THE OICR LIVING FOREST INITIATIVE: TINY FORESTS
A global experiment in ecological micropolitics

Trees, Bushes, and Shrubs of Portland, Oregon

Image: Jiřina Kaplická

Douglas Fir
Pseudotsuga menziesii

Image: USGS

The Douglas Fir, the state tree of Oregon, is a giant, second only in height to Coastal Redwoods[1] with old-growth trees in the Elliott State Forest in southern Oregon reaching over 360 feet.[2] Many of those trees, even though they are part of a public forest, have, unfortunately, now been logged, with more slated for cutting. Across Oregon as a whole, old-growth forests are said to comprise a mere ten percent of the state's remaining forests,[3] with the days of 385-foot Douglas Fir long gone.[4] An evergreen, the Douglas Fir is characterized not only by its large size but also by its natural longevity; left alone, it is said to live up to a thousand years.[5] In western Oregon and Washington, where rain is plentiful and the soil fertile, the tree is still abundant, although much of what we see today is second-growth due to aggressive logging. Indeed, eight out of every ten conifers west of the Cascades are Douglas Firs, according to the late Frank A. Lang, former President of the Native Plant Society of Oregon and Professor of Systematic Botany, Plant Ecology, Conservation of Natural Resources, and Biological Illustration at Southern Oregon University.[6] The Fir can adapt itself to a variety of environments and conditions, from drought to heavy rain, full sun to darkest shade; thus, in her 2014 study of the trees and shrubs of the Pacific Northwest, botanist and Northwest flora expert Ellen Kuhlmann terms the tree a "generalist."[7] Willis Linn Jepson, Co-founder of the Sierra Club and former Professor Emeritus of Botany at the University of California, Berkeley, expands the notion, describing in detail the various environments of the tree, noting that it "inhabits fertile mountain slopes, moist canyons, dry gravelly valleys, and rocky ridges . . . from sea-level to . . . 6,000 feet."[8] In terms of wildlife, the Douglas Fir may be one of the most important trees in Pacific Northwest forests, providing food, cover, and nesting habitat throughout its long life. Deer depend on Fir saplings for food during the lean winter months, Black Bears eat the nutrient-rich cambium beneath the tree's dense bark, and small Mammals feast on plentiful seeds stored away for hard times. Even long after their death, the snags of Douglas Firs provide happy homes and safe haven for a host of Birds.[9] For the endangered Northern Spotted Owl, forests of old-growth Douglas Fir constitute a primary habitat.[10]

Image: Terry Richard

Image: TakingOver

[1] George B. Sudworth, *Forest Trees of the Pacific Slope (*New York: Dover Publications, Inc., 1967*)*, 100.
[2] Chuck Bolsinger, "Analysis of a Pre-existing Condition: The Northwest's Old-Growth Forests," *The Oregonian*, October 15, 2011 https://www.oregonlive.com/opinion/2011/10/analysis_of_a_pre-existing_con.html.
[3] "Old-Growth Forests," Oregon Wild, last modified 2019, https://wildoregon.org/forests/learn-about-oregons-forests/old-growth-forests.
[4] Chuck Bolsinger, "Analysis of a Pre-existing Condition: The Northwest's Old-Growth Forests."
[5] LeeAnn Kriegh, *The Nature of Portland* (Bend, Oregon: Tempo Press, 2020), 3-4.
[6] Frank A. Lang, "Douglas-fir," Oregon Encyclopedia: A Project of the Oregon Historical Society, April 8, 2021, https://www.oregonencyclopedia.org /articles/douglas_fir/.
[7] Mark Turner and Ellen Kuhlmann, *Trees & Shrubs of the Pacific Northwest* (Portland: Timber Press, Inc., 2014), 86.
[8] Willis Linn Jepson, *The Trees of California* (San Francisco: Cunningham, Curtis & Welch, 1909), 80.
[9] Kriegh, *The Nature of Portland*, 3-4.
[10] "Douglas Fir," The National Wildlife Federation, accessed May 25, 2022, https://www.nwf.org/Educational-Resources/Wildlife-Guide/Plants-and-Fungi/Douglas-Fir.

Bigleaf Maple
Acer macrophyllum

Image: Jean Emmons

Image: USGS

The Bigleaf Maple is the largest of its species, rising one-hundred feet in the air with a canopy spreading fifty-feet wide.[1] The trunk fades from green in its early years to a "drab grey-brown, furrowed into narrow, horny ridges,"[2] as it reaches maturity after one-hundred years or more.[3] It thrives in wet environments, especially along streams, often in the shady company of Red Alder, Black Cottonwood, Douglas Fir, Western Redcedar, and Western Hemlock.[4] Tolerant to shade thanks to its massive, light-absorbing leaves,[5] the Bigleaf Maple is unique in that its leaves shrink with age.[6] Though commonly found in wet, moist environments, the tree has also adapted to drier climates where soil is poor because of the symbiotic relationship it shares with epiphytes.[7] Because the Bigleaf Maple is one of the most moisture-retentive trees in the Northwest, moss, lichens, and liverworts oftentimes cover the entire surface of its trunks and branches, absorbing the surplus water in exchange for the nutrients they pull out of the air; in times of drought, the roles are reversed.[8] In mid-spring, the tree is in full flower, producing long, vertical chains of creamy-yellow blossoms, providing pollen for Bees and Butterflies, and in late summer, its canopy fills with winged-seeds, food for Finches and Squirrels.[9] In autumn, the remaining seeds, covered in hispid hairs,[10] spin to the ground as late-season treats for Rodents and Gophers.[11]

Image: Alan Majchrowicz

Image: Elena Elisseeva

[1]LeeAnn Kriegh, *The Nature of Portland* (Bend, Oregon: Tempo Press, 2020), 13.
[2]C.P. Lyons and Bill Merilees, *Trees, Shrubs & Flowers to Know in Washington & British Columbia* (Vancouver, B.C.: Lone Pine Publishing, 1995), 93.
[3]Willard Ayres Eliot, *Forest Trees of the Pacific Coast* (New York: G.P. Putnam's Sons, 1938), 468-470.
[4]John Laird Farrar, *Trees of the Northern United States and Canada* (Ames, Iowa: Iowa State Press, 1995), 138.
[5]Richard M. Smith, *Wild Plants of America* (New York: Wiley, 1989), 243.
[6]Eliot, *Forest Trees of the Pacific Coast,* 468-470.
[7]Marjorie Harris, *Botanica North America* (New York: Harper Resource, 2003), 493-495.
[8]Harris, *Botanica North America,* 493-495.
[9]"Big Leaf Maple," PlanBee Native Plants, last modified 2022, https://planbeenativeplants.com/shop/big-leaf-maple/.
[10]Joseph-Pierre Redouté and François-André Michaux, *The Trees of North America* (New York: Abbeville Press Publishers, 2017), 363.
[11]Harris, *Botanica North America,* 493-495.

Image: David More

Grand Fir
Abies grandis

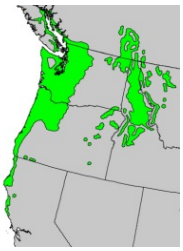

Image: USGS

Derived from the Latin meaning "rising one," the *Abies grandis*, commonly known as the "Grand Fir," was so named because it springs from the ground as straight as an arrow.[1] It is not uncommon to see one of these two-hundred-foot giants, the largest of the true firs, towering rigidly above a mix of tangled and twisted Western Redcedar, Western Hemlock, Red Alder, and Sitka Spruce.[2] Although it is the fastest-growing fir in North America,[3] expanding over ten inches a year,[4] the Grand Fir doesn't begin developing its mature, winged seeds until it is over twenty years old.[5] Due to its slow maturity rate as well as its relatively short lifespan of 250-300 years,[6] the Grand Fir makes up only two percent of the Pacific Northwest's conifer population.[7] When fully mature, it is a beautiful and multi-colored sight with olive-brown bark turning red with age, two-sided needles featuring a dark, glossy green at the top and gray-green towards the ground, a thick whorl of branches at its pyramidal crown, and yellow-green cones[8] perched at the pinnacle like a parliament of Owls. The dense canopy of the Grand Fir offers the ideal nesting habitat for both the endangered Northern Spotted Owl and the endangered Marbled Murrelet, while Squirrels, Rodents, Chickadees, and Nuthatches enjoy the tree's nutritious seeds.[9] When crushed, its needles give off a pleasant tangerine scent, hence the Grand Fir's Latin name, *Abies aromatica.*[10]

Image: Farm Forestry New Zealand

Image: Michael Rubel

[1]Linda Kershaw, Andy MacKinnon, and Jim Pojar, *Plants of the Rocky Mountains* (Edmonton: Lone Pine Publishing, 1998), 27.
[2]John Laird Farrar, *Trees of the Northern United States and Canada* (Ames, Iowa: Iowa State Press, 1995), 91.
[3]Janet L. Howard and Keith C. Aleksoff, "Abies Grandis," Fire Effects Information System (FEIS), U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Library, 2000, https://www.fs.fed.us/database/feis/plants/tree/abigra/all.html.
[4]Marjorie Harris, *Botanica North America* (New York: Harper Resource, 2003), 454
[5]Harris, *Botanica North America*, 454.
[6]Yongjiang Zhang, "Grand Fir, *Abies Grandis,*" College of Forest Resources, University of Washington, April 11, 2003, https://depts.washington.edu/propplnt/Plants/Abiesgrandis.htm.
[7]Edward C. Jensen, *Trees to Know in Oregon and Washington* (Corvallis: Oregon State University, 2020), 64.
[8]David More and John White, *The Illustrated Encyclopedia of Trees* (New Jersey: Princeton University Press, 2013), 141.
[9]Howard and Aleksoff, "Abies Grandis."
[10]Joe Antos et al., *Plants of Southern Interior British Columbia*, eds., Roberta Parish et al. (Vancouver, B.C.: Lone Pine Publishing, 1996), 41.

