Native Plants for Rain Gardens

Ideas and inspiration for utilizing native plants in rain gardens and stormwater landscapes.

By

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What is a rain garden?

- A depression that is shallow or of varying depth that is vegetated with the intention of holding and slowing rain fall or surface stormwater until it dissipates. The plants help soak up the excess water and re release it into the atmosphere through transpiration.

- Some of the water can recharge the aquifer as well. There can be temporary ponding in rain gardens as well as outlets and gravel sub structures that aid in these processes.
Basic form of rain garden

- Basin - collects water wetland plants do well here and also some plants that can take seasonal inundation
- Mid slope - a place that gets wet at times but dries our fairly quickly plants that don't mind a little water and wetland plants can do well here.
- Berm - top and the area at normal grade of surrounding landscape most generalists can handle this area and those that like drier sites will thrive here.
Features of a rain garden
Image of a residential rain garden cross section
Commercial rain gardens vary

- Hardscape retains other structures and defines rain garden area also helping to channel stormwater
- Species are native but palette is restrained
- Height of plants is also kept low for lines of site as it’s a parking area and walkway
Streetscaping Eco-scape rain garden

• More species diversity
• Trees grasses and perennials create a natural look against the urban forms of parking lots and buildings.
• More ecological function is added
• Stormwater is channeled through the landscape and taken up by the plants.
• It becomes an opportunity to educate as well if signage is added.
Even narrow spaces make for good rain/stormwater gardens.
The High Line Park in New York is a great example of capturing storm water.

- Paving is dry set or gapped to allow infiltration
- Species are selected based on their water requirements and even larger shrubs and trees are part of the design
- It acts like a large planter box as its suspended above the streets.
Hardscaping can help slow surface water before the rain garden

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Grasses

• There are many native grasses that do very well in rain gardens. Deep roots drought resistance and a variety of form make these great plants for rain gardens.
  • Muhly grass
  • Fakahatchee grass
  • Dwarf Fakahatchee grass
  • Indian grass
  • Lopsided Indian grass
  • Wiregrasses
  • Cordgrasses
  • Bluestem grasses

A mix of wiregrass and blue stem grasses
Muhenberghia capillaris-Gulf coast muhly grass
Muhly grass in a mixed border

- 3-4 feet tall and wide
- Drought tolerant once established
- Tolerates sandy soils but does ok with some organic content
- Pink blooms in late summer and fall can repeat bloom
- Tolerant of coastal locations and does well upland
- Locate in basin on berm or mid slope versatile plant
Beautiful in residential or commercial applications.
Eragrostis spectabilis - Purple lovegrass

- Naturalizes well
- Drought tolerant once established
- 1.5-2 feet tall and wide
- Mixes well with other plants
- Purple blooms in summer/fall
- Berm but it may move around
Dichromena colorata - white topped sedge

- Densely growing sedge
- Loves wet areas
- Can be mown down to renew it
- Plant in the basin

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Andropogon capillipes-
Chalky blue stem

- Prefers drier sites / sandy soils
- Taller grass 3-5 feet
- Clumping grass but can self seed
- Bluish cast to the leaves
- Berm
Sorghastrum secundum-Lopsided Indian grass
Lopsided Indian grass

- Tends to lean as it matures
- Tolerant of drier and wetter sites with good drainage
- 4-5 feet tall
- Will self seed
- Basin or mid berm
Schoenplectus californicus-giant bullrush

- Wetland specialist
- 4-7 feet tall
- Round stems rise above the water
- Basin or mid slope
Eragrostis elliottii - Lovegrass

- 1-2 feet tall
- Bluish foliage
- Will self seed and needs to be cutback after winter
- Tolerates dry soils once established
- Mid slope or berm
Sysrinchium atlanticum-
Blue eyed grass

• 6-12 inches tall
• Prolific self seeder once established
• Sandy to loamy soils of adequate moisture can handle drier
• Blue flowers great foundation plant for rain gardens
• Berm basin mid slope will move around
Front yard rain garden

- Eragrostis elliotii-Elliots lovegrass
- Pityopsis graminifolia- silky aster
- Mimosa strigulosus-Sunshine mimosa
- Vernonia gigantea-giant ironweed
- Flagstone path on gravel bed
Perennials

- Whether focusing on a single species or mixing it up, proper placement and followup care will ensure a successful result
- Identify what you like
- Plant in groups and repeat patterns of planting
- Use grasses for structure and support
- Know the mature sizes for better overall form and appearance

