SOCIETY OF AMERICAN FORESTERS

Western Forester

June/July/August 2014 Oregon • Washington State • Inland Empire • Alaska Societies Volume 59 • Number 3

Managing for Long-term Soil Productivity in Pacific Northwestern Forests

BY TIMOTHY B. HARRINGTON AND SCOTT M. HOLUB

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Scott M. Holub

Maintaining the productive capacity of forest soils is a potential concern in regions where harvesting or displacement of forest-residual biomass, or "logging debris," may occur. Understanding the effects of removing this primarily branch and needle material is critical to assessing the sustainability of commercial forestry and biomass-energy systems. A primary source of uncertainty arises from the removal of carbon and other nutrients present in the biomass, as well as from trafficking of heavy equipment during collection of the material. Could these practices be detrimental to long-term soil productivity of managed forest ecosystems?

In a large-scale, collaborative effort, U.S. Forest Service Research and Development, forest industry, and multiple universities initiated the North American Long-Term Soil Productivity (LTSP) Study in 1989 to investigate the long-term consequences of organic matter removal, soil disturbance, and competing vegetation control that occur during intensive forest management. Initially led by Forest Service project leader and scientist Robert Powers, who passed away in November 2013, the LTSP research network now includes over 100 core and affiliate installations spanning a variety of forest types in the U.S. and Canada.

PHOTO COURTESY OF TIMOTHY B. HARRINGTON

The Molalla LTSP Study, shown here in the seventh year after planting (foreground), is located on a site of moderate productivity in the foothills of the Cascades near Molalla, Ore. The study is investigating how different harvest intensities (i.e., levels of residual logging debris) and competing vegetation levels influence long-term productivity of Douglas-fir.

Common treatments present at each installation include two or more intensities of forest harvesting (i.e., "stem-only" versus "whole-tree") with and without control of competing vegetation. As an experimental approach, vegetation control allows scientists to compare effects of harvesting intensity, and therefore, levels of residual logging debris, free of variability in competing vegetation that could influence survival and growth of planted trees. To date, the primary factor influencing stand development in the study has been competing vegetation control: A positive tree response to this treatment has been observed at nearly every installation. Harvesting intensity has had little or no negative influence on tree responses. Soil compaction, which was experimentally manipulated at some of the installations, was associated with reductions in tree survival and growth only at those sites having fine-textured or clayey soils.

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Managing for Long-term Soil Productivity

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Establishing the regional studies

There are currently four LTSP studies in western Oregon and Washington. Now in its fifteenth growing season, the Fall River LTSP study, located near Raymond, Wash., was initiated by Weyerhaeuser Company in collaboration with the U.S. Forest Service Pacific Northwest (PNW) Research Station and University of Washington (UW). Fall River represents one of the most productive forest-growing areas in the region. In 2003, two more fully replicated studies were installed in more moderate-productivity landscapes. These studies, located near Matlock, Wash., and Molalla, Ore., were initiated by PNW Research Station, Oregon State University, and UW, in collaboration with their respective landowners, Green Diamond Resource Company and Port Blakely Tree Farms. A fourth site, located east of Springfield, Ore., is being installed by Weyerhaeuser scientists and funded by a U.S. Department of Agriculture, Agriculture and Food Research Initiative Competitive Grant awarded to the Northwest Advanced Renewables Alliance (NARA). Treatments on the new NARA LTSP study were implemented in 2013, and Douglas-fir seedlings were planted in spring 2014. Located within a warmer and drier range of coastal Douglas-fir, the NARA LTSP study rounds out a suite of sites representative of the region. Each of the four studies (Fall River, Matlock, Molalla, and NARA) is an affiliate of the North American LTSP network, providing a regional database for best management practices of coast Douglas-fir.

What we learned

Findings from the three well-established regional LTSP studies are in general agreement with those from the North American LTSP network. Through the tenth year after planting, Douglas-fir survival and growth have not differed among harvest intensities when combined with competing vegetation control. However, in the absence of vegetation control, tree responses differed among harvest intensities at Matlock and Molalla because logging debris altered the species composition and abundance of competing vegetation. At Matlock, low levels of logging debris remaining after whole-tree harvesting were associated with a high abundance of a vig-

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Western Forester

Society of American Foresters
4033 S.W. Canyon Rd. • Portland, OR 97221 • 503-224-8046 • Fax 503-226-2515
rasor@safnwo.org • www.forestry.org/northwest/westernforester/2014