Image: G. West

Red Alder
Alnus rubra

Image: USGS

Due to its rapid growth, the Red Alder was once considered to be a weedy and invasive tree.[1] Recently, however, we have learned that there is perhaps no more important tree to the health of a forest.[2] Where there is water, there is Red Alder, and where there is Red Alder, there is usually a thriving understory of young conifers. This is due to the fact that the roots of Red Alder contain bacteria that inhibit the growth of soil fungus that rots the hearts of Douglas Fir; these same roots possess small nodules that convert nitrogen from the air into a soluble form that helps feed neighboring trees.[3] Douglas Fir, Grand Fir, Willow, Maple, Dogwood, Cottonwood, and countless other forest trees thrive along the entire West Coast when they are within reach of Red Alder roots.[4] Few other trees can perform this underground miracle. In the Coastal Range of Oregon, there is no more important factor to reforestation after a fire than the Red Alder.[5] If there is a seed source nearby, the Red Alder will grow in dense stands even in the most disturbed soil,[6] creating a habitat for saplings to grow, thrive, and ultimately take over.[7] For wildlife, the Red Alder provides food for Elk and Deer, abundant construction material for Beavers, and nesting opportunities for a multitude of Birds.[8]

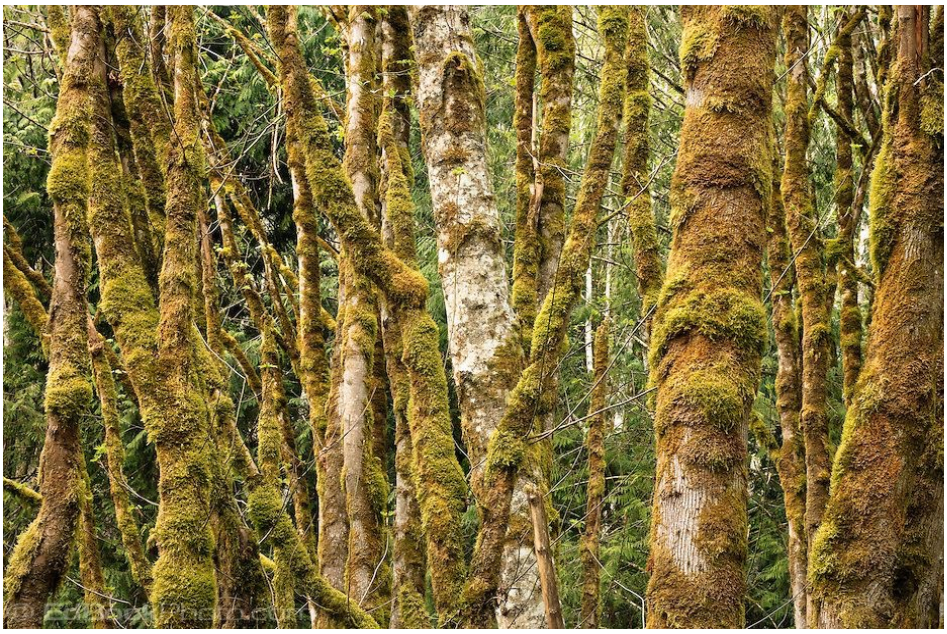

Image: Ed Book

Image: CGAxis

[1]George Palmer and Martha Stuckey, *Western TreeBook: A Field Guide for Weekend Naturalists* (Portland: Victoria House, 1977), 51-53.
[2]LeeAnn Kriegh, *The Nature of Portland* (Bend, Oregon: Tempo Press, 2020), 24.
[3]Marjorie Harris, *Botanica North America* (New York: Harper Resource, 2003), 496.
[4]David More and John White, *The Illustrated Encyclopedia of Trees* (New Jersey: Princeton University Press, 2013), 323.
[5]Willard Ayres Eliot, *Forest Trees of the Pacific Coast* (New York: G.P. Putnam's Sons, 1938), 369-374.
[6]Eliot, *Forest Trees of the Pacific Coast*, 369-374.
[7]Joseph-Pierre Redouté and François-André Michaux, *The Trees of North America* (New York: Abbeville Press Publishers, 2017), 304.
[8]Kriegh, *The Nature of Portland*, 24.

Image: Ed More

Pacific Madrone
Arbutus menziesii

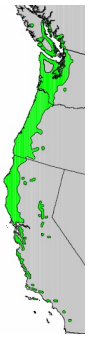

Image: USGS

The Pacific Madrone can immediately be identified by its magnificent and singular bark. Canadian gardener Marjorie Harris writes in *Botanica North America* that it is the "most eye-catching part of the tree," with colors that range "from soft orange to dull chartreuse and age to a reddish-brown,"[1] while the Australian botanist Tony Rodd pays special attention to its tactile characteristics, describing it as "smooth and rich orange brown for much of the year, but peeling dramatically in summer to reveal pale greenish cream new bark, cool and clammy to the touch."[2] "No other of our trees," rhapsodizes Willis Linn Jepson in 1909, in *The Trees of California*, "makes so strong an appeal to man's [sic] imagination—to his love of color, of joyful bearing, of sense of magic, of surprise and change."[3] The Pacific Madrone is a spectacularly beautiful tree, not only because of its rainbow-colored peels, but also its springtime clusters of pinkish-white bell-shaped flowers,[4] attracting every Bee, Butterfly, and Hummingbird, and the bright red berries that follow in autumn, calling all Birds to feast.[5] After observing a dozen of these twisting, contorting eighty-foot-tall, three-hundred-year-old[6] forest treasures, you see that no two look alike, as each is rooted by a unique underground burl that has shaped the trunk over decades and, indeed, centuries, through powerful storms, freezing winters, and devastating droughts.[7]

Image: Anna Farba

Image: Ruth Hager

[1]Marjorie Harris, *Botanica North America* (New York: Harper Resource, 2003), 497-498.
[2]Tony Rodd and Jennifer Stackhouse, *Trees: A Visual Guide* (Berkeley: University of California Press, 2008), 132.
[3]Willis Linn Jepson, *The Trees of California* (San Francisco: Cunningham, Curtis & Welch, 1909), 208-210.
[4]Rodd and Stackhouse, *Trees: A Visual Guide,* 132.
[5]Harris, *Botanica North America*, 497-498.
[6]Mark Turner and Ellen Kuhlmann, *Trees & Shrubs of the Pacific Northwest* (Portland: Timber Press, Inc., 2014), 155.
[7]Sonja L. Reeves, "Arbutus Menziesii," FEIS et al., 2007, https://www.fs.fed.us/database/feis/plants/tree/arbmen/all.html.

Image: G. West

Oregon White Oak
Quercus garryana

Image: USGS

Perhaps the most important tree for wildlife in the Willamette Valley is the Oregon White Oak. More than 300 native species, including the at-risk Acorn Woodpecker and Red-legged Frog as well as a half-dozen species of Butterflies, depend on the habitat provided by this ancient tree.[1] Mammals and Birds seek out the large yield of sweet acorns that the tree produces each year, while Deer, Black Bears, and many other animals feed on its leaves.[2] Before European colonists introduced nonnative species and grazing livestock in the nineteenth century, there were 85% more Oregon White Oak growing in the Willamette Valley,[3] a decimation that also wreaked havoc on the wildlife population. Today, the White Oak has been extinguished almost entirely, with some estimates placing the decline of its habitat at 97 percent, prompting residents of the Valley to draft a protective land agreement called the Oak Accord. With a lifespan of five-hundred years,[4] a single Oregon White Oak has experienced its share of severe droughts and floods. Growing on rocky outcrops, in dry meadows, at forest edges, on floodplains, and in poor soil,[5] the tree can adapt to almost any environment that has not been too severely altered by humans. The Oregon White Oak has a presence that produces awe and wonder. Perhaps, it's the enormous root system of a mature tree, amounting to many hundreds of miles,[6] or, maybe, it's the vast above-ground ecosystem, full of Animals, Birds, and Insects, chirping, crawling, hibernating, slithering, nibbling, and fluttering in, on, and around every gnarled branch, nook, and cranny of this magnificent tree.

