Rain Garden Plant Selection

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Rain Garden Plant Function

- Nutrient and some heavy metal uptake
- Transpiration
- Enhance infiltration
- Soil stabilization
- Provide wildlife habitat – pollinators and beneficial insects
- Provide aesthetic appeal

Plants suitable for rain gardens…

- Tolerate periods of saturated soil, yet also thrive under drier conditions
- Persistent, long lived
- Low Maintenance
- Do not require fertilization or irrigation

Texas Star,
Hibiscus coccineus

Native Wetland Plants

- Tolerate wet conditions – many also tolerate intermittent drought
- Accustomed to our climate and soils
- Typically low maintenance
- Beautiful selections
- Caution: some spread vigorously, eg. Hardy ageratum

Hardy Ageratum, *Conoclinium coelestinum*

Native spreading perennial with vigorous rhizomatous roots – will quickly overtake other plants

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Plants not suitable for rain gardens…

- Do not like “wet feet” (eg. Flowering Dogwood)
- Are susceptible to root rot (eg. Non native Azaleas)
- Invasive plants
  - Ligustrum – Privet
  - Eleagnus - Autumn Olive
  - Miscanthus
  - Asian Wisteria
  - Callery Pears (‘Bradford’)

Avoid Invasives!

North Carolina Native Plant Society

NCNPS HOME | Natives | Invasives | Plant Gallery | Neat Stuff | Contact

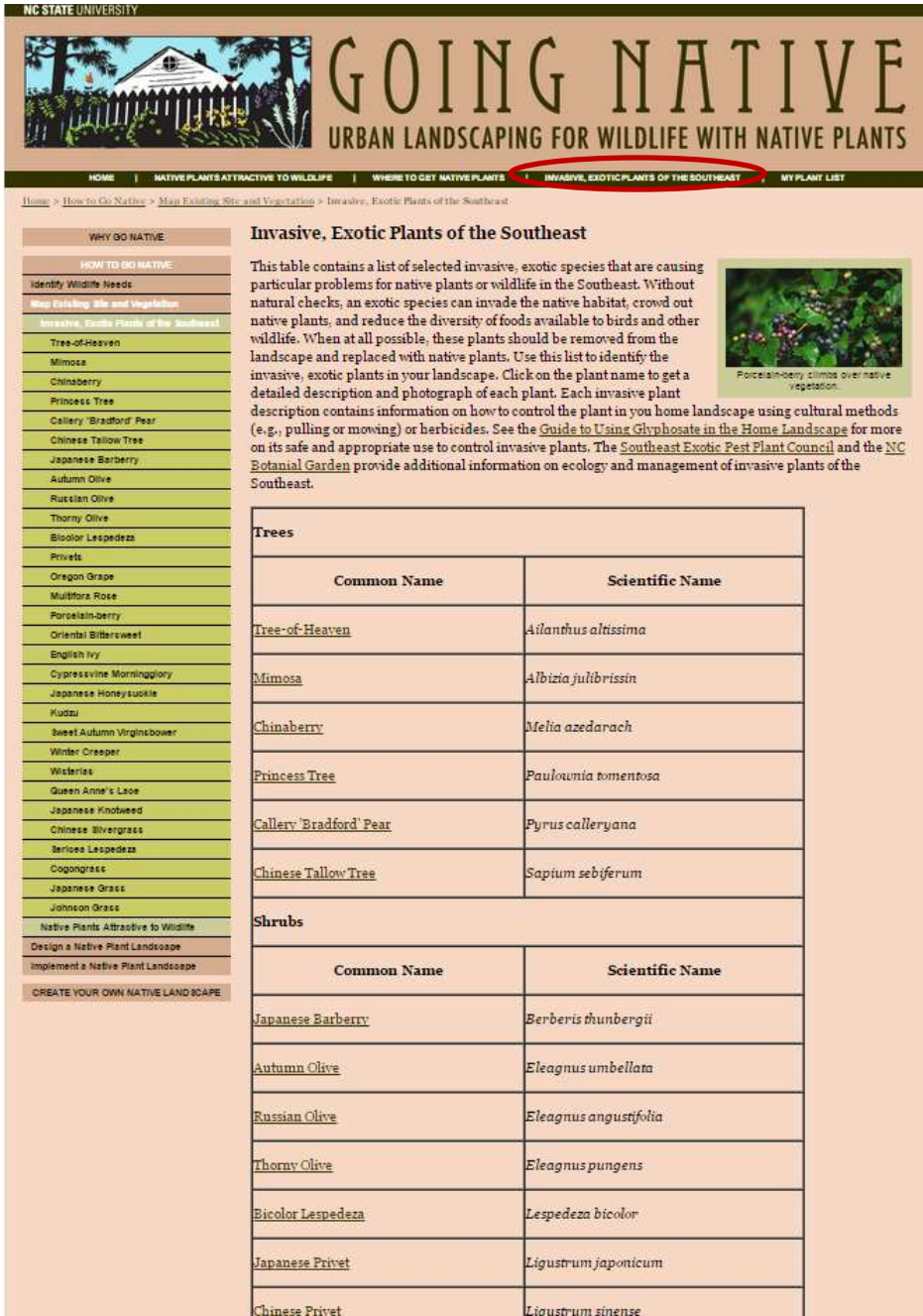
Invasive Exotic Species List

NC Native Plant Society – Invasive Exotic Plants in NC – 2010

http://www.ncwildflower.org/invasives/list.htm

Invasive Guides

- NCSU **Going Native** website
- http://www.ncsu.edu/goingnative/
- Link on top bar, "Invasive Exotic Plants of the SE"



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GOING NATIVE

URBAN LANDSCAPING FOR WILDLIFE WITH NATIVE PLANTS

HOME | NATIVE PLANTS ATTRACTIVE TO WILDLIFE | WHERE TO GET NATIVE PLANTS | INVASIVE, EXOTIC PLANTS OF THE SOUTHEAST | MY PLANT LIST