Editor: Lori Rasor

Western Forester is published five times a year by the Oregon, Washington State, Inland Empire, and Alaska Societies' SAF Northwest Office

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Next Issue: The Carbon Cycle and Forests: How They Are Connected

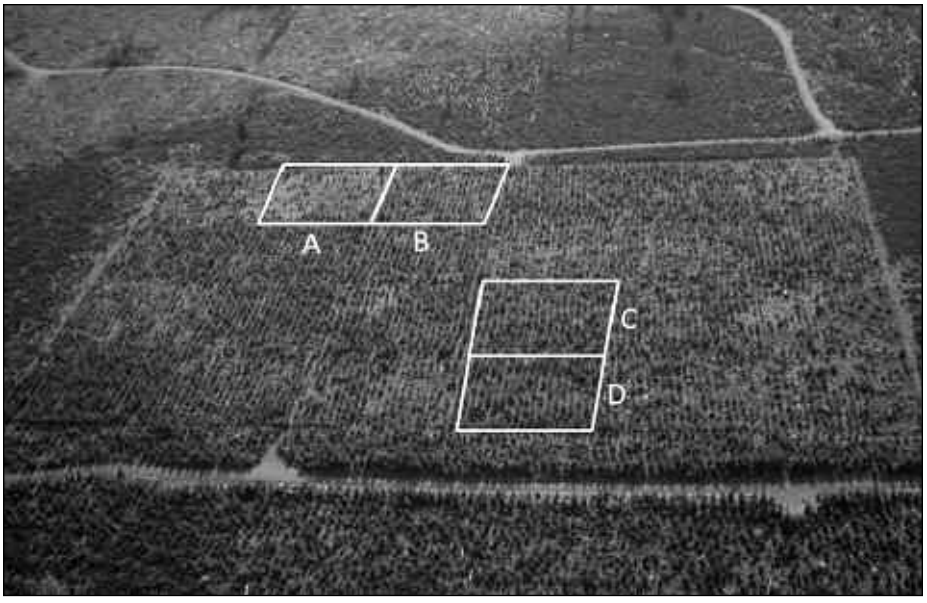

PHOTO COURTESY OF JAMES DOLLINS

In this aerial photograph of the Matlock LTSP Study, taken in the ninth year after planting, Douglas-fir density and size differ due to early effects of logging debris, vegetation control, and soil disturbance on tree survival and growth. A sparse stand of Douglas-fir (A) developed where a low level of logging debris and associated soil disturbance allowed a vigorous stand of Scotch broom to develop and compete with the planted trees. A more productive stand (B) developed where high levels of debris inhibited broom development. However, stand productivity did not differ between low (C) and high (D) levels of logging debris when they were combined with five years of competing vegetation control.

findings have been observed at Matlock and Molalla for trees planted in compacted machine trails. It is important to note that the logging equipment used in the regional LTSP studies were tracked vehicles (e.g., shovel-forwarders), and thus, soil disturbance was limited to compaction only. "Puddling" or displacement of the soil did not occur.

Results from the NARA LTSP study will be available in the future as the trees grow and are monitored. NARA's overall goal is to design and evaluate a supply chain based on using the forest residuals left after logging or thinning operations to produce bio-jet fuel and other co-products. In addition, NARA investigates the potential social, economic, and environmental impacts from this anticipated industry. Each of the LTSP studies examines the sustainability of removing the raw materials, and thus, fills critical knowledge gaps for these production systems.

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orous competitor, Scotch broom, which germinated from an existing seed bank, resulting in reduced tree survival and growth. At Molalla, piling of debris was associated with increased abundance of trailing blackberry, resulting in reduced tree growth.

Further research on these and other study sites has also shown that logging debris affects microclimate in ways that can influence tree survival and growth. For example, debris can reduce evaporation from the soil surface via a mulching effect that conserves soil water, and it can reduce soil temperature sufficiently to inhibit germination of Scotch broom. Logging debris also is associated with reduced cover of forbs and grasses—species that can be highly competitive with tree seedlings.

