



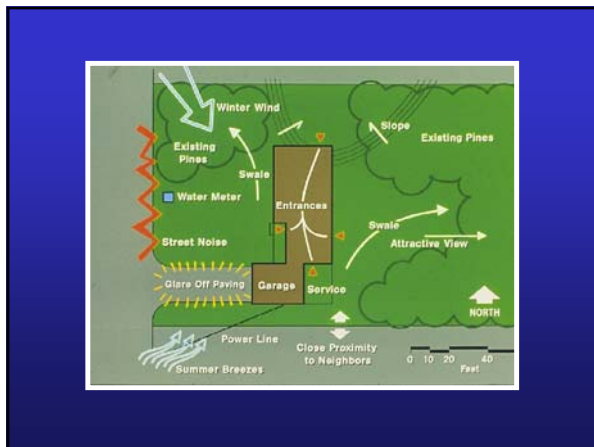






Step # 2 Learn About the Site

- Weather records
- Observe other plants in the neighborhood
- Structure/texture of the soil
- Drainage
- Soil pH and nutrients




New Construction Sites

- Left-over debris - chunks of concrete, tar paper, roofing shingles, sheetrock, etc.
- Compaction from construction equipment
- Hidden oil, gasoline and other chemical spills

Analyze the structure and texture of the soil, it's drainage characteristics, and it's pH and nutrient content





Most Ornamental Plants Prefer a Soil pH Between 5.2 and 6.5

Prefer an Alkaline pH (6.5 to 7.5)

- Barberry
- Ornamental Cherry
- Honeysuckle
- Mulberry
- Virginia Creeper
- Lilac
- Wisteria

Japanese Andromeda
(*Pieris japonica*)



Winter Daphne
(*Daphne odora*)



Step # 3 Ask Questions

- Never insult the client
- Never make rash statements until you have all the facts
- Take the lead during the conversation



Step #4

Be Prepared to Ask for Samples

- Helpful Diagnostic tools:
 - Hand lens
 - White paper
 - Pocket knife
 - Zip-lock plastic bag
 - Container for insects
 - Soil Bags



Step #5

Focus on the Plant

Above ground symptoms

Leaves:

- Leaf spots – possibly caused by diseases, spray damage or chemical injury
- Marginal burn – drought or excess fertilizer
- Shot Hole – insect feeding, disease
- Yellowing – deficiency, spider mites, lace bugs or root problems



Step #5

Focus on the Plant

Above ground symptoms

Stems:

- Cankers
- Mechanical injury
- Insect wounds
- Borers
- Internal decay fungi
- Animal browsing

Step #5
Focus on the Plant
Below ground symptoms
Roots:

- Are they healthy white or dark brown?
- Rotted, decayed appearance?
- Planted too deep?
- Internal bark browning?



80% of Plant Problems
Result from the Inability
of the Plant to Tolerate
or Adapt to the
Environment

Avoiding Plant Stress It's a Killer!!!



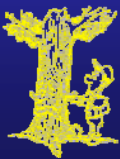
Two Kinds of Plant Stress

- Environmental Stress
- Cultural Stress



Environmental Stress

- Too dry
- Too wet
- Fluctuations in soil moisture
- Too much sun
- Too much shade
- Cold injury
- Heat tolerance












More plants are killed
in Georgia from too
much water than from
the lack of water





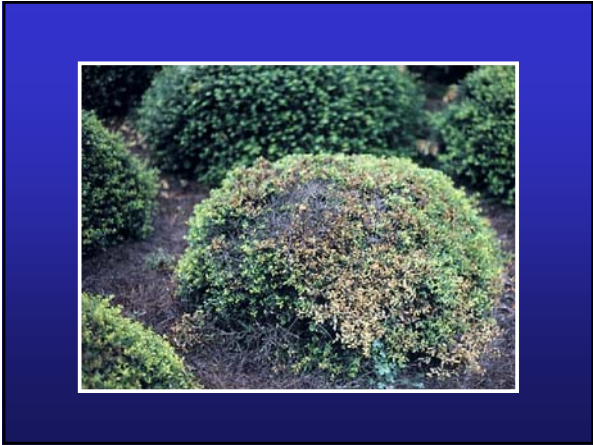
Pancake-like root system resulting from poorly drained soils



Water draining from air-conditioners can puddle and cause problems. Run drain lines away from ornamental plantings.