Home > How to Go Native > Map Existing Site and Vegetation > Invasive, Exotic Plants of the Southeast

WHY GO NATIVE

HOW TO GO NATIVE

Identify Wildlife Needs

Map Existing Site and Vegetation

Invasive, Exotic Plants of the Southeast

Tree-of-Heaven

Mimosa

Chinaberry

Princess Tree

Callery 'Bradford' Pear

Chinese Tallow Tree

Japanese Barberry

Autumn Olive

Russian Olive

Thorny Olive

Bicolor Lespedeza

Privets

Oregon Grape

Multiflora Rose

Porcelain-berry

Oriental Bittersweet

English Ivy

Cypressvine Morningglory

Japanese Honeysuckle

Kudzu

Sweet Autumn Virginsbower

Winter Creeper

Wisterias

Queen Anne's Lace

Japanese Knotweed

Chinese Silvergrass

Sericea Lespedeza

Cogongrass

Japanese Grass

Johnson Grass

Native Plants Attractive to Wildlife

Design a Native Plant Landscape

Implement a Native Plant Landscape

CREATE YOUR OWN NATIVE LANDSCAPE

Invasive, Exotic Plants of the Southeast

This table contains a list of selected invasive, exotic species that are causing particular problems for native plants or wildlife in the Southeast. Without natural checks, an exotic species can invade the native habitat, crowd out native plants, and reduce the diversity of foods available to birds and other wildlife. When at all possible, these plants should be removed from the landscape and replaced with native plants. Use this list to identify the invasive, exotic plants in your landscape. Click on the plant name to get a detailed description and photograph of each plant. Each invasive plant description contains information on how to control the plant in you home landscape using cultural methods (e.g., pulling or mowing) or herbicides. See the Guide to Using Glyphosate in the Home Landscape for more on its safe and appropriate use to control invasive plants. The Southeast Exotic Pest Plant Council and the NC Botanial Garden provide additional information on ecology and management of invasive plants of the Southeast.

Porcelain-berry climbs over native vegetation.

Trees	
Common Name	**Scientific Name**
Tree-of-Heaven	*Ailanthus altissima*
Mimosa	*Albizia julibrissin*
Chinaberry	*Melia azedarach*
Princess Tree	*Paulownia tomentosa*
Callery 'Bradford' Pear	*Pyrus calleryana*
Chinese Tallow Tree	*Sapium sebiferum*
Shrubs	
Common Name	**Scientific Name**
Japanese Barberry	*Berberis thunbergii*
Autumn Olive	*Eleagnus umbellata*
Russian Olive	*Eleagnus angustifolia*
Thorny Olive	*Eleagnus pungens*
Bicolor Lespedeza	*Lespedeza bicolor*
Japanese Privet	*Ligustrum japonicum*
Chinese Privet	*Ligustrum sinense*

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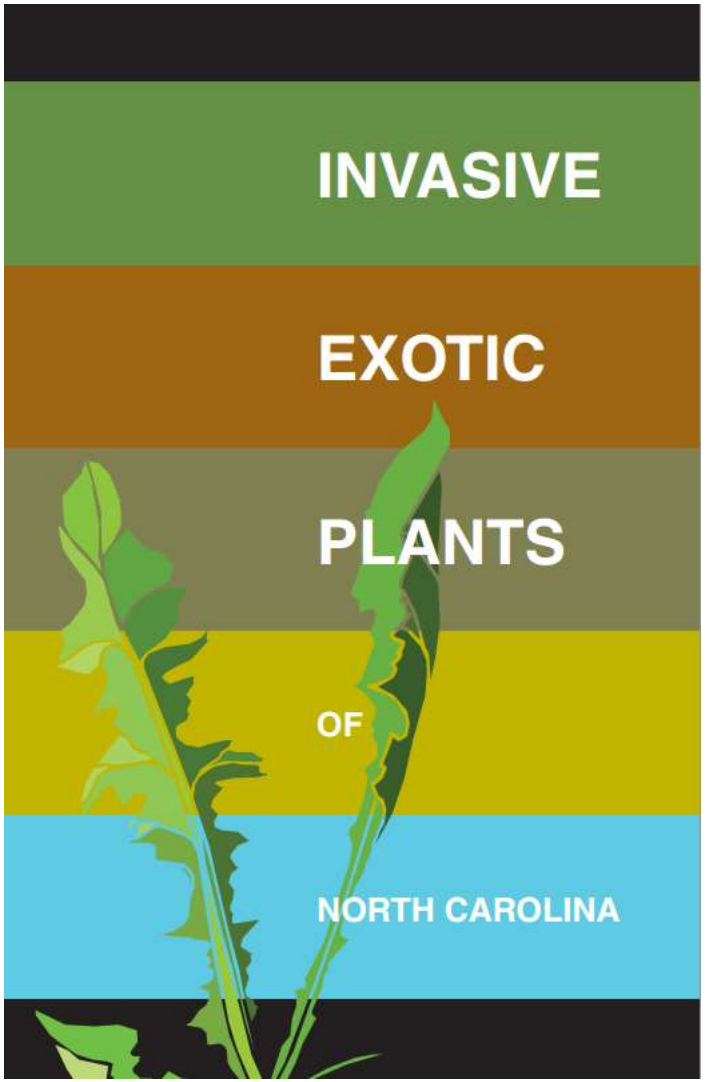
Invasives Guide

- NCDOT – Invasive Exotic Plants of NC
- http://www.se-eppc.org/northcarolina/NCDOT_Invasive_Exotic_Plants.pdf



Rain Garden Design

- **Minimum size** depends on watershed
  - Can plant outside of excavated area
- **General location** determined by stormwater flow

Intercept stormwater before it leaves the landscape

Avoid the “rain garden that fell from the sky” look

Blend in with existing plantings and topography

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If rain garden is “on its own”, make large enough to be a landscape feature, in scale with size of yard

