

NC COOPERATIVE EXTENSION

Extension Gardener - Class 1:

Think Before You Plant!

Colby Griffin,
Extension Agent – Horticulture
NCCE - Franklin County Center



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Think Before You Plant

- Course outline and goals
- What is Cooperative Extension
- The Big Picture:
 - Gardening in NC Piedmont
 - Sustainability: Water, wildlife and more!
 - Your needs and priorities



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Extension Gardener Short Course

Helping you grow sustainable landscapes that are:

- Resilient
- Beautiful
- Bountiful
- Life-sustaining




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Sustainable

- Functional
- Maintainable
- Environmentally sound
- Cost efficient
- Visually pleasing



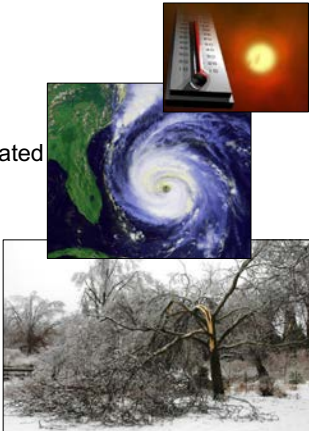
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Resilient

Capable of surviving weather and climate related challenges:


- Wind
- Drought
- Deluges
- Heat waves
- Ice storms



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Beautiful & Bountiful

- **Aesthetically pleasing**
 - Personal preferences
 - Neighborhood norms
- **Bountiful**
 - Fruitful: Yield fruits, vegetables, culinary herbs



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Life Sustaining

Nurture and shelter:

- People
- Pets and animals
- Pollinators
- Birds
- Beneficial insects
- Wildlife



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Course Goals

Create and care for landscapes that:

- Are less dependent on fertilizers, pesticides, irrigation
- Capture runoff on site
- Grow healthier plants
- Support more species
- Meet your needs
- Conserve energy




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Schedule

DATE	TOPIC
2/27:	Think Before You Plant
3/6:	Growing Healthy Soils
3/13:	Growing Veggies/Herbs
3/20:	The Care & Growing of Fruit Trees
3/27:	Selecting & Caring for Ornamental Plants
4/3:	Diagnosing Plant Problems & Pest Management




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Schedule

- Classes begin at 9:00 – please check in
- Break ~ 10:00 – 10:15
- Finish ~ 11:30ish, time for questions
- Restrooms...




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Course Resources

- **Extension Gardener Handbook** – online resource from NC State University
- <https://content.ces.ncsu.edu/extension-gardener-handbook>
- **Follow up email:** resources to learn more
- Handouts in class as appropriate




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Questions

- **For clarification** of information being covered – ask anytime
- **Help us stay on time** – save personal yard/garden questions or other topics for break, after class, etc.




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Course Evaluations...

- Suggestions to improve class
- Concerns about room set up, sound level, etc.
- Topics that need clarification
- Anonymous




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Miscellaneous

- Please turn cell phones on silent
- There are no "stupid" questions!



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What Is Cooperative Extension?




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Cooperative Extension

What We Do:

- Provide practical information you can trust
- To help individuals, families and communities
- Gain knowledge and skills
- For economic prosperity, environmental stewardship, and improved quality of life




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Practical Information You Can Trust

- Hands-on, How-to
- Solutions to your problems
- Research based
- Non-biased
- Live and local
- Center in every NC County




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What is Cooperative Extension?

- **A nationwide network of:**
 - Educators
 - Researchers
 - Volunteers
- **Funded through:**
 - Federal, State, County Government



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Where is Cooperative Extension?

- Based within each state's **land grant university** system
- Housed at:**
 - Colleges and Universities
 - Research stations
 - County centers
 - Online: eXtension.org

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NORTH CAROLINA A&T STATE UNIVERSITY

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Franklin County Center Extension Center

- 103 S. Bickett Blvd. - Louisburg
 - County Extension Director
 - Family/Consumer Science Agent
 - EFNEP Program Assistant
 - Horticulture Agent
 - Livestock/Local Foods Agent
 - 4-H Agent
 - Small Farms Agent
 - Farmer's Market Manager
 - Administrative Assistants

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Since 1914, Helping You Grow:

Responsible Youth

- 4-H and youth leadership

Strong, Healthy and Safe Families

- Food and nutrition education, disaster preparedness

<http://www.theproducelady.org/>





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Since 1914, Helping You Grow:

Profitable, Sustainable Farms and Forests

- Traditional and alternative crops and methods

Resilient, Life-sustaining Yards and Landscapes

- Edibles and ornamentals, lawns, gardens and landscapes




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Think Before You Plant!



