

Landscaping with Natives on Lake Gaston

Kathy Pfleger





agenda

**Native, Exotic &
Invasive Plants**

**Benefits of Natives
Impact of Invasives**


Conservation Landscaping

**Dominion Energy's Native
Plant List**

Common Natives

Native VS Exotic/Alien VS Invasive Plants

What's the difference?



**Natives vs. Invasives
What's the difference?**

Native Plants

Plants evolved in a particular area over a period of time & have adapted to the climate, hydrology & geology of that area

Generally defined as those plants that occurred in North America before European settlement.



Non-Native / Exotic / Introduced / Alien Plants

Plants that are directly or indirectly, deliberately or accidentally introduced by human action & *then became established.*



Anise Tree

**Some species native
to North America may
be exotic to NC & VA**



NATIVES VS EXOTICS/ALIENS



Today, approximately 25% of flowering plants in North America are *naturalized non-natives* or *exotic species*.

MOST NON-NATIVE PLANTS ARE NOT INVASIVE

- **BUT** - The characteristics that make them attractive as ornamentals (colorful berries, pest resistance, tolerance of harsh conditions) also increases their potential for invasiveness & makes them difficult to contain.

Once established, exotic plant species can become invasive, out compete & displace the native plant species.



Invasive Plants

Introduced species that cause health, economic or ecological damage in their environment.



- Dominate areas due to no natural enemies or predators
- Have a negative impact on the local environment, ecosystem & biodiversity of an area.

Benefits of Native Plants

- **Provide greater diversity in the landscape**
- **Can restore regional landscapes & habitats**



Natives
require less
watering,
therefore
less runoff

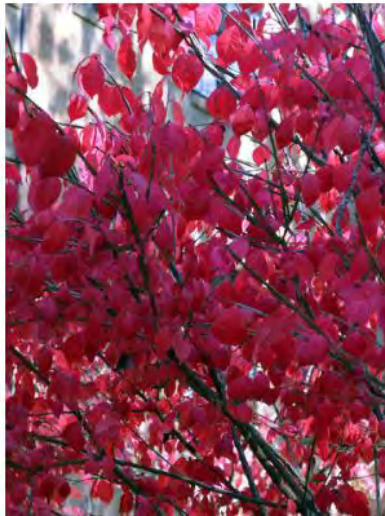
Maintains or
improves soil
fertility



Supports
beneficial
insects &
pollinators

Lower
maintenance
costs:
Less pesticides
& fertilizers

Invasive Plants



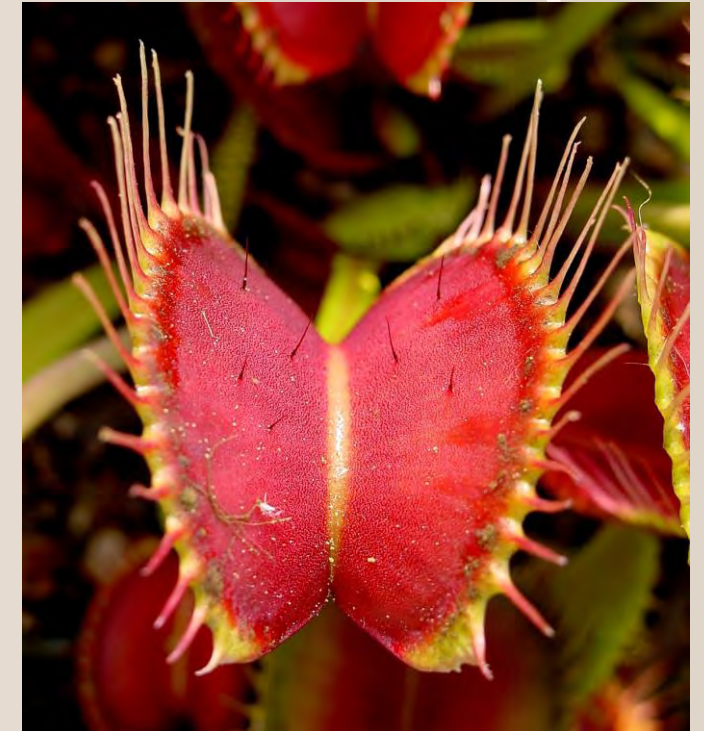
The VA Dept. of Conservation & Recreation currently lists 90 species as invasive.

The NC Invasive plant list contains 107 plants.

Clockwise from top left: Multiflora Rose, Bradford Pear, Chinese Privet, Burning Bush, Princess Tree and Paper Mulberry

Impact of Invasive Species

Invasive species are a major threat, (2nd only to habitat destruction), to native plants & wildlife.

