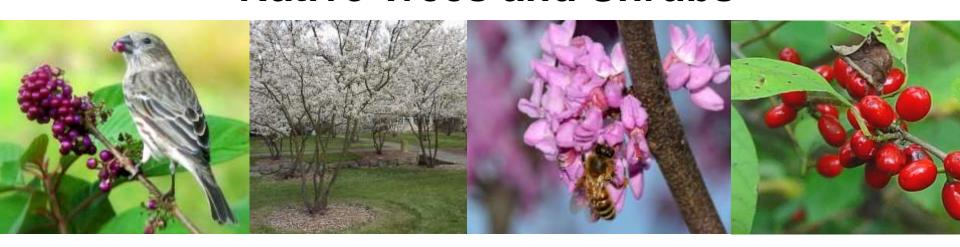


## Landscaping for Wildlife with Native Trees and Shrubs



#### **Matt Jones**

**Extension Agent – Horticulture NCCE Chatham County Center** 

2 May 2019







#### Resources

http://go.ncsu.edu/nativeplants







#### **Tree Planting...**

- Trees did not arrive as scheduled...
- Reschedule demo in the in next two weeks.



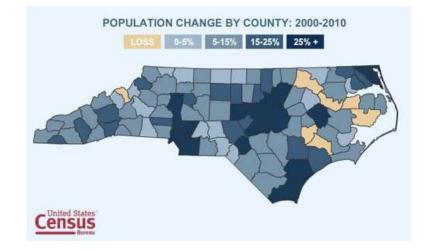




#### **Habit Loss and Fragmentation**









#### **Traditional Landscapes Less Biodiverse**







#### **Dominated by Non-Native Plants**

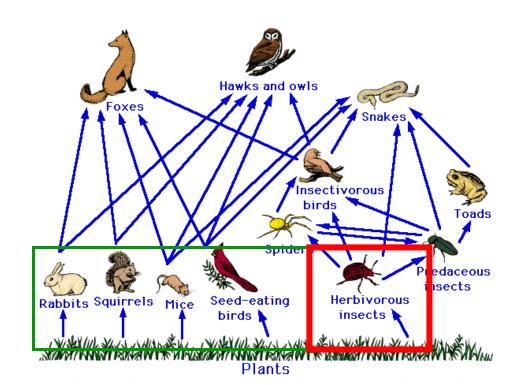






#### Plants are the Foundation of Food Webs

Plants capture and convert the sun's energy into a form that can be consumed by other organisms





## Herbivorous Insects are Host-specific

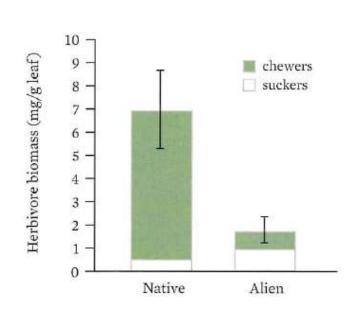
- Only feed on certain species
  - 90% are specialists
- Biochemical co-evolution
- Native insects need native plants



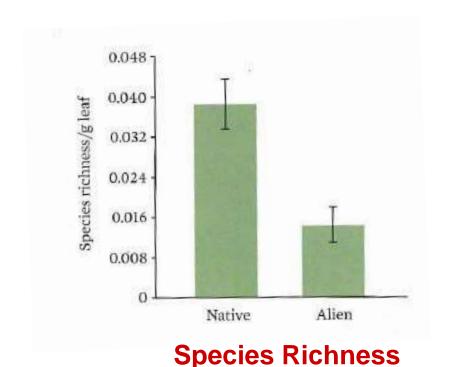
Monarchs aren't the only pick eaters!



### **Native Plants Support More Insects**









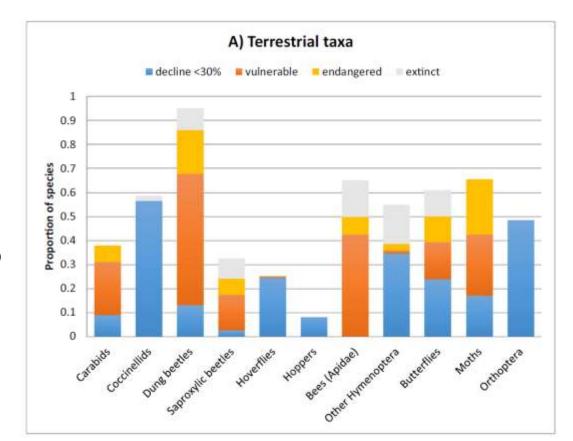
#### Fewer Insects = Less Wildlife

- Nearly all Passerines rear their young on insects, not seeds or berries
- Non-native trees do not support caterpillar populations birds need to rear their young





