the Stery of Understory

Important plant "natural services"

- Uptake of carbon dioxide
- Storing of carbon
- Making of sugars and oxygen
- Soil stability (prevent erosion)/enrichment
- Critical roles in carbon-oxygen and water cycles
- Filtration/breakdown of pollutants in air, water, soil
- Moderate air and ground temperatures
- Produce water vapor for weather production
- Provide food, shelter, habitat for other organisms

Major Functions/Values of the Urban Forest

- Sociological, Psychological, Economic
 - Increase property values
 - Decrease crime (City of Charleston)
 - Increase profitability for merchants (University of Washington)
 - Decrease/prevent urban heat island effect=decrease in use of fossil fuels
 - Increase our sense of "well being"
 - Shorten healing time

Organization is Everything

Our Forest is in Vertical Layers

- Here in coastal South Carolina, we have temperate forests that have plants growing in vertical layers
- On Hilton Head Island, our forests have five vertical layers:
 - a. Overstory layer
 - b. Smaller trees layer
 - c. Shrub layer
 - d. Herbaceous layer
 - e. Litter layer

Layers b-e make up the understory



What a difference layers make!

- A forest with multiple layers of vegetation provides more habitat, food and shelter to support many more non-plant species
- Studies show that such complex forests are more resilient to change
- The understory of our forests is a critical habitat for the majority of our biodiversity









Wax myrtle



















How We Simplify the Forest







Simple Solutions

Protect Understory

- LMO currently has some protections
- To better protect understory:
 - Tighter regulations on underbrushing
 - Reestablish buffer regulations
 - Building? Save as much understory as possible
 - Need help identifying plants on your site?
 Town or Clemson Extension can help

Go Native!

- Native plants are part of the natural species mix, or biodiversity
- These plants have evolved in this region, so are more resistant to native disease organisms and predators
- They are adapted to local climate conditions
- They are essential to the survival of native wildlife, as food (food web) and as life cycle "connectors"

Zebra Longwing

Passion Flower

2.

How Do I Benefit?

- Native plants are drought tolerant:
 - ✓ Help you conserve water and save money on your bill; HHI currently uses about 60% of its drinking water for irrigation
- Native plants are pest and predator resistant:
 ✓ Little or no pesticide required (you save money)
 ✓ Natives provide habitat for beneficial insects
 ✓ Less pesticide means more pollinators and healthier
 - Less pesticide means more pollinators and nealthier surface and ground water (and more oysters!)
 - ✓ Pesticides have been linked to many human illnesses

How Do I Benefit? (cont'd)

- Native plants may need less fertilizer:
 - Do a soil test to determine what level of nutrients are present in your soil
 - ✓ Start a compost pile for grass clippings, leaves and non-meat food scraps (saves landfill space and taxpayer dollars)
 - Use compost to amend soil; use chemical fertilizers sparingly or not at all (saves money on fertilizers)
 Nitrates and phosphates contribute to degraded water quality
 Nitrates are known "environmental hormones"
 NATIVE PLANTS MEAN LOW MAINTENANCE GARDENING!

Rethink our Landscape Practices

- Minimize pesticide use; encourage presence of natural predators
- Use mulch and compost to fertilize landscape
- Use native plants, and non-natives for accent; plant for biodiversity and in layers---lead by example!
- Prune in the very early spring or late fall
- Minimize lawn use
- Add a rain sensor to irrigation; water sparingly
- Mulch those leaves!
- Encourage your POAs to do the same



















Beautyberry

Beautyberry







Lizard Tail

-





Louisiana Iris

Sea Ox Eye

7

Stiffcornel Dogwood





Fetterbush

AFTA

Fetterbush

1

-POAL





Who uses tree cavities?

- Carolina wren
- Eastern bluebird
- Brown-headed nuthatch
- White-breasted nuthatch
- All woodpeckers
- American Kestrel
- Purple Martin
- Swallows
- Chickadee
- Titmouse
- Great crested flycatcher

- Screech owl Barred owl Wood duck Chimney swift Grey squirrel Flying squirrel Raccoon Opossum Bats Black/Turkey Vultures Mink
- Other users of tree cavities include lizards, tree frogs, snakes, honeybees



Yaupon Holly



Painted Bunting



Eastern Garter Snake



White Tailed Deer



Bet You Didn't Know...

- New research by scientists at Tel Aviv U.
- The evening primrose can sense buzzing of bees from about 4 inches away
- Sweetens nectar to attract that pollinator; increases sugar concentration 12-20% within 3 minutes of detection
- Silence, intermediate and high frequency sounds do not result in sweetening
- Petals form bowl-shape that capture low freq.

THANK YOU!

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