


Plants for Living Landscapes: Class 2 – Trees and Shrubs



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Review slides from this class and
class 1, and explore additional
resources:

<http://go.ncsu.edu/nativeplants>



Plants for Living Landscapes

Class 1:

- Defined **living landscapes** as managed landscapes that
 - meet our needs and
 - support healthy ecosystems
- Discussed **vital role of native plants** in supporting
 - native pollinators, insects
 - and organisms necessary for ecosystem health



Many native insects cannot survive without the plants they evolved to feed upon

1998年12月15日

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Ecoregions of North America

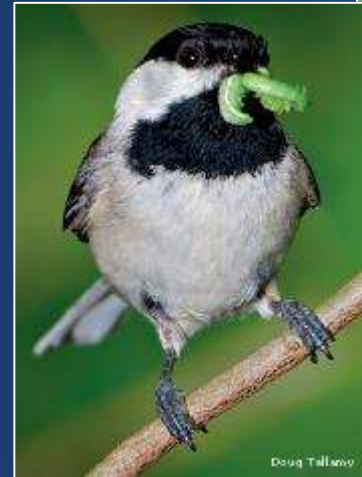
Level III: Piedmont

Plants for Living Landscapes

Class 2

This Week:

- Explore woody plants: trees, shrubs, vines
- Provide valuable resources for insects, birds, mammals:
 - Nesting habitat
 - Flowers, fruits, seeds
 - Leaf feeding insects



A New Paradigm

- Select plants for:
 - Appearance
 - Performance
 - Adaptation to site conditions
- **PLUS** ability to sustain native species
 - Support ecosystem services
 - Native plants are essential!



Foraging Hubs

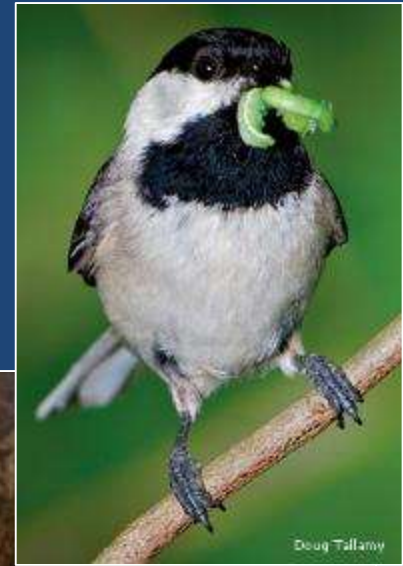
- Leaves of native trees are caterpillar food
- Most caterpillar species feed on narrow range of related species
- Feed for part of life cycle – usually 2-4 weeks
- **Caterpillar feeding rarely threatens tree health**



Polyphemus moth
caterpillars feed for a few
weeks in late summer

Caterpillar Hunters

- Nearly all terrestrial birds rear their young on insects, not seeds or berries
- Eg. Chickadees are caterpillar specialists
 - Requires 6,000-10,000 caterpillars to fledge a single nest!
- **Non native trees do not support caterpillar populations birds need to rear their young**



New Paradigm: More Natives

Not always natives

– some sites too stressful for most natives



Gloomy
Scale

Parking lots are a graveyard
for red maple

What about cultivars?

- Varieties selected for unique/desirable feature
- Propagated by cuttings or grafting to maintain genetic integrity = clones



Merlot Redbud

Cercis canadensis 'Merlot'
Purple leaf form of redbud

Key Question: How different is it?

- Flowering time
- Flower shape
- Flower color
- Foliage color

Some cultivars
provide same benefit,
others do not – use in
moderation



**Merlot
Redbud,**
*flowers same
time, same
color, leaves
purple*

Getting the Most Benefit

Help plants thrive:

