Plants for Living Landscapes: Class 1 - Perennials

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Plants for Living Landscapes Class 1

- Define living landscapes
- The role of native plants
- Explore herbaceous plants: perennials, grasses and groundcovers

Class 2 – Next Week

- Explore woody plants: trees, shrubs, vines

What are living landscapes?

Managed landscapes that:

- Sustain people, pets and wildlife
- Require few inputs once established
- **Support local ecosystem health**

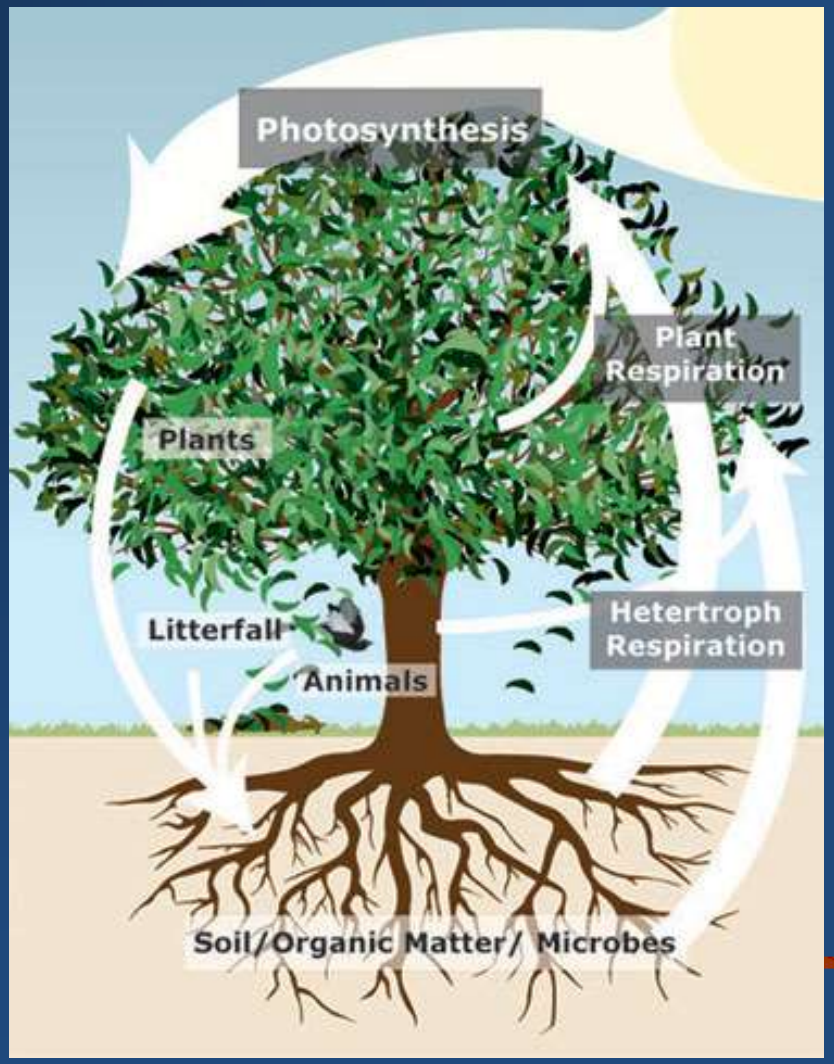
Healthy Ecosystems

- Provide services essential to human wellbeing and survival, including:
  - Pollination
  - Water and Air Purification
  - Soil Formation
  - Balance Pest Species
  - Climate Stability

Learn More: Millennium Ecosystem Assessment

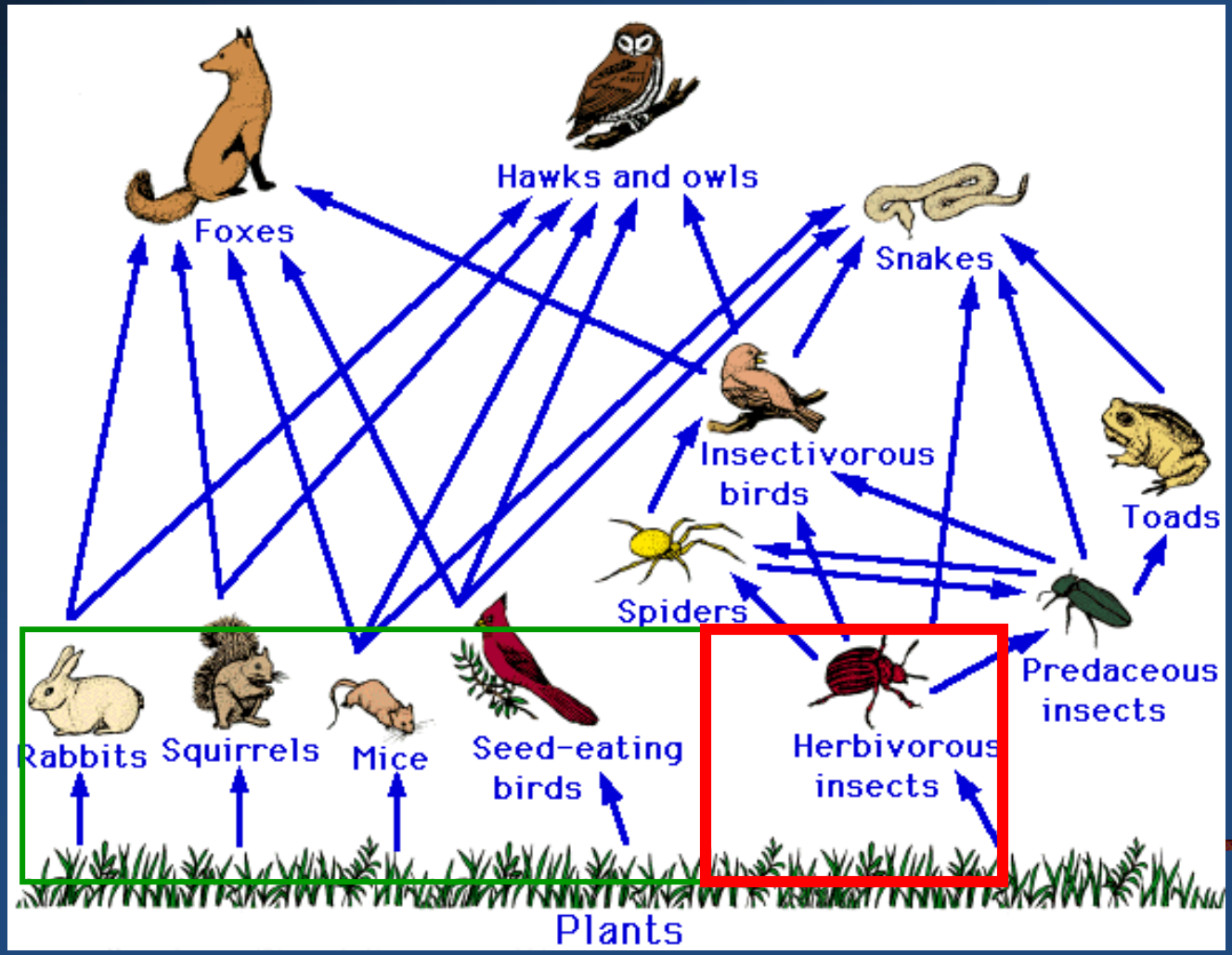
Within Healthy Ecosystems, Plants Have Many Functions