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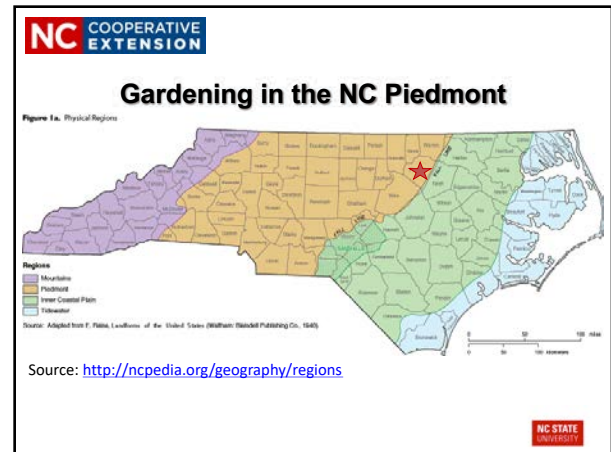
Think Before You Plant

Get the most out of this course – think before you plant!

- Is this the best place?
- What is needed here?
- Will this increase sustainability?




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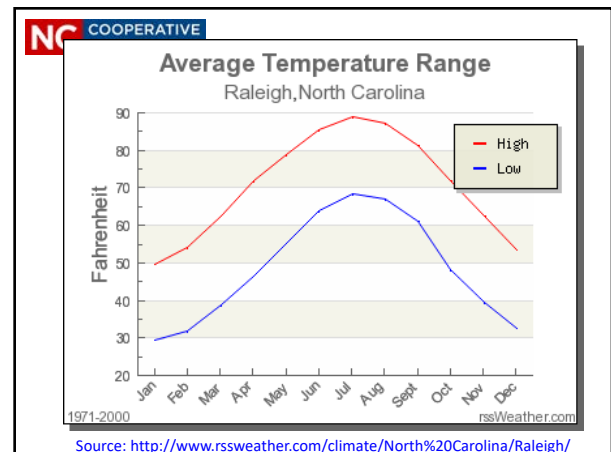
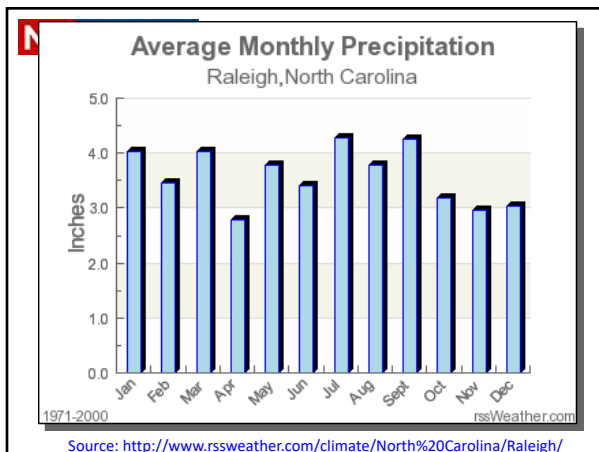
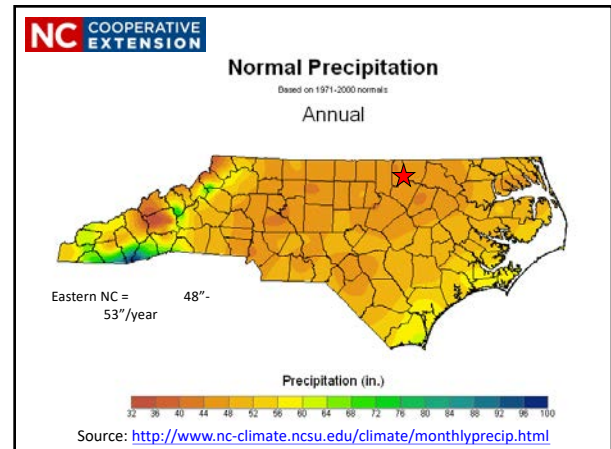
Gardening in the NC Piedmont