Soil compaction treatments at Fall River have not had any deleterious effects on survival and growth of Douglas-fir through the tenth year after planting. Noteworthy was the finding that, when combined with vegetation control, compaction of the silty loam soil at Fall River was associated with small increases in tree growth because the treatment increased water holding capacity of the soil. Similar

Putting it all together

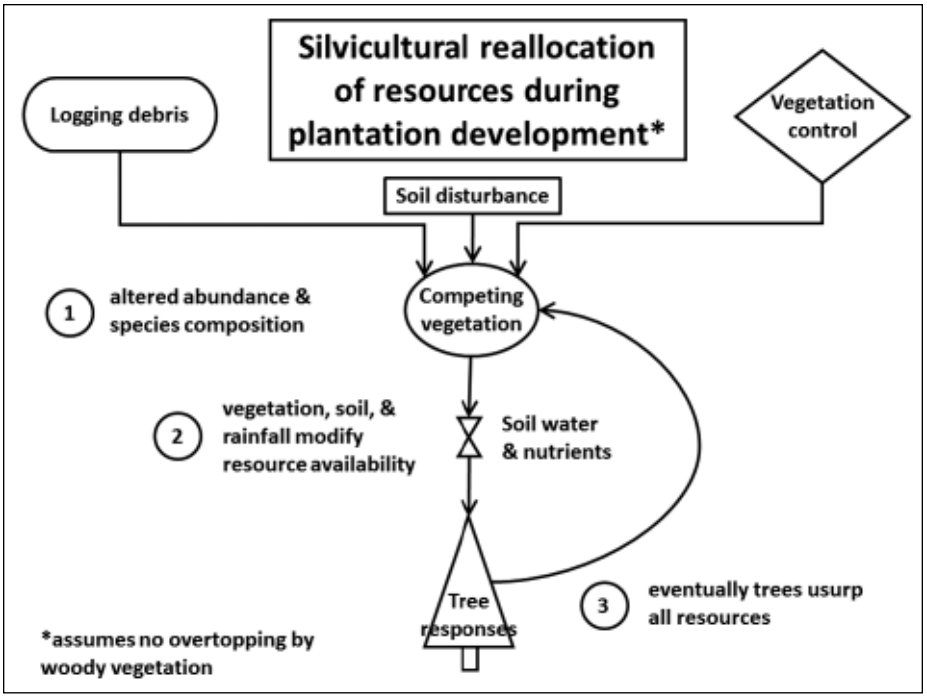
In addition to providing key information on sustainability, results of the regional LTSP studies are contributing toward a conceptual understanding of silvicultural reallocation of soil resources to crop trees (see Figure 1). The presence of logging debris, amount of competing vegetation, and the type and degree of soil disturbance are all factors that managers can manipulate to reallocate soil water and nutrients to planted trees. Each of these factors influences species composition and abundance of competing vegetation, which in turn alters availability of soil resources. Site characteristics that are not within the manager's control, such as certain soil chemical and physical properties, topographical effects, and annual precipitation, can place further limits on soil resources. Note that the conceptual model assumes that non-crop woody vegetation was suppressed during site preparation to prevent it from overtopping tree seedlings. Therefore, in this scenario, light availability is not a factor limiting productivity of Douglas-fir.

Of the three factors shown in the conceptual model, vegetation control probably affects tree responses the most because it provides a direct manipulation of competing vegetation. Timing and intensity of vegetation control are critical to treatment effectiveness because competition thresholds (i.e., the minimum abundance of competing vegetation that can be economically justified for treatment) are low on most sites—as little as 20% vegetation cover.

Logging debris abundance is generally associated with the harvesting method. With "shovel" harvesting, branches break off as trees are transported to the log processing area. With mechanized "cut-to-length" harvesting, the non-merchantable tree top and branches are left at the stump or near a machine trail. Logging debris that remains at the log processing area can be scattered across the site or distributed within machine trails. Logging debris that interferes with planting can be piled and left, piled and burned, or harvested for biomass energy or other products.

Although soil disturbance may not have a direct effect on tree responses, it can have an indirect effect of promoting establishment of highly competitive grasses and forbs. The intensity and area of soil disturbance can be reduced through the use of appropriate equipment, designated machine trails, and operator best management practices. Selective herbicide treatments can then be used to control the especially problematic vegetation that may develop in soil-disturbed areas.

By using a credible, science-based approach to address management and sustainability questions relevant to the effects of forest biomass removal, the North American LTSP Study has proven to be an important asset to policy makers and land managers alike. While valuable thus far, continuing these studies through multiple harvest rotations will provide the comprehensive information needed to make informed decisions on the costs and benefits of utilizing forest biomass. ◆



SOURCE: TIMOTHY B. HARRINGTON

Figure 1. At the time of forest harvesting and soon thereafter, forest managers have the opportunity to reallocate soil resources to the newly regenerated plantation. Logging debris, soil disturbance, and vegetation control are key factors that can be manipulated to alter species composition and abundance of competing vegetation, and therefore, access to soil water and nutrients by the planted trees.