Image: Michel Hersen

Image: Tualatin Soil and Water Conservation District

[1]LeeAnn Kriegh, *The Nature of Portland* (Bend, Oregon: Tempo Press, 2020), 21-22.
[2]Corey L. Gucker, "Quercus Garryana," FEIS et al., 2007, https://www.fs.fed.us/database/feis/plants/tree/quegar/all.html.
[3]Gucker, "Quercus Garryana."
[4]"Oregon White Oak: Eastern Washington," Bentler.us, last modified 2014, http://www.bentler.us/eastern-washington/plants/trees/oregon-white-oak.aspx.
[5]Mark Turner and Ellen Kuhlmann, *Trees & Shrubs of the Pacific Northwest* (Portland: Timber Press, Inc., 2014), 194.
[6]N.T. Mirov, "A Tree Is a Living Thing," in *Trees: The Yearbook of Agriculture,* ed. Alfred Stefferud (Washington D.C.: U.S. Government Printing Office, 1949), 3.

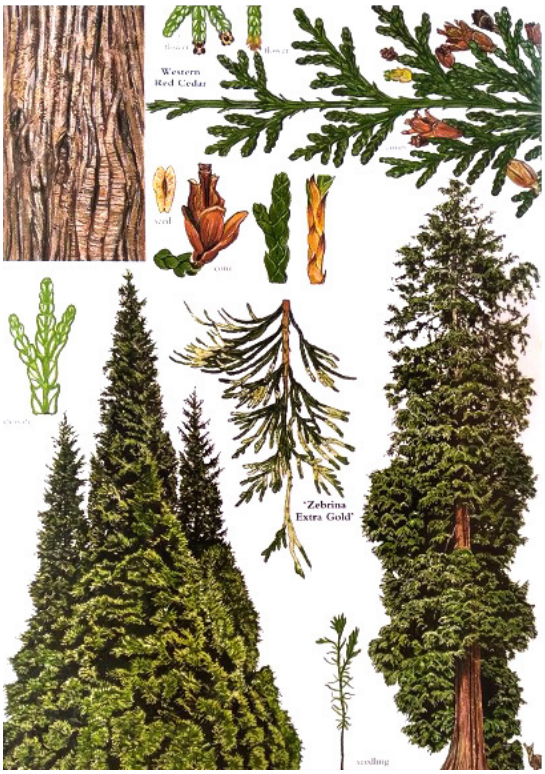

Image: David More

Western Redcedar
Thuja plicata

Image: USGS

With a trunk that can reach twenty feet in diameter and a crown stretching over two-hundred feet into the air, the Western Redcedar might seem to the casual observer the largest specimen in the world,[1] but follow the cinnamon-colored bark upwards, and, quickly, the tree narrows to half its size at ground level.[2] This rapidly diminishing girth makes the Western Redcedar nowhere near the size and mass of a Giant Sequoia, but the tree is no less amazing for it. Smooth, U-shaped boughs the size of Lodgepole Pines curve upwards before disappearing into the thick, dark green canopy that hangs low to the ground like palm fronds, the ideal cover for Grizzly Bears.[3] Black Bears are also common in Western Redcedar forests, feeding on the sapwood after removing the bark, while Roosevelt Elk, along with Black-tailed Deer, feast on saplings, one of their preferred winter foods.[4] For such a giant tree, the cones are remarkably small—less than half an inch long—yet the Western Redcedar is a prolific seeder with a high rate of germination.[5] Finding a grove of Western Redcedar is, nevertheless, a rare sight, as the tree most often shares space with Redwood, Sitka Spruce, Western Hemlock, Douglas Fir, Grand Fir, Silver Pine, Western Larch, Lodgepole Pine, Engelmann Spruce, Pacific Yew, Vine Maple, Broadleaf Maple, Black Cottonwood, Western Birch, Red Alder, Sitka Alder, and, occasionally, Yellow Cedar.[6] However, if conditions are very wet, the Western Redcedar dominates.[7]

Image: Simon Fraser

Image: Jake Kornely

[1]Willis Linn Jepson, *The Trees of California* (San Francisco: Cunningham, Curtis & Welch, 1909), 114.
[2]George B. Sudworth, *Forest Trees of the Pacific Slope (*New York: Dover Publications, Inc., 1967*)*, 154.
[3]Julie L. Tesky, "*Thuja Plicata*," FEIS et al., 1992, https://www.fs.fed.us/database/feis/plants/tree/thupli/all.html.
[4]Tesky, "*Thuja Plicata*."
[5]Sudworth, *Forest Trees of the Pacific Slope*, 154.
[6]Sudworth, *Forest Trees of the Pacific Slope*, 157-158.
[7]Mark Turner and Ellen Kuhlmann, *Trees & Shrubs of the Pacific Northwest* (Portland: Timber Press, Inc., 2014), 102.

Image: G. Worley

Oregon Ash
Fraxinus latifolia

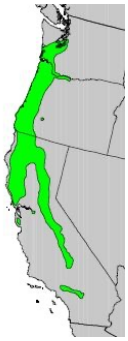

Image: USGS

Of the sixteen species of Ash native to North America, only one is native to the Pacific Northwest. The Oregon Ash, possessing the Latin name *Fraxinus Latifolia*, "wide leaves," shares many characteristics with other varieties, including flexible and light yet very strong wood, with featherlike leaves oppositely arranged (the only native tree in the Northwest possessing such a feature),[1] but is distinguished by the size of its leaves, which are the largest of any Ash found on the continent.[2] The tree grows along the Pacific Coast from southern Washington through Oregon down to central California[3] but is most abundant in western Oregon,[4] in particular, the Willamette River Valley.[5] Although occasionally found in pure stands, the Oregon Ash flourishes alongside Red Alder, Bigleaf Maple, and Grand Fir,[6] growing largest in rich, moist soil,[7] with most growth occurring during the first seventy-five years of its 250-year life.[8] It prefers wet conditions, particularly areas where flooding is frequent,[9] making it an ideal choice for erosion control.[10] Reaching heights of seventy feet, the largest examples can be found on Sauvie Island (originally, Wapato Island, after a tuber eaten by the native peoples of the area), ten miles north of the City of Portland.[11] The tree's wide and generous canopy provides plentiful shade and nesting sites for Birds and other wildlife. Its winged seeds are eaten by Birds and small Mammals, while its leaves supply food for Butterfly larvae and are believed to deter Snakes.[12] The Ohlone people are said to have placed leaves of the Oregon Ash in their sandals as a repellant.[13]

Image: The BRG

Image: ArtStation

[1]Edward C. Jensen, *Trees to Know in Oregon and Washington* (Corvallis: Oregon State University, 2020), 82.
[2]Dana Kelley Bressette, "Oregon Ash, Fraxinus Latifolia," Native Plants PNW: An Encyclopedia of the Cultural and Natural History of Northwest Native Plants, June 22, 2015, http://nativeplantspnw.com/oregon-ash-fraxinus-latifolia/.
[3]David More and John White, *The Illustrated Encyclopedia of Trees* (New Jersey: Princeton University Press, 2013), 723.
[4]Richard Spellenberg, Christopher J. Earle, and Gil Nelson, *Trees of Western North America* (Princeton: Princeton University Press, 2014), 374.
[5]George B. Sudworth, *Forest Trees of the Pacific Slope (*New York: Dover Publications, Inc., 1967*)*, 425-426.
[6]Spellenberg, Earle, and Nelson, *Trees of Western North America*, 374.
[7]Sudworth, *Forest Trees of the Pacific Slope,* 425-426.
[8]Spellenberg, Earle, and Nelson, *Trees of Western North America*, 374.
[9]Mark Turner and Ellen Kuhlmann, *Trees & Shrubs of the Pacific Northwest* (Portland: Timber Press, Inc., 2014), 413.
[10]LeeAnn Kriegh, *The Nature of Portland* (Bend, Oregon: Tempo Press, 2020), 19.
[11]John D. Stuart and John O. Sawyer, *Trees and Shrubs of California* (Berkeley: University of California Press, 2001), 239-240.
[12]Kriegh, *The Nature of Portland*, 19.
[13] Allen J. Coombes, *The Book of Leaves* (Chicago: The University of Chicago Press, 2010), 371.