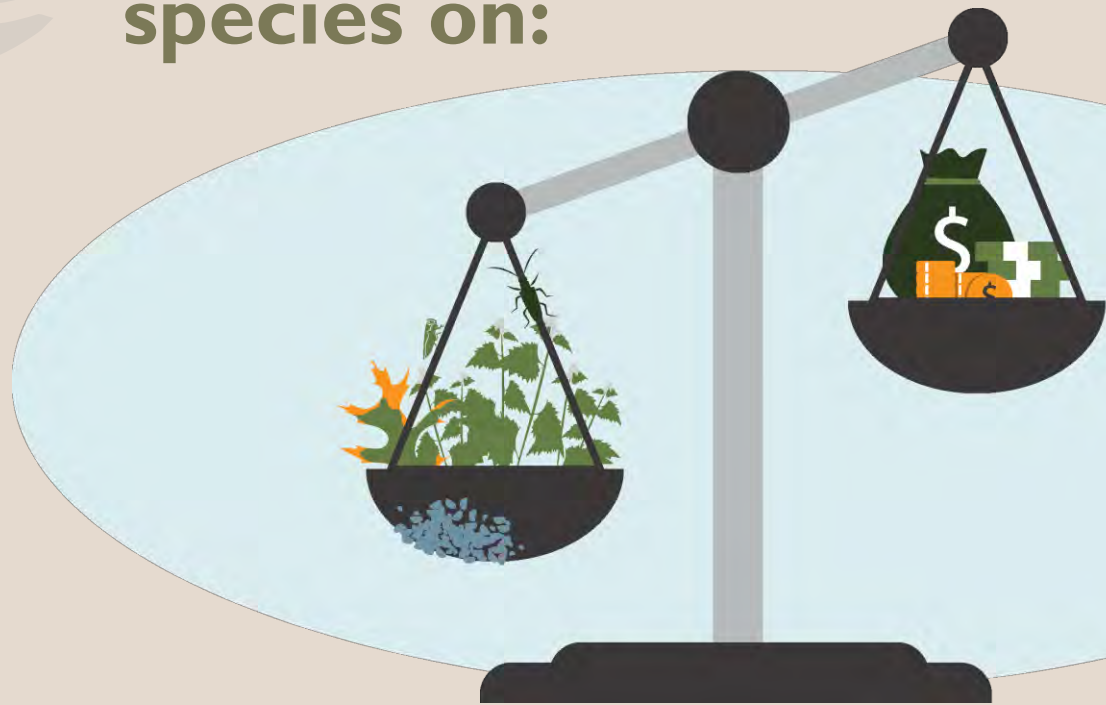


Piping plover

57% of plant species listed as threatened or endangered by the U.S. Fish & Wildlife Service are directly threatened by invasive species.

Impact of Invasive Species

In the **US**, invasive species cause an estimated **\$120 billion** in annual economic losses due to the direct effects of invasive species on:

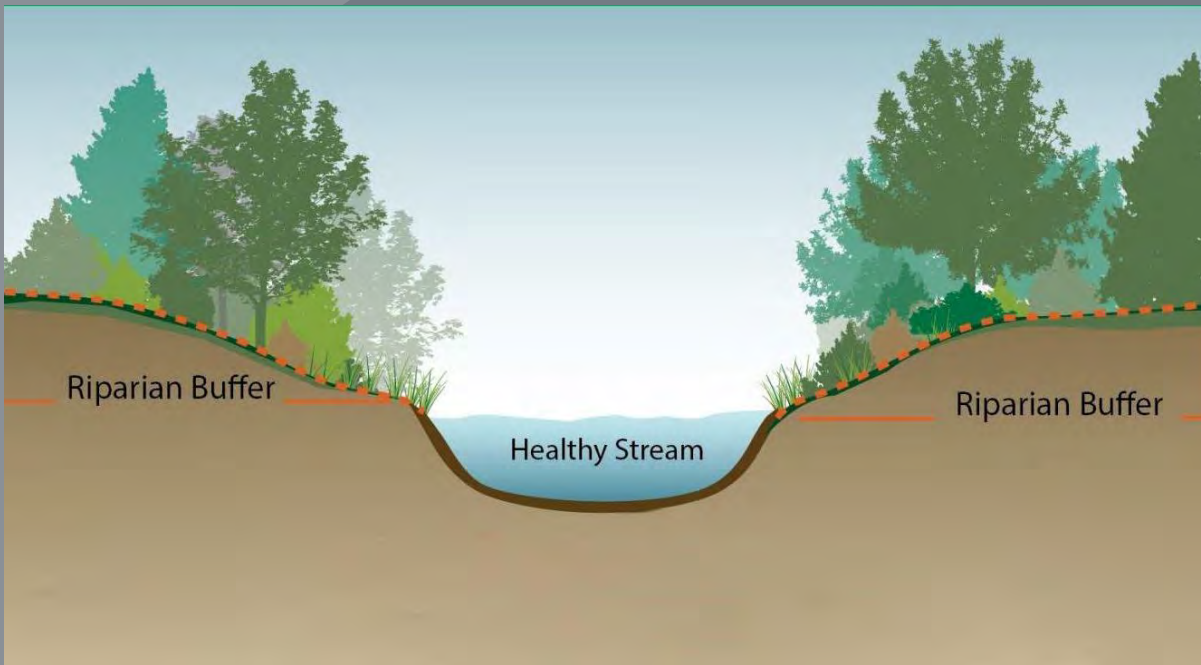


- ✓ **Property values**
- ✓ **Agricultural productivity**
- ✓ **Public utility operations**
- ✓ **Native fisheries**
- ✓ **Tourism & outdoor recreation**
- ✓ **Costs of invasive species control efforts**

So WHAT can we do?



Conservation Landscaping for Land & Shorelines



- Landscaping with specific goals of reducing pollution and *improving the local environment*.
- Used to address areas with problems such as erosion, poor soils, steep slopes, or poor drainage.

Goals & Benefits

Reduce the amount of intervention needed to have attractive & functional landscaping

Over time, garden maintenance is reduced to only minimal seasonal cleanup and occasional weeding or plant management.



Less maintenance over the long term, while still presenting a “maintained” appearance.

Improved environmental quality, landscape sustainability, improved aesthetics, cost savings, & bringing wildlife to the property.

