

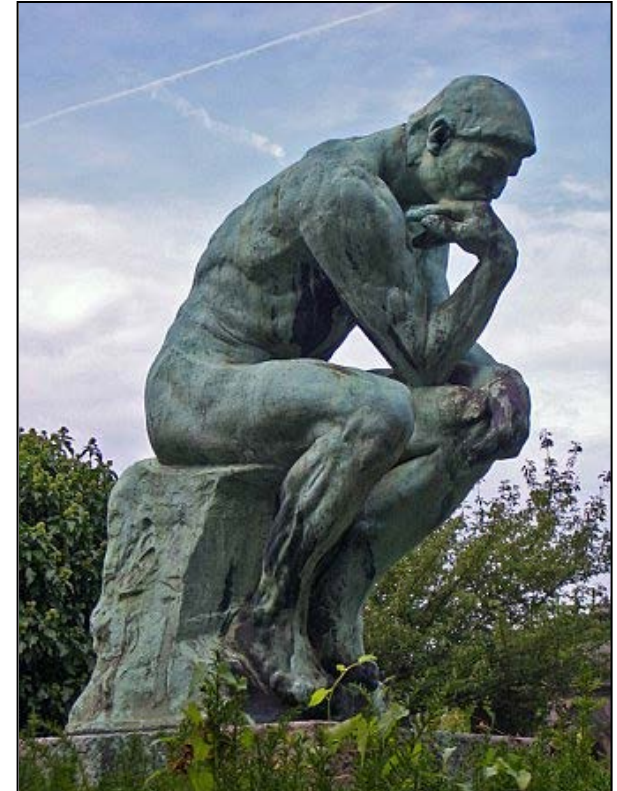
Extension Gardener, Class 1: **Think Before You Plant!**

Charlotte Glen,
Extension Agent – Horticulture
NCCE - Chatham County Center



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



Extension Gardener

Helping you grow sustainable landscapes that are:

- Resilient
- Beautiful
- Bountiful
- Life-sustaining



Sustainable

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



Resilient

Capable of surviving weather and climate related challenges:

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



Beautiful & Bountiful

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



Life Sustaining

Nurture and shelter:

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



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



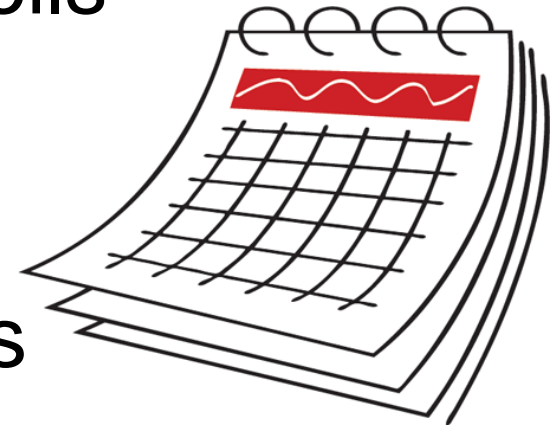
Schedule

P.M., A.M. Topic

- 3/17-18: Think Before You Plant
- 3/24-25: Growing Healthy Soils
- 3/31, 4/2: Lawns

NO CLASS week of 4/6

- 4/15-16: Vegetables & Herbs
- 4/21-22: Fruits & Berries

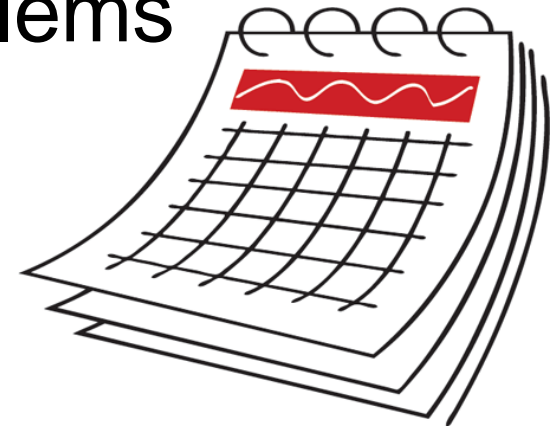


Schedule

P.M., A.M. Topic

- 4/28-29: Selecting Plants
- 5/6, 5/5: Landscape Care
- 5/14, 5/13: Diagnosing Problems
- 5/19, 5/20: IPM

Make up: May 28



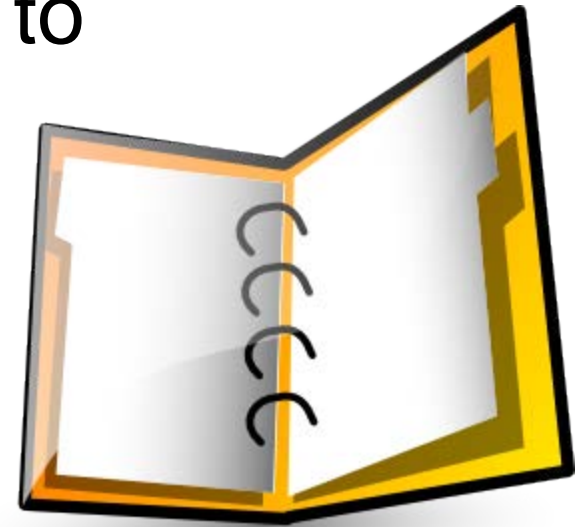
Schedule

- Classes begin:
 - 6:00 p.m., evening series
 - 9:30 a.m., morning series
- 15 minute break halfway through
- Coffee, hot tea, water and refreshments will be provided every class



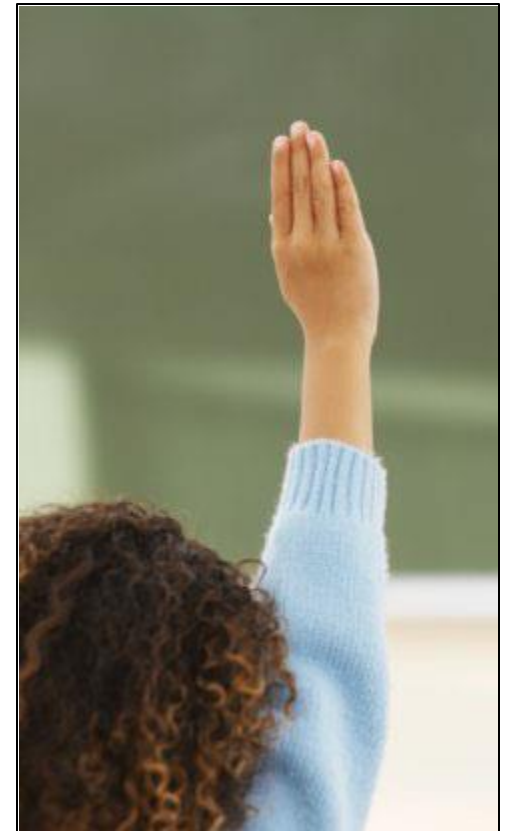
Course Resources

- **Binder** – notes each week
- **Follow up email:** resources to learn more
- **CD** at end of course
- Weekly content and resources **posted online**



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.



Suggestion/Feedback Box

- Suggestions to improve class
- Concerns about room set up, sound level, refreshments, etc.
- Topics that need clarification
- **Class 1:**
 - What do you most hope to learn from this course?
 - Refreshment preferences



Miscellaneous

- Turn cell phones on silent
- **Reduce waste** - bring favorite mug or cup!
- Refreshments provided – additional food allowed
- If miss PM class, can attend AM session



What Is Cooperative Extension?



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



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**



What is Cooperative Extension?

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



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

**NC STATE
UNIVERSITY**



New Chatham County Agriculture and Conference Center

- Hwy 64 west, Pittsboro - adjacent to CCCC campus
- Will house:
 - Cooperative Extension
 - Soil and Water Conservation
 - USDA Farm Service Agency
 - NC Forestry Service
 - 800 seat auditorium + break-out rooms!

