



PRO
Green EXPO
Colorado Convention Center
Denver, CO | February 13- 16

**Basic Woody Plant Identification for
Certification**

Basic Woody Plant Identification for Certification ProGreen Expo

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Deciduous Trees: Whorled leaf arrangement

Catalpa speciosa

Western or Northern Catalpa

- 1) Leaves – whorled or opposite, simple, heart-shaped, large
- 2) Flowers – white, showy panicle, June
- 3) Fruit – capsule, 8-20” long, persistent, goes from green to brown
- 4) Fall Foliage – poor yellow-green to brown, often fall before turning
- 5) Cultural Requirements – will withstand dry or alkaline soils and hot, dry environments, sun or part shade
- 6) Winter ID – large, whorled sunken leaf scar, no terminal bud, fruit
- 7) Elevation up to 6,000’

**Deciduous Trees: Alternate leaf
arrangement, simple leaves**

Ginkgo biloba

Ginkgo

- 1) Leaves – alternate, simple from spurs. Dichotomous leaf venation.
- 2) Flowers – April
- 3) Fruit – naked seed, tan/orange, plum-shaped. Foul Odor.
- 4) Fall Foliage – yellow
- 5) Cultural Requirements – Tolerant of urban conditions
- 6) Winter ID – Gray bark, twig spurs
- 7) Elevation to 5000'
- 8) Cultivars include: 'Princeton Gold' and other male cultivars

Quercus gambelii
Gambel Oak

- 1) Leaves – alternate, simple, rounded lobes. Small leaf
- 2) Flowers – catkins
- 3) Fruit – small, solitary or in clusters, green or brown acorn
- 4) Fall Foliage –gold, yellow. Sometimes red.
- 5) Cultural Requirements – adaptable to various soils even dry clay, full sun, tolerates urban conditions.
- 6) Winter ID –Multi-stem small tree, in ‘thickets’. Slender twig, cluster buds.
- 7) Elevation to 7000’

Quercus macrocarpa

Bur Oak, Mossy Cup Oak

- 1) Leaves – alternate, simple, rounded lobes, fiddle shaped
- 2) Flowers – catkins
- 3) Fruit – solitary nut with fringed green cap almost covering acorn
- 4) Fall Foliage – dull yellow-green to yellow-brown
- 5) Cultural Requirements – adaptable to various soils even dry clay, full sun, tolerates urban conditions.
- 6) Winter ID – Ridges on new growth, stout stem, galls on stems, cluster bud
- 7) Elevation to 7,000'

Quercus robur

English Oak

- 1) Leaves – alternate, simple, rounded lobes with ear lobes at base, short petiole, persistent
- 2) Flowers – catkins
- 3) Fruit – acorn, long and narrow
- 4) Fall Foliage – brown, persistent
- 5) Cultural Requirements – well-drained soil, pH tolerant, full sun
- 6) Winter ID – persistent leaves, long acorns, pointed clustered buds
- 7) Elevation to 6,000'
- 8) Cultivars include 'Royal Prince', 'Fastigiata', 'Crimson Spire'

Quercus rubra –
Red Oak

- 1) Leaves – alternate, simple, sharp pointed lobes
- 2) Twigs- smooth and reddish brown
- 3) Flowers – catkins
- 4) Fruit – acorn, two years to mature
- 5) Fall Foliage – russet to bright red, sometimes just yellow-brown
- 6) Cultural Requirements – prefers well-drained slightly acid soil, full sun, withstands pollution
- 7) Winter ID – pointed cluster buds, smooth reddish brown twigs
- 8) Elevation to 6,000'

Celtis occidentalis

Common Hackberry

- 1) Leaves – alternate, simple, pointed, “lopsided”, often infested with unsightly nipple galls
- 2) Twigs- small downy twigs branch frequently, branches and trunk have wart like projections
- 3) Flowers – April-May, not showy
- 4) Fruit – Fleshy drupe on 1/2” stem, green to red to dark purple, birds like them
- 5) Fall Foliage – yellow/golden
- 6) Cultural Requirements – adaptable to urban sites, drought tolerant, full sun
- 7) Winter ID – buds, downy twigs
- 8) Elevation to 7,000’

