

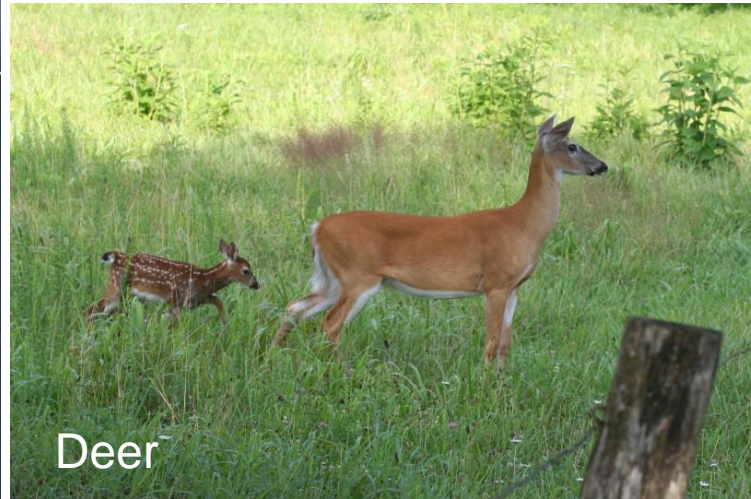


Resilient Coastal Native Plants

May 24th 2018

Eamonn Leonard

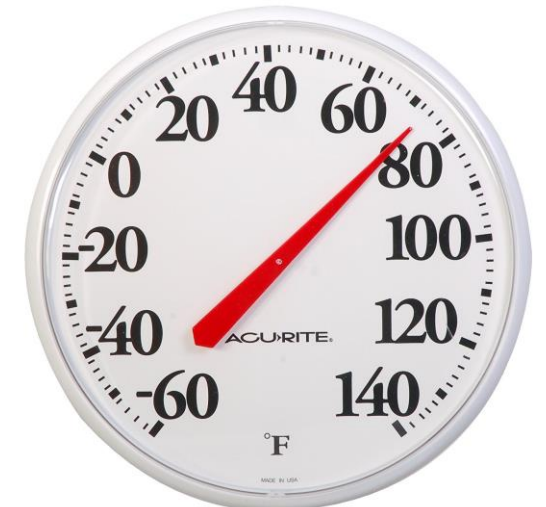
Coastal Conditions - Challenges



Blowing sands



High Temperatures



Salt Spray

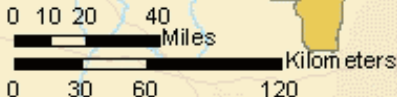
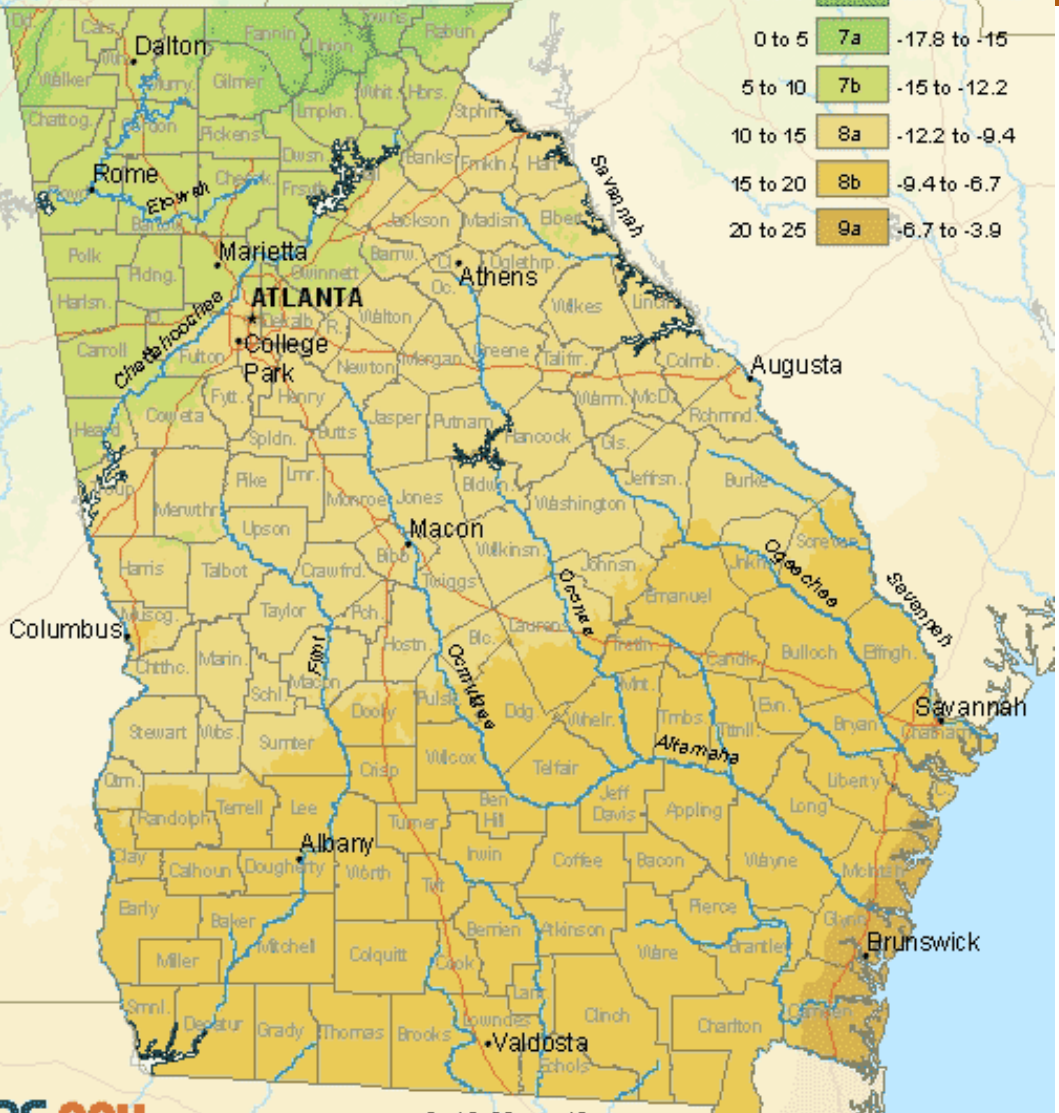




