jim Perry, Virginia Institute of Marine Science

Mike Woolson, JCC Planning Division

Pat Menichino, JCC Environmental Division

George Homewood—New Kent County Community Development

Editing: Mary Mills, Susan Voigt, Amy Walker

Contact your local County Environmental Division to determine the relationship between your property, existing streams and Resource Protection Area designation and ordinance information. For further information on how to create an effective stream buffer or plant selections, contact your local Virginia Cooperative Extension.

Additional Information

Virginia Cooperative Extension: James City County
(757) 564-2170

Virginia Cooperative Extension: New Kent County
(804) 966-9645

James City County/Williamsburg Master Gardener Assoc.
www.jccwmg.org

James City County Environmental Division
(757) 253-6640

James City County—PRIDE Program
www.protectedwithpride.org

New Kent County Environmental Division
(804) 966-8580

Virginia Riparian Buffers Modification & Mitigation Manual
www.dcr.virginia.gov/chesapeake_bay_local_assistance/ripbuffmanual.shtml

VA Dept. of Forestry/Riparian Forest Buffers
www.dof.virginia.gov/rfb/

Alliance for the Chesapeake Bay www.acb-online.org

Bayscapes www.fws.gov/chesapeakebay/Bayscapes.htm

Center for Watershed Protection www.cwp.org

Chesapeake Bay Program www.chesapeakebay.net

Native Plants for Chesapeake Bay Watershed
www.nps.gov/plants/pubs/chesapeake/

Ways to Protect and Preserve the Environment on your property

Table of Contents

In Your Backyard: RPAs and Riparian Buffers	4-5
Native Plants for Our Area	6-15
Large Trees	6-7
Small Trees	6-7
Shrubs	8-9
Perennials	10-13
Grasses	12-13
Vines	14-15
Ferns	14-15
Riparian Zones	16
Planting Tips	17
Sources for Additional Information	18

In your Backyard: RPAs and Riparian Buffer

What is a Resource Protection Area (RPA)?

Resource Protection Areas are the corridors of environmentally sensitive lands that lie alongside or near the banks of streams, rivers and other waterways. In their natural condition, RPAs protect water quality, stabilize shorelines and stream banks, prevent erosion, filter pollutants and reduce the volume of storm water runoff. RPAs also provide critical habitat for wildlife and serve other important ecological and biological functions. These benefits translate into increased quality of life for our community.

RPAs include land 100 feet from a stream bank or edge of wetlands adjacent to streams. These areas are protected under state and local ordinances. Generally, no development, land disturbance or vegetation removal is allowed. These RPAs are often described as the last line of defense for the protection of water quality.

What is a Riparian Buffer?

Vegetative areas along waterways are known as Riparian Buffers and are noted for their ability to protect and enhance water quality. A vegetative buffer can trap sediment and reduce and remove nutrients and other chemicals. Most of these buffers are included in RPAs under the Chesapeake Bay Preservation Act.



**A Healthy Stream
Buffer System**

Planting Tips

Locating Native Plants

The plants were selected with the expertise and cooperation of the Virginia Native Plant Society. There are numerous websites and specialty nurseries that cater to native plant enthusiasts. The recommended selections were chosen for their suitability for this area and availability at local garden centers, nurseries, specialty growers and retailers that offer nursery-propagated species.

Soil Preparation

Native plants are adaptable to native soils; therefore little or no soil amendments are needed.

Planting

Fall and Spring are the ideal times to plant. Try to avoid planting in the summer as successful establishment will be minimized due to heat and limited moisture availability.

Care and Maintenance

It will take time for native plants to become well established. Watering is critical for the two to three weeks after planting, or longer, depending on the season and rainfall amounts. Pruning and maintenance may be necessary for fast growing species and to maintain the visual quality.

IMPORTANT:

Be sure to familiarize yourself with your local Chesapeake Bay Ordinance. Routine maintenance may be considered a buffer modification requiring a permit. Pruning, removal of dead, diseased and dying plants, as well as, noxious species typically requires a county permit.

What is a Riparian Vegetative Zone?

