NC COOPERATIVE EXTENSION

Landscaping for Wildlife with
Native Trees and Shrubs




Matt Jones
Extension Agent – Horticulture
NCCE Chatham County Center

2 May 2019

N.C. A&T STATE UNIVERSITY

NC STATE UNIVERSITY

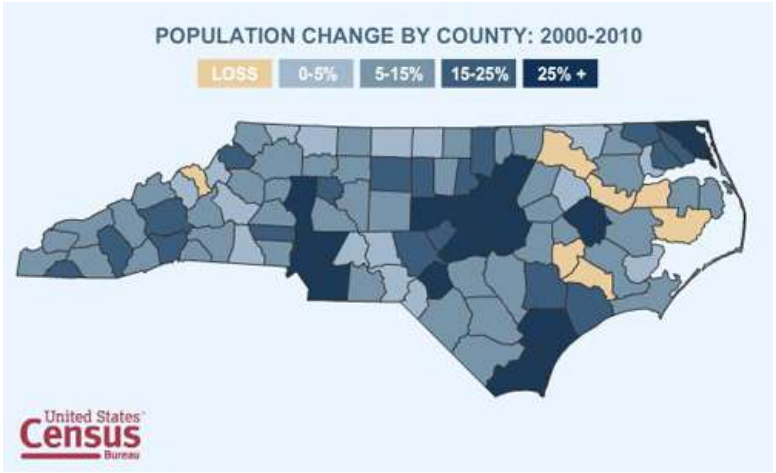
Resources

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

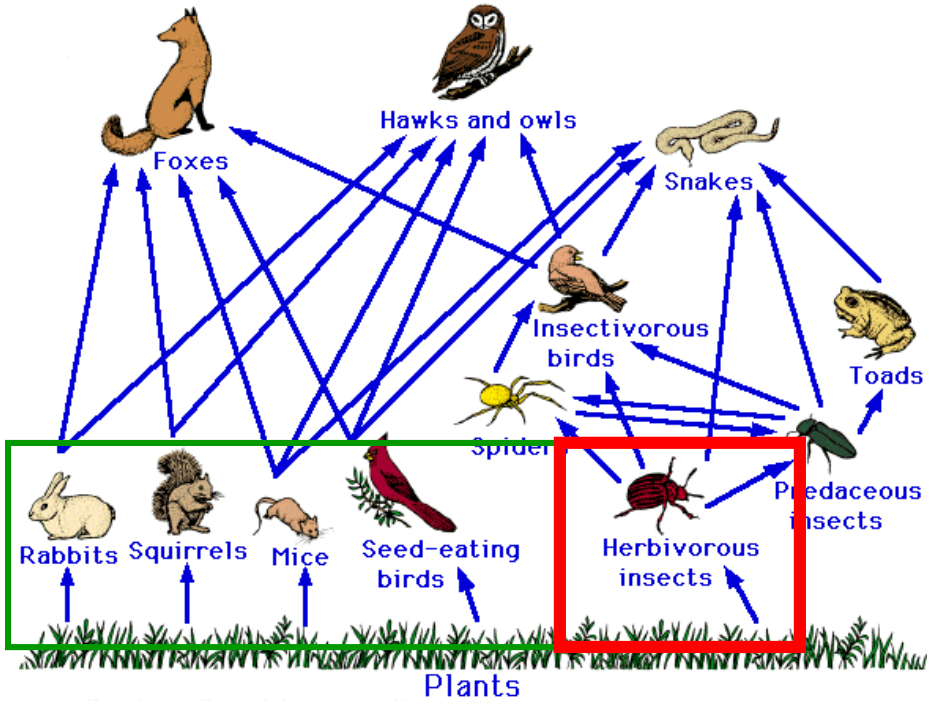


Traditional Landscapes Less Biodiverse

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

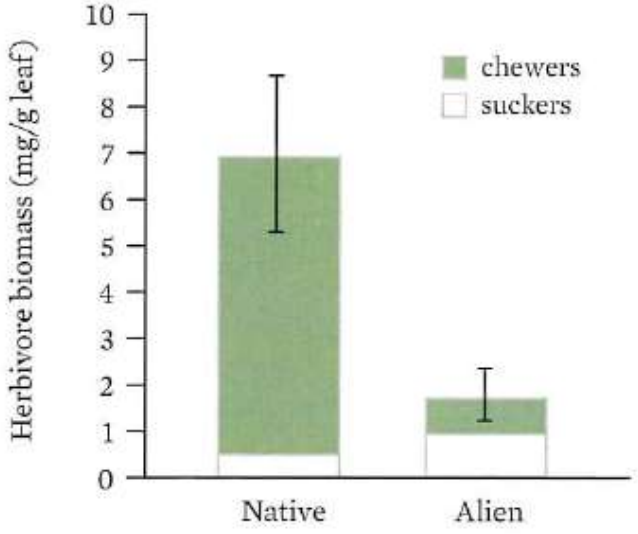


Herbivorous Insects are Host-specific

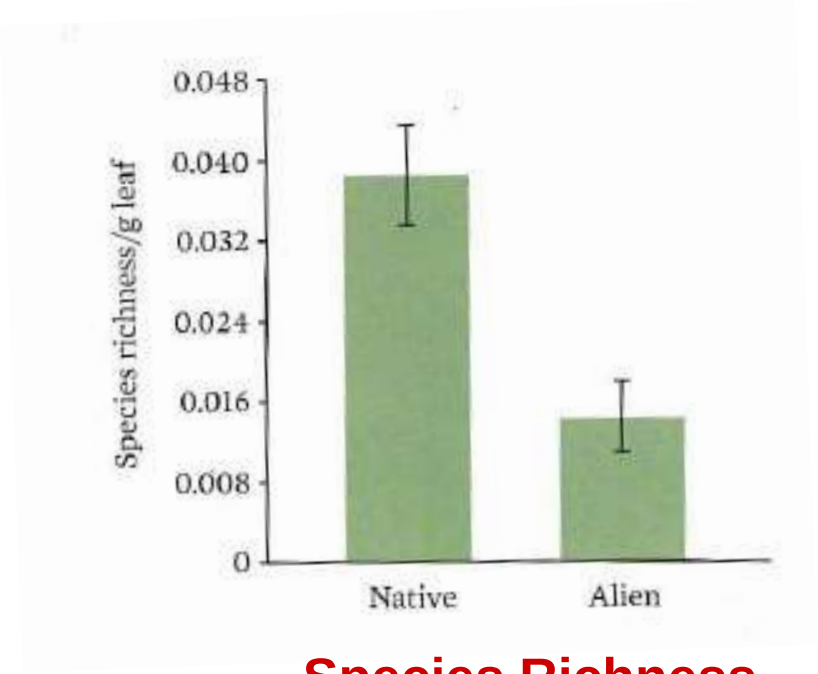
- Only feed on certain species
  - 90% are specialists
- Biochemical co-evolution
- Native insects need native plants

Monarchs aren't the only pick eaters!