Plant Hardiness Zone Map Georgia

Average Annual Extreme
Minimum Temperature
1976-2005

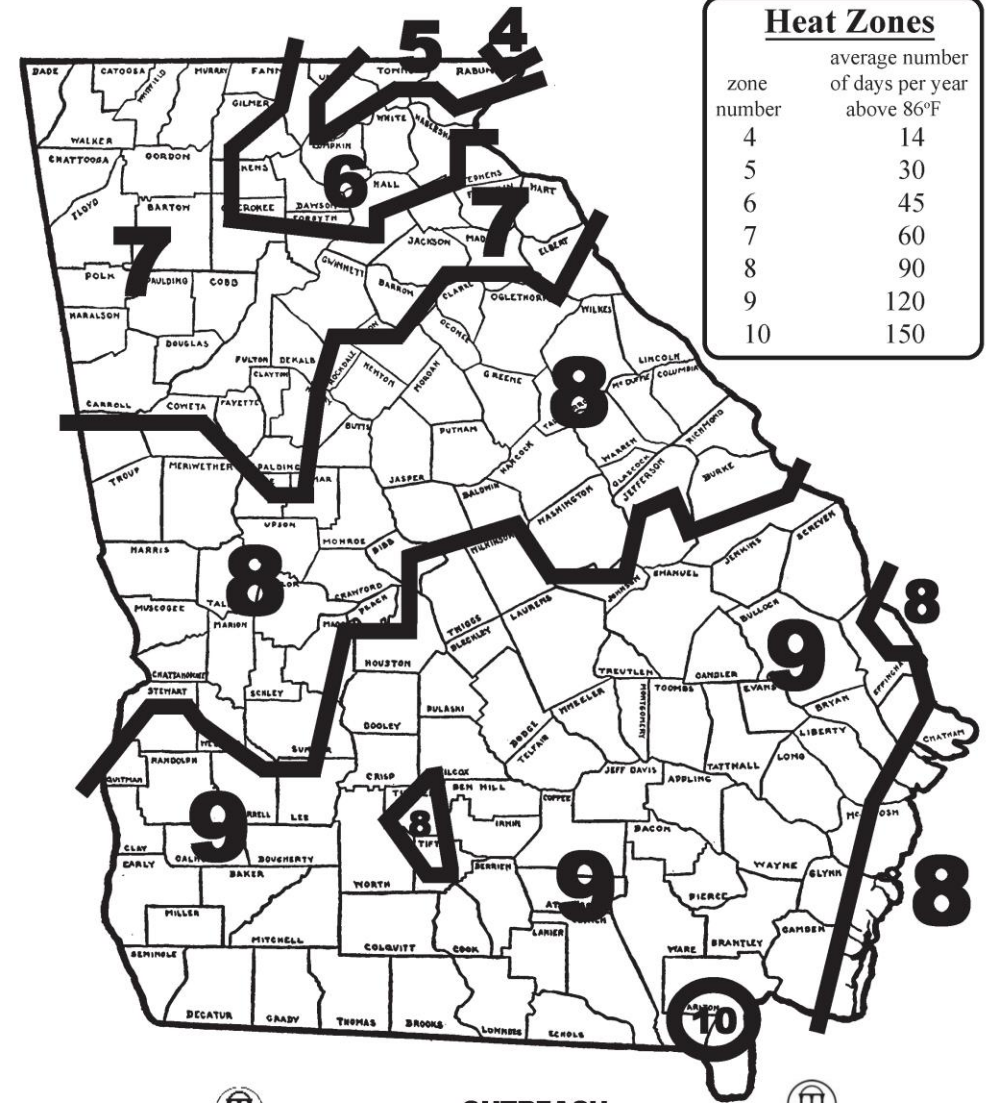
Temp (F)	Zone	Temp (C)
-10 to -5	6a	-23.3 to -20.6
-5 to 0	6b	-20.6 to -17.8
0 to 5	7a	-17.8 to -15
5 to 10	7b	-15 to -12.2
10 to 15	8a	-12.2 to -9.4
15 to 20	8b	-9.4 to -6.7
20 to 25	9a	-6.7 to -3.9