- Protect soil from erosion
- Help cycle nutrients
- Help cycle water
- Support soil microbes



Most Important Function: **Foundation of Food Webs**

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

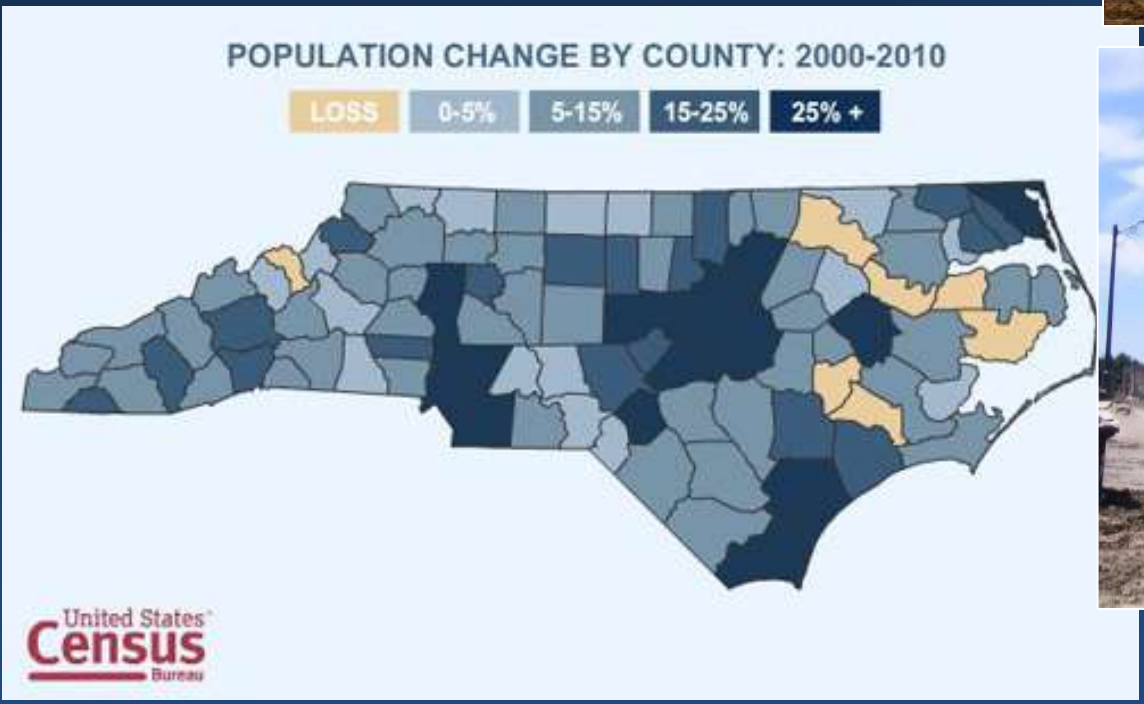


Within Ecosystems, **All Plants Are Not Equal**

- Most herbivorous insects adapted to feed on specific plants
- Plants with which they share an evolutionary history
- Plants native to the same region
- Plants they cannot survive without

Asclepias are the only plants Monarch caterpillars can feed on (butterflyweed, milkweed)

TREND: Natural areas replaced by managed landscapes



Managed Landscapes

- Often dominated by non-native plants
  - Turf
  - Exotic trees, shrubs, flowers
  - Focus on “pest free”
- Do not sustain natural communities they replaced
- Not able to support healthy ecosystems

The Good News

- What you plant in your landscape can make a difference
- Increasing the number of native species in your yard and neighborhood supports local ecosystem health

Support Monarchs – Plant Asclepias!

The Challenge

- Create healthier ecosystems by changing the way:
  - Gardeners
  - Landscapers
  - Plant Breeders
  - Nurseries
- View and value landscape plants

Beyond Ornamental

- Landscape plants are more than ornaments!
- Living organisms - Part of the local ecosystem
- Should support other species
- Should not require excessive resources

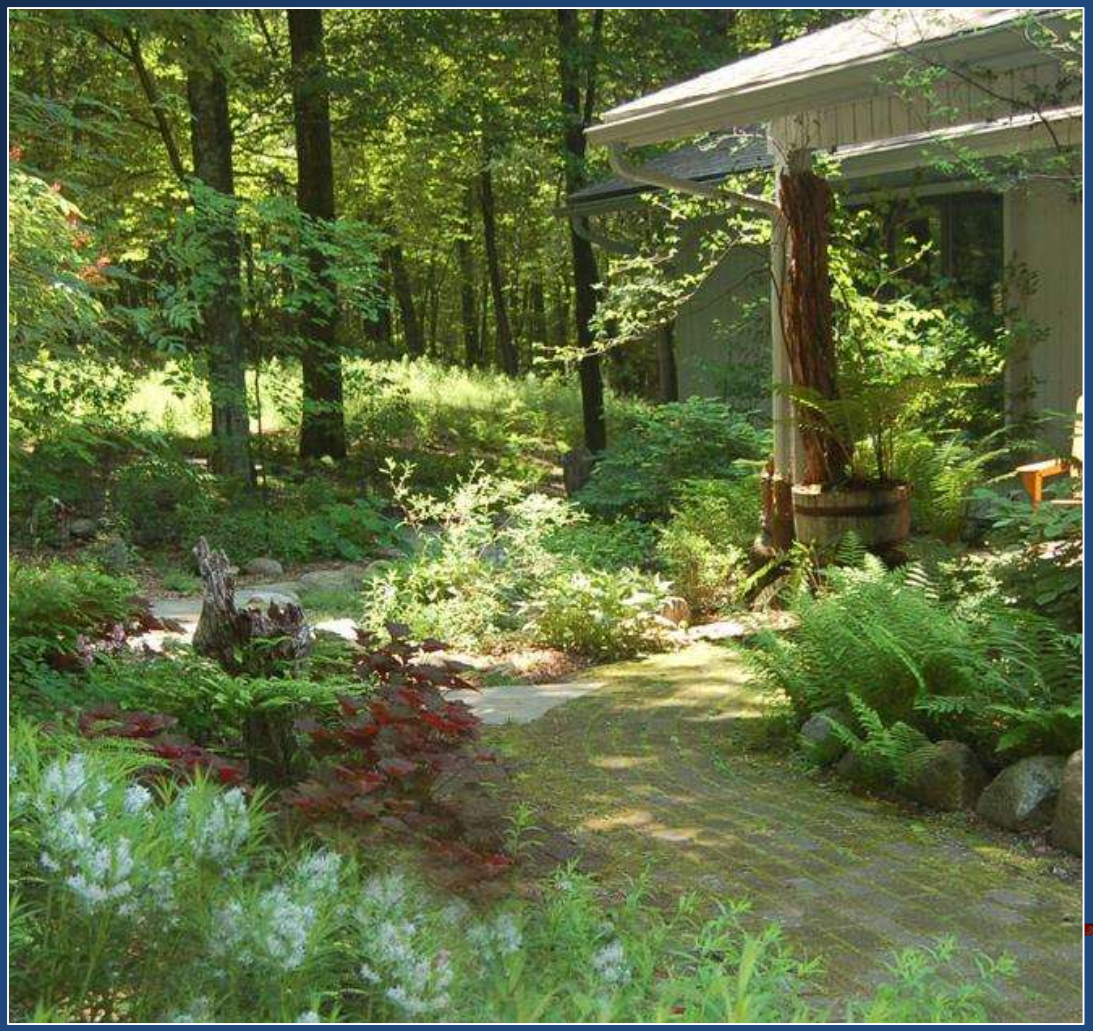
Hydrangea: Pretty but flowers are sterile, not drought tolerant