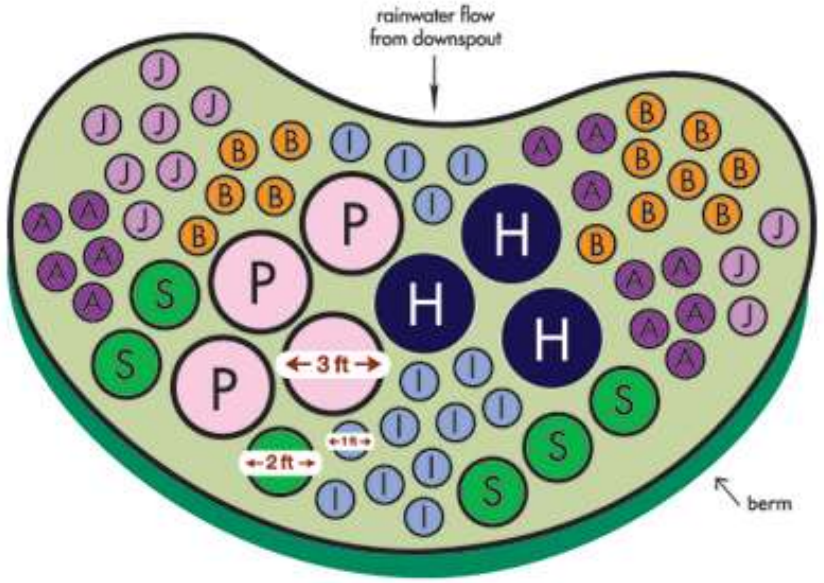
Too small, stranded in middle of yard

Design with maintenance in mind –

Would it have been better to extend this rain garden out to the sidewalk?

Rain Garden Planting Design

- Rain gardens can be any shape
  - Work with contour of site
- Groups of plants look better than 1 of this, 1 of that
- Generally, taller plants in middle or towards back



Simple planting plan incorporating: stone, mass plantings of grasses, and accent trees

More complex planting plant incorporating shrubs and several types of perennials

Dense plantings of grassy plants around berm and edges look good, stabilize the edge, help filter debris, and keep mulch from washing out

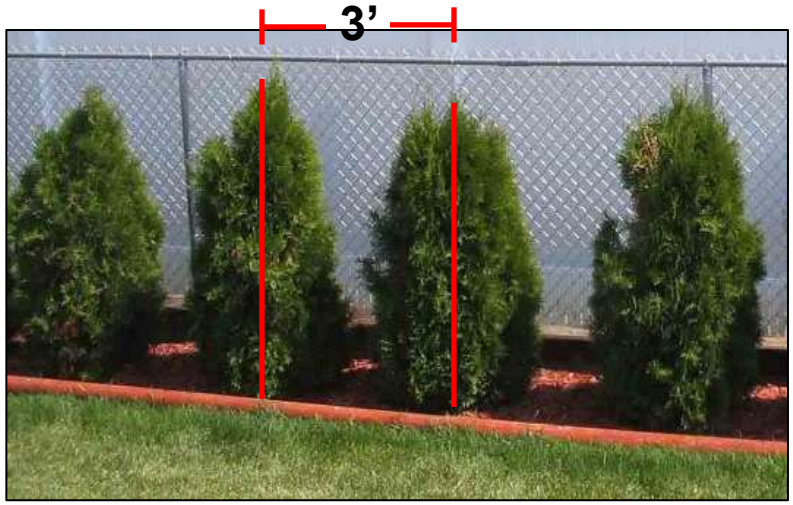
Plant Spacing

- Depends on growth habit of plant (height, width, overall shape)
- Allow enough space for plants to reach mature size
  - Slight overlap for full look
  - Just touching or space in between for less crowded look

Plant Spacing

- Spacing measured from center of one plant to the center of the next (not the edge)
- General planting guide (Note: Read plant label for spacings):
  - 1’- 3’ apart for perennials
  - 2'-3' apart for most grasses
  - 3'-5' apart for most small to medium shrubs
  - 6'-8' apart for larger shrubs
  - For trees use mature size

If these shrubs grow 3’ wide and you want them to meet at maturity, space 3’ apart from center of one shrub to center of next



Good planting technique

- Dig a hole at least twice as wide as root ball or container
- Same depth as root ball
- Turn plant on side to remove container