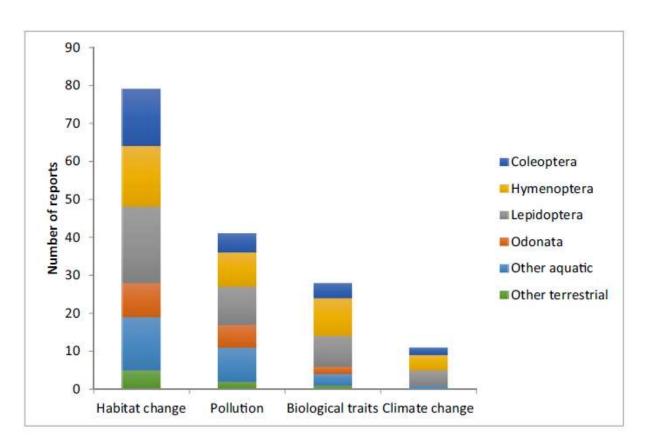
#### **Proportion of Insect Taxa in Decline**



Sanchez-Bayo & Wyckhuys 2019 Biological Conservation 232 (8-27)



#### **Major Drivers of Decline by Taxa**



Sanchez-Bayo & Wyckhuys 2019 Biological Conservation 232 (8-27)







### What makes good bird food?

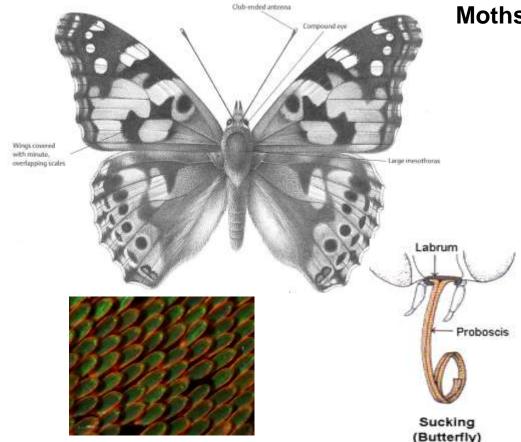






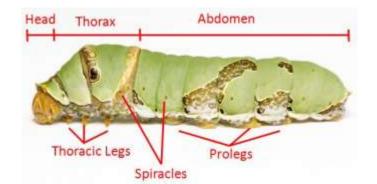
## Lepidoptera

#### **Moths and Butterflies**





Larvae called caterpillars



## **Lepidopteran Diversity**









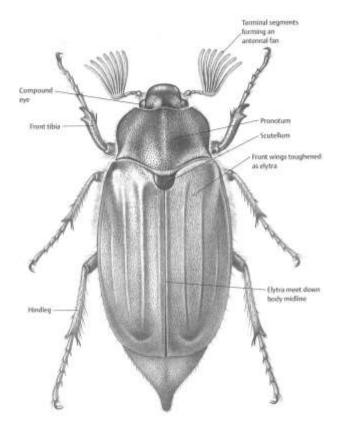






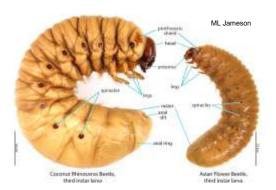
## Coleoptera

#### **Beetles**



Melafantha melafantha — the Cockchafter

George C. McGavin



Larvae called 'grubs'



Two elytra + Two flight wings

### **Coleopteran Diversity**



**Leaf-eating Beetles** 

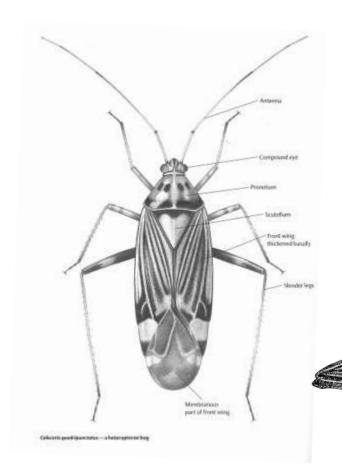


**Long-horned Beetles** 



**June Beetles** 





### Hemiptera Bugs

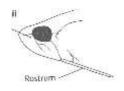


Nontrum

**Rostrum:** piercing/sucking mouthpart



Hemelytra



## **Hemipteran Diversity**











#### Other Herbivorous Insects



**Katydids (Orthoptera)** 



Walkingsticks (Phasmatodea)



