

Rooted in Nature: Conserving NC's Coast Using Native Plants and Trees



Amy Mead
Interim Director, Brunswick County Center
Area Natural Resources Agent



Changing our Landscaping Philosophy

- How does our yard function in the larger landscape?
- How can we use plants to protect the environment?
- Value ecosystem support over aesthetics
- Work with nature instead of against it



Nature Based Solutions for Coastal Challenges

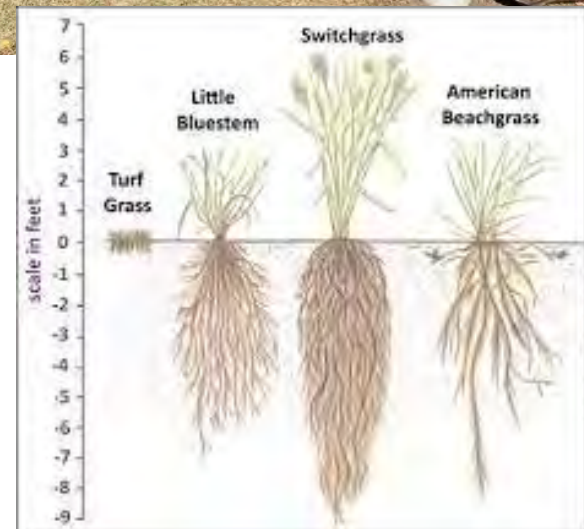
Challenges:

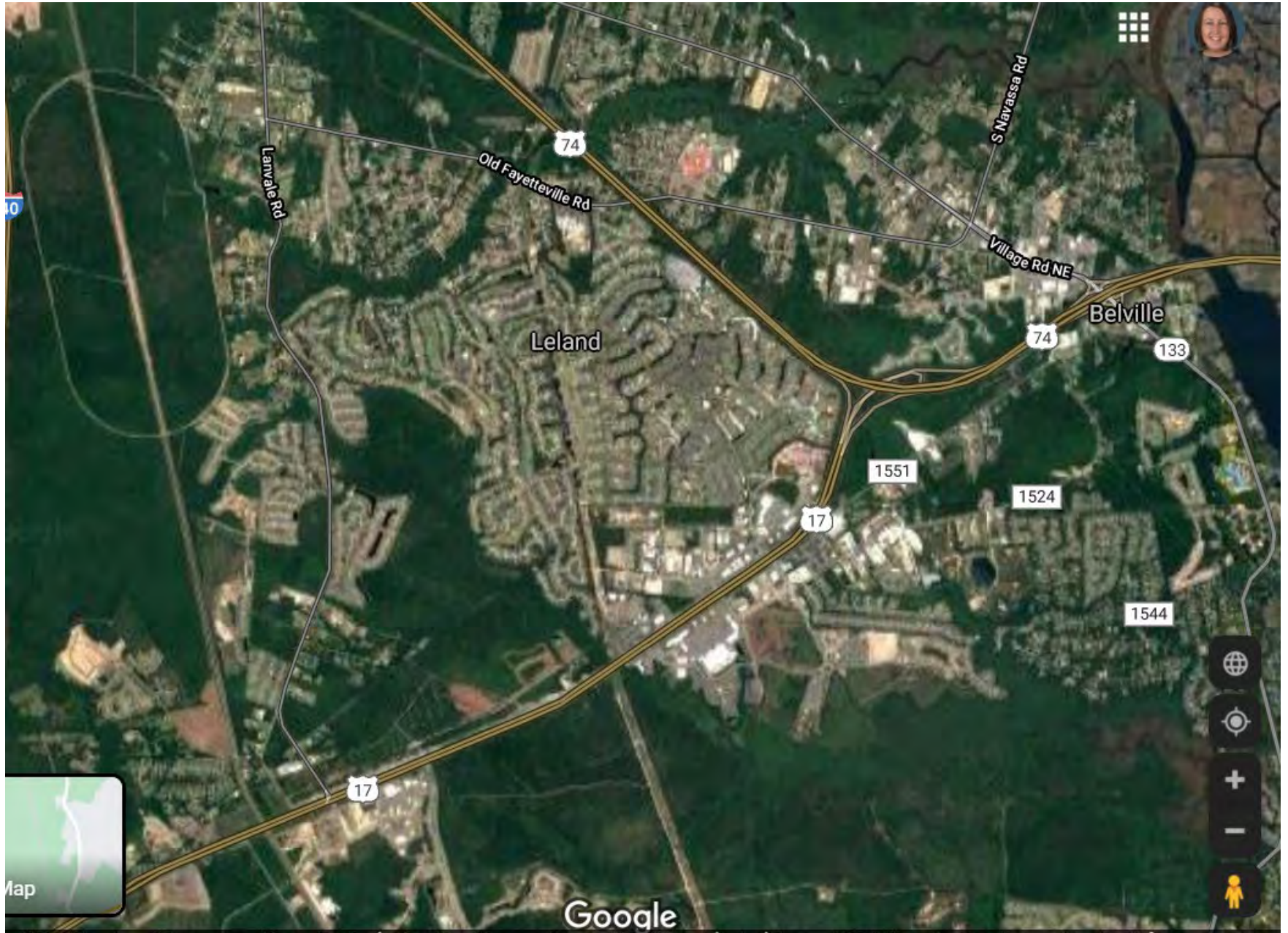
- Increasing storm frequency and intensity
- Stormwater overflows
- Water Quality
- Drought
- Extreme heat
- More air pollution
- Habitat loss



