Friends of Trees
EUGENE CHAPTER

Summer, 2012; Vol. 2, No.3

The Wind in the Trees

By Whitey Lueck

Many people are aware of the apparent effect of strong winds on trees that grow along the coast and on exposed ridges in the high mountains. The trunks of trees in these locations that sometimes experience severe weather may be strongly slanted or bent, and the crowns or canopies of the trees are often very asymmetrical. But few people realize that, even where relatively gentle weather prevails most of the time, such as here in the upper Willamette Valley, wind can cause significant *crown deformation* in both native and cultivated trees.

Whitey Lueck

Looking east at the row of London plane-trees by Amazon Pool. Note the very asymmetrical canopy of the tree in the foreground, with far more growth to the right of the tree's main axis (its trunk) than to the left.

Interestingly, trees at the coast and in the mountains are not deformed due to the wind, per se. At the coast, for example, the strongest winds occur in the wintertime as storms arrive—generally from the *southwest*—from the Pacific Ocean. But tree canopies there are deformed as if a wind from the *northwest* were acting on them! How can that be? Well, what causes the deformation of coastal tree canopies is not the wind itself, but the salt that is carried on the wind—which kills the tissues, buds, and needles on the windward side of the tree.

Moreover, during the winter, storms off the ocean are accompanied by rain, which washes any salt off. But during the summer, the strong, north/northwest winds that blow almost daily along Oregon's coast deposit on the northwest sides of trees salt that does *not* wash off, resulting in the *southeast* side of the tree (out of reach of the salt) growing more luxuriantly than the northwest side and thus over time creating the lopsided canopy.

In the mountains, the effects on trees are similar. There, it is a wintertime phenomenon, as well, but what causes the crown deformation is not salt, but blowing snow, ice, and abrasive volcanic materials, all of which kill tissues, buds, and needles on the windward side of the tree and create an asymmetrical canopy.

Okay, back to the Willamette Valley. Here in the Eugene-Springfield area, part of what makes our summers so exceedingly pleasant—compared to many other parts of the state and country—is that, even when it's occasionally very hot, we almost always benefit from a strong diurnal wind that develops by mid-morning on most days, and lasts until about sunset.

Because this is a growing-season wind, and it occurs over a period of many weeks, it affects the canopy development of many (but not all) species of trees growing here. Broad-leafed trees tend to be more affected than conifers, for

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Director's Corner

The First Year for the Friends of Trees Eugene Chapter

This July marks the end of our first year as the Eugene chapter of Friends of Trees. We made great progress this year. We engaged more volunteers than ever before. FOT volunteers in Eugene and Springfield planted a lot of trees and did a great deal of work caring for trees and green spaces, as well. We worked, too, on building a core of trained volunteers to plant, care for, monitor, and study our city trees.

In the 2011-2012 season, FOT led our largest and most complicated events to date. The Eugene chapter held 39 tree plantings, stewardship events, invasive plant removals, and trainings. Last season, 484 volunteers with Friends of Trees planted a total of 854 trees in 10 plantings, including 133 street and yard trees in the Neighborhood Tree program. I was especially pleased on Arbor Day to see the first FOT Eugene planting team of 20 volunteers planting 16 street trees using only bicycles as transport vehicles. In the Green Space program, volunteers planted 721 trees in urban natural areas and roadsides. Our first Friends of Trees planting in Springfield was in November at Rob Adams Park. The FOT Stewardship program coordinated volunteers to care for trees and natural areas.

In the 2011-2012 season, a total of 870 FOT volunteers put in 2,892 hours of work, valued at over $57,000. In the past year, we recruited many new volunteers from the UO, LCC, and local middle and high schools. Over the season, we held our first trainings for volunteers to become part of FOT's Tree Team as Crew Leaders, Neighborhood Coordinators, Pruners, Summer Inspectors, and Tree Inventory volunteers. Our community stewardship program took a big leap forward with our first Summer Inspector and Tree Inventory volunteer trainings in June and July 2012.

In FOT's first year in Eugene, we began to expand funding beyond ETF's past reliance exclusively on individual donations. Our goal is to have balanced and sustainable funding from contracts, businesses, foundations, and individuals. In 2011-2012, individual donations increased, we received significant business support, and aggressively sought municipal contracts. Our primary funding this year was major grant support from the Alice Tyler Trust, Meyer Memorial Trust, J. Schmidt Family Fund, REI, Union Pacific Foundation, and EWEB.