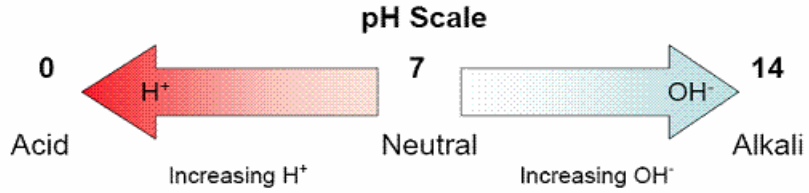
Plant correctly

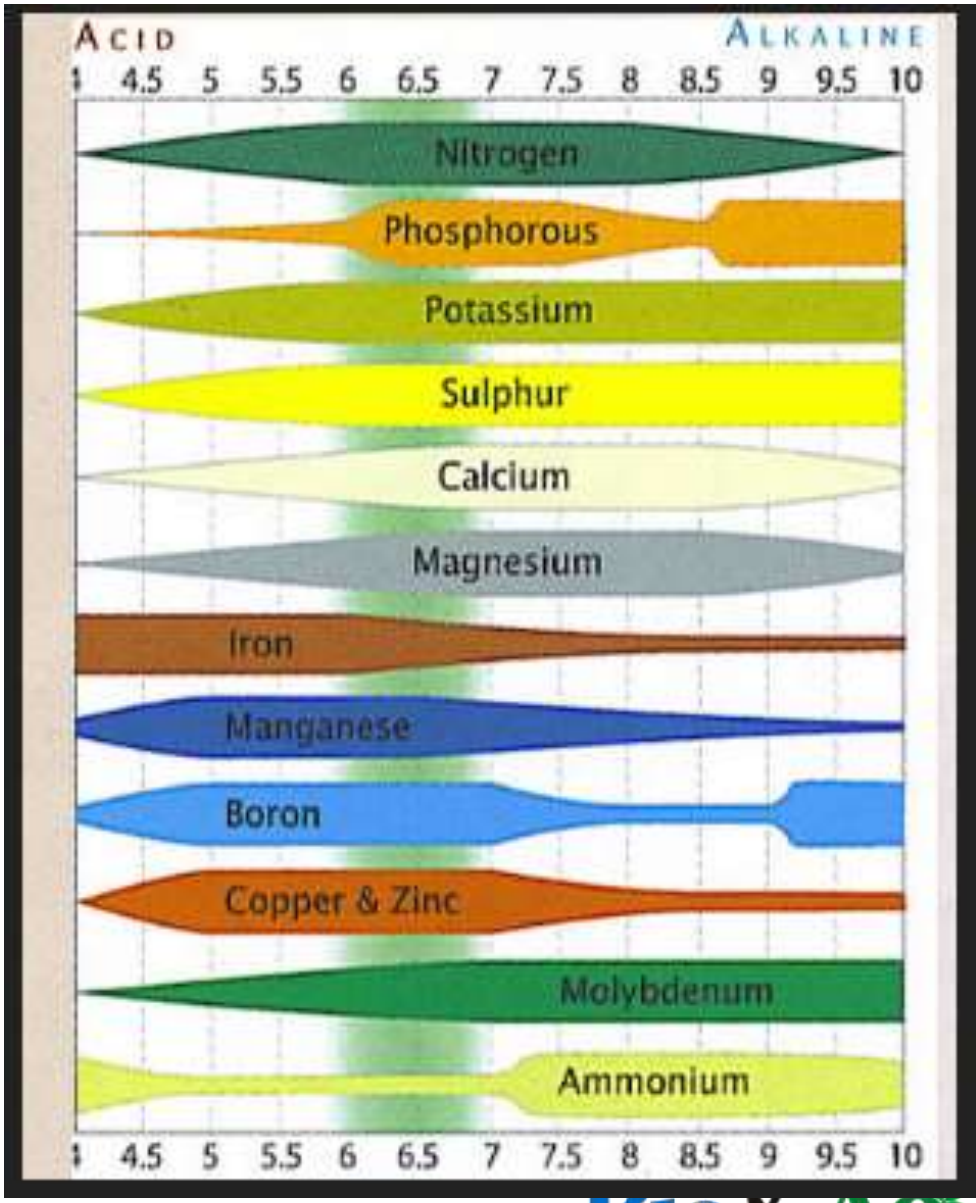
Tight roots may not grow out properly

Loosen roots before planting

Check Soil pH

- Changes in pH affect nutrient availability
- Can limit root growth under extremely acidic conditions
- Our soils are acidic, as is rain water





Choosing Plants for Rain Gardens

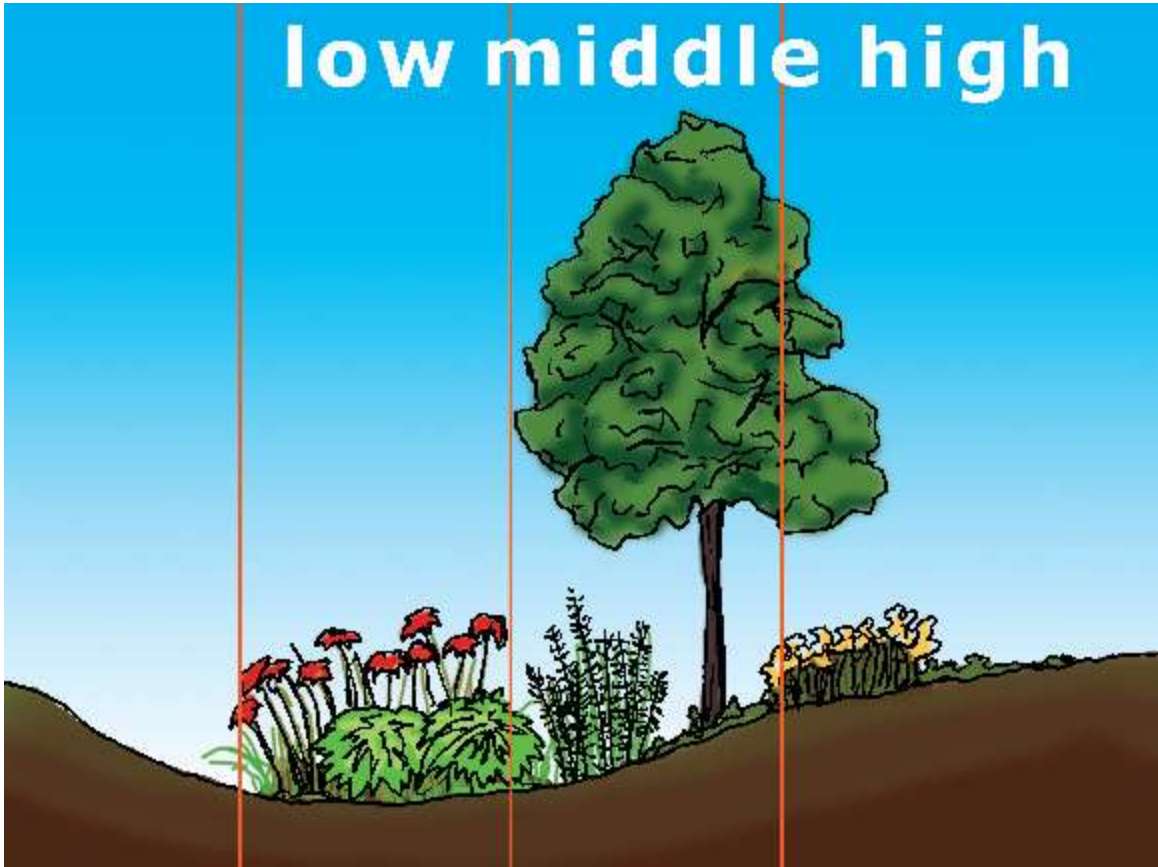
- **Key question:** How wet will it be?
- Depends on soil type and hydrology of the site (sand or clay)
- Also depends on location within rain garden