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**

New Paradigm:
Living Landscapes

- **Not dominated by lawn/turf**
- Home to many different plant species, **many native to local region**
- Replicate natural communities - **have layers**

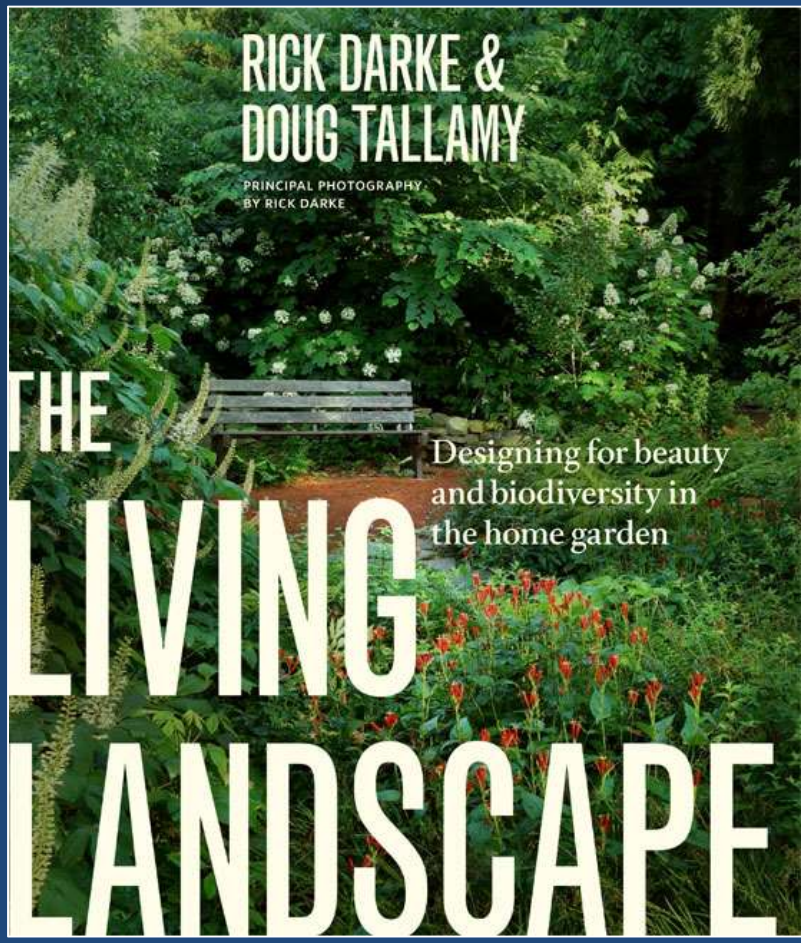


What is native?

"A plant or animal that has evolved in

- a **given place**
- over a **period of time**
- sufficient to develop **complex and essential relationships**
- with the **physical environment** and **other organisms**

in a given **ecological community**"



Period of Time

- 1000's of years
- Does not include plants recently introduced from other regions that have naturalized or become invasive

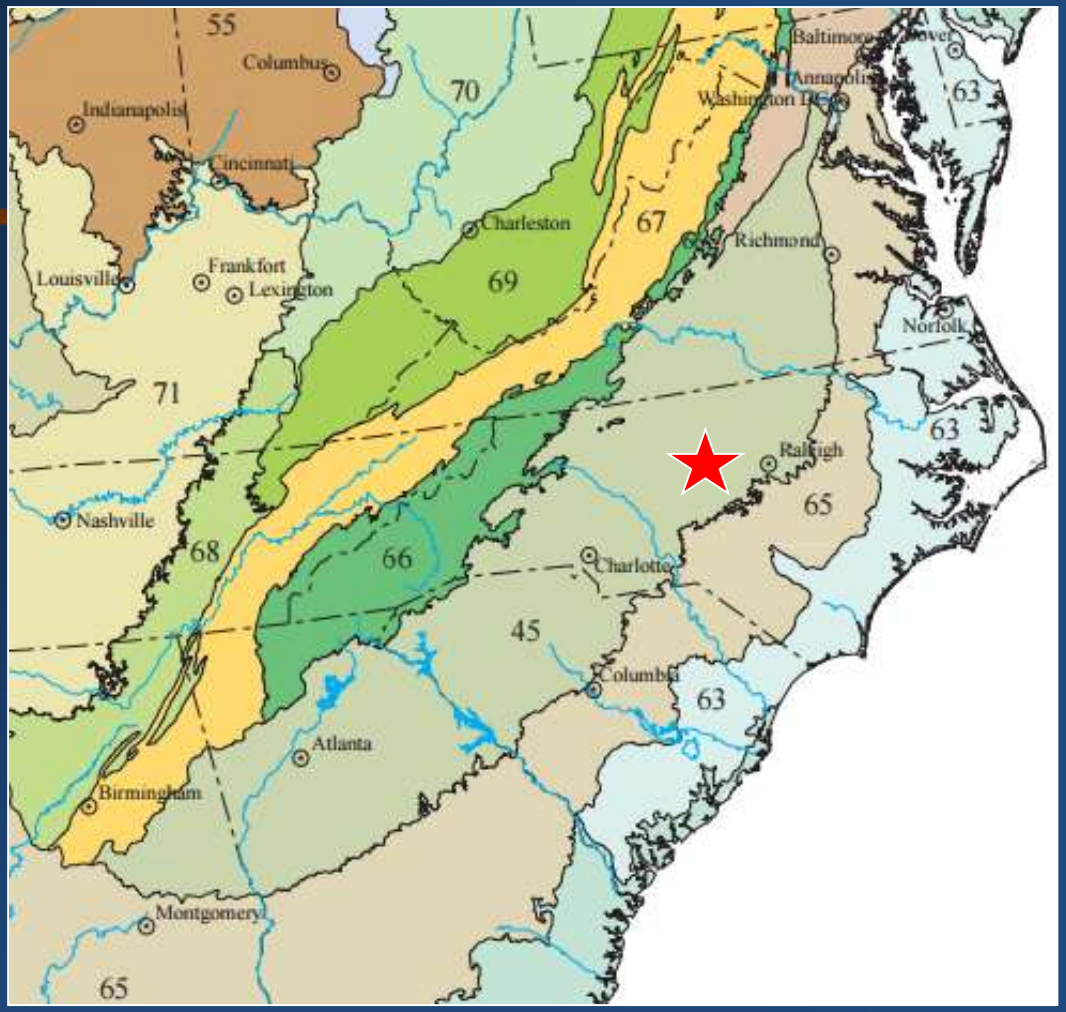
Not all plants found growing wild are native. **Naturalized species**, such as daylilies, persist after cultivation. Others are **invasive species**, such as Japanese honeysuckle