The plant list indicates a **Riparian Zone**. The following describes the 4 zones identified on the previous list:

- Zone 1:** Permanently to semi-permanently flooded and often dominated by grasses, sedges and herbaceous emergent plants.
- Zone 2:** Riverside thicket, may be seasonally to temporarily flooded and characterized by emergent species, shrubs and a few tree species.
- Zone 3:** Forest wetlands, has soils that are saturated to poorly drained.
- Zone 4:** Well drained forest or upland forest.

What are the consequences of violating the RPA?

Non-compliance is a violation of the County's Chesapeake Bay Ordinance and can result in penalties. Violators will be required to restore the RPA in accordance with county guidelines. An RPA Restoration Plan must be developed and submitted to the County Environmental Division for approval. The objective of the plan is to restore the RPAs primary function to remove pollutants from storm water runoff.



How do I Establish, Replace or Restore my Buffer?

First contact your local County Environmental Division to understand the local ordinance and how it effects your property. They will also indicate if you are in a Resource Protection Area (RPA) which would prohibit any land use activities including removal or alteration of existing vegetation without prior written approval.

It's best not to alter the existing natural stream buffers. Buffer requirements typically require three layers of vegetation comprised of canopy and mid-story trees, shrubs and ground cover. The 100 foot wide vegetative buffer is set to achieve a 75% reduction of sediments and a 40% reduction of nutrients from reaching the waterway.

What native plant species are recommended?

The purpose of this brochure is to provide guidance for native plant riparian buffer selections approved for RPAs. The plants listed on the following pages were selected for our specific area by experienced gardeners, Master Gardeners, and our local Native Plant Society. They were chosen for their performance, availability, establishment, sustainability in extreme weather conditions, seasonal interest and natural habitat attractiveness. The list includes vegetation from all three layers mentioned above including trees, shrubs, perennials, grasses, vines and ground covers.

When selecting plants for the site, consider soil conditions, slope and sunlight. Many of these native plants are suitable for use throughout your landscape.

See the following pages for a list of the best native plants for Tidewater Virginia.

Common Name	Scientific Name	Bloom Time	Soil	Light	Plant Height	Riparian Zones
Vines						
Crossvine	<i>Bignonia capreolata</i>					
Trumpet creeper	<i>Campsis radicans</i>					
Virgin's bower	<i>Clematis virginiana</i>					
Climbing hydrangea	<i>Decumaria barbara</i>	S	M-W	SU	40'-100'	1-4
Carolina jessamine	<i>Gelsemium sempervirens</i>	LS	M-W	SU	50'-75'	2-3
Trumpet honeysuckle	<i>Lonicera sempervirens</i>	S	D, DT	SU	50'-75'	2-4
Partridgeberry	<i>Mitchella repens</i>	S	D-W	SU-PS	30'-75'	2-4
Virginia creeper	<i>Parthenocissus quinquefolia</i>	SM	D-M	PS-SH	15'-50'	3-4
			D-W	SU	70'-90'	2-4
Passionflower	<i>Passiflora incarnata</i>	S	D-M	SU-PS	75'-100'	3-4
		S	D-M	SU	40'-70'	3-4
American wisteria	<i>Wisteria frutescens</i>		D-M	SU	70'-90'	3-4
			M-W	SU	50'-80'	2-3
		S	M-W	SU-PS	35'-50'	1-2
		S	M-W	SU	50'-100'	1-3
Ferns						
Southern ladyfern	<i>Athyrium filix-femina</i> ssp. <i>asplenioides</i>					
Sensitive fern	<i>Onoclea sensibilis</i>	S	M	PS	35'-50'	2-4
Cinnamon fern	<i>Osmunda cinnamomea</i>	S	M	PS-SH	20'-35'	2-4
		S	M	SU-PS	12'-35'	3-4
Royal fern	<i>Osmunda regalis</i>	S	D-M	PS	15'-50'	3-4
Christmas fern	<i>Polystichum acrostichoides</i>	S	D	SU-SH	15'-50'	2-4
Marsh fern	<i>Thelypteris palustris</i>	S	W-M	SU-SH	10'-30'	2-3
Netted chain fern	<i>Woodwardia areolata</i>					
Virginia chainfern	<i>Woodwardia virginica</i>					

