

Bigleaf Maple (*Acer macrophyllum*)

Description

Bigleaf maple (*Acer macrophyllum*), is one of the few commercial hardwood tree species on the Pacific Coast. Mature bigleaf maples generally range from 50 to 100 feet tall and 12 to 36 inches in diameter. The crown (spread of the branches) can reach a diameter of 50 feet on larger trees. The bigleaf maple is moderately long-lived (up to 300 years). True to its name, the leaves generally reach 12 inches across, with some leaves up to 24 inches. In the fall the leaves blanket the forest in brilliant yellows and golds. Come spring, creamy yellow flowers load the branches. In forest stands, maples often develop clear, well-formed trunks with narrow crowns. Without nearby trees, bigleaf maples have broad, rounded crowns on short, branching trunks. The bigleaf maple root system is shallow and spreads through wet or shallow soils. The bigleaf maple is an excellent shade tree.

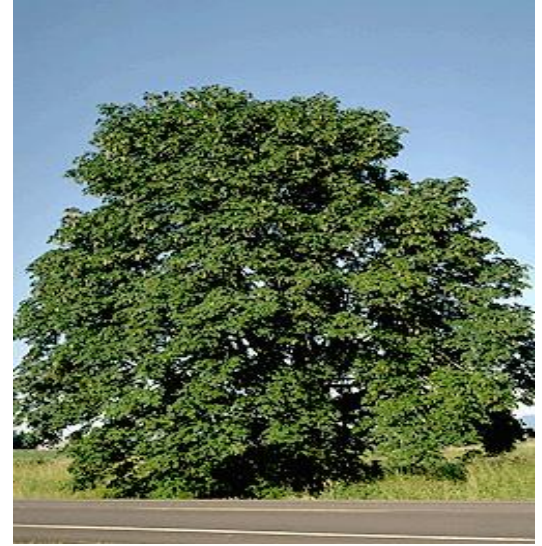


Photo by John Seiler

Distribution and Habitat

Like most native maples, bigleaf maples dominate the landscape near streams and in river floodplains. This sociable species grows in exclusive groups or scattered amid conifers. The bigleaf maple is common in foothills and valleys from southern British Columbia south through the Cascades to the southern Sierra Nevada mountains. The bigleaf maple grows from near the Pacific Ocean up to 186 miles inland.

This tree prefers moist well-drained soils of riparian habitats but tolerates both seasonal flooding and dry upland environments. The tolerant nature of this maple means the tree can live in deep loamy soils, as well as poorer rocky soils.

Bigleaf maple may establish in the full sun, but it also grows in partially shaded sites. The quickly decomposing leaves are very high in nutrients and generate thick, rich soils beneath the tree's canopy. If you lift up a mass of maple leaf litter, you can be pleasantly surprised by finding a rare Megomphix snail or jumping slug! Many mollusk species (such as snails and slugs) prefer the maple's protective layers of thick litter (decomposing leaves) and nutritious humus (soil from decomposed leaves). Bigleaf maple is a soil-building species that benefits the sites on which it grows.

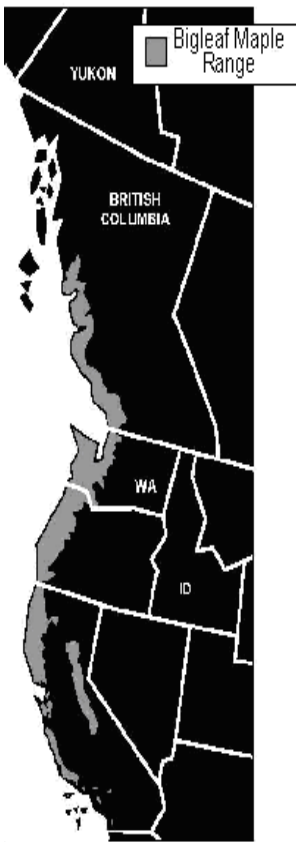
The calcium-rich bark supports a blanket of plants within the bark cracks. In the moist canyons of mountain streams, mosses, lichens, Licorice ferns, and liverworts anchor into every niche and begin a mutually beneficial relationship with their host tree. While the maple provides these plants with nutrients and habitat, the tree produces a network of aerial roots in its crown to tap into the nutrients and moisture associated with these other plants.

