

## **DOUGLAS FIR** *Pseudotsuga menziesii*

**NEEDLES:** Single needles ½ in to 1 ½ in. arranged in bottle brush style around the stem. (On very young trees it may be flat splayed.)

**CONES:** Cones are 2 to 4 in. long and pendant with a “rat tail” three pronged bract projecting from under the scales.

**BARK:** Dark grey and deeply furrowed, on younger trees light grey. On extremely old trees in old growth forests bark will have the “jigsaw puzzle” bark flakes similar to Ponderosa Pine and other pines.

**BUDS:** The buds on the tips of the stem are sharp pointed, a key ID feature (except fresh winter early spring growth tips. The only conifer in the area with single needles and sharp pointed buds. Douglas Fir typically grows to a height of 150 to 200’ with a diameter from 2 to 5 ft. It is used for making lumber, especially house framing,, pulp and plywood and Christmas trees. Most important timber tree in US. It is fast growing. When small, young and growing in the understory it may look like a white fir. Very shade tolerant.

## **CYPRESS FAMILY** CUPRESSACEAE

### **INCENSE CEDAR** *Calocedrus decurrens*

**NEEDLES:** Green, scale-like leaves in flat sprays, ¼ to 3/4” long, aromatic.

**CONES:** ¾ to 1” long, 3 pairs fused scales, duck bill shape.

**BARK:** Fibrous stringy red brown, looks like redwood bark and is furrowed. Incense Cedar grows to be 90 to 150’ tall and 3 to 5 ft. in diameter at elevations ranging from 700 to 7,000 ft. in Shasta County. Pollination occurs in the winter. It is used for fences, fence posts, shingles, pencils, cedar chests, interior paneling and decking. The aromatic wood is resistant to decay. Early logging operations left Incense Cedar in the forest as it was considered an undesirable wood.

### **Other plants on trail**

Alder, Mountain *Alnus incana ssp. tenuifolia*

Little-leaf Creambush *Holodiscus discolor var microphyllus*

Mountain Pride *Penstemon newberryi var. newberryii*

Snow Plant *Sarcodes sanguinea*

Yellow Pond Lily *Nuphar polysepala*

# **Conifers of the Lily Pond Trail**

## **Lassen Volcanic National Park**

Composed by David Ledger

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### **PINE FAMILY** PINACEAE

#### **JEFFREY PINE** *Pinus jeffreyi*

**NEEDLES;** 3, green to green blue to yellow green, 7 to 11 in. long

**CONES:** 4 to 10 in. long, round, reddish brown with prickles pointed in. (“gentle Jeffrey”)

**BARK:** Jig-saw puzzle like pieces in large plates, deeply furrowed, may smell like vanilla.

This pine is similar to the Ponderosa Pine, but can grow in harsher environments as on poor soils, serpentine and dryer climates at elevations from 5000 to 10000’ in the Sierra Nevada range and as low as 500’ in the Klamath Range and Southern Oregon. At maturity it grows to 100 to 150’, 3 to 4 ft in diameter and can live to be 500 years old. It is an important lumber tree. The tree is fire resistant but like Gray Pine produces heptane in its resins, a highly flammable hydrocarbon.

#### **PONDEROSA PINE** *Pinus ponderosa*

**NEEDLES;** 3 in bundle, green to green blue to yellow green, 4 to 6 in. long.

Needles feel rough if rubbed from the tip to the base.

**CONES:** 4 to 6 in. round ,dark reddish brown with prickles pointed out. (“prickly ponderosa”) Basal scales of are dark brown to black, on the base side closest to the stem.

**BARK:** Jig-saw puzzle like pieces in large plates, deeply furrowed often yellow underneath.

This classic tree of the West grows from 500’ to 6000’ elevation in Shasta County and reaches a height of 100 to 180 ft. with a diameter of 3 to 4 feet. The tree is fire resistant and frequent fires keep out competitors such as White Fir. This is a very important lumber tree and can be used to make turpentine from its resins. Very important lumber tree. Both Jeffrey and Ponderosa Pine are intolerant of shade.

**LOGEPOLE PINE** *Pinus contorta* ssp. *murrayana*

NEEDLES: 2 per bundle 1 to 3 in. long.

CONES: 1 ½ to 2 ½ in long, many cones remain on tree for several years, cone base usually remains closed.

BARK: Bark is gray with a thin “cornflake” pattern.

