



Friends of Trees

EUGENE CHAPTER

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A Landscape Transformed: How Trees Came to Dominate the Landscape of the Eugene-Springfield Area

By Whitey Lueck

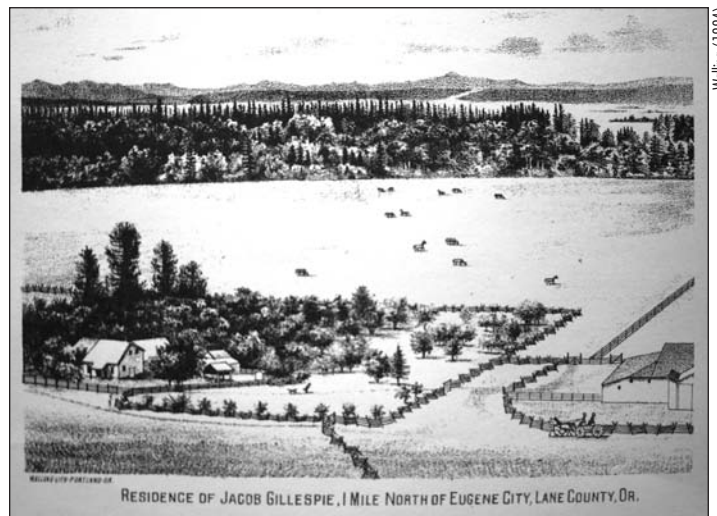
There are a number of myths about trees and forests that most Oregonians hold to be true. One of those myths is that, virtually everywhere west of the Cascade crest, since time immemorial, what we these days call “old-growth forests” have cloaked the hills and filled the valleys. And that landscape would still exist, had white settlers not arrived and cut the trees down to make way for farms and cities.

Contrary to this popular belief, the Euro-American settlers who arrived here in the upper Willamette Valley in the mid-1800s were greeted, not by cathedral-like conifer forests, but by mostly treeless prairies that extended across the entire valley floor and up into the nearby hills. Only near large watercourses such as the Willamette and McKenzie did one find closed-canopy forests—of both broad-leafed trees (white alder, black cottonwood, bigleaf maple) and conifers (mostly Douglas-fir and some grand fir).

Away from the river, however, and especially in the surrounding hills, trees occasionally grew both as solitary individuals and in groves of widely spaced trees with grass and wildflowers beneath them. Oaks (both Oregon white as well as California black) dominated this *savanna* landscape, but scattered conifers (Douglas-fir, incense-cedar, and ponderosa pine) were also present.

The three habitat types that formerly defined the upper Willamette Valley—grassland, savanna, and (in limited areas) forest—were the result of many millennia of landscape management by a series of fire-friendly cultures who had lived in the valley for over 10,000 years. These cultures' economies had come to depend on a productive and very open landscape that, unlike dense forests, provided an abundance of plants (roots, bulbs, fruits, seeds) and animals (deer, elk, waterfowl) that they gathered and hunted. For economic reasons, then, they annually set fire to the valley floor to maintain the open landscape that was so essential to their livelihood.

With the arrival of the agrarian and fire-unfriendly Euro-American culture, a very different set of values was imposed on the local landscape. In the absence of frequent human-set fires, the surrounding hills quickly began to fill in with



The view from Gillespie Butte toward the Coast Range—with horses grazing on the future site of Valley River Center—clearly shows the closed-canopy riparian woodlands of both broad-leafed trees and conifers along the Willamette River.

conifers—whose abundant, winged, wind-dispersed seeds and relatively fast growth rate enabled them to transform the hills in just a few decades from an open, oak-dominated landscape to a closed-canopy forest dominated by conifers.

Meanwhile, on the valley floor—where most of the pioneers chose to settle due to the superior quality of the soil for growing crops—people began to plant trees. The settlers, most of whom came from the Midwest, planted trees both for the food they could provide—fruits and nuts—as well as for their aesthetic and environmental benefits, including summer shade.

Trees such as the once-popular eastern black walnut “crossed the plains” as dried nuts in the wagons of the pioneers. These trees were valuable for their shade as well as for their delicious nuts, and one can still find individuals dating back to the 1800s gracing the front yards of old farmhouses. But fruit trees—most of which are grafted *cultivars* or cultivated (and named) varieties that cannot be propagated by seed—came to the Northwest as living plants and by boat from nurseries on the eastern seaboard.

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Other useful trees such as the black locust—a fast-growing, very adaptable tree that provided fragrant flowers in spring, shade in summer, and rot-resistant fence posts after being cut down—were, like the nut trees, easily transported by seed, and popular around 19th-century farmhouses.