Image: C.L.Taylor

Ponderosa Pine
Pinus ponderosa

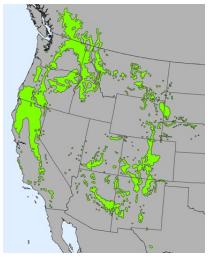

Image: USGS

The Ponderosa Pine is the most common and widely distributed pine tree in the western United States,[1] growing from the coast of British Columbia, south to the high desert of Arizona, and east to the Chisos Mountains of West Texas.[2] It can be found at sea level on the California coast and up to nine-thousand feet in the Rocky Mountains of Colorado.[3] It can become a two-hundred-foot giant, whether growing on moist and fertile mountain slopes, atop arid desert plateaus, or along dry and rocky ridges; whether clinging to granite cliffs or settled in gravelly canyon bottoms.[4] The Ponderosa Pine, which acquired its name in 1826, when David Douglas spotted a "ponderous" four-hundred-year-old behemoth in Eastern Washington,[5] can live six-hundred years in a wide variety of soils—volcanic ash, glacial drift, loose sands, and stiff clays.[6] The thick, jigsaw-like, pumpkin-orange bark can survive repeated fires and withstand drought, torrential rain, heavy snow, 110-degree summers, and sub-zero winters.[7] This magnificent tree, whose young twigs smell of oranges,[8] is, according to Willis Linn Jepson, "more widely distributed and growing in a greater variety of habitats and subject to greater ranges of temperature and precipitation than any other North American tree."[9] Many types of Birds, including Chickadees, Evening Grosbeaks, Finches, Nuthatches, Sparrows, and a multitude of Mammals all benefit from the Ponderosa Pine's extreme adaptability and assemblage of resources.[10]

Image: James Eddy

Image: Nicole Rowland

[1]Richard Spellenberg, Christopher J. Earle, and Gil Nelson, *Trees of Western North America* (Princeton: Princeton University Press, 2014), 90-91.
[2]Spellenberg, Earle, and Nelson, *Trees of Western North America*, 90-91.
[3]Tony Russell and Catherine Cutler, *The World Encyclopedia of Trees* (London: Anness Publishing, 2003), 92.
[4]George B. Sudworth, *Forest Trees of the Pacific Slope (*New York: Dover Publications, Inc., 1967*)*, 46-47.
[5]David Douglas, *Journal Kept by David Douglas during His Travels in North America: 1823-1827* (London: William Wesley & Son, 1914), 63.
[6]John D. Stuart and John O. Sawyer, *Trees and Shrubs of California* (Berkeley: University of California Press, 2001), 85.
[7]"Ponderosa Pine (Pinus Ponderosa)," University of California Agriculture and Natural Resources, accessed September 2, 2022, https://ucanr.edu/sites/forestry/California_forests/http___ucanrorg_sites_forestry_California_forests_Tree_Identification_/Ponderosa_Pine_Pinus_ponderosa/.
[8]Marjorie Harris, *Botanica North America* (New York: Harper Resource, 2003), 458-459.
[9]Willis Linn Jepson, *The Trees of California* (San Francisco: Cunningham, Curtis & Welch, 1909), 63-65.
[10]LeeAnn Kriegh, *The Nature of Portland* (Bend, Oregon: Tempo Press, 2020), 8.

Image: Pierre Joseph-Redoute

Quaking Aspen
Populus tremuloides

Image: USGS

The Quaking Aspen, which grows in the northern tree limits from Alaska to Newfoundland, and as far south as Mexico, is the most widely distributed tree in North America,[1] and is so named for its delicately-attached leaves that appear to quake or tremble with the slightest breeze. It can thrive in almost any soil or environment, from rocky avalanche chutes to soft valley floors, from stream bottoms, benches, and moist slopes to dry, harsh terrain.[2] In fact, it's easier to list the places where Quaking Aspen do not grow, namely, alpine environments and arctic tundra.[3] The incredible range of the Quaking Aspen is due to the prolific seeding of female trees, with a single tree producing over fifty-million seeds per year,[4] and the ability of its roots to lie dormant underground, waiting patiently for a wildfire, as generations of coniferous forests grow above and around it.[5] Once the devastating event occurs, the Aspen pick up where they left off, sprouting suckers that quickly fill the cleared area and grow up to eighty feet tall.[6] These massive stands of Aspen (one in Utah contains 47,000 trees)[7] belong to a single clone and can live up to a million years old, making Quaking Aspen the largest and oldest specimen on the planet.[8] The buds, leaves, and bark of the Quaking Aspen attract Bats, Insects, Hawks, Beavers, Elk, Moose, Mule Deer, Rabbits, Coyotes, and nesting Birds. Its unique root system has the remarkable ability to remove contaminants from groundwater.[9]

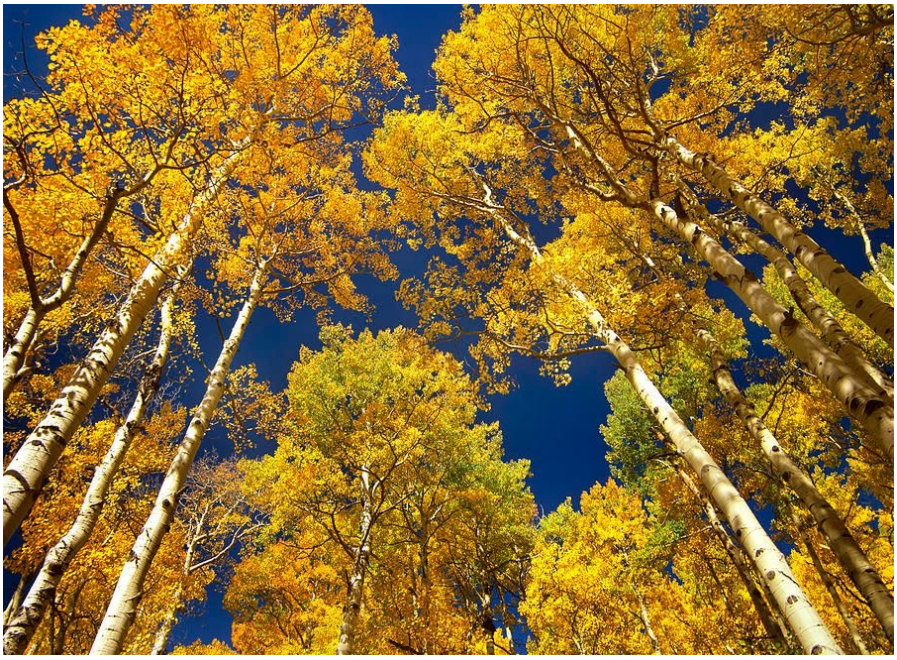

Image: Tim Fitzharris

Image: Lizzie Harper

[1]Allen J. Coombes, *The Book of Leaves* (Chicago: The University of Chicago Press, 2010), 522.
[2]George B. Sudworth, *Forest Trees of the Pacific Slope* (New York: Dover Publications, Inc., 1967), 239-244.
[3]Marjorie Harris, *Botanica North America* (New York: Harper Resource, 2003), 274-275.
[4]Harris, *Botanica North America*, 274-275.
[5]Richard Spellenberg, Christopher J. Earle, and Gil Nelson, *Trees of Western North America* (Princeton: Princeton University Press, 2014), 472.
[6]Sudworth, *Forest Trees of the Pacific Slope,* 239-244.
[7]Sonal Panse, "The Pando Tree of Utah—The World's Largest and Oldest Living Organism," *STSTW Media*, January 21, 2019, https://www.ststworld.com/pando-tree-quaking-aspen/.
[8]Harris, *Botanica North America*, 274-275.
[9]Harris, *Botanica North America*, 274-275.

Image: C.L.Taylor

Western Hemlock
Tsuga heterophylla

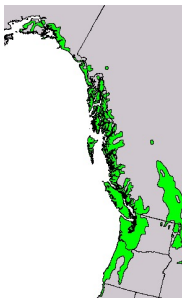

Image: USGS

Venture deep into the darkest, wettest, thickest forest of mixed Western Redcedar, Douglas Fir, Grand Fir, Black Cottonwood, and Red Alder, and you will likely encounter a Western Hemlock. Venture further in, where little light reaches the mossy, fern-covered forest floor and fog engulfs the tops of trees, and you may find yourself surrounded by these two-hundred-foot giants, some over a thousand years old.[1] There are few trees more adapted to shade than the Western Hemlock, the largest species of Hemlock in the world,[2] and where the forest is darkest and precipitation greatest, from southeast Alaska to the Rockies, and south to California, these trees dominate the landscape.[3] With twice as many leaves as the Douglas Fir, the Western Hemlock absorbs twice as much light,[4] oftentimes using the shady canopy of the Douglas Fir to their advantage until they eventually replace them.[5] This capacity for light absorption in dark places allows the Western Hemlock to grow in remarkably dense stands with more mass per acre than the larger Douglas Fir,[6] and gives each of the astonishing eight-million seeds-per-acre a chance to transform into a giant, no matter how deeply the seeds fall into the dark decay of the forest floor.[7] Western Hemlock forests are a favorite habitat for Grizzly Bears, Northern Flying Squirrels, and the endangered Northern Spotted Owl, and the tree is a popular grazing food for Roosevelt Elk and Black-tailed Deer, who eat the leaves; for Black Bears and Beavers, who peel the bark and eat the cambium; and, finally, for the tiny Deer Mice, who eat the seeds just before they germinate.[8]

Image: Robert Potts

Image: Wood Magazine

[1]Mark Turner and Ellen Kuhlmann, *Trees & Shrubs of the Pacific Northwest* (Portland: Timber Press, Inc., 2014), 87.
[2]Marjorie Harris, *Botanica North America* (New York: Harper Resource, 2003), 481-482.
[3]Edward C. Jensen, *Trees to Know in Oregon and Washington* (Corvallis: Oregon State University, 2020), 35-36.
[4]LeeAnn Kriegh, *The Nature of Portland* (Bend, Oregon: Tempo Press, 2020), 9.
[5]John Laird Farrar, *Trees of the Northern United States and Canada* (Ames, Iowa: Iowa State Press, 1995), 116.
[6]Harris, *Botanica North America*, 481-482.
[7]Harris, *Botanica North America*, 481-482.
[8]Julie L. Tesky, "Tsuga Heterophylla," FEIS et al., 1992, https://www.fs.fed.us/database/feis/plants/tree/tsuhet/all.html.