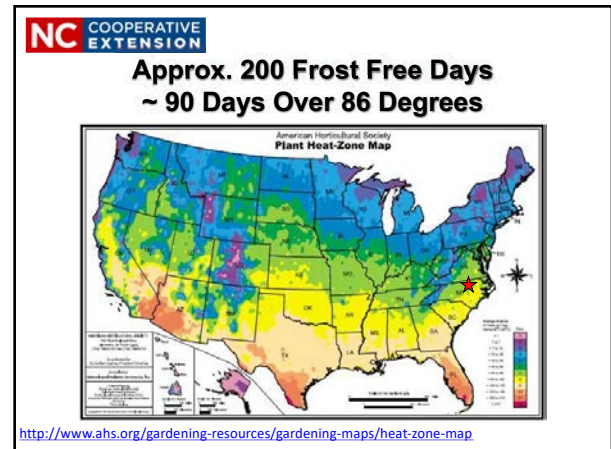
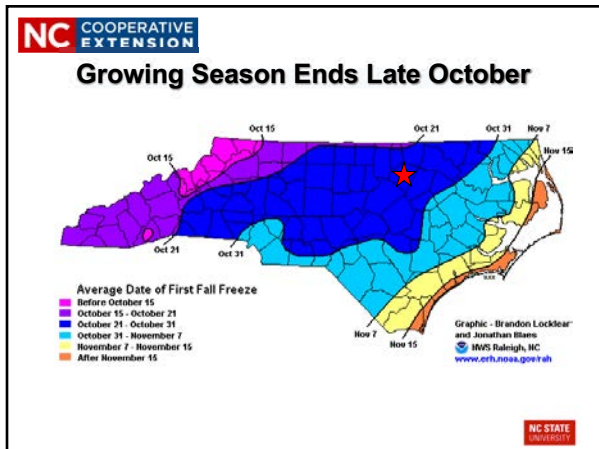
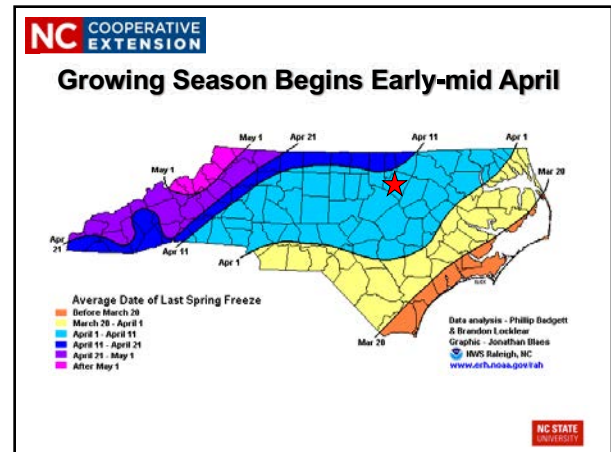
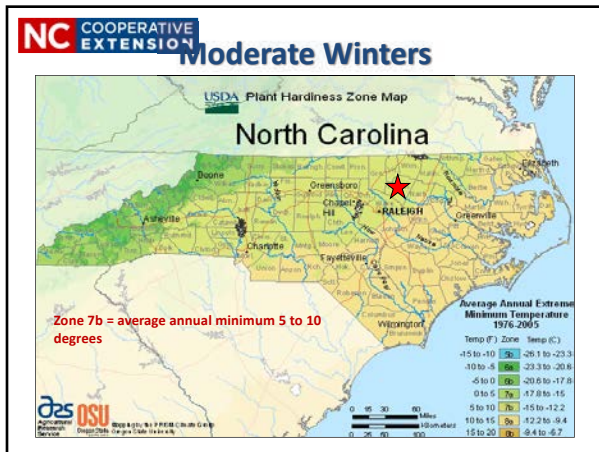
- Hot, humid summers
- Long growing season
- Moderate winters – can be erratic
- Rainfall throughout the year – can also be erratic!