Cercis canadensis

Eastern Redbud

- 1) Leaves – alternate, simple
- 2) Flowers – ½” long, 4-8 together, rosy-pink, March-April, often damaged by late frosts
- 3) Fruit – legume, 2-3” long, green to brown, persistent
- 4) Fall Foliage – yellow-green to yellow
- 5) Cultural Requirements – adaptable to alkaline soils and higher pH, full sun or light shade, will suffer dramatically with too much or too little water
- 6) Winter ID – zig-zag stem, superposed buds, persistent pod fruit
- 7) Elevation to 5,500’

Tilia americana–

American Linden

- 1) Leaves – alternate, simple, heart shaped
- 2) Flowers – yellow-white, fragrant, favored by bees, June-July
- 3) Fruit – round nutlet with 2-3” light green bract
- 4) Fall Foliage – yellowish
- 5) Cultural Requirements – tolerant of alkaline clay soils
- 6) Winter ID – yellowish-brown “teardrop” buds, fruit and bract may persist, Large, open growth habit when mature
- 7) Elevation to 6500’
- 8) *Tilia americana* ‘Redmond’ – darker leaves, larger bract, maroon red teardrop buds and twigs in winter, pyramidal growth habit.

Tilia americana 'Redmond' –
Redmond Crimean Linden

- 1) Leaves – alternate, simple, heart shaped, dark green larger than *T. americana*
- 2) Flowers – yellow-white, fragrant, favored by bees, June-July
- 3) Fruit – round nutlet, light green bract larger than *T. americana*
- 4) Fall Foliage – yellow
- 5) Cultural Requirements – tolerant of alkaline clay soils
- 6) Winter ID – maroon red “teardrop” buds, fruit and bract may persist, pyramidal growth habit
- 7) Elevation to 6500'

Tilia cordata –

Littleleaf Linden

- 1) Leaves – alternate, simple, smaller, heart-shaped
- 2) Flowers – yellow-white, fragrant, favored by bees, June-July
- 3) Fruit – round nutlet with 2-3” light green bract
- 4) Fall Foliage –gold
- 5) Cultural Requirements – tolerant of alkaline clay soils
- 6) Winter ID – yellowish-brown “teardrop” buds, fruit and bract may persist, pyramidal growth habit
- 7) Elevation to 6,000’
- 8) Cultivars include ‘Greenspire’, ‘Chancellor’, ‘Glenleven’

Prunus cerasifera ‘Newport’
Newport Plum

- 1) Leaves – Alternate, simple, ovate, red/purple
- 2) Flowers – Pink to white, April-May, 3-6” long
- 3) Fruit – Red to dark purple, 1-1 ½ inches long
- 4) Fall Foliage – Red/purple
- 5) Cultural requirements - Hardy but can sucker
- 6) Winter ID – very scaly, pointed bud. Small tree or large shrub, 12-25 feet tall
- 7) Elevation to 8,500’

Pyrus calleryana

Callery Pear

- 1) Leaves – alternate, simple and glossy
- 2) Flowers – white, April, showy
- 3) Fruit – tan/green pome July into winter
- 4) Fall Foliage – variable red-orange-yellow, can be spectacular, held late
- 5) Cultural Requirements – adaptable, prefers full sun and well-drained soil
- 6) Winter ID – persistent fruit, hairy scaly bud
- 7) Elevation to 6,000'
- 8) Cultivars include: 'Chanticleer', 'Redspire', 'Aristocrat'

Crataegus crusgalli inermis

Thornless Cockspur Hawthorn

- 1) Leaves – alternate, simple, glossy, entire, leathery
- 2) Flowers – white corymbs, May, can have a disagreeable odor
- 3) Fruit – deep red pome-like drupe, September-October, persistent into late fall, larger fruit
- 4) Fall Foliage – bronze-red to purplish
- 5) Cultural Requirements – tolerant of a wide range of soils and higher pH, should be well-drained, full sun, tolerates pollution
- 6) Winter ID- twigs zigzag and deep red-purple, rounded, more sunken buds
- 7) Elevation to 7500'

Populus deltoides
Cottonwood

- 1) Leaves – alternate, simple, triangle-shape, glabrous, shiny
- 2) Flowers –catkin
- 3) Fruit – capsule with cotton, June
- 4) Fall Foliage – golden yellow
- 5) Cultural Requirements – for moist sites.
- 6) Winter ID – stout, yellow/brown twig, large, resinous buds.
- 7) Elevation to 8000’
- 8) Cultivars include: Siouxland, Nor’easter, Geronimo