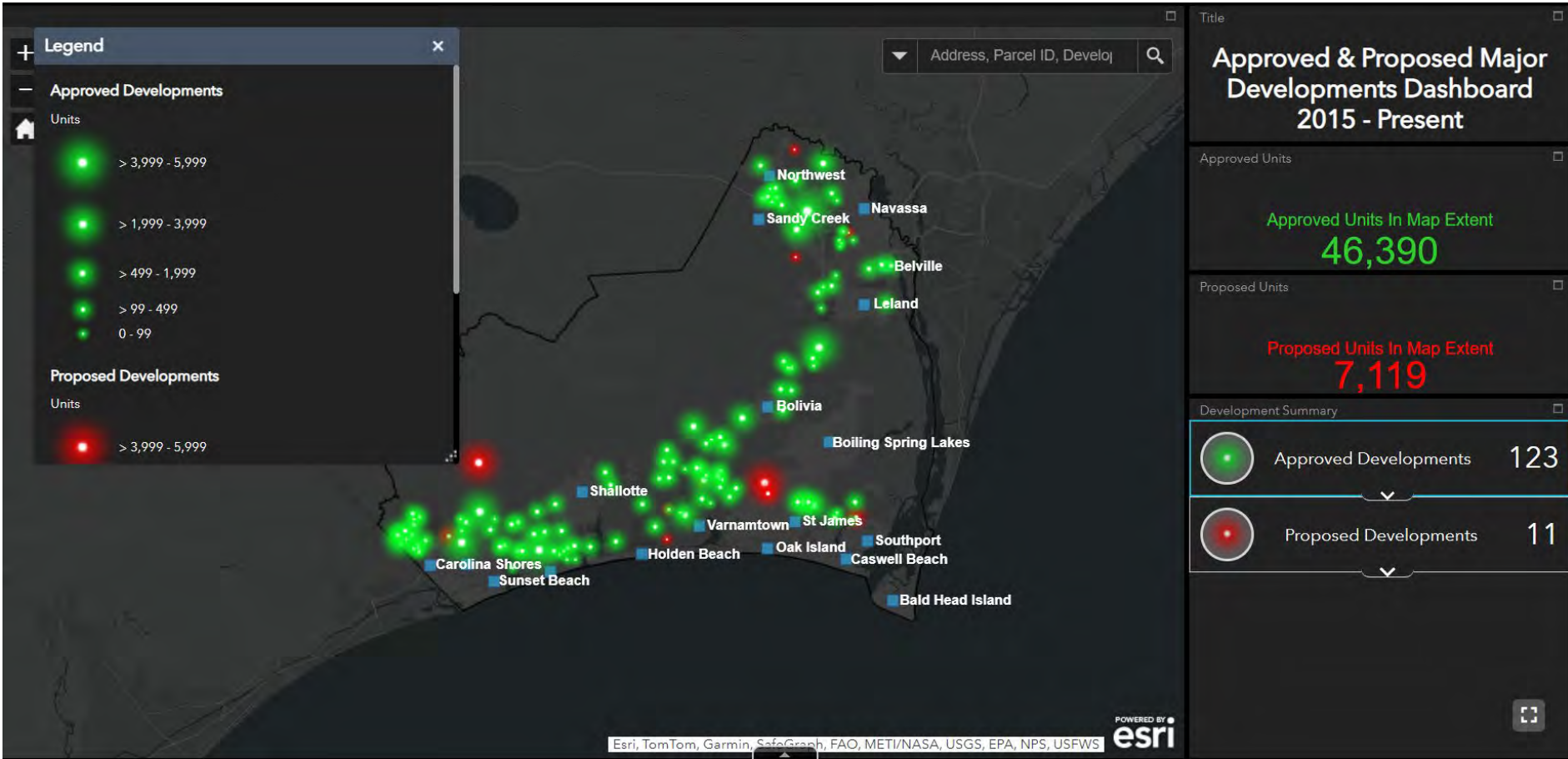
How Native Plants Protect our Community

- Promote Coastal Resiliency
 - Mitigate heat island effects
 - Higher wind tolerance
 - Salt tolerance
- Supporting wildlife
 - Many native plants are host plants for moth and butterfly caterpillars
 - Provide food for birds and wildlife
- Native Plants protect our waterways
 - Native plants have reduced needs for fertilizer and supplemental water
 - Native plants have deep root structures to help prevent erosion
 - Natural areas help infiltrate stormwater