But early immigrants soon familiarized themselves with our area's native trees—as non-native “ornamental” trees were not yet available in local nurseries—and began to plant them. Conifers, especially Douglas-fir, were planted, but it was “shade” trees to cool the settlers' homes in summer, and still let the sun shine through in winter, that people really sought. Our native oaks, lovely as they are, were relatively slow-growing and somewhat difficult to transplant. And riparian species such as alder and cottonwood—though fast-growing and easy to transplant—simply never found favor with the settlers.

Only one indigenous tree species really fit the bill, and that was bigleaf maple—which settlers began to plant in great numbers on the valley floor, both around houses and along newly-developed streets. The true-to-life drawings in A. G. Walling's *Illustrated History of Lane County* (1884) clearly show young bigleaf maples along many Eugene streets.

Over time, local nurseries began to provide an increasing variety of ornamental trees—non-native oaks, flowering cherries, lindens, magnolias, and many others—for local residents to plant both around their houses and along streets. Many of these plants, especially those from eastern Asia, had been “discovered” by plant explorers from Europe and America only in the late 1800s, and did not make their way into the nursery trade until well into the 1900s.

One of the artists for Walling's book sat on Skinner Butte and drew an overview of Eugene and its surroundings in the early 1880s. That sketch clearly shows a sharp-tipped(!) Spencer Butte in the distance—since then “rounded over” visually by the maturing Douglas-firs on its north flank—as well as young woodlands of both oak and conifer on Eugene's hills. Especially noteworthy in the sketch's foreground is downtown Eugene. Only thirty-some years after

settlement, Willamette Street is lined with bigleaf maples, and conifers (likely all natives) and fruit and nut trees flourish around private residences away from the young community's main street.

Only a couple of decades after that sketch was made, however, the maples along Willamette Street were felled to make way for utility poles carrying electric and telegraph wires. Later still, after we began placing utility lines underground in the 1950s and 1960s, trees re-appeared along Willamette Street—but nothing (yet) to match the grandeur of the lovely allée of maples that graced the street for at least several decades in the late 1800s and early 1900s.

Walling (1884)



The house of prominent early Eugenean, T. G. Hendricks—at the corner of Broadway and Charnelton Street—with its young, street-side bigleaf maples.

Over time, the planting of indigenous trees nearly ceased, as local nurseries procured and propagated more and more species of “exotic” trees that were more unusual or developed more spectacular autumn foliage or showier flowers than our local trees. Then, in the late 1900s, an interest in indigenous trees was renewed, at least to a limited extent. Young bigleaf maples—prohibited as street-side trees in most maritime Northwest communities because they “get too big”—began to be planted once again in Eugene when and where old street-side maples were removed.

On the slopes of the Chambers Overpass, a large planting of native conifers went in. And elsewhere in Eugene—along Amazon Creek and in East Alton Baker Park, for example—native trees were planted in great numbers to help restore native habitats that elsewhere in our communities have been displaced by both development (buildings, streets, parking lots) and the planting of non-native species.

This return to the planting of trees native to the upper Willamette Valley has been confined, so far, mostly to publicly-owned lands—along streets and in parks and open spaces. In the coming years, however, perhaps it will spread to private property, as well, as owners of residential and commercial properties learn about and begin to understand the ecological importance of planting indigenous trees and other plants.

From the mid-1800s until fairly recently, almost all of the trees planted in our communities were the result of caring individuals who simply wished to beautify their properties or neighborhoods, or benefit from the environmental advantages (largely shade) of trees. These days, public agencies and non-profits—including Friends of Trees Eugene—

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When looking out across the cities of Eugene (above) and Springfield these days, it is difficult to imagine that only 150 years ago, the landscape was largely treeless.

play a large role in the planting of trees, especially on public property. In recognition of the host of benefits provided by street-side trees, the City of Eugene has required since the late 1990s that all new neighborhoods include street-side park strips planted with trees that can over time develop large canopies—and that all commercial properties, including parking lots, include large-canopy trees. In many part of

Eugene, a quick comparison of older suburban streets and commercial areas with more recent developments shows clearly how far we've come in recognizing the importance of trees to our community's well-being.

These days, when looking down from any of the hills surrounding the communities of Eugene and Springfield, one can scarcely see the buildings for the trees. It is amazing to consider that the striking transformation from treeless grassland to urban forest occurred over a period of less than 150 years. Again, except for along the river, almost all of the trees growing on the valley floor were planted by humans. Conversely, virtually every tree we see on our now-forested hillsides developed there naturally.

But the view from atop the hills is not the only transformation that has occurred. Along with the dramatic change in the local landscape has come, over time, a change in our minds. Where once we planted trees almost exclusively for the benefits they provided to humans—fruits, nuts, shade, “prettiness”—we are now seeing a slow but significant shift to viewing trees (and humans) as part of a much bigger picture that includes myriad plants and animals that are native to the upper Willamette Valley and with which we share this unique place. It remains to be seen how, in the long term, this shift will affect both us and the tree-dominated landscape that surrounds us.