#### **Insect Predators**





#### A Brief Intro into Tree & Shrub Care

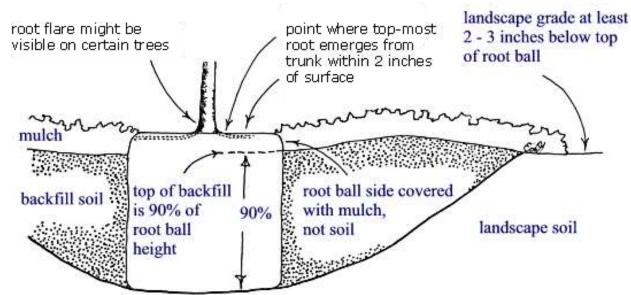
More to come in follow-up demonstration







### **Planting Trees and Shrubs**



Ed Gilman
UF IFAS Extension





# Work with the natural shape of plants



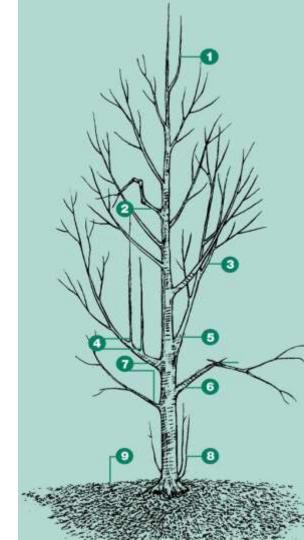


Forsythia (not native) is a LARGE arching shrub



## **Pruning Trees and Shrubs**

- 1) Competing leaders
- 2) Malformed branches
- 3) Crossing branches
- 4) Water sprouts
- 5) Narrow angles
- 6) Broken branches
- 7) Limb up later in life





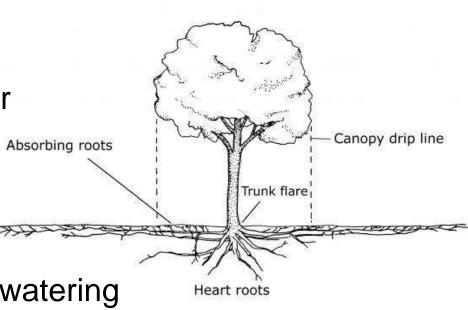
## Watering

#### **Establishment**

- 2 gal per caliper inch
- 5 gal. pot 3-5 gal, water
- 2-3x per week
- Plant in fall less water

#### **Maintenance**

- May need supplemental watering during drought, every 10 days
- Wet to 1-3' deep









## Mulching

#### **2-3**" Layer

- Pine bark/nuggets
- Pine Straw
- Wood chips
- Leaves









# **Protecting Young Trees from Deer**

- Cages 6' tall
- Until lowest foliage > 6'







## A New Paradigm

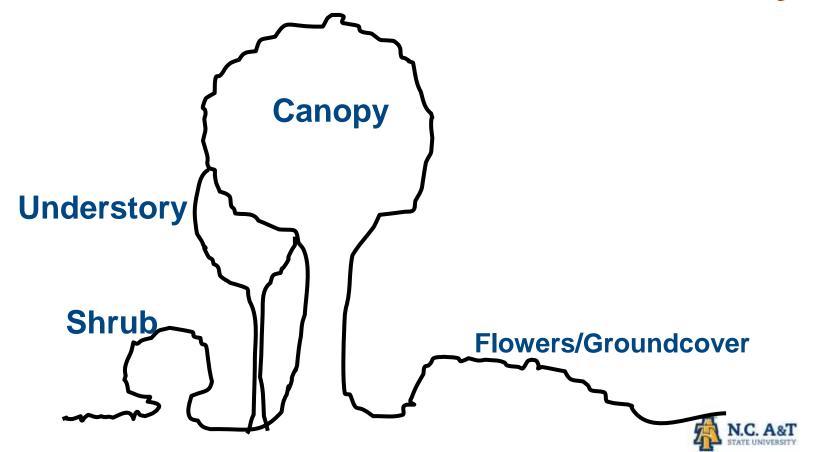
- Select landscape plants based upon traditional factors:
  - Appearance
  - Performance
  - Adaptation to site conditions
- PLUS ability to sustain native species and support ecosystem health







