Plants for Landscape Design
HORT 608
Fall 2019

Plant List 8
Large and Medium Evergreen Trees

Reading Assignments
In Landscape Plants For Texas And Environs, Third Ed.
– Intro materials on shrubs (p. 682, 807)
– Family descriptions for:
  Araucariaceae (p. 69), Cupressaceae (p. 78), Fagaceae (p. 82), Lauraceae (p. 86), Magnoliaceae (p. 87), Myrtaceae (p. 91), Pinaceae (p. 94), Taxodiaceae (p. 104)
– Descriptions for individual species
  See page listings on Plant List 6 Handout
    (also available under lists on course website)

Why Do These Trees Not Have The Same Growth Habit?

How do large evergreen trees function compared with large deciduous trees?

• Similar function as main backbone / framework and permanence as deciduous counterparts
• Many are ancient evolutionarily
• Serve even greater roles in screening and wind breaks
• Huge role in wildlife habitat and food chains and ecological systems
• Extremely important to cold climate winter designs
• Many are commercially important for forestry, indigenous medicinal, maritime (past), holiday products
• Significant implications for effects of pruning and insect/disease damage – reserves in foliage
**Araucaria spp.**

* Araucaria
  - Genus of evergreen gymnosperms from South America equivalent to our pines
  - Mostly tropical/subtropical, few warm temperate species hardy to protected locations in USDA zone 7
  - Most commonly grown species are *A. araucana*, *A. bidwillii*, *A. heterophylla*, and *A. columnaris*

**Eucalyptus spp.**

* Eucalyptus
  - 100's of species of trees/shrubs, most native to Australia, some naturalized (invasive?) in California and Florida
  - Often confined by cold (at best zone 8, mostly zone 9 - 13) to use as suckering shrubs or herbaceous perennials in SE USA, but a few species can become large trees
**Size & Placement Are Critical**

Imagine planted three feet off the corner beside your house.

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**Melaleuca spp. Honey Myrtles**

- Vigorous (sometimes invasive?) Australian genus of shrubs and medium size trees
- Most are tropical or subtropical (z. 9-13), maximum of USDA z. 8, evergreens
- Soft textured foliage and white bottle-brush-like spikes of fragrant flowers
- Many species have handsome peeling bark
- Many species are tolerant of drought, salt, and period flooding
- *Melaleuca quinquenervia*, Cajeput Tree or Paperbark Tree, is a federally prohibited species rarely seen along the Texas Gulf Coast; very invasive in Florida Everglades

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**Magnolia grandiflora Southern Magnolia**

- Medium/large broad-leaved southern evergreen trees
  - Pyramidal in youth, oval - rounded crown with age
  - Smaller in Central Texas than rest of SE USA
  - Hardy from z. 6b, marginal in 6a, to 9 (10)

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**Magnolia grandiflora Southern Magnolia**

- Large 6”-12” diameter white flowers, fragrant, legendary
  - Peak in late spring, sporadically to frost
- Best left limbed to ground as dropping leaves, fruit, & flowers are messy, requires steadily available moisture
- Trademark / signature plant of southern landscapes
**Magnolia virginiana**
**Sweetbay Magnolia**
- Semi-evergreen small to large trees, hardy in z. 5b(5a) - 9

**Open picturesque variable habit, creamy white flowers late spring to frost, very fragrant**
- Prone to chlorosis on very high pH soils, needs some steady moisture

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**Quercus virginiana**
**Live Oak**
- Medium/large (40’-60’) evergreen shade tree, z. 7b–13
  - Picturesque spreading crown, thick trunk, drooping limbs
  - Larger south & east, hybridizes with *Q. fusiformis* in west

**A premier oak for widespread use in Texas**
- Extremely site adaptable, drought, heat, seasonal poor drainage, salt, and wind tolerant; a signature plant for the SE USA
- One of most urban tolerant oaks available
Quercus virginiana
Live Oak

- Oak wilt is lethal, a major limitation in some areas
  - Similar effect as Dutch elm disease on elms, more readily spread when planted as a monoculture, a good argument for species diversity