SHORELINE MANAGEMENT

We want to seek a balance that satisfies our lakeshore lifestyle & recreational needs while providing for good habitat & water quality



WE CAN ACHIEVE THIS BY:

- **Re-establishing native plant communities**
- **Keeping human disturbances to a minimum at the shoreline**



Steps to Developing a Shoreline/ Landscape Project



Step 1 - Assessment

Step 2 - Planning

Step 3 - Preparation

Step 4 - Installation

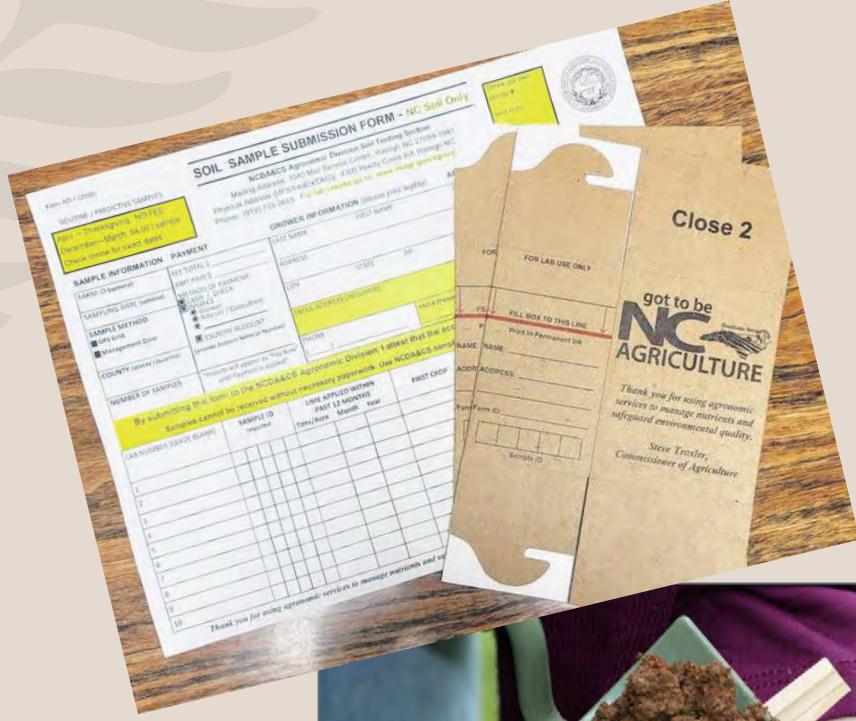
Step 1 - ASSESSMENT

Become aware of the site's conditions that can influence your project:

- Surrounding areas
- Topography
- Drainage
- Soil
- Existing Vegetation
- Micro-climates
- Views



Step 1 - ASSESSMENT



Have Your SOIL ANALYZED

- Soil testing is free for NC residents; \$10 for VA residents
- Contact your local **County Cooperative Extension Service** for a soil test kit.
- It tests for nutrient content & gives you specific recommendations for preparing your soil before planting.

Step 2 - PLANNING

Create a scaled map of the area indicating:

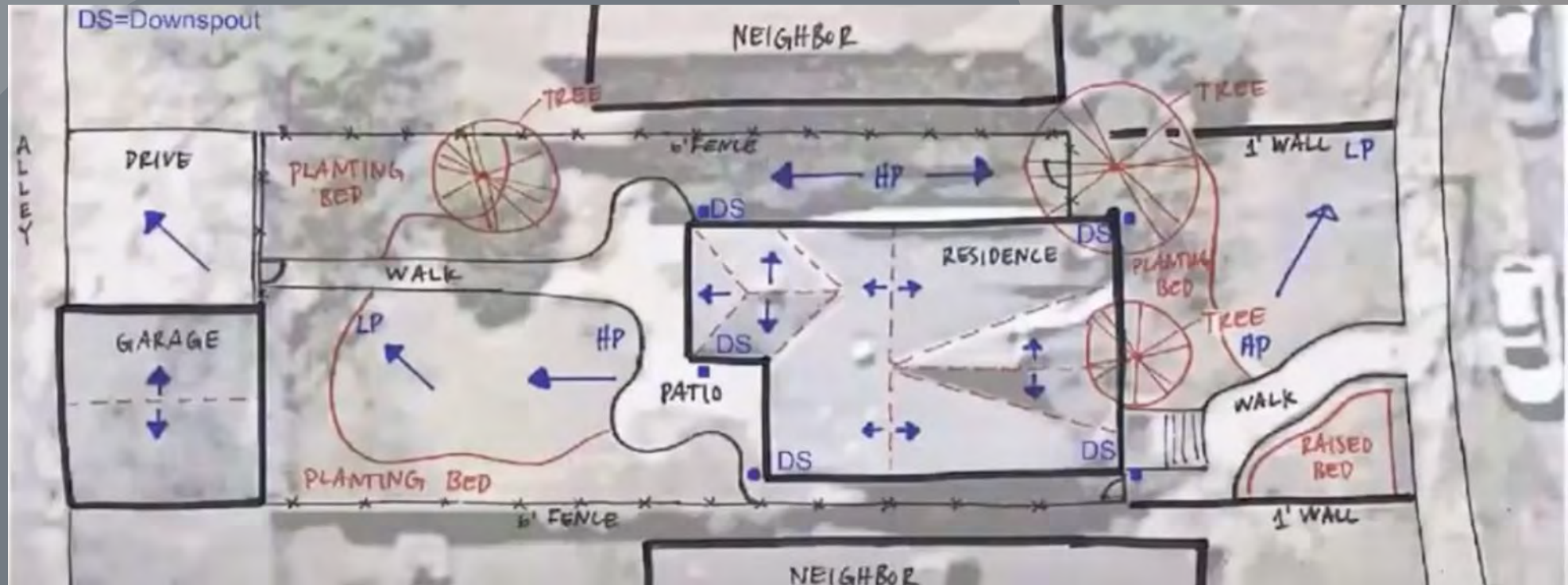
- Buildings & Patios/decks
- Property & shore-lines
- Water access, docks & boathouses
- DOM high water mark & ROW
- Soil moisture (areas excessively wet or dry)
- All Existing vegetation
- Exposure: sunny and shady areas
- Slopes, drainage patterns, eroding areas
- Add in your proposed/new plantings
- Plan should show MATURE plant size



Step 2 - PLANNING

TIP:

- You can print a view of your property from your county's GIS map and draw your site map over it



Step 2 - PLANNING

Things to consider when creating your design:

- **Reduce lawns & Establish a Buffer zone**
- **Imitate Nature**
- **Provide Diversity**
- **Right plant - right place**
- **Keep it small & simple**



Did You Know?!