Can grow vegetables outside year around with minimal protection

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Work Within Climate Limitations

Some things we can't grow:

- Too cold for tropical plants outdoors
- Too hot in summer for some temperate climate plants
- Too wet for true xeric plants

Irrigation needed for reliable production of fruits and vegetables

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Your Landscape Orientation

Knowing this will help:

- Conserve energy
- Place plants where they are most likely to thrive

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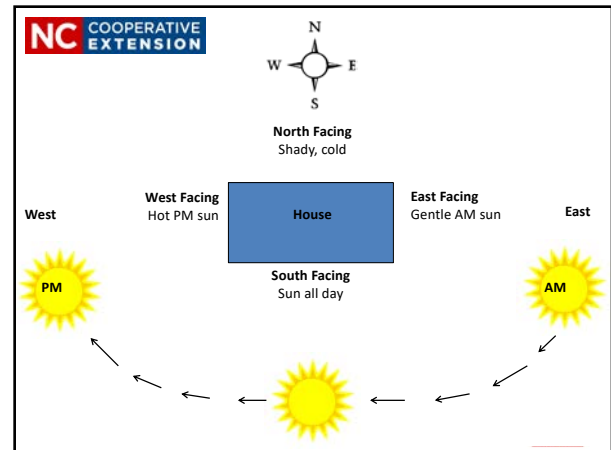
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Landscape Orientation

- **East** = morning sun, gentle
- **West** = direct afternoon sun, hot
- **North** = shaded, cold
- **South** = all day sun
 - Warms up earlier in spring
 - Best location for fruits and vegetables
- **Which way does your property slope?**



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Conserve Energy

- Shield home from cold winter winds
- Plant evergreen screen on north and northwest side
- Dense, branched to ground




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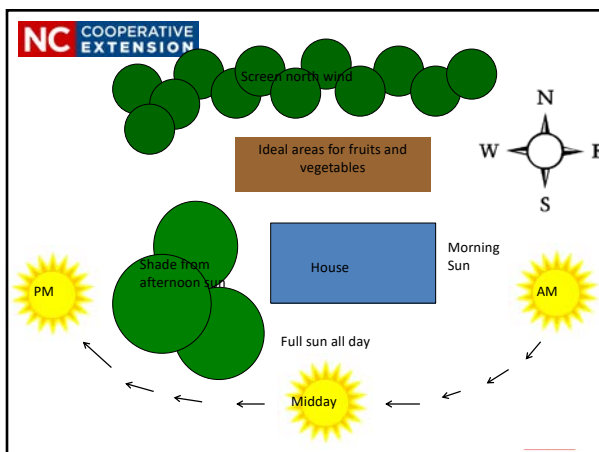
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Conserve Energy

- Plant deciduous trees on west to shade hot afternoon sun in summer
- Deciduous = lose leaves in winter



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Environmental Sustainability

- What goes into your yard?
- What leaves your yard?
- How many species does your yard support?



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What happens in your yard does NOT stay in your yard!


Your yard is part of the larger ecosystem connected by water



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Where Does the Water Go?



- From your roof and driveway?
From your property?
- **Downhill** - Ultimately to local stream, creek, or pond/lake
- **What does it carry with it?**
 - Soil, nutrients, pesticides, seed



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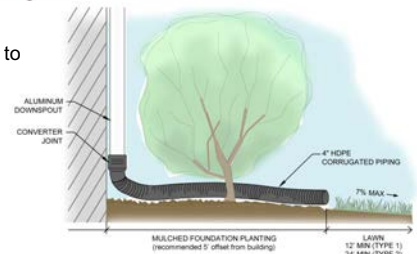
Typical Flow Patterns