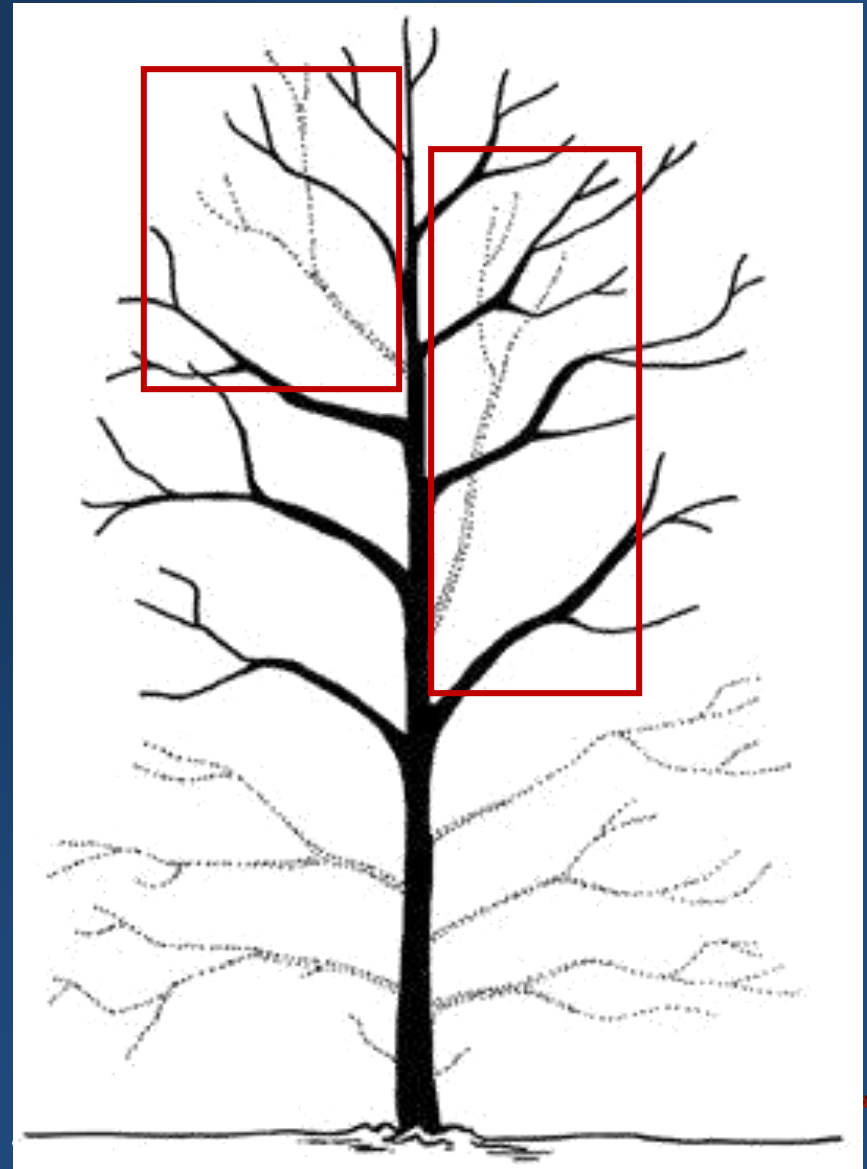
- **Prepare the soil**
 - Alleviate compaction
 - Incorporate organic matter
- **Water during establishment**
 - At least first season
- **Mulch**



Getting the Most Benefit

Train and prune:

- **Prune trees when young**
 - Remove competing leaders, crossing branches
- Prune shrubs to enhance natural form - not to force them to fit a space that is too small



Work with the natural shape of plants



Forsythia (not native) is a LARGE arching shrub

Getting the Most Benefit

Ecological Design

- Majority of plants natives to local ecoregion
- Diversity of species and height ranges
 - Less lawn - More trees, shrubs, and flowers
- Year round food supply
 - Flowers, fruits, seeds, leaves