- Americans spend **\$750M/year** on grass seed.
- **We use 100M tons of fertilizer and more than 80M pounds of pesticides ANNUALLY.**
- Lawn chemicals affect the lake's chemical balance, contributing to algal blooms or fish kills.



To prevent these problems:

Replace the lawn with native plants &/or maintain a "buffer zone" to separate the lawn from the water.

Step 2 - PLANNING

Reduce lawn & establish a Buffer zone

A buffer filters nutrients, runoff and pollutants

The most effective buffer will occupy at least 50% of your shoreline frontage.

The wider the better - **but even the smallest buffer is better than none**



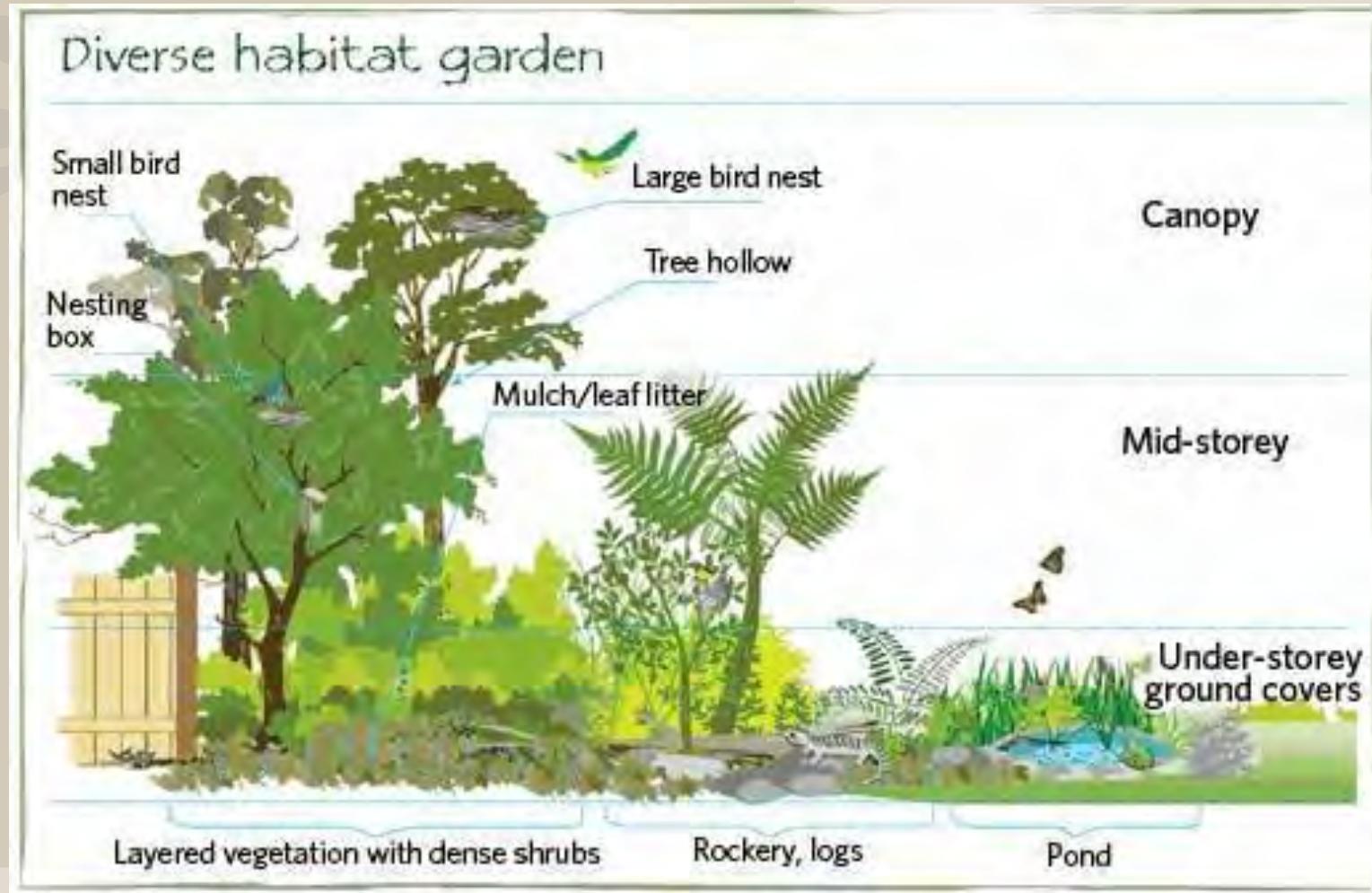
IMITATE NATURE

- Choose **deeply rooted woody vegetation** which holds the soil & captures rainwater & runoff
- Mimic “Mother Nature” by creating gentle curves (not straight lines)
- Create layers of vegetation



PROVIDE DIVERSITY

A natural shoreline contains a **wide diversity of plants & materials**



- **Provide a diversity of native plants**
 - It ensures that flowers, fruits, seeds & nectar attractive to birds, butterflies, & other wildlife will be available throughout the year.
- **Mix evergreens with deciduous plants.**

Right plant - Right Place!