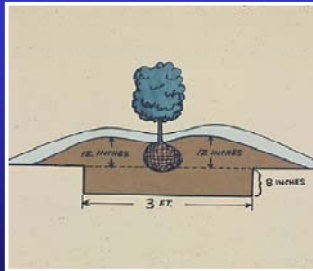






Solutions to Wet Sites

- Plant on elevated beds
- Break apart a hard-pan layer
- Select adapted plants
- Install Sub-surface drainage







Stressed plants are generally more prone to insect and disease problems.



Poor plant selection for this heavy clay soil



Spider mites and diseases often attack stressed plants

Suggestions

Instead of shore juniper, plant groupings of Siberian iris, ornamental grasses, daylilies, dwarf wax myrtle, asiatic jasmine, or Carolina jessamine. Red maple and/or hibiscus for height

Select adapted plants when you can't change the site











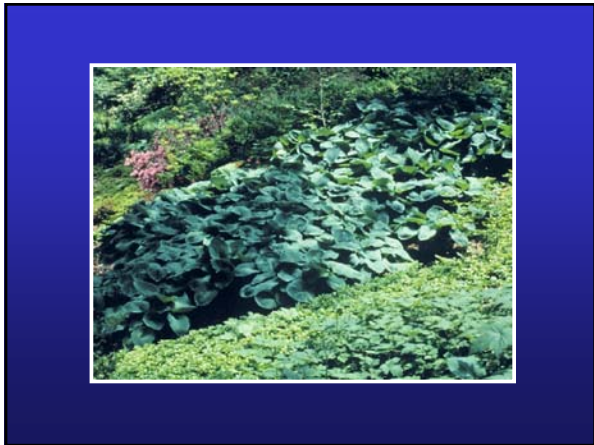


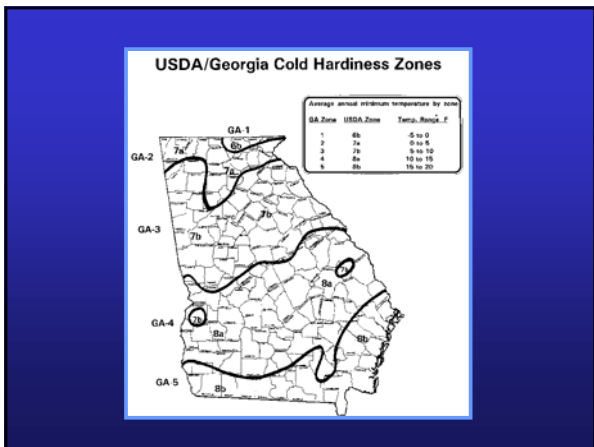
Sun/drought effects on Japanese Pachysandra

A photograph of Japanese Pachysandra plants. The plants appear stressed, with some leaves showing yellowing and wilting. They are situated near a wooden fence, and the overall appearance is less vibrant than the hydrangeas in the previous image.





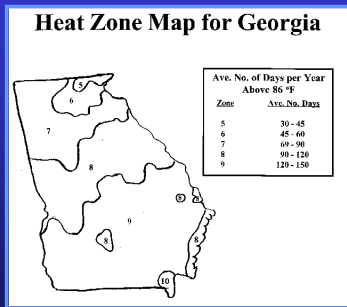






Select Plants Adapted to Your Hardiness Zone







Heat stress on Alberta Spruce

Spider Mites attack

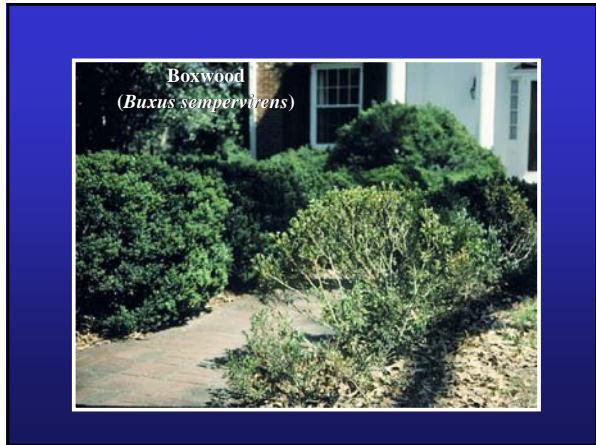
Some plants are less tolerant of stress than others and therefore more prone to problems when the environment isn't perfect