Native Plants Support More Insects



Herbivore Biomass

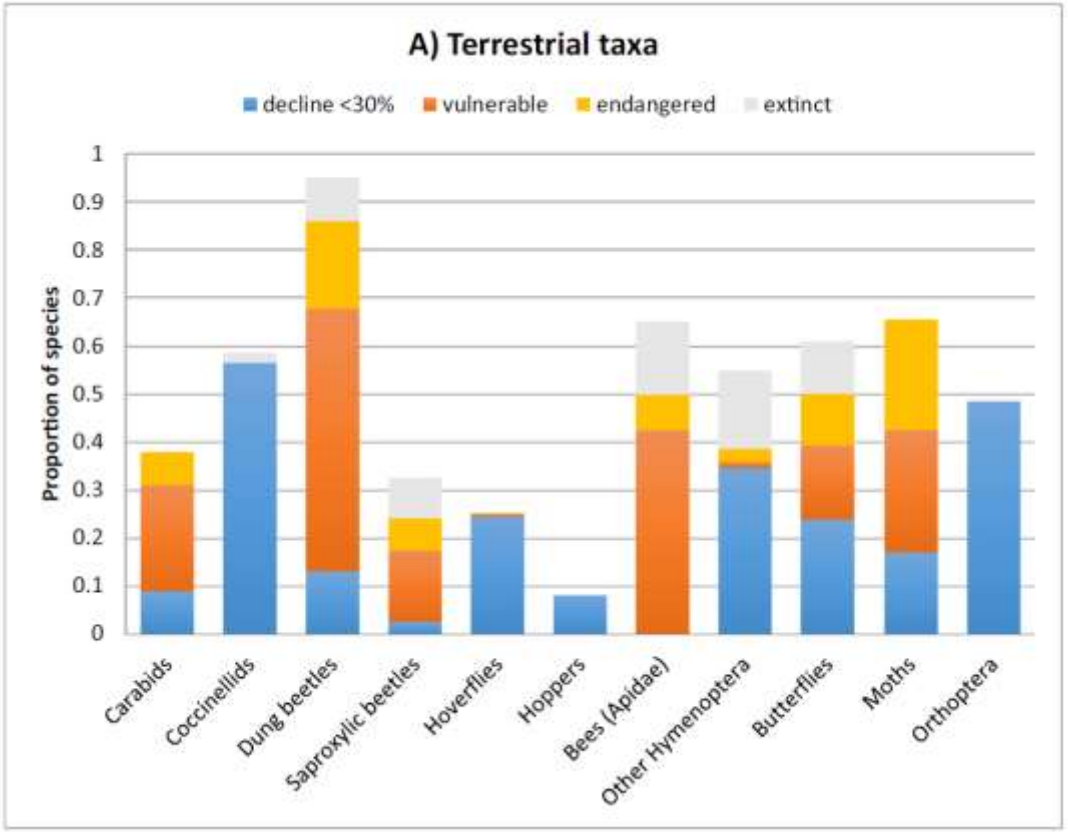


Species Richness

Fewer Insects = Less Wildlife

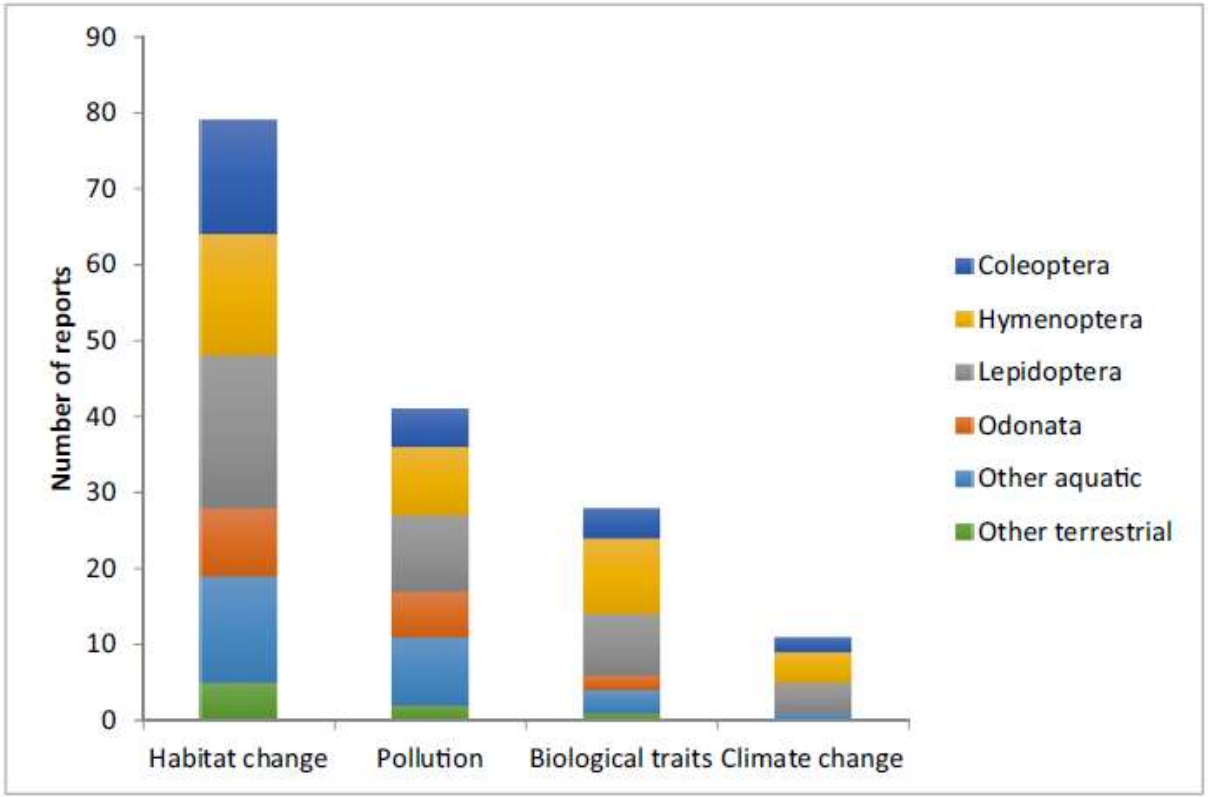
- Nearly all Passerines rear their young on insects, not seeds or berries
- Non-native trees do not support caterpillar populations birds need to rear their young

Proportion of Insect Taxa in Decline



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

Major Drivers of Decline by Taxa

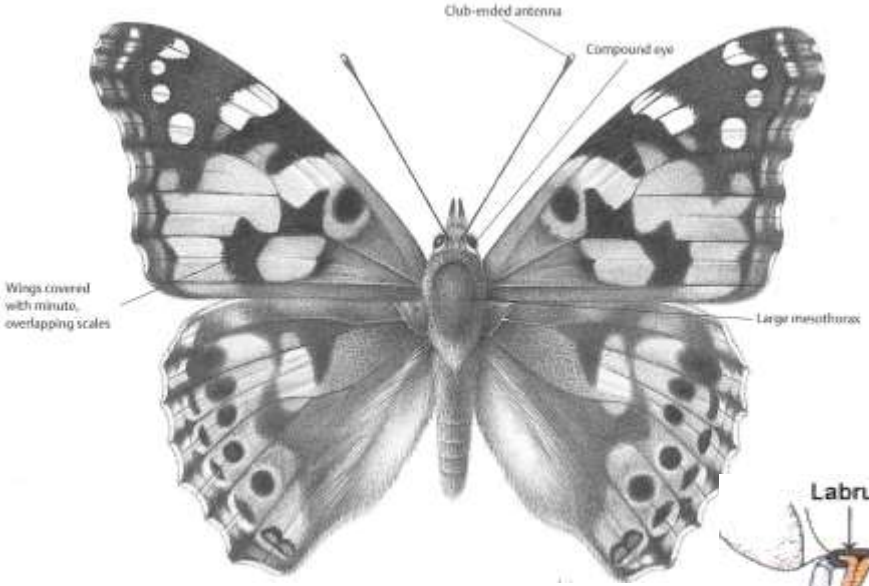


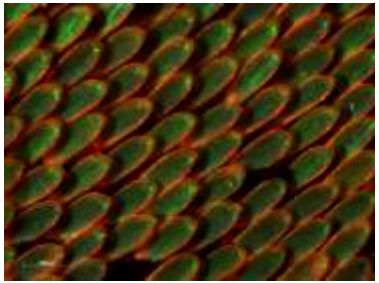
Sanchez-Bayo & Wyckhuys 2019
Biological Conservation 232 (8-27)

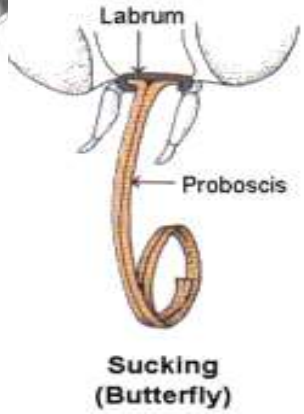
What makes good bird food?

