



Mountain Loop Conservancy Fact Sheet:

Western Hemlock *Tsuga heterophylla*



Range: The Western hemlock ranges from the coastal areas of northern California northward to south central Alaska. It grows in all but the wettest and driest areas west of the major mountain ranges in the region. The Western hemlock also occurs in the wetter parts of the Rocky Mountain System in southeast British Columbia, northeast Washington, northern Idaho, and northwest Montana. It grows in low to middle elevations up to 3,000 feet (900 m). In Washington State, Western hemlock often grows in association with Douglas-fir and western red cedar.

“Droopy” tops of Western hemlock

Identification: Western hemlock grows to a height of 200 feet (60 m) and average 4 feet (1.2 m) in diameter. Trees can reach an age of 500 years. They have long limbs that gracefully sweep downward. Trees can be identified from a distance by their “droopy” top-most leader branch. The foliage is also distinctive. The needles are of unequal lengths, short, flat, and blunt. The bark is a dark, rich brown color and becomes thick and furrowed as it ages. The 1 inch (2.5 cm) long cones hold 30-40 seeds. Seeds can germinate in a wide variety of soils and habitats.

Unique characteristics: Unlike other conifers in its range, Western Hemlock thrives in shade. Seedlings do not need an open area created by fire or other disturbances to grow. Young tree seedlings of Western hemlock commonly grow on “nurse logs”. Its dense growth in mature stands will not allow enough light through for other species to grow. This species is so successful, that it can eventually dominate a forest. Some refer to it as the “Cinderella tree” because though not as spectacular as other conifer tree species, it is successful as a commercial and ecological component of northwest forests.



Nurse log with Western hemlock seedlings



John J. Harter
1988 ©

Value to wildlife: Douglas fir-Western hemlock forests are predominant in the Pacific Northwest and provide a mix of shaded and more open habitats. Edges formed between different forest types and geological features offer wildlife easy access to food and cover. A variety of animals occupy habitats in varying stages of maturity. Rabbits and snowshoe hares eat young Western hemlock seedlings. Deer and elk feed on the foliage. Mature trees provide holes for cavity nesting birds. The various levels of a forest, from ground level to canopy top, are utilized by specific species. Tree frogs and rough-skinned newts used downed logs as shelter. Small mammals such as deer mice and chipmunks live at ground level and attract predators including coyotes, bobcat, and bear. The tiny winter wren, with its melodious song, is common in the understory layer. Douglas squirrel and Steller’s jay are common in the overstory layer. Spotted owls and northern goshawks nest and hunt in the canopy layer.

Northern goshawk in flight

Commercial value: Though once considered “worthless” and a weed species, this tree has many uses. Its habit of forming dense forests produces more timber per acre than less densely growing species such as Douglas-fir. Western hemlock lumber is used for construction framing, windows, doors, moldings, and paneling. Its strong and wear-resistant characteristics make it ideal for ladders, stair components, and gymnasium floors. This wood is easy to machine and finish so is used in furniture and cabinet making. Its fiber is used in the production of paper and in the manufacturing of rayon, cellophane, and many plastics. It is prized as an ornamental plant.



Needles and cones of Western hemlock

Historical uses: Archeological evidence indicates that people were present in the Pacific region of North America 10-14,000 years ago. Plant materials were used by native people and later by European immigrants. The Western red cedar is well known for its usage by Native Americans and First Peoples, but the Western hemlock was also widely used. The bark of hemlock is rich in tannin so it was used to tan hides. It was used to make baskets water tight and as a decorative trim. Dye made from Western hemlock and mixed with other materials made red, black, and yellow-orange colors. This dye was used for dyeing baskets, mountain goat wool, fishnets (so they would be invisible to fish), dip-nets, and paddles. Western hemlock was used for personal care including as a facial cosmetic, hair remover, sunscreen, and powder for foot odor. It was used medicinally as a poultice, linament, hunger suppressant, diuretic, and to treat hemorrhaging. Pitch was used as chewing gum and tea was made from leaves and young shoots. It is easy to carve so was made into spoons, feast bowls, combs, wedges, berry-picking hooks, and roasting spits. It was used in fishing for hooks, dip-net poles, drying and steaming racks, and for collecting fish spawn. Spear shafts and bows for children were made from it. Clothing such as skirts, headdresses, and headbands were made from Western hemlock. It was sometimes used as bedding.

Interesting Fact: In 1946, a newspaper in Oregon pointed out the fact that Washington did not have a state tree. They suggested that we consider the Western hemlock. A Washington paper responded by proposing the Western red cedar as a possible state tree. Washington State Representative George Adams advocated strongly for selecting the Western hemlock. He said Western hemlock would become “the backbone of this state’s forest industry”. It was designated as the Washington State tree in 1947.

Sources

Arno, S.F. and R. Hammersly 1977. *Northwest trees*. Seattle, WA: The Mountaineers.

Hemlock. (n.d.). Retrieved from <http://www.woodmagazine.com/materials-guide/lumber/wood-species-2/hemlock/>

Lyons, C.P. 1999. *Trees & shrubs of Washington*. Edmonton, AB, Canada: Lone Pine Publishing.

Moore, L.M. (2002, June 19). *Western hemlock*. Retrieved from http://plants.usda.gov/plantguide/pdf/cs_tshe.pdf

Pojar, J. and A. MacKinnon 1994. *Plants of the Pacific Northwest coast*. Vancouver, BC, Canada: Lone Pine Publishing.

State Symbols. (n.d.). Retrieved from <http://www.leg.wa.gov/Symbols/Pages/default.aspx>

Whitney, S. 1989. *A Sierra Club Naturalist’s Guide to the Pacific Northwest*, San Francisco, CA: Sierra Club Books.

Prepared by Siobhan Sullivan for the Mountain Loop Conservancy June 2010 ©

Photos and illustration by Siobhan Sullivan ©

This fact sheet was made possible by a grant from The Mountaineers Foundation, Seattle, WA.