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2014 SAF/CIF National Convention Call for Presentations

In 2014, SAF will partner with our Canadian counterpart, the Canadian Institute of Forestry/Institut forestier du Canada (CIF/IFC), for our national convention. In addition, the convention will be co-located with the International Union of Forest Research Organizations (IUFRO) World Congress, which only takes place once every 5 years and has not been hosted in the United States since 1971.

This is an exceptional convergence, which will bring several thousand forest scientists and managers from over 100 countries together in Salt Lake City, Utah during the first full week in October. We are thrilled at the opportunities this will bring for our US-based conference to enhance knowledge exchange and networking among professionals who study and manage forest resources around the globe.

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Online submissions open: November 1, 2013

Presentation submissions deadline: March 9, 2014

Notification of acceptance: April 2014

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Nutrient Effects on Inland Northwest Forest Health and Productivity

BY TERRY SHAW, MARK KIMSEY, AND CHRIS CHASE

Terry Shaw

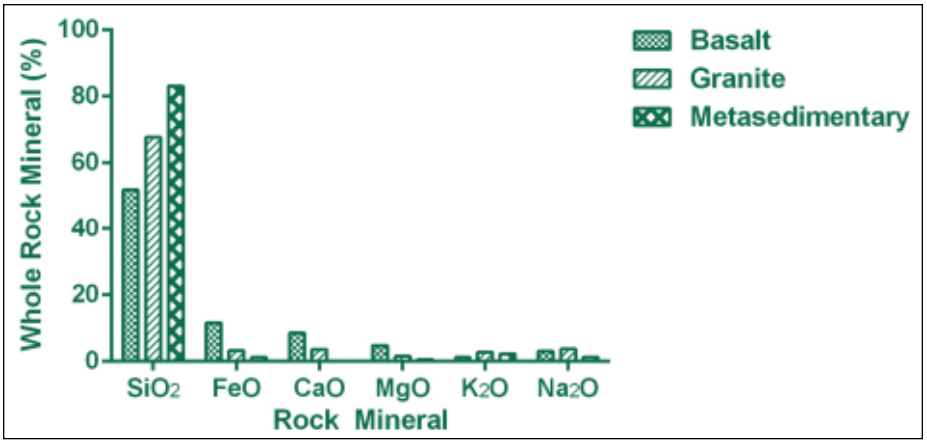
Mark Kimsey

Chris Chase

The Intermountain Forest Tree Nutrition Cooperative (IFTNC) has carried out forest productivity and health monitoring activities in the Inland Northwest since the early 1980s. Over the course of this time period it has become clear that forest productivity depends on favorable site quality characteristics to achieve healthy stand structures and maximum productivity. Forest managers utilizing site quality type classifications that integrate soil parent material properties and climatic regimes along with nutrient enhancing site management treatments can facilitate the development of improving site-specific nutrient capital. This strategy will maximize growth potential and minimize mortality for major conifer species across the Inland Northwest.

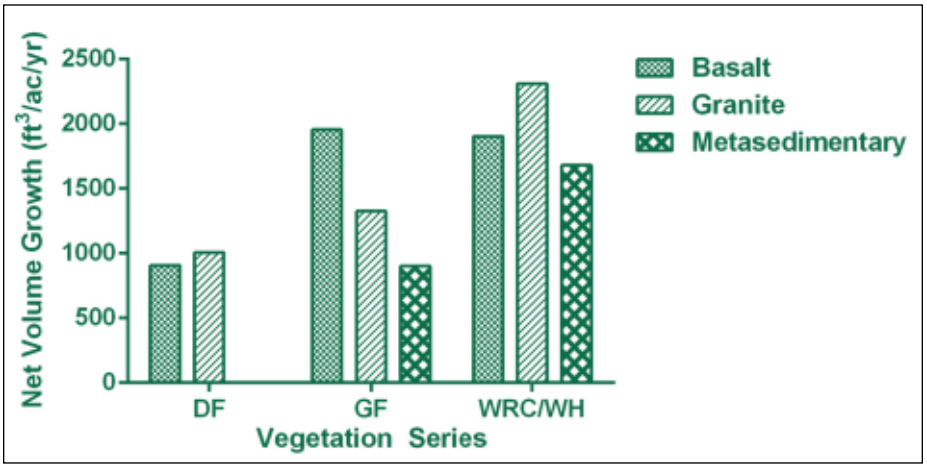
A number of physiographic factors affect forest health and productivity, but one of the most important factors is soil nutrient supply—the ability to supply non-nitrogen plant essential nutrients. Most nutrients in a forest environment are derived from rock minerals, which form the soil parent material. The three broad parent material types most common in our Inland Northwest area are basalts, granites, and metasedimentary rocks. Generally speaking, the basalts have greater quantities of plant essential nutrients (e.g., Fe, Ca, Mg, K), followed by granites and metasedimentary rock types (see Figure 1). Furthermore, the finer-grained minerals in basalts tend to be more susceptible to weathering than those found in granites and metasedimentary rocks. Rock weathering is important in determining soil development (texture, structure, and depth) and degree of nutrient availability. Hence, basalt rocks have an overall good soil nutrient supply rating, granite is moderate, and metasedimentary rocks typically have a poor soil nutrient supply.