Lepidoptera

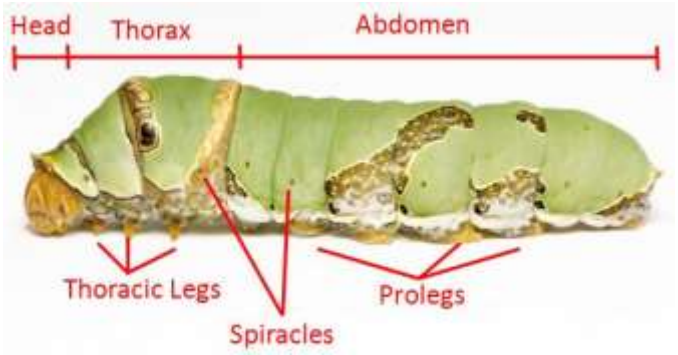
Moths and Butterflies







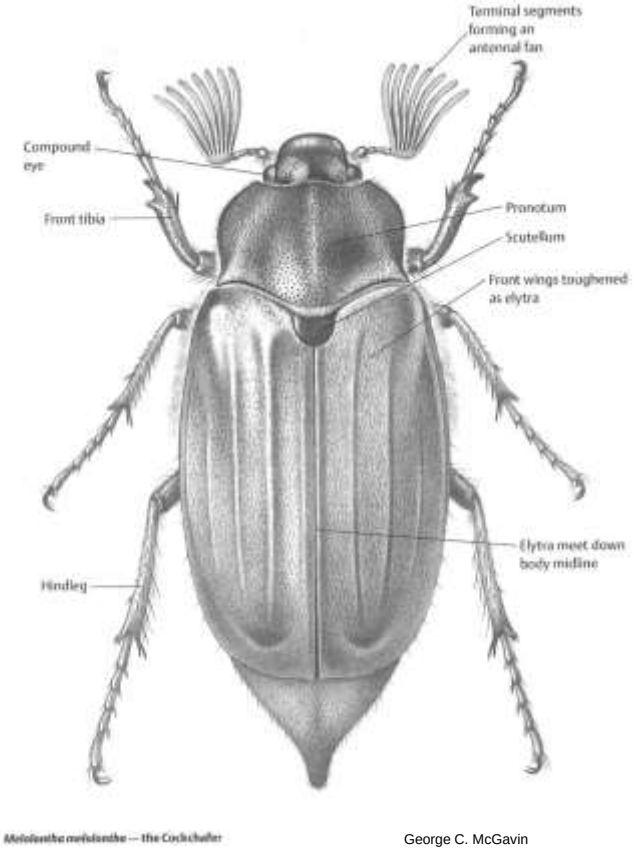
Larvae called *caterpillars*



Lepidopteran Diversity

Coleoptera

Beetles



George C. McGavin

ML Jameson

Larvae called ‘grubs’

Two elytra + Two flight wings

Coleopteran Diversity

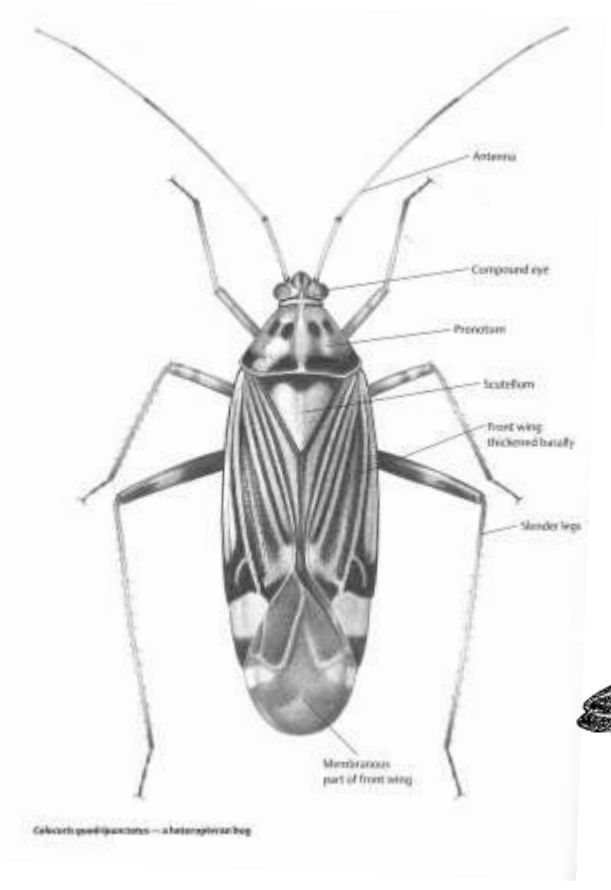
Leaf-eating Beetles

Long-horned Beetles

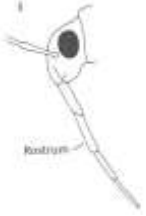
June Beetles

Hemiptera

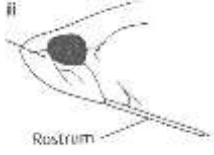
Bugs



Hemelytra



Rostrum:
piercing/sucking mouthpart



Hemipteran Diversity

Other Herbivorous Insects

Katydids (Orthoptera)