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Asclepius tuberosa-butterfly milkweed

- Prefers drier soils and sun
- 1-2 feet tall will self seed if it likes where it is
- Browsed by monarch caterpillars
- Dried stems used to make rope by native americans
- Monarch larval host
- berm
Asclepius Incarnata-
swamp milkweed

- Tall perennial with pink blooms
- Will get eaten to the ground sometimes but will come back
- Likes wet soils with some organic content but is adaptable with moisture
- 2-3 feet tall
- Monarch larval host
- Basin mid slope
Phlox divaricata—woodland phlox

• Prefers loamy soils with organic content leaf mould, an old log to hide next to
• 8-12 inches tall in bloom lower when dormant
• Blue flowers in spring
• Can live beneath other taller plants
• Mid slope or berm

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Lobelia cardinalis - scarlet lobelia

- Perennial that likes wet areas ponds
- Scarlet blooms in summer
- 3-5 feet tall variable
- Hummingbirds and other pollinators enjoy this plant
- basin

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Eryngium species

Many varieties of this useful plant many prefers drier sites
Eryngium Aquaticum-
Marsh rattlesnake master

- Taller Eryngo 3-4 feet
- Blue thistle like flowers
- A pollinator magnet
- Likes wet soils but can handle avg moisture and
- Avg to poor soils
- Basin mid slope other varieties can be on the berm
Rudbeckia laciniata-
Cutleaf coneflower

- Yellow & green blooms
- 2.5-4 feet tall clump forming will seed
- Seeds browsed by wildlife
- Prefers avg to richer soils with some organic content
- Part shade to part sun
- Mid slope berm
Stokesia laevis-Stokes aster

• 1.5-3 feet tall
• Blue to lavender flowers in late spring and summer can repeat bloom if cut back
• Can seed around
• Pollinator favorite
• Likes good soil with some organic content
• Sun to part sun
• Mid slope or berm
Stokes aster color variations

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Dischorista humistrata-Hammock twinflower

- Low creeper forms mats
- Blue flowers nearly year round
- Evergreen in central & southern locations
- Larval host for common buckeye
- Likes moist well drained soil but also handles inundation well
- Basin mid slope or berm adaptable
- Sun to part sun and shade

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Iris virginica - blue flag iris

- 18-36 inches tall clump forming
- Prefers moist soils or standing water but is adaptable with irrigation.
- Swordlike leaves good structural plant
- Blue and yellow blooms
- Avg to rich or mucky soils
- Sun to part sun
- Basin mid slope
Monarda punctata-Dotted horsemint

- Bushy perennial forms colonies
- Pink flowers very fragrant
- 2-4 feet tall
- Rhizomatous and self seeding
- Pollinator magnet
- Our native oregano!
- Berm mid slope will move around
Salvia misella-blue river sage

- Low groundcover with blue flowers
- Scented foliage prune to shape
- Likes shade to part sun
- Avg to rich soils well draining
- Larval host for Fulvous hairstreak butterfly
- Mid slope to berm

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Calamintha georgiana - Georgia basil

- Low shrubby perennial
- Minty fragrance with pink blooms
- Likes well drained soils with some organic content
- Responds well to pruning
- Pollinator attractor
- Berm or mid slope
Chrysopsis mariana-
Maryland goldenaster

• 1-2 feet tall and wide
• Yellow flowers
• Prefers drier locations but is adaptable
• Sun to part sun
• Berm midslope
• Avg soils to sandy soils

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Passiflora incranata-passionvine

- Vining to 18 feet or so
- Purple and cream colored flowers
- Avg soils
- Larval host for gulf fritillary butterfly
- Sun to part sun
- Slope & berm as groundcover or climiber

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Vernonia gigantea—Ironweed

- 4-5 feet tall
- Likes wet locations
- Purple flowers in umbels
- Pollinator magnet
- Will self seed
- Sun to part sun
- Basin mid slope
Conradina canescens-
scrub mint

- 12-18 inches tall
- Pink blooms
- Likes avg to sandy soils
- Shrubby habit and evergreen make this a good structure plant on berm
- Pollinator attractor
- sun
Silphium asteriscus-rosinflower

- 3-4 feet tall
- Yellow flowers 3 inches across
- Drought tolerant once established
- Will self seed
- Sun to part sun
- Berm or mid slope
Salvia coccinea-tropical sage

• 2-4 feet tall
• Drought tolerant once established
• Red flower but can hybridize and produce pinks and white blooms
• Pollinator magnet
• Dry to moist well drained soils in sun to part sun dry shade.
Cephalanthus occidentalis - buttonbush

- 7-12 feet tall
- White spherical blooms
- Deciduous
- Like wet soils but can adapt if given supplemental irrigation and rich soil
- Sun to part sun
- Basin mid slope
Verbesina Virginica-White crownbeard

- Tall perennial 4-6 feet tall
- White blooms in summer and fall
- Likes wet meadows or edges of woodlands
- Pollinator magnet
- Sun to part sun
- Basin or midslope

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Why we need rain gardens.