Quercus virginiana
Live Oak

What's wrong with this Live Oak?
= Hurricane Rita survivor

Q. virginiana / Q. fusiflormis
Hybrid Swarm

Q. virginiana phenotype  Q. fusiflormis phenotype

Opposite sides of the same road in Brazos County, Texas

Quercus fusiformis
Escarment Live Oak

- Very similar to Q. virginiana (Live Oak), except:
  - Shorter (30'-40'), more drought, limestone soil, and cold tolerant, often found in clonal mottes
  - Cold hardy to z. 7a (6b) - 13, better adapted to North & West Texas than Q. virginiana
**Quercus suber**  
Cork Oak

- A medium size, 30’ to 50', evergreen tree useful in USDA zones 8 - 13
- Initially strongly upright, becoming spreading and rounded with time
- Tolerant of heat and drought, withstands some soil salts and some alkalinity
- Very handsome bark
- Needs well drained soils, may have problems with excess rainfall / high RH
- Source of commercial cork

**Cinnamomum camphora**  
Camphor Tree

- A medium to large evergreen Asian tree, in USDA zones 9b (9a) - 13, or dieback shrub in zones 8 - 9a
- Typically a spreading Live Oak-like growth habit, 30’ to 40’ (50’) tall in our region
- Vibrant green aromatic foliage

**So Where Would You Look For Shelter?**

**Pinaceae**  
Pine Family

- Probably the most important gymnosperm family in the world
  - 9 or 10 genera, containing 200 to 210 species
  - Primary source of softwood timber, naval stores, and Christmas trees
  - Invaluable ecologically and for ornament
- Males in small deciduous cones, females in spirals of woody scales subtended by the seeds resulting in a persistent cone
- Important genera include Abies, Cedrus, Picea, Pinus, Pseudotsuga and Tsuga
**Abies spp.  Firs**

- Important conical-shaped coniferous evergreen trees native to mostly high elevation cool to cold temperate regions
- Useful in USDA zones 3 - 6 (7a) which lack hot summers
- Nearly all are heat intolerant, variable in drought and soil tolerances
- Very popular as Christmas trees

**Picea pungens**

**Colorado Spruce**

- Native to wide range in Western USA mountains
- Species is conical tree with dense evergreen needles
- Not well adapted to most of Texas, but sometimes planted in the Texas Panhandle / High Plains
- Best in z. 2-6, suffers in heat of z. 7 & warmer
- Popular northern plant, & should remain there

**Abies spp.  Firs**

- Only *Abies concolor*, White Fir (a Rocky Mountain native), and *Abies firma*, Japanese Fir, have any potential for the coolest portions of our region
- *Abies concolor* and *Abies fraseri*, Fraser Fir, are considered premium species for use as cut Christmas trees

**Picea pungens f. glauca**

**Blue Colorado Spruce**

- Needles blue-green to silver-blue
- Most commonly encountered taxa in the trade

Dwarf cultivars as shrubs & in dwarf conifer rock gardens
**Picea abies**
**Norway Spruce**
- European native that is second only to *P. pungens* in adaptivity among *Picea* to the Eastern USA
- Widely grown in the Midwest and Northeastern USA & into Canada
- Useful in USDA zone 3 to 7a (7b) where it has naturalized
- Potentially a large, 100’+, broadly pyramidal evergreen, smaller in the northern portions of our region
- Similar culture as *P. pungens*
- Picturesque European timber tree

**Cedrus deodara**
**Deodar Cedar**
- Evergreen, 40’ - 50’ tall, blue-green needles
- Pyramidal in youth, broader, spreading, flat-topped and more picturesque with age
- Finicky as to site requirements, tends to suffer dieback from drought, cold, borers

**Pseudotsuga menziesii**
**Common Douglasfir**
- Important Western USA timber tree to 250’
- *Pseudotsuga menziesii* var. *glauc*a is native to West Texas mountains, mostly 20’ - 30’ in Texas; bluish green foliage
- Suffers in heat of z. 7, conical form, green to blue-green foliage, best on moist well drained acid to neutral soils in z. 4 - 6 with cool summers
- Popular Christmas tree

**Cedrus deodara**
**Deodar Cedar**
- Narrow band of adaptability, suffers in heat of z. 9, but cold damaged in z. 7a
- Intolerant of poorly drained soils
- Limitedly effective from North, East & Central Texas to Carolinas
**Pinus taeda**  
Loblolly Pine

- Large, 50’ - 70’ (120’), needled evergreen
  - Pyramidal in youth, irregular upright oval with age
  - Long straight bole in competition
  - Dwarf forms known, but not common
  - Prone to ice, snow, & wind damage