HEAT ZONE MAP OF GEORGIA

by Dr. Kim D. Coder, Warnell School of Forestry & Natural Resources Feb. 2010

(derived from the *Plant Heat-Zone Map of the United States* produced by the American Horticultural Society, Alexandria, VA, 1997)



The University of Georgia

OUTREACH
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THE UNIVERSITY OF GEORGIA

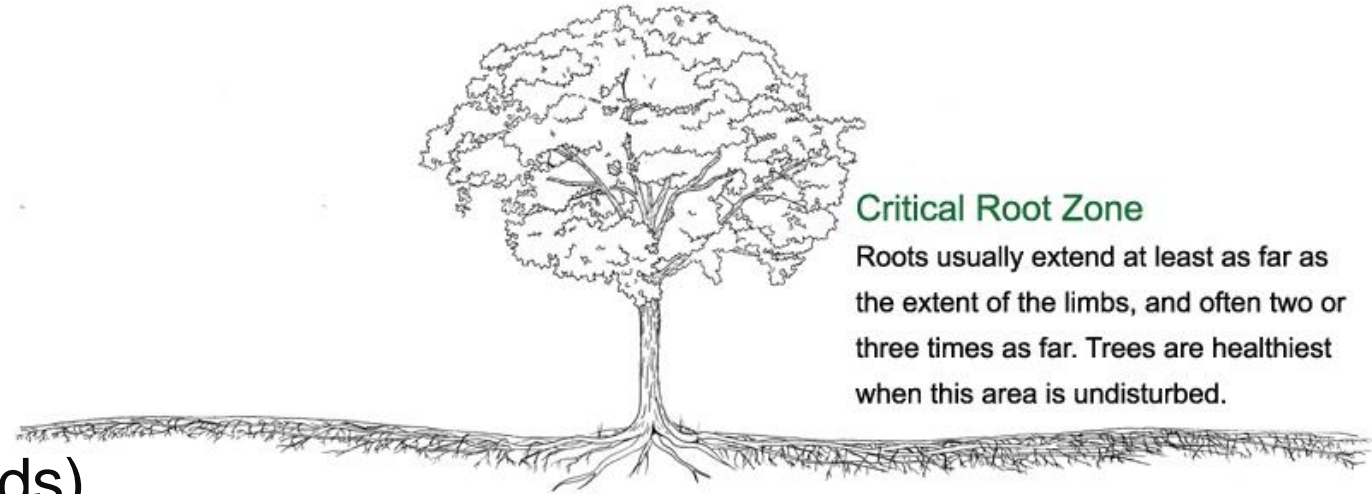
Storm resistant Species?

Proper Tree care

- Healthy root system
- Good limb structure
- Right species right site

Tree position

- Ocean side (full force of the winds)
- Landward side (some wind protection)
- Canopy Structure
 - Intact composition
 - Emergent trees