In 2011-2012, FOT received from Trainsong Neighbors our first neighborhood-association money ($750) for tree planting and care. We received the chapter's first *corporate* support from both Northwest Natural and the Portland Timbers. FOT is submitting proposals for planting and stewardship work with City of Eugene, City of Springfield, Willamalane Park and Recreation District, ODOT, Lane County, and our local utilities.

In our first year as a FOT chapter, we learned a lot and accomplished a lot, as well. FOT Portland staff gave the Eugene office tools and training to improve our effectiveness, and we began to put in place parts of FOT's award-winning community-building approach.

Next planting season, the Neighborhood Tree program, and FOT's

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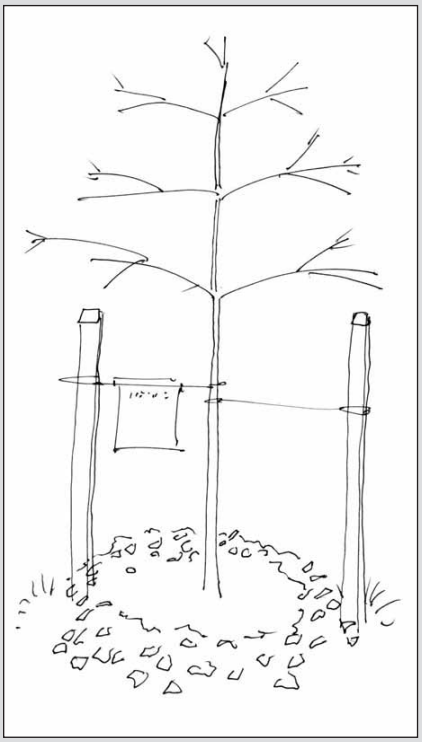
Arbor Day Planting

At 2012's Arbor Day planting in Eugene on April 7th, 127 volunteers planted 102 trees and launched FOT's Neighborhood Tree program. Eugene Mayor Kitty Piercy gave a nice speech to start the event. The planting was sponsored by Northwest Natural and supported by City of Eugene, Lane County, REI, Hummingbird Wholesale, EWEB, and several UO student groups. This was the first planting where FOT tree tags were used on every tree in the planting.



Tree tags provide tree identification, watering and care instructions, and sponsor recognition. (Drawing by Randy Speck)

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Director's Corner

street and yard tree program will expand to all of Eugene and Springfield neighborhoods, offering affordable trees planted by volunteers at neighborhood plantings. There will also be more bike planting teams. We will continue to support the effective tree committees in Trainsong and Jefferson Westside neighborhoods, and to identify, train, and support key volunteers to build tree committees in new neighborhoods, including River Road, Cal Young, Friendly, and others.

In FOT's second season in Eugene, we'll train many more volunteers as leaders, and engage new UO groups as volunteers and leaders. In the coming year, we will continue to build balanced and sustainable funding. We will get our first municipal contracts, increase individual donations, initiate our business giving program, and continue to apply for foundation grants.

The first year for FOT's Eugene chapter was a good test of whether the FOT approach that works so well in Portland and southwestern Washington is equally suited for the Eugene-Springfield area. There is pent-up demand here for a neighborhood- and community-based tree program like FOT's. The model works and can be made sustainable. I'm excited about our second year!

Erik Burke

Erik Burke
Friends of Trees, Eugene Director

Scott Altenhoff

Tree Inventory Volunteers Needed

Help Jefferson Westside Neighbors inventory their urban forest in collaboration with Friends of Trees and City of Eugene. Being a Tree Inventory volunteer gives you a chance to get outdoors in the sunshine while learning to identify and inventory neighborhood trees. It's a great way to meet neighbors and work together to monitor and care for your urban forest. Three remaining work days are 8/11, 8/25, and 9/8, from 10am-1pm. No previous tree knowledge required. For more information, call Erik Burke at 541-632-3683 or email eugene@friendsoftrees.org. Space is limited!

Something Wicked This Way Comes

By Alby Thoumsin

One of the most satisfying aspects of my job as an arborist is being the bearer of "good" news for someone who is worried about the health of a tree that, in fact, is fine. One fall, I had a customer who was really upset to see her favorite "fir" dying. With just a glance, I realized that her tree was a larch—sometimes called tamarack—and since larches are *deciduous* conifers, her tree was just displaying its gorgeous peach fall color before dropping its leaves! It was her first autumn on a property that she had bought the previous June, and she had not yet experienced the tree's annual shedding of its needles.