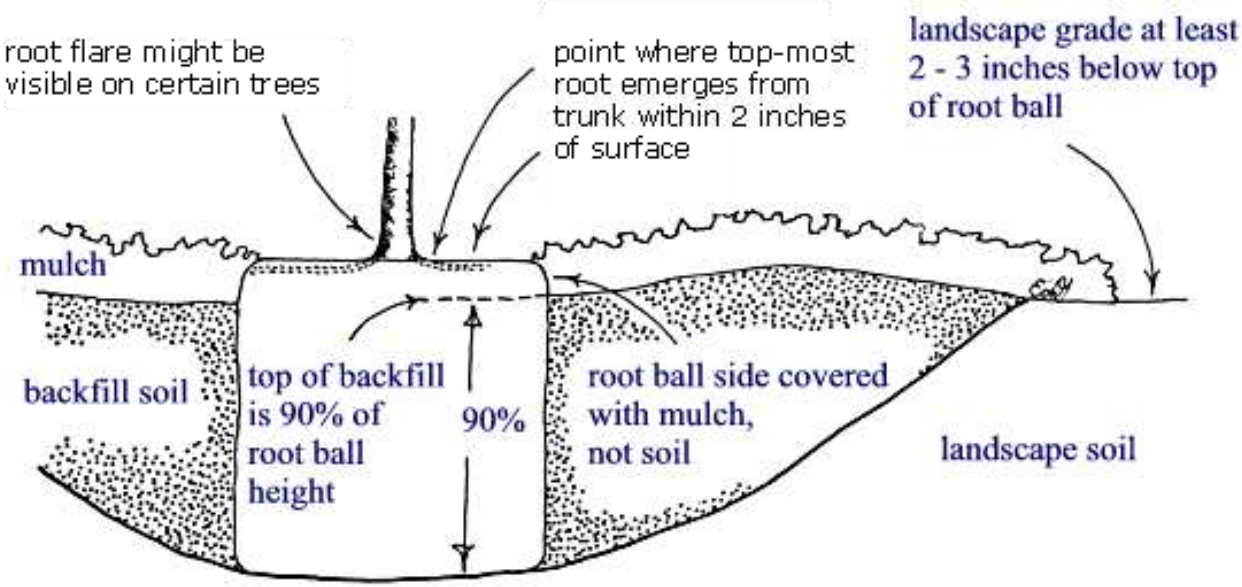
Walkingsticks (Phasmatodea)

