Forestry

WASHINGTON STATE UNIVERSITY
EXTENSION

WSU North Puget Sound Extension Forestry E-Newsletter – Large Print Edition

Late July 2014
Volume 7, No. 3

In this issue:

(click links to jump to article)

Forester's Notes

If you're thinking you just got a July newsletter, you're right. But I want to squeeze in one more here at the very end of the month. Earlier this month I touched on what happened in Oso. Our state is now contending with another major natural disaster with the forest fires in eastern Washington. As I drove to the office yesterday afternoon, two big smoke columns were visible from all the way out here in Everett, rising from the other side of the Cascades like volcanic

plumes. North-central Washington has been gutted, including the largest recorded fire in the state. If you're thinking this is only an Eastside problem, consider that the previous record was held by the Yacolt burn in western Washington. A lot of homes have been lost in this year's fires. Thankfully, there has not been a direct loss of life from the fires; I believe just one indirect death at this point. Fighting the fires has been an enormous task, with some of our specialists and workshop instructors from DNR deployed as part of the effort.

As the fires first got underway, I heard a disturbing account on the radio of homeowners who stayed behind after the evacuation order to try to start clearing brush around their homes for defensible space. After evacuation orders have been given is not the time to start thinking about Firewise practices. This not only puts the homeowner at risk, but firefighters as well who now have to consider taking greater risks to protect human life than they would have if there was only property at stake. When the fire is on the horizon is the time to head to safety knowing that you prepared your property as well as possible years in advance.

This highlights a broader problem that we all grapple with of trying to make time to prepare for the future when there's not an imminent threat. It's also hard to devote time preparing for something that may never happen. In a landowner survey I conducted a few years ago, two of the highest-ranked education topics of interest were fire risk reduction and estate planning, and yet these are two of the hardest topics to fill a workshop for since it is always perceived as something that can be done "next year." The problem is that we are continually faced with things that are more urgent. Stephen Covey, in his book *Seven Habits of Highly Effective People*, discusses this and presents a time management grid of four categories of tasks: Urgent & important, not urgent & important, urgent & not important, and not urgent and not important. Spending more time on tasks that are not urgent but important and less time on urgent but not important tasks can lead to greater effectiveness and success. A classic little booklet by

Charles Hummel called *Tyranny of the Urgent* also speaks to these concepts.

Tackling important but non-urgent tasks is not easy. It takes discipline, dedication, and sometimes hard choices. This year I finally took steps on something I had put off for years, which was to create an emergency preparedness kit. This portable kit provides food, water, first aid, and essentials for at least three days for my family and pets in case of a catastrophic earthquake or other disaster. Was it worth the effort? I won't know unless something horrible happens, and thus I hope I never know. Hence the difficulty devoting time to it. It was the right thing to do, though, and I sleep a little better at night.

My challenge to you for the rest of this year is to take some small steps toward something important but not urgent in preparation for the future. This could as simple as creating an emergency preparedness kit for your home or car, or begin drawing up estate planning documents, making your home in the woods more resistant to wildfire, or creating a forest stewardship plan for your woods. We regularly offer classes that can help you get started with some of these tasks. At some point, the woods burn, the earth shakes, and each of us returns to the dust from which we came. Disciplining yourself to take some small steps now will make a huge difference when the smoke is on the horizon.

Kevin W. Zobrist
Regional Extension Forestry Specialist
Serving the North Puget Sound Area

[return to top]

Women Owning Woodlands

Calling all you ladies out there! Are you a woman looking to become more involved in making the land management decisions on your wooded property? Washington State University Extension Forestry is excited to launch the first Washington state chapter of Woman Owning Woodlands. Woman Owning Woodlands is a network of women who learn, educate, and work together to build female literacy and involvement in forestry, land conservation, and natural resources. This is your opportunity to start seeking out resources to care for your land by becoming more connected and learning with and from other women in similar land management roles.