Whitey Lueck is a horticulturist and naturalist, and an instructor with the University of Oregon's Department of Landscape Architecture.

Friends of Trees Green Space Initiative Program

The Friends of Trees Green Space Initiative guides volunteers at watershed restoration projects throughout the Portland-Vancouver and Eugene-Springfield metro areas. We plant in urban natural areas and along public right-of-ways. During the 2010-11 planting season, we planted more than 24,000 trees and other plants.


Volunteers of all ages and abilities are welcome at our weekend plantings. Only groups of 10 or more need to contact us in advance. Just find a planting event on our online calendar, dress to keep dry and get dirty, and arrive by 8:45 a.m. for registration, breakfast pastries, and planting instructions.

FOT works with over a dozen project partners including several watershed councils, SOLVE, public parks departments, and other public agencies to identify sites on public and private land that are in need of restoration. Major program goals include shading our creeks and streams to lower



water temperature; providing habitat in degraded areas for wildlife; increasing habitat connectivity; increasing native species diversity and overall ecological function; reducing storm water runoff through increased canopy and increased soil health; reducing pollution from our transportation corridors; and increasing the scenic beauty of our public green spaces.

FOT's Green Space Initiative is involved in many aspects of the restoration process including initial site identification; site preparation through the removal of invasive weeds such as English ivy, English hawthorn, and Himalayan blackberry; planting of sites with appropriate native species of trees, shrubs, and herbaceous plants; conducting maintenance on sites for three to ten or more years as a site requires; and monitoring the site for native plant survival and invasive species re-colonization.



Director's Corner

Another beautiful winter is nearing its end. Alder catkins are releasing their pollen. Across the city, trees' leafless forms stand out against winter skies. I love this time of year and the anticipation of spring. The bustle of the holidays and the typically wet months of November and December are behind us, as is our coldest month of January, and one can feel the sunlight strengthening. The leaves of camas and other bulbs are rising from the ground, and buds are swelling.

I believe 2012 will be an especially productive year for Friends of Trees, and I am grateful to all who helped build Eugene Tree Foundation and bring Friends of Trees to where it is today. I would like to thank our generous donors and everyone who has come to a planting or work party over the years. It's amazing to come back years later to prune some of the trees we have planted and see how large the trees are.

I want to extend a special thanks to Helen Liu and Whitey Lueck for their work to put together and edit this newsletter. For more than ten years, Helen has done design and layout, and Whitey has contributed articles and edited the Eugene Tree Foundation—and now Friends of Trees Eugene—newsletter. They do fantastic work. Thanks also to all the contributors to the newsletter over the years. And a special thanks also to Jennifer Salvatore, who took excellent care of ETF's books for the life of the organization, and handed over the books in great shape to Mary Harrell, Friends of Trees office manager.

Many thanks also to all past ETF leaders and the current members of FOT's steering committee for their commitment to building our organization. We welcome Eric DeBord to our steering committee this winter. Because of all these contributions, we have a strong, thriving organiza-

tion with an exciting future.

Some of the highlights of the last few months for me include FOT's first three tree plantings in Springfield. In the first one, volunteers planted 263 trees on December 10th in Rob Adams Park, in collaboration with Willamalane Park and Recreation District. One remarkable part of this planting was seeing a bike trailer climb the steep hill to the park carrying 38 Douglas-fir trees from Eugene. Kory Northrop, a graduate student at the UO, transported the trees to the site by bicycle and planted each one as part of a student project.

On January 14, FOT worked with Willamalane again, as well as the Portland Timbers, to plant 100 trees on a seasonal island of the McKenzie River at Harvest Landing Park. At this event, more than 50 volunteers watered and mulched the 100 trees with a bucket brigade that went down one side of a ravine and up the other. Another nice aspect of this planting was seeing the caravan of 22 volunteers from the UO Outdoor Program arrive at the planting by bike.

In the third Springfield event this winter, on MLK Day, volunteers—including an Environmental Studies class from the UO—planted native trees and herbaceous plants and removed ivy and blackberries from Eastgate Woodlands.

In this newsletter, we announce the launch of our Neighborhood Tree program and our pruning program. I hope you will join us to make these programs thrive. Happy winter and spring!



Erik Burke
Director
Friends of Trees Eugene

Neighborhood Tree Program

Join volunteers to plant trees in your neighborhood!

There is still time to order a tree for your home this spring! For only \$15 to \$45, choose a tree that suits you and your planting strip or yard. The cost covers delivery of your tree, planting assistance, and follow-up checks in the summer. Email eugene@friendsoftrees.org or call 541-632-3683 for more information or to sign up.