## **Structural Diversity**







## A Few of Matt's Favorite Native Trees, Shrubs, and Vines



Amount of Sunlight



Wildlife Benefits



Soil/drainage requirements



Mature dimensions, Height x Width



**Bloom Period** 







## Oaks

### Quercus spp.

#### Support hundreds of species!

- Acorns
- Leaves
- Habitat















## **Oaks in Landscapes**

#### Most commonly planted:

- Willow oak Quercus phellos
- Pin oak Quercus palustris















#### **More Oaks**

- Shumard Oak Quercus shumardii
- White Oak Quercus alba
- Swamp White Oak Quercus bicolor
- Overcup Oak Quercus lyrata
- Red Oak Quercus rubra
- Scarlet Oak Quercus coccinea





#### **River Birch**

#### Betula nigra



Part shade to full sun



Summer





Moist, survives drought, flooding



Lep. food, seeds for birds, habitat



40-60' x 40-60'









## In spring, aphids may cause leaf distortion but attract ladybugs and do not damage tree











# Redbud Cercis canadensis



Part shade to full sun



Clay, moist sands, brief floods



Till 15-30' x 20-40' Spring Fall-Winter















# Redbud Cercis canadensis

















### **Redbud Cultivars**

'Forest Pansy'
'Merlot'
'Burgundy Hearts'



'Hearts of Gold', 'Rising Sun'















# Serviceberry Amalanchier spp.



Part shade to full sun



Clay/moist soils, drier soils in shade



Spring



15-30' x 12-15'



Spring-Summer













# Serviceberry *Amalanchier spp.*

















## **Cedar Quince Rust on Serviceberry**











# **American Holly**

# llex opaca



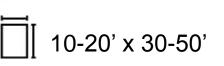
Part shade to full sun



Moist, well-drained Flooding, drought



Spring





Fall-Winter











# American Holly *llex opaca*







**Henry's Elfin Host** 

Robins & thrushes, Mockingbirds, thrashers waxwings, woodpeckers



# American Holly *llex opaca*



**Male Flowers** 



**Female Flowers** 



# **American Beautyberry**

Callicarpa americana



Part shade to full sun



Moist, well-drained, clay, acid



6' x 6'













## **American Beautyberry**



Sweat Bees, butterflies







Thrushes & Robins
Thrashers & Mockingbirds



**Rustic Sphinx Moth** 





# Possumhaw Viburnum Viburnum nudum



Full sun to part shade



Moist to wet, tolerates dry



6-12' x 6-12'





Spring



Summer-Fall







#### Viburnum nudum



Thrashers & Mockingbirds Waxwings



Spring Azure Host







#### **Other Native Viburnums**



Viburnum prunifolium
Blackhaw Viburnum



Viburnum obovatum Small-leaf Viburnum



# **Red Buckeye** Aesculus pavia





Part-shade to Sun



Moist to wet







12-15' x 12-15'



Hummingbirds, squirrels, Caterpillar food









# **Other Native Buckeyes**



Aesculus parviflora
Bottebrush Buckeye



Aesculus sylvatica Painted Buckeye



# Sweetbay Magnolia Magnolia virginiana



Part-shade to Sun



tolerates flooding Spring Fall Moist to wet,







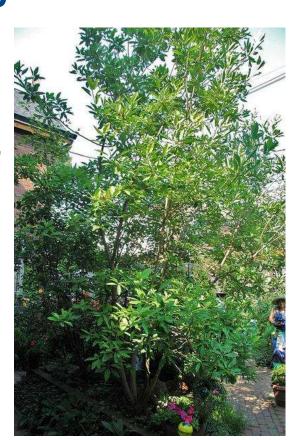
20-50' x 15-35'



Caterpillar food, fruit for birds, pollinated by beetles & bees









## **Spicebush** Lindera benzoin



Part-shade to Sun



Moist, clay, flood tolerant



Spring



6-15' x 6-12'