- **Match** Native plants with your *existing site conditions*:
- **Light**
- **Moisture**
- **Soil**
- **Plant Characteristics**



CATEGORY		Wildlife Value		
Common Name	Scientific Name	High	Medium	Low
GRASSES				
bluestems	Andropogon spp.	X		
sedges	Carex spp.		X	
lezpedezas	Lezpedeza spp.	X		
rushes*	Juncus spp.		X	
clovers	Trifolium spp.	X		
Warm Season Grasses				
Big Bluestem	Andropogon gerardii	X		
Little Bluestem	Andropogon scoparius	X		
Broom sedge	Andropogon virginicus	X		
Switchgrass	Panicum virgatum	X		
Indiangrass	Sorghastrum nutans	X		
Purple top	Tridens flavus	X		
Eastern Gamagrass	Tripsacum dactyloides	X		
Ferns				
Christmas Fern	Polystichum acrostichoides	X		
Perennials				
Columbine	Aquilegia canadensis		X	
Lance-Leaved Coreopsis	Coreopsis lanceolata		X	
Threadleaf Coreopsis	Coreopsis verticillata		X	
Purple Cornflower	Echinacea purpurea		X	
Joe-Pye-Weed	Eupatorium fistulosum		X	
Rose Mallow	Hibiscus moschetos		X	
Wild Bergamot	Monarda fistulosa		X	
Horsement	Monarda punctata		X	
Summer Phlox	Phlox paniculata		X	
Moss Pink	Phlox subulata		X	
Orange Coneflower	Rudbeckia fulgida		X	
Vines				
common trumpet creeper	Campsis radicans	X		
trumpet honeysuckle	Lonicera sempervirens	X		
American bittersweet	Celastrus scandens	X		
Virginia creeper	Parthenocissus quinquefolia	X		
grapes	Vitis spp.	X		
greenbriars**	Smilax spp.	X		
Carolina jessamine	Gelsemium sempervirens		X	
blackberries	Rubus spp.	X		

Dominion Energy Approved Native Plants List

**Plant List For Planting On Company Property At
Roanoke Rapids & Gaston Lakes
Appendix 2 To The Construction And Use
Procedures - Rev. 2 2010/12/01**

Light

Amount of sunlight a plant requires/day during the growing season

- **Full Sun (F)**-direct sunlight for **at least 6 hours/day**
- **Partial shade (P)**-approximately **3-6 hours** of direct sunlight
- **Shade (S)**-the site receives **less than 3 hours** of direct sunlight or filtered light



Moisture

Amount of soil moisture a plant requires

- **Dry** (D), areas where **water does not remain** after a rain (areas may be in full sun or in a windy location, on a steep slope, or have sandy soil)
- **Moist** (M), areas where the **soil is damp**, & may be occasionally saturated
- **Wet** (W), areas where the **soil is saturated** for much of the growing season, except in droughts
- Plants with the Dry designation can be considered **drought tolerant**.



Soil Requirements

SOIL TEXTURE:

- Clay
- High Organic Matter
- Loam (Silt)
- Sand
- Shallow Rocky

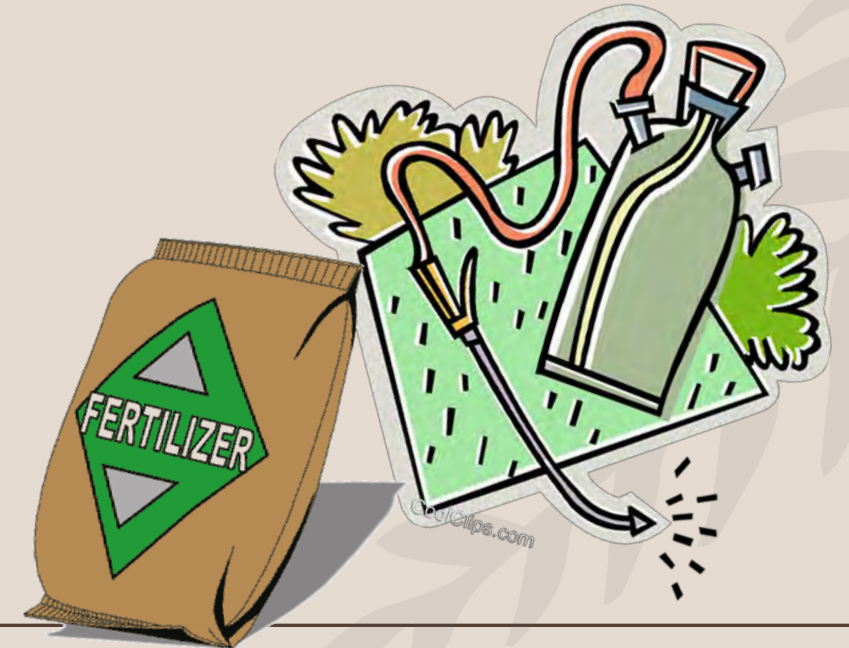
SOIL pH:

- Acid (<6.0)
- Alkaline (>8.0)
- Neutral (6.0-8.0)