March 2016



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/>

Since 1914, Helping You Grow:

Profitable, Sustainable Farms and Forests

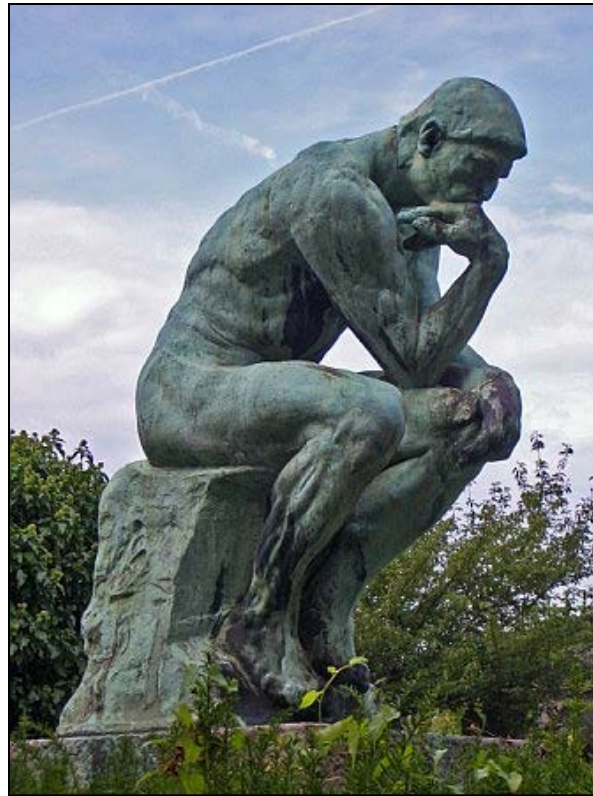
- Traditional and alternative crops and methods

Resilient, Life-sustaining Yards and Landscapes

- Edibles and ornamentals, lawns, gardens and landscapes



Think Before You Plant!



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?

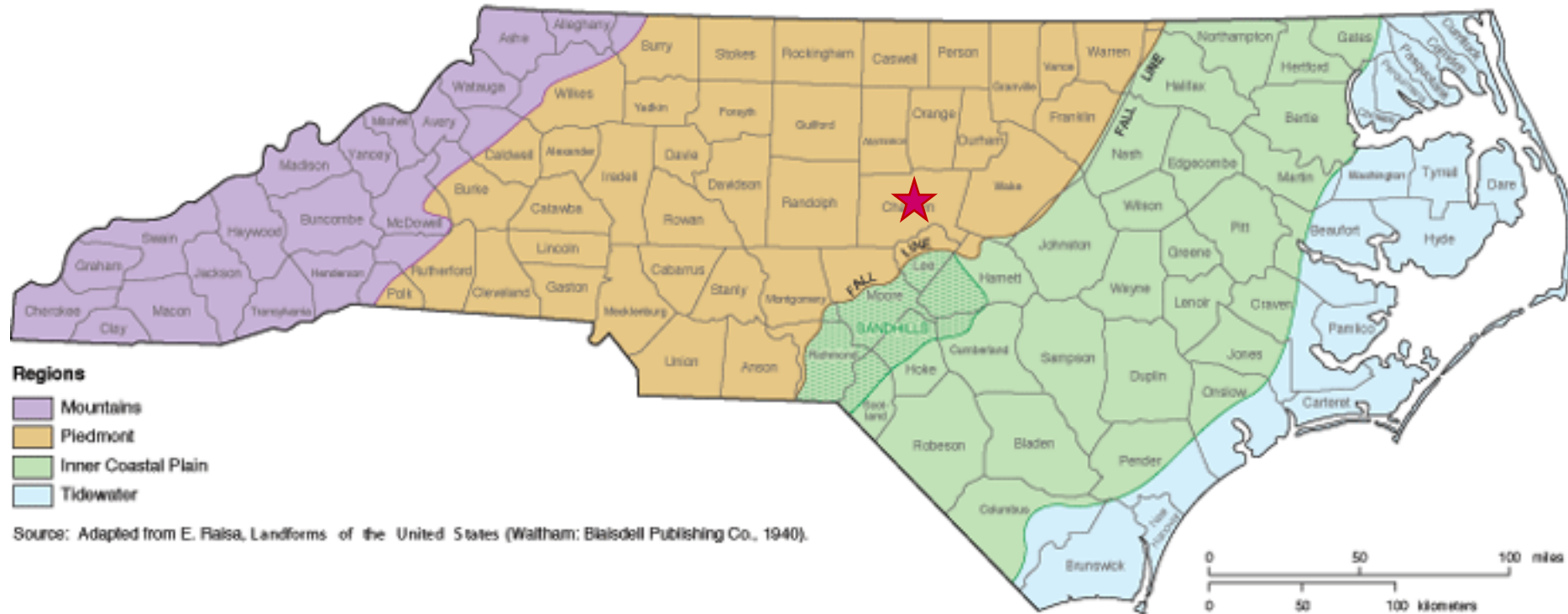


The BIG Picture



Gardening in the NC Piedmont

Figure 1a. Physical Regions



Source: <http://ncpedia.org/geography/regions>



Gardening in the NC Piedmont

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



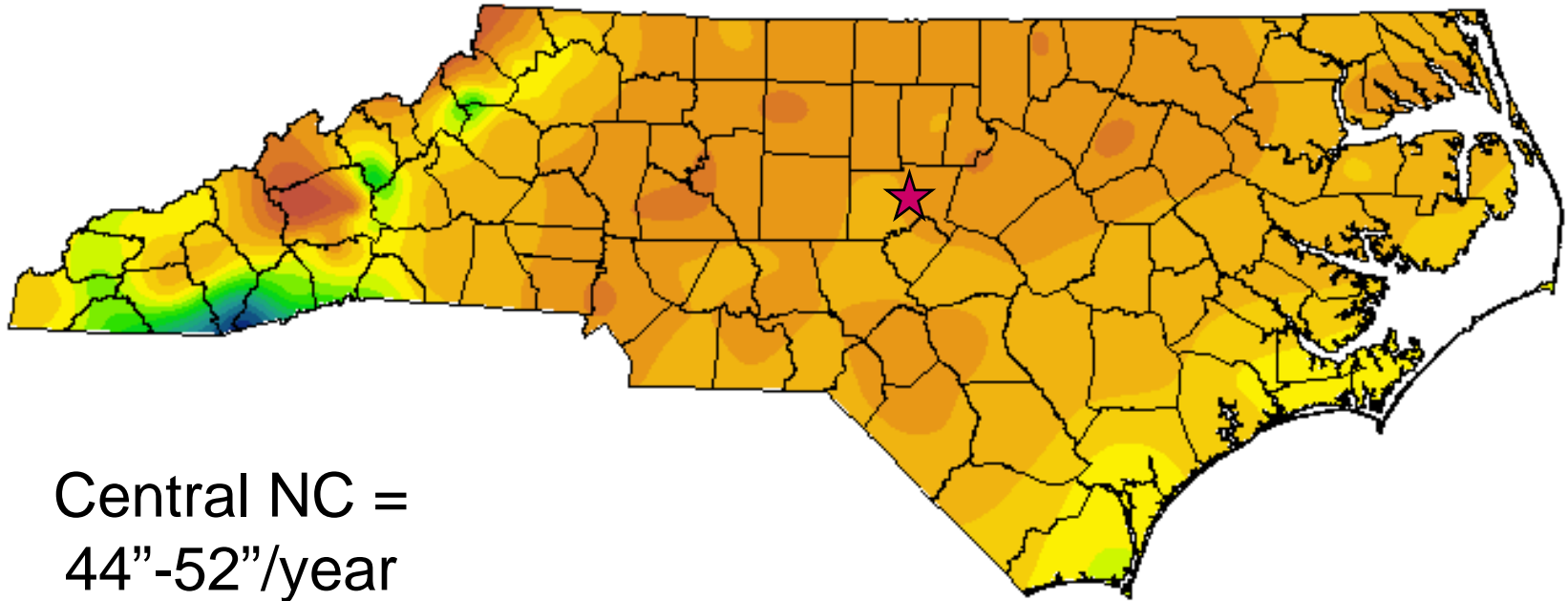
Can grow vegetables outside year around with minimal protection



