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COOPERATIVE EXTENSION
College of Agriculture, Forestry and Life Sciences



LOW IMPACT DEVELOPMENT PRACTICES FOR RESIDENTIAL PROPERTIES

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Rethink The Built Environment

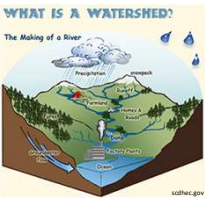



Watershed

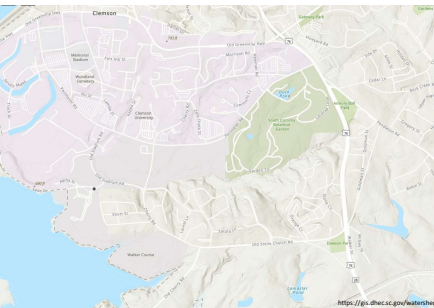


WHAT IS A WATERSHED?

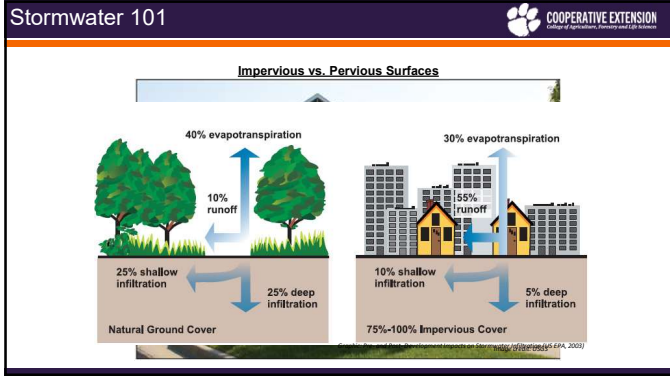
The Making of a River

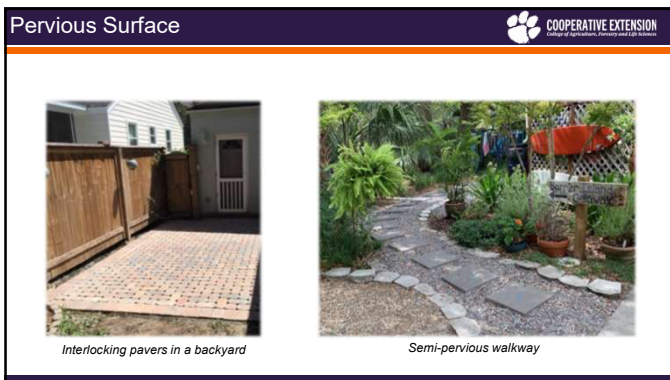


sdcnac.gov



<http://gis.sdcnac.gov/watershed/>





Site Assessment

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Go outside when it rains!

- **Identify source and destination:**
- Source is impervious areas such as rooftops, parking lots, and driveways
- Destination is ditch, storm drain, stormwater pond, etc.
- **Note problem areas and conveyance**

The images show: 1) A shovel in a trench, likely for inspecting a storm drain. 2) A house with blue arrows indicating runoff from the roof and driveway. 3) A hand pointing to a storm drain opening in the ground.

Site Assessment



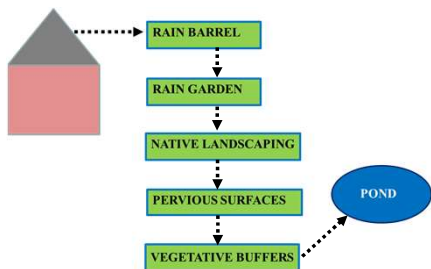
Soil



Perc (percolation) Test
Jar Test
Ribbon Test
Soil Test



Treatment Train




Rain Gardens

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Rain Gardens Are A Working Landscape Feature:

- Manage erosion & moisture control issues around building foundations
- Collection and infiltration of stormwater runoff
- Attract desirable wildlife
- Beautify the landscape
- Water conservation
- Pollutant removal



Rain Gardens

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Increase in development, shrinking natural areas = need to create areas that mimic natural absorption and filtering abilities of forests, meadows, and diverse habitats for variety of animals



Rain Gardens

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Maintenance

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Case Study

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Case Study

- o Blue flag iris (*Iris virginica*)
- o Aquatic milkweed (*Asclepias perennis*)
- o New England aster (*Aster noviae-angliae*)
- o New York ironweed (*Vernonia noveboracensis*)
- o Scarlet hibiscus (*Hibiscus coccineus*)
- o Coral honeysuckle (*Lonicera sempervirens*)
- o Joe pye weed (*Eutrochium fistulosum*)
- o Swamp milkweed (*Asclepias incarnata*)
- o Swamp sunflower (*Helianthus angustifolius*)
- o Saltmarsh mallow (*Kosteletzkya virginica*)