• Non point source pollution in the form of runoff carries fertilizers, soil, silt, heavy metals, and other impurities into our watercourses then into our main water sources.

• The process of evapo-transpirsation and the ability of plants to stabilize soils to allow these impurities to settle and dropout is vital to creating healthier watersheds and ultimately healthier water.

• Supports many wildlife functions.
New rain garden receiving its first deposit!

• Notice logs and other organic matter is added to mimic natural wetland systems.
• There is a variety of topography present to allow for diverse species and mixed plantings of grasses, herbs, and shrubs.
• Natures irrigation!
Part of a public park, this is a network of rain gardens constructed wetlands and streams.
Thank you!

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Rain garden- the basic definition of a rain garden is a depression in the earth designed to capture and hold storm water. They can be vegetated partially or fully, some even integrating with the surrounding landscape so as to practically disappear. The plant choices can tend toward formal or more naturalistic depending. There is an inlet and an outlet though there can be more than one of each. They consist of three zones 1.basin 2.berm 3. upper berm different terms can be used for these areas but this is my approach. Specific plants can be chosen for each zone based on their characteristics and preferred habitat.

Designing these features requires astute observation of the location and site conditions. What are the water regimes on site? Does the topography present some problems or benefits? What type of soils are present? What is the proximity to building or other structures? Is there full sun or shade? What are the building codes and requirements limitations? Is supplemental water required for establishment?

Luckily native plants have certain adaptations that allow for them to be used in these situations. The structure of the rain garden consists of a depression but also a berm to retain the water and an outlet to allow for overflow egress. The depression is for plants adapted to wet situation and the berm can support more drought tolerant species which will help wick moisture from the basin but wont mind having wet feet periodically. A plant such as scarlet lobelia loves the seasonal inundation of wet meadows and swales and makes a showy perennial for the lower basin, while muhly grass or dwarf saltbush can be planted on the berm to wick moisture from the basin but not sit in water for extended periods. Other grasslike plants like juncus effusus can handle the wet feet and thrive in the basin and mix well with perennials.

Mulches-typically mulches are needed during establishment and to help weed suppression or if there is any erosion but over time their use will be less needed. Pine straw is the most versatile while florimulch is next followed by other mulches. When ponding occurs and it will, many mulches will float, they will eventually settle but may not be in the same place.

Soils-for rain gardens a simple soil mix of 50% sand 25% percent compost and 25% compost many native plants do not require special soils but if you want to host a variey of plants this mix will accommodate them. On the berm and slope the native soils would be more fitting as those plants are adapted to them and chosen for that reason.

Aggregates/stone-the use of aggregates is common and can help with areas of high flow or to increase infiltration, shell, gravel or various sizes even larger stones can e used practically and aesthetically to enhance the look of the rain garden. Some rain gardens require intensive drainage structures and intensive design and planning with multiple layers.

Upkeep is an important part of all landscapes and rain gardens tend to stay wetter than others so can be susceptible to intrusion by undesirables. Preparation work in the form of weed removal of suppression is first and foremost. Stay ahead of the weed curve. Choosing some plants that will cover quickly will help as well. Mulching to begin with will help impede weeds as well. For wildflower areas there are seasonal down times and the need time to establish so its good to have a long term maintenance plan. Ultimately its still a garden even if the scale can be much greater.
HERE IS A LIST OF PLANTS FOR RAIN GARDENS:

GRASSES AND GRASS LIKE PLANTS-
(dry)
muhly grass  muhlenberghia cappillaris
lovegrasses  eragraostis spectabilis/elliotii
dwarf fakahatchee  tripascum floridanum
fakahtchee  tripascum dactyloides
indian grass  sorghastrum nutans
lopsided indian grass  sorghastrum secundum
piney woods dropseed  sporobolus junceus/virginicus
sea oats  uniola paniculata
black seeded needle grass  Piptochaetum aveneum
wiregrass  aristida stricta var beyrichiana
blue stems species  andropogon ternarius/ virginicus glaucus