Image: Jiřina Kaplická

Pacific Yew
Taxus brevifolia

Image: USGS

Search far and wide through Pacific Northwest forests, and chances are you will never encounter a Pacific Yew. What a shame, as this small, understory conifer, which lacks a distinctive form as its branches grow in every direction in search of sunlight,[1] may be the most unique conifer of them all. Scaly, red-brown bark that peels in thin strips revealing a purple inner bark,[2] the darkest green leaves found in the coniferous forest,[3] and bright red "berries," called *arils*, enclosing the precious seeds, set the Pacific Yew apart from other conifers.[4] The Pacific Yew is a small tree compared to its gigantic neighbors—the Douglas Fir, Grand Fir, Redwood, and Western Hemlock,[5] averaging only ten to thirty feet in height.[6] It thrives in the dark shadows of old-growth; indeed, it is the most shade-tolerant tree in the Pacific Northwest;[7] unlike other conifers, however, it grows exceedingly slowly, taking hundreds of years to reach its full size.[8] Perhaps, this is one of the reasons why the Pacific Yew is such an uncommon tree in the forest; that, and the amazing quality of its heartwood, which is hard, elastic, and decay-resistant, making the tree, according to David Douglas in his *North American Journal*, the preferred material for bow-making amongst the Columbia River Valley tribes.[9] Compounding these factors was the 1969 discovery of paclitaxel in the bark and leaves of the tree, a chemical compound that can be used to treat ovarian and breast cancer. The resulting "yew-bark boom"[10] decimated Pacific Yew stands. Today, many of those stands are protected from harvesting,[11] but it will be years before we begin to see these unique and beautiful trees in abundance.

Image: C.J.Earle

Image: The Practical Herbalist

[1]Edward C. Jensen, *Trees to Know in Oregon and Washington* (Corvallis: Oregon State University, 2020), 72-73.
[2]Marjorie Harris, *Botanica North America* (New York: Harper Resource, 2003), 491-492.
[3]Jensen, *Trees to Know in Oregon and Washington*, 72-73.
[4]Jensen, *Trees to Know in Oregon and Washington*, 72-73.
[5]George B. Sudworth, *Forest Trees of the Pacific Slope* (New York: Dover Publications, Inc., 1967), 194-197.
[6]Willis Linn Jepson, *The Trees of California* (San Francisco: Cunningham, Curtis & Welch, 1909), 125.
[7]D. A. Tirmenstein, *Taxus Brevifolia*, FEIS et al., 1990, https://www.fs.fed.us/database/feis/plants/tree/taxbre/all.html.
[8]Jensen, *Trees to Know in Oregon and Washington*, 72-73.
[9]David Douglas, *Journal Kept by David Douglas During His Travels in North America: 1823-1827* (London: William Wesley & Son, 1914), 109.
[10]Frank A. Lang, "Pacific Yew," Oregon Encyclopedia, Modified May 6, 2022, https://www.oregonencyclopedia.org/articles/pacific_yew/.
[11]Harris, *Botanica North America*, 491-492.

Image: Jiřina Kaplická

Black Cottonwood
Populus trichocarpa

Image: USGS

While the Pacific Yew is the slowest-growing tree in the Portland area, the Black Cottonwood is the fastest.[1] Where water is plentiful, on floodplains, in moist bottom valleys, and along mountain streams, from southeast Alaska to Baja California, the Black Cottonwood can grow at an astounding rate (over forty-five feet in as little as seven years), making it a valuable tree for rapid erosion control and urban wasteland reclamation.[2] It is the largest of the North American Cottonwoods,[3] and the tallest broadleaf tree in the West.[4] After only thirty years, the Black Cottonwood can reach well over 120 feet in height,[5] providing ideal nesting habitat for Bald Eagles and Osprey in its wide canopy,[6] and stream-cooling shade for spawning Trout and Salmon. In spring, each tree releases a snowstorm of millions of cottony seeds,[7] along with a spicy-sweet balsam fragrance, emitted by the resinous buds and leaves,[8] hence, the tree's alternate Latin name Populus Balsamifera.[9] Bees collect this sticky, aromatic resin from the young leaves and use it as a cement to waterproof their hives,[10] Moose and other ungulates browse the young trees, and Blue Heron frequent the riparian environments in which the Black Cottonwood thrive. Although it is a short-lived tree with a lifespan of 165 years,[11] the Black Cottonwood provides invaluable shelter and shade for wildlife in riparian environments and urban areas alike.

Image: ScenicHillFarm

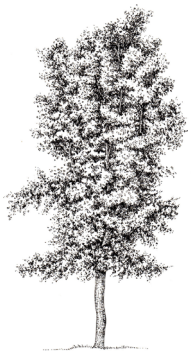

Image: Lizzie Harper

[1]LeeAnn Kriegh, *The Nature of Portland* (Bend, Oregon: Tempo Press, 2020), 15.
[2]Edward C. Jensen, *Trees to Know in Oregon and Washington* (Corvallis: Oregon State University, 2020), 95-96.
[3]Arthur R. Kruckeberg and Linda Chalker-Scott, *Gardening with Native Plants of the Pacific Northwest* (Seattle: University of Washington Press, 2019), 91.
[4]Kriegh, *The Nature of Portland*, 15.
[5]Kruckeberg and Chalker-Scott, *Gardening with Native Plants of the Pacific Northwest,* 91.
[6]Kriegh, *The Nature of Portland*, 15.
[7]C.P. Lyons and Bill Merilees, *Trees, Shrubs & Flowers to Know in Washington & British Columbia* (Vancouver, B.C.: Lone Pine Publishing, 1995), 80.
[8]Mark Turner and Ellen Kuhlmann, *Trees & Shrubs of the Pacific Northwest* (Portland: Timber Press, Inc., 2014), 264.
[9]Jaromir Pokorny, *Trees: Leaves, Bark and Fruit* (Leicester: Magna, 1994), 82.
[10]Linda Kershaw, Andy MacKinnon, and Jim Pojar, *Plants of the Rocky Mountains* (Edmonton: Lone Pine Publishing, 1998), 37.
[11]John Laird Farrar, *Trees of the Northern United States and Canada* (Ames, Iowa: Iowa State Press, 1995), 338.

Image: Thomas J. Howell

Cascara
Rhamnus purshiana

Image: USGS

The Cascara is a small, unassuming tree that oftentimes disguises itself as a shrub.[1] It grows extensively in moist and deeply-shaded climates along the West Coast from Canada to California,[2] in coniferous and hardwood forests of Red Alder, Birch, Douglas Fir, Ponderosa Pine, Western Hemlock, and Vine Maple,[3] coastal scrubs, and chaparrals, from sea-level up to 6,500 feet.[4] The tree is fast-growing and can withstand drought, especially if grown in shade.[5] Popularly called "Buckthorn," the waxy, dark-green-leaved Cascara lacks any thorns whatsoever,[6] and is instead covered in nectar-rich clusters of yellow-green flowers, up to twenty-five flowers per cluster, and a favorite of Butterflies,[7] and fleshy, cherrylike berries that turn from green to red and finally to dark blue-black when ripe in late summer.[8] The berries are a favorite of wildlife, especially Cedar Waxwings, Grouse, and Raccoons, all of which eat the stone fruit as soon as they ripen, leaving little opportunity for humans to enjoy the tree's plentiful bounty.[9] This may be for the best, as the berries, especially the bark, eaten in large quantities, are a powerful laxative. In Spanish, the tree is called *Cascara sagrada*, or "Sacred Bark,"[10] due to the fact that it is believed to heal liver problems, gallstones, and cancer, among other conditions. In autumn, the leaves turn a brilliant yellow, orange, and red.

Image: Dave Ingram

Image: Peter Pearsall/USFWS

[1]Mark Turner and Ellen Kuhlmann, *Trees & Shrubs of the Pacific Northwest* (Portland: Timber Press, Inc., 2014), 232.
[2]John Laird Farrar, *Trees of the Northern United States and Canada* (Ames, Iowa: Iowa State Press, 1995), 276-277.
[3]Eileen M. Stark, *Real Gardens Grow Natives* (Seattle: Skipstone, 2014), 245.
[4]John D. Stuart and John O. Sawyer, *Trees and Shrubs of California* (Berkeley: University of California Press, 2001), 337.
[5]Stark, *Real Gardens Grow Natives*, 245.
[6]Edward C. Jensen, *Trees to Know in Oregon and Washington* (Corvallis: Oregon State University, 2020), 87-88.
[7]Stuart and Sawyer, *Trees and Shrubs of California,* 337.
[8]George A. Petrides, *Trees of the Pacific Northwest* (Mechanicsburg: Stackpole Books, 2005), 90.
[9]Jensen, *Trees to Know in Oregon and Washington*, 87-88.
[10]C.P. Lyons and Bill Merilees, *Trees, Shrubs & Flowers to Know in Washington & British Columbia* (Vancouver, B.C.: Lone Pine Publishing, 1995), 96.