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Capture Runoff Onsite

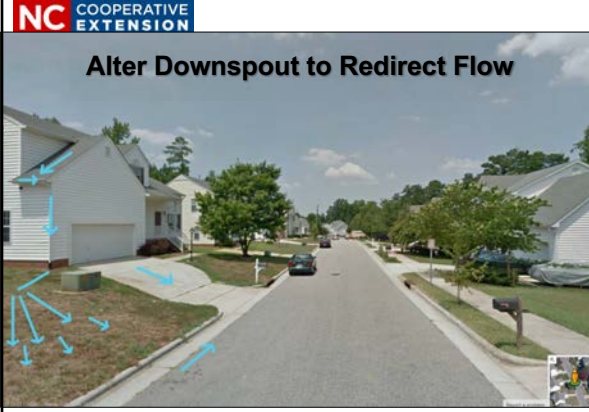
- Redirect downspouts to lawn



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Alter Downspout to Redirect Flow



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Rain Gardens

- Shallow, planted depressions that capture runoff and allow it to infiltrate

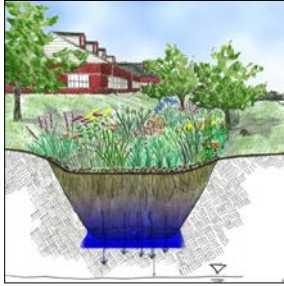


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Rain Garden


- Designed to capture first 1" of runoff
- Should infiltrate within 24-48 hours
- Select moisture tolerant plants



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Add a Rain Garden!



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Backyard Rain Gardens

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HOME	Stormwater and Your Rain Garden	Building a Rain Garden	Plant Selection
Garden Maintenance	Distribution Materials	With and Without	Contact Us



[Visit our Photo Gallery!](#)

[Click Here](#)


<https://stormwater.bae.ncsu.edu/resources/>

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Harvest Rainwater

- Capture and store for later use
- Rain barrels, cisterns
- Can add pump or rely on gravity



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Rain Barrels



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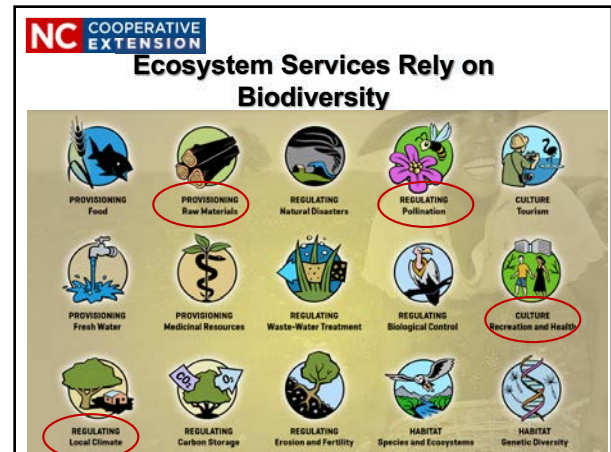
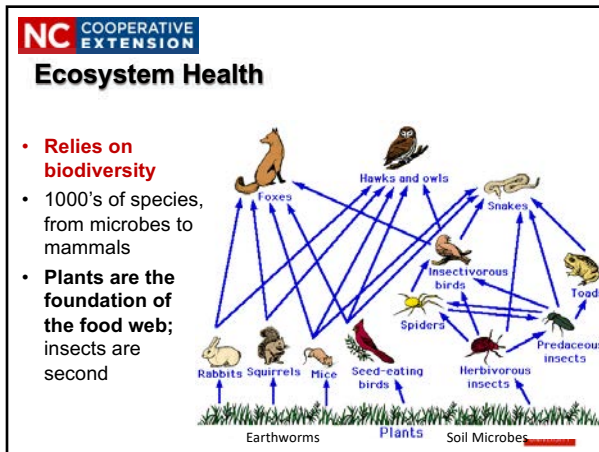
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Extension Gardener

- **Not just about stopping the bad stuff** from leaving your yard
- Helping you cultivate a resilient, life-sustaining yard that **contributes to ecosystem health**



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Native plants better support native wildlife

- Research shows native plants are essential for many birds and insects to complete their life cycle

Birds rear young on insects, particularly caterpillars

Monarchs

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Plant Natives

- "A plant that has fed nothing has not done its job"**
 - Doug Tallamy, *Bringing Nature Home*
- Choose species native to your region and adapted to your growing conditions

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Going Native

<https://projects.ncsu.edu/goingnative/>

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Diversity!