Match Plants to Expected Moisture Level

- **Quick Draining Rain Garden**, drain < 12 hours
  - Need greater drought tolerance, especially in deep sandy soils
- **Standard Rain Garden**, drain in 12 hours - 3 days
  - Plants tolerant of moist soil and “wet feet”
- **Wetland Garden**, drain > 3 days
  - Plants tolerant of extended flooding

Rain Garden Wetness Zones

- LOW
  - pooling area, wettest zone
  - Most careful plant selection
- MIDDLE
  - sloped area
  - intermittently wet with flooding then dry



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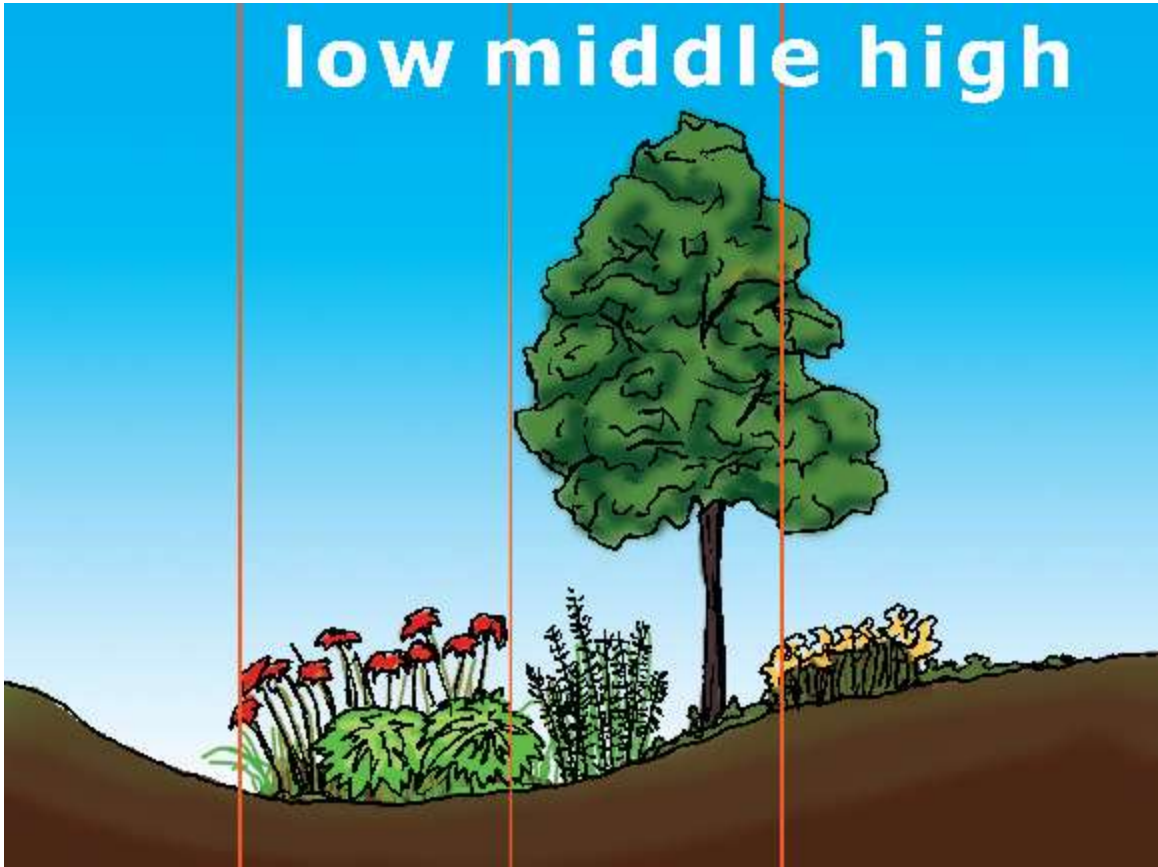
Rain Garden Zones

- HIGH
  - Outer edge and surrounding area
  - May experience brief overflow but not standing water
  - Can use any plants adapted to site conditions
  - Planting in and beyond this area will help garden blend into larger landscape



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Plant selection is most critical in deeper/longer ponding areas

Deep, sandy soil = drought tolerance most important

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Extend plantings beyond the excavated area to broaden plant selection

Plants for Rain Gardens in SE NC

- Trees
- Shrubs
- Perennials
- All for sun to part shade
- Natives and non-invasive non-natives
- Commercially available

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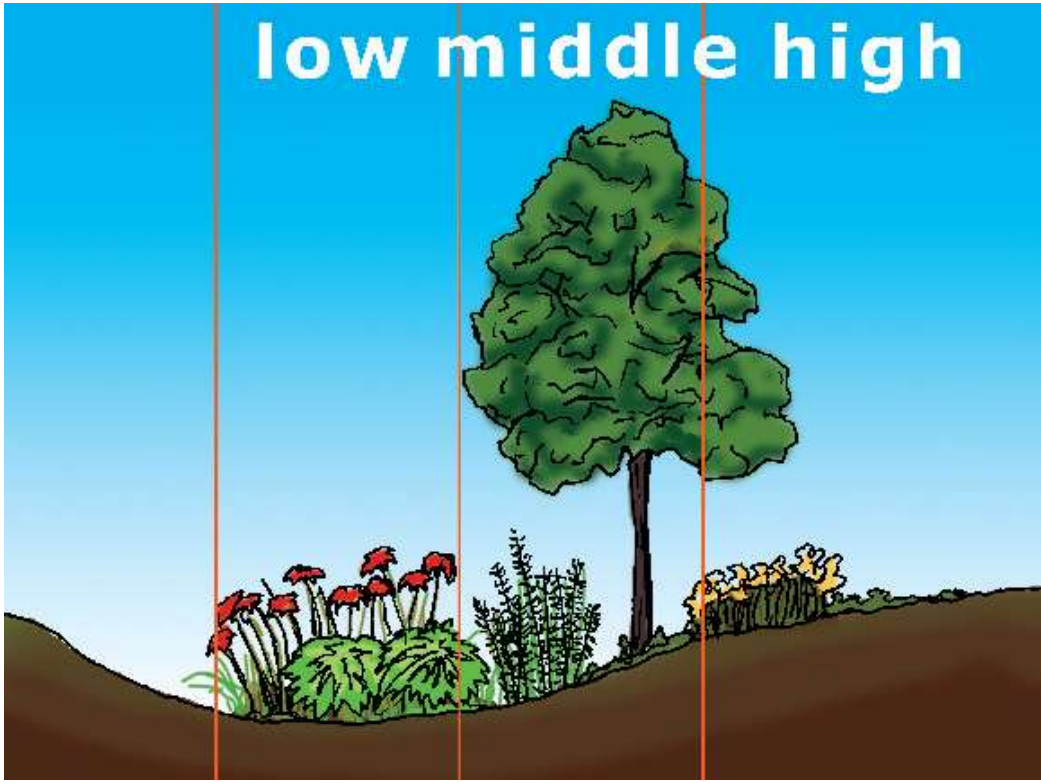
Match Plants to Expected Moisture Level

