

## Key to selected conifer species on campus

This key is a heavily modified version of the key in *Conifers: morphology and variation* by Mirko Vidaković.

Plant identification and maps were produced by John Rawlings as part of a new edition of *Trees of Stanford* by Ron Bracewell. Many thanks to John Rawlings for generously making the unpublished maps available to the class.

### Species list

*Abies cilicia*, Cilician Fir  
*Calocedrus decurrens*, Incense cedar  
*Cedrus atlantica* “*glauca*,” Atlas Cedar  
*Cedrus deodara*, Deodar Cedar  
*Cedrus libani*, Cedar of Lebanon  
*Chamaecyparis lawsoniana* “*pendula*,” Port Orford Cedar  
*Cupressus macrocarpa*, Monterey Cypress  
*Metasequoia glyptostroboides*, Dawn Redwood  
*Pinus canariensis*, Canary Island Pine  
*Pinus mugo*, Mugho Pine  
*Pinus pinea*, Italian Stone Pine  
*Pinus thunbergii*, Japanese Black Pine  
*Picea pungens* “*glauca*,” Colorado Blue Spruce  
*Sequoiadendron gigantea*, Big Tree  
*Sequoia sempervirens*, Coast Redwood  
*Thuja plicata*, Western Red Cedar

## Key to genera

- Leaves on short shoots in clusters or whorls, *and* needle-like or linear
  - Leaves 2, 3, or 5 in a cluster, 2.5 cm or more long with characteristic resin ducts  
*Pinus* (Pines) *See key to Pinus species*
  - Leaves evergreen and clustered in whorls of 15-40; leaves 1.5 to 5 cm long  
*Cedrus* (Cedars) *See key to Cedar species*
- Leaves not clustered on short shoots, but spirally arranged or opposite (or if whorled, then

scale-like)

- Leaves linear, linear-lanceolate (long and narrow, but slightly wider in the middle), or long and needle-like
  - \* Leaves not in two distinct ranks; very conspicuous scars left by leaves that have fallen off; leaf bases not strongly decurrent (running down length of stem); buds covered with dark brown or grey scales
    - Leaf scars peg-like; cones pendulous (hanging down), with persistent scales  
*Picea* (Spruces)
    - Leaf scars disc-like; cones erect with deciduous scales (bases of scales remain)  
*Abies* (Firs)
  - \* Leaves in two distinct ranks; leaf bases obviously decurrent; buds with green or light brown scales
    - Leaves in two ranks (rows) and linear, evergreen and dark green above; leaves smaller at base of each shoot  
*Sequoia sempervirens* (Coast Redwood)
    - Leaves in two ranks (rows) and linear, deciduous and light green  
*Metasequoia glyptostroboides* (Dawn Redwood)
- Leaves not linear, but short and wide at base, sometimes scale-like
  - \* Leaves opposite or in whorls (3 or more leaves at a single node); individual branchlets more or less flat (young trees may not show this)
    - Branchlets flat and arranged into larger flattened sprays; leaves in opposite pairs, scale-like
      - ◇ Cones oblong or subglobose (not quite spherical), woody with overlapping scales; tips of lateral and facial leaves equal, due to alternation of long and short internodes
        - Male cones with 3-6 pairs of scales. Female cone scales 3-6, with 2-5 seeds to each fertile scale; foliage not usually aromatic when rubbed.  
*Thuja* (Arbor vitae)
        - Male cones with 6-8 pairs of scales. Female cone scales less than 8 (usually 4-6), with 1-2 seeds per scale; foliage aromatic when rubbed  
*Calocedrus decurrens* (Incense Cedar)
      - ◇ Cones subglobose, woody, cone scales peltate and with valves, not overlapping; tips of lateral and facial leaves off-set, internodes more or less equally spaced  
*Chamaecyparis lawsoniana* (Port Orford Cedar)
    - Branchlets flat, but together in more or less disorganized elongated clusters; leaves scale-like; woody cones with peltate (umbrella-like) scales  
*Cupressus macrocarpa* (Monterey Cypress)

- \* Leaves spirally arranged; branchlets not flat; leaves pointed and bluish green  
*Sequoiadendron gigantea* (Big Tree)

## Key to the Pines

- Leaves in bundles (fascicles) of three; leaves long (20-30 cm); branches light tan with “shingled” look  
*Pinus canariensis* (Canary Island Pine)
- Leaves in bundles of two
  - Leaves dark green and stiff, only up to 15 cm long; bark with fissures dividing it into scales
    - \* Leaves very short (3-4 cm); tree shrublike *Pinus mugo* (Mugho Pine)
    - \* Leaves 6-15 cm; tree tall (up to 40 m high) with irregular crown; bark black-grey  
*Pinus thunbergii* (Japanese Black Pine)
  - Leaves light green or blue green, 10-20 cm long; bark furrowed, forming long ridges; crown flat-topped or umbrella shaped  
*Pinus pinea* (Italian Stone Pine)

## Key to the Cedars

- Leading shoot stiff, upright or spreading, usually not pendulous (hanging); cones flat or slightly concave on top; needles 0.5-3 cm long
  - Shoots very finely scaly; cones 7-10 cm long; needles usually shorter than 2.5 cm; some individuals on campus are of the “glauca” variety and have bluish leaves  
*Cedrus atlantica* (Atlas Cedar)
  - Shoots glabrous (smooth, lacking very fine scales); branches ascending in young trees; cones 8-10 cm long; needles usually 1.5-3 cm long, dark green  
*Cedrus libani* (Lebanon Cedar)
- Leading shoot and ends of branches pendulous (hanging); cones rounded on top; needles 3.5-5 cm long  
*Cedrus deodara* (Deodar Cedar)