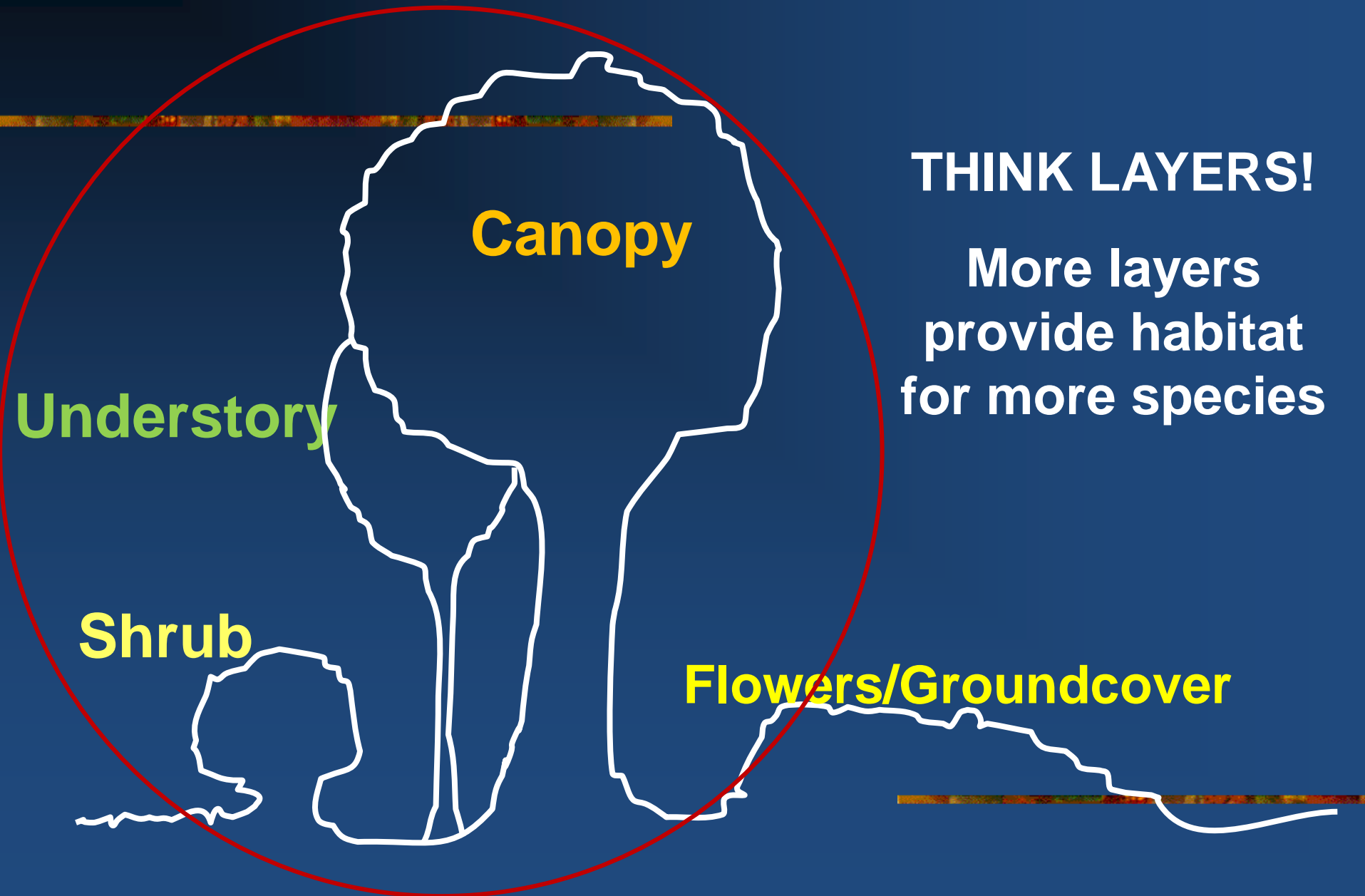


Not diverse!



Very diverse!

Getting the most benefit



THINK LAYERS!

More layers
provide habitat
for more species

Canopy

Understory

Shrub

Flowers/Groundcover

Great Native Trees, Shrubs & Vines for Piedmont Landscapes

- **Serve ecological function:**
 - Support other species
- **Serve landscape function:**
 - Attractive and adaptable
- **Can be nursery produced**
 - Some only available from specialty nurseries



Plants with this symbol are less likely to be repeatedly eaten by deer

Think Layers: Canopy Trees

- The top layer, 40'-80'+ tall
- Provide shade
- Protect soil
- Food source for many species (leaves, nuts/fruits, nectar/pollen)
- Large, unbroken areas of woodland needed



Getting the Most Benefit

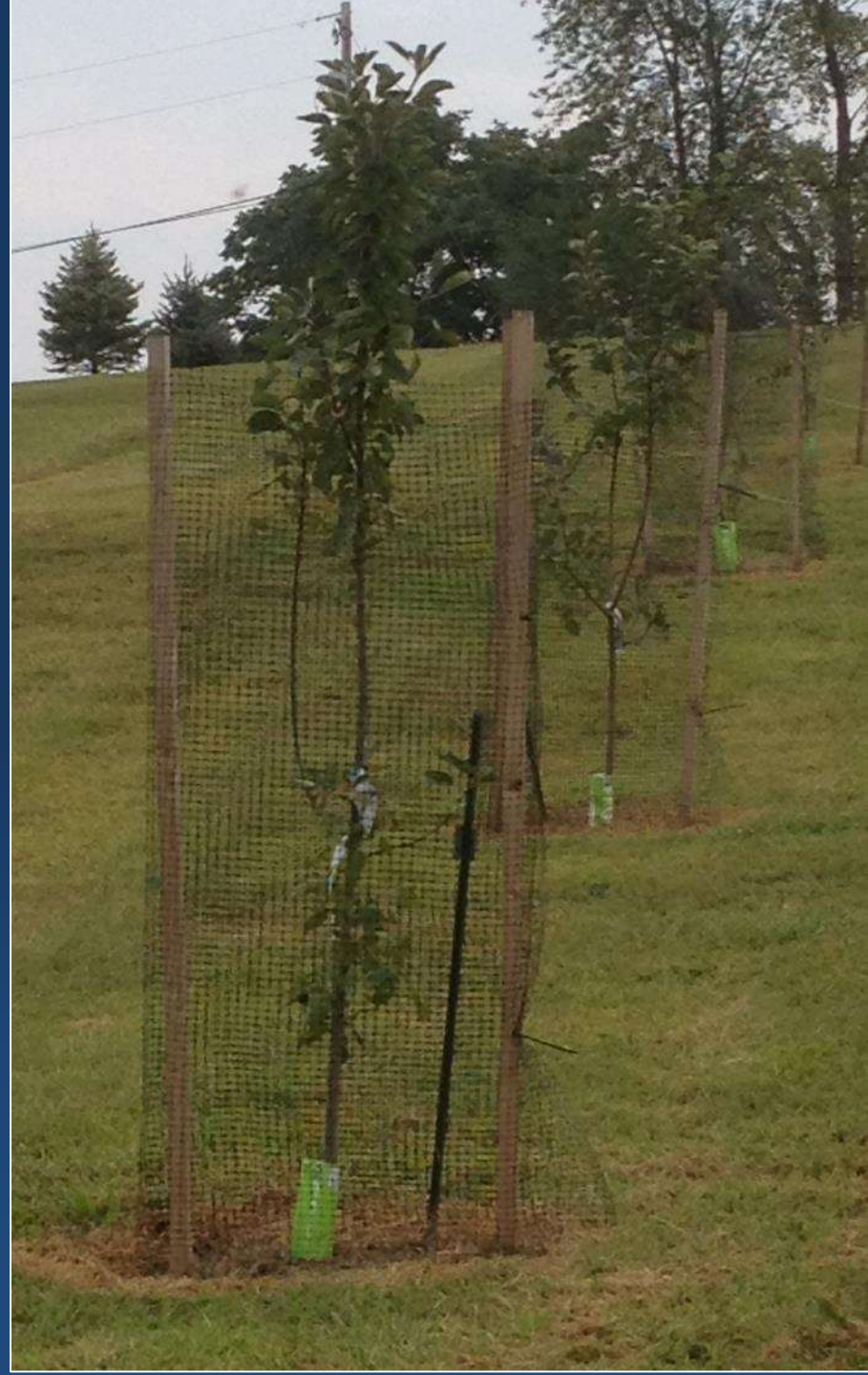
Add trees to connect fragmented areas

- Work with neighbors to:
 - Protect existing natural areas
 - Connect natural areas
- Create larger area for habitat
- Bridges existing areas to create a corridor