(wet)
cordgrasses  spartina bakerii/ patens
white topped sedge  dichromena colorata
giant rush  schoenoplectus californicus
river oats  chasmanthium latifolium
soft rush  juncus effusus
sugar cane plume grass  saccharrum giganteum
coastal spikerush  eliocharis cellulosa

PERENNIALS-
(wet)
cardinal flower  lobelia cardinalis
carolina fimbry  fimbristylus caroliniana
blue flag iris  iris virginica
hammock twinflower  dischoriste humistrata
herb of grace bacopa  bacopa monieri
peperomia  peperomia obtusifolia
blue eyed grass  sysrinchium angustifolium
arrow arum  peltrandra virginica
arrowhead lanceleaf  sagittaria latifolia
skyflower  hydrolea corymbosa
spider lily  hymenocallis caroliniana
rain lily  zephranthes atamasco
swamp sunflower  helianthus verticillatus
rayless sunflower  helianthus radula
blazing star  liatris spicata
yellow eyed grass  Xyris sp
climbing aster  symphyotrichum carolininanum
elliots aster  symphyotrichum elliottii
swamp milkweed  asclepius incarnata
white milkweed  asclepius perrenis
crinum lily  crinum americanum
pipewort eriocaulon sp
ironweed vernonia gigantea/ angustifolia
scarlet hibicus hibiscus coccineus

(dry)
coreopsis coreopsis lanceolata
leavanworths coreopsis coreopsis leavenworthii
sunshine mimosa mimosa strigulosa
dune sunflower sp helianthus debilis
twinflower dischoriste oblongifolia
adams needle yucca filamentosa
black eyed susan rudbeckia hirta
rosinweed silphium integrifolium
blue sage salvia azurea
white top aster sericocarpus tortifolius
whorled milkweed asclepius verticillata
tropical sage salvia coccinea
creeping river sage salvia misella
blue curls trichostema dichotoma
mistflower concoclinum coelestinum
beach mistflower concoclinum littorale
dotted horsemint monarda punctata
grass leaved aster pityopsis graminifolia
gracefull liatris latris gracillus
yellowtop flaveria linearis
goldenrod solidago sp
wild petunia ruella carolinienis
blanketflower gallardia pulchella
Stokesia laevis stokes aster
symphyotrichum walteri walters aster
symphyotricum georgiana georgia aster

SHRUBS-
(wet)
virginia sweetspire tea virginica
horizontal cocoplum chrysobalanus icaco horizontalis
wild coffee psychotria nervosa
softleaf coffee psychotria sulzneri
buttonbush cephalanthus occidentalis
elderberry sambucus niger
christmas berry lycium carolinianum
swamp azalea rhododendron serrulatum
arrowwood viburnum viburnum dentatum
scorpiontail heliotropium angiospermum
dwarf wax myrtle myica cerifera dons dwarf
dwarf palmetto sabal minor
sweet pepperbush clethra alnifolia
buckwheat tree cliftonia monphylla
leadplant amorpha fruticosa
holly species ilex vomitoria/ambigua/cassine/glabra
florida dogghobble leucothoe axillaris
saltmarsh mallow kosteletzkia virginica
(dry)
buttonsage lantana involucrata
pineland lantana lantana depressa
coontie zammia pumila
georgia basil clinopodium georgiana
rogue plant rivalis humilis
saw palmetto serenoa repens
beautyberry callicarpa americana
native azaleas rhododendron canescens
lyonia sp lyonia lucida/ferruginea/fruticosa
scrub hypericum hypericum tenuifolium
scrub blueberry vaccineum darrowii
highbush blueberry vaccineum corymbosum
beach creeper ernodea littoralis
shiny blueberry vaccineum myrsinites
false rosemary conradina canescens
appalachicola rosemary conradina glabra
largeflower conradina conradina grandiflora
scrub pennyroyal piloblephis rigida
mrs schillers viburnum viburnum obovatum

VINES-
skyblue clustervine jacquemontia pentanthos
railroad vine ipomoea pes-caprae
passionvine passiflora incarnata
corky stem passionvine passiflora suberosa

FERNS-
swamp fern blechnum serrulatum
cinnamon fern Osmunda cinnamomea
giant leather fern Achrosticum danaeifolium
southern maidenhair fern adiantum capillus veneris
whisk fern psilotum nudum
netter chain woodwardia areolata
southern wood fern dryopteris ludoviciana