Normal Precipitation

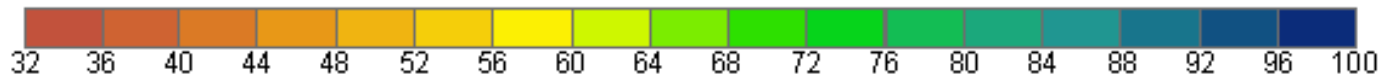
Based on 1971-2000 normals

Annual



Central NC =
44"-52"/year

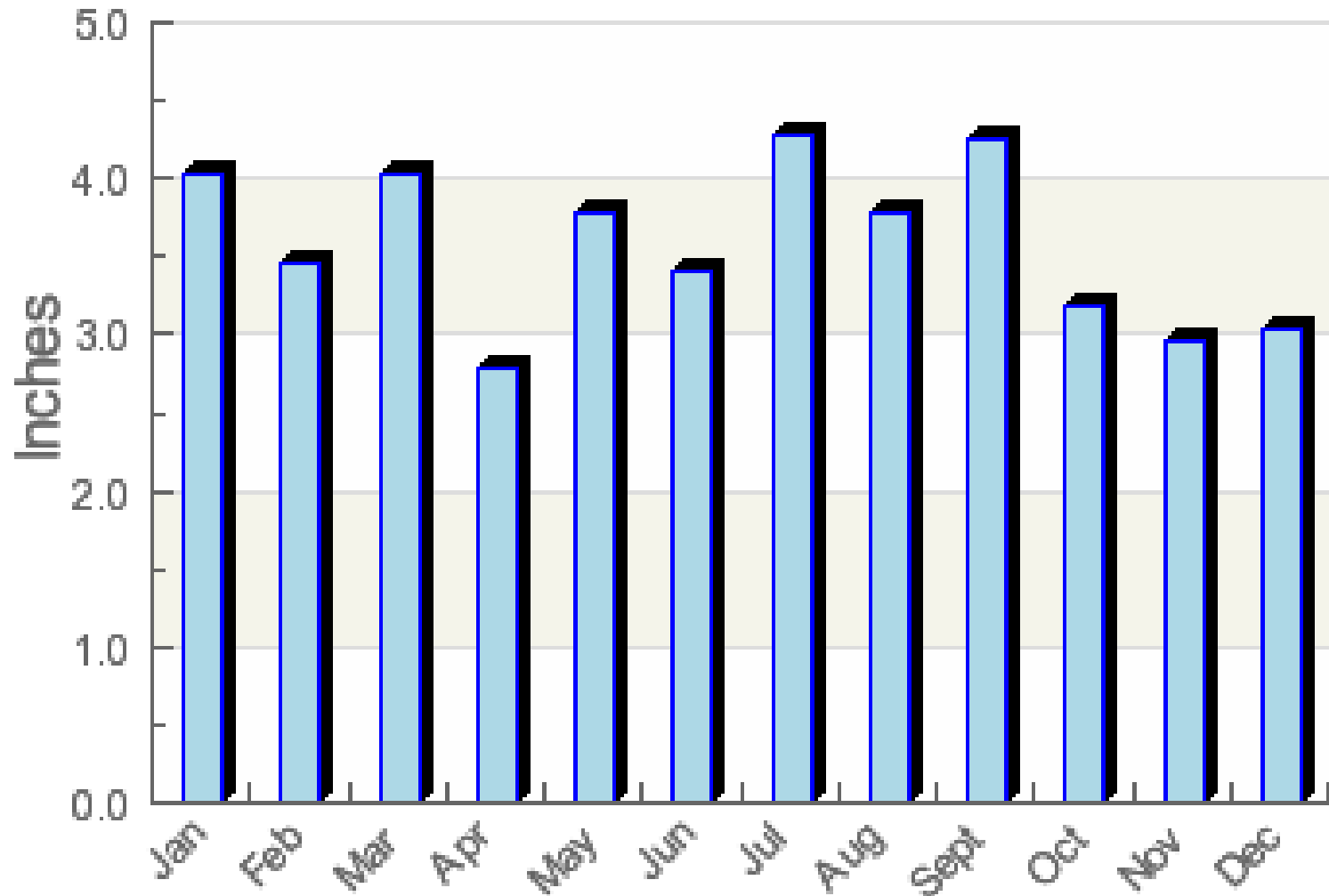
Precipitation (in.)