Protect Trees

- Young trees may be damaged by deer
- Individual cages 6' tall protect foliage and trunks (rubbing)
- Leave until foliage out of reach – lowest foliage above 6'



Trees

- Take many years to reach maturity but worth it
 - Fast growing trees typically short lived
- Provide joy from the day they are planted



Oaks

- Support 100's of species
 - Acorns
 - Leaves
 - Habitat
- The best shade trees
- Most are very long lived
- Over 30 species native to NC!



Oaks in Landscapes

Most commonly planted:

- **Willow oak,**
Quercus phellos
- **Pin oak,**
Quercus palustris

Willow Oak



Pin Oak

More Oaks

Commercially
Available:

- **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*



Red Maple

Acer rubrum

- 40'-60' tall and wide
- Wet – well drained soil
- Avoid sites surrounded by pavement
- Excellent fall color
- Cultivars:
 - 'October Glory'
 - 'Brandywine'
- Winter blooms are early nectar source for bees



Blooms (top)
Seeds (bottom)

Red Maple foliage



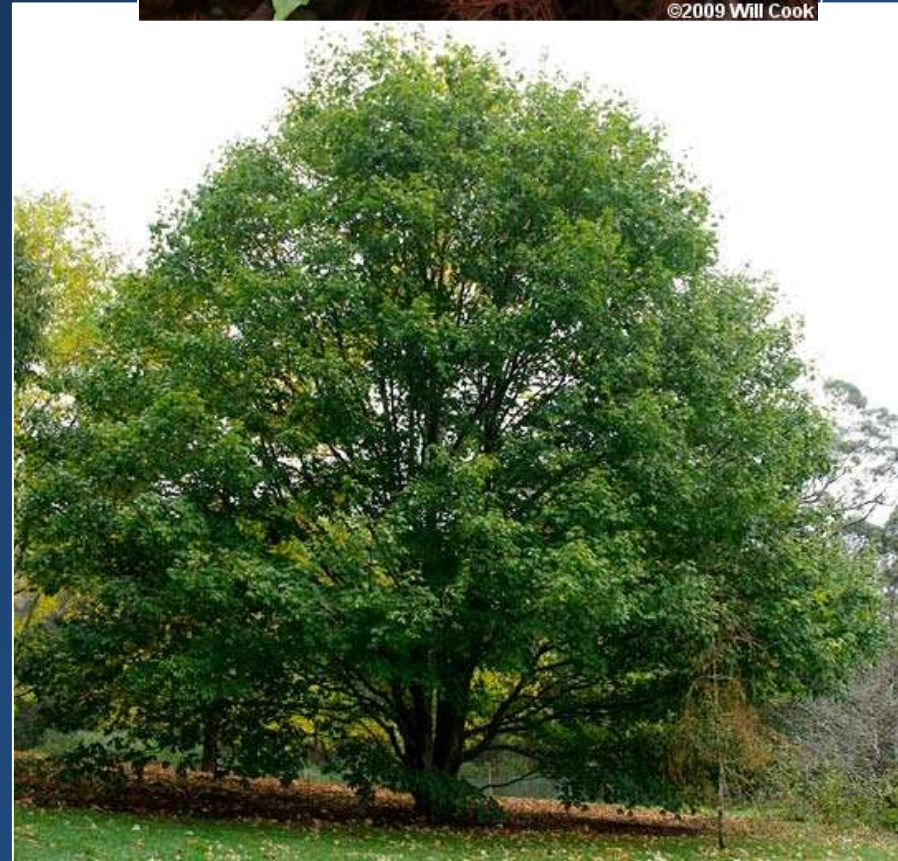
Other Piedmont Maples

Southern Sugar Maple, *Acer barbatum*

- 40' – 60' tall
- Prefers moist soil

Chalk Maple, *Acer leucoderme*

- To 30' tall, often multi-trunked
- Prefers well drained soil



Both can have
great fall color



River Birch

Betula nigra

- Native to streams and riverbanks
- Fast growing, tolerates wet or dry soil
- Can grow 50' tall, often multi-stemmed
- Cultivars: 'Heritage', 'Duraheat'



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



Ladybug larvae

More Great Native Trees: Less Readily Available

- **Black Gum**,
Nyssa sylvatica
- **Persimmon**,
Diospyrus virginiana
- **Hickory**,
Carya species
- **American Beech**,
Fagus grandifolia