Brunswick County Development Map

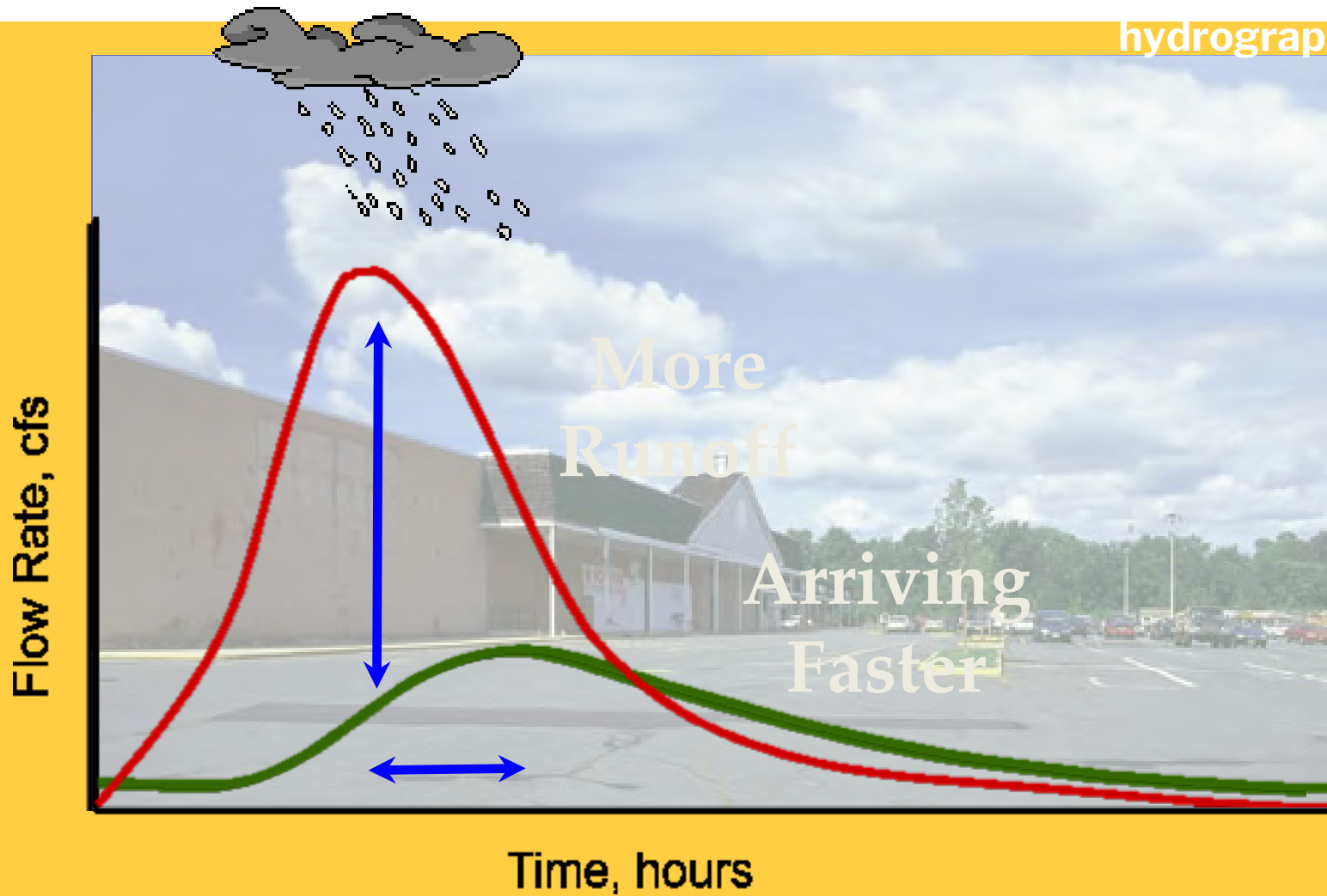


Impervious Surfaces

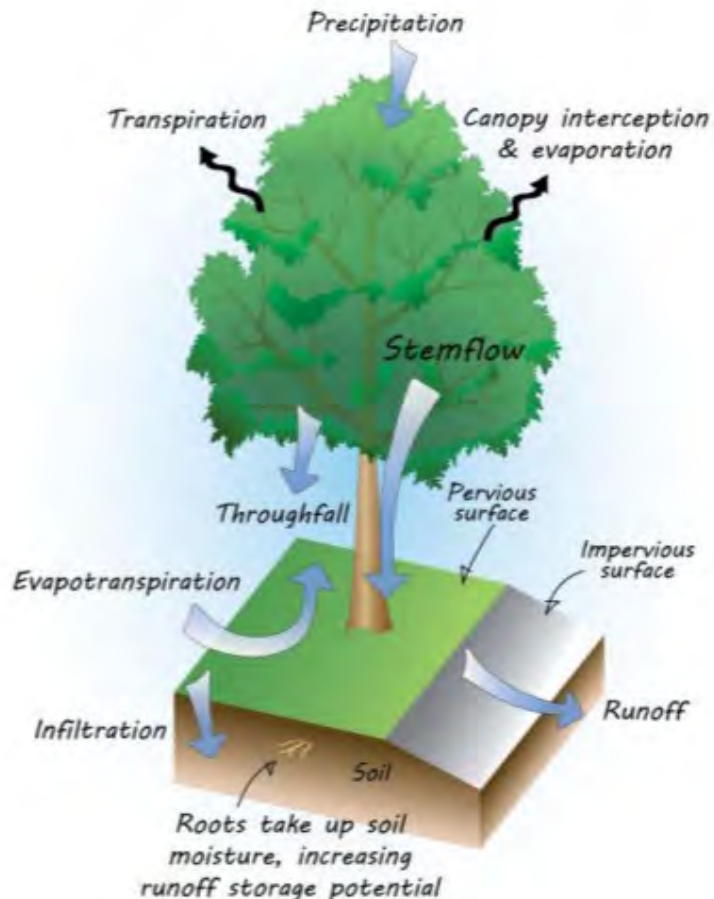


Water Flow

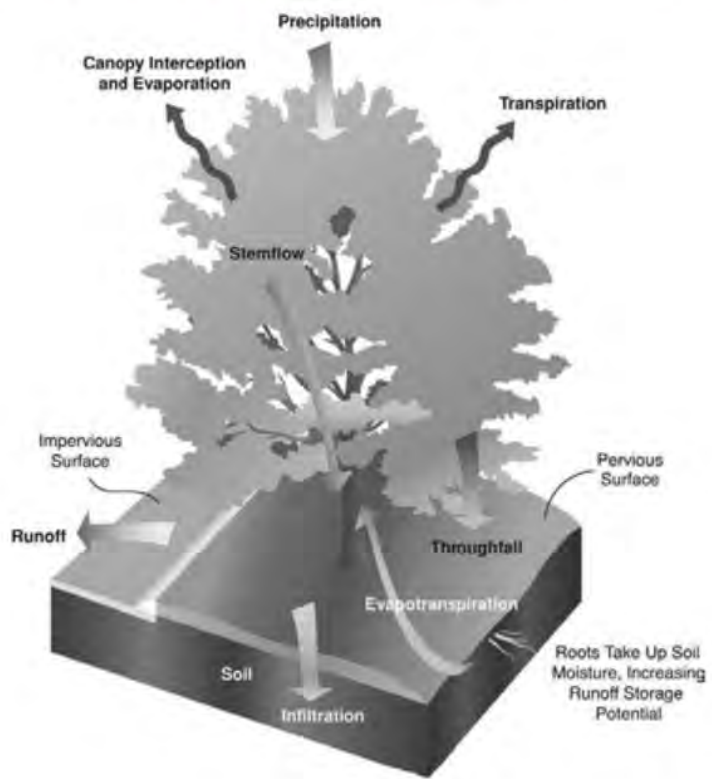
hydrograph



Trees Improve Water Quality, Flooding, and Erosion



- The tree canopy buffers precipitation, capturing some and allowing the rest to lightly drip to the ground
- Tree roots also slow down stormwater runoff flow while helping to hold soil in place
- In wooded areas decaying leaves form an organic layer on the ground allowing water to percolate into the soil, which also helps to reduce runoff and soil erosion



Your 30 inch Live oak will intercept 11,935 gallons of stormwater runoff this year.