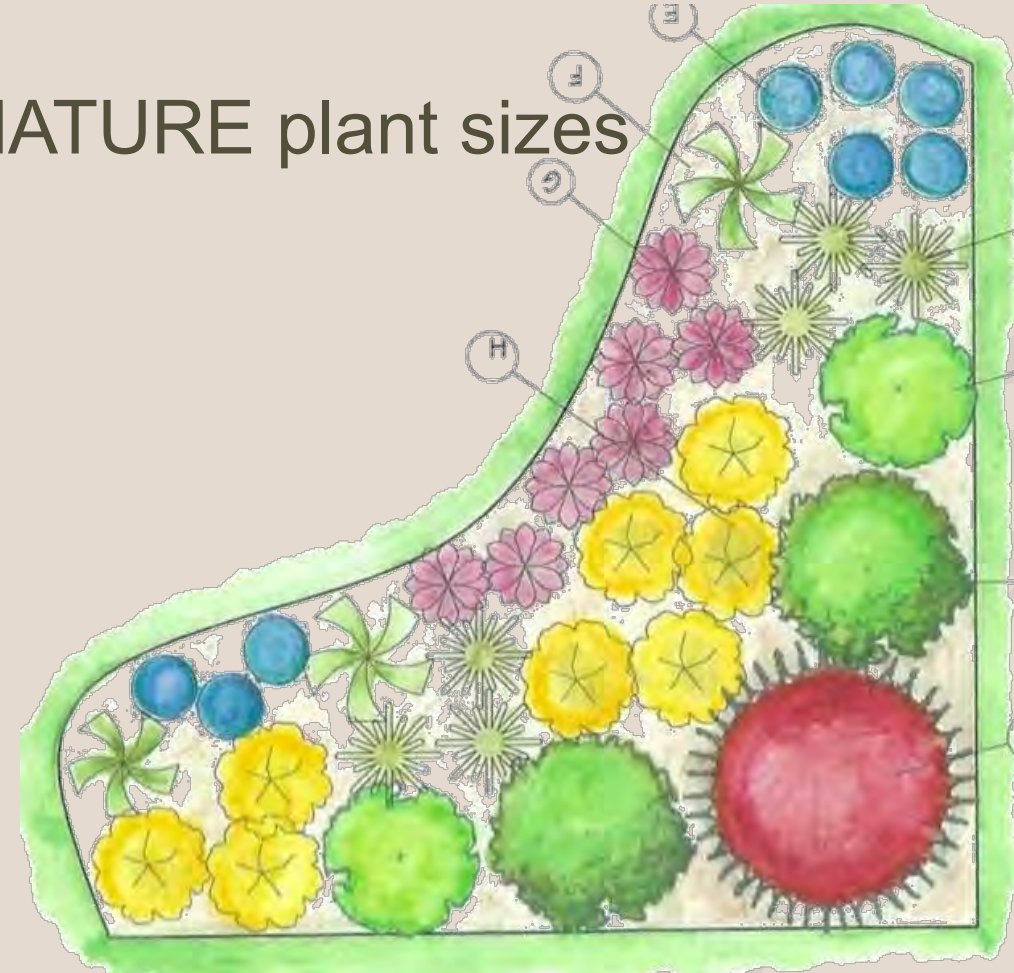
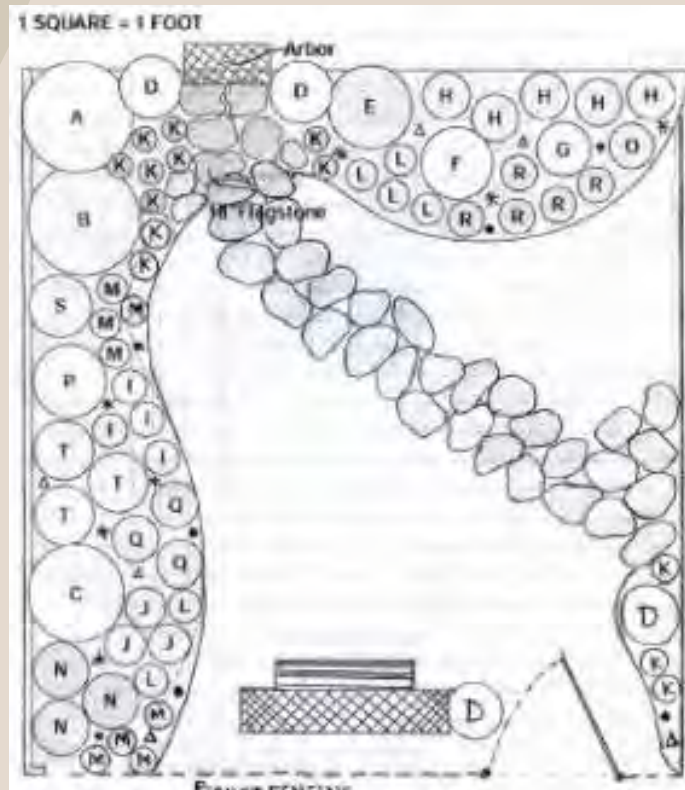
Supplements

- If using native plants, you **shouldn't need** to add supplemental water (after the 1st year), fertilizer or pesticides



Plant Size

- Always **consider MATURE** plant size (height & width) to provide adequate growing space for each plant in your plan!
- Your plan should show MATURE plant sizes



Plant Characteristics

- Consider plant & flower **colors & bloom times & and seasonal colors**
- **Plant textures**
- **Evergreen vs deciduous**
- **Wildlife value: food & cover**



Step 2 - Planning

KEEP IT SMALL & SIMPLE.

- Draw up a plan for your entire yard but choose one small area for your first effort.
- Phase in the whole project over time.