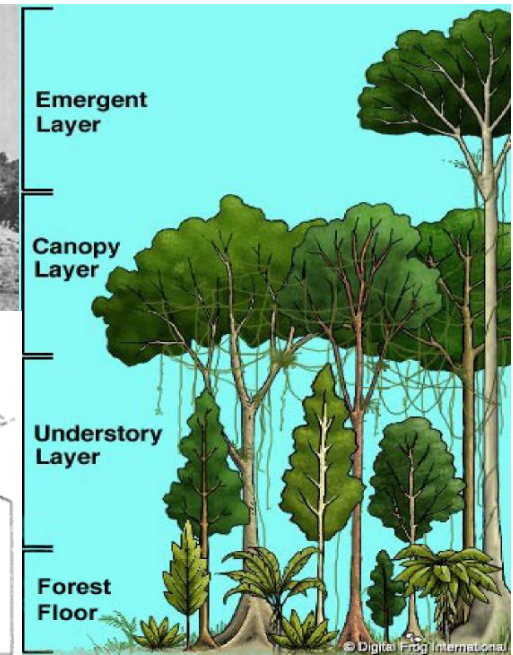
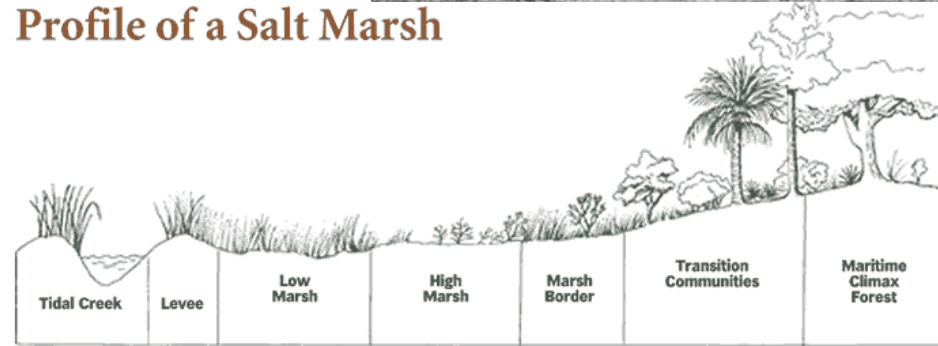


Critical Root Zone

Roots usually extend at least as far as the extent of the limbs, and often two or three times as far. Trees are healthiest when this area is undisturbed.



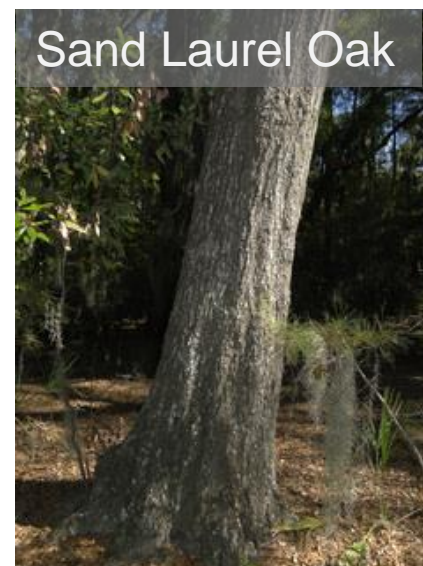
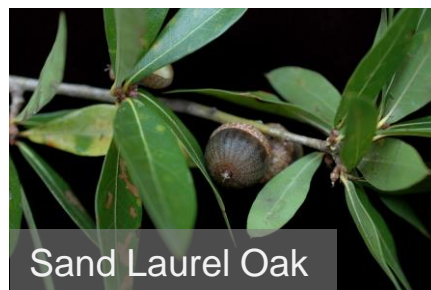
Profile of a Salt Marsh



Storm resistant Species?

Specific Species Recommendation

- Oak species – tend to be strong
 - *Live Oak (Quercus virginiana)*,
 - *Sand Live oak (Q. geminata)*
- Exceptions: *Water Oak (Q. nigra)*,
- *Sand Laurel Oak (Q. hemisphaerica)*.



Storm resistant Species?

Specific Species Recommendation

- Other Species
 - *Southern Magnolia (Magnolia grandiflora)*
 - Cabbage Palmetto (Sabal Palmetto)