Reproduction:

A bigleaf maple begins to produce double winged samaras (seeds) at about 10 years of age. In the spring flowers bloom before the leaves emerge. The flowers are greenish yellow and scented. Insects usually pollinate the flowers within 2 to 4 weeks after blooming begins. The fertilized seeds ripen in September and October. Browsing by deer is an important factor influencing the survival of bigleaf maple seedlings. Temporary flooding is common on riparian sites, but the seedlings can survive short periods of flooding. However, bigleaf maple is not as tolerant of flooding as red alder, Oregon ash, black cottonwood, Sitka spruce, and western red-cedar. Flooding for 2 months during the growing season may kill both maple seedlings and mature trees. Rapid height growth of bigleaf maple continues through the sapling stage. This maple frequently replaces willow or red alder in riparian areas. Sometimes it replaces oaks or Pacific madrone on upland sites.

Conservation:

The Refuge Conservation Plan established a forest area canopy cover goal of 40% to 60%, with bigleaf maple a component.



Wildlife Uses:

Elk and deer browse the foliage and young stems of bigleaf maple. Male elk and deer often rub their antlers on saplings. Beavers clip seedlings and saplings on the Refuge. Birds and rodents feed on bigleaf maple seeds. Feeding by rodents and invertebrates (such as insects and slugs) is a major cause of seedling death. The understory vegetation associated with maple can be quite different from that in adjacent conifer woodlands. A variety of birds and mammals may benefit from these distinct attributes of food and habitat. Many insects feed on mature bigleaf maple foliage, twigs, and wood, causing only minor damage in most cases.

Its long-lasting downed woody debris creates important habitat for cavity nesting birds. The decaying wood attracts a host of insects that birds eat. The woody debris decomposes slowly in streams and rivers, creating fish habitat. For a successful garden, plant the trees along with its native companions including sword fern, Oregon grape, and salal. The bigleaf maple's natural communities also include Douglas fir, western hemlock, vine maple, and willows.

Fun Facts:

- The largest bigleaf maple grew in Clatsop County, Oregon, with a diameter of 12 feet, a height of 103 feet, and a crown spread of 112 feet, but it blew over in a 2011 windstorm. However, a Lane County bigleaf maple keeps the “world’s largest” title in Oregon.
- Large dense burls (rounded growths) at the base of the trunk are esteemed for their attractive knotted grain patterns. The finely grained wood can be fashioned into fine furniture, interior finishing, musical instruments, and cabinets.
- Like other maple trees the sap may be boiled down into a sweet syrup
- The flowers are edible and may be used in salads.
- Historically Native American uses included:
 - Carved oars – giving the tree the name of “paddle tree”;
 - Temporary containers from the leaves;
 - Leaves covering food cooking in fire pits;
 - Rubbing the underside of leaves on teenaged males to prevent thick whiskers; and
 - Ropes and baskets from the fibrous inner bark.



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References:

Eyre, F.H., ed. 1980. Forest cover types of the United States and Canada. Society of American Foresters, Washington, DC.

S.S. Niemiec, G.R. Ahrens, S. Willits, and D.E. Hibbs. 1995. This information was originally published in *Hardwoods of the Pacific Northwest*. Oregon State University, Forest Research Laboratory.

Tualatin River CCP/EA. 2013. fws.gov/tualatinriver/refugeplanning.htm, Tualatin River NWR, Sherwood, OR. online. accessed 12/14/2015.

FRIED, J.S., J.C. TAPPEINER II, and D.E. HIBBS. 1988. Bigleaf maple seedling establishment and early growth in Douglas-fir forests. *Canadian Journal of Forest Research*.

MINORE, D., and J.C. ZASADA. 1990. Bigleaf maple. P. 33-40 in [Silvics of North America](#), Volume 2, Hardwoods. R.M. Burns and B.H. Honkala, coords. USDA Forest Service, Washington D.C. Agriculture Handbook 654.

NADKARNI, N.M. 1984 Biomass and mineral capital of epiphytes in an *Acer macrophyllum* community of temperate moist coniferous forest, Olympic Peninsula, Washington State. *Canadian Journal of Botany* 62:2223-2228

Pojar, J. and Mackinnon, A. 1994. *Plants of the Pacific Northwest Coast*. P. 45.

The Wild Garden, Hansen's Northwest Native Plant Database, 2012

V Tree, bigleaf maple, *Aceraceae acer*, Virginia Tech, Department of Forest Resources and Environmental Conservation, Copywrite 2015. Photo by John Seiler

http://blog.oregonlive.com/terryrichard/2011/04/oregon_loses_worlds_largest_bi.html

<https://www.americanforests.org/big-trees/bigleaf-maple-acer-macrophyllum-2>