Well, this time, I'm sorry to say that I have *bad* news to bring. We have a new pest in town—although some sources say that it is just re-occurring after a brief hiatus.

Two weeks ago, I was inspecting a Himalayan white birch (*Betula jacquemontii*) in a neighborhood of west Eugene and I couldn't help but notice significant decline in the upper part of the tree's canopy. The leaves had fallen off and the upper part of the main trunk was dead. The foliage elsewhere in the tree, from ground level on up, was increasingly sparse with height. And a zigzag "gallery" excavated by beetle larvae was visible just underneath a patch of the bark.

Whitey Lueck

Himalayan white birch at the northeast corner of 19th and Oak with dead top due to bronze birch borers.

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Something Wicked This Way Comes

Whitley Lueck

D-shaped exit hole of an adult beetle.

Two days later, I encountered similar symptoms on a second tree, this time a European white birch (*Betula pendula*). This tree showed all of the symptoms of the pest that I suspected was attacking the trees, so I was able to confirm its presence.

Ladies and gentlemen, let me introduce to you the bronze birch borer (let's call it BBB, if you don't mind). This insect is a member of the order *Coleoptera*—or what we call beetles—and is in the *Buprestid* family which is distinguished by the metallic color and fairly elongated bodies of its members. The adult is about 3/8 of an inch long and lives up to its name, as its body is dark bronze in color. After over-wintering as a late-stage larva, the adult emerges between mid-May and early June from a small (1/5 inch diameter) exit hole in the shape of a "D" lying on its side, that looks like either a smile, or occasionally a frown....

The adult beetles fly into the canopy and snack on a few leaves, making small notches. The eggs are then laid in cracks or crevices of the tree's bark, and around wounded areas and other small cavities. The larvae hatch some two weeks later and start excavating shallow tunnels just under the bark, as they begin eating the cambium layer. A tree under attack soon displays not only decline in the upper canopy but also the zigzag bulging tunnels under the smooth bark. Look closely and you are also likely to find the famous D-shaped exit holes that confirm the presence of BBB. The larva, if you can fine it, is pretty characteristic of the *Buprestid* family with its long skinny body and a large, flat head.

BBB has been in Oregon for a while and, according to some sources, was in Eugene before now, sporadically attacking birches in very small numbers. What concerns me is the fact that Portland—and for the past seven or eight years, Corvallis—has been hit really hard by the insect. In Corvallis, it has reached the point where approximately three quarters of the population of susceptible birches are either under attack or have already been killed by BBB.

The attacks that have occurred in Eugene in the past were solely on stressed trees, according to my investigations, but Corvallis and Portland have seen healthy trees succumb just as well. How can this happen? I think that eventually, the beetle population can reach high enough levels to start attacking healthy trees but, more likely, I believe that we are seeing the aftermath of an excessive love for a tree species that has been all too popular and not always well taken care of.

Fifteen or twenty years ago, when I was working in landscape installation, the Himalayan white birch was *the* tree everybody wanted. I recall few new plantings that didn't include a classic trio of birches in one of the front- or backyard corners. I grant that the trees are truly elegant, but let's not forget that the genus *Betula* is at its best at higher elevations and more northern latitudes. They are intolerant of dry soils, so they suffer during our long, dry summers unless planted in cool, moist, and well drained soils. It is logical, then, that I found my first two victims in west Eugene, where the drainage is poor and the clay-rich soil dries out quickly.

I really don't like to be the bearer of bad news, and the last thing I want to do is to get birch owners (including me!) overly concerned. But this critter is here in our community and people need to be aware of it. It is possible to treat trees with insecticide during the VERY early stages of an attack (but not preventively) and achieve fairly good results. But maybe a better alternative is to select a different species in the *Betula* genus—river birch (*Betula nigra*) is supposed to be very resistant—or select a different tree genus altogether.

In my own case, I am keeping a close eye on my two European white birches and will water them adequately. The birches cultivated in Lane County, in order of decreasing susceptibility to BBB are: European white birch, Himalayan birch, paper birch (*Betula papyrifera*), and finally river birch.

My tip this time? Do not try to get ahead of this disease by cutting down healthy trees in the hope of slowing down the bronze birch borer's spread, as your tree(s) might actually turn out to be immune to the pest and could thus add to the gene pool of resistant birch trees.

Until next time,

Alby

Alby Thoumsin is a certified arborist.

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The Wind in the Trees

example, and some species of broad-leafed trees much more than others.