- Many species
- Evergreen and deciduous
- Flowers spring – fall
- LAYERS:**
 - Groundcover
 - Understory
 - Canopy

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Lawns

- Least environmentally sound aspect of landscape
- High inputs: fertilizers, chemicals, irrigation
- Low diversity – monoculture
- **Aim for yard to be less than 50% lawn**

**Connect to Existing Natural Areas**

- Fragmentation and habitat loss among greatest threats to wildlife

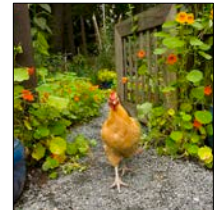
**Remove Invasives**

- **Invasive plants** colonize natural areas
- Out compete natives, reduce habitat value

Autumn
Olive**Think Before You Plant:
Your Needs and Priorities**

You have a limited amount of space and time – **what do you most want to do with it?**

- Grow fruits and vegetables
- Area for outdoor recreation/play/relax
- Create habitat for wildlife
- **Will be different for each person!**

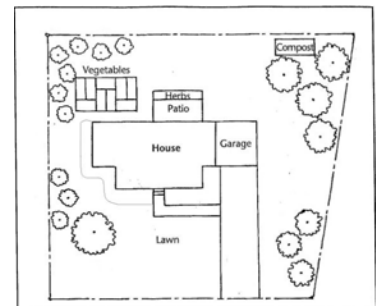
**Homework!**

- **Landscape assessment**
 - Framework to help you think before you plant!
 - For you – complete when and how you want

**Assessing Sustainability:
Base Map**

Mark existing:

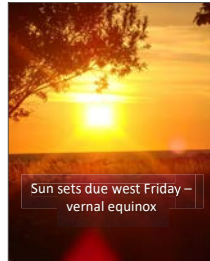
- Trees
- Planting beds
- Structures
- Impervious surfaces



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Identify N, S, E, W

- Is your home sheltered from north wind?
- Do deciduous trees provide shade from afternoon (west) sun?
- Do fruit/vegetable/herb plantings receive at least 6-8 hours direct sun per day?

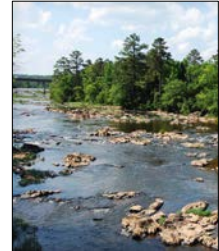


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Where does water from your landscape go?

- Do downspouts direct to driveway?
- Can runoff be intercepted with a rain garden?
- Can you install rain barrels, cistern?
- **Where does water go when it leaves your yard?**
 - Before it reaches the **Tar River – Pamlico Sound & Atlantic Ocean**



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How Diverse Is Your Landscape?

- % lawn? % trees?
- Do flowers bloom spring-fall? When are dearth periods?
- How many different species are in your landscape? Any native plants?
- **Are there layers?** Groundcover, understory, canopy



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Can you connect existing natural areas to:

- Create larger area for habitat
- Bridges two or more existing areas to create a corridor
- Work with neighbors to connect natural areas



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Your Needs and Priorities: What Are They?

- Grow fruits and vegetables
- Area for outdoor recreation/play/relax
- Screening, privacy
- Shade
- Pets, animals
- Increase diversity
- Other



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Identify Problem Areas

- Areas you are not happy with appearance
- High maintenance areas
- Plants that need frequent watering
- Spots where nothing grows
 - Too wet, too dry, too shady




Narrow strips of turf are high maintenance!

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Questions?



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Gardening News

- **Extension Gardener** email list
 - Sustainable gardening information
 - Seasonal email updates
 - What to plant, pest alerts, timely tips Upcoming classes and events
- To subscribe:
 - Google – NCSU Extension Gardener
 - Newsletter tab on left
 - Email Sign-up

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Next Week: Growing Healthy Soils

- Working with clay
- Adding organic matter: cover crops, compost
- Soil pH
- Soil testing



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Contact Info:

Franklin County Center
103 South Bickett Blvd.
Louisburg, NC 27549
<http://franklin.ces.ncsu.edu/>

919-496-3344
colby_griffin@ncsu.edu

**EXTENDING KNOWLEDGE
CHANGING LIVES**

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Spring Blooming Bulbs


For Eastern Piedmont of North Carolina

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What Are Bulbs?