Insect Predators

A Brief Intro into Tree & Shrub Care

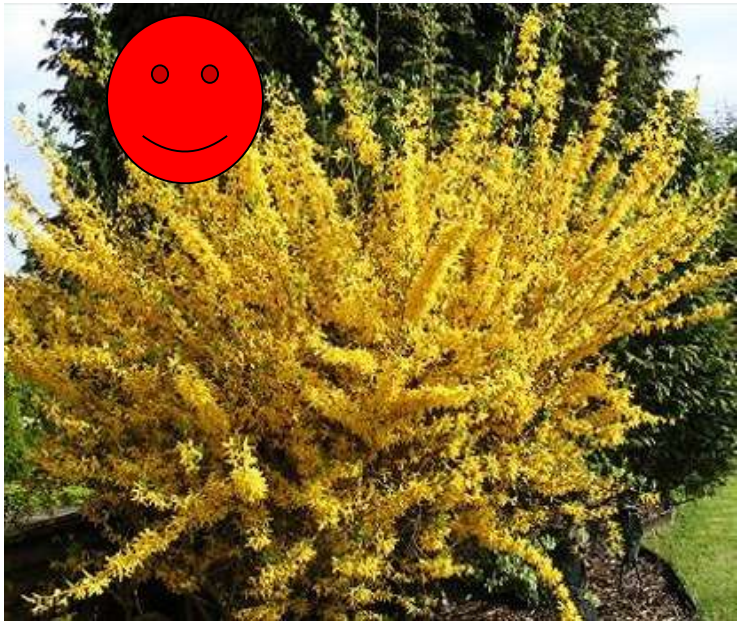
More to come in follow-up demonstration

Planting Trees and Shrubs



Ed Gilman
UF IFAS Extension

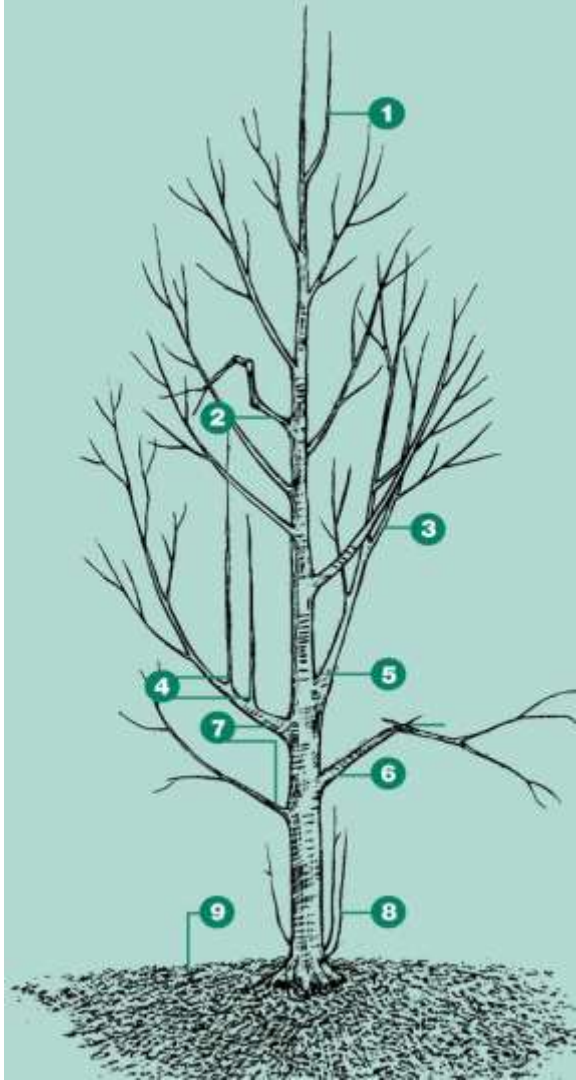
Work with the natural shape of plants



Forsythia (not native) is a LARGE arching shrub

Pruning Trees and Shrubs

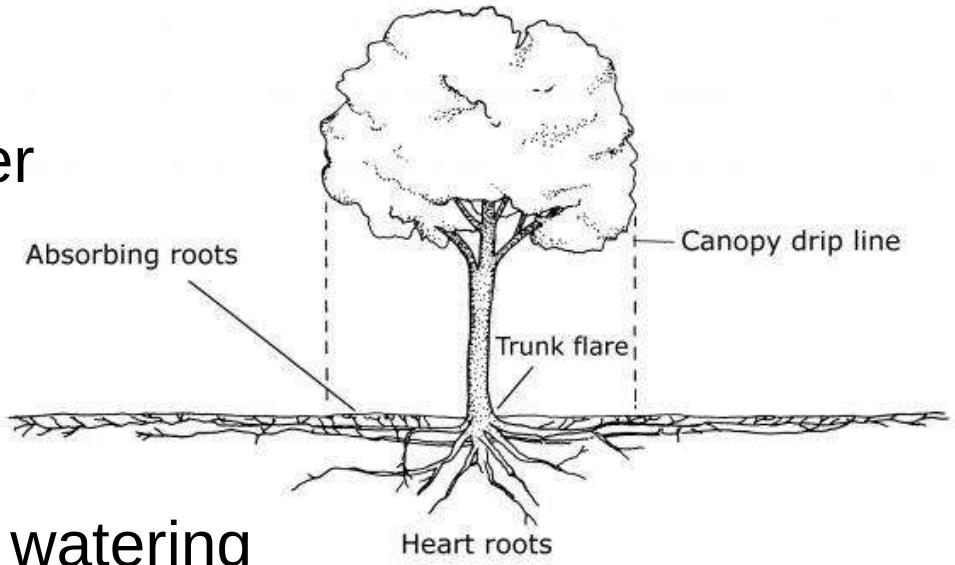
1) Competing leaders
2) Malformed branches