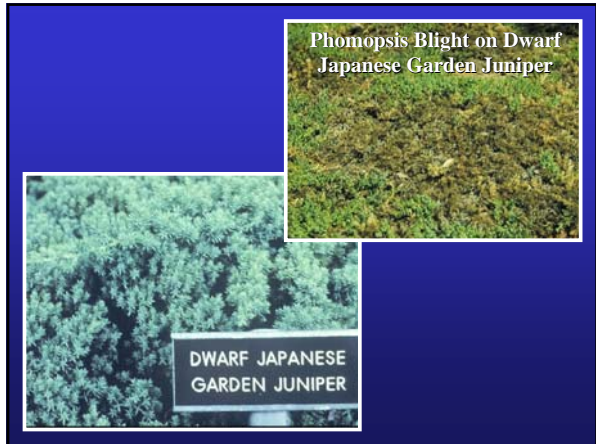
Red-tip photinia (*Photinia x fraseri*)

Entomosporium leaf spot













Canna leaf roller





**Bot Canker
on Leyland Cypress**

Bagworms on Leyland Cypress



The Ideal Landscape Plant

- Requires no pruning
- Requires no supplemental fertilizer
- Requires no irrigation
- Has no known pests
- Tolerates extreme heat and cold
- Thrives on neglect







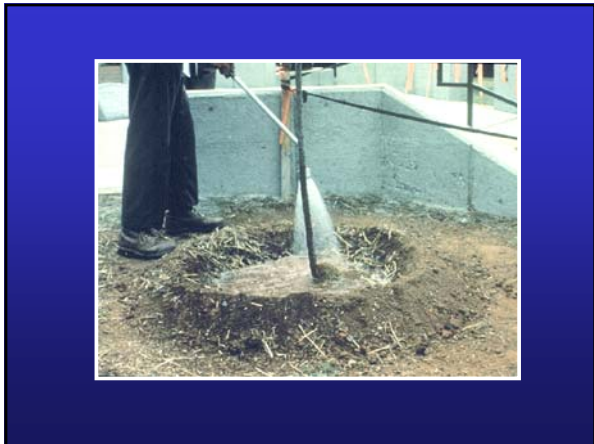


Cultural Causes of Plant Stress

- Planting too deep
- Planting too shallow
- Excess water ring
- Too much mulch
- Planting too close
- Over-watering
- Improper pruning
- Chemical injury
- Mechanical injury
- General plant abuse











Sun-scald
on red maple



Plants should fill the space...
not compete for space



Improper Spacing

- Poor air circulation
- Encourage insects and diseases
- Plants lose individuality
- Shear plants as one mass

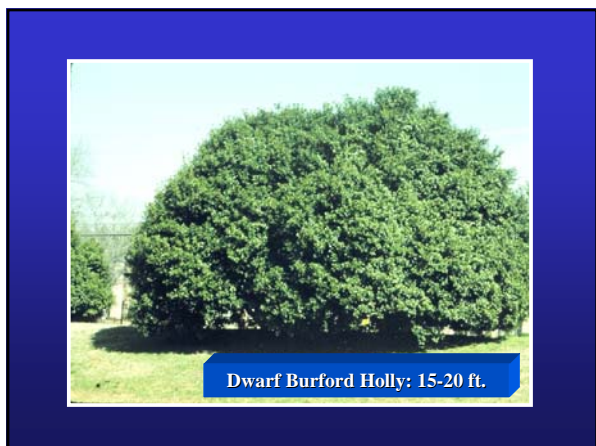








Consider the mature size and shape of ornamental plants when determining their location and spacing in the landscape



Dwarf
Chamaecyparis





How large does
Leyland
Cypress grow?