Source: <http://www.nc-climate.ncsu.edu/climate/monthlyprecip.html>

Average Monthly Precipitation

Raleigh, North Carolina



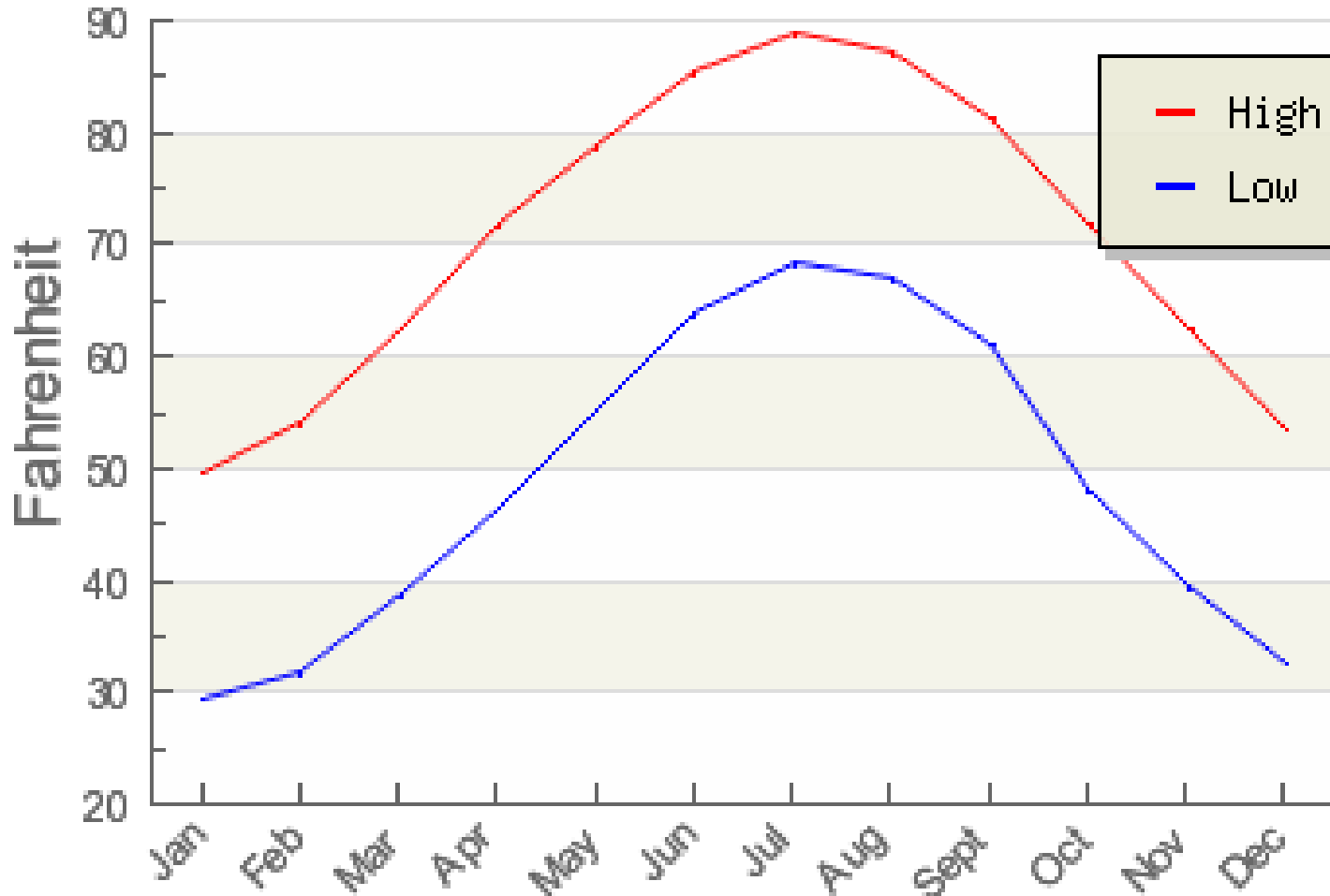
1971-2000

rssWeather.com

Source: <http://www.rssweather.com/climate/North%20Carolina/Raleigh/>

Average Temperature Range

Raleigh, North Carolina

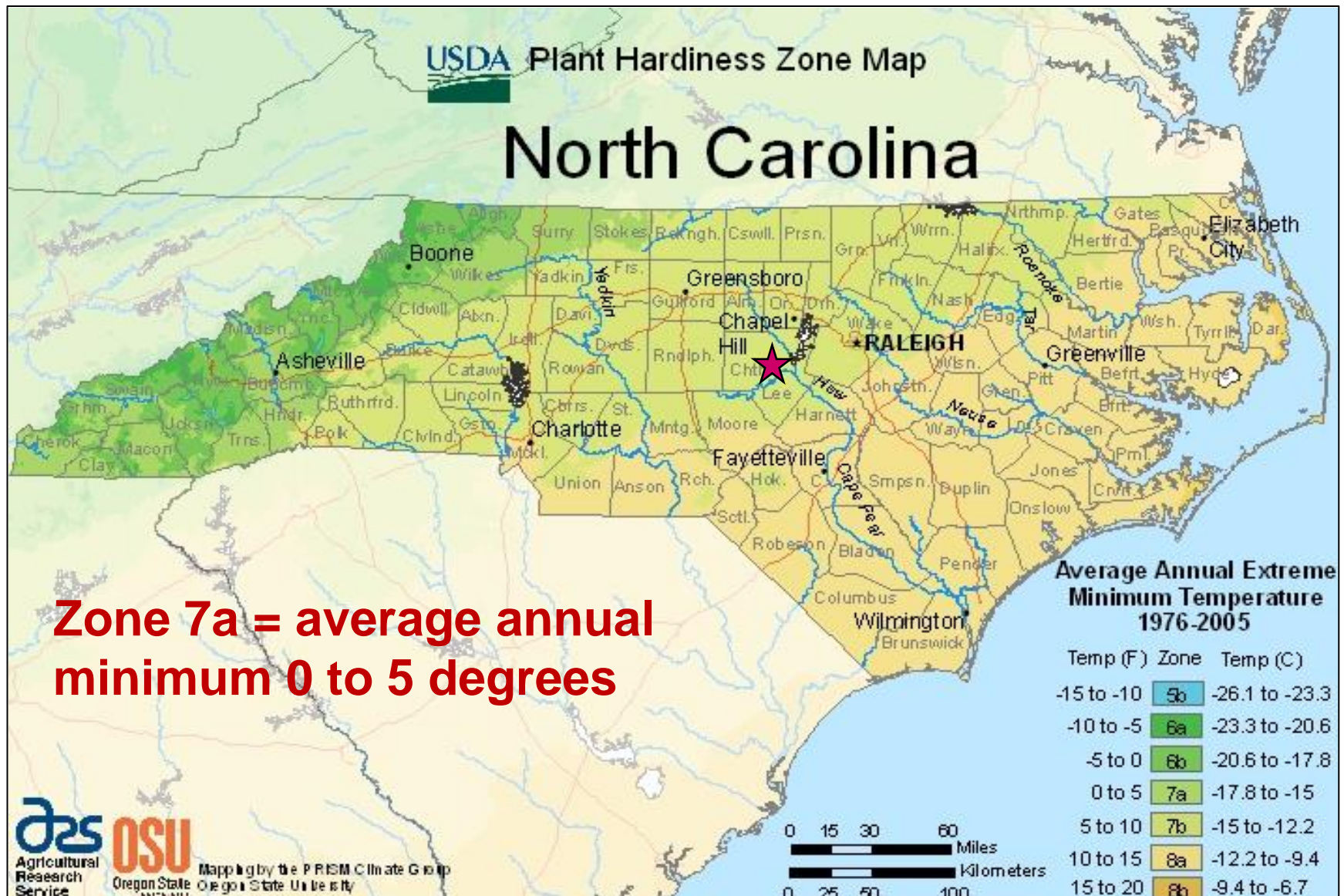


1971-2000

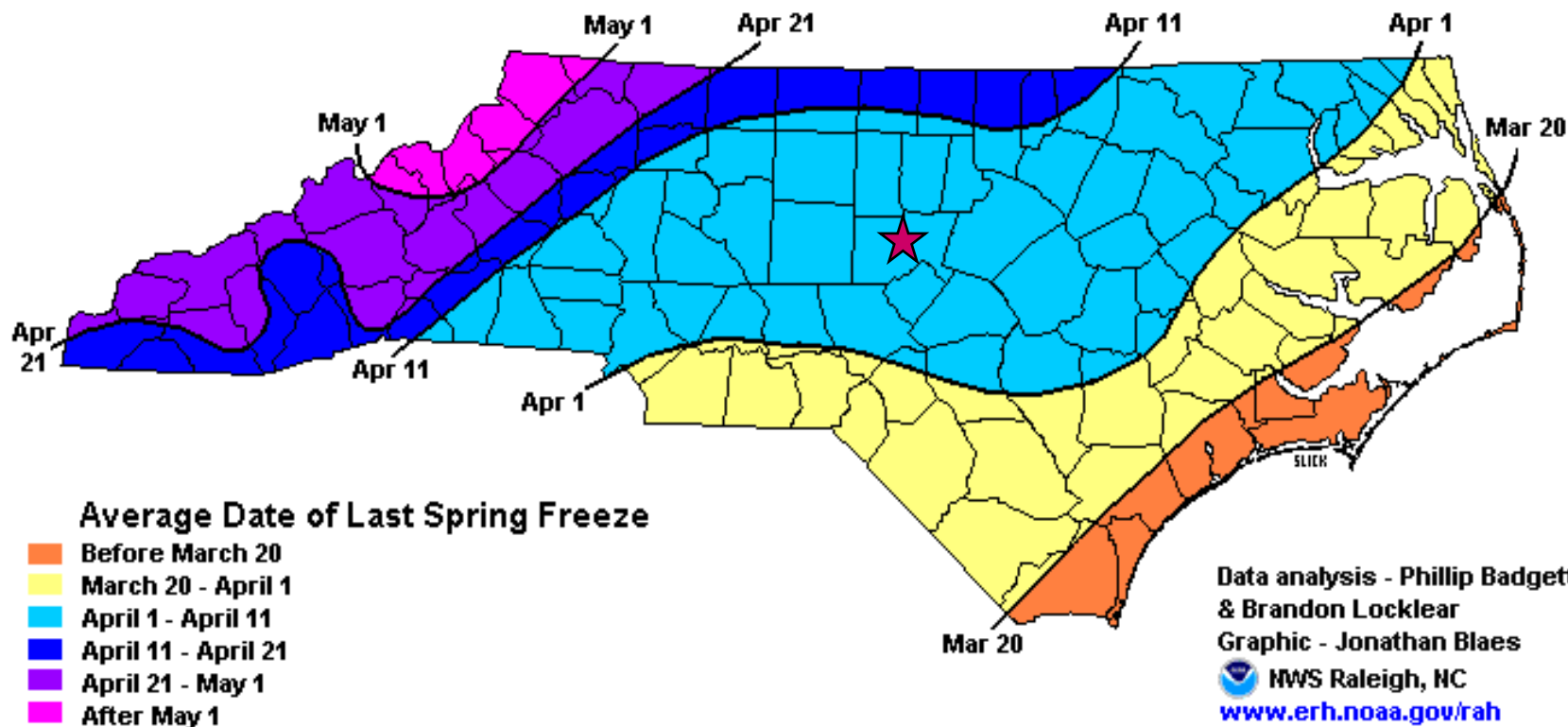
rssWeather.com

Source: <http://www.rssweather.com/climate/North%20Carolina/Raleigh/>

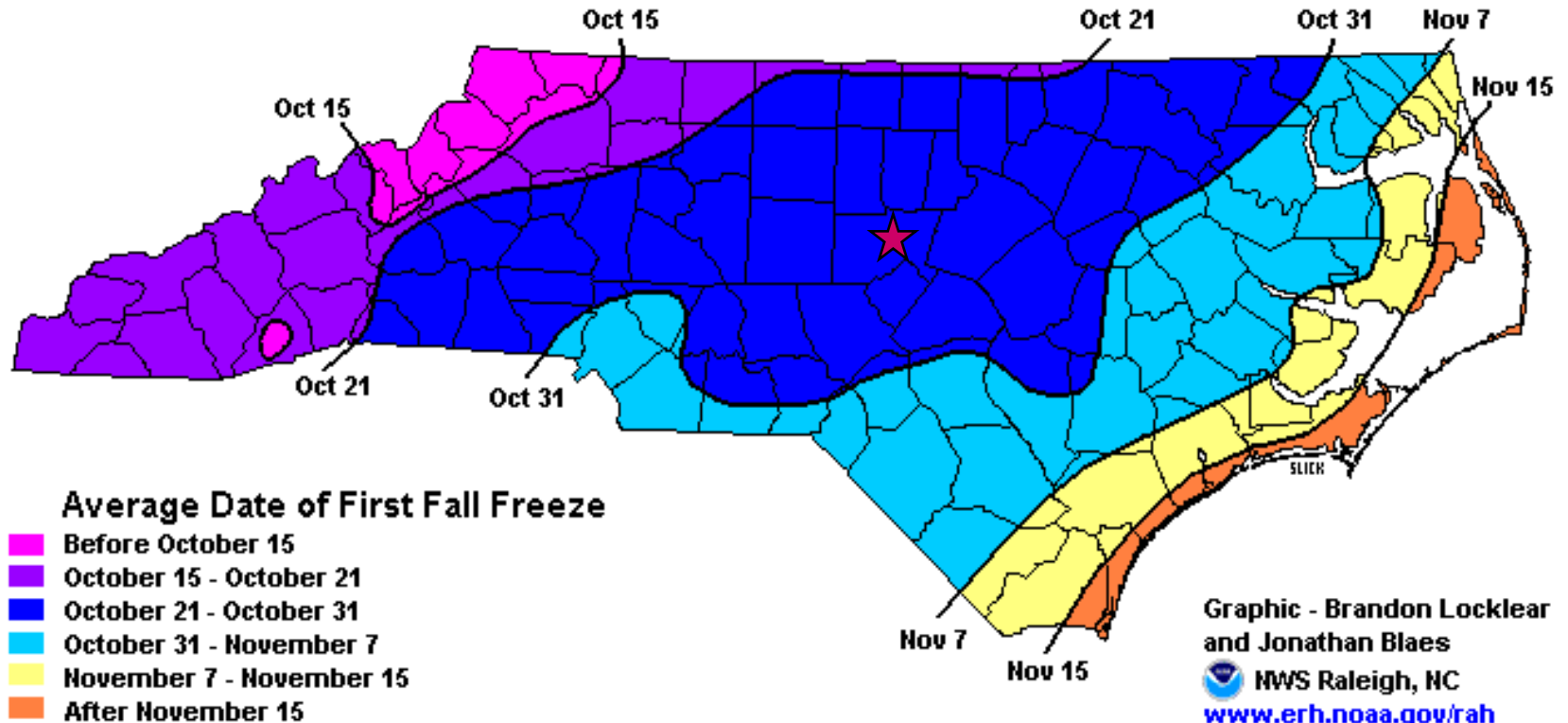