Southern Magnolia

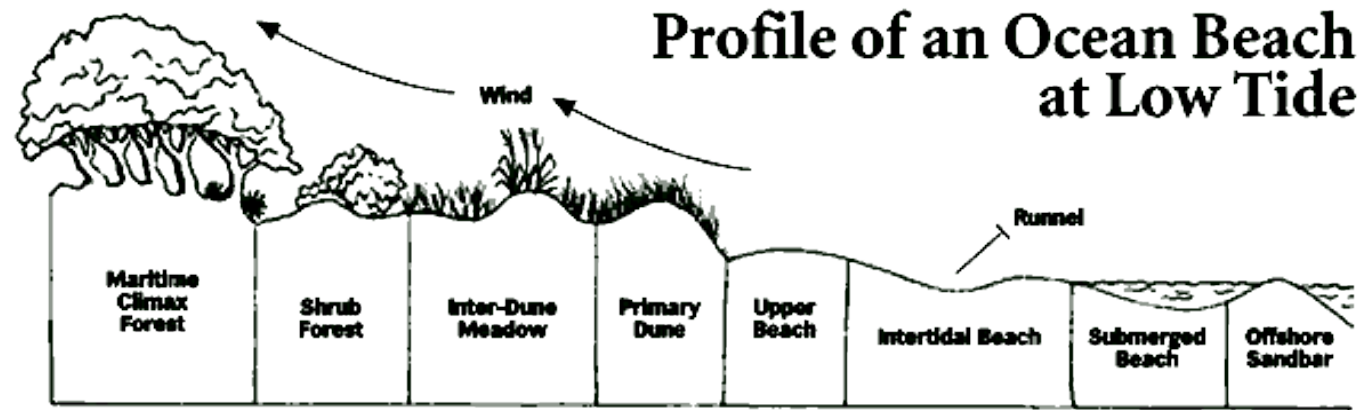


Cabbage Palmetto

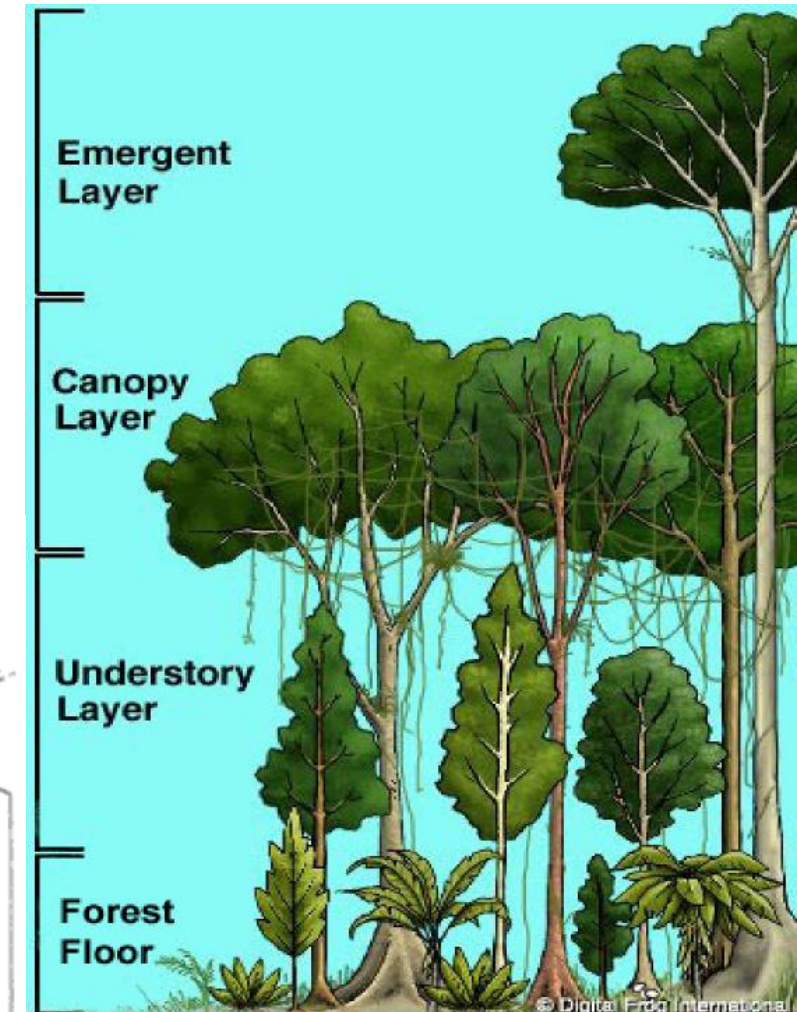
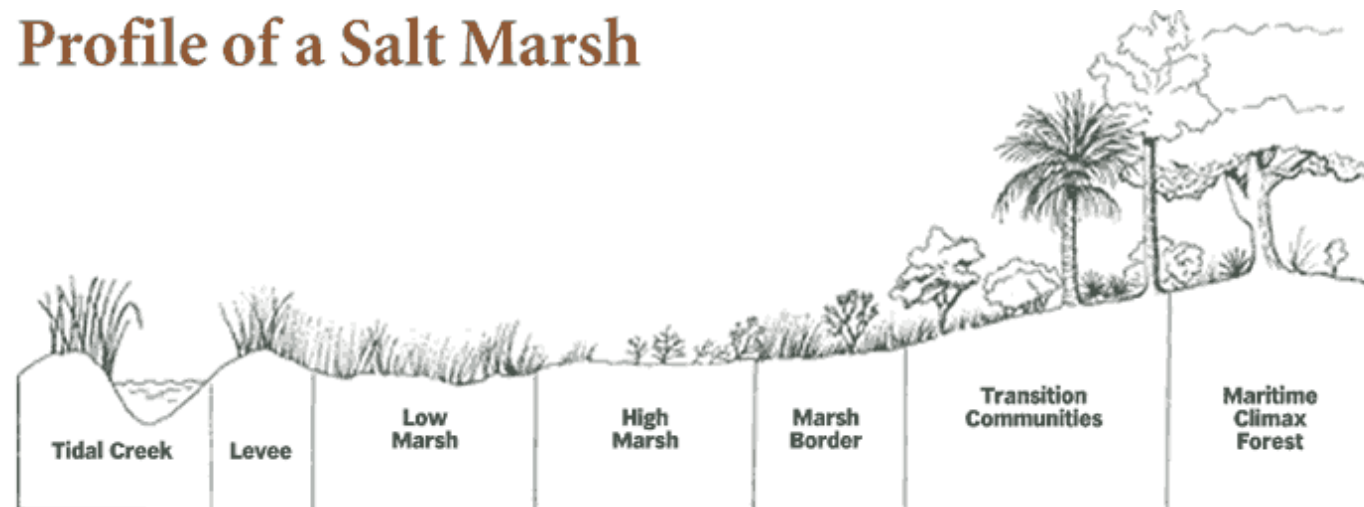