100+ feet tall







Select plants adapted to the site and the local environmental conditions

Above-average Tolerance to Moist Sites

- Weeping willow
- Red maple
- Bald cypress
- Yaupon/dwarf yaupon holly
- Sweetbay magnolia
- Wax myrtle
- Virginia sweetspire
- Clethra
- Iris
- Ornamental grasses

Plants Not Tolerant of Wet Sites or Extreme Fluctuations in Soil Moisture

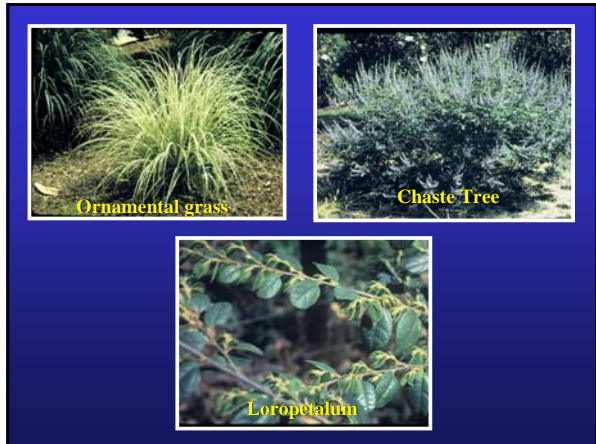
- Juniper
- Azalea
- Camellia
- Cryptomeria
- Leyland cypress
- Ornamental cherries
- Helleri holly
- Winter daphne

Avoid Planting Plants with Similar Pest Susceptibility Side by Side

Possible Plant Combinations to Avoid

- Marigolds/daylilies/junipers – spider mites
- Iris/junipers – spider mites
- Spirea/crape myrtle – aphids
- Lantana/ornamental sweetpotato – whiteflies
- Camellia/burford holly – scale insects
- Azaleas/ornamental cherries

Look for Pest-resistant Alternatives



Native Plants are
Not Always
the Answer





Fertilizer burn on azaleas

Avoid this problem by never broadcasting fertilizer on wet foliage



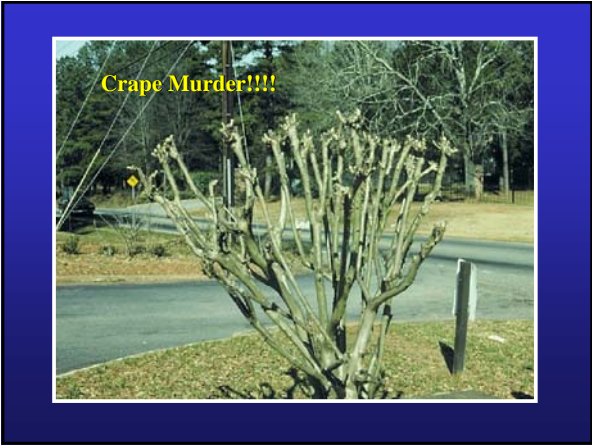
Many of the problems we encounter in landscapes are our own fault

Poorly designed irrigation is a leading cause of plant stress



Botrytis blight on begonia caused by frequent overhead irrigation. Could be avoided by using drip irrigation or ooze hose to avoid wetting foliage









Pyracantha not pruned – pedestrian problem



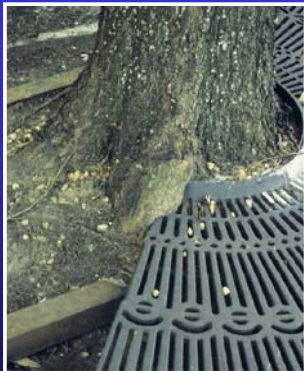


Herbicide/Chemical Damage
Serious Plant Stress




Round-up Damage









Be a Detective
When Analyzing
Ornamental Plant
Problems

*You've got a sick
tree here
Mr. Johnson*



**Plant Stress Can Be
Avoided Most of the Time**

- Thoroughly analyze the site
- Select plants best suited to the site
- Make changes to the site to fit plants
- Minimize stress from maintenance practices

Diagnostic Resources

A compilation of Low-maintenance
Plants for Georgia Landscapes

UGA Web Site:

www.uga.edu

Click on departments, then
horticulture, then publications