One way to show important linkages between forest productivity and soil nutrient supply is to enhance plant nutrient availability through fertilization. IFTNC fertilizer trials in the Inland Northwest region show general growth enhancement, but the magnitude of fertilizer-induced growth response is dependent on climate and soil. Growth response on sites where moisture is less limiting (cedar/hemlock vegetation series) and soil nutrient supply is highest (basalt soils) was significantly greater than that found on drier sites (Douglas-fir series) or on soils with poor nutrient supply (metasedimentary soils) [see Figure 2]. These studies demonstrate that some soil parent materials such as basalts have adequate nutrient availability to support high productivity levels, whereas soils derived from metamorphic rocks such as a metasedimentary quartzite are lacking multiple nutri-



SOURCE: IFTNC

Figure 1. Whole rock chemistry of major rock types found throughout the Inland Northwest, USA.



SOURCE: IFTNC

Figure 2. Mixed conifer growth rate by major rock type and vegetation series (moisture regimes—DF "dry"—WRC/WH "wet") across the Inland Northwest, USA (DF—Douglas-fir, GF—grand fir, WRC/WH—western redcedar/western hemlock vegetation series).

ents including N, S, and B. These nutrient deficiencies significantly affect individual tree growth and thus total stem volume a site is capable of supporting.

Despite consistent positive growth response to fertilization across the Inland Northwest, net growth response varied significantly across the region. For instance, fertilizing moisture-limited or multiple nutrient-limited stands with nitrogen alone does not always produce substantial growth response and can lead to negative net growth responses or mortality. Increased incidence of mortality caused by insect pests and disease following fertilizer applications suggests a strong association between forest nutrition and forest health. Ten-year mortality across IFTNC test trial sites was strongly related to nitrogen application rates (see Figure 3). Mortality increased with increasing N rates, peaking at around 1.6% annually for the 400 lbs/acre rate. Mortality on metasedimentary parent material was nearly linear to the N rates, showing increased mortality with increasing N rates; whereas, mortality was less than 2% for granite and basalt types regardless of N rate. Mortality on wet western redcedar sites expressed the lowest mortality between vegetation moisture series and soil parent material site combina-

