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



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N.C. A&T STATE UNIVERSITY NC STATE UNIVERSITY

## **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

   Reduced needs for fertilizer and
   supplemental water
  - -Deep root structures to help prevent erosion
  - -Natural areas help infiltrate stormwater





## **Impervious Surfaces**



## **Water Flow**



Time, hours

## 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



#### 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 <u>maintenance</u> <u>in mind</u>

## **Use a Diversity of Plants for your Landscape**



Coastal Landscapes Initiative template

## Crape Myrtle Bark Scale





### **FOUNDATION**

FOR DRY AREAS WITH SUN TO PART-SHADE

SUN: ★ ★ SOIL MOISTURE: ▲ SEASONAL COLOR: AUG-FEB



#### DESCRIPTION

This design can be used for a foundation planting, stand-alone bed or as a border along a road, driveway, walkway or patio. The number of coastal N.C. native plants that thrive in the dry, hot conditions around a building's foundation is limited, but the species in this design should be suitable for most buildings that have rain gutters. In addition, these plants produce pollinator-friendly flowers and berries that will attract birds to your yard. The evergreen inkberry and dwarf yaupon are slow growing. As they mature, they will improve building energy efficiency.

#### PLAN VIEW 5' x 20'

DI ANT CELECTION



#### ALTERNATIVE

Dwarf palmetto (*Sabal minor*) is a great substitute for the deciduous beautyberry, if you prefer different leaves and an evergreen plant.

You also can plant lower-growing perennials, like orange coneflower (*Rudbeckia fulgida '*Goldsturm'), at the front of the border.

#### MAINTENANCE

Prune shrubs in late winter as needed.

FLAI	11 95	LEGIION					SEASONAL COLOR											
KEY	QTY	COMMON NAME	BOTANICAL NAME	PLANT TYPE	SPACING	J	F	M	A	M	J	J	A	s	0	N	0	
А	1	Inkberry	llex glabra	SHRUB	4.5' O.C. TO YAUPON													
в	3	Dwarf yaupon	llex vomitoria 'Nana'	SHRUB	4.5' O.C.													
с	1	American beautyberry	Callicarpa americana	SHRUB	4.5' O.C. TO YAUPON													



**COASTAL** 

**INITIATIVE** 

**LANDSCAPES** 



### **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



**Dwarf Yaupon Holly** *Ilex vomitoria* 'Nana'



Yaupon Holly Ilex vomitoria



Little Gem Magnolia Magnolia grandiflora 'Little Gem'



Live Oak Quercus virginiana



**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



Sweetbay Magnolia and Longleaf Pine at UNCW



'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



## 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...



Pampas Grass Cortedaria selloana





### Muhly Grass Muhlenbergia capillaris



Little Bluestem Schizachyrium scoparium

Jim RobbinsCO BY-NC-ND 4.0

Switchgrass

Panicum virgatum

## Don't plant this...

## **Plant this instead!**





Yaupon Holly Ilex vomitoria

Blueberries Vaccinium spp.





Yucca *Yucca filamentosa* 

## Native Trees, Shrubs, and Grasses for Urban Landscapes

#### LargeTrees- 50+' tall at maturity

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





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### Quercus bicolor 🗔

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

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