Daylily,
Hemerocallis fulva

Japanese Honeysuckle,
Lonicera japonica

Given Place

- Native is meaningless without location!
- **Think ecoregion, not political boundaries**
- **Greatest benefit:** choose plants from local ecoregion



Ecoregions of North America

Level III: Piedmont

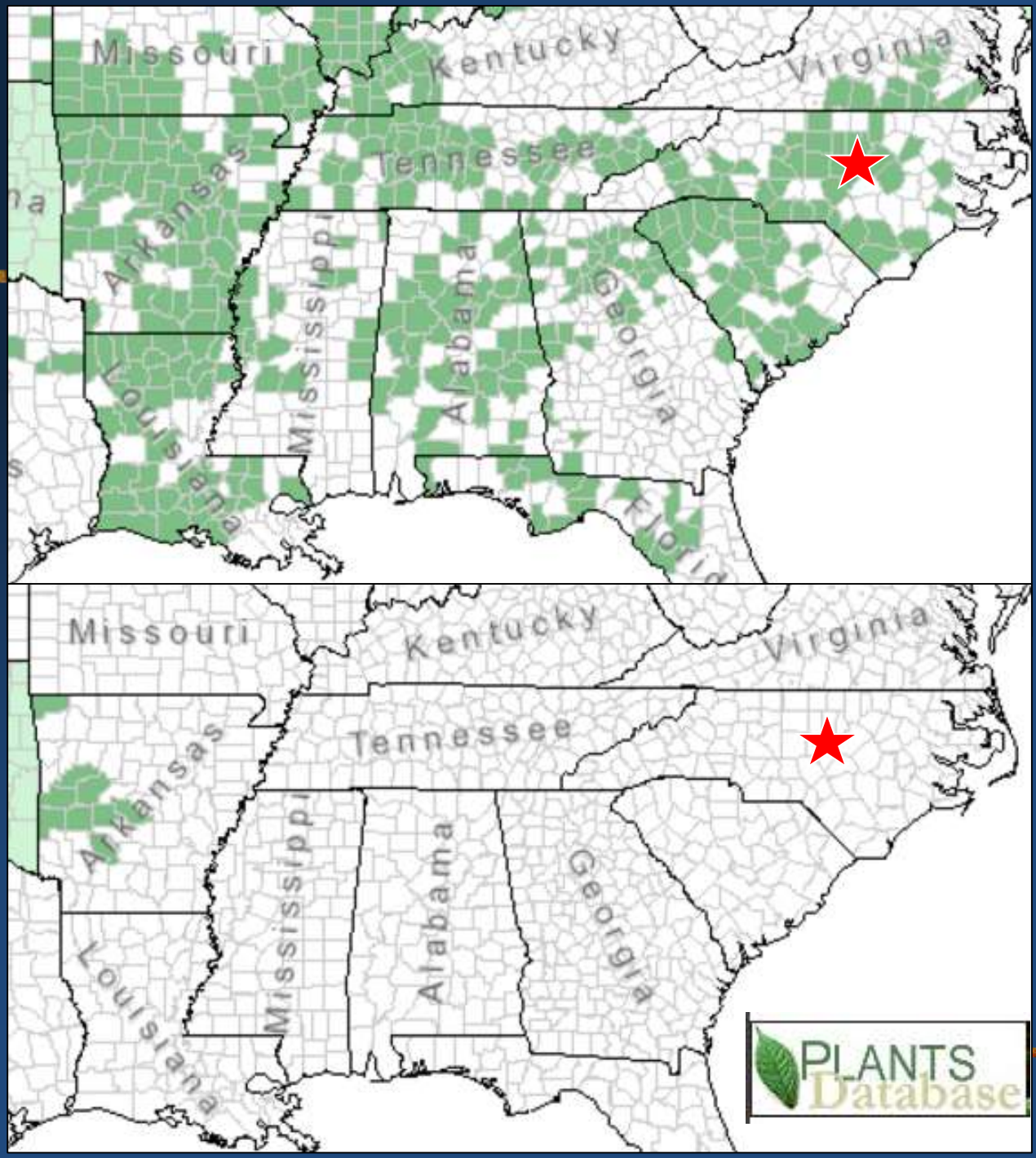
Congeners

- Plants in same genus
- For example, Blue Star:
  - *Amsonia tabernaemontana*
  - *Amsonia hubrichtii*
- Congeners from southeast US often support local pollinators and beneficial insects even if not native to this region

Native Range

Amsonia tabernaemontana

Amsonia hubrichtii



Best source for native range: **USDA PLANTS Database**

Native Range

Consider both:

- Geographical range
- Type of habitat

- *Amsonia tabernaemontana*
  - Moist woods, stream edges
  - Prefers moist soil, part shade
- *Amsonia hubrichtii*
  - Rocky outcrops, dry creek banks
  - More sun and drought tolerant

What about cultivars?

Purple Coneflower,
Echinacea purpurea

Echinacea ‘Razzmatazz’

“Nativars”

- Cultivated varieties of native species
- Selected for unique/desirable feature
- Propagated by cuttings, division to maintain genetic integrity = clones

Cercis canadensis ‘Merlot’
Purple leaf form of redbud

Key Question: How different is it?

- Flowering time
- Flower shape
- Flower color
- Foliage color
- Topic of current research
  - Mt. Cuba Center

Natives for Living Landscapes

Things to consider:

- **Adaptability**
  - Some natives from specialized habitats (soils, hydrology)
  - Not able to adapt to typical landscape conditions
  - Or difficult/not economical to propagate

Lady Lupine, *Lupinus villosus*

Things to consider:

- **Longevity**
  - Some species short lived - often self seed
  - Rely on disturbance to sustain populations
  - May disappear over time OR become a nuisance
  - May require periodic “editing”
- **Spreading tendencies**

Golden Alexanders

Zizia aurea

Some natives may be too vigorous for smaller landscapes, especially rhizomatous plants

Canada Goldenrod
Solidago canadensis

Hardy Ageratum,
Conoclinium coelestinum

Weedy versus Invasive

- **Invasive** refers to non-native plants capable of harming ecosystems
- **Weedy** – spread vigorously in garden/landscape setting
  - By seed
  - By roots – rhizomatous

Saliva lyrata, lyre-leaf sage, self seeds prolifically!

Making the most of spreaders

- Spreaders that aren't too aggressive make great groundcovers
- Layer under and around taller plants – "living mulch"

Viola walteri
'Silver Gem'

Many natives are great choices for landscapes!