Step 3 - PREPARATION

Transferring your plan onto the land

- Remove undesirable & invasive plants plants
 - remove stump & roots
- Eliminate unwanted turf
- Layout planting beds & buffer zones
- Amend your soil
- Locate & purchase Native plants – see list of Sources



Tip:

Use a garden hose, rope, flagging, or stakes to outline your plant beds & pathways. This helps you visualize the actual size and shape of your plans.



Step 4 - INSTALLATION

- Proper planting technique improves the likelihood of a plant's success in the garden.
- Water thoroughly at the time of planting.
- Continue frequent watering for the first year after installation.
- Mulch



MULCH

Retains soil moisture & keeps weeds in check.

- Minimum of 3-4" deep (4-6" is better)
- **JUST SAY NO TO "LANDSCAPE CLOTH"** instead, use things that will biodegrade & add organic matter to soil. In shoreline buffers you want to **encourage dense, vegetative growth**, unlike a garden with open areas between plants.
- Try: **cardboard, newspapers, burlap, straw, grass clippings, dry leaves, old carpet**
- Better yet - use **Native groundcovers!**



BE PATIENT!

It generally takes 3-5 years before the results of landscaping efforts pay off.

Remember the old adage says, “The 1st year a garden sleeps, the 2nd year it creeps, the 3rd year it leaps.”



BEFORE



AFTER



Common invasive plants & Native plant substitutes



Rated: Highly Invasive



BRADFORD PEAR
Pyrus calleryana



MULTIFLORA ROSE
Rosa multiflora



ENGLISH IVY
Hedera Helix

Plant These Natives Instead



FLOWERING DOGWOOD

Cornus florida



SERVICEBERRY TREE

Amelanchier spp.



REDBUD TREE

Cercis canadensis

Plant These Natives Instead



PRICKLY GOOSEBERRY

Ribes cynosbati



VIRGINIA CREEPER

Parthenocissus quinquefolia

Rated: Highly Invasive



JAPANESE HONEYSUCKLE
Lonicera japonica



ORIENTAL BITTERSWEET
Celastrus orbiculatus



MIMOSA, SILK TREE
Albizia julibrissin

Plant These Natives Instead



TRUMPET HONEYSUCKLE

Lonicera sempervirens



AMERICAN BITTERSWEET

Celastrus scandens



SOURWOOD

Oxydendrum arborescens

Native Plants to Consider

Virginia State



North Carolina State

Dominion Energy Approved Native Plants List

CATEGORY		Wildlife V	
Common Name	Scientific Name	High	Medi
GRASSES			
bluestems	Andropogon spp.	X	
sedges	Carex spp.		X
lezpedezas	Lezpedeza spp.	X	
rushes*	Juncus spp.		X
clovers	Trifolium spp.	X	

When the Genus is followed by: *spp.*
MEANS: ALL species in that genus SIZES can vary greatly!

norserment	ivionarda punctata		
Summer Phlox	Phlox paniculata		
Moss Pink	Phlox tubulata		
Orange Coneflower	Rudbeckia fulgida		
Vines			

If Genus & species are listed, there can be many *Varieties & cultivars*
EX: Rudbeckia fulgida 'Little Goldstar'
Rudbeckia fulgida var. sullivanti 'Goldstrum'

Bluestems

Andropogon spp.

Broom sedge



Little Bluestem



Big Bluestem



Deciduous Perennial
Grass/Sedge-5 spp.

1-3'; 3-6'; 6-12'.

Bloom Color: Yellow, Brown

Light: Full Sun

Soil Moisture: Dry, Moist

Bloom Time: June - October

Switch Grass

Panicum virgatum



Deciduous Perennial
Grass/Sedge

3-6' - 6-12'.

Light: Full Sun

Soil Moisture: Dry, Moist, Wet

Bloom Time: June - October

Christmas Fern

Polystichum acrostichoides



Perennial Evergreen fern

1-3' H x 1-3' W

Silvery fiddleheads in spring

Moist soil & Shade

Songbirds use it in nest construction.

Attracts songbirds & Ruffed Grouse

Orange Coneflower

Rudbeckia fulgida

Minimum of 5 varieties & cultivars



Deciduous Wildflower/herb

Size: 1-3 ft.

Bloom Color(s): Orange, Yellow, Brown

Light: Full Sun

Soil Moisture: Dry, Moist

Bloom Time: August-October

Leave seed heads in winter for birds

Columbine

Aquilegia canadensis



Perennial Wildflower/herb
Red Blooms in late March - June
Sun-part shade
Moist, well drained soil
1-3' tall
Attracts butterflies & hummingbirds
Will naturalize by self seeding

Carolina Jessamine *Gelsemium sempervirens*



Perennial, Evergreen vine

Climbs 12-20'

Yellow fragrant flowers early
spring & again in fall

Full sun-light shade

Moist, rich soil

Foliage bronzes in winter

Attracts bees, butterflies &
hummingbirds

Trumpet Honeysuckle

Lonicera sempervirens



Perennial broad leaf evergreen Woody Vine

10-20' H x 3-6' W

Bloom Colors: Red, orange, Yellow

Light: Full Sun-Part Shade

Soil Moisture: Dry, Moist

Bloom Time: March-July

Flowers followed by red berries

Attracts butterflies, hummingbirds, bees

Rose Mallow

Hibiscus moschetos



Herbaceous perennial

2-6' H x 2-5' W

Blooms: red, pink & white

Bloom Time: June to September

Sun: Full sun-part shade

Soil: Moist-wet

Attracts: Butterflies, Hummingbirds
& Pollinators

Tolerates: Wet Soil



Buttonbush

Cephalanthus occidentalis



Deciduous shrub

6'-12' H x 4-8' W

Full sun-part shade

Moist to wet soil

**Can grow in up to 3' of
standing water**

Unusual white globe like flowers
in June

Excellent nectar source for
hummingbirds & butterflies

Inkberry

Ilex glabra



Broadleaf evergreen shrub

5-10' h

Full sun & Moist soil

Flowers late April-early June

Black berries on female bushes
loved by bees

Deer may browse & twigs,
although it is somewhat
resistant to damage by deer &
is rabbit resistant