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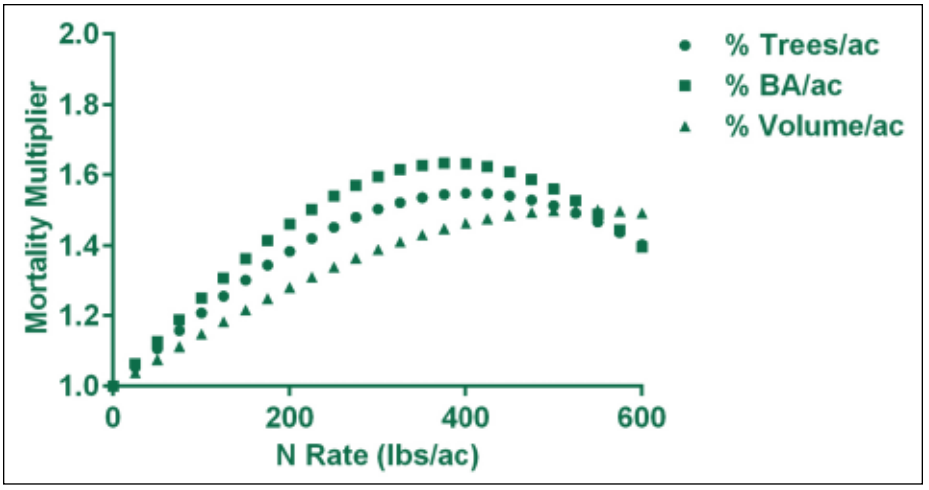
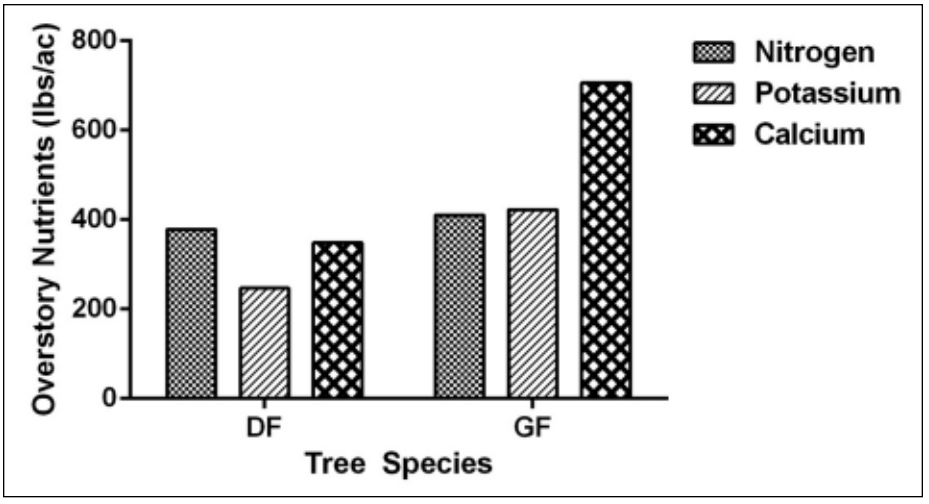


SOURCE: IFTNC

Figure 3. Nitrogen fertilizer-induced mortality in mixed conifer species across the Inland Northwest, USA. Mortality was higher for grand fir than for other species on either an absolute number of trees or a percentage basis. The known causes of mortality among the tree species included competition, weather, and insects and disease, which accounted for about 70% of the total mortality. Of those known causes of mortality, suppression due to competition was the largest (50%). The next most abundant known cause of mortality was disease at 30%.

tions. N-related mortality on moist grand fir vegetation series was mostly expressed on the metasedimentary soil parent material types. Nitrogen-caused mortality on the Douglas-fir/basalt site type was low when N rates were below 300 lbs/acre, then increased with higher N rates. In general, N-fertilizer induced mortality was a consequence of creating an imbalance in tree nutrient ratios. If a site was too dry or had a poor soil nutrient supply, it was incapable of supplying the necessary plant essential nutrients to maintain a balance with increasing N. This imbalance created a favorable



SOURCE: IFTNC

Figure 4. Douglas-fir (DF) and grand fir (GF) nutrient content in mixed conifer stands within the Inland Northwest, USA. Grand fir and then Douglas-fir have higher nutrient contents and demands ("nutrient hogs") than other conifer species in the Inland Northwest.

environment for insect and fungal pathogens to attack the trees.

A site nutrient maintenance alternative to fertilization is slash management. The effects of silvicultural activities or harvesting on forest nutrient capital have come under increasing scrutiny, particularly when balancing the costs of nutrient-conserving harvesting techniques against the costs of replacing nutrients in the form of fertilizer. Research by the IFTNC and others indicates that a large portion of ecosystem plant essential nutrients is held in the overstory (see Figure 4). For example, nearly 50% of the total nutrient ecosystem budget for nitrogen is held in the standing crop. For most conifers, approximately 40% of the stand total amount of nitrogen is held in the stemwood and bark, and the

other 60% is held in the branches, twigs, and foliage. Therefore, whole-tree harvesting is thought to be more detrimental to the nutrient pool than conventional bole-only removal, especially on sites that are nutrient poor. Thus, retaining slash on site during harvesting is critical to maintaining long-term nutrient capital and future forest productivity and health. Current research by the IFTNC is examining the interaction between growth productivity, nutrient status and harvesting technique (see Management Effects on Future Forest Productivity Study below).