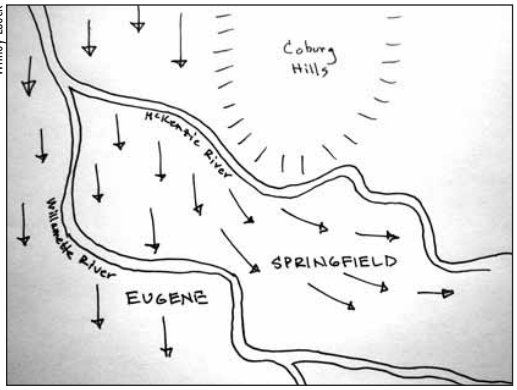
Some members of the magnolia family (magnolias and tulip-trees) are particularly vulnerable to crown deformation. So are London plane-trees and some species of ash. The pink-flowered and frequently planted cultivar of Japanese flowering cherry called 'Kwanzan' is also very susceptible.

The two oak species native to this area—Oregon white oak and California black oak—respond very differently. The former is never deformed by these strong diurnal winds; the latter almost always is, exhibiting both a leaning trunk and deformed crown.

Perhaps understandably, the most deformed trees are found in the most exposed locations where the daily winds are strongest. Such trees can be at the north edge of town—adjacent to open fields, across which the wind can really rip—or in downtown "canyons", or in parks with extensive open areas (e.g., Amazon Park), or in large parking lots. Conversely, the crowns of trees growing in courtyards or in heavily treed neighborhoods tend to be relatively unaffected by the wind.

The direction in which affected trees lean can tell us a lot about wind patterns in and around the Eugene-Springfield area. In Eugene, the diurnal summer winds are out of the north, and affected trees lean due south. But as one heads east in the metropolitan area toward the Cascades, prevailing wind direction shifts by 90 degrees!

Whitey Lueck



The prevailing wind direction during the growing season—based on crown deformation observed in local trees—varies greatly from Eugene to eastern Springfield.

This is especially evident as one drives along the I-105 freeway and highway 126. West of the I-5 interchange in Eugene, affected trees point south. But soon after crossing I-5 to Springfield, tree canopies begin tilting a little bit to the east of south, then toward the southeast, then east-southeast, and finally due east—all in a matter of just a few miles! Why is this? Two reasons: 1) here in the upper Willamette Valley, the north wind is confined to the valley by the Coburg Hills on the east side of the valley, and as soon as the wind gets past the Coburgs, it is able to fan out toward the east; and 2) the McKenzie Valley has its own up-valley diurnal wind that is "sucking" air out of the Willamette Valley west of it.

Whitey Lueck

Looking east at a severely wind-deformed tulip-tree in Lane Community College's northeast parking lot.

Another effect of these strong, hot, dry winds can be seen in local dawn redwoods (*Metasequoia glyptostroboïdes*). These deciduous conifers—"discovered" only in the 1940s in a remote area of south-central China—are native to an area where summers are warm and humid. In similar climates outside of that area—such as in Washington, DC and elsewhere east of the Great Plains—the trees (most of them less than 60 years of age) have grown very fast and maintained a strong central leader, as most conifers do. Here in Eugene, however, the vertical growth of dawn redwoods is relatively slow in exposed areas. Or, if the tree develops well during its early years in the lee of other trees or buildings, then gets above those trees or buildings, its upward growth is quickly curtailed.

A good example of this effect is the dawn redwood on the University of Oregon campus (near the Science Library) that is one of the oldest in North America—but shorter than some trees elsewhere in the US that are half its age. The top growth of this tree has all but halted now that the tree's tip has grown above the protective influence of the buildings to its north.

So keep your eyes open as you explore the Eugene-Springfield area, and look for the effect of wind on the trees. Again, not all species are affected by our strong summer winds, and trees growing in the most exposed areas show more dramatic effects than those growing in more protected areas. Finally, remember that the "bad" wind that is strong enough to deform the crowns of some local trees is at the same time the "good" wind that makes warm and sometimes hot summer days here especially pleasant for human beings!

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

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Bike Team on Arbor Day

Our first all-bike team of 20 volunteers came together on Arbor Day and planted 16 large street trees. Volunteers brought a nice assortment of bikes and trailers, and Hummingbird Wholesale brought two huge cargo trailers. The bike team hauled tools, trees, and mulch from the staging area in Jefferson Park to planting sites in Jefferson Westside Neighborhood. Our Portland chapter has a popular bike planting program. We are looking forward to bringing you more bike planting teams here in Eugene-Springfield in 2012-2013.

Planting photos by Jessica Burke