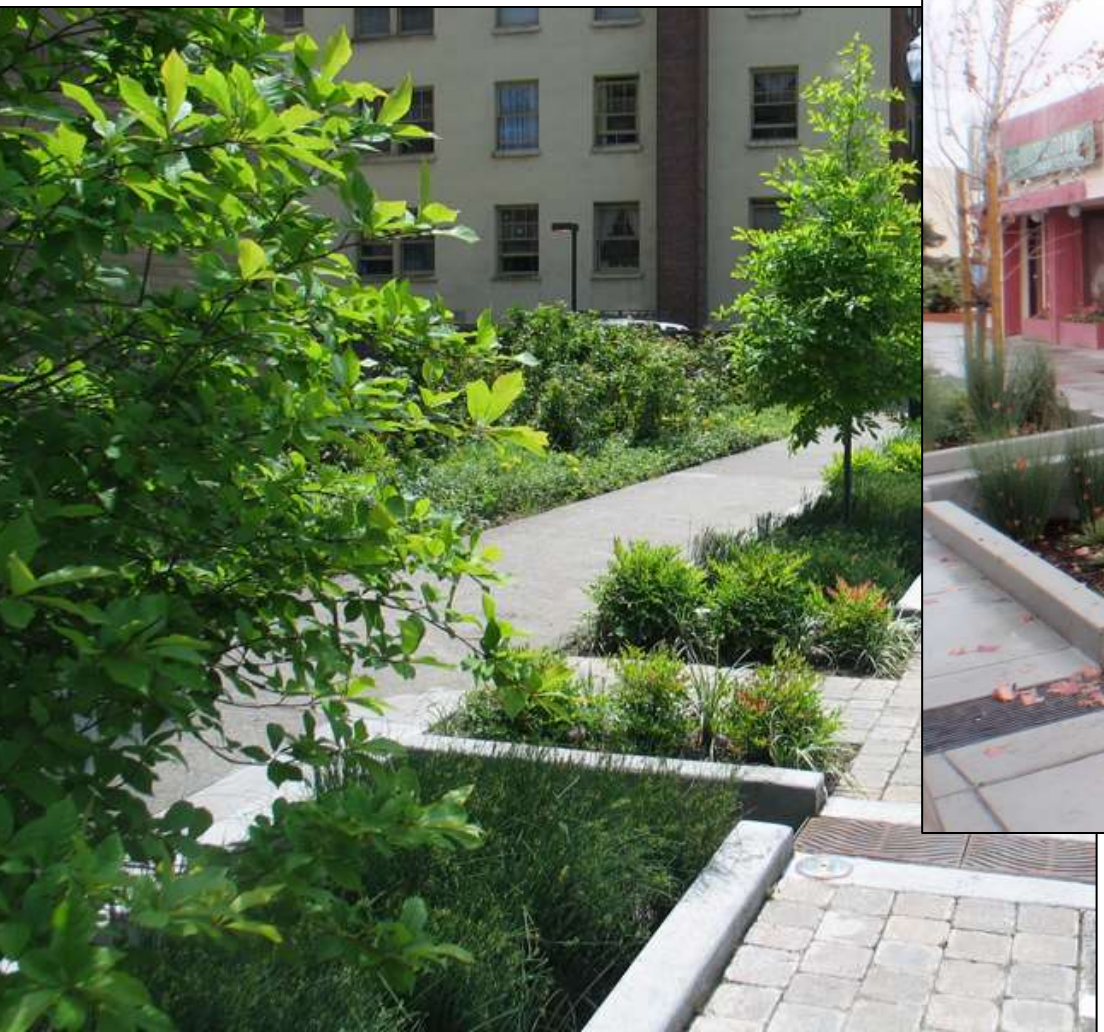
- **Plants suited to quick draining rain gardens** (wet < 12 hours) good for HIGH areas
- **Plants suited to standard rain gardens** (wet 12 hours - 3 days) good for LOW and MIDDLE areas
- **Plants suited to wetland gardens** (wet > 3 days) best in LOW areas



Trees in Rain Gardens

- Add height
- Extensive root systems!
- For small rain gardens, 1 small tree often enough!
- Use in combination with shrubs and perennials
- Or trees only for a low maintenance garden

Trees in bioretention cells underplanted with grasses and sedges



River Birch

Betula nigra

- Native
- 40’ x 30’
- ‘Heritage’ older variety, **‘Duraheat’** newer with better leaf spot resistance
- Dry, standard, wetland

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Red Maple

Acer rubrum

- Native
- Grows 40’-60’ x 40’-60’
- Standard, Wetland
- Cultivars:
  - ‘October Glory’
  - ‘Red Sunset’