- **Serve ecological function**:
  - Support other species
- **Serve landscape function:**
  - Attractive and adaptable
  - Not overly aggressive or finicky
- **Can be nursery produced**
  - Some only available from specialty nurseries

Getting the Most Benefit

Help plants thrive:

- **Prepare the soil**
  - Alleviate compaction
  - Incorporate organic matter
- **Choose plants adapted to site**
  - Sun/Shade
  - Moisture/Drainage
- **Water during establishment**

Getting the Most Benefit

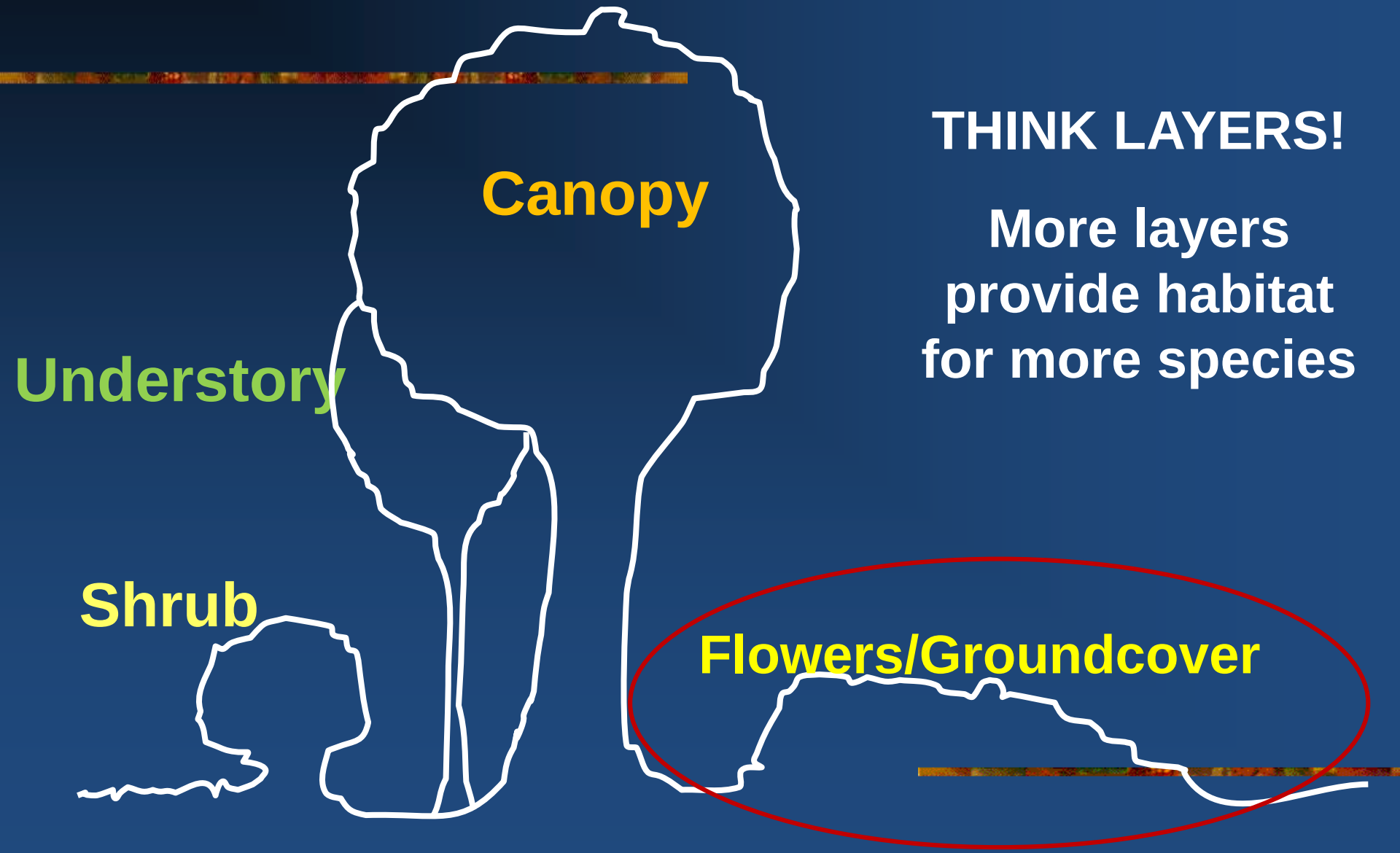
Ecological Design

- **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

Perennials

- Critical nectar and pollen source for pollinators and beneficial insects
- **Most benefit:**
  - Plan for something to be in bloom spring-fall
  - At least 3 different species in bloom each season
  - Plant in groups, 3+ of each species

Blossoms with many small flowers clustered together are the richest nectar plants

Eastern Columbine

Aquilegia canadensis

- Blooms March - May
- Part sun or shade, well drained soil
- 12” – 24” tall in bloom
- Attracts butterflies and hummingbirds
- Will naturalize in the garden by self seeding

Green and Gold

Chrysogonum virginianum

- Light to part shade, moist or well drained soil
- 1’ x 2’
- Evergreen foliage
- Spring flowers
- Self seeds
- Var. *australe* is stoloniferous, lower growing - groundcover

Trailing Phlox

Phlox nivalis

- Evergreen, mat-forming
- Blooms spring
- Sun – light shade
- Well drained soil
- One of several Phlox native to SE

Woodland Phlox,
Phlox divaricata

Narrow-leaf Carolina Phlox
Phlox carolina var. *angusta*

Woodland Stonecrop

Sedum ternatum

- Part – full shade
- Well drained soil – native to rocky crevices
- 3”-6” tall
- Blooms in spring
- Evergreen, loose mat