Moderate Winters



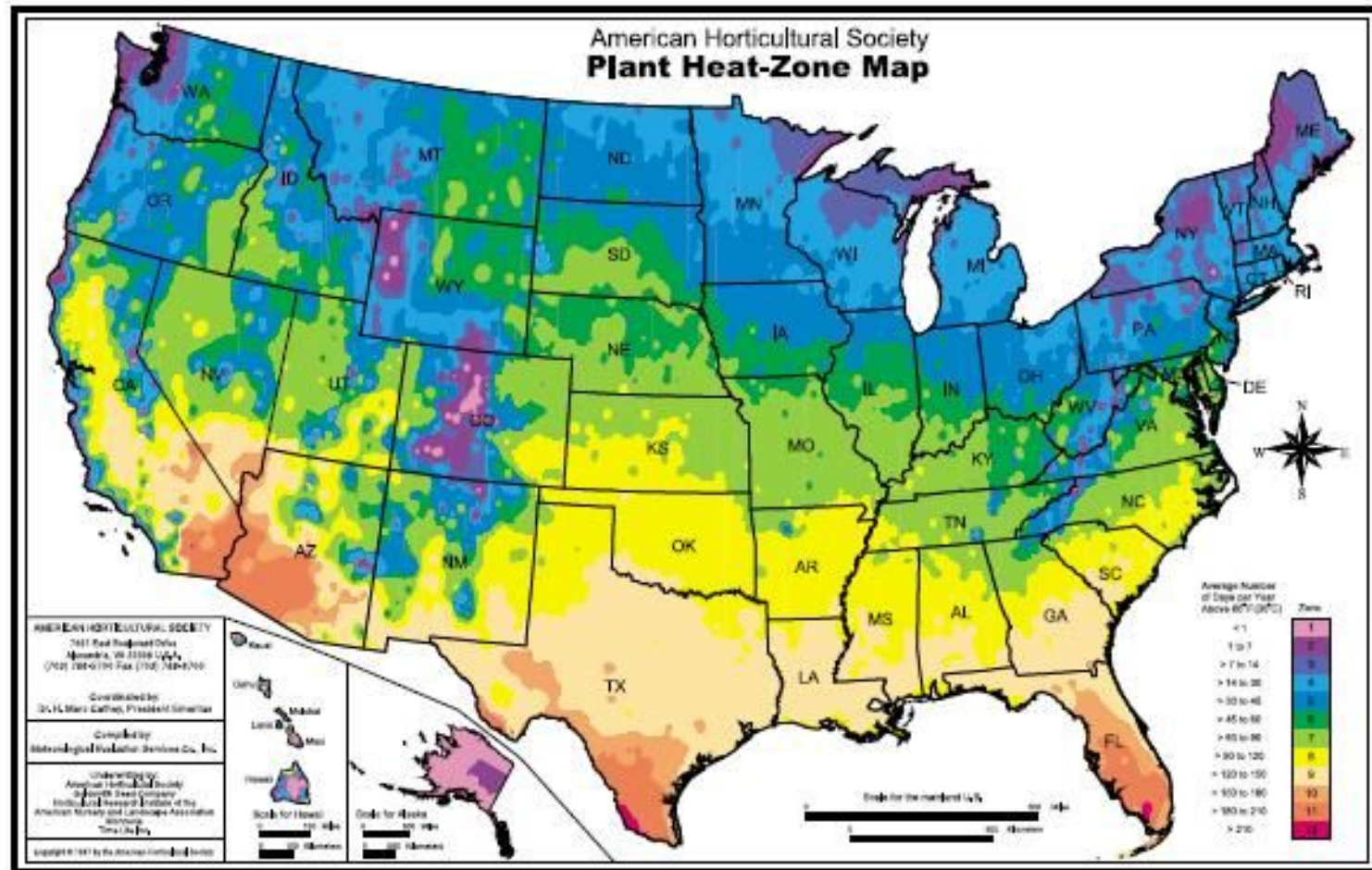
Growing Season Begins Early-mid April



Growing Season Ends Late October



Approx. 200 Frost Free Days ~ 90 Days Over 86 Degrees



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

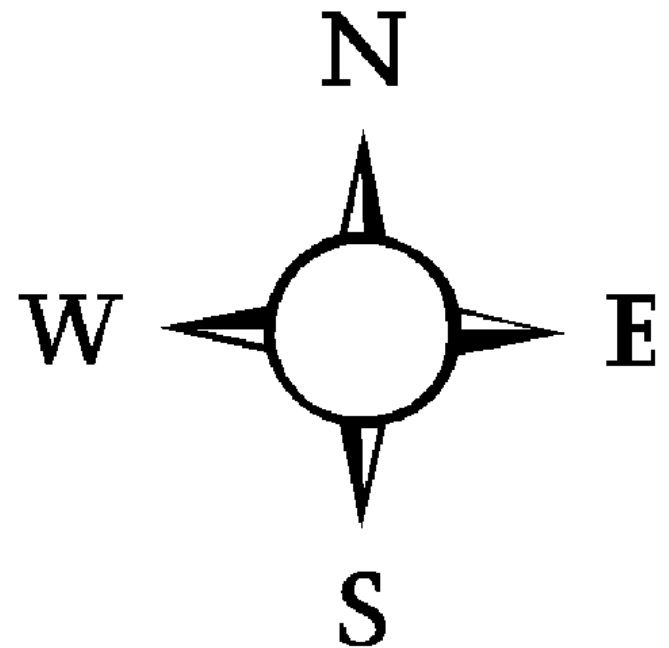
Irrigation needed for reliable production of fruits and vegetables



Your Landscape Orientation

Knowing this will help:

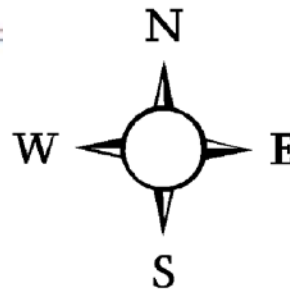
- Conserve energy
- Place plants where they are most likely to thrive