Sweet Bay Magnolia

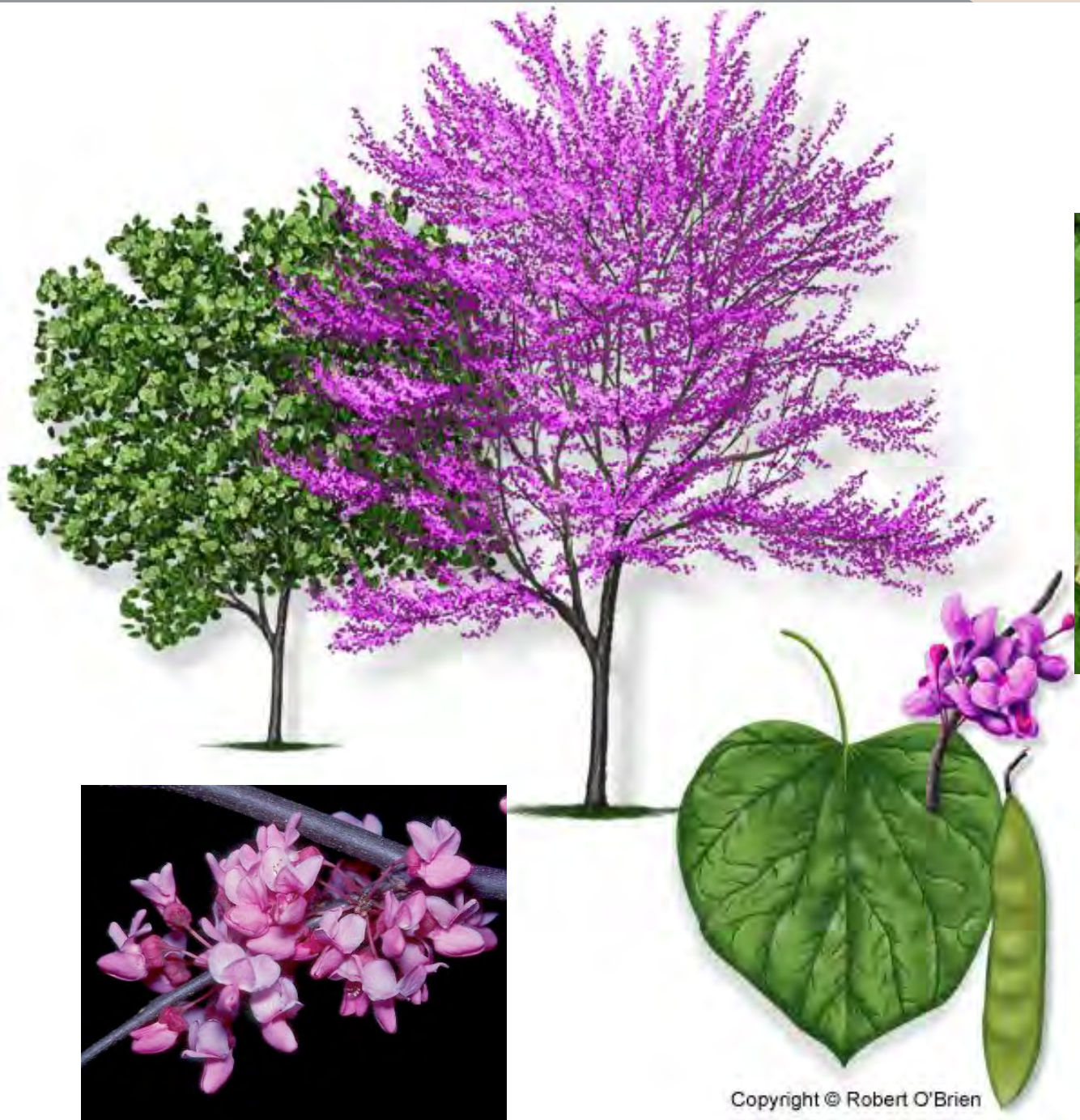
Magnolia virginiana



BLE small multi-stemmed Tree
or lg Shrub
Grows 10-35' H & W
Full sun - part shade,
Moist-wet soil; (tolerates flooding
mostly)
White flowers in May-June
Attractive red seeds in fall are
eaten by birds

Redbud

Cercis canadensis



Perennial tree

20-30' W x 20-35' W

Bloom colors: pink, purple

Full sun- part shade

Soil: dry, moist

Bloom time: March-May

Flowering Dogwood

Cornus florida



Deciduous understory tree
15--25' tall
Well drained soil
Part shade to full sun
Flowers attract butterflies
& specialized bees
Winter berries attract
songbirds

Serviceberry

Amelanchier spp.

Deciduous multi-stemmed tree

15-25' H x 15-20'W

Bloom Colors: Pink, Purple

Well drained soil

Full sun-Part shade

Winter berries good for birds

Brilliant fall color



See Handout for websites & resources for:

- **DOM Approved Native plant list & ROW Native list**
- **Native Plant Growing Information**
- **Invasive Plants**
- **Where to buy Native plants**
- **Shoreline Management**





thank you

KATHY PFLEGER

KATHY.PFLEGER@GMAIL.COM