Populus tremuloides
Quaking Aspen

- 1) Leaves – alternate, simple, ovate, blue/green, flat petiole
- 2) Flowers – catkins; male=reddish, female=white, cottony. March
- 3) Fruit – capsule, June/July
- 4) Fall Foliage – yellow/gold, sometimes reddish
- 5) Cultural Requirements – best for high elevations
- 6) Winter ID – light gray/white bark, pointed chestnut brown buds, poplar twig gall.
- 7) Elevation to 9500'

**Deciduous Trees:
Alternate leaf arrangement,
compound leaves**

Sorbus aucuparia

European Mountain-Ash

- 1) Leaves – alternate, pinnately compound
- 2) Flowers – white, flat-topped corymbs, May
- 3) Fruit – orange-red, berry-like pome, showy; heavy fruit load
- 4) Fall Foliage – green to yellow to reddish purple
- 5) Cultural Requirements – prefers slightly acid soil, does not do well in compacted soils or polluted areas, avoid hot exposures

Winter ID – “orange-ish” stem, persistent fruit, large hairy purplish terminal bud, attractive bark with lenticels

- 1) Elevation to 7,500’
- 2) Cultivars include: ‘Cardinal Royal’, ‘Black Hawk’, ‘Cherokee’

Gleditsia triacanthos inermis

Thornless Common Honeylocust

- 1) Leaves – alternate, pinnately or sometimes bipinnately compound
- 2) Flowers – Greenish-yellow raceme, May/June, not showy
- 3) Fruit – reddish-brown pod, 8-18”, can persist into winter
- 4) Fall Foliage – yellow to yellow-green, early
- 5) Cultural Requirements – more drought tolerant, adaptable, full sun
- 6) Winter ID – Fruit, zigzag greenish-tan twigs, buds hidden under swollen nodes
- 7) Elevation to 7,500’
- 8) Cultivars include: ‘Shademaster’, ‘Skyline’, ‘Sunburst’, etc.

Robinia pseudoacacia

Black locust

- 1) Leaves – alternate, pinnately compound, 10-15 short, dull, rounded leaflets
- 2) Flowers – white raceme, May/June
- 3) Fruit – pod, can persist into winter, mature color brown/black
- 4) Fall Foliage – yellow
- 5) Cultural Requirements – salt tolerant, suckers, short lived
- 6) Cultivars include: ‘Purple Robe’, ‘Globosa’
- 7) Winter ID – fruit, short spines in pairs, no terminal bud, zig zag twigs
- 8) Elevation to

Koelreuteria paniculata

Goldenrain Tree

- 1) Leaves – alternate, pinnate or bipinnately compound, 6-18” long
- 2) Flowers – large yellow panicles, June-July, very showy
- 3) Fruit – papery capsule, August-October, pink to yellow to tan, persists
- 4) Fall Foliage – inconsistent yellow
- 5) Cultural requirements – withstands drought, heat, wind, alkaline soils & pollution, full sun, suckers, brittle wood
- 6) Winter ID – raised leaf scars, stout stem, no terminal bud, pith solid white, fruit
- 7) Elevation to 5,500’

Gymnocladus dioicus

Kentucky Coffeetree

- 1) Leaves – alternate, bipinnately compound, to 36” long & 24” wide
- 2) Flowers – greenish-white panicles, May-June, not showy
- 3) Fruit – reddish-brown to brownish black leathery pod, 5-10” long, October, persistent on female trees
- 4) Fall foliage - yellow
- 5) Cultural Requirements - full sun, adaptable to soil and moisture conditions, tolerates some pollution, drought tolerant
- 6) Winter ID – no terminal bud, large leaf scar with small buds above, very stout stem, pink pith color, fruit
- 7) Elevation to 7,500’

**Deciduous Trees:
Opposite leaf arrangement,
simple leaves**

Acer saccharinum

Silver maple

- 1) Leaves – opposite, simple, 5-lobed, deeply sinused
- 2) Flowers – greenish yellow to red, March, not showy
- 3) Fruit – Double samara, May-June
- 4) Fall Foliage – green-yellow-brown
- 5) Cultural Requirements – Transplants well, tolerates variety of soils but prefers slightly acidic and moist soil, often gets chlorosis in alkaline soils.
- 6) Winter ID – Cluster flower buds, light colored silver/gray bark, peels off revealing cinnamon colored under-bark.
- 7) Elevation to 6,000'