Woodland Stonecrop

Foamflower

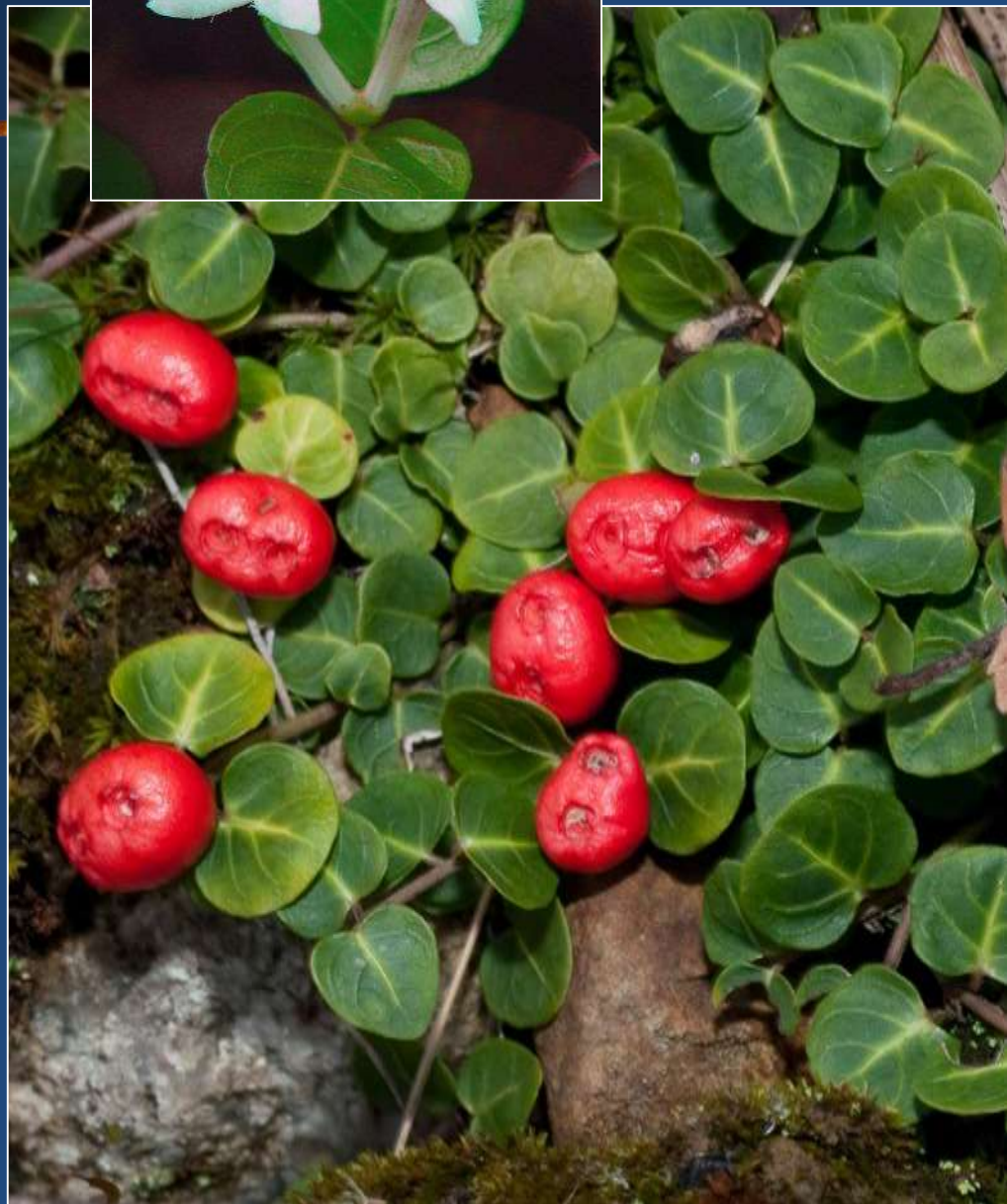
Tiarella wherryi

- Light – part shade
- Moist, well drained soil
- Evergreen clumps
- Spring flowers, 1’
- Heartleaf foamflower - *Tiarella cordifolia* – spreading groundcover
- Many cultivars are available (both species)

Partridge Berry

Mitchella repens

- Evergreen creeping perennial
- Shade, well drained soil
- Pairs of small white flowers in spring
- Red berries fall and winter – birds!
- Drought tolerant once established



Bluestar

Amsonia tabernaemontana

- Tough, long lived clumping perennial
- Pale blue flowers in spring loved by bees
- To 2’ tall and wide
- Sun to part shade, wet to well drained soil

Congener:
Arkansas Blue Star

- *Amsonia hubrichtii*
- 3’ x 3’
- Sun
- Long lived
- Flowers in spring
- Yellow autumn color
- Attractive, ferny foliage all season
- Pollinators love it!

Indian Pink

Spigelia marilandica

- Light - part shade
- Moist, well drained soil
- 1-2’ tall
- Flowers late spring
- Cut back after flowering for a second bloom
- Hummingbirds love it!

False Indigo

- *Baptisia* - hybrids and species
- 3’ - 4’ x 2’ - 3’
- Sun to light shade
- Drought tolerant
- Very long lived, clump forming
- Several species native to SE US

Baptisia alba

‘Purple Smoke’

‘Carolina Moonlight’

Coreopsis, Tickseed

- Several species native to NC
- Sun lovers
- Threadleaf Coreopsis
  - *C. verticillata*
  - Long live
  - Summer blooming
  - Drought tolerant
  - ‘Zagreb’ – 2’ x 2’

Butterfly Weed

Asclepias tuberosa

- Sun to part shade
- Well drained soil
- Very drought tolerant
- 2-3’ tall
- Late to emerge in spring
- Orange flowers summer – attract many pollinators

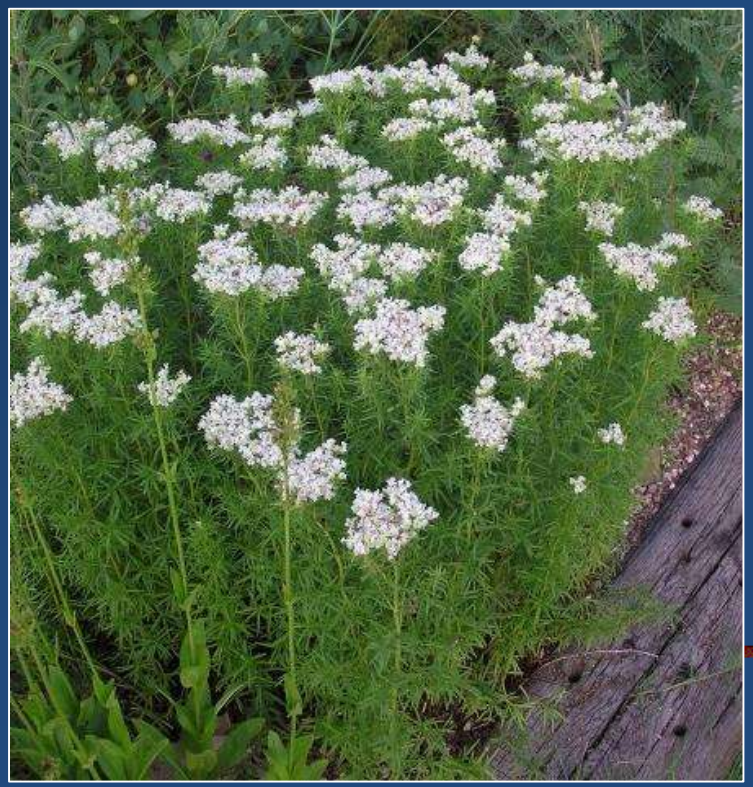
Support Monarchs – Plant Asclepias!

Swamp Milkweed
Asclepias incarnata

- 3’ tall and wide
- Summer flowers
- Sun to part shade
- Moisture tolerant
- Monarch larval host
- Attracts many pollinators

Mountain Mints
Pycnanthemum species

- 12+ species native to NC
- Bloom mid-late summer
- Sun to light shade
- Moist soil
- 3’ tall and wide
- The best pollinator plants!
- Deer resistant



Pycnanthemum tenuifolium

Joe Pye Weed

- Sun – pt. shade
- Wet to moist soil
- *Eutrochium dubium*
  - 4’-5’ tall x 3’-4’ wide
  - More common coast
- *E. fistulosum*
  - 5’-8’ x 3’-4’
  - More common piedmont
- *E. purpureum and E. maculatum* in Mountains
- Deer resistant

Ironweed

Vernonia noveboracensis

- Purple flowers, late summer-fall
- 5’ – 8’ in flower
- Sun to light shade, wet to moist or well drained soil
- Attracts butterflies
- Great for natural areas and pond’s edge – spreads!

