Plants for Living Landscapes: Class 2 – Trees and Shrubs

Charlotte Glen
Horticulture Agent
NC Cooperative Extension – Chatham County Center
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.
Plants for Living Landscapes

Class 1:

- Defined “native” in terms of **ecoregions**
  - Greatest benefit comes from planting species that occur in local ecoregion

- Discussed **native perennials** for living landscapes
  - **Nectar and pollen** from flowers supports pollinators and other insects

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

Parking lots are a graveyard for red maple

Gloomy Scale
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
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*
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
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

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

‘Hearts of Gold’, ‘Rising Sun’

‘Royal White’
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

Called:
• Conkers
• Horse Chestnuts
• Buckeyes

NOT EDIBLE!
**Bottlebrush Buckeye**

*Aesculus parviflora*

Wide spreading shrub for part shade. Blooms in summer.
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
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
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
American Holly: Many cultivars and hybrids

More compact and vigorous than species

- Nellie Stevens
- Foster’s
- Oakleaf
- Greenleaf

Most cultivars are female
‘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
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
Rustic Sphinx Moth

Sweat Bee
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
Spicebush

- *Lindera benzion*
- 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
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
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 
(\textit{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

![Image of Carolina Jessamine flowers](image)
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

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!
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/
Plant Profiles:

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

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:
Pollinator Paradise Garden
carolinapollinatorgarden.org
Chatham Mills, Pittsboro
Learn More!

- **NC Botanical Gardens, Chapel Hill**
  - [http://ncbg.unc.edu](http://ncbg.unc.edu)
  - Spring plant sale, April 29

- **NC Native Plant Society**
  - [http://www.ncwildflower.org](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.cure nursery.com

Learn more:
http://go.ncsu.edu/nativeplants