- Specialized roots adapted to survive harsh conditions
- Many spring blooming bulbs come from areas with hot, dry summers
- To perennialize, most need very good drainage, especially in summer



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Using Bulbs in the Landscape

- How depends on whether they are: Annuals or Perennials
- **Perennial** = need to allow foliage to die down naturally



Annual Bulbs

- Easiest to keep all annuals together
- **For quick (but short lived) color**
- In masses or
- Mixed varieties



Annual Bulbs

- Layered with annuals
 - Pansies
 - Forget me nots
 - English daisy
- Adds color and cover in winter



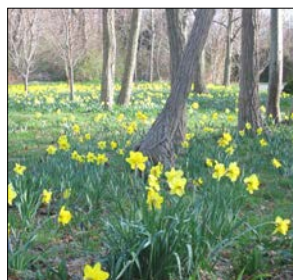
In Containers

- Simple or Elaborate



Perennial Bulbs

- **Naturalized**
 - Under deciduous trees
 - Scatter when planting for natural look
- **Let foliage die down naturally**



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Perennial Bulbs


- **Mixed Plantings**
 - Base of deciduous shrubs, small trees
 - With perennials
 - Don't damage perennial roots when planting
- **Plan for empty spots left by dormant bulbs**



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Buying Bulbs

- If comparing prices, make sure same size
- Size parameters for each species online
- Buy top size when using as annuals
 - Bigger bulb = bigger flower, more flowers
- Can buy smaller when naturalizing

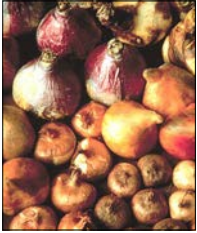


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Planting Bulbs

- When???
 - November – Early December
- Storing Bulbs
 - Cool (40°), dry
 - Refrigerator – No fruit!!
- General Requirement
 - Good Drainage!!!
 - Sun (in spring)



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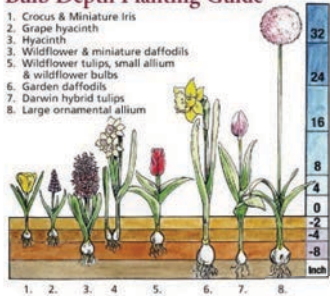
Planting Bulbs

How Deep?

- General:
- 5" small bulbs
- 8" large bulbs
- Measured from base of bulb to top of MULCH

Bulb Depth Planting Guide

1. Crocus & Miniature iris
2. Grape hyacinth
3. Hyacinth
4. Wildflower & miniature daffodils
5. Wildflower tulips, small allium & wildflower bulbs
6. Garden daffodils
7. Darwin hybrid tulips
8. Large ornamental allium





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Planting Bulbs

- Mass Planting vs. Individual holes
- Layering bulbs
- Spacing depends on mature size – small bulbs closer together

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Fertilizing Bulbs

- Soil Test
 - pH 6.0 – 7.0
- Not necessary for annual bulbs
 - Flower already in the bulb!!
- For perennial bulbs
 - Phosphorous and Potassium when planting based on soil test results
 - Slow release when come up in spring




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Bulbs and Deer

- Deer Favorites
 - Crocus
 - Tulips
 - Lilies
- Deer Resistant
 - Daffodils
 - Amaryllis
 - Ipheion
 - Alliums
 - Leucojum
 - Spanish Bluebells ~



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Annual Bulbs

Usually only good for one season:

- Scilla
- Puschkinia
- Chionodoxa
- Dwarf and Dutch Iris
- Galanthus (Snowdrops)
- Hybrid Tulips
- Large Flowered Crocus
- Ranunculus

But are so inexpensive it may be worth it!