**Pinus taeda**  
Loblolly Pine

- Important widely distributed timber / landscape species, useful in USDA z. 6a to 10 with proper provenance; very adaptable
  - Widely hybridized with several other “southern yellow pine” species
  - Major component of pine breeding programs in the Southern U.S.
  - Tends to yellow in z. 6 & 7 winters without proper genotype selection
  - Often intolerant of poor drainage
  - Develops chlorosis on high pH soils

**Pinus elliottii**  
Slash Pine

- Large needled evergreen tree, 40’ - 60’ (120’)
- Important timber / landscape / wildlife species
  - Somewhat coarse and rank grower
  - Best adapted “Southern Yellow Pine” for Central Texas, adapted to USDA z. 8 (7b) - 10
    - Prefers acidic well drained sites, but takes high pH & seasonal poor drainage better than most southern U.S. pines
  - Fusiform rust, pine tip moths, and southern pine bark beetles are significant problems

**Pinus elliottii**  
Slash Pine

- Pyramidal needled evergreen tree, 35’- 45’ (60’)
- Christmas tree-like conical growth form in youth, more sculpted and picturesque later in life
- Fine-textured wiry look
- Cold hardy to USDA z. 6, tolerant of z. 9 heat
**Pinus eldarica**  
*Afghan Pine*
• Good drought, heat, salt, and high pH soil tolerance, but intolerant of poor drainage
  – One of few pines to provide soft Eastern White Pine look in Central & West Texas, widely adaptable
• Diplodia blight and tip moth can be problems

**Pinus strobus**  
*Eastern White Pine*
• Large (60’-70’+) popular timber / landscape pine
  – Premier pine in NE USA, but intolerant of high pH soils & salinity, reserve for use in NE Texas
  – Cold hardy to z. 3, not as vigorous in USDA z. 8 or warmer

**Pinus strobus**  
*Eastern White Pine*
• Fine textured tree, tiered branching
• Pyramidal in youth, flat-top picturesque with age

**Pinus thunbergii**  
*(Pinus thunbergiana)*  
*Japanese Black Pine*
• Medium size needled evergreen tree, 20’ - 40’
• Variable species, irregular oval crown
• Tufted dark green needles; shoot tip moths
• Picturesque growth habit, frequently used in oriental style gardens, hardy to z. 6 to 9a (9b)
• Fair heat, drought, salt, & high pH soil tolerance, but needs good drainage
**Pinus nigra**
Austrian Pine

- Medium / large (40' - 60') formal pine
  - Can be a bit stiff and inflexible in appearance
- Cold hardy to z. 5, performs poorly in z. 8+
  - Best for Midwest, NE USA, Plains, TX/OK panhandle

**Pinus cembroides**
Pinyon Pine

- Group of taxa, small to medium trees, 20'- 30', with 1 to 4 evergreen needle-like leaves
  - Sometimes separated into 5 species, *P. cembroides, P. remota, P. edulis, P. monophylla, P. quadrifolia*
- Dense tear-drop-shaped trees, slow growers
- Need good drainage; heat, cold, drought, and limestone soil tolerant; useful USDA z. 5 - 9
- Dark green to blue-green foliage, important for wildlife cover and food, edible seeds

**Cupressaceae**
Cypress Family

- A temperate to tropical gymnosperm family
  - (3 to 21 genera containing 100 to 125 species)
  - Mostly trees, some shrubs, often resinous, coniferous, and evergreen
  - Scale-like to awl-like leaves are often aromatic
- Monoecious or dioecious
  - Males tiny yellow-brown cones at branch tips
  - Females are persistent few-valved woody cones or hard berries with waxy coatings
- Important genera include: Calocedrus, Chamaecyparis, Cupressus, Juniperus, Platycladus, Thuya, and × Cupressocyparis
Cupressus arizonica
Arizona Cypress
- Medium / large evergreen tree
- Attractive green to blue-green foliage
- Interesting shreiddy red-brown bark
- Tolerant of hot, dry sites with alkaline soils, hardy in USDA zones 7 (6b) - 13
- Avoid poorly drained sites, susceptible to borers and spider mites
- Trunk cankers have been reported

Cupressus sempervirens
Italian Cypress
- Classic spire-like silhouette, 30’ to 40’ tall
- Favorite for formal Mediterranean landscapes
- Alternative to Lombardy Poplar for SW USA
- Grows in most of our region, better adapted to drier portions of USDA zones 8 (7b) to 13
- Avoid poorly drained soils and high RH
- Juniper blight, spider mites, trunk cankers and root rots can be problems