Image: G. Worley

Pacific Dogwood
Cornus nuttallii

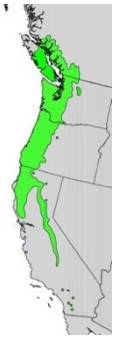

Image: USGS

Cherry blossoms may command attention during their brief spring flourish, but the Pacific Northwest's native star, the Pacific Dogwood, puts on an equally ostentatious show that lasts well into fall. Announcing the arrival of spring, the Pacific Dogwood bursts with large, creamy white bracts that contrast strikingly against the tree's dark, bare bark and dreary, gray sky. As the season progresses into summer, whites flush to pink, and bright green leaves appear. The show appears to be over until mid-summer when the tree blooms again in another flash of white.[1] With the onset of autumn, tiny clusters of yellow flowers produce vibrant red berries that delight Birds,[2] especially the Band-tailed Pigeon, which prefers the Pacific Dogwood fruit over anything else.[3] Now deep in autumn, as deciduous trees put on their best fall foliage, the Pacific Dogwood outshines the bunch, turning its leaves a fiery red, orange, and purple.[4] This spectacular tree is a common sight in urban settings of the Pacific Northwest, but is rare in the wild. Scattered infrequently in the cool depths of mountain forests among Douglas Fir, Western Hemlock, Red Alder, and Broadleaf Maple, the Pacific Dogwood is almost never found in pairs.[5] In the Puget Sound, the tree grows up to fifty feet tall, while everywhere else it stands at a modest twenty feet.[6]

Image: Jessica Jenney

Image: Jane Small

[1]Arthur R. Kruckeberg and Linda Chalker-Scott, *Gardening with Native Plants of the Pacific Northwest* (Seattle: University of Washington Press, 2019), 81-82.
[2]Edward C. Jensen, *Trees to Know in Oregon and Washington* (Corvallis: Oregon State University, 2020), 98-99.
[3]Richard Spellenberg, Christopher J. Earle, and Gil Nelson, *Trees of Western North America* (Princeton: Princeton University Press, 2014), 208.
[4]LeeAnn Kriegh, *The Nature of Portland* (Bend, Oregon: Tempo Press, 2020), 20.
[5]Willis Linn Jepson, *The Trees of California* (San Francisco: Cunningham, Curtis & Welch, 1909), 207.
[6]George B. Sudworth, *Forest Trees of the Pacific Slope* (New York: Dover Publications, Inc., 1967), 413-416.

Image: Mary Vaux Walcott

Red-osier Dogwood
Cornus sericea

Image: USGS

Though not quite as ostentatious as its relative, the Pacific Dogwood, the Red-osier Dogwood is an eye-catching shrub that puts on a show of its own that spans all four seasons and provides year-round habitat for a host of wildlife. Beginning in May, large clusters of fragrant white flowers appear on this rapid-growing, thicket-forming shrub, attracting a variety of Bees and Butterflies.[1] In summer, flowers turn to creamy white or pale blue fruit, which are eaten by Robins, Cedar Waxwings, Tree Swallows, Crows,[2] and other Birds that frequent stream banks, lakes, and other moisture-rich environments where Red-osier Dogwoods are found.[3] It should be noted that an established Red-osier Dogwood is drought tolerant as long as it grows in places where there is ample shade.[4] It thrives under the canopy of Douglas Fir, Western Hemlock, Western Redcedar, Vine Maple, Alders, Cottonwood, and Aspen,[5] across the entirety of the United States and Canada, with the exception of the Great Plains.[6] In autumn, the leaves of the Red-osier Dogwood transform to a deep red, complementing its already bright-red stems, and turning the shrub into a flaming thicket. As cold weather approaches, Deer and Elk nibble the leaves, Black Bears pick off the few remaining berries, and Moose take down anything left that is edible.[7] It is perhaps in winter that the Red-osier Dogwood is most striking, its bright-red leaves and berries dramatically contrasting with the otherwise barren, snowy landscape.

Image: Evgeniya Vlasova

Image: Pam Little

[1]Eileen M. Stark, *Real Gardens Grow Natives* (Seattle: Skipstone, 2014), 222.
[2]LeeAnn Kriegh, *The Nature of Portland* (Bend, Oregon: Tempo Press, 2020), 41.
[3]David Douglas, *Journal Kept by David Douglas during His Travels in North America: 1823-1827* (London: William Wesley & Son, 1914), 283.
[4]Stark, *Real Gardens Grow Natives*, 222.
[5]Stark, *Real Gardens Grow Natives*, 222.
[6]Walter Fertig, "Plant of the Week: Red Osier Dogwood (*Cornus Sericea* L. ssp. *Sericea*)," U.S. Forest Service, accessed August 9, 2022, https://www.fs.fed.us/wildflowers/plant-of-the-week/cornus_sericea.shtml.
[7]Derek Johnson et al., *Plants of the Western Boreal Forest & Aspen Parkland* (Edmonton: Lone Pine Publishing, 1995), 54.

Image: Swallowtail Garden Seeds

Red-flowering Currant
Ribes sanguineum

Image: USGS

The deeper one explores the native plants of Portland, the more acutely one feels the difficulty of deciding which is most beautiful. Discovering the beauty of the Red-flowering Currant only complicates matters further. When winter and gloom refuse to relent, the Red-flowering Currant explodes overnight in deep, rose-colored hues of reds and the palest pinks, stopping forest visitors in their tracks.[1] Migrating Hummingbirds, whose return to the Pacific Northwest coincides with this glorious display, add another element of beauty.[2] Butterflies and Bees feast on the rich nectar of the drooping clusters of flowers, Zephyr Butterfly larvae feed on the maple-like leaves, and Birds and Mammals delight in the powdery blue, late-summer berries as soon as they ripen.[3] The Red-flowering Currant thrives on sunny slopes at the edge of forests,[4] oftentimes in the company of Madrone, Bitter Cherry, Elderberry, Manzanita, and Mock Orange,[5] providing an optical feast for anyone wandering through such a forest at the peak of spring. The flowers are reminiscent of wild roses; the summer foliage, of sage.[6] An additional charm of this stunning shrub is its golden autumn foliage, which, if the winter is mild enough, lasts till spring, when the flowering cycle begins anew.[7]

Image: Kitty

Image: Peter Pearsall/USFWS

[1] T. Abe Lloyd and Fiona Hamersley Chambers, *Wild Berries of Washington and Oregon* (Auburn, WA: Lone Pine Publishing, 2014), 95.
[2] C.P. Lyons and Bill Merilees, *Trees, Shrubs & Flowers to Know in Washington & British Columbia* (Vancouver, B.C.: Lone Pine Publishing, 1995), 114.
[3] Eileen M. Stark, *Real Gardens Grow Natives* (Seattle: Skipstone, 2014), 246.
[4] Russ Holmes, "Plant of the Week: Red-flowering Currant (*Ribes Sanguineum),"* U.S. Forest Service, accessed August 9, 2022, https://www.fs.fed.us/wildflowers/plant-of-the-week/ribes_sanguineum.shtml.
[5] Stark, *Real Gardens Grow Natives*, 246.
[6] Bressette, "Red Flowering Currant, *Ribes Sanguineum*," Native Plants PNW, August 10, 2016, http://nativeplantspnw.com/red-flowering-currant-ribes-sanguineum/.
[7] Stark, *Real Gardens Grow Natives*, 246.

Image: John T. French

Black Hawthorn
Crataegus douglasii

Image: USGS

The Black Hawthorn is a slow-growing,[1] medium-sized tree with clusters of white spring flowers and dark black, late summer fruit similar in appearance to crabapples.[2] The fruit is sweet; [3] the flowers, pretty and fragrant;[4] the leaves, green in summer, red and orange in autumn.[5] But the tree is often overlooked and rarely celebrated—perhaps, because the flowers of the Black Hawthorn give off such an unpleasant scent;[6] the fruit contains large seeds;[7] and the tree is covered in inch-long thorns.[8] The Black Hawthorn grows along streams and in deep, rich soil, where moisture is plentiful,[9] and spreads by root suckers that oftentimes turn the tree into a multi-stemmed shrub—an impenetrable, thorny thicket.[10] The Black Hawthorn can be a nuisance to people, but for wildlife, it is the ideal tree, there being no better place for Birds to nest than in a thicket of thorny shrubs.[11] The flower's unpleasant smell amounts to a sure attraction for Butterflies, Moths, and Bees,[12] while the large-seeded fruit is quickly devoured by a wide assortment of Animals, including Robins, Solitaires, Waxwings, Grosbeaks, Thrushes, Woodpeckers, Band-tailed Pigeons, Wood Ducks, Grouse, Pheasants, Turkeys, Foxes, Black Bears, and Coyotes.[13] The leaves provide ample food for Swallowtail Butterfly larvae, while the twigs entice Deer and Rabbits.[14]