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?**





North Facing
Shady, cold

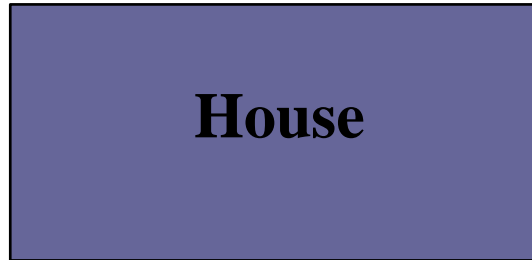
West Facing
Hot PM sun

East Facing
Gentle AM sun

South Facing
Sun all day

West

East



Conserve Energy

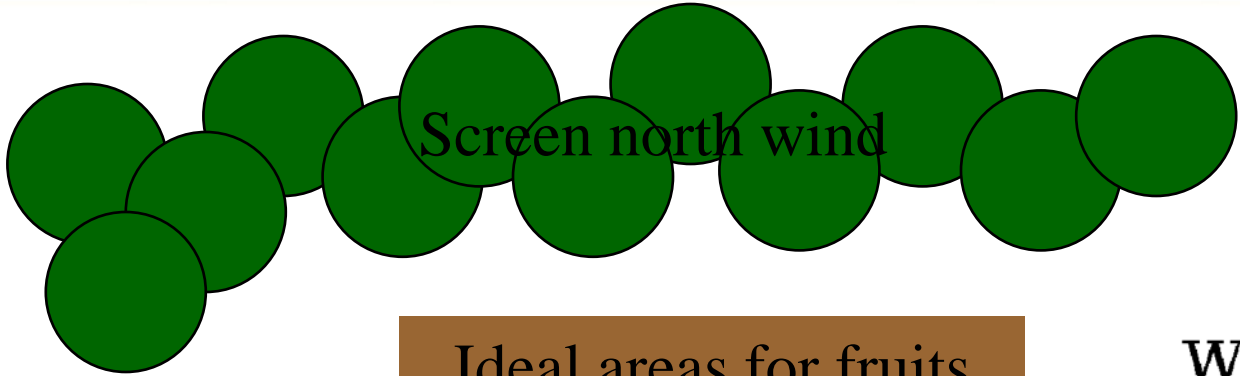
- Shield home from cold winter winds
- Plant evergreen screen on north and northwest side
- Dense, branched to ground



Conserve Energy

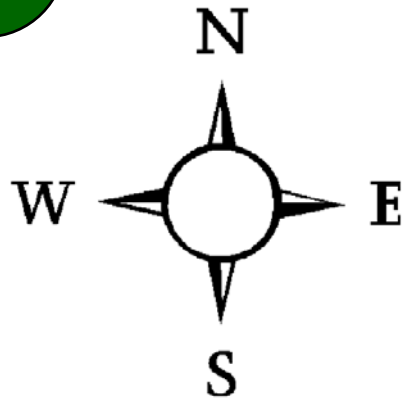
- Plant deciduous trees on west to shade hot afternoon sun in summer
- Deciduous = lose leaves in winter