NC Forest Service,
Tree Seedling Store -

<http://nc-forestry.stores.yahoo.net>



American Beech

Understory Trees and Shrubs

- **Middle layer**
- Often missing in managed landscapes
- **Prime nesting height** for most birds, 5'-15' above ground
- Many have attractive flowers, produce fruits/berries



Middle/understory layer
missing in many modern
landscapes

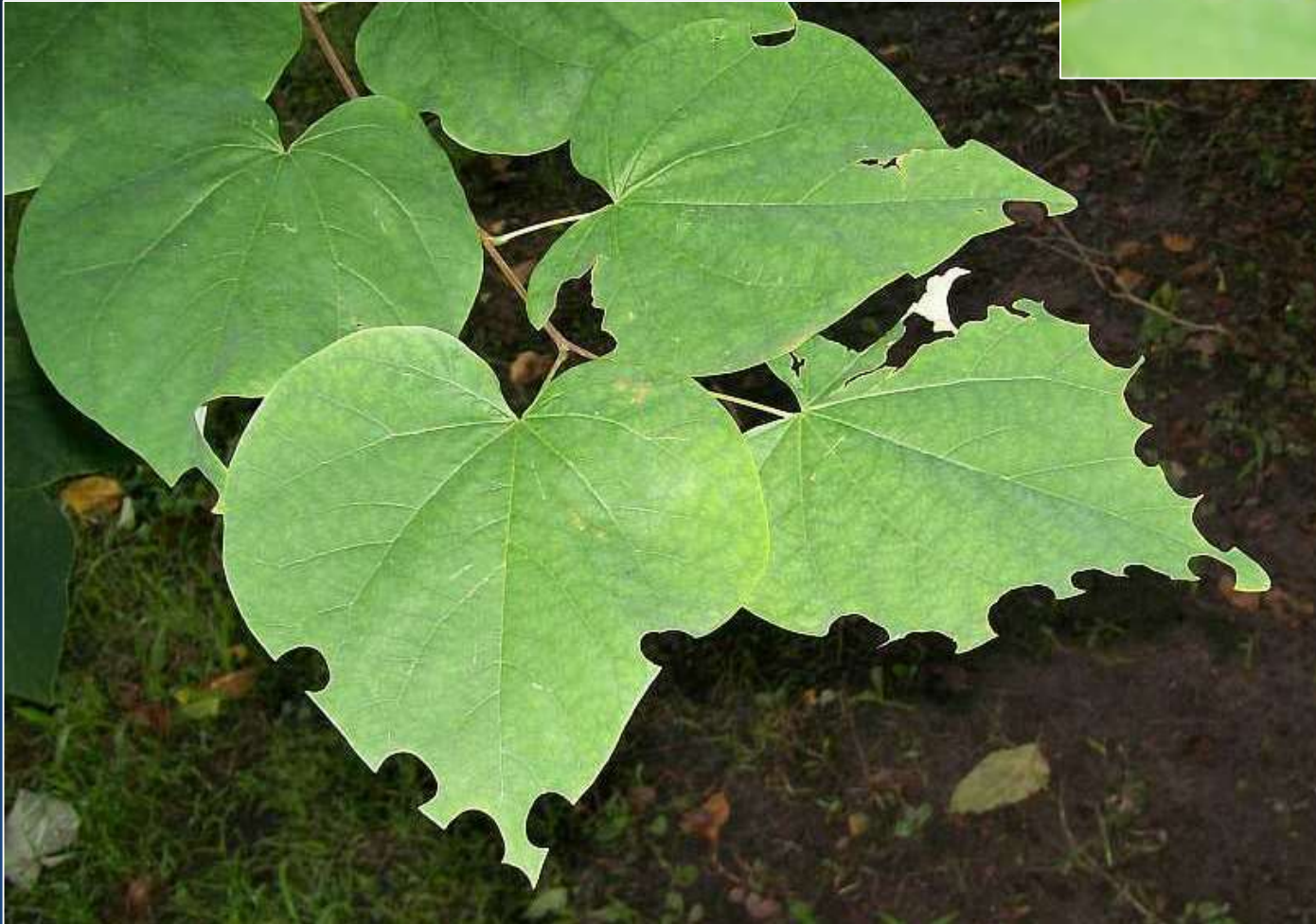
Redbud

Cercis canadensis

- Small deciduous tree
- Blooms early spring before leaves come out
- Lives ~ 20 yrs.
- Sun – pt. shade, well drained soil
- Protect from deer when young



Leafcutter Bees



Redbud Cultivars

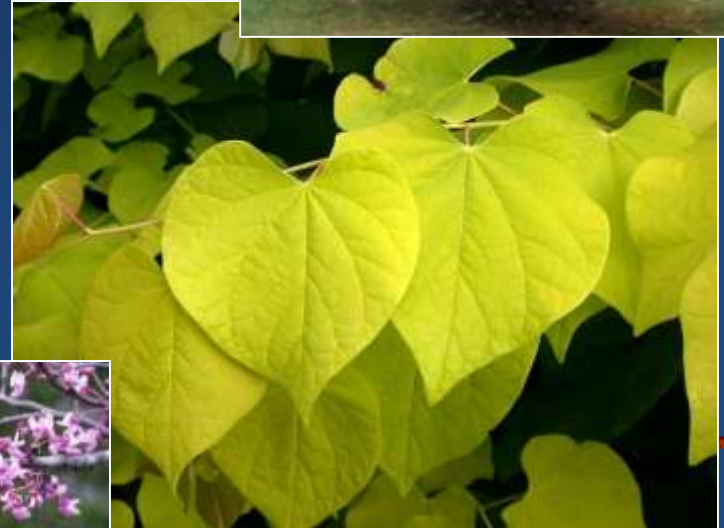


‘Royal White’