Rough Stemmed Goldenrod

- *Solidago rugosa*
- cultivar ‘Fireworks’
- Grows 3’-4’ high and wide
- Sun to part shade, moist or well drained soil
- Blooms late summer - nectar for butterflies and many other pollinators

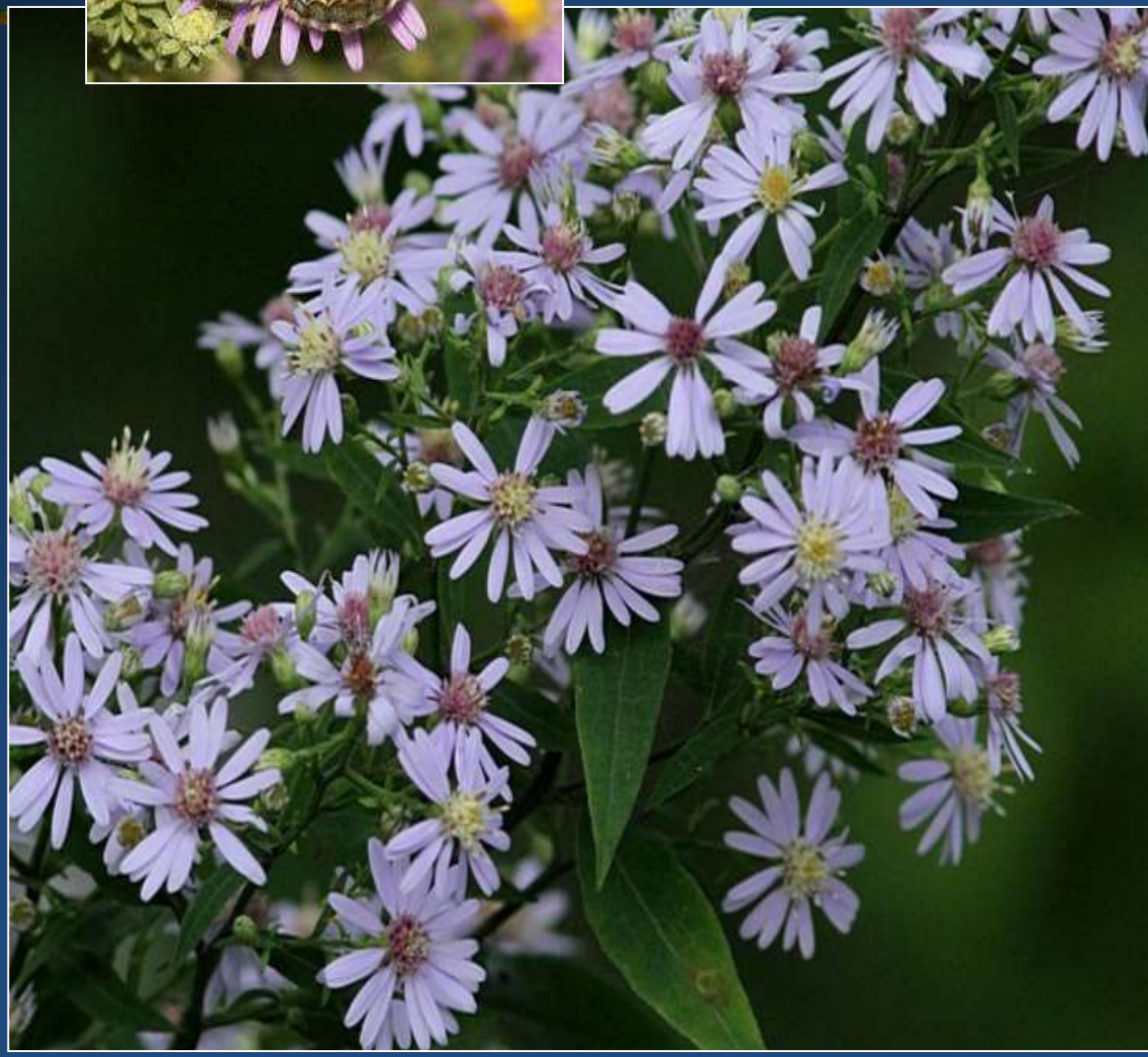
Wreath Goldenrod

Solidago caesia

- Shade tolerant!
- Drought tolerant!
- Clump forming, 2-3’ tall
- Grow in full-part shade, moist-dry soil

Asters

- Many native aster species
- Most need sun
- Pollinators love them!
- **Blue Wood Aster,** *Symphyotrichum cordifolium*
  - Shade tolerant!
  - Moist-dry soil
  - 2-3’ tall
  - Native statewide



Aromatic Aster

- *Symphiotrichum oblongifolium*
- Late blooming – Oct/Nov
- Mounding habit
- ‘October Skies’, 2’ x 3’
- ‘Raydon’s Favorite’, 3’ x 4’
- Sun, well drained soil

Native Grasses

- Many do best in a meadow setting
  - Little Blue Stem
  - Broomsedge
  - Indian Grass
- In landscape, can become large and floppy
- Competition keeps them compact in the wild

Little Blue-stem

Indian Grass

Switch Grass

Panicum virgatum

- Several cultivars, 3’ - 8’ tall
- Moist or dry soils
- Sun to light shade
- Stands up well through winter, birds enjoy seeds
- Cut back by late Feb.

Muhly Grass

Muhlenbergia capillaris

- 4’ tall in bloom, 3’ x 3’ mound
- Blooms late fall
- Sun, well drained soil
- Cut back in late winter, before new growth begins

River Oats

Chasmanthium latifolium

- Will grow in sun or shade
- Wet to average soil
- Attractive seed heads in winter
- Self seeds

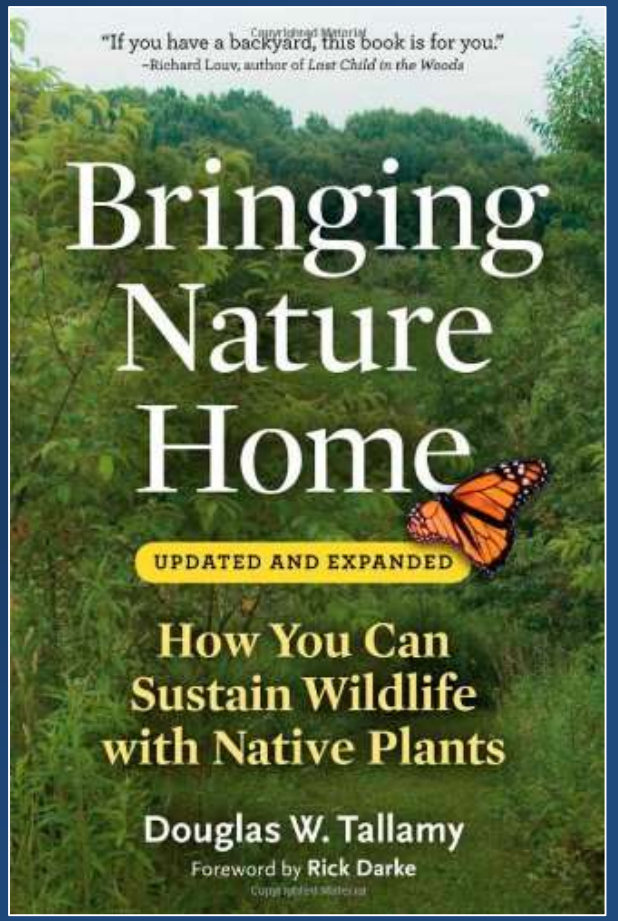
Ferns!

