

Sitka Spruce

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Dense rainforests along foggy coastlines with trees as large as mythical giants. That is one image of the classic Sitka spruce (*Picea sitchensis*) forest. The Sitka spruce is all of that and more.

This conifer is the largest of the spruce species and the third-largest tree in the world – after the coastal redwood and Douglas-fir – averaging 125-180 feet tall and three to five feet in diameter. The largest known tree in the United States is a Sitka spruce and until last December’s storm, that honor was shared by Oregon’s own “Kloochy Creek Giant” which was over 200 feet high and 17 feet in diameter.

This species’ natural range is the lower elevations – up to 1500 feet in Oregon – primarily along the narrow strip of the Pacific Northwest coastal fog belt lands from southeastern Alaska to northern California, occasionally venturing short distances further inland. The Sitka spruce thrives in a mild climate of high annual rainfall, and cool, wet summers with accompanying summer coastal fogs that add additional crown moisture and block the warmth of the sun. It is shade- and salt spray-tolerant, and shallow-rooted, growing in brackish bog water and the soils found nearest Oregon’s ocean dunes and coastal beaches, and on the barren wind-swept headlands. Many of this spruce’s other names – the coast west spruce, coast spruce, tideland spruce, western spruce – reflect it’s native range.

After slowly initially becoming established, Sitka spruce are among the world’s fastest growing trees. They are long-lived – up to 800 years – and, as such, were a “pioneer” of the Pacific Northwest coastline, colonizing glacial moraines centuries ago when glaciers retreated.

In Oregon, this native evergreen may grow in pure stands, but is more commonly seen mixed with western hemlock and other species such as western redcedar, red alder, and lodgepole pine or shore pine. Many wildlife species are attracted to spruce forests. Deer, porcupines, elk,

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Photo by Jeri Chase, ODF



Sitka spruce needles

Photo by Cynthia Orlando, ODF



Guitar soundboards are one common use for spruce wood



Photo by Jack Sleeper, USFS

bear, rabbits, and hares browse the new foliage. Bald eagles and peregrine falcons find stellar roosts in their branches. And a variety of other mammals, game and non-game birds, reptiles, and amphibians use these forests for the excellent hiding and cover they provide.

Because of its unusually long fibers, it is among the finest quality of pulpwood for the manufacture of paper products. The wood is fine-grained, straight, and relatively elastic, soft and easy to work with - if free of knots. It can also be great, long-lasting firewood – a few Sitka spruce “knots” will burn all night.

One of the most unique qualities of Sitka spruce wood is that it is surprisingly both strong and light at the same time – it has what is referred to as “high strength-to-weight ratio.” This makes it valued for many specialty uses – turbine blades for wind-driven electricity generators, ladders and oars, aircraft, spaceship, and missile components and gliders, sailboat masts, and racing sculls – things that need to be lightweight for speed. Nearly all of the Allied forces’ airplanes in World Wars I and II were made largely from Sitka spruce.

Sitka spruce wood is also highly resonant and many musical instruments that rely on this unique quality are manufactured primarily from Sitka spruce – guitars, harps, violins, and pianos. Today’s Native Americans make still make traditional wooden flutes out of Sitka spruce.

Past Native Americans believed the Sitka spruce possessed mystical powers and provided protection against evil thoughts, using boughs in winter dance ceremonies to protect dancers and inspire fear in their enemies. They used Sitka spruce pitch in a variety of ways – caulking canoes, chewing, glue, and a protective varnish. Pitch and decoctions of roots, branch tips, bark, or cones were


also used medicinally – to treat diarrhea, rheumatism, stomach pain, constipation, back aches, and for steam baths. Today, the inner bark and young shoots may still be eaten as emergency food and a tea can be made from young shoots.

In appearance, the Sitka spruce is straight-trunked, often with a characteristic “flared” base – swollen and buttressed, particularly as the tree matures. The bark of younger trees is grey and smooth, becoming darker purple-brown and scaly with age. One to four-inch oblong cones with paper-thin scales that are green to purple grow near the tree’s top.

The crown is open and conical, with horizontal, rigid limbs and pendulous branches commonly reaching the ground, although there may be no branches in the lowest portion of trees as they age. The one to one-and-one-half-inch needles are extremely stiff, sharp, and prickly, yellow-green above and white streaks on their undersides, and borne on woody pegs.

Important for its timber production and as a component of old-growth habitat throughout the Pacific Northwest, the Sitka spruce is probably most valued in the state of Alaska, where it was adopted as the state tree in 1962 because it was so critically important to that state’s economy. Its’ common name and Latin name – *Picea sitchensis* – reflects this relationship, with “picea” meaning “pitch” and “sitchensis” for Sitka, where the tree was first sighted by European explorers.

Dense rainforests along foggy coastlines filled with trees as large as mythical giants...part of Oregon’s heritage and history...products that enhance our economy and enrich us culturally...magical protection and power. The Sitka spruce forest is all of that and more.

Find out for yourself – visit one of Oregon’s forests. 

Note: A famous Oregon icon fell to the December 2007 storm – the Seaside Spruce or Kloochy Creek Giant – the largest spruce known in the United States, sharing that title with Washington’s Quinault Lake Spruce. The spruce will retain its title of heritage tree for the time-being, and Clatsop County will include additional interpretive displays at the park to tell the history of the tree’s life and fall. Its trunk remains on the ground to serve as a “nurse log” for future generations of Sitka spruces – a living story of birth and new life in the forest. For more information on Oregon Heritage Trees, go to <http://www.oregontic.com/heritage/trees.php>