Fall











## Spicebush Lindera benzoin





Thrushes & Robins Tanagers & Vireos



**Spicebush Swallowtail** 



# **Dwarf Fothergilla**

Fothergilla gardenii



Part-shade to sun



Moist to wet



2-3' x 2-4' Spring 6 Fall









Bee pollinated, cover for birds, deer resistant







## Sweet Pepperbush Clethra alnifolia





Part-shade to Sun



Summer



Fall-winter



3-8' x 4-6'

drained

Moist, well



Hummingbirds, butterflies, bees Caterpillar food (many), birds (seeds)









# **Coral Honeysuckle**



Part sun to full sun

# Lonicera sempervirens



Moist to wet



Summer



Fall-winter



8-15' x 3-6'



Hummingbirds, butterflies, bees Caterpillar food (many), birds (fruit









# Coral Honeysuckle Lonicera sempervirens





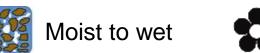


# **Carolina Jessamine** Gelsemium sempervirens





Full sun





Early Spring





3-6' x 12-20'



Hummingbird & bee pollinated, squirrels (seeds)









# Carolina Jessamine Bignonia capreolata



Part shade to full sun



Moist to wet, tolerates flooding







3-5' x 20-30'



Hummingbirds and butterflies Deer (!)









#### **NC STATE EXTENSION**



Hope of Reach St. Holland & Dog Tree Way Starting Discord Tageston

merch, William Beatle

Personal Read of Partie of the Decimal

MANAGEMENT PROPERTY AND ADDRESS OF THE PERSON NAMED IN COLUMN

Making Places, Measures in Stickly

Secretary of Realism Printers in Concession,

#### Step Two - Map Existing Site and Vegetation

Landscape design is essentially a smartine problem solving process. It involves developing a design that is tailured to your site, meets your needs and desires, and also provides valuable vilidite habitat. So before you begin to make any landscape improvements to your property, you should thoroughly familiaring yourself with all aspects of your existing property. This will mean conducting an inventory and analysis of your property to electify opportunities and assets as well as constraints and liabilities. To help organize this information, you will need an accurate map of your property on which to record your observations and subsequent analysis.

#### Base Map

The first step in this process is the creation of an accurate have map. which shows all existing permanent physical sits elements. The base map will be useful when considering design changes to the landscape. At its simplest, it is developed from your existing plot plan. When purchasing your house, you should have sensived a property survey, also called a plat or plot plan of your property. This is a plan drawing that typically includes the lot configuration, right-of-ways, sidewalks, essements, and position and dispensioning of the house (and permanent structures such as decks and steps), gazage, and deliverage. If you don't have one, request one from the tan assessor's office or devoloed a copy from your counts's GIS webnite. You can also develop one entirely from your own field measurements, but that will take you longer.

A trained plant plan always includes a drawing scale, for instance of ago, which means that every such on the map is equal to 40' on your property. Flot plans need to be enlarged to allow you to show more details of the landscape. You can take your plan to a copy shop and have it enlarged to

a minimum of phono for smaller properties or small areas of your garden, or up to abuse for larger properties. The plan should have the north arrow on it as well, which will be needed to assess your growing conditions.



On the hase map of your property, you want to show the property lines and house footprint for your residence. On this sample base map. information from the plot plan has been re-drawn on 5 x 3 graph paper (when x'=10', each square equals x'). If your property or area of interest is larger, adjust the scale of your squares as needed. For instance, s' could equal po', which would note each square equal to 4. For this, you can use a plot plan you had sularned or take the dimensions directly off

# **Going Native Portal**

https://projects.ncsu.edu/goingnative /index.html







# NC STATE

#### **EXTENSION**



#### **NCSU Plants Database**

https://plants.ces.ncsu.edu/





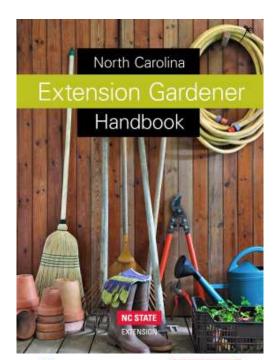


### **Extension Gardener Handbook**

Available online for FREE
 https://content.ces.ncsu.edu/extension-gardener-handbook

 Full-color, hardback copy available from UNC Press (\$60)











# **Chatham County Native Plant Nurseries**



http://www.curenursery.com/



https://www.growingwildnursery.com/









# **Need help? Contact:**

NC STATE EXTENSION

Master Gardener | Chatham County

Plant Clinic: MW 1:00-4:00, F 9:00-12:00

chathamemgv@gmail.com

919-545-2715