Screen north wind

Ideal areas for fruits and vegetables

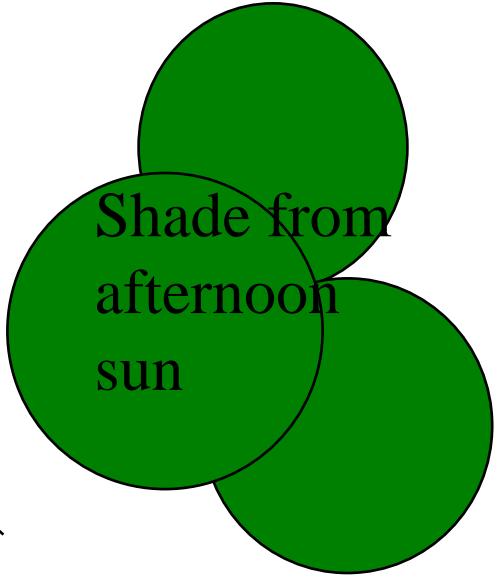


House

Morning Sun



PM

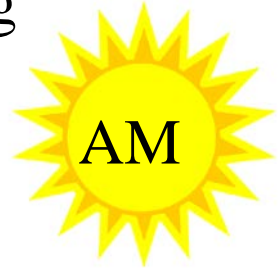


Shade from afternoon sun

Full sun all day



Midday



AM



Environmental Sustainability

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



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

**Your yard is part
of the larger
ecosystem
connected by
water**



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

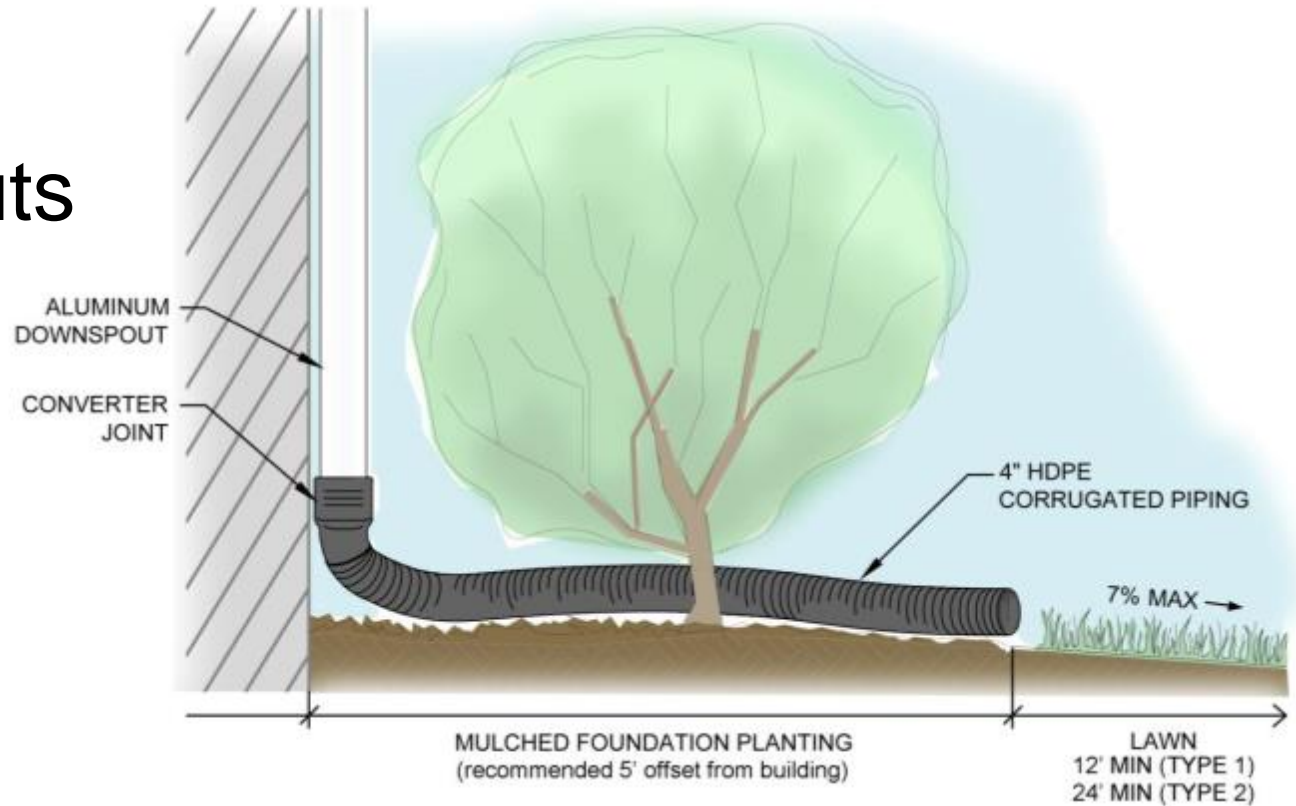


Typical Flow Patterns



Capture Runoff Onsite

- Redirect downspouts to lawn



Alter Downspout to Redirect Flow



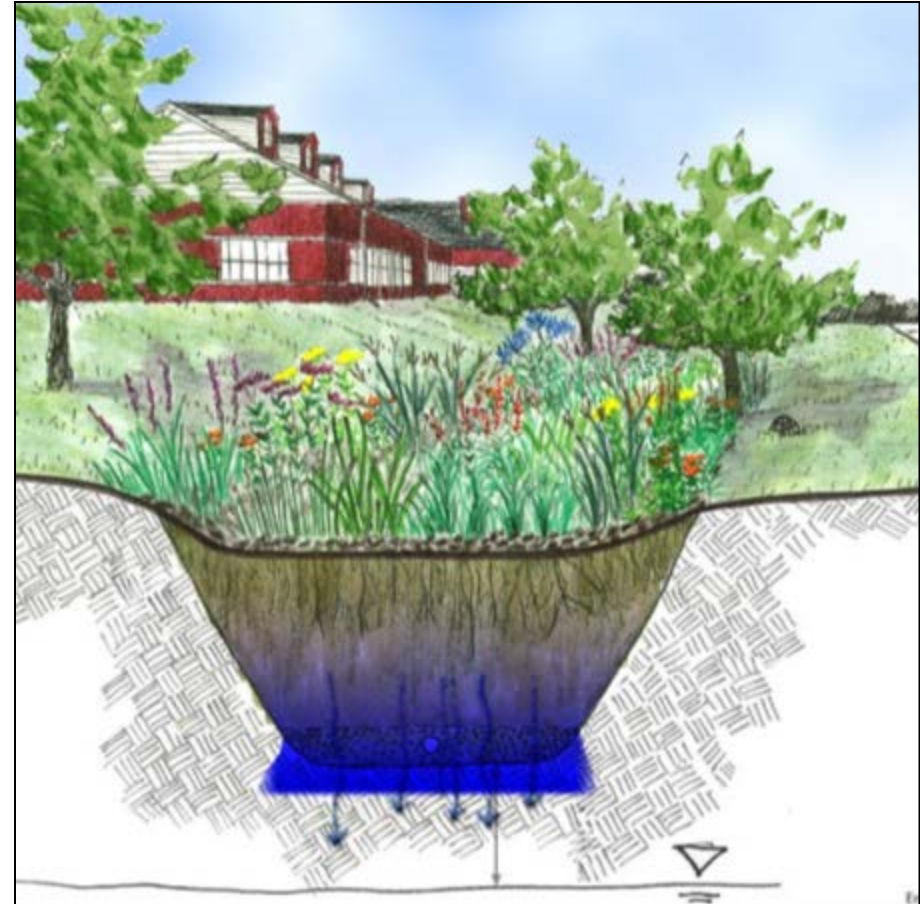
Rain Gardens

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



Rain Garden

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



Add a Rain Garden!



Rain Garden

Report a problem

Backyard Rain Gardens



NORTH CAROLINA COOPERATIVE EXTENSION

| | | | |
|------------------------------------|---|--|---------------------------------|
| HOME | Stormwater and Your Rain Garden | Building a Rain Garden | Plant Selection |
| Garden Maintenance | Distribution Material | Links and Photos | Contact Us! |



[Visit our Photo Gallery!](#)

[Click Here](#)

<https://www.bae.ncsu.edu/topic/raingarden/>

Harvest Rainwater

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



Rain Barrels



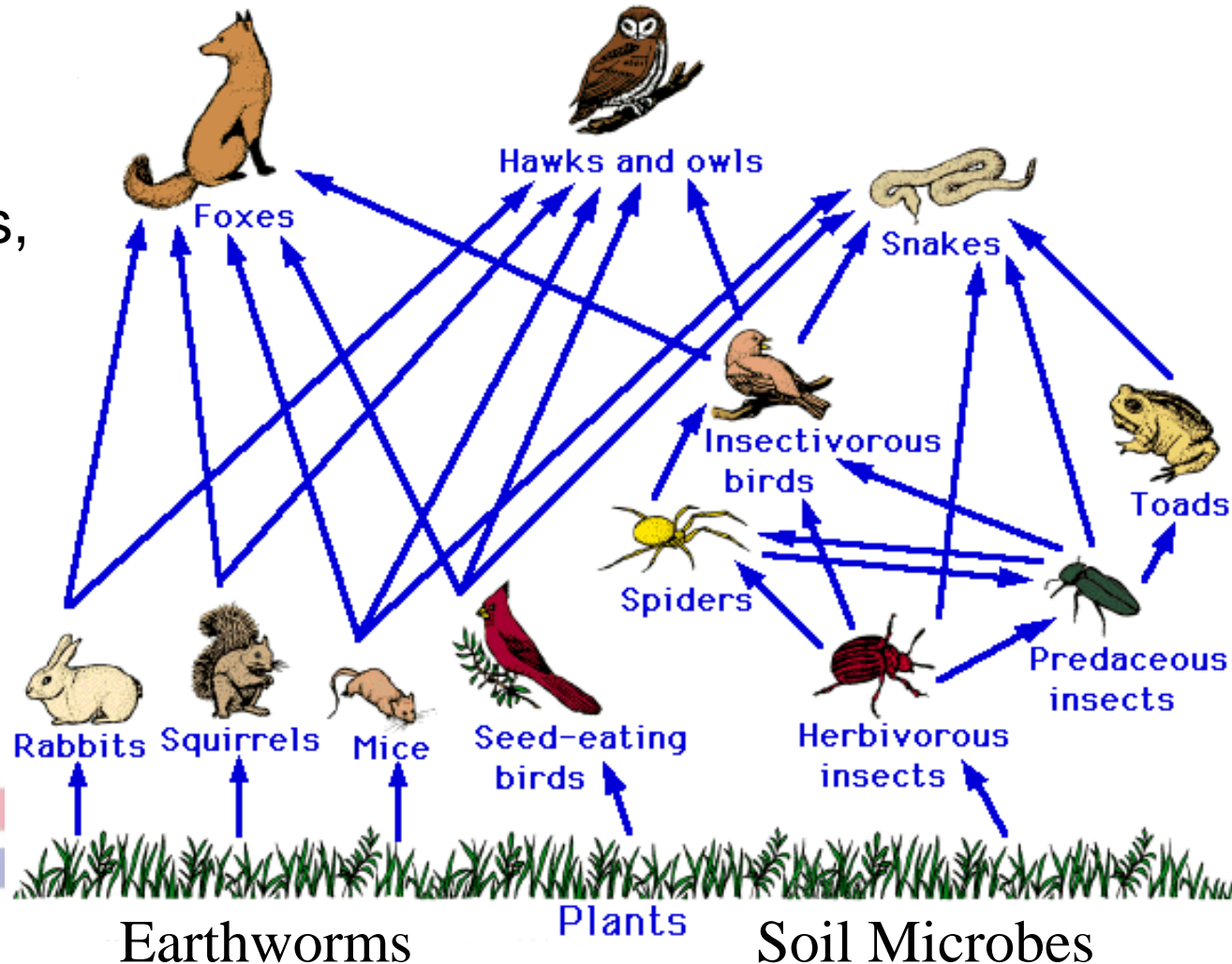
Extension Gardener

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



Ecosystem Health

- **Relies on biodiversity**
- 1000's of species, from microbes to mammals
- **Plants are the foundation of the food web; insects are second**



Ecosystem Services Rely on Biodiversity



PROVISIONING
Food



PROVISIONING
Raw Materials



REGULATING
Natural Disasters



REGULATING
Pollination



CULTURE
Tourism



PROVISIONING
Fresh Water



PROVISIONING
Medicinal Resources



REGULATING
Waste-Water Treatment



REGULATING
Biological Control



CULTURE
Recreation and Health



REGULATING
Local Climate



REGULATING
Carbon Storage



REGULATING
Erosion and Fertility



HABITAT
Species and Ecosystems



HABITAT
Genetic Diversity

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



Plant Natives

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



Going Native

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

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 even tell you [where](#) you can buy natives!
- Create your own native plant landscape that's attractive to wildlife and people with our [step-by-step guide](#) that helps you choose the right plants for your landscape.

Diversity!

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



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!