Our goal to establish a North Puget Sound Chapter of the Woman Owning Woodlands Network (WOWnet). WOWnet is a nationwide program that is dynamic, fun, informative, and strives to bring topical, accessible, and current forestry information to woman woodland owners and forest practitioners. We support women in forest leadership, women who manage their own woodlands, and all who facilitate the stewardship of forests. Utilizing tools such as news articles, blogs, events, resources, and personal stories we strive to instil a sense of confidence and empowerment in women's abilities to meet the challenges of forest ownership. For more information on the National Women Owning Woodlands Network visit their website: http://www.womenowningwoodlands.net/

We invite women who own, manage, or are interested in forestland to join us for our kick-off event, which will be evening potluck picnic at the Snohomish County Extension facility at McCollum Park (600 128th St SE, Everett, WA 98208) on Tuesday August 12th at 6 pm. The event is free, but please RSVP. To RSVP, please contact Lauren Grand at 425-357-6023 or lauren.grand@wsu.edu.

At our kick-off picnic we will be discussing what your needs and interests are as a female woodland owner in order to develop educational programing and experiences that directly relate to the care, needs, and management of your woodland. As a network, we are seeking interested women to become part of this opportunity to create a community and serve as mentors and friends to other women woodland owners across the North Puget Sound Region.

Whether or not you can attend the kick-off, if you are interested in this group we encourage you to join or WOWnet mailing e-mail list. For more information or to sign up for this list, please visit or WOWnet website at http://forestry.wsu.edu/nps/wownet/.

[return to top]

Twilight Tour

We're a little later than usual for our summer tradition this year, but it is happening! Our "twilight tours" don't involve vampires, but rather long summer evenings touring local family-owned forests. These free, family-friendly, out-in-the-woods events are a chance to share ideas, see what others are doing, and look at real examples of challenges and solutions. Each tour concludes with a potluck dessert.

This year we are doing one tour, and it will be the evening of Wednesday August 13th at Keevie Lake Forest, just west of Black Diamond (King County) off of Auburn-Black Diamond Road. The tour is free, but please RSVP and bring a dessert to share. To RSVP or get additional details, please visit http://forestry.wsu.edu/nps/events/twilight/ or call Lauren at 425-357-6023.

[return to top]

Forest Stewardship Coached Planning

*Register before **August 23rd** and save $25.*

Coached Planning is our flagship program. This comprehensive, university-based forestry class will help you get the most out of the land you love. Whether you have just a few acres of woods or a large forest tract, if you have trees on your property, this class is for you.

Topics covered include:

- How do you know if your trees are healthy? What should you do if they aren't?
- Are characteristics of your property attracting or repelling the wildlife you enjoy? What can you do if wildlife cause damage?
- Are there certain trees you should always keep or remove? How do you remove trees without damaging your land?
- When selling logs, are you getting a fair deal or getting ripped off?
- How do you find or grow edible berries or mushrooms? How do you cut holiday greens without hurting the tree?
- Are invasive and noxious weeds taking over your underbrush? What are the risks and what can you do about it?
- What kind of soil do you have and how does that affect what grows?

Save money, too!
As part of this class we will "coach" you in the writing of your own simple forestry plan that may qualify you for property tax reductions or conservation cost-share grants.

What's included:

- Eight classroom sessions taught by forestry experts
- A Saturday field trip
- A large notebook full of reference materials and how-to guides
- A one-on-one consultation at your property with a professional forester.

Our third and final class for 2014 will be in Preston (King County) on Tuesday nights starting September 16th. Registration is open. For details and registration information, call 425-357-6017 or visit http://forestry.wsu.edu/nps/events/cppreston/

Participants frequently tell me that this is one of the best classes they have ever taken. Not convinced? I'll make you this deal: if you register for and attend this class and by the third week you decide that it isn't for you, you can turn your materials in and drop out of the class for a full refund, no questions asked.