Acer x freemanii 'Autumn Blaze' –
Freeman Autumn Blaze maple

- 1) Leaves – opposite, simple, 5-lobed, moderate sinuses
- 2) Flowers – greenish-yellow to red, March, not showy
- 3) Fruit – Double samara, May-June
- 4) Fall Foliage – red, red/orange
- 5) Cultural Requirements – Transplants well, tolerates variety of soils but prefers slightly acidic and moist soil, often gets chlorosis in alkaline soils.
- 6) Winter ID – Cluster flower buds, usually red in color. Silver/gray bark
- 7) Elevation to 6,000'

Acer tataricum

Tatarian Maple

- 1) Leaves - opposite, simple, unlobed, not 'maple-like'
- 2) Flowers – greenish-white, panicles, May, attractive
- 3) Fruit – double samara, green turning attractive red, persistent
- 4) Fall foliage – yellowish-orange to reddish
- 5) Cultural Requirements – adapts to Front Range clays, not as prone to chlorosis
- 6) Winter ID – persistent samaras or stalks
- 7) Elevation to 8,000'
- 8) Clones include: Hot Wings®, a 2007 Plant Select® introduction

Acer platanoides
Norway Maple

- 1) Leaves – opposite, simple, often 5-lobed
- 2) Flowers – yellow to greenish yellow, April
- 3) Fruit – double samara at 180°, September-October
- 4) Fall Foliage – sometimes yellow, leaves hold later
- 5) Cultural Requirements – easy to transplant, adaptable to different soils, tolerates slightly drier conditions
- 6) Winter ID – Terminal bud, large & plump
- 7) Elevation up to 6,000'
- 8) Cultivars include: 'Deborah', 'Royal Red', 'Emerald Queen'

Acer saccharum
Sugar Maple

- 1) Leaves – opposite, simple, often 3-5 lobed, rounded tips
- 2) Flowers – yellow to greenish yellow, April
- 3) Fruit – double samara horseshoe-shaped, don't persist.
- 4) Fall Foliage – orange, red, yellow
- 5) Cultural Requirements –grows at slower rate, needs protected spot
- 6) Winter ID –Buds scaly and pointed, brown
- 7) Elevation up to 6,000'
- 8) Cultivars include: 'Caddo', 'Sugar Cone', 'Campfire', 'Fairview'

Syringa reticulata

Japanese Tree Lilac

- 1) Leaves – opposite, simple, heart-shaped
- 2) Flowers – white panicles, fragrant and showy, June
- 3) Fruit – persistent capsule, not ornamental
- 4) Fall Foliage – yellowish to not significant
- 5) Cultural Requirements – pH adaptable, full sun
- 6) Winter ID – Twin terminal buds, large persistent fruit, attractive cherry-like bark with many lenticels
- 7) Elevation to 6,500'

**Deciduous Trees:
Opposite leaf arrangement,
compound leaves**

Aesculus glabra
Ohio Buckeye

- 1) Leaves – opposite, palmately compound, usually 5 leaflets
- 2) Flowers – showy greenish-yellow panicles, May
- 3) Fruit – light brown capsule with prickly cover, usually containing one seed (“buckeye”)
- 4) Fall Foliage – yellow to orangish
- 5) Cultural Requirements – prefers moist, well-drained, slightly acid soil, full sun or part shade, develops leaf scorch and drops leaves in hot, dry conditions
- 6) Winter ID – large, scaly terminal bud, fruit
- 7) Elevation to 6,000’

Acer negundo

Boxelder

- 1) Leaves – opposite, pinnately compound, usually 3-5 leaflets, yellow-green color
- 2) Twig: waxy; green color in summer with white bloom
- 3) Flowers –greenish-yellow pendulous racemes, May
- 4) Fruit – two-winged samara, pendulous chains
- 5) Fall Foliage – yellow/tan
- 6) Cultural Requirements – Fast-growing, weak-wooded
- 7) Winter ID – purple waxy twig, leaf scar encircles twig
- 8) Elevation to 6,000'

Fraxinus americana

White Ash

- 1) Leaves – opposite, pinnately compound
- 2) Flowers – green to purple panicle, April, before leaves, not ornamentally important
- 3) Fruit – samara (female trees) in fall, can persist into winter
- 4) Fall Foliage – yellow to deep purple and maroon, earlier
- 5) Cultural Requirements – pH adaptable, full sun
- 6) Winter ID – stout stem, bud set down into leaf scar
- 7) Elevation to 6,000' Cultivars include: 'Autumn Purple', 'Autumn Blaze', 'Autumn Applause'
- 8) Emerald ash borer in Boulder County as of December 2017