Southern Magnolia

Salt Tolerant – Salt spray vs Soil salinity (inundation)



Profile of a Salt Marsh



Salt Tolerant - Trees

Specific Species Recommendation

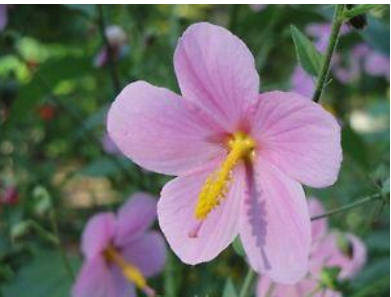
- **Coastal cedar** (*Juniperus silicicola*) – high salt spray & moderate soil salinity tolerance
- **Hercules' club** (*Zanthoxylum clava-herculis*) – moderate salt spray
- **Live Oak** (*Quercus virginiana*) – high salt spray tolerance & moderate soil salinity tolerance
- **Sand Live Oak** (*Q. geminata*) – moderate salt spray tolerance & low soil salinity tolerance
- **Southern Magnolia** (*Magnolia grandiflora*) – moderate salt spray & soil salinity tolerance
- **Cabbage palm** (*Sabal palmetto*) – high salt spray & low soil salinity tolerance



Salt Tolerant - Shrubs

Specific Species Recommendation

- **Seashore Mallow** (*Kosteletzkya virginiana*) – saline and brackish tolerant & salt spray
- **Yaupon Holly** (*Ilex vomitoria*) – moderate soil salinity & salt spray tolerant
- **Wax myrtle** (*Morella cerifera*) – high salt spray & moderate soil salinity tolerance
- **Swamp rosemallow** (*Hibiscus grandiflorus*) – moderate soil salinity & spray?
- **Gulf croton** (*Croton punctatus*) – low salt water tolerance & moderate salt spray
- **Sea oxeye daisy** (*Borrachea frutescens*) – high salt spray tolerance & brackish water inundation.



Swamp rosemallow

Sea oxeye daisy

Gulf croton

Yaupon holly

Wax myrtle

Seashore mallow

Salt Tolerant - Shrubs

Specific Species Recommendation

- **Saw palmetto** (*Saw Palmetto*) – moderate salt spray tolerance
- **Coontie** (*Zamia floridana*) – high salt spray tolerance & low soil salinity tolerance
- **Eastern prickly pear** (*Opuntia humifusa*) – moderate salt spray tolerance & low soil salinity tolerance
- **Beauty berry** (*Callicarpa americana*) - moderate salt spray tolerance & low soil salinity tolerance
- **Adam's needle** (*Yucca filamentosa*) – spray & moderate soil salinity (not wet)



Saw palmetto



Eastern prickly pear



Coontie



Beauty berry



Adam's needle

Salt Tolerant – Herbaceous

Specific Species Recommendation

- **Seaside Goldenrod** (*Solidago sempervirens*) – salt spray & soil
- **Sand cordgrass** (*Spartina bakeri*) – brackish to freshwater & moderate salt spray
- **Salt marsh cordgrass** (*Spartina patens*) – salt spray & irregular inundations to 35 ppt
- **Sea Oats** (*Uniola paniculata*) – salt spray & brief inundations of salt water
- **Beach morning glory** (*Ipomea imperati*) – high salt spray & soil salinity (not wet)
- **Railroad vine** (*Ipomea pes caprae*) - high salt spray & moderate soil salinity (not wet)