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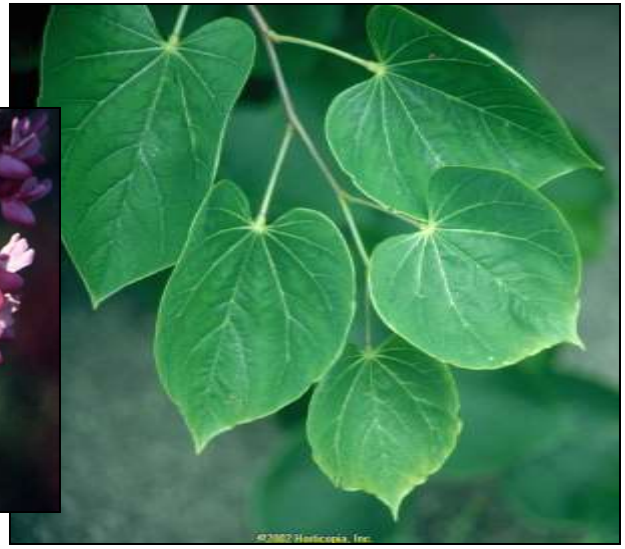
Redbud

- *Cercis canadensis*
- Native
- Lives ~ 20 yrs.
- Dry, standard (not in ponding area)
- 15’-20’ tall and wide
- Deer love it!



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Redbud Cultivars

'Forest Pansy'

'Merlot'

'Hearts of Gold'

Sweet Bay

- *Magnolia virginica*
- Semi-evergreen tree to 30’
- Native
- Standard, wetland

Fringetree

- *Chionanthus virginicus*
- To 20’ x 20’
- Standard, wetland
- Fragrant blooms in spring
- Deer love it!

Shrubs in Rain Gardens

- Most moisture tolerant shrubs are **deciduous**
- Plant **evergreens** in high zones and outer edges for winter interest
- Too many shrubs may look overgrown

Too many shrubs – planted too close together

Beautyberry

Callicarpa americana

- Native
- 6’ x 6’ if cut back to 1’ every year in Feb/March
- Quick, standard

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Virginia Sweetspire

Itea virginica

- Native
- Standard, wetland
- Suckering roots
- Cultivars:
  - ‘Henry’s Garnet’, 4’-6’ x 4’-6’
  - **‘Little Henry’,** dwarf - 3’ x 3’
- Deer Love It!

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Possumhaw Viburnum

Viburnum nudum

- Native
- 6-10 feet tall
- Standard, wetland
- Cultivars: ‘Winterthur’ and ‘Brandywine’

Sweet Pepperbush

Clethra alnifolia

- Native
- 4’-6’ tall and wide
- Cultivars:
  - ‘Hummingbird’, ‘Sixteen Candles’, dwarf white, 3’ x 6’
  - ‘Ruby Spice’, upright pink, 8’ x 5’
- Very fragrant, suckering roots
- Quick, standard

Sweet Pepperbush

‘Ruby Spice’

‘Sixteen Candles’

Inkberry
Ilex glabra

- Native
- 4’-5’ x 3’-4’
- Evergreen
- Quick Draining, Standard

Perennials and Grasses in Rain Gardens

- For color and seasonal interest
- Most dieback in winter – cut back after frost
- Grasses add texture and are tough!
- Flowers provide food and habitat for beneficials and pollinators

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Bluestar

Amsonia tabernaemontana

- Native
- Grows 1 to 2’ tall and wide
- Cut back after flowering to prevent seeding
- Standard, wetland
- For Quick, plant *Amsonia hubrichtii*

Blue Flag Iris, *Iris virginica*

Native

2’-3’

Standard, wetland

Siberian Iris,
Iris sibirica,
not native,

Yellow Flag Iris,
Iris psuedacorus,
is not native and is potentially invasive!
Don’t plant!

Black Eyed Susan
Rudbeckia fulgida

- Native
- Yellow flowers all summer, 3’ tall
- Quick, standard
- Cultivar: ‘Goldstrum’ most common
- Deer love it!

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Daylilies

Hemerocallis hybrids

- Not native
- Quick, standard
- 100's of varieties!
- 1' to 4'
- Dwarf rebloomers:
  - 'Happy Returns', 'Pardon Me', 'Stella D'oro', 'Purple Stella'

Rain Lilies
Zephranthes

- Not native
- Evergreen foliage
- 1’ tall
- Standard, wetland
- Several species and selections – white, pink, yellow, apricot
- ***Z. candida*** – white
- Hardy to zone 7

Rain Lilies

Ajax

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Seashore Mallow

Kosteletskya virginica

- Native
- 4’-5’ tall
- Standard, wetland
- Butterflies love it!
- Late to emerge in spring

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Rose Mallow

Hibiscus moscheutos

- Native
- 4’-6’ tall and wide
- Standard, wetland
- Many cultivars and hybrids, ‘Disco Bell’ - seed strain
- Deer?

Red Star, Texas Star
Hibiscus coccineus

Red flowers, more finely cut leaves, less bothered by Jap. Beetles and caterpillars

Swamp milkweed
Asclepias incarnata

- Native
- 3’ -4’ tall and wide
- Spring/early summer flowers, pink or white
- Sun to part shade
- Standard, wetland
- Monarchs! Attracts many pollinators

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Joe Pye Weed

- Native
- Standard, wetland
- *Eutrochium dubium*
  - 4’-5’ tall x 3’-4’ wide
  - More common coast
- *E. fistulosum*
  - 5’-8’ x 3’-4’
  - More common piedmont
- *E. purpureum and E. maculatum* in Mountains

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Cardinal Flower
Lobelia cardinalis

- Native
- Height: 3’
- Standard, Wetland
- Do not mulch over evergreen leaves in winter

‘Fireworks’ Goldenrod

- Native
- *Solidago rugosa*
- 2’-3’ tall and wide
- Pollinators love it!
- Standard

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Panic Grass, Switch Grass

- *Panicum virgatum*
- Native
- Quick, standard
- **‘Shenandoah’ ‘Prairie Fire’,** 3’ x 2’, burgundy leaves
- **‘Northwind’,** 5’ x 2’, upright
- **‘Cloud Nine’,** large, 8’ x 6’, strong stems