Fraxinus pennsylvanica

Green Ash

- 1) Leaves – opposite, pinnately compound
- 2) Flowers – green to purple panicle, April, before leaves, not ornamentally important
- 3) Fruit – samara (female trees), can persist
- 4) Fall Foliage – yellow
- 5) Cultural Requirements – very adaptable once established, full sun, susceptible to borers
- 6) Winter ID – stout stem, dark brown scaly buds, leaf scar with bud set on top, fruit
- 7) Elevation to 7,500'
- 8) Cultivars include: 'Patmore', Marshall Seedless', 'Summit' and 'Cimmaron'
- 9) Emerald ash borer in Boulder County as of December 2017



**Conifers: Leaves scale or
awl-like**

Juniperus scopulorum


Rocky Mountain Juniper

- 1) Leaves - scale-like, tightly appressed, variable color from green to gray-green
- 2) Size and growth habit – variable; upright, narrow, pyramidal
- 3) Fruit – cones globular, dark blue, 2 years to mature
- 4) Cultural requirements – native, adaptable
- 5) Winter ID - Foliage scale-like and darker blue fruits
- 6) Elevation to 9,000'
- 7) Cultivars – numerous cultivars selected for growth habit and foliage color: 'Cologreen', 'Gray Gleam', 'Woodward'

Thuja occidentalis

Eastern Arborvitae or American Arborvitae

- 1) Leaves – scale-like, pointed, about 1/2” long, in “flattened” arrangement on branches. Dark green color becoming green-brown-yellow in winter.
- 2) Fruit – cone approx 1/2” long
- 3) Growth Habit – varies, usually single stem, many cultivars selected, most on the basis of growth habit and size
- 4) Cultural Requirements – full sun and well drained soil; often winter burns in dry, windy, exposed sites
- 5) Winter ID - flattened/compressed foliage; cones
- 6) Elevation to 6,000’
- 7) Cultivars include ‘Emerald’, ‘Techny’ and ‘Hetz Midget’



**Conifers: Needles in
bundles, woody cones**

Pinus aristata

Bristlecone Pine

- 1) Leaves - Borne 5 together and persist for 14-17 years, 1-2" long. Dark green color with white resin exudations on needles.
- 2) Size and Growth Habit - 20-40' tall and 15-20' wide. Irregular, branches to ground.
- 3) Fruit – Cones, 2-4" length, bristle tip at end of scales
- 4) Comments - slower growing and thought to be one of the oldest living plants on earth. Native.
- 5) Winter ID – Needles in groups of 5, with white resin dots, cone
- 6) Elevation to 11,000'

Pinus edulis

Pinyon Pine

- 1) Leaves - borne 2 or 3 together; shorter, resinous. Light green color
- 2) Size and Growth Habit - 15-25' tall and 15-20' wide. Open, irregular 'shrubby' appearance.
- 3) Fruit – Cones, resinous, rose shaped. Females produce large pinon seed, edible
- 4) Comments - slow growing, round headed pine. Very drought tolerant. Colorado native.
- 5) Winter ID – Cone, needles sometimes swollen with insect gall, resinous buds, breaks between needles where male flowers located.
- 6) Elevation to 7,500'

Pinus mugo

Mugo Pine or Swiss Mountain Pine

- 1) Leaves – needles in pairs, persisting 5+ years and about 1.5” long, curved. Medium green to dark green color, sometimes becoming yellowish green in the winter
- 2) Size and Growth Habit – extremely variable; several cultivars selected for size and/or growth habit
- 3) Fruit – Brown cones approx. 1.5”, single or in groups of 2-3
- 4) Cultural Requirements – tolerant of alkaline soils, best in well drained loamy soils, full sun to partial shade
- 5) Winter ID – cones, paired/curved needles, stout resinous buds
- 6) Elevation to 7,000’
- 7) Cultivars include ‘Tannenbaum’, ‘Mops’ and ‘Big Tuna’

Pinus nigra

Austrian Pine

- 1) Leaves - In pairs, persisting 4-8 years, stiff, 5-6" long. Dark green color which holds into winter
- 2) Size and Growth Habit - 40-50' tall and 25-30' wide. Pyramidal to oval dense with age.
- 3) Fruit – Cone, 2-3 together or single, 2-3" long, no spines at end of scales
- 4) Comments - fast growing. Adaptable to Rocky Mountain region.
- 5) Winter ID – needles darker green than ponderosa pine, whitish buds, grayish bark
- 6) Elevation to 7,500'