Image: Seven Oaks Nursery

Image: Sandy Sisti

[1]Welby Smith, "*Crataegus douglasii*," Minnesota Department of Natural Resources, 2018, https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=PDROS0H860.
[2]Arthur R. Kruckeberg and Linda Chalker-Scott, *Gardening with Native Plants of the Pacific Northwest* (Seattle: University of Washington Press, 2019), 88.
[3]George B. Sudworth, *Forest Trees of the Pacific Slope (*New York: Dover Publications, Inc., 1967*)*, 347-349.
[4]John D. Stuart and John O. Sawyer, *Trees and Shrubs of California* (Berkeley: University of California Press, 2001), 224.
[5]Matt Lavin and Andrey Zharkikh, "*Crataegus douglasii*, Black Hawthorn," Gardenia: Creating Gardens, accessed August 10, 2022, https://www.gardenia.net/plant/crataegus-douglasii
[6]Lavin and Zharkikh, "*Crataegus douglasii*, Black Hawthorn."
[7]Bressette, "Black Hawthorns, *Crataegus Douglasii* & *C. suksdorfii," Native Plants PNW*, March 23, 2015, http://nativeplantspnw.com/black-hawthorns-crataegus-douglasii-c-suksdorfii/.
[8]George A. Petrides, *Trees of the Pacific Northwest* (Mechanicsburg: Stackpole Books, 2005), 60.
[9]Sudworth, *Forest Trees of the Pacific Slope,* 347-349.
[10]Bressette, "Black Hawthorns, *Crataegus douglasii* & *C. suksdorfii*."
[11]Edward C. Jensen, *Trees to Know in Oregon and Washington* (Corvallis: Oregon State University, 2020), 100.
[12]Lavin and Zharkikh, "*Crataegus douglasii*, Black Hawthorn."
[13]Gerald B. Stanley and Sarah Verlinde-Azofeifa, "*Crataegus douglasii*," Washington Native Plant Society, accessed August 9, 2022, https://www.wnps.org/native-plant-directory/335:crataegus-douglasii.
[14]Stanley and Verlinde-Azofeifa, "*Crataegus douglasii*."

Image: N. Brenizer

Western Crabapple
Malus fusca

Image: USGS

The Pacific Northwest is known as an apple-producing region, so it is surprising to discover that there is only one native apple tree in the West—the Western Crabapple.[1] This delightful and pretty tree grows up to thirty feet tall,[2] and is found mostly along streams, in wetlands and moist woods, among Red Alder, Willow, Cascara, Broadleaf Maple, and Pacific Dogwood.[3] It is not uncommon for the Western Crabapple to grow in thickets and fill with the sounds of Birds nesting in the safety of its dense, thorn-like branches.[4] In early spring, fragrant clusters of white flowers bloom, attracting Butterflies and other pollinating Insects,[5] and in late summer, tiny, red-blushed, oblong fruit, often described as "apple-like" (a unique shape for North American Crabapple trees),[6] appears to the delight of myriad Birds and Mammals, including Finches and Cedar Waxwings.[7] The fruit remains on the tree late into fall and sometimes into winter, providing important food during the lean months, especially for the Purple Finch, which prefers it to all other options.[8] Descriptions of the Western Crabapple sound similar to those of the Black Hawthorn, and indeed, the two are easily confused;[9] however, the Western Crabapple features pleasant-smelling white flowers, its fruit is more sour than sweet, and the thorns covering the tree are more forgiving than those of the Black Hawthorn. Wildlife relish both equally.

Image: Steve Zamek

Image: Christine Darnell

[1]Steve Cafferty, *Trees: West* (New York: HarperCollins Publishers, 2007), 141.
[2]George A. Petrides, *Trees of the Pacific Northwest* (Mechanicsburg: Stackpole Books, 2005), 60.
[3]George B. Sudworth, *Forest Trees of the Pacific Slope* (New York: Dover Publications, Inc., 1967), 342.
[4]T. Abe Lloyd and Fiona Hamersley Chambers, *Wild Berries of Washington and Oregon* (Auburn, WA: Lone Pine Publishing, 2014), 28-31.
[5]LeeAnn Kriegh, *The Nature of Portland* (Bend, Oregon: Tempo Press, 2020), 25.
[6]Richard Spellenberg, Christopher J. Earle, and Gil Nelson, *Trees of Western North America* (Princeton: Princeton University Press, 2014), 428.
[7]Kriegh, *The Nature of Portland*, 25.
[8]C.P. Lyons and Bill Merilees, *Trees, Shrubs & Flowers to Know in Washington & British Columbia* (Vancouver, B.C.: Lone Pine Publishing, 1995), 89.
[9]Spellenberg, Earle, and Nelson, *Trees of Western North America*, 428.

Image: David More

California Hazelnut
Corylus cornuta

Image: USGS

Oregon is hazelnut country. Ninety-nine percent of American-grown hazelnuts come from the state,[1] and they grow best in the Willamette Valley, where soil is moist and rich in organic matter, sunshine is plentiful, and mixed forests of Oak, Douglas Fir, Western Hemlock, Red Alder, Salal, Thimbleberry, Western Sword Fern, and Woodland Strawberry abound.[2] Oregon's commercial hazelnuts are of the European variety and, as such, are susceptible to blight, a fungal disease that almost destroyed the entirety of what was a ninety-million dollar industry in the late-twentieth century until a blight-resistant tree yielding the same amount of nuts as the European Hazelnut was created through cross-breeding international varietals with the Northwest-native California Hazelnut.[3] Not surprisingly, only the native tree is capable of resisting *anisogramma anomala*, a disease striking hazelnuts during the prolonged, wet springs characteristic of Oregon. The California Hazelnut is more a shrub than a tree, although the largest specimen, found in Lincoln County, Oregon is, indeed, a tree, reaching fifty feet tall.[4] The tree's suckers can quickly grow into a dense thicket, providing cover for Birds and small Mammals.[5] The first tree of the season to release pollen,[6] the California Hazelnut does so as early as January from pendant chains of catkins that emerge before the leaves.[7] The fragrant spores drift in the wind to tiny, reddish female flowers that once pollinated, transform into hard-shelled nuts with beaklike points that ripen in fall to the delight of Squirrels, Chipmunks, and Jays, which devour the sweet-tasting nuts before anyone else can reach them.[8] Those lucky enough to outrace the wildlife say our native nut tastes even better than its European counterpart.[9]

Image: Pete Veilleux

Image: Brian Ribelin

[1]Christian DeBenedetti, "The Shell Shock: Saving Oregon's Hazelnuts," *Portland Monthly*, December 14, 2012, https://www.pdxmonthly.com/news-and-city-life/2012/12/saving-oregons-hazelnuts-january-2013.
[2]Eileen M. Stark, *Real Gardens Grow Natives* (Seattle: Skipstone, 2014), 223.
[3]DeBenedetti, "The Shell Shock: Saving Oregon's Hazelnuts."
[4]John D. Stuart and John O. Sawyer, *Trees and Shrubs of California* (Berkeley: University of California Press, 2001), 221-223.
[5]Marjorie Harris, *Botanica North America* (New York: Harper Resource, 2003), 19.
[6]LeeAnn Kriegh, *The Nature of Portland* (Bend, Oregon: Tempo Press, 2020), 28.
[7]Arthur R. Kruckeberg and Linda Chalker-Scott, *Gardening with Native Plants of the Pacific Northwest* (Seattle: University of Washington Press, 2019), 88.
[8]Stark, *Real Gardens Grow Natives*, 223.
[9]Harris, *Botanica North America*, 19.

Image: David Allen Sibley

Vine Maple
Acer circinatum

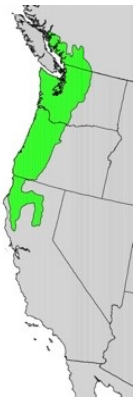

Image: USGS

All but one of the plants in this field guide have two things in common: They are native to Portland, and they grow alongside the Vine Maple. If you walk through any forest in the Pacific Northwest, coastal, Cascade, or urban, the understory is dominated by this rapid-growing, bright green-leaved, deciduous tree, which remains one of the timber industry's biggest enemies,[1] given that as soon as a forest has been logged, the tree grows profusely, easily outcompeting replanted Douglas Fir saplings. French fur trappers called the Vine Maple *Bois de diable*, or "Devil wood," due to the difficulty of passing through a forest containing it.[2] Crawling along the forest floor in search of sunlight, its branches growing into the ground to form new roots,[3] which can spread up to twenty-five feet, the Vine Maple constitutes a massive tangle of stems and leaves. Although it appears to be a vine or shrub, it is actually a tree, capable of reaching thirty feet in height and ten inches in diameter, and living up to one-hundred years.[4] With the coming of autumn, it ignites into brilliant shades of yellow, orange, scarlet, and pink.[5] In spring, clusters of red and white flowers appear, attracting Bees and other pollinators, and by summer, the flowers have turned into red-winged samaras, favored by Grosbeaks, Finches, Woodpeckers, and Chipmunks.[6]

Image: Greg Vaughn

Image: Angie Vogel

[1]Tom Kloster, "Meet the (Northwest) Maples!" Wyeast Blog, Mt. Hood National Park Campaign, May 31, 2016, https://wyeastblog.org/2016/05/31/meet-the-northwest-maples/.
[2]David Douglas, *Journal Kept by David Douglas during His Travels in North America: 1823-1827* (London: William Wesley & Son, 1914), 108.
[3]LeeAnn Kriegh, *The Nature of Portland* (Bend, Oregon: Tempo Press, 2020), 47.
[4]George B. Sudworth, *Forest Trees of the Pacific Slope* (New York: Dover Publications, Inc., 1967), 389.
[5]Stephen F. Arno and Ramona P. Hammerly, *Northwest Trees: Identifying and Understanding the Region's Native Trees* (Seattle: The Mountaineers Books, 2017), 209-210.
[6]Eileen M. Stark, *Real Gardens Grow Natives* (Seattle: Skipstone, 2014), 214.