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‘Northwind’

River Oats

- *Chasmanthium latifolium*
- Native
- 3’-4’
- Standard, wetland

Sweetflag

Acorus gramineus

- Not native
- 8” – 12”, evergreen
- ‘Ogon’ – gold leaves
- Great for edges and underplanting
- Standard, Wetland
- *Acorus calamus* – is native, taller, green leaves

Juncus (Rush)

- Native
- *Juncus effusus* = Common rush
- 3’ x 2’
- Semi-evergreen
- Grass like plant
- Standard, wetland – prefers constant moisture

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Juncus in bioretention

Sedges – *Carex* species

- Many native species available from wetland nurseries
- Non native species sold at many nurseries
- Most need constant moisture and prefer afternoon shade
- *Carex crinita*, Fringe Sedge
- 3’ tall, semi-evergreen
- Standard, wetland

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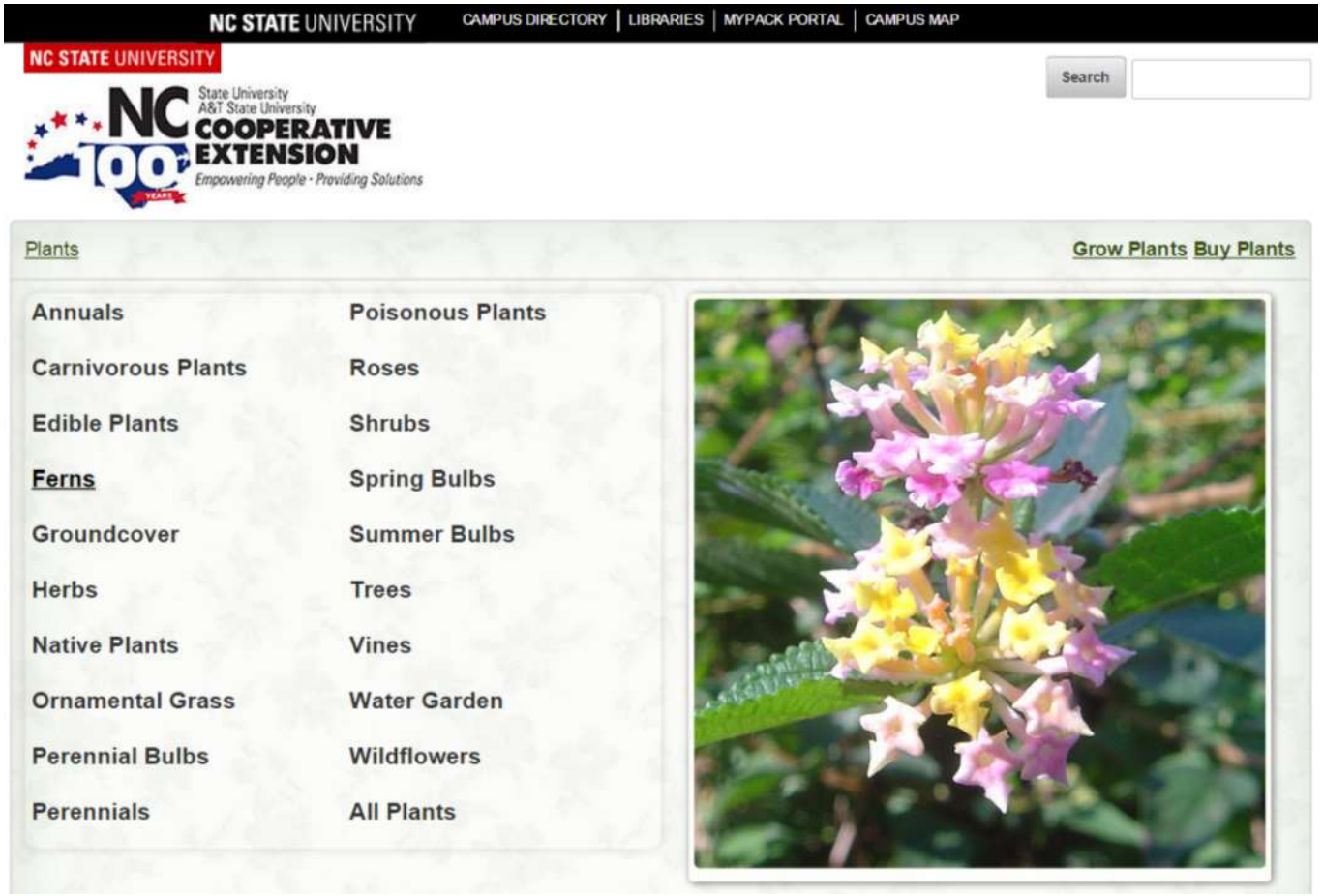
Ferns

- Many native ferns for moist soils
- Most prefer part-full shade
- **Cinnamon Fern**
  - *Osmunda cinnamomea*
  - Tolerates full sun if constantly moist
  - 3’-4’ x 2’-3’
- **Sensitive Fern**
  - *Onoclea sensibilis*
  - Spreads
  - 2’-3’ tall
- Standard, wetland

Need more plant info?
Plants Database

http://plants.ces.ncsu.edu/



Learn More!

NCCE Backyard Rain Gardens

http://www.bae.ncsu.edu/topic/raingarden/

Backyard Rain Gardens

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HOME	Stormwater and Your Rain Garden	Building a Rain Garden	Plant Selection
Garden Maintenance	Distribution Material	Links and Photos	Contact Us!

Search Extension Nationwide

https://search.extension.org/

Specialty Plant Sources

- **Wetland Plants**
  - Mellow Marsh Farms, Siler City
  - http://www.mellowmarshfarm.com/
  - Cure Nursery, Pittsboro
  - http://curenursery.com/
- **Grasses and sedges**
  - Hoffman Nursery, Rougemont
  - http://hoffmannursery.com/

Questions?

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