

**Woody Ornamental Plants**  
**HORT 306**  
**Fall 2011**



**Plant List 3**  
**Medium & Large Deciduous Trees II**

**Reading Assignments**

In *Landscape Plants For Texas And Environs, Third. Ed.:*

– Family descriptions

*Fagaceae* (p. 82), *Lauraceae* (p. 86),  
*Magnoliaceae* (p. 87), *Rosaceae* (p. 99),  
*Sapindaceae* (p. 101) & *Ulmaceae* (p. 106)

– Descriptions for individual species

See page listings on Plant List 3 Handout  
 (also available under lists on course website)

***Pyrus calleryana***  
**Callery Pear**

- **Medium deciduous tree, 30' - 40' tall**
  - Narrow upright oval to broadly teardrop-shaped
  - Dark glossy green leathery foliage, fall color variable from green to yellow, orange, red, or maroon-purple
  - White spring fragrant / malodorous (?) flowers
  - Small pome fruits, brown, inedible, utilized by wildlife
  - Variable heat (z. 7 - 9) and cold tolerance (z. 6a - 4b)
  - **Adaptable to adverse sites, seasonal poor drainage**
  - **Resistant to many diseases / pests of *Pyrus* spp. except fireblight**
  - **Many clones have poor branching structure**



***Pyrus calleryana* 'Bradford'**  
**Bradford Callery Pear**

- *P. calleryana* cultivar with teardrop shape, extremely uniform and favorite of designers, excessively formal
- High chilling requirement & tendency for summer dormancy often ruin flower effect in southern Texas
- Extremely poor branching structure, long-term liability
- Other cultivars have been selected, supposedly with better branching structure, time will tell



***Pyrus communis***  
**Common Pear**

- **Medium, 20' - 30', deciduous tree, hardy in USDA z. 5 (4) - 9**
- **Source of commercial pears, important fruit tree**
- **Clones vary tremendously in adaptability to Texas regions**
- **Susceptible to fireblight**



***Quercus* spp. Oaks**

- **Huge economic, ecological, and historical implications**
- **Red/black oaks vs. white oaks**
- **Oak wilt (*Ceratocystis fagacearum*) and sudden oak death (*Phytophthora ramorum*)**
- **Very promiscuous groups**







**Chlorosis**

### *Quercus acutissima* Sawtooth Oak




- A medium size, 35' to 45' (60') tall, introduced deciduous Asian oak useful in USDA zones 6 (5b) – 9a
- Dark glossy green chestnut-like leaves, upright oval to pyramidal in youth, broader with age
- Easily transplanted, drought and heat tolerant; mast species for wildlife
- Needs training when young, prone to chlorosis on neutral to high pH soils
- 'Gobbler' is a seed propagated line with rapid growth, good cold tolerance, & profuse acorn production from S.C.S.






### *Quercus macrocarpa* Bur Oak

- Large (60'- 80') deciduous shade tree, cold hardy to USDA z. 3 & tolerates heat of z. 9
  - Stout trunk dividing into several large branches forming bulk of oval to rounded crown; huge acorns
  - Pleasantly coarse textured, medium growth rate; wind firm
- Very widely distributed native oak, well adapted to both warm and cold regions, wide variety of soils
  - Drought and limestone soil tolerant
- Too large for residential use, excellent park, street tree where sans overhead utility lines
- Asset with age, needs a little TLC at transplant

### *Quercus muehlenbergii* Chinkapin Oak



- Increasingly popular medium to large deciduous tree
- Valued for its attractive disease-free foliage, pleasing growth form, and adaptability to a range of sites
- Can tolerate high pH soils and drought with correct provenance selection, moderate growth rate, useful in USDA zones 5-9







### *Quercus nigra* Water Oak

- Large (50' - 70+') deciduous shade tree, hardy z. 6 – 10a
  - Decidedly pyramidal in youth
  - Round crown with age
- Bottomland species adaptable to upland sites
  - Tolerates clay soils and periodic flooding, rapid grower
  - Prone to chlorosis on high pH soils; mast species
- One of most widely used, but least desirable oaks
  - Subject to heart rots, powdery mildew, weak wood
  - Leaves difficult to rake, requires lots of "limbing-up"
  - Dense shade & surface roots hinder turf culture