3) Crossing branches
4) Water sprouts
5) Narrow angles
6) Broken branches
7) Limb up later in life



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

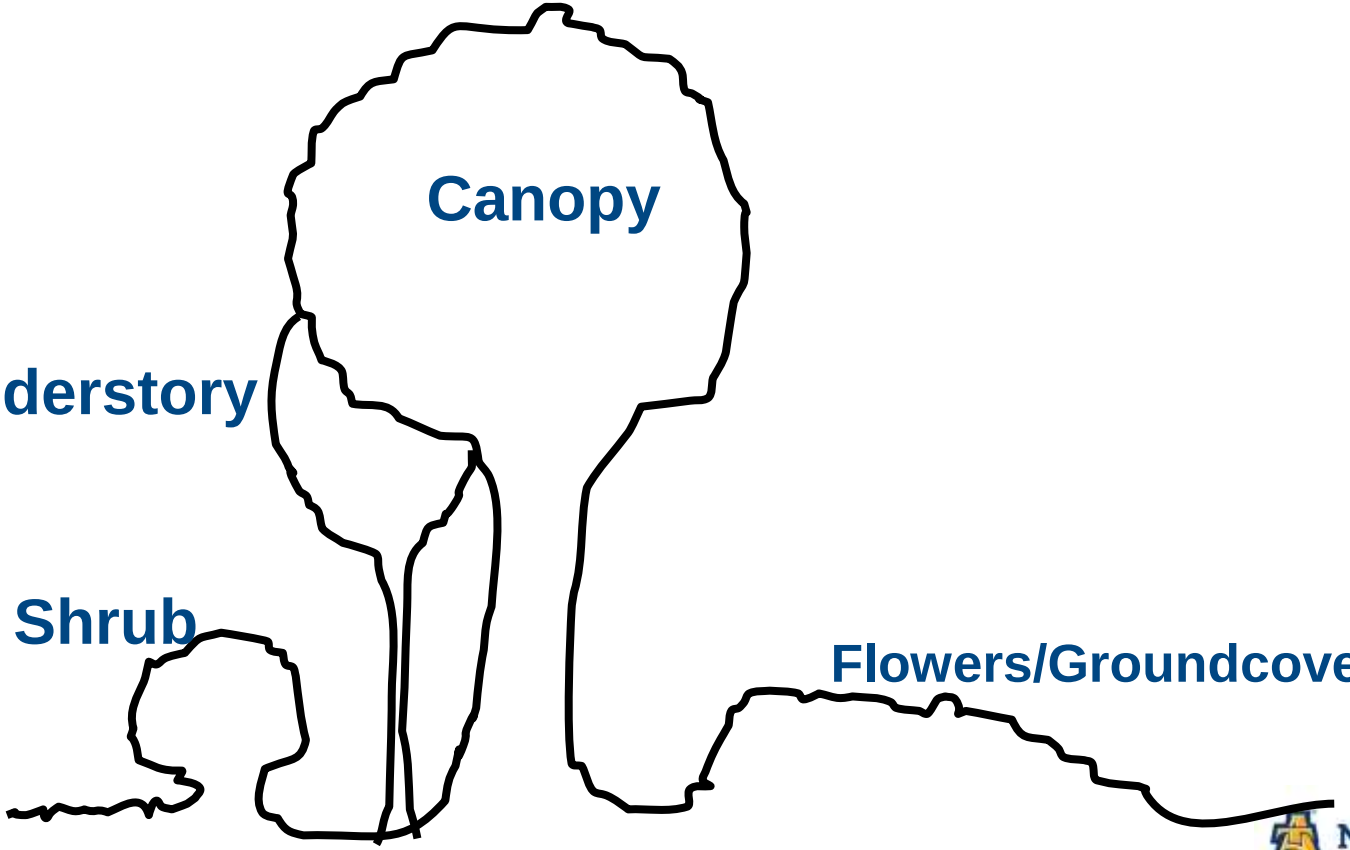
Protecting Young Trees from Deer

- 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
- Soil/drainage requirements
- Mature dimensions, Height x Width
- Wildlife Benefits
- 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