[return to top]

Research Update

Effects of thinning young Douglas-fir forests on flying squirrels– The wildlife and biodiversity benefits of thinning are well established. As with anything, though, there can be too much of a good thing. A recent study in Oregon found that northern flying squirrel density decreases with increased thinning intensity, especially in young forests. This species is associated with greater tree cover and less shrub cover. More open shrub cover is important to other species, though. Ultimately flying squirrels thrive best in late-seral forests that have large snags. Thinning can accelerate this structure, but keeping

some areas unthinned (or more lightly thinned) can provide meet some short-term habitat needs in the meantime.

Kevin's note: While more open conditions and robust understory may not be best for flying squirrels, other species thrive in those conditions. This illustrates the importance of not treating the landscape uniformly when managing for biodiversity—provide different things for different species. Thinning to different densities and leaving some areas unthinned ("skips") and incorporating mini-clear-cut openings (gaps) is a management strategy called variable density thinning. You can read about this and other strategies for increasing biodiversity in our publication on wildlife biodiversity: https://pubs.wsu.edu/ItemDetail.aspx?ProductID=15459

Reference: Manning, T., J.C. Hagar, and B.C. McComb. 2012. Thinning of young Douglas-fir forests decreases density of northern flying squirrels in the Oregon Cascades. *Forest Ecology and Management* 264:115-124.

Establishing lower canopy layers through underplanting or advanced (natural) regeneration–When trying to establish lower canopy layers in a thinned stand through natural advanced regeneration or underplanting, Douglas-fir does not perform well, especially under higher overstory density, with competing vegetation, and/or deer browse. Western hemlock is much more likely to form viable mid-canopy layers. Underplanted seedlings perform similarly to natural recruits, suggesting no need to plant if there is adequate seed source for natural regeneration. Western hemlock can have prolific regeneration, whether or not competing vegetation is controlled, suggesting no need for understory herbicide treatment if regeneration is doing well on its own. Grand fir could also be a good species for midstory formation if there is a significant seed source. Additional overstory thinning/clumping/gap creation over time is necessary to maintain viability of understory conifers, and care would

need to be taken to avoid damaging those understory conifers during such operations (e.g. fell trees away from regeneration areas).

Kevin's note: Here's another good application of variable density thinning.

Reference: Nabel, M.R., M. Newton, and E.C. Cole. 2013. Abundance of natural regeneration and growth comparisons with planted seedlings 10-13 years after commercial thinning in 50-year-old Douglas-fir, Douglas-fir/western hemlock, Oregon Coast Range. *Forest Ecology and Management* 292:96-110.

[return to top]

Focus On: Maple Syrup

By Al Craney, Skagit Conservation District, and Kevin Zobrist, WSU Extension

Bigleaf maple (Acer macrophyllum) is Western Washington's largest native maple. It is found in abundance in lowland areas (below 1,500 feet) throughout the west side of the state. True to its name, its characteristic five-lobed leaves can be up to a foot across. It is a versatile tree with a unique combination of fast growth and shade tolerance. In forestry settings it is often treated as a weed because its vigorous growth and aggressive stump-sprouting competes with Douglas-fir. It has many desirable qualities, though.

Bigleaf maple grows on a variety of different sites. It grows best on well-drained alluvial and colluvial soils, which are characterized by sediments that accumulate in river flood plains and at the bases of hillsides. It thrives in areas of abundant moisture, such as river terraces, flood plains, and seep areas, but it does not tolerate long-

term flooding. It is also found on shallow, rocky soils, but growth is poorer and sap production is not optimum.

Sap comprises water, dissolved minerals, sugars, vitamins, and amino acids. Sap flows up the stem of the tree from the roots to provide water and nutrients to various parts of the tree. The sap flows through tiny pipelines that compose the sapwood of the tree, which is the lighter-colored wood in a tree stem. The sap flow quantity and quality varies on weather conditions and available moisture. It also depends on the soil type, as the concentration of potassium, calcium, phosphorus, iron, sodium, and other macro and micro nutrients in the soil will affect the color and taste of maple syrup.

Sap collection for maple syrup production is done in the late fall and winter, after the leaves have come off the tree and before raceme (flower) formation prior to spring bud-break. The best sap flows occur during periods of nighttime freezing followed by daytime warming (to 45 degrees). The freezing temperatures desiccate the buds, and if it warms up enough the following day sap will flow up the tree to replenish moisture.