Salt Tolerant – Herbaceous

Specific Species Recommendation

- **Beach sunflower** (*Helianthus debilis*) – high salt spray & low soil salinity tolerance
- **Spotted beebalm** (*Monarda punctata*) – moderate salt spray
- **Blanket flower** (*Gaillardia pulchella*) – high salt spray tolerance
- **Coral bean** (*Erythrina herbacea*) - high salt spray tolerance & low soil salinity tolerance
- **Muhly grass** (*Muhlenbergia capillaris* or *M. filipies*) – high salt spray tolerance



Dune sunflower



Spotted beebalm



Blanket flower



Coral bean

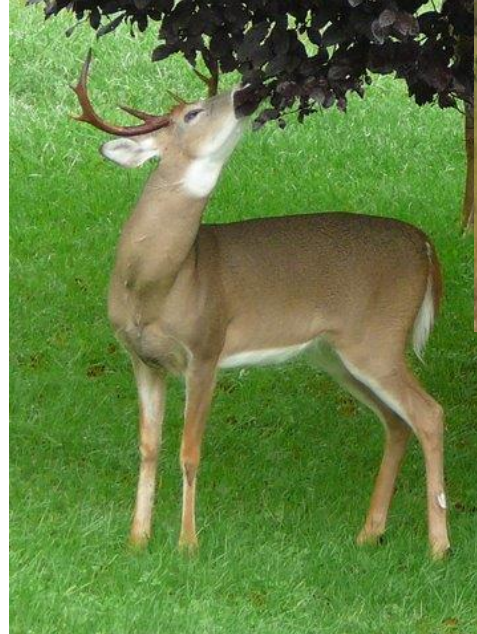


Muhly grass



Deer Tolerant

- General rules
 - Plants with pungent aromas
 - Plants with prickly or rough leaves
 - Plants with a bitter taste
 - Tend to not eat grasses
 - Group sensitive plants with repellent plants.
- Other repellants
 - Human hair, soap, animal blood or urine
 - Motion detection devices
 - Noise, water.
- Restrict access
- Manage deer



Deer Tolerant - Trees

Specific Species Recommendation

- **Bald cypress** (*Taxodium distichum*)
- **Carolina silverbell** (*Halesia carolina*)
- **Gordonia** (*Gordonia lasianthus*)
- **Southern Magnolia** (*Magnolia grandiflora*)
- **Tuliptree** (*Liriodendron tulipifera*)
- **Coastal Cedar** (*Juniperus silicicola*)



Bald cypress



Carolina silverbell



Southern Magnolia



Gordonia



Tuliptree



Coastal cedar



Deer Tolerant - Shrubs

Specific Species Recommendation

- **Dog-hobble** (*Agarista populifolia*)
- **Needle palm** (*Rhapidophyllum hystrix*)
- **Osmanthus** (*Osmanthus americanus*)
- **Pineland hibiscus** (*Hibiscus aculeatus*)
- **Red Buckeye** (*Aesculus pavia*)
- **Wax myrtle** (*Morella cerifera*)
- **Adam's needle** (*Yucca filamentosa*)



Dog-hobble



Osmanthus



Pineland Hibiscus



Needle Palm



Red Buckeye



Wax myrtle



Adam's needle

Deer Tolerant - Herbaceous

Specific Species Recommendation

- **Scarlet Sage** (*Salvia coccinea*)
- **Blue Sage** (*Salvia azurea*)
- **Spotted beebalm** (*Monarda punctata*)
- **Rattlesnake master** (*Eryngium yuccifolium*)
- **Gaillardia** (*Gaillardia pulchella*)
- **Butterfly weed** (*Asclepias tuberosa*)
- **Blazing stars** (*Liatris sp.*)
- **Goldenrod** (*Solidago sp.*)
- **Indigos** (*Baptisia sp.*)



Spotted beebalm



Blue sage



Scarlet sage



Rattlesnake master



Goldenrod



Blazing star



White Indigo



Blanket flower



Butterfly weed

Deer Tolerant - Grasses

Specific Species Recommendation

- **Little bluestem** (*Schizachyrium scoparium*)
- **River oats** (*Chasmanthium latifolium*)
- **Pink Muhly** (*Muhlenbergia capillaris*)
- **Switch grass** (*Panicum virgatum*)
- **Purple lovegrass** (*Eragrostis spectabilis*)