In conclusion, knowledge of the interaction between soil nutrient supply and climate is important for developing sustainable silviculture practices. Long-term forest health and productivity are dependent on this knowledge. Through skillful use, soil nutrient management through conservation or enhancement with fertilizers are effective methods for maintaining or significantly increasing forest stand productivity and reducing mortality in many commercial conifer species across the Inland Northwest and other regions. ◆

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Management Effects on Future Forest Productivity Study

BY TERRY SHAW, MARK KIMSEY, AND CHRIS CHASE

Intermountain Forest Tree Nutrition Cooperative (IFTNC) research across the Inland Northwest has shown that geologic soil parent material influences soil properties, and therefore forest growth and health. Our forest nutrition studies, as well as others, have shown that a large pool of plant essential nutrients required by trees is held in tree branch, twig, and foliage biomass. Tree nutrient/biomass studies, such as our Nutrient Effects on Future Forest Productivity study, can provide needed information in management decision making, particularly during selection of harvest and site preparation applications. For example, whole tree harvesting removes a large proportion of the nutrient-rich tree biomass materials. Consequently, on low productivity sites where soil parent material is nutrient poor, the "mining" of aboveground tree biomass and nutrients during harvest activities can have detrimental effects on long-term forest health and productivity. Thus, the IFTNC seeks to identify the mechanisms behind how soil parent material, forest harvesting and site preparation techniques, belowground resources, and seedling productivity characteristics interact.

A Douglas-fir seedling study was established on grand fir "vegetation series" moisture regime types focusing on two parent materials identified as "good" (extrusive basalt) and "bad" (metasedimentary quartzite) from a nutrition perspective. Two different harvesting techniques were implemented before the seedlings were planted: whole tree and bole only. These two harvest types were used to determine how woody biomass debris material (slash loading) of the two harvest types influences seedling growth and forest productivity. Plots were also installed where all slash was removed to provide reference conditions. Furthermore, several belowground characteristics including soil nutrients, moisture, and temperature are being monitored. Lastly, an herbicide treatment was applied to determine the role of competing vegetation in forest stand establishment and site preparation; controls were again used without herbicide. This design was block replicated at six locations across the Inland Northwest. Douglas-fir seedling characteristics being studied are growth (both height and diameter), survivability, and nutrition. Disturbance is also being estimated for all seedlings.

The Management Effects on Future Forest Productivity study is still being measured and monitored for results, although some trends are beginning to appear. Seedlings growing on basalt (good) soil parent materials have faster growth rates than seedlings on quartzite (bad) parent materials. Harvesting technique also plays a role in terms of the impacts on soil resources. The bole only harvest that leaves more woody biomass debris generally improves soil moisture while reducing the soil temperature. Also, bole only harvesting with high woody debris retention increased soil nitrogen when compared to no woody debris or whole tree harvesting with low woody debris retention. Removing competing vegetation had a strong impact on seedling growth. In all treatments (harvest with woody biomass debris removed; whole tree harvest with low woody biomass debris; and bole only harvest with high woody biomass debris), seedlings had greater diameter growth when competing vegetation was removed. However, early results show vegetation control success may be affected by debris (slash) loading levels. Applying herbicide as vegetation control to remove undesirable species shows a trend of increased soil moisture and temperature. While there are patterns between these treatments and seedling properties, responses to treatments are developing and other factors need to be acknowledged. Complex interactions are taking place including the previously mentioned treatments and parent materials, as well as climate, previous stand conditions (how much slash was retained), and site characteristics. Sites will be monitored every year for the first five years since establishment, then every 5 years thereafter through the rotation. ◆

Interior Alaska Inventory Pilot Study Soil Measurements

BY KEN WINTERBERGER

The boreal forests of interior Alaska and other northern latitude terrestrial ecosystems are known to store vast amounts of carbon in deep organic soils. Warming temperatures make these deep organic soils much more susceptible to faster decomposition and methane production or burning and carbon release due to fires. These soils have been studied intensely at a number of locations in interior Alaska, but variation in organic soil carbon content remains uncertain both locally and regionally. The permafrost in these deep organic soils is often within a degree of thawing, and warming trends and increased fire activity could tip the balance.

The Forest Inventory and Analysis (FIA) program for Alaska is conducting an Interior Alaska Inventory Pilot Project in the Tanana River Valley this summer. The pilot plots are being collected on the Tanana Valley State Forest and the Tetlin National Wildlife Refuge. This pilot project is designed to test both standard FIA plot measurement protocols and regional add-ons that are specifically designed to help assess the efficacy and practicality of measuring ground surface and below ground carbon content.

A standard FIA plot of four subplots will be installed to measure trees, basic understory composition, and down woody material. A second microplot will be measured at each subplot to accommodate those forested conditions where trees less than 5 inches in diameter at breast height are the only trees present and would otherwise not be measured on the subplots. On each plot, surface (ground layer) and subsurface (soil) measurements will also be recorded.

