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
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

Invasive Exotic Species List

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”
Invasives Guide

- NCDOT – Invasive Exotic Plants of NC
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
If rain garden is “on its own”, make large enough to be a landscape feature, in scale with size 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
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
Plant selection is most critical in deeper/longer ponding areas

Deep, sandy soil = drought tolerance most important
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
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
Red Maple
Acer rubrum

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

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

‘Forest Pansy’

‘Merlot’

‘Hearts of Gold’

‘Royal White’
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
Beautyberry
Callicarpa americana

- Native
- 6’ x 6’ if cut back to 1’ every year in Feb/March
- Quick, standard
Virginia Sweetspire
*Itea virginica*

- Native
- Standard, wetland
- Suckering roots
- Cultivars:
  - ‘Henry’s Garnet’, \(4’-6’ \times 4’-6’\)
  - ‘Little Henry’, dwarf \(3’ \times 3’\)
- Deer Love It!
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

‘Shamrock’
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
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!
Daylilies

_Hemerocallis_ hybrids

- Not native
- Quick, standard
- 100’s of varieties!
- 1’ to 4’
- Dwarf rebloomers:
Rain Lilies
Zephyranthes

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

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

https://search.extension.org/

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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/
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