Pinus ponderosa

Ponderosa Pine or Western Yellow Pine

- 1) Leaves - in threes, or sometimes twos, remaining about 3 years, 5-10" long and curved. Medium green color which turns yellow green in fall and winter
- 2) Size and Growth Habit - 50-60' tall and 20-25' wide. Younger trees are more narrow, pyramidal in growth, and older trees more open, rounded in habit, often void of lower branches.
- 3) Fruit – Cone, 3" long, prickle on end of scale
- 4) Comments - Valuable forest tree. CO Native.
- 5) Winter ID – yellowish needle color, soft and long needles, cone, reddish brown buds and cinnamon colored bark
- 6) Elevation to 9,000'

Pinus sylvestris

Scotch Pine

- 1) Leaves - in pairs, persisting about 3 years, twisted, stiff, about 1-3" long. Bluish green color, frequently changing to yellow green in the winter
- 2) Size and Growth Habit - 40-50' tall and 20-25' wide. Open, wide spreading as matures.
- 3) Fruit: Cone, 1-2", light tan to khaki color
- 4) Comments - peeling, orange-red bark with age.
- 5) Winter ID – twisting needles, smaller cone
- 6) Elevation to 7,000'

Pinus strobus

Eastern White Pine

- 1) Leaves -.Needles in groups of 5, Needles soft and flexible
- 2) Foliage color – bluish-green, white stomatic lines on inner surface.
- 3) Cone: Much longer 6-8” than wide 1”, light brown, resinous
- 4) Size – Large, pyramidal ascending branches
- 5) Comments – not salt tolerant, tip dieback in dry winters
- 6) Winter ID – Needles in groups of 5, soft. Long cones.
- 7) Elevation

Pinus flexilis
Limber Pine

- 1) Leaves - Borne 5 together, stiff needles, 2-3" length
- 2) Foliage color – dark green
- 3) Twig - Very flexible
- 4) Size - 20-40' tall and 15-20' wide
- 5) Comments –native, pyramidal open growth habit
- 6) Cultural requirements – likes well drained sites
- 7) Winter ID – Needles in groups of 5, with white resin dots, cone short-stalked, 3-6" length, 1.5" wide, scales come to point, resin
- 8) Elevation to 11,000'



Conifers: Singular needles

Picea pungens

Colorado Spruce

- 1) Leaves – radially spaced around stem, stout, sharp point, about 0.75” - 1” long. Variable dull green to bluish or silvery white color.
- 2) Size and Growth Habit - 70-80’ tall and 30-35’ wide. Pyramidal horizontal branching, becoming more open as matures.
- 3) Fruit: Cone, 2-4” length, papery scales with resin
- 4) Comments - Prefers rich, moist soil in sunlight. Many clones selected for foliage color and growth habit. Susceptible to Ips beetle. Native.
- 5) Winter ID – single bristly needles, rose shaped bud, papery cones.
- 6) Elevation to 9,500’

Abies concolor

White Fir, Concolor Fir

- 1) Leaves - curve outward and upward, 1.5-2.5" long, flattened, glaucous on both sides. Bluish or grayish green color with pale blue bands on the underside
- 2) Size and Growth Habit – 30-40', Pyramidal to open as matures, branches to ground.
- 3) Fruit – Cones, stalked, cylindrical, pale green before maturity or often with purplish bloom. Sit upright on stem. Scales fall off in Fall, only stalk remains.
- 4) Winter ID- flat blue-green soft to touch needles, curve upward. Small resinous bud. Gray, smooth bark, may become scaly as matures.
- 5) Elevation to 9000'

Pseudotsuga menziesii
Douglas Fir

- 1) Leaves –Horizontal, straight, apex blunt or pointed, narrowed at the base, $\frac{3}{4}$ -1½ inches long. Shining dark green color, narrowly grooved with 2 white bands of stomata beneath.
- 2) Size and Growth Habit -Densely pyramidal with horizontal branching. 12 to 20' wide, up to 80' in landscape.
- 3) Fruit – Cones, pendulous, 3-4 inches long, oval-ovoid, scales numerous, thin slightly convex, light brown, bracts straight, erect and exerted (bracts similar to rat tails).
- 4) Winter ID- cones, pointy tight bud, soft needles
- 5) Elevation to 11,000'

Thank you!

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