### *Quercus phellos* Willow Oak

- Large (60'-80+') deciduous shade tree, hardy in USDA zones 5b – 9; can be a liability with age
  - Needs some moisture, even more prone to chlorosis on high pH soils than *Q. nigra*
  - Readily transplanted, rapid growth rate
- Attractive pyramidal form in youth, rounded form with age
  - Drooping limbs necessitates constant "limbing up" for vehicular traffic
  - Pruning requirements & size limit use as street tree
- Fine textured willow-like leaves, difficult to rake
- Similar uses as *Q. nigra*, but less objectionable in East Texas, more objectionable westward



### *Quercus falcata* Southern Red Oak

- A large deciduous bottomland tree of the Southern U.S., adapted to USDA zones 6a-9
- Dark lustrous olive green leaves, muted orange-red to red fall color



*Quercus falcata*  
**Southern Red Oak**

- Heat tolerant, can withstand occasional poor drainage
- Intolerant of high pH soils and not overly drought tolerant, susceptible to oak wilt
- *Quercus falcata* var. *pagodifolia* (Cherrybark Oak) is a highly desirable bottomland timber tree



*Quercus rubra*  
**Northern Red Oak**

- Northern counterpart to *Q. falcata*
- A large deciduous forest and landscape tree from the Eastern U.S., popular in USDA zones 3 – 8a
- Long straight boles on forest trees, spreading upright oval crowns when open grown
- Poor performer in droughty alkaline soils and hot summers, only useful in NE portion of our region



*Quercus shumardii*  
**Shumard Oak**

- Large (50'-60') deciduous shade tree, oval to rounded
- With proper provenance selection can be used on higher pH soils, adapted to USDA z. 4 – 9a, Texas native
- Attractive "Red Oak" shaped-leaves, good red fall color with some genotypes in right environments



*Quercus shumardii*  
**Shumard Oak**

- Some tolerance to soil salts, but intolerant of foliar salts and poor drainage
- Probably the best of red oak group for widespread use in Texas; important mast species for wildlife
- Provenance selection is a critical issue



*Quercus buckleyi*  
**Texas Red Oak**

- Formerly *Quercus texana*, used in zones 6 to 9a (9b)
- A medium to large, 30' to 50' (70'), deciduous tree very closely related to *Q. shumardii*
- Somewhat smaller of leaf and plant size and more drought and high pH soil tolerant than *Q. shumardii*
- Lustrous dark green summer foliage, red-orange to bronze-red fall color is possible
- Avoid poorly drained sites, susceptible to oak wilt



*Quercus palustris*  
**Pin Oak**

- Important landscape/forest tree of East/Central USA
- Maybe most widely planted landscape oak in USA, easy to transplant, handsome habit, occasional red fall color, pyramidal form, USDA z. 5 (4b) – 8
- Constant pruning of lower limbs, drooping and swooping / chlorosis limits Texas use

***Quercus polymorpha* Monterey Oak**



- Medium size, 35' to 45' (60') evergreen Mexican oak with upright oval crown
- Highly variable thick leathery dark green to blue-green leaves
- Only recently entering the mainstream trade; useful in USDA z. 8 (7) - 11
- Appears adaptable to a range of conditions, including heat & drought
- Tolerates higher relative humidity than many xeric climate oaks making it useful further into the SE USA



***Quercus stellata* Post Oak**



- Medium/large (40' - 60') deciduous shade tree
  - Best substitute for White Oak (*Q. alba*) in much of Texas
- Dominant tree in post oak savannah region of Texas
  - Important native landscape tree in Central Texas
  - USDA z. 5-9, of minor importance outside Texas/Oklahoma
  - Very slow grower; essentially old growth forests