River oats



Pink Muhly



Switch grass



Little bluestem

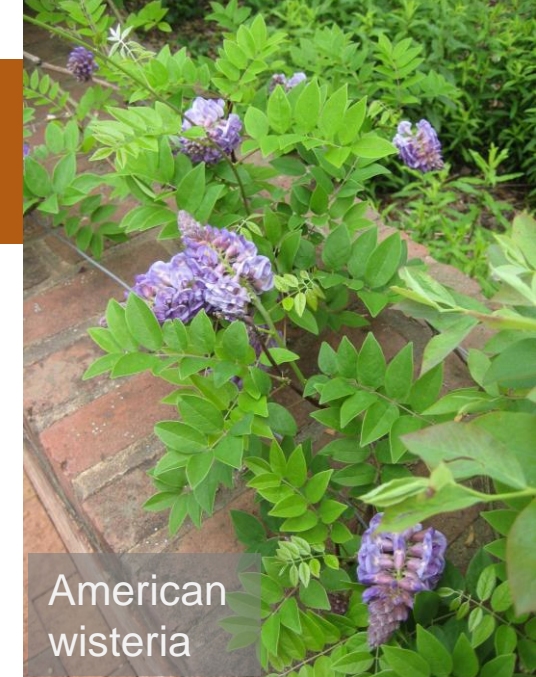


Purple lovegrass

Deer Tolerant - Vines

Specific Species Recommendation

- **Coral honeysuckle** (*Lonicera sempervirens*)
- **American wisteria** (*Wisteria frutescens*)
- **Trumpet creeper** (*Campsis radicans*)
- **Swamp leather flower** (*Clematis crispa*)
- **Cross vine** (*Bignonia capreolata*)
- **Carolina jessamine** (*Gelsemium sempervirens*)



All around tough plants

Specific Species Recommendation

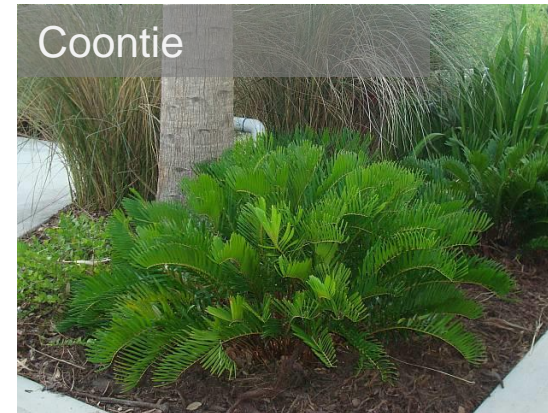
- **Passion vine** (*Passiflora incarnata*)
- **Butterfly pea** (*Centrosema virginiana*)
- **New Jersey Tea** (*Ceanothus americanus*)
- **Sandhills milkweed** (*Asclepias humistrata*)
- **Georgia basil** (*Calamitha georgianum*)
- **Tickseed** (*Coreopsis sp.*)
- **Coontie** (*Zamia floridana*)
- **Dwarf Palm** (*Sabal minor*)



Tickseed



Passion vine



Coontie



Sandhills milkweed



New Jersey Tea



Georgia Basil



Butterfly pea



Dwarf Palm

Plant Profiles



Key to Codes



Full Sun



Part Shade



Full Shade



Dry Soils



Moist Soils



Wet Soils



Prune to maintain shape / dead head. Or to remove seed to prevent spread.



Attracts Butterflies



Larval host plant



Attractive to bees



Seed / fruit food for birds



Attracts hummingbirds



Deer normally do not eat plant



Deer will eat this plant



Scarlet Sage

Salvia coccinea



This subshrub is a perennial in our area and treated as an annual in northern areas. Stems are square shaped and bear triangular leaves. Flowers are bright red at about 1 inch, and arranged in whorls on a tall stem. Once blooming, this plant keeps it up till the first frost. Unlike the Brazilian species available in garden centers, this plant reseeds and is attractive to our native pollinators. While drought tolerant, regular water gives more reliable flowers.

- Perennial - Grows 2 feet - Found in open woods, forest edges



Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
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Flowering Time

Questions? eamonn.leonard@dnr.ga.gov

NATIVE PLANT NURSERIES

- **Ernst Southern Native Seeds**
1 800 873 3321 1 800 873 3321
www.ernstseed.com
- **Mail Order Natives**
www.mailordernatives.com
- **Thompson's Garden**
6175 GA Hwy South
I-16 Exit 127
912 839 2164 912 839 2164
plantguy@bulloch.net
- **Ann's and Howard's Plants**
Hwy 204
912 748 2719 912 748 2719
- **Southern Native Plantings**
1549 Pryor Rd, Newington, GA 30446
912 857 4571 912 857 4571
www.southernnativeplantings.com
- **Florabundance Gardens**
Darien, GA 31305
debshep@dariintel.net