‘Forest Pansy’,
‘Merlot’,
‘Burgundy Hearts’



‘Hearts
of Gold’,
‘Rising
Sun’



Red Buckeye

Aesculus pavia

- 10'-15' high and 10' wide
- Beautiful spring flowers attract hummingbirds
- Best in moist soil and afternoon shade
- Loses leaves in early fall
- Seeds are poisonous



Seeds ripen in fall



©2007 Will Cook



Called:

- Conkers
- Horse Chestnuts
- Buckeyes

NOT EDIBLE!



Bottlebrush Buckeye

Aesculus parviflora

Wide spreading shrub
for part shade. Blooms
in summer



Painted Buckeye

Aesculus sylvatica

Common in piedmont,
upright shrub/small tree



Dogwood

Cornus florida

- 15' – 30' tall
- Moist, well drained soil
- Best in afternoon shade
- Spring blooms, excellent fall color
- Many cultivars



Fall fruits relished by birds



Serviceberry

Amelanchier arborea

- Small tree – often multi-stemmed
- Sun to part shade, moist soil
- White flowers in spring
- Sweet berries ripen late May
- Rust can be a problem on fruit and leaves if red cedar trees are nearby





Amelanchier blooms in early April

Cedar Quince Rust on Serviceberry



Sourwood

Oxydendrum arboreum

- 30'-50' tall
- Acidic, moist to well-drained soil
- Sun – pt. shade
- White flowers in summer – bee favorite
- Beautiful fall color



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Fall color and seed pods



Sweet Bay Magnolia

Magnolia virginiana

- Smaller cousin of Southern Magnolia
- Grows 20'-30' tall, often with multiple trunks
- Sun to part shade,
- Moist or well-drained soil – tolerates flooding
- Fragrant flowers, spring-early summer
- Deciduous



Upright habit;
Fall seeds great
for birds



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American Holly

Ilex opaca

- Evergreen
- Sun – shade
- Moist or well-drained soil
- Moderately slow growing, 40'-70'
- Red berries in winter on female trees



Male Flowers



Female Flowers



Hollies are dioecious – Some trees are male, others are female. Only female trees will have berries but they must be pollinated by a male tree.

Native Holly Hybrids:

Ilex opaca x *Ilex cassine*

More compact and vigorous than species

- Fosters #2
- Greenleaf
- Savannah

All three cultivars are female

Savannah Holly,
Image by Jim Robbins,
[CC BY-NC-ND 4.0](https://creativecommons.org/licenses/by-nc-nd/4.0/)



Spicebush



- *Lindera benzoin*
- Small yellow flowers in early spring on bare stems
- Red berries in fall on female plants
- Grows 4'-6' tall and wide
- Moisture tolerant
- Sun – shade



Spicebush Swallowtail



'Mt. Airy' Fothergilla

Fothergilla major

- 4'-5'x 4'-5'
- Sun to part shade
- Moist or well drained soil, acidic
- Honey scented spring blooms
- Dwarf fothergilla, *F. gardenii* similar but smaller



Fothergilla fall color



Native Azaleas

- *Rhododendron* species
- Deciduous
- Bloom in spring before leaves come out
- Part shade
- Moist, well-drained soil
- Protect from deer

Pinxter Bloom

Rhododendron periclymenoides



Flame Azaleas



Florida Flame Azalea,
R. austrinum – more heat
tolerant, earlier blooming



Flame Azalea,
R. calendulaceum

Sweet Pepperbush

Clethra alnifolia

- Sun – part shade
- Well drained or moist soil
- Dwarf cultivars grow 3'-4'
 - Hummingbird
 - Sixteen Candles
- Blooms in June-July, attracts butterflies and pollinators
- Very fragrant





fall
color

‘Ruby Spice’ – pink flowers



Clethra ‘Sixteen Candles’
Grows 3’ - 4’ tall and wide

American Beautyberry

Callicarpa americana

- Sun to part shade
- Moist or dry soil
- Magenta berries late summer - attract songbirds
- 4'-5' tall and wide
- Cut back to 1'-2' in early spring





Sweat Bee



**Rustic
Sphinx
Moth**

Possumhaw Viburnum

Viburnum nudum

- Deciduous shrub – looks evergreen
- Grows 6-10 feet tall
- Moist or wet soil
- Sun to light shade
- Excellent fall color
- Fruit changes color as it ripens, from green to red, pink, and finally blue
- Cultivars: 'Winterthur' and 'Brandywine'



Snowberry Clearwing Moth



Yucca, Adam's Needle

- *Yucca filamentosa*
- Sun – part shade
- Extremely drought tolerant
- Evergreen
- 2' x 2', summer flower spikes to 5'
- Broken roots regenerate new plants