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Case Study

Joe pye weed (*Eutrochium fistulosum*)

- Height: 4-7'
- Moist soil
- Full sun
- Blooms July-August
- Host plant to 32 species of butterflies and moths*
- May attract jays, chickadees, cardinals, wrens, and more*



Case Study

Swamp milkweed (*Asclepias incarnata*)

- Up to 5' tall
- Moist soil
- Full sun, part shade
- Blooms June-October
- Host plant to 13 species of butterflies and moths*
- May attract hummingbirds, wrens, cardinals, finches and more*




Case Study

Swamp sunflower (*Helianthus angustifolius*)

- Up to 5' tall
- Moist soil
- Full sun, part shade
- Bloom August-November
- Host plant to 57 species of butterflies and moths*
- May attract chickadees, cardinals, jays, orioles, and more*

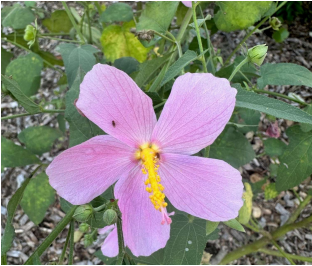


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Case Study

Saltmarsh mallow (*Kosteletzkya virginica*)


- Height: 4-6', occasionally up to 10'
- Moist soil
- Full sun
- Blooms June-October
- Host plant to 1 moth species
 - Curved-line bird-dropping moth (*Tarache terminimaculata*)
- May attract waxwings, orioles, warblers, hummingbirds, and more*



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CAROLINA YARDS PROGRAM
Anaston Porter (Water Resources Agent Pickens County)

 **Carolina YARDS**
A COOPERATIVE EXTENSION SERVICE

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What is Carolina Yards?





Certify Your Yard

- Carolina Yards Scorecard
- 12 Principles - 55 Actions Total (worth 2" each)
- 110" of Credit Possible
- Minimum 36" for Certification







Carolina Yards 12 Principles

1. Maintain Healthy Soil
2. Recycle Yard Waste
3. Mulch Matters
4. Right Plant, Right Place
5. Garden Like A Local
6. Remove Invasives
7. Be Wise When You Fertilize
8. Manage Yard Pest Responsibly
9. Water Wisely
10. Rain As a Resource
11. Reduce Runoff
12. Provide For Wildlife











Principle Highlight: #1 Maintain Healthy Soil

- Soil is the foundation of any landscape
- Start with a standard soil test
 - pH
 - Phosphorus
 - Potassium
 - Calcium Magnesium
 - Zinc
 - Manganese
 - Copper and Boron
 - Lime requirements and recommendations





Principle Highlight: #5 Garden Like A Local 

Three regions according to Carolina Yards: Coast, Midlands and Upstate

What course participants will learn in this section:

- Develop a Landscape Plan
- Discover the SCNPS Database
- Learn to protect existing trees
- Create a plan for native plant buffer along your shoreline
- Manage for erosion




Purple Coneflower (*Echinacea purpurea*)




Cardinal Flower (*Lobelia cardinalis*)



Principle Highlight: Garden Like A Local 

Amend, Plant, & Mulch



Native Plants

- Require little to no irrigation
 - nor fertilizer once established
- Combat invasive plant species
- Support biodiversity
 - & healthy ecosystems
- Aesthetically pleasing
- Hardy

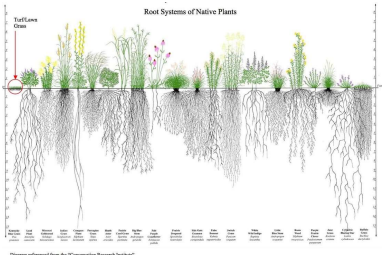


Diagram referenced from the "Carolina Research Database"

Native Landscaping & Vegetative Buffers 




Swamp Sunflower (*Helianthus angustifolius*)

Photo by Barbara El South 2022 BKAC

SC Native Plant Society Database



Native Plants in Your Yard

- SC Native Plant Society
- Your local Extension or Master Gardener Office.
- Find your local office at: clemson.edu/extension/



Principle Highlight: #10 & #11 Rain As a Resource/Reduce Runoff



Certified Yard Spotlight



Bridget B. Wells, Charleston County

"I realized during my time spent completing the SC Master Garden program that continuing education with regard to our yards is so important. There is so much to learn and this program highlights some of the most important things we can do to not only have a beautiful, healthy yard, but care for our environment as well. After removing invasive plants and focusing of the health of my soil, I have been able to create an easy to maintain yard without excess fertilizer while creating a beautiful space for butterflies and birds."



Benefits & Resources

Agricultural Services Lab

Questions?



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