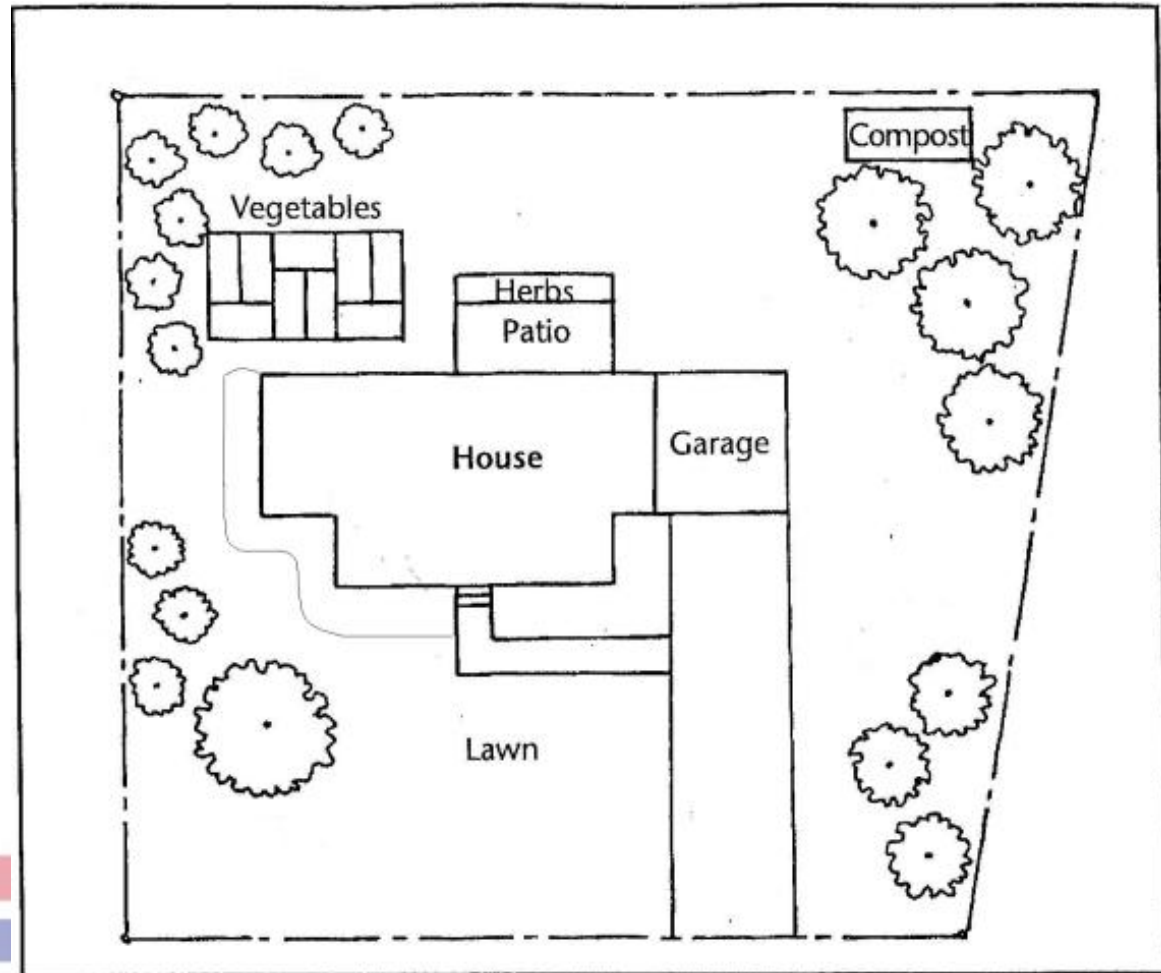
- **Online survey**
 - Tell me about your yard
 - **Please complete by Saturday**
- **Landscape assessment**
 - Framework to help you think before you plant!
 - For you – complete when and how you want



Assessing Sustainability: Base Map

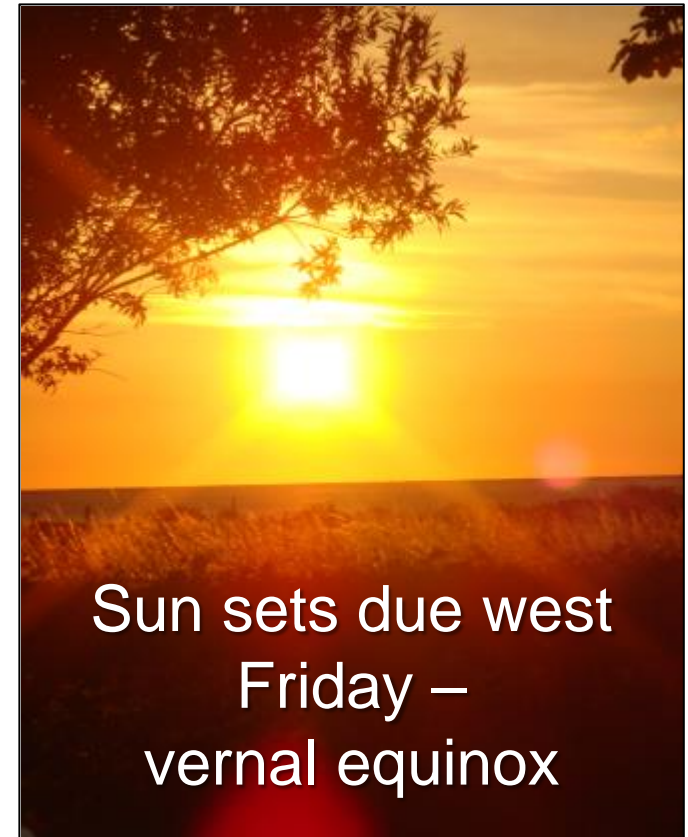
Mark existing:

- Trees
- Planting beds
- Structures
- Impervious surfaces



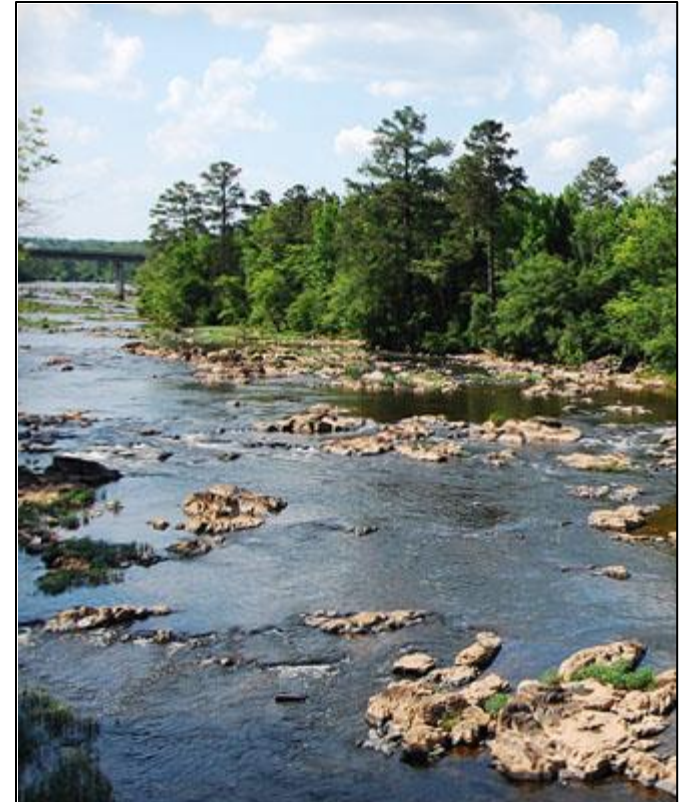
Identify N, S, E, W

- 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?



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 **Cape Fear River & Atlantic Ocean**



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



Can you connect to existing natural areas to:

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



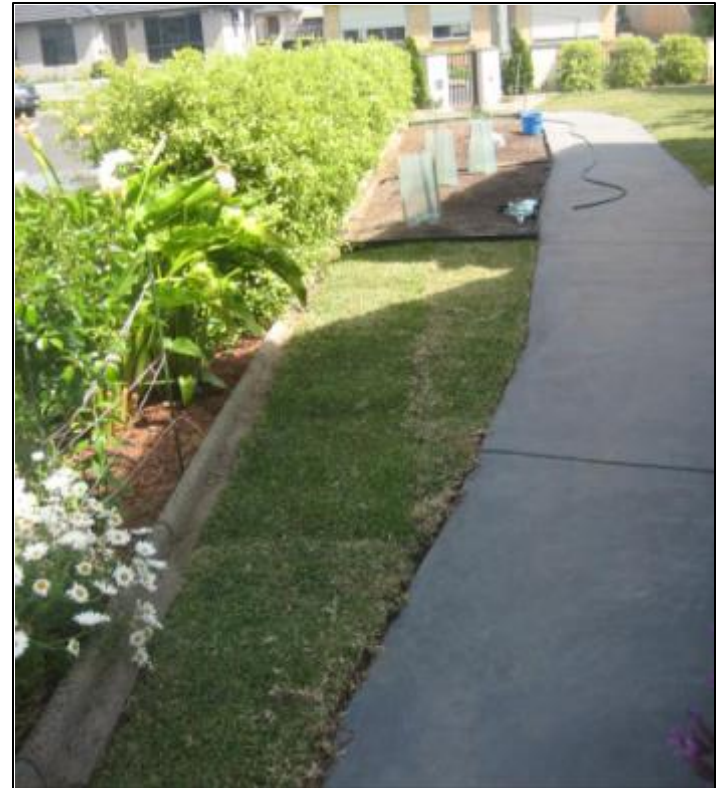
Your Needs and Priorities: What Are They?

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



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!



Questions?



Gardening News

- **Chatham Gardener** email list
 - Sustainable gardening information
 - Weekly email updates
 - What to plant, pest alerts, timely tips
 - Upcoming classes and events
- To subscribe:
 - <http://go.ncsu.edu/subscribeCG>



Next Week: Growing Healthy Soils

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

P.M. Tues., 3/24, 6:00

A.M. Wed., 3/25, 9:30



Questions?

Chatham County Cooperative Extension

PO Box 279

65 East Chatham St., Pittsboro

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

919-542-8202

charlotte_glen@ncsu.edu

**EXTENDING KNOWLEDGE
CHANGING LIVES**