FOT'S New Pruning Program

Join us to prune trees along streets and in parks, and contribute to the health of your urban forest. FOT is excited to build this program into a great collaboration among FOT, Willamalane Park and Recreation District, and the City of Eugene. The first event is February 18th in Bob Artz Memorial Park in Springfield. There will be a training for both beginners and experienced pruners, and hands-on work pruning park trees. Pre-registration required. Email eugene@friendsoftrees.org or call 541-632-3683 to sign up.

The Yew Tree

By Alby Thoumsin

Last weekend, as I was carving a cane with a grizzly-bear head for a dear friend of mine, I realized that few trees have captivated my imagination, admiration, and respect like the yew tree—whether I was playing as a kid among the large branches of a centuries-old English yew (*Taxus baccata*) in the park of a small monastery in Belgium, or passing by its cousin, the Pacific yew (*Taxus brevifolia*), while hiking a trail in the luxuriant old-growth forests of western Oregon.

The genus *Taxus* includes just seven species, all of which occur naturally in the temperate regions of the northern hemisphere. Yews are remarkable trees for multiple reasons. We know, for example, that every indigenous group that formerly lived within the natural range of yew trees used the trees' wood. The comparatively slow-growing trees have very dense wood with a tight grain which is good for making tools, weapons, and art objects, ranging from fishing hooks and canoe bailers, to paddles, masks, whistles, gambling sticks, staffs, handles, and spoons. And shooting bows—including, of course, the famous long-bow used by medieval English archers in 1415 to wipe out the French army during the battle of Agincourt (even though the English were outnumbered ten to one).

Barely 40 years earlier, King Richard II of England “upheld his grandfather’s edict that men should practice archery on Sundays and holidays rather than play frivolous games” (Hal Hartzell, *The Yew Tree, A Thousand Whispers*). Apparently, practice did make perfect! Among some traditional bowyers—those who make shooting bows—there is even a belief that yew wood is so perfect for making bows that divine intervention must have been somehow involved, as no other wood comes even close to yew wood in its suitability for that purpose.

There is actually a particular way to use the wood of a yew to make a bow. One needs to have a straight stave and split it so that the piece includes both heart- and sapwood. The denser heartwood will be the part facing the archer—and capable of bearing the compression of the wood fibers as the bow is drawn—while the sapwood will be toward the outside of the bow curve since it is more flexible.

In the Pacific Northwest, foresters and loggers for a long time referred to the yew as a “trash tree” because of its inability to grow fast and produce lumber. For that reason, it was mercilessly cut down and left to rot (very slowly, by the way...another quality of yew wood!) while its larger and more distant relatives such as Douglas-fir and western hemlock were harvested for lumber.



Fruit of the Pacific yew (*Taxus brevifolia*)

This view of the yew changed dramatically in the early 1960s when “the National Cancer Institute began an extensive screening of plant compounds for anti-cancer activity and found taxol, the most complex yew-compound discovered to date, in the yew” (Hartzell). The tree was already known for its medicinal properties, mainly for viper-bite antidote (not proven) and also a poison used by Celts on the tips of arrows. But the discovery of taxol changed the fate of the Pacific yew forever. At the time, taxol was thought to be found only in the bark of the tree, and this triggered the beginning of the cutting and stripping of countless yew trees in the Pacific Northwest.

The bark of a yew tree is less than an eighth of an inch thick and it was estimated that a 200-year-old tree with a diameter of 10 inches could produce about six pounds of dried bark. That amount of bark could in turn produce *one fifth of a gram* of taxol, and it took two grams to treat a patient. The bark of ten large trees was thus required to produce enough taxol to treat one patient.

As yews began to be cut, it became quickly obvious that such a small yield of taxol per tree could eventually bring the species to the brink of extinction. Eventually, however, taxol was also found to occur in the yew’s needles, too, changing the ratio from 60 pounds of bark for 2 grams of taxol, to 9 pounds of foliage for the same amount of taxol. So instead of killing ten large yews by stripping off their bark, a single average yew tree could now easily produce nine pounds of foliage. Furthermore, the yew tree, unlike most conifers, has the ability to re-sprout and grow back, even after being severely pruned. So the solution to the problem—the yew tree’s natural ability to rapidly produce new foliage to replace that which was removed—had been overlooked all those years! In the end, however, taxol was synthesized in a lab and the yew tree was at last completely spared.

I never miss the opportunity to consider the above yew-related facts when I come across a yew tree, whether it’s in a forest, a graveyard, or a garden. What an amazing tree, indeed!

My tip this time? I heartily recommend the book I quoted from above, written by Hal Hartzell—I learned so much from it. I’m sure the public library has a copy of it, but it can also be found in local used-book stores.

Until next time,

Alby Thoumsin is a certified arborist.



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