S-Spring; SM-Summer; F-Fall
ESM-Early Summer

Riparian Zones: 1-usually flooded, wetlands
2-Streamside, May Flood
3-Wet Forest, poorly drained
4-Upland

Common Name	Scientific Name	Flower Color	Flower Color	Bloom Time	Soil	Light	Plant Height	Riparian Zones
Shrubs								
Common (smooth) alder	<i>Alnus serrulata</i>	purple catkins	white	SM	W	PS	1'-3'	1-2
Red chokeberry	<i>Aronia arbutifolia</i>	white blooms	blue, pink, white	SM	M	SU	1'-2'	2-3
Groundsell tree	<i>Baccharis halimifolia</i>	white to green	blue	S-SM	M	PS	6"-18"	2-4
Beautyberry, American	<i>Callicarpa americana</i>	light pink	yellow	SM-F	M-D	SU-PS	2'-6'	2-4
New Jersey tea	<i>Ceanothus americanus</i>	white						
Button bush	<i>Cephalanthus occidentalis</i>	white blooms						
Summer sweet	<i>Clethra alnifolia</i>	white blooms	lavender, violet	SM-F	D-M	SU-SH	1'-3'	3-4
Silky dogwood	<i>Cornus amomum</i>	white blooms	violet-blue	L SM-F	D-M	SU	1'-3'	2-3
Strawberry bush	<i>Euonymus americanus</i>	pale green	purple	L SM	M	SU	2'-7'	2-4
Witch hazel	<i>Hamamelis virginiana</i>	yellow						
Inkberry	<i>Ilex glabra</i>	white						
Winterberry	<i>Ilex verticillata</i>	white blooms	reddish	SM	D-W	SU	6'	2-3
Sweetspire	<i>Itea virginica</i>	white blooms	light brown	F	M DT	SU	3'-6'	3
Mountain laurel	<i>Kalmia latifolia</i>	white-pink	tan	F	D	SU	2'-5'	3-4
Sweetbells, Fetterbush	<i>Leucothoe racemosa</i>	pink	tan	SM-F	M	PS	2'-5'	2-4
Spicebush	<i>Lindera benzoin</i>	tiny yellow flowers	purple	SM-F	D-M	SU	1'-3'	2-4
Bayberry, Wax myrtle	<i>Myrica cerifera</i>	green	brown	SM	M-W	SU-PS	1'-4'	1-3
Swamp azalea	<i>Rhododendron periclymenoides</i>	pink	red, purple	SM-F	M-W	SU	4'-6'	1-3
Highbush blueberry	<i>Vaccinium fuscatum</i>	pale pink	blue foliage, red fall foliage	SM	D-M	SU	3'-5'	2-4
Arrowwood	<i>Viburnum dentatum</i>	white blooms						
Possumhaw	<i>Viburnum nudum</i>	white blooms	brown	SM	M-W	SU	4'-5'	1-2

Common Name	Scientific Name	Bloom Time	Soil	Light	Plant Height	Riparian Zones
Perennials, Continued						
Lizard's tail	Saururus cernuus	S	W-M	SU	12'-20'	1-3
Hyssops skullcap, Helmet flower	Scutellaria integrifolia	S	M	PS	2'-12'	2-4
Blue-eyed grass	Sisyrinchium angustifolium	S	W-D	SU	6'-12'	2-4
Goldenrod (sweet, gray, seaside, late, wrinkleleaf)	Solidago sp (odora, nemoralis, sempervirens, altissima, rugosa)	S	D-M	SH-PS	6'	3-4
		S	D	SU-PS	3'	4
		SM	M-W	SU-SH	3'-12'	1-2
Aster (blue wood, smooth)	Symphyotrichum (cordifolium, laeve)	SM	M-W	PS-SH	6'-12'	2-3
New York aster	Symphyotrichum novi-belgii	S	W-M	SU-PS	6'-12'	2-3
New York Ironweed	Vernonia noveboracensis	SM	D_M	PS	6'-12'	4
		F	M-D	PS-SH	15'-30'	4
		E SM	D-M	SU-SH	6'-10'	2-3
Grasses						
Big bluestem	Andropogon gerardii	L S	M-W	SU-SH	6'-12'	2-4
Bushy bluestem	Andropogon glomeratus	L S	M-W	SU-SH	3'-10'	2-3
Split bluestem	Andropogon ternarius	E SM	D-W	PS-SH	5'-20'	4
River oats, Indian oats	Chasmanthium latifolium	S-SM	M-W	SH-SU	6'-12'	2-3
Purple lovegrass	Eragrostis spectabilis	S	M	SH	6'-16'	2-4
Soft rush	Juncus effusus	S	D-M	SU-SH	5'-15'	1-4
Switchgrass	Panicum virgatum 'Shenandoah', 'Heavy Metal', 'Dallis Blue', 'Northwind'	S	M-W	SH	3'-10'	2-3
		S	D-W	SU-SH	6'-12'	2-4
Little bluestem	Schizachyrium scoparium	L S-SM	D-M	SU	10'-15'	2-4
Woolgrass	Scirpus cyperinus	SM	M-W	SU-SH	6.5'-20'	1-3