**Yucca
'Bright Edge'**



**Yucca
'Color Guard'**



Inkberry

Ilex glabra

- 4'-5' x 3'-4'
- Evergreen
- Tolerates moist soil
- Bees attracted to blossoms
- 'Shamrock' – 3'-4' tall and wide



Southern Wax Myrtle

Morella cerifera

- Full sun – lt. shade
- Moist to dry soil
- 10'-15' x 10'-15'
- Semi-evergreen
- Drought tolerant
- Prone to ice and wind damage
- Winter berries for birds (female shrubs)



SE US Native Evergreens

Florida Anise

Illicium floridanum

- 6' x 4'
- Red spring flowers
- **Anise Shrub** – *Illicium parviflorum* is larger



Florida Leucothoe

Agarista populifolia

- 10'-12'
- Deer resistant



Native Vines

- Vigorous climbers – need large support (in wild climb up trees)
- Best in sun

NOT NATIVE:

Japanese honeysuckle
(*Lonicera japonica*)
has escaped cultivation and
become invasive



Coral Honeysuckle

- *Lonicera sempervirens*
- Semi-evergreen vine
- Spring blooming – often reblooms
- Hummingbirds!
- Sun, most soil types
- Climbs 10'+
- Protect from deer



Carolina Jessamine

- *Gelsemium sempervirens*
- Climbs 10' +
- Early spring flowers, very fragrant
- Twining vine, mostly evergreen
- Adaptable – sun, most soil types



American Wisteria

Wisteria frutescens

- Vigorous twining vine – grows 15'+
- Spring flowers, not fragrant
- Sun, moist or well drained soil
- Cultivars: 'Amethyst Falls'



Wisteria floribunda - Invasive



Native to Asia, fragrant
Velvety seed pods

Cross Vine

Bignonia capreolata

- Moist or well drained soil, sun
- Blooms mid spring
- Vigorous climber – 20'+
- Good for hummingbirds



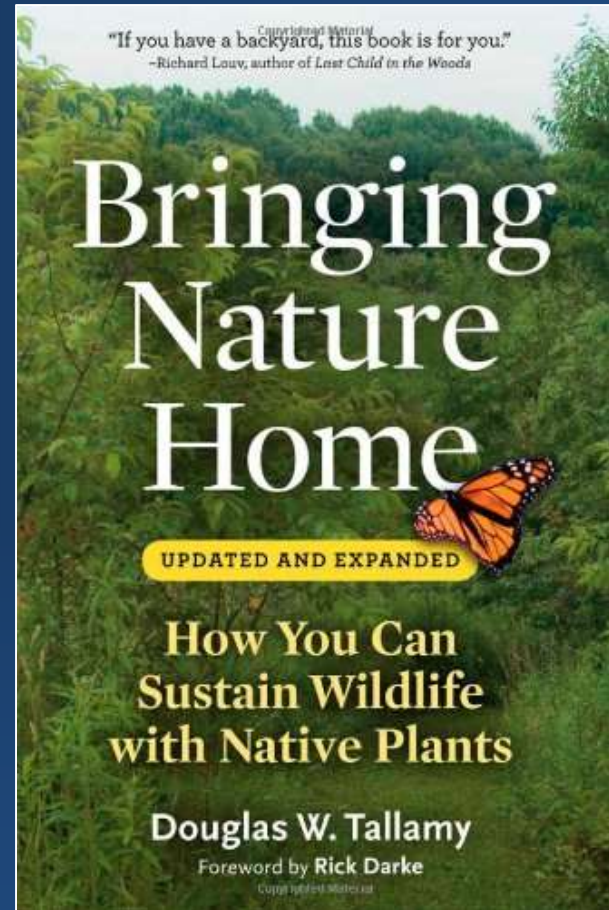


Cross Vine Cultivars:
'Miss Jekyll'
'Tangerine Beauty'



“A plant that has
fed nothing has
not done its job”

- D. Tallamy,
*Bringing Nature
Home*



Upcoming Class:

Piedmont Lawns and Lawn Alternatives

- Tues., April 25,
6:30 – 8:30 pm
- Wed., April 26,
10:00 – noon

Registration closes April 21



Moss is a beautiful lawn substitute for shade

Learn More: **Going Native Website**

<http://www.ncsu.edu/goingnative/>

Searchable plant database!

NC STATE UNIVERSITY



GOING NATIVE

URBAN LANDSCAPING FOR WILDLIFE WITH NATIVE PLANTS

HOME | NATIVE PLANTS ATTRACTIVE TO WILDLIFE | WHERE TO GET NATIVE PLANTS | INVASIVE, EXOTIC PLANTS OF THE SOUTHEAST | MY PLANT LIST



Home >

WHY GO NATIVE

HOW TO GO NATIVE

CREATE YOUR OWN NATIVE LANDSCAPE

Going Native: Urban Landscaping for Wildlife with Native Plants

You can go native!...with native plants in your landscape.