Fall-Winter

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

15-30’ x 20-40’

Spring

Fall-Winter

Redbud

Cercis canadensis

Redbud Cultivars

‘Forest Pansy’
‘Merlot’
‘Burgundy Hearts’

‘Hearts of Gold’,
‘Rising Sun’

‘Royal White’

NC COOPERATIVE EXTENSION

Serviceberry

Amalanchier spp.

Part shade to full sun

Clay/moist soils, drier soils in shade

Spring

15-30’ x 12-15’

Spring-Summer

N.C. A&T STATE UNIVERSITY

NC STATE UNIVERSITY

Serviceberry

Amalanchier spp.

Pollinators, birds eat fruit, caterpillar food

Cedar Quince Rust on Serviceberry

NC COOPERATIVE EXTENSION

N.C. A&T STATE UNIVERSITY

NC STATE UNIVERSITY

American Holly

Ilex opaca

Part shade to full sun

Moist, well-drained
Flooding, drought

Spring

10-20’ x 30-50’

Fall-Winter

American Holly

Ilex opaca

Henry's Elfin Host

Robins & thrushes, Mockingbirds, thrashers waxwings, woodpeckers

American Holly

Ilex opaca

Male Flowers

Female Flowers

American Beautyberry

Callicarpa americana

Part shade to full sun

Moist, well-drained, clay, acid

6’ x 6’

N.C. A&T STATE UNIVERSITY

NC STATE UNIVERSITY

American Beautyberry

Sweat Bees, butterflies

Thrushes & Robins
Thrashers & Mockingbirds

Rustic Sphinx Moth

Summer

Fall-Winter

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
Snowberry Clearwing Moth

Other Native Viburnums

Viburnum prunifolium
Blackhaw Viburnum

Viburnum obovatum
Small-leaf Viburnum

Red Buckeye

Aesculus pavia

Part-shade to Sun

Moist to wet

Spring

Summer

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

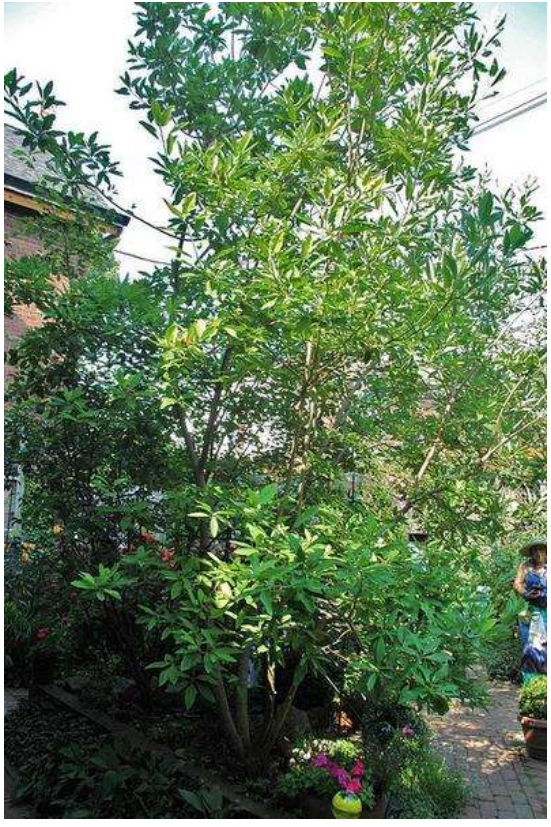
Moist to wet, tolerates flooding

Spring

Fall

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

Fall

Bee pollinated, cover for birds, deer resistant

Sweet Pepperbush

Clethra alnifolia

Part-shade to Sun

Moist, well drained

Summer

Fall-winter

3-8’ x 4-6’

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

Coral Honeysuckle

Lonicera sempervirens

Part sun to full sun

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

Moist to wet

Early Spring

Fall

3-6’ x 12-20’

Hummingbird & bee pollinated, squirrels (seeds)