Urban stormwater runoff (or "non-point source pollution") washes chemicals (oil, gasoline, salts, etc.) and litter from surfaces such as roadways and parking lots into streams, wetlands, rivers and oceans. The more impervious the surface (e.g., concrete, asphalt, rooftops), the more quickly pollutants are washed into our community waterways. Drinking water, aquatic life and the health of our entire ecosystem can be adversely effected by this process.

Trees act as mini-reservoirs, controlling runoff at the source. Trees reduce runoff by:

- Intercepting and holding rain on leaves, branches and bark
- Increasing infiltration and storage of rainwater through the tree's root system
- Reducing soil erosion by slowing rainfall before it strikes the soil

For more information visit: [The Center for Urban Forest Research](http://www.treebenefits.com/calculator/)

<http://www.treebenefits.com/calculator/>

Lean into what your yard is telling you...

- How can I work with nature?
- **Right Plant, Right Place!**
- Do I have a wet area in my yard?
- Can I move water to a rain garden to capture it before it runs off?



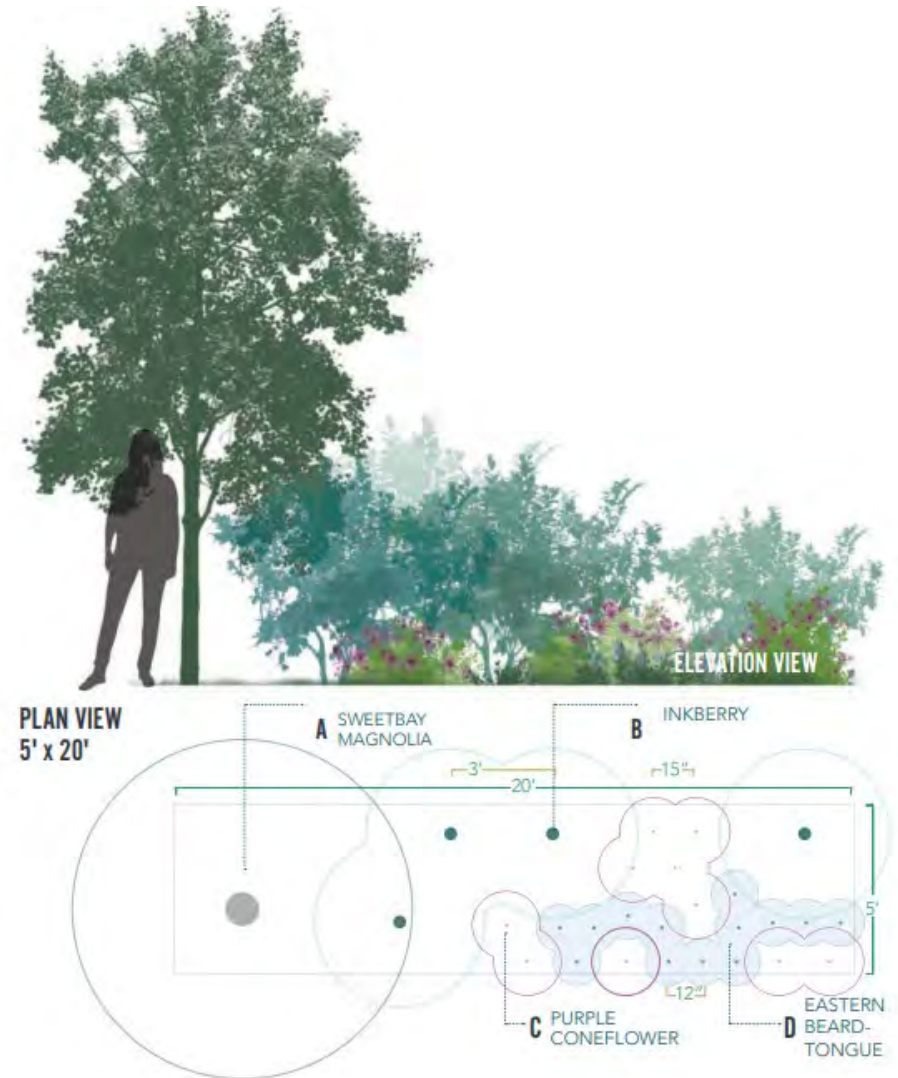
Rain Garden at the Brunswick Botanical Garden

Where should I place a Rain Garden?