Image: Mary E. Eaton

Tall Oregon Grape
Berberis aquifolium

Image: USGS

The state flower of Oregon is the Tall Oregon Grape.[1] The plant blooms in early spring, exploding into clusters of striking golden yellow spring-loaded anthers that leave the heads of feasting Bees pollen-coated, and transform an otherwise inconspicuous shrub into a dynamic eye-catcher.[2] The Oregon Horticultural Society spent two years, 1890-1892, deciding which flower would best represent Oregon, and the competition was fierce, with contenders including Madrone, Bearded Gaillardia, Washington Lily, and Wake-robin. Many argue that there are numerous native flowers more beautiful—Western Trillium, Nootka Rose, Pacific Rhododendron, Douglas Spiraea, Oregon Fawn Lily, Oregon Iris, and the Common Camas, to name a few, but the Tall Oregon Grape was chosen not so much on the basis of beauty but, rather, because it grows almost everywhere within the state's borders. It is the most common evergreen shrub in the western lowlands,[3] and provides essential habitat for wildlife. Sharp-edged, holly-like leaves offer protection for small Mammals and nesting Birds, plentiful, brightly-colored flowers attract Hummingbirds, Bees, and Butterflies, and tart summer fruit provides food for a multitude of Birds.[4] The blue-gray berries grow in bunches and are arranged in such a way that it is not uncommon for a Bird to clear out an entire bush in one sitting.[5] Because the shrub can adapt to most environments in the state, it is safe to say that the Tall Oregon Grape is a favorite—nay, vital—staple in the summer diets of most Birds in Oregon.

Image: Refra.eu

Image: Eileen M. Stark

[1]LeeAnn Kriegh, *The Nature of Portland* (Bend, Oregon: Tempo Press, 2020), 35.
[2]Kriegh, *The Nature of Portland*, 35.
[3]Arthur R. Kruckeberg and Linda Chalker-Scott, *Gardening with Native Plants of the Pacific Northwest* (Seattle: University of Washington Press, 2019), 108.
[4]"Oregon Grape (Tall)," East Multnomah Soil and Water Conservation District, accessed August 9, 2022, https://emswcd.org/oregon-grape-tall/.
[5]Marjorie Harris, *Botanica North America* (New York: Harper Resource, 2003), 505.

Image: Ron Clausen

Douglas Spiraea
Spiraea douglasii

Douglas Spiraea is a deciduous shrub that spreads very quickly in wet, sunny environments such as moist coniferous forests of Western Hemlock, Quaking Aspen, Oregon Ash, and Red-twig Dogwood.[1] Showy pink plumes appear in summer and attract Hummingbirds, Butterflies, Bees, and other beneficial pollinators.[2] Next to bogs and wet meadows, Douglas Spiraea grows in thickets up to six feet tall,[3] creating important nesting sites for Birds and essential cover for wildlife.[4]

Image: Sharon Talson

Nootka Rose
Rosa nutkana

The Nootka Rose is a showy shrub with large, two-inch[5] pink flowers that bloom in early summer and can grow up to ten feet tall, oftentimes forming a Bird-friendly thicket.[6] Plump, deep red hips appear in summer and remain on the shrub through winter, providing important sustenance for wildlife.[7] The Nootka Rose enjoys rich soil in moist, open areas, at forest edges and along stream banks, especially near the Willamette River, where they grow "in great perfection,"[8] as noted by David Douglas in his *Journal*.

Image: Awkward Botany

Orange Honeysuckle
Lonicera ciliosa

Orange Honeysuckle is a large vine that grows along the forest floor over anything that stands in its way.[9] It clambers over thickets of Nootka Rose and Salal shrubs at the forest's edge, and can grow twenty feet high[10] along the trunks of Douglas Fir and Oregon Oak deep in the forest. Where there is ample sunlight, the Orange Honeysuckle produces plentiful tube-shaped flowers especially shaped to accommodate the long bills of Hummingbirds; however, Bees, Butterflies, and other pollinators also favor the flowers.[11] The clusters of seedy, red fruit are eaten by Robins, Finches, and other Birds, while the bluish-green leaves are host to Snowberry Checkerspot Butterfly larvae.[12]

[1]Eileen M. Stark, *Real Gardens Grow Natives* (Seattle: Skipstone, 2014), 257.
[2]LeeAnn Kriegh, *The Nature of Portland* (Bend, Oregon: Tempo Press, 2020), 29.
[3]Mark Turner and Ellen Kuhlmann, *Trees & Shrubs of the Pacific Northwest* (Portland: Timber Press, Inc., 2014), 258.
[4]Kriegh, *The Nature of Portland*, 29.
[5]C.P. Lyons and Bill Merilees, *Trees, Shrubs & Flowers to Know in Washington & British Columbia* (Vancouver, B.C.: Lone Pine Publishing, 1995), 138.
[6]Turner and Kuhlmann, *Trees & Shrubs of the Pacific Northwest*, 396.
[7]Linda Kershaw, Andy MacKinnon, and Jim Pojar, *Plants of the Rocky Mountains* (Edmonton: Lone Pine Publishing, 1998), 68.
[8]David Douglas, *Journal Kept by David Douglas during His Travels in North America: 1823-1827* (London: William Wesley & Son, 1914), 119.
[9]Arthur R. Kruckeberg and Linda Chalker-Scott, *Gardening with Native Plants of the Pacific Northwest* (Seattle: University of Washington Press, 2019), 142.
[10]T. Abe Lloyd and Fiona Hamersley Chambers, *Wild Berries of Washington and Oregon* (Auburn, WA: Lone Pine Publishing, 2014), 161-162.
[11]Kriegh, *The Nature of Portland*, 34.
[12]Stark, *Real Gardens Grow Natives*, 236.

Image: Thayne Tuason

Western Trillium
Trillium ovatum

Picking wildflowers is a forgivable offense unless the flower is a Western Trillium. This early spring perennial, whose white petals turn pink when pollinated,[1] converts sunlight into food for underground rhizomes, some of which are seventy years old.[2] If the flower is plucked, the rhizome does not produce a flower the following spring[3]—a shame for Birds and Deer, which eat the fleshy, yellow fruit and disperse the seeds throughout moist forests of Douglas Fir, Western Redcedar, Bigleaf Maple, and Red Alder.[4] Ants are also an important disperser of seeds, which take up to fifteen years to bloom once deposited into the soil.

Image: Christian Rogers

Common Camas
Camassia quamash

A starlike perennial that blooms in midspring in spectacular shades of purple and blue, the Common Camas provides nectar for Insects, most notably, the endangered Fender's Blue Butterfly.[5] The Common Camas once grew abundantly in meadows and was a staple food of Native Americans until white farmers aggressively plowed its habitat, leading to a bloody conflict known as the Bannock War of 1878.[6] Today, the bulb flower grows in forests under the fallen leaves of Oregon Oak,[7] and according to celebrated conservationist Ira N. Gabrielson, in "mountain meadows galore where for miles the blue of the Camas shimmers as the blue of the sea."[8]

Image: Crokus.co.uk

Woodland Strawberry
Fragaria vesca

One of the most delicious ground covers in the Pacific Northwest, the Woodland Strawberry puts cultivated strawberries to shame. Growing up to a foot tall[9] in open woods and meadows and along stream banks,[10] the Woodland Strawberry is a delightful treat for wildlife. Blooming in early spring, clusters of white flowers attract Bees and Sara's Orange-tip Butterflies, while in midsummer, the plant's small but intensely flavored red fruit feeds Robins, Cedar Waxwings, and Towhees. For Gray Hairstreak and Two-banded Checkerspot Butterfly larvae as well, the Woodland Strawberry is a sweet host.[11]

[1]Marjorie Harris, *Botanica North America* (New York: Harper Resource, 2003), 109-110.
[2]LeeAnn Kriegh, *The Nature of Portland* (Bend, Oregon: Tempo Press, 2020), 59.
[3]Arthur R. Kruckeberg and Linda Chalker-Scott, *Gardening with Native Plants of the Pacific Northwest* (Seattle: University of Washington Press, 2019), 175.
[4]Eileen M. Stark, *Real Gardens Grow Natives* (Seattle: Skipstone, 2014), 294.
[5]Stark, *Real Gardens Grow Natives*, 178.
[6]Harriet L. Smith, *Camas: The Plant That Caused Wars* (Lake Oswego: Smith, Smith and Smith Publishing Company, 1978), 3.
[7]Stark, *Real Gardens Grow Natives*, 178.
[8]Ira N. Gabrielson, *Western American Alpines* (New York: The MacMillan Company, 1932), 62.
[9]Kriegh, *The Nature of Portland*, 73.
[10]T. Abe Lloyd and Fiona Hamersley Chambers, *Wild Berries of Washington and Oregon* (Auburn, WA: Lone Pine Publishing, 2014), 189.
[11]Stark, *Real Gardens Grow Natives*, 230.