Carolina Jessamine

Bignonia capreolata

Part shade to full sun

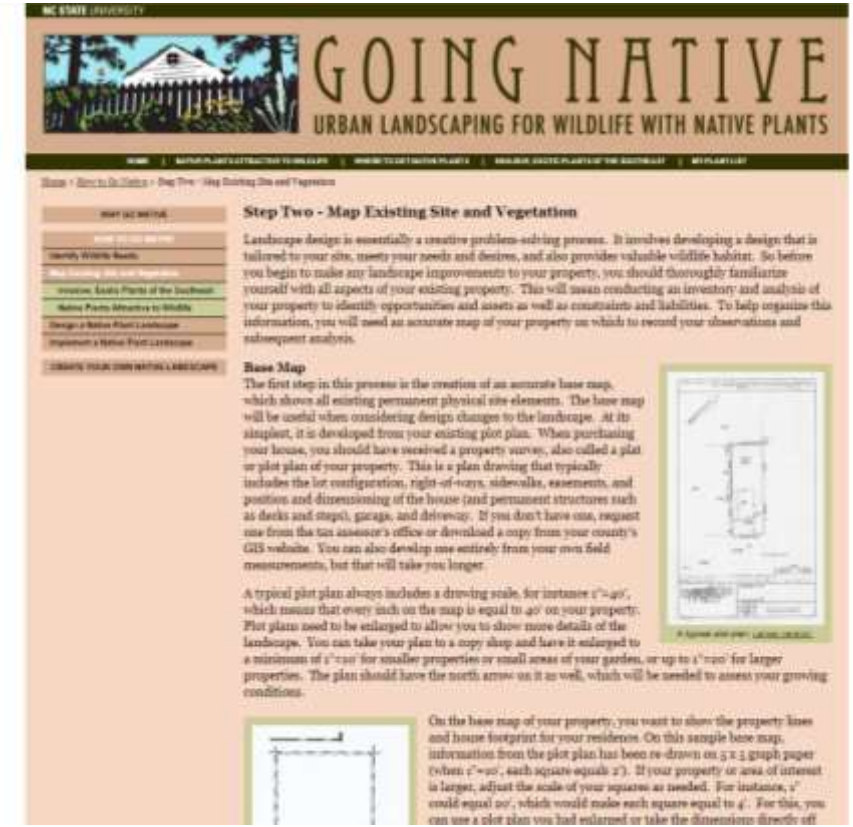
Moist to wet, tolerates flooding

Spring

Summer

3-5’ x 20-30’

Hummingbirds and butterflies
Deer (!)

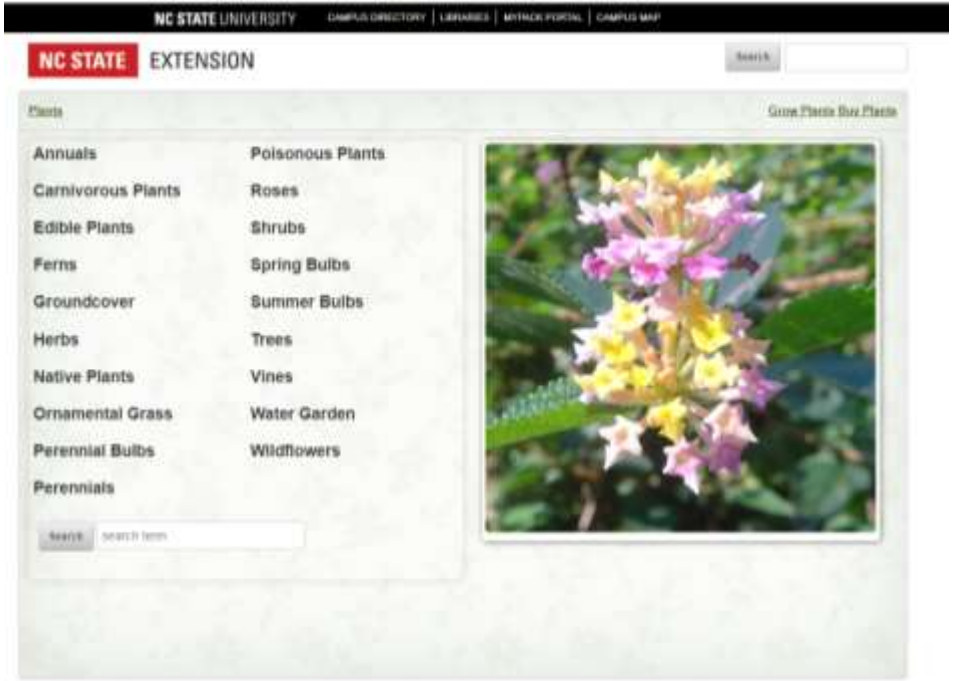


Going Native Portal

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

NC COOPERATIVE EXTENSION

NC STATE EXTENSION



NCSU Plants Database

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

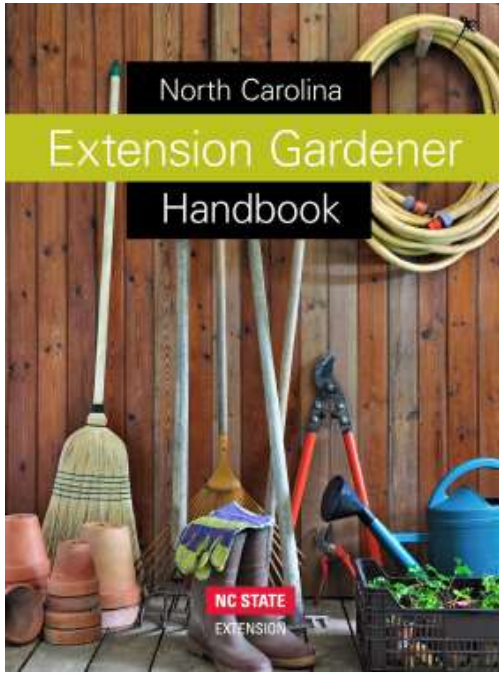
N.C. A&T STATE UNIVERSITY

NC STATE UNIVERSITY

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

Cure Nursery
Native Plants

http://www.curenursery.com/

GROWING WILD NURSERY

https://www.growingwildnursery.com/

Mellow Marsh Farm, Inc.
Wholesale Native Plants

https://mellowmarshfarm.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