***Quercus stellata* Post Oak**



- Tolerates variety of well drained soils, intolerant of prolonged wet soils, compaction, or disturbance
  - Frequently damaged by compacted soils, disturbed root zone, alteration of drainage, application of irrigation in new developments, planning required to save *in situ* trees

***Quercus alba* White Oak**



- Large important landscape / timber / mast tree of eastern USA, East Texas native, useful on mesic sites with acidic soils in USDA z. 4 (3) - 8 (9a)
- Beautiful form, foliage, fall color, but needs moist acidic soils, has extensive taproot system, and is extremely sensitive to root disturbance / compaction

***Quercus laceyi* Lacey Oak**

- Picturesque handsome small to medium tree
- Blue-gray foliage, new growth pink
- USDA zones 7(6b)-9b
- Heat, drought, alkaline soil tolerant
- High humidity and heavy soils are a problem in Southeast Texas, best I-35 west



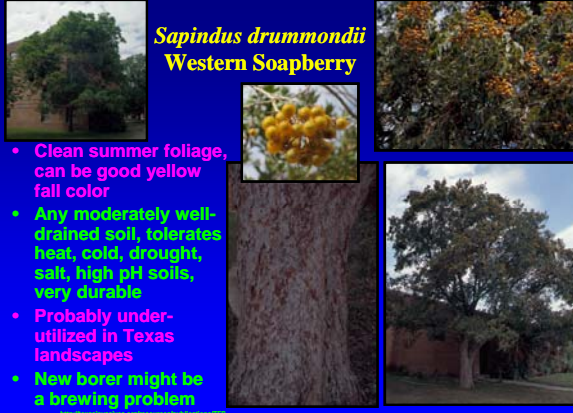
***Sapindus drummondii* Western Soapberry**



- Medium, 30' - 40', deciduous tree native to western USA, with upright oval crown, useful in USDA z. 6 (5b) - 9
- Creamy white late spring/early summer flowers
- Yellow fruit in late summer/fall on female trees, *poisonous*, asset in summer/fall, liability by late winter, can be weedy



***Sapindus drummondii***  
**Western Soapberry**



- Clean summer foliage, can be good yellow fall color
- Any moderately well-drained soil, tolerates heat, cold, drought, salt, high pH soils, very durable
- Probably under-utilized in Texas landscapes
- New borer might be a brewing problem

***Sassafras albidum***  
**Sassafras**



- A medium to large, 30' to 60' tall, deciduous tree of Eastern North America, including East Texas
- Handsome aromatic summer foliage is followed by yellow, orange, and / or red fall color
- Blue-black fruit and pink-red pedicels are mildly showy

***Sassafras albidum***  
**Sassafras**




- Symodial branch structure and corky bark are interesting
- A pioneer species that is site responsive, may develop chlorosis on high pH soils, has suckering tendencies
- Intolerant of foliar salt exposure, but heat and cold tolerant
- Naturalizing, shade tree, bank or slope stabilization

***Ulmus alata***  
**Winged Elm**



- Medium deciduous native shade tree
- Variable in height, 30' to 60' depending on location and genotype, USDA z. 6 – 9 (10a)
  - Irregularly vase-shaped to oval crown
- Durable adaptable species, rapid grower
- Numerous elm diseases, powdery mildew and Dutch elm disease are most troublesome
  - Perhaps more DED resistant than *U. americana*, but still susceptible
  - Inferior tree to *U. crassifolia*, less refined, weedy

***Ulmus americana***  
**American Elm**



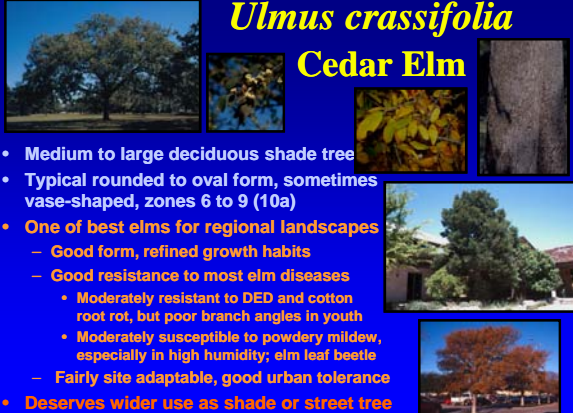
- Large (60' - 80') deciduous native tree, zones 3 to 9 (10a)
  - Famous for cathedral lined streets of vase-shaped trees
  - Also upright oval to broad spreading oak-like forms