- Many great native ferns!
- Most need moist soil
- Large, clumping ferns
  - Cinnamon Fern
  - Royal Fern
- Evergreen fern
  - Christmas Fern
- Spreading ferns
  - Sensitive Fern
  - Netted Chain Fern

Cinnamon Fern grows 3’ tall in sun or part shade and moist soil

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

- D. Tallamy, *Bringing Nature Home*



Next Week:

- **Woody plants**
  - Same time, same place!
  - Registration closed
- **Piedmont Lawns and Lawn Alternatives**
  - Tues., April 25, 6:30 – 8:30 pm
  - Wed., April 26, 10:00 – noon
  - Registration closes April 21

Cross Vine, *Bignonia capreolata*

Learn More:
Going Native Website

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

Searchable plant database!

Learn More

Extension Gardener Handbook

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

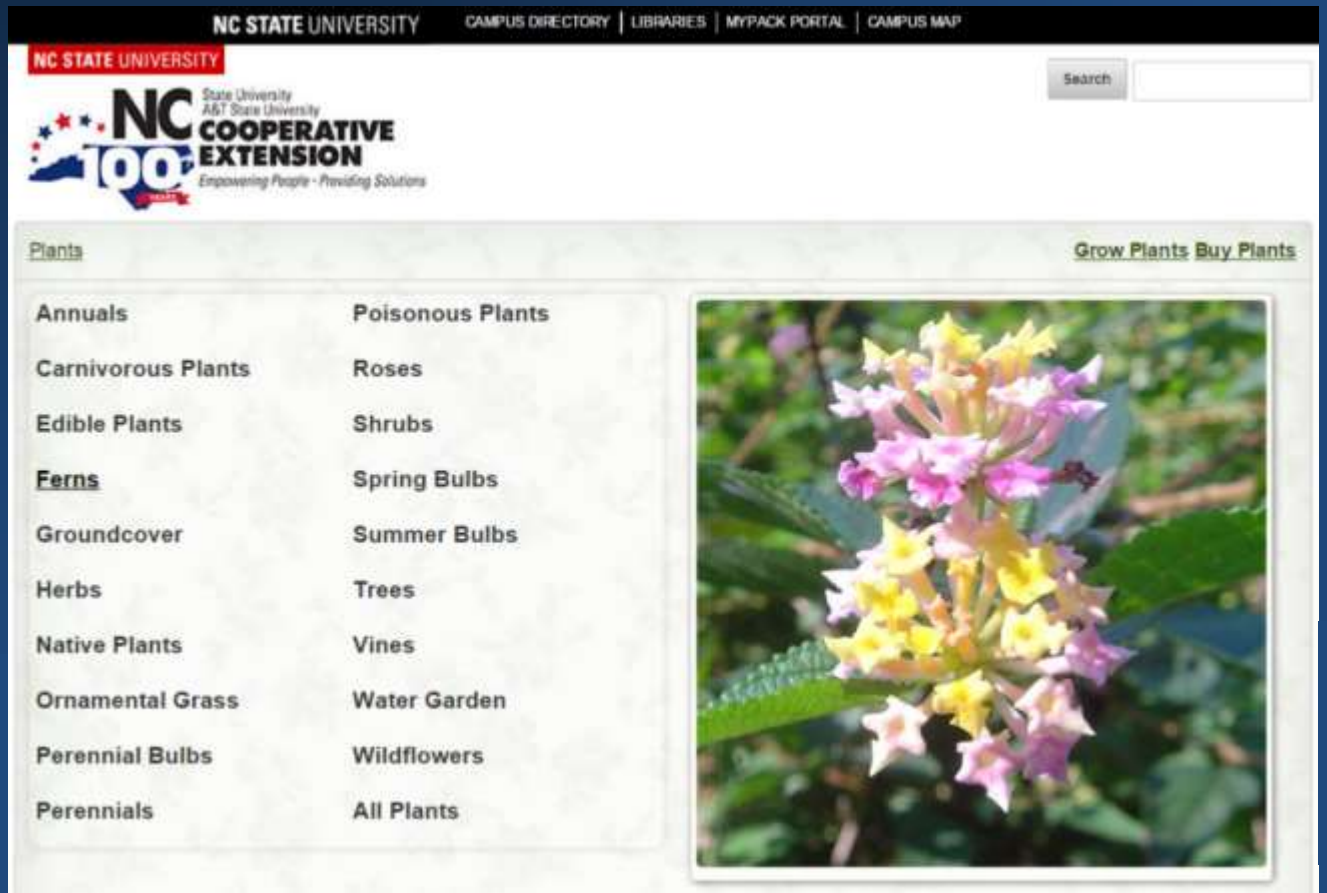
NC State Extension

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/



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 Kingsorse Garden, CC BY-NC-SA - 2.0

H. quercifolia 'Snow Queen'
Photo by Henryr10, CC BY-NC-ND - 2.0

Pollinator Paradise Garden

carolinapollinatorgarden.org

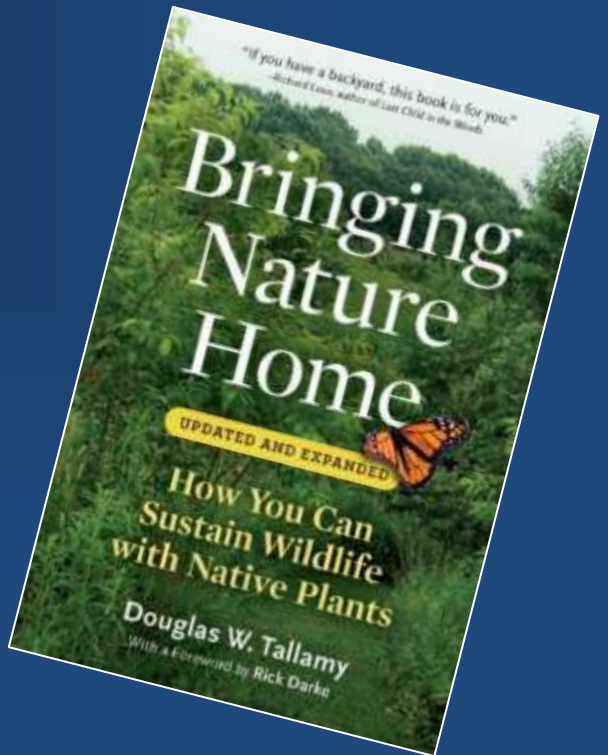
Chatham Mills, Pittsboro

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



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Review slides:

http://go.ncsu.edu/nativeplants