- Near the source of water (often by downspout)
- Incorporate into existing garden bed
- Avoid the “orphan” garden look
- Design with maintenance in mind

Use a Diversity of Plants for your Landscape



Coastal Landscapes Initiative template



Sweetbay Magnolia
Magnolia virginiana



Inkberry
Ilex glabra



Beardtongue
Penstemon digitalis 'Huskers Red'



Purple Coneflower
Echinacea purpurea



Inkberry
Ilex glabra



Dwarf Yaupon Holly
Ilex vomitoria 'Nana'



Beautyberry
Callicarpa americana



Dwarf Palmetto
Sabal minor

What should I plant in my yard? Right Plant/Right Place

- Determine what is already growing well in your neighborhood, nearby forest, ponds
- Choose native plants that are well adapted to our coastal climate and soil conditions



Hiking Trail through Fort Fisher
State Recreation Area



Dwarf Palmetto
Sabal palmetto



Yaupon Holly
Ilex vomitoria



Live Oak
Quercus virginiana



Dwarf Yaupon Holly
Ilex vomitoria 'Nana'



Little Gem Magnolia
Magnolia grandiflora 'Little Gem'



Eastern Red Cedar
Juniperus virginiana

Sweetbay Magnolia

Magnolia virginiana

20+' tall, semi-evergreen tree or multi-stemmed shrub, deer resistant

Fragrant flowers

Larval host for Spicebush Swallowtail and Eastern Tiger Swallowtail butterflies

Medium-high wind resistance



Jim RobbinsCC BY-NC-ND 4.0



RachelgreenbeltCC-BY-SA 2.0



Sweetbay Magnolia and Longleaf Pine at UNCW



Jim RobbinsCC BY-NC-ND 4.0

'Heritage'

River Birch

Betula nigra

40-60' tall

Prefers wetter sites, but is very adaptable

Exfoliating bark, Yellow fall color

Heat tolerant and moderately salt tolerant

Medium-high wind resistant



Taylor's Nursery



Kristyna CulpCC BY 4.0

American Fringetree

Chionanthus virginicus

15-25' tall

Full to part Sun

Striking blooms April-May

Small olive-like fruits eaten
by birds

Medium-High Wind
resistance

Don't plant this...

Plant this instead!



Pampas Grass
Cortedaria selloana



Muhly Grass *Muhlenbergia capillaris*



Switchgrass
Panicum virgatum



Little Bluestem
Schizachyrium scoparium

Don't plant this...

Plant this instead!



Jim Robbins
CC BY-NC-ND
4.0

Nandina
Nandina domestica



Paul E. Filch, NC Botanical



Jim Robbins
CC BY-NC-ND 4.0

Yaupon Holly
Ilex vomitoria

Blueberries
Vaccinium spp.



Jim Robbins
CC BY-NC-ND 2.0

Yucca
Yucca filamentosa

Native Trees, Shrubs, and Grasses for Urban Landscapes

Large Trees- 50+' tall at maturity

Common Name	Scientific Name	Height	Spread	Form	Notes
Bald Cypress	<i>Taxodium distichum</i>	50-70'	20-30'	Columnar	Drought tolerant once established
Pond Cypress	<i>Taxodium distichum</i> var. <i>imbricarium</i>	30-50'	15-20'	Columnar	More narrow and shorter than Bald Cypress
Long Leaf Pine	<i>Pinus palustris</i>	60-100'	30-40'	Rounded	Best planted in groupings
Overcup Oak	<i>Quercus lyrata</i>	35-60'	35-60'	Rounded	Very urban tolerant
Nuttall Oak	<i>Quercus texana</i>	30-60'	30-60'	Rounded	Works as a street or shade tree
Live Oak	<i>Quercus virginiana</i>	40-80'	30-100'	Spreading	Iconic SE NC tree, 'Cathedral' cultivar smaller



Amy Mead
afmead@ncsu.edu

North Carolina Extension Gardener Plant Toolbox

Design Gallery Help Give Now Contact Search

Quercus bicolor

Common Name(s): Bicolor Oak; Oaks; Swamp White Oak