Lodgepole Pine grows from 70 to 120 ft. tall and 12” to 24” diameter, with some trees reaching 5 ft. diameter and has a narrow crown. It grows from 5000 to 8000 ft. elevation in Shasta County, to 11,000 ft. in the southern Sierras. The tree can grow in a variety of habitats, from damp meadows to rocky areas. Shore Pine is a closely related subspecies that grows on sand dunes and coastal terraces in a contorted stunted growth form. Lodgepole pine is used for log homes and paper pulp. Susceptible to fire replacing stands as happened in Lassen Volcanic National Park in the natural lightning caused Reading fire in 2012.

**SUGAR PINE** *Pinus lambertiana*

NEEDLES: 5 in bundle, dark green, 2 to 4 in. long.

CONES: 12 to 24 in. long, brown scales with yellow brown tips, without prickles. Has a straight stem of 3 to 4 in.

BARK: The bark is red brown with long furrows and small jigsaw like pieces. This tree grows from 170 to 200 ft. tall with a diameter of 4 to 5 ft. at elevations of 1500 ft. to 7500 ft. in Shasta County. This tree can be recognized at a distance with the long pendant cones hanging off the spreading horizontal limbs. On younger trees the branches grow more upright at a 45 degree angles. It is susceptible to white pine blister rust. The tree is fire tolerant. The wood is used for lumber and molding, wood shakes. Grows on the ridge above the Whiskeytown Visitor Center.

**WESTERN WHITE PINE** *Pinus monticola*

NEEDLES: 5 per bundle, 2 to 4 in. long, green to blue green.

CONES: 5 to 10 in. long with a curved stem, scales are brown and tips are yellow brown, looks similar to sugar pine but smaller. Often in clusters of 2 to 4.

BARK: Gray brown and split into rectangles somewhat like an alligator skin, but can look a little like the cornflake pattern of Lodgepole on some trees. This tree grows from 130 to 180 ft. tall with a diameter of 2 to 4 ft. at elevations generally from 5000 to 10000 ft., but can grow as low as 500. The wood is used for lumber and moldings and most wooden matches.. It has a narrow crown. It is also susceptible to white pine blister rust. Somewhat fire tolerant.

**RED FIR** *Abies magnifica* var. *magnifica*

NEEDLES: Single, ¾ to 1 ½ in. with leaf base that parallels the stem and has a hockey stick shape. Four angled needle that can be rolled between fingers

CONES: 6 to 9 in. long, bracts hidden, purple to brown, deciduous, rarely on ground

BARK: Redish brown bark on older trees with red scale pieces, medium deep long furrows, young trees have gray bark. Break off a piece of bark and it will be red through out.

This tree grows to 150 to 180 ft. tall with a diameter of 4 to 5 ft. at elevations of 4000 to 9000 ft. The tree is shade tolerant. The trees are used as lumber, Christmas trees and plywood.

**WHITE FIR** *Abies concolor*

NEEDLES: Single, 1 to 2 ½ in. long, dark green and arranged in flat sprays and twisted at the base. Needles turned upward on higher branches.

CONES: 3 to 5 in. long, deciduous and sit upright on upper branches.

BARK: Gray with deep furrows on older trees, light gray on younger trees. Pieces of bark have alternating layers of red-brown and yellow, looks somewhat like bacon.

This fast growing conifer grows to 125 to 175 ft. tall with a diameter of 3 to 5 ft. at 3000 to 9,000 ft. elevation. This tree is very shade tolerant and can grow in the low light of the understory and become the dominate species in forests where there has been fire suppression. Frequent natural fires can keep this tree in abeyance. The wood is used as Christmas trees, construction wood, plywood and some pulp.

**MOUNTAIN HEMLOCK** *Tsuga mertensiana*

NEEDLES: Single, ½ to 1” long, three sided, blue-green, soft, arranged in bottle brush style around stem.

CONES: 2” to 3” long, tan, thin scales with smooth edges, pendant.

BARK: The bark is a gray brown with deep fissures.

This subalpine tree grows be 100’ tall, 2 to 3’ in diameter at elevations ranging from 4000 to 11,000 ft. and can live to be 800 years. It has a drooping leader at the top of the tree which makes it a key easy identifying feature at a distance. Lower drooping basal branches on the ground can reproduce vegetatively. Little availability for lumber in California.