



Sugar Pine *Pinus lambertiana*

General Description

Sugar pines (*Pinus lambertiana*) are the largest of the pine genus in both height and volume. The branches often sweep gracefully downward from the weight of their hefty cones, while their pyramidal crowns reach upward for the sky. These deep-rooted pines with their dark green foliage are sure to stand out in every season.

Sugar pines commonly grow between 40 and 60 m (130–200 ft) tall, with some growing up to 76 m (250 ft) tall. The mature trunks, distinguished by deeply furrowed cinnamon-red bark, grow to 1.5–3 m (5–10 ft) wide. The sweeping branches contain needle leaves that are 8 cm (3 in) long and arranged in clusters of 5. Most notable are the massive, woody cones that may reach a length of over 51 cm (20 in), but average 30 cm (12 in) long and are commonly 10–15 cm (4–6 in) wide. The cones fill with plump seeds that mature in late August and often weigh several pounds!

Habitat and Distribution

Where are these coniferous forest giants found? In 1826, famous Scottish botanist-explorer, David Douglas, first noticed the sugar pine on the headwaters of the Umpqua River in Oregon. Native to the Pacific coast mountains, they grow in dry to moist, mixed-conifer forests primarily along the west slope of the Cascade Range from the north central Cascades in Oregon and south into the Siskiyou, Klamath, and Sierra Nevada mountains. Smaller, isolated populations are found in the Coast Range of southern Oregon and California, and in this species' southernmost

extent, on a high plateau in the Sierra de San Pedro Mártir Mountains of Baja California Norte, Mexico. Sugar pines occur at elevations from 183 m (600 ft) (rare) with Coast redwoods, to 3,353 m (11,000 ft) (upper limit) on Mount San Pedro in southern California, but they are most commonly found at 914–1829 m (3,000–6,000 ft) elevation.

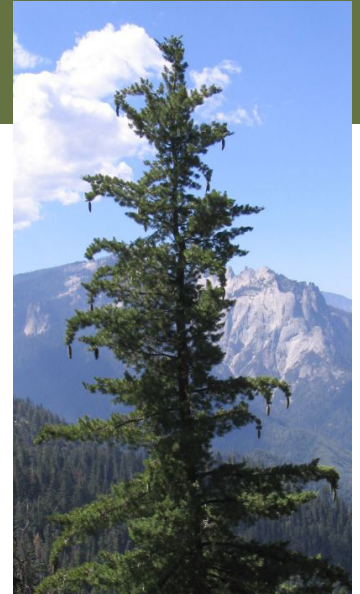
Life Cycle

Sugar pines, like other pine species, produce both male and female cones. Male cones are smaller and less noticeable. The scales of male cones are closely knit together and grow on lower branches of the tree. Female cones grow on higher branches. At maturity, male cones release pollen, which travel to the female cones by wind or by insects for pollination. Seeds grow inside the hardened scales of female cones, and fertilization occurs about 12 months after pollination. It can take many years for a cone to develop, become fertilized, and produce seeds. The most productive seed years are every 3–5 years. The seeds are mainly dispersed by animals (birds and mammals) and wind.

Each sugar pine seed is adorned with a 2 cm (0.75 in) long wing, which helps with dispersal. The 1 cm (0.5 in) long seed flies on the wind until gravity takes hold. Then, the seed drops, settles into the soil, and if conditions are favorable, it begins to grow. From a seedling to a sapling with smooth gray bark, it matures to eventually produce long slender purplish cones. A sugar pine can grow into a stately forest giant that can live up to 500 years and more!

Ethnobotanical Significance

Native American people in the region used the sweet tasting sap of sugar pine as a food additive and medicine. The seeds are a nutritious food source—a type of edible pine nut. The nuts were often roasted or pounded into cakes and stored for the winter. The blackish brown nuts were also used as decorative beads in jewelry.



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Sugar pine, *Pinus lambertiana*.

Early European settlers used sugar pines for timber. The wood is renowned for being lightweight (despite its massive volume), knotless, and very straight. Sugar pine lumber is used to make storage containers, wide knotless boards, and piano and organ keys.

Conservation

Sugar pines are susceptible to white pine blister rust (*Cronartium ribicola*) infection and mountain pine beetle (*Dendroctonus ponderosae*) attack. Other factors such as climate change, wildfire suppression, and logging make sugar pines vulnerable.

Where to See

Sugar pines are present in all Klamath Network parks, but only commonly found in Whiskeytown NRA, Lassen Volcanic NP, and Oregon Caves NM&P.

More Information

https://www.oregonencyclopedia.org/articles/sugar_pine/#.YcTGImjMKU1

<https://www.nps.gov/articles/000/white-pines-in-decline.htm>

<https://www.usgs.gov/news/12-days-conifers-tale-two-conifers-incense-cedar-and-sugar-pine>



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THIS EDITION PREPARED BY JENNIFER CHENOWETH



This unusually large mature female sugar pine cone is 22.9 inches long.