X Cupressocyparis leylandii
Leyland Cypress
- Intergeneric hybrid between the American species Cupressus macrocarpa and Chamaecyparis nootkatensis in England
- Rapid growing narrow upright columnar evergreen tree, mistaken for a shrub
- Variable foliage colors from medium to dark green or blue-green, scale-like leaves
- Best as a very large screen or tall hedge
- May attain a much greater size than anticipated by lay persons, 40’ to 50’ (70’)
- Hardy in USDA z. 6b (6a) to 10
- Frequently inappropriately placed in designs

X Cupressocyparis leylandii
Leyland Cypress
- Susceptible to windthrow
- Damage from snow and ice loads can be problematic
- Prone to twig / stem blights, serious trunk cankers, bagworms
- Frequently overgrows sites
- Banned from being planted in some regions of England
**Juniperus virginiana**  
**Eastern Redcedar**

- Needle or scale-like evergreen foliage, variable size and form, 4’ - 50’ tall
- Dwarf spreading mounds to medium size trees
- Green to blue-green foliage, habit is picturesque with age; interesting bark/trunk
- Some female clones produce attractive gray-blue cones; tiny brown pollen cones
- Useful USDA zones 3 – 9 (10)

Widespread native (East & Central U.S.) conifer, important timber tree, wildlife cover/browse, & landscape plant

- Wide variety of sites, avoid poor drainage and/or shade
- Pollen is a major allergen
- Tendency for foliage to brown in winter, infestations of juniper blight, bagworms, cedar-apple rust, and spider mites can all be problematic

**Juniperus ashei**  
**Ash Juniper**

- Counterpart to *J. virginiana* in Hill Country and parts of West Texas
- Small evergreen tree, 15’ to 20’ (25’)
- Important for wildlife; Golden Cheek Warbler nesting sites
- Useful for similar purposes as *J. virginiana*, but on drier sites
- Needs well drained soils; drought and heat tolerant; hardy z. 7 (6) – 9
- Ecological controversy; Pollen ⊕

Essentially a western counterpart to *J. virginiana*; intergrades in North Texas

- Native to high elevations of Texas Panhandle, Guadalupe Mountains, and Arizona
- Often narrower crowned and of smaller, 30’ to 40’, stature than *J. virginiana*
- Tolerates less heat (z. 3-7 (8)) and humidity than *J. virginiana*, but otherwise culture is similar with good drought resistance
- Narrow cultivars, such as ‘Skyrocket’ are popular in the trade
**Cryptomeria japonica**  
**Japanese Cryptomeria**

- Large 40’ to 60’ pyramidal to conical coniferous evergreen tree; USDA z.6-8(9)
- Handsome dark green to blue-green awl-shaped needles on tufted branches
- Shreddy red-brown to gray bark, pealing in strips sheets

**Sequoia sempervirens**  
**Coast Redwood**

- The world’s tallest trees, 350’+, native to CA & OR coastal mountains; a national treasure
- Rapid growing, long lived, fire resistant trees
- An important timber and ecological resource

**Cryptomeria japonica**  
**Japanese Cryptomeria**

- Most effective in groves or groupings
- Sometimes used as large screen
- Important timber tree in Japan where it can grow to 150’ tall
- Prone to leaf blights in high relative humidity, spider mites & scales in hot summers
- Slow growing; avoid poorly drained heavy clays
- Best on acid soils; shield from cold dry winter winds; lots of old foliage in interior

**Sequoia sempervirens**  
**Coast Redwood**

- Cathedrals to the gods of nature?
- Frequently planted on West Coast and in England; USDA z. 7 - 10
- Less well adapted to the eastern U.S. than *S. giganteum*; intolerant of dry atmospheric conditions
Sequoiadendron giganteum
Giant Sequoia

- Even more massive than, if not quite as tall as (325'), *S. sempervirens*; to walk among them is a humbling experience
- Leaves are more juniper-like, awl-shaped
- Among largest living organisms on earth

Sequoiadendron giganteum
Giant Sequoia

- More potential for planting outside their native range than *S. sempervirens*
- More cold hardy (z. 6 to 10) and drought tolerant than *S. sempervirens*, but less tolerant of poorly drained soils; avoid hot summers

Questions / Comments?

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