- See why landscaping with native plants is better for wildlife and for the environment.
- Find out about the problems caused by invasive, exotic plants. Odds are you have invasive exotics in your own backyard!
- Discover the native plants you can use as alternatives to exotic plants. We can tell you where you can

Learn More

Extension Gardener Handbook

- Chapters cover many topics
 - Soils, Insects, Landscape Design, Vegetables, Flowers, etc.
- **Chapter 12 is Native Plants!**

NC State Extension



Cardinal flower -
Lobelia cardinalis

Extension Plants Database:

Can help you select native and non-invasive
non-native species for your yard

<http://plants.ces.ncsu.edu/>


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Annuals	Poisonous Plants
Carnivorous Plants	Roses
Edible Plants	Shrubs
Ferns	Spring Bulbs
Groundcover	Summer Bulbs
Herbs	Trees
Native Plants	Vines
Ornamental Grass	Water Garden
Perennial Bulbs	Wildflowers
Perennials	All Plants



Plant Profiles:

- Height
- Hardiness
- Soil
- Exposure
- Description
- Images
- More!

[Plants](#) > [Native Plants](#) > *Hydrangea quercifolia*

Hydrangea quercifolia

This plant has poison characteristics. See below.

Common Name(s):

Oakleaf hydrangea

Cultivar(s):

Snow Queen, Snowflake, Harmony, Pee Wee, Sykes Dwarf, Alice, Little Honey (golden foliage), Munchkin (semi-dwarf), Ruby Slippers (semi-dwarf)

Categories:

[Native Plants](#), [Poisonous Plants](#), [Shrubs](#)

Comment:

Bold leathery leaves; spread of 8 ft.; seeds eaten by birds; mulch to keep root system cool; exfoliating bark on mature plants; wine, orange, and mahogany fall foliage; coarse texture; drought tolerant; native to southeastern US; rapid growth rate

Description:

Deciduous shrubs; leaves opposite, simple, stalked, toothed and sometimes lobed; flowers in terminal, round or umbrella-shaped clusters, white, pink, or blue, 4-5-parted, the sterile flowers (around the margin or the entire cluster) are much enlarged.

Height:

4-8 ft.

Foliage:

Opposite, simple, bold leathery leaves; 3-8 in. long; wine, orange, mahogany fall color

Flower:

4-12 in. erect panicles of creamy white flowers in summer; fades to pink, then tan; fragrant; good for drying

Zones:

5 to 9

Habit:

Deciduous

Site:

Sun to partial shade; prefers moist, well-drained soil but tolerates damp soil

Texture:

Coarse

Form:

Upright, irregular, rounded, multi-stemmed shrub with limited branching; stoloniferous; forms colonies

Exposure:

Sun to partial shade; moist, well drained soil

Fruit:



H. quercifolia 'Snowflake'

Photo by Kingsize Garden, CC BY-NC-SA - 2.0



H. quercifolia 'Snow Queen'

Photo by Henry10, CC BY-NC-ND - 2.0

Pollinator Paradise Garden

carolinapollinatorgarden.org



Chatham Mills, Pittsboro

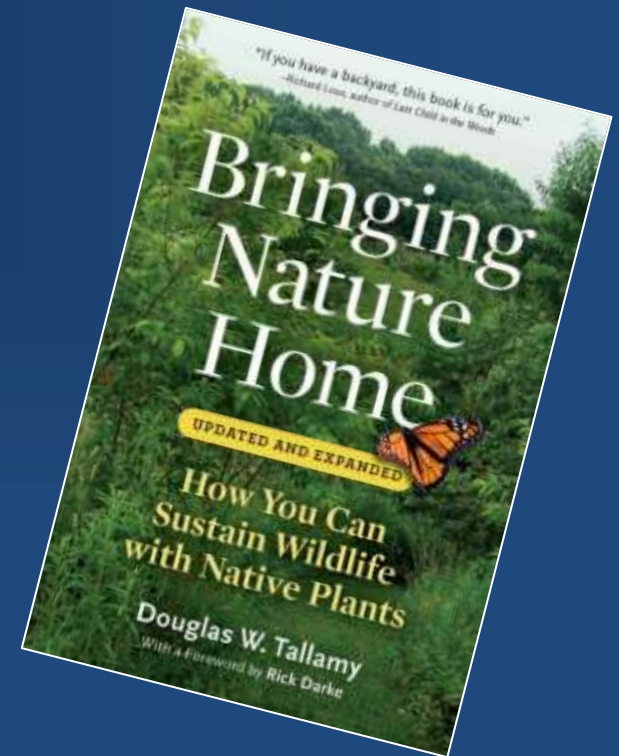
Learn More!

- **NC Botanical Gardens,**
Chapel Hill
 - <http://ncbg.unc.edu>
 - Spring plant sale, April 29
- **NC Native Plant Society**
 - <http://www.ncwildflower.org>



Great Books to Learn More!

- ***Native Plants of the Southeast***
 - L. Mellichamp
- ***Best Native Plants for Southern Gardens***
 - G. Nelson
- ***Gardening with Native Plants of the Southeast***
 - S. Wasowski
- ***Bringing Nature Home***
 - D. Tallamy
- ***The Living Landscape***
 - D. Tallamy and R. Darke



Evaluation

Thanks to
Cure Nursery
for donating
our door prize!



880 Buteo Ridge
Pittsboro NC 27312
Phone: 919-444-9902

<http://www.curenursery.com>

Learn more:

<http://go.ncsu.edu/nativeplants>