Recommended Native Plants

Common Name	Scientific Name	Flower Color	Bloom Time	Soil	Light	Plant Height	Riparian Zones
Perennials							
Blue Star	<i>Amsonia tabernaemontana</i>	pale Blue	S	M, DT	SU	3'	3-4
Columbine	<i>Aquilegia canadensis</i>	red & yellow	S	M	PS-SH	1'-2'	4
Butterfly Weed	<i>Asclepias tuberosa</i>	orange	SM	D, DT	SU-PS	1'-3'	4
Green & gold	<i>Chrysogonum virginianum</i>	yellow	S	M	SU-SH	.5'-1'	4
Maryland golden aster	<i>Chrysopsis mariana</i>	yellow	SM-F	D	SU	.5'-2'	4
Blue mistflower	<i>Conoclinium coelestinum</i>	blue, lavender	SM, Late	D-W	PS-SH	1'-3'	3-4
Lanceleaf coreopsis	<i>Coreopsis lanceolata</i>	yellow	SM	D, DT	SU	1'-2'	4
Threadleaf coreopsis	<i>Coreopsis verticillata</i>	yellow	SM	D-M, DT	SU-PS	.5'-3'	4
Coneflower	<i>Echinacea</i> sp (<i>E. purpurea</i>)	white, Yellow, Pink-purple	SM	M-D	SU-SH	3'	3-4
Joe-pye weed, Trumpetweed	<i>Eupatorium fistulosum</i>	pink, purple	SM	D-W	SU-PS	1.5'-10'	2-4
Wild geranium, spotted geranium	<i>Geranium maculatum</i>	lavender, pink	S	D-M	SU-PS	1'-2'	4
Sneezeweed	<i>Helenium autumnale</i>	yellow	F	M	SU-PS	1.5'-6'	1-3
Oxeye Sunflower	<i>Heliopsis helianthoides</i>	yellow	SM	D-M	SU-PS	1'-5'	4
Rose mallow	<i>Hibiscus moscheutos</i>	pink or white	SM	W	SU	3'-6'	1-2
Virginia blue flag	<i>Iris virginica</i>	blue	L S	M-W	SU-PS	1'-3'	1-2
Turk's cap lily	<i>Lilium superbum</i>	orange	L SM	M-W	SU	3'-8'	1-3
Cardinal flower	<i>Lobelia cardinalis</i>	red	SM	M-W	SU-PS	2'-4'	1-3
Lupine	<i>Lupinus perennis</i>	blue	L S	D	SU-PS	1'-3'	4
Virginia bluebells	<i>Mertensia virginica</i>	pink-blue	S	M-W	PS	1'-2'	3-4
Wild Quinine, American fever-few	<i>Parthenium integrifolium</i>	white	SM	D	SU	1'-3'	4
Wild blue phlox	<i>Phlox divaricata</i>	blue, white	S	M-D	PS-SH	.5'-1.5'	3-4
Virginia meadow beauty	<i>Rhexia virginica</i>	pink	SM	W	SU	1'-3'	1-3
Black-eyed Susan, orange cone-flower	<i>Rudbeckia hirta</i> ; <i>R. fulgida</i> , <i>R. triloba</i> ,	yellow	SM	D-M	SU-PS	1'-4'	3-4