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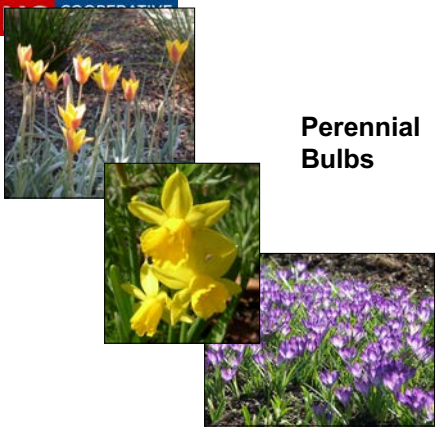
More Annual Bulbs

May get a few years out of these:

- **Alliums**
 - Large flowered types shorter lived
 - Small flowered types may become weedy
- **Anemones**
 - Blanda – 1 year
 - Coronaria – few years
- **Hyacinths and Grape Hyacinths**



Perennial Bulbs




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Tommies

Crocus tommasinianus

- Smaller flowered but persistent
- Could naturalize in lawn
- 3" tall
- Shades of purple and white
- Reportedly squirrel proof




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Lady Tulips

Tulipa clusiana

- Much smaller and earlier flowering than hybrid tulips
- 8" – 12"
- Flowers open wide during day
- Need excellent drainage to perennialize

'Cynthia'




DATE 2017

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Star Flower

Ipheion uniflorum

- Often found naturalized abundantly in old towns
- 6" tall
- 'Wisley Blue' – bluer than species
- Foliage has garlic smell when crushed



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Blue Bottles

Muscari neglectum


- Smaller than hybrid grape hyacinth
- Bloom with daffodils
- 6"-8"
- Need good drainage



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Daffodils


- Many types – divided into 12 divisions
- Some divisions do better in the South than others
- Pink-peach types generally less reliable
- Good drainage – especially in summer
- Sun while foliage up



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Daffodils – Tazettas

Paperwhite types - fragrant




'Minnow' 'Grand Soleil D'Or' 'Geranium'

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Daffodils – Cyclaminus

Relatively short – early flowering




'Tete a Tete' 'Jetfire' 'Jack Snipe'

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Daffodils – Large Cup

More reliable than Trumpets



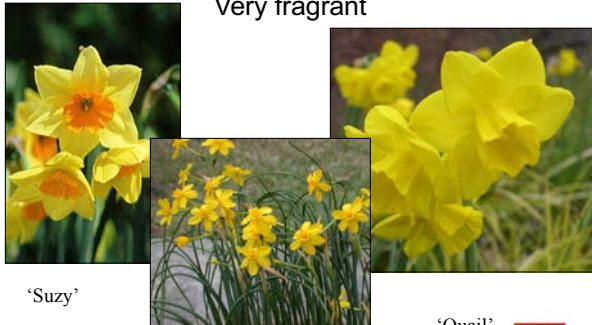
'Ice Follies' 'Fortissimo' 'St. Keverne'

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Daffodils – Jonquils

Very fragrant




'Suzy' 'Baby Moon' 'Quail'

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Daffodils – *Triandrus*

Later Blooming, nodding flowers



'Thalia' 'Hawera'

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Spanish Bluebells

Hyacinthoides hispanica

- Blue, pink, white
- Woodland soil – work well with azaleas
- Part shade



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Summer Snowflake

Leucojum aestivum

- Similar to Snowdrops and Lily of the Valley
- Moist soil
- Flower after most bulbs



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Star of Bethlehem

Ornithogalum umbellatum

- Often weedy!
- Will grow almost anywhere
- Foliage has a silver streak down center – flower has green stripe on back of petals
- Flowers open in midday




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Lilies

Asiatic Lilies

- Difficult to perennialize but not impossible
- Need right conditions
- Part shade – especially afternoon
- Rich, high organic soil
- Good drainage
- pH around 5.5 - 6.0
- Deer favorites!

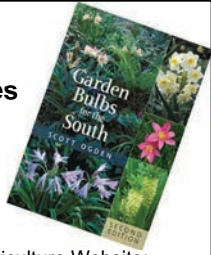


perennial

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Bulb References

- Garden Bulbs for the South
 - Scott Ogden
- Bulbs for Warm Climates
 - Thad Howard
- Online Bulb Information – Urban Horticulture Website:
 - <http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/>
 - Spring Bulbs, Summer Bulbs
 - Bulbs that perennialize



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EXTENSION**

**Next Week:
Growing Healthy Soils**

- Working with clay
- Adding organic matter: cover crops, compost
- Soil pH
- Soil testing



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**EXTENDING KNOWLEDGE
CHANGING LIVES**

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