To harvest the sap, trees are tapped by drilling a 1.5 inch to 2 inch hole in the trunk of the tree with a 5/16” drill bit. A plastic spout called a spile is tapped firmly into the hole. A spile with a check valve is recommended, as it prevents bacteria from growing in the spile when the sap is not actively flowing. Flexible blue polyethylene tubing is run from the spile into a collection container (Figure 1). Spiles and tubing can be purchased from a maple syrup supply company (an internet search for “maple syrup supplies” will give you several companies to choose from). It will take 30 to 40 gallons of sap to produce one gallon of syrup, depending on the sugar content of the sap. In good conditions, sap flow can average one gallon per spile (tap) in 24 hours. Maple trees are not created equal, and sap production will vary between trees. Trees are tapped once per season.

Spiles are removed in the early spring allowing the trees to heal-over during the growing season, and then they are re-tapped in the fall.

A healthy tree that is ten inches diameter breast height (DBH) should have only one tap. An 18 to 24 inch DBH tree should have no more than 2 taps, and a tree larger than 24 inches DBH should have no more than 3 taps. Sap production and flavor will vary from year to year. Sap will stop flowing once temperatures no longer fluctuate between freezing at night and thawing during the day. Maple sap does not keep well, so it must be collected daily and processed.

Bigleaf maple sap is about 2 to 2.5 percent sugar before processing. The goal is to boil the sap to evaporate the water and concentrate the sugar to 64.4 percent. Collected sap is cooked in three stages, all using stainless steel containers (evaporator pans). In stage one, sap is brought to a rolling boil (219 degrees F) to evaporate water and kill bacteria. Wood heat is normally used for stage one, because it is cost-effective (Figure 2). A small amount of vegetable oil is added to keep foam down. It is best to pre-heat additional sap in a side pot before adding it to the boiling sap in the evaporator pan. You can build your own fire box (called an arch) out of stainless steel (and/or cast iron) and fire bricks. You can also purchase commercially-built arches (as well as stainless steel evaporator pans) from a maple syrup supply company.

When boiling the sap, the sugar content should be checked regularly. A refractometer works best for this. A refractometer is a small device that analyzes the brix (sugar content) in a drop of liquid (Figure 3). Once the sugar content reaches about 30 percent, the thickening sap is transferred to propane heat for the second stage. It is easier to control the temperature with propane. Controlling the temperature is very important, because it is very easy to burn the syrup when the sugar content rises above 50 percent. This second stage is optional, as the cooking can be done entirely on wood, by it will be harder to control the heat. The first and second phase should be done outside.

The cooking process produces a lot of steam, which can lead to black mold if done in the house.

Once the sugar content reaches 60 percent the syrup can then be finished on the stove in the house (stage three). During this finishing stage, monitor the sugar content with a refractometer to determine when it reaches the target of 64.4 percent. Remove the sap from the heat when it reaches about 63%, as there will be residual heat and evaporation that will bring the concentration to the target level.

The syrup must be filtered to remove natural mineral deposits. This can be done by running the syrup through an orlon acrylic sack. Because this is a time-consuming process, it is best to only use this filtering method for small amounts of syrup (i.e. a gallon or less). For larger producers, faster, commercial-grade filter systems are available.

Finished syrup should either be sealed in canning jars at 180 degrees or kept refrigerated as you would with any natural food. Maple syrup has a one year shelf life, but like any food should be refrigerated after open. Pure maple syrup is a natural product with considerable variation in flavors. Syrup is graded based on color, from light amber, to medium amber, to dark amber (Figure 4). One gallon of pure bigleaf maple syrup can sell for up to $300.00.

For more information, check out our syrup production video at http://www.youtube.com/watch?v=z03vapfoiAA&feature=youtu.be.

[return to top]

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The WSU North Puget Sound Extension Forestry program is made possible in part by funding from Snohomish County Surface Water Management, the Snohomish Conservation District, King County, Skagit County, Island County, and Whatcom County.