***Ulmus americana***  
**American Elm**



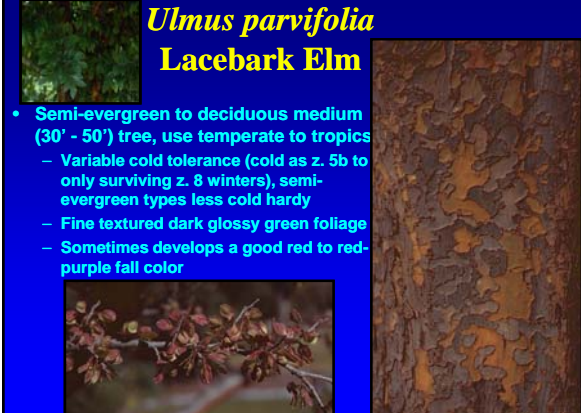
- Steeped in American folk lore, victim of DED
  - Despite architecturally unmatched vase-shaped habit, they are subject to numerous insect and disease pests
  - DED, phloem necrosis, wet wood, bark beetles, cotton root rot, and elm leaf beetle to name the serious ones
- Very adaptable, former favorite for difficult urban sites
- Breeding for disease resistance progresses, DED resistant clones are available

## *Ulmus crassifolia* Cedar Elm



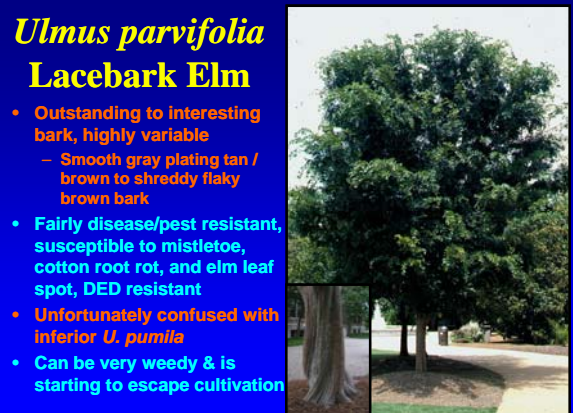
- Medium to large deciduous shade tree
- Typical rounded to oval form, sometimes vase-shaped, zones 6 to 9 (10a)
- One of best elms for regional landscapes
  - Good form, refined growth habits
  - Good resistance to most elm diseases
    - Moderately resistant to DED and cotton root rot, but poor branch angles in youth
    - Moderately susceptible to powdery mildew, especially in high humidity; elm leaf beetle
  - Fairly site adaptable, good urban tolerance
- Deserves wider use as shade or street tree

## *Ulmus parvifolia* Lacebark Elm



- Semi-evergreen to deciduous medium (30' - 50') tree, use temperate to tropics
  - Variable cold tolerance (cold as z. 5b to only surviving z. 8 winters), semi-evergreen types less cold hardy
  - Fine textured dark glossy green foliage
  - Sometimes develops a good red to red-purple fall color

## *Ulmus parvifolia* Lacebark Elm



- Outstanding to interesting bark, highly variable
  - Smooth gray plating tan / brown to shreddy flaky brown bark
- Fairly disease/pest resistant, susceptible to mistletoe, cotton root rot, and elm leaf spot, DED resistant
- Unfortunately confused with inferior *U. pumila*
- Can be very weedy & is starting to escape cultivation

## *Zelkova serrata* Japanese Zelkova



- Medium (50' - 60') vase-shaped deciduous tree
- Short stout trunk, numerous arching branches
- Highly resistant to DED, possible *U. americana* substitute, used widely in Upper South / Midwest
- Adaptability to Texas not fully known, deserves wider testing, USDA z. 6 (5) – 8 (9a)

## Questions / Comments?

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