Mosses, lichens, and liverworts are extremely important components of vegetation cover in Alaska. A protocol to measure carbon storage and the functional importance of moss/lichen ground layers was developed by Robert Smith, Sarah Jovan, and Bruce McCune. Rather than having field crews attempt to identify individual lichen and moss species, which would require a great deal of training and/or specimen collection, the lichens, liverworts, and mosses are broken into recognizable functional groups based on their roles as wildlife forage, nitrogen fixers, carbon storage, bare soil colonization, and water infiltration enhancement. The live portion of these ground-cover functional groups will be measured on thirty-two 20 by 50 cm. micro-quads, eight per subplot, placed at five-foot intervals along the down woody material transects. The percent cover per micro-quad of each of the moss/lichen/liverwort functional groups will be estimated and the median depth of each of these functional groups will be measured. These estimates and measurements will be used to calculate functional group volume and ground cover carbon content.

Organic soil depth in interior Alaska forests is extremely variable. Total below-ground soil carbon content is much greater in deep organic soils. Due to the normally cold climate and very slow decomposition, soil carbon content is maintained in both mineral and organic soils. One of the most important aspects of Alaskan soils, mineral or organic, is the presence or absence of permafrost and that many of the frozen soils are at or near freezing. Black spruce-dominated ecosystems in Alaska are often those with the deepest frozen (permanent or seasonal) organic soils. Spruce, and in particular black spruce, is very susceptible to fire due to normal canopy structure, with many small persistent dead limbs near the ground, creating an excellent fire fuel ladder. This combination of extreme fire susceptibility of the

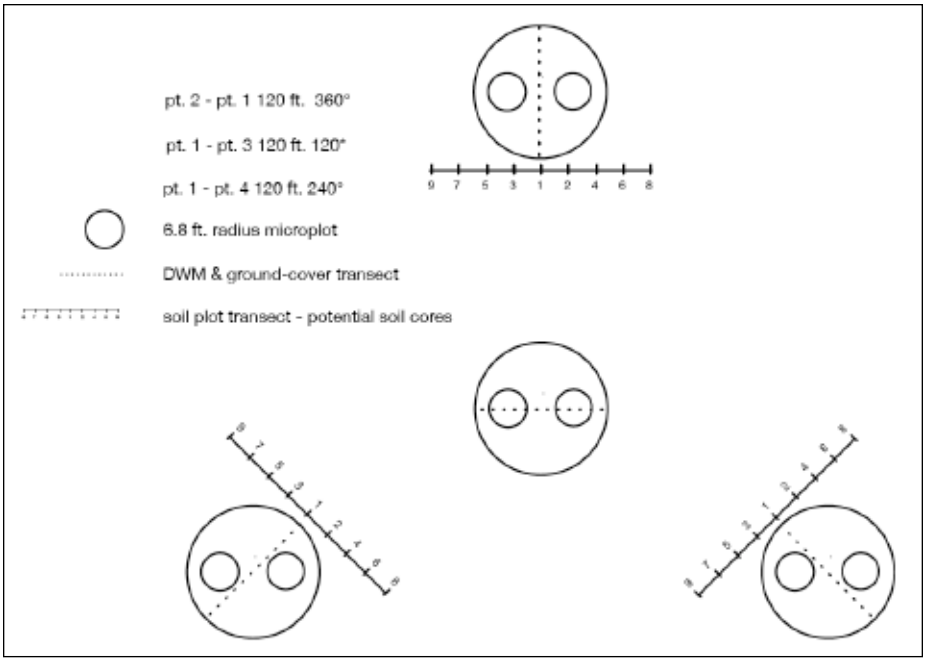

Figure 1. Interior Alaska Inventory Pilot Plot Layout SOURCE: FIA

spruce forests and combustible deep organic soils, when thawed and dry, creates a potentially huge atmospheric carbon source.

The objective of the Interior Alaska Inventory Pilot Project's soil sampling protocol is to assess forest ecosystem health in terms of physical and chemical properties of the soils. Soils are a primary component of all terrestrial ecosystems and any stressor that alters the function of the soil, e.g., thawing, has the potential to alter the vigor, composition, or hydrology of the ecosystem.

Due to plot data collection time constraints (FIA would like to complete one plot per day per crew) any additional measurement protocols must be streamlined. While complete soil pit analysis can provide a wealth of knowledge, it can take a long time to dig and describe these complete pits. The soils measurement and sampling protocol has been divided into three components. These measurements and sampling will only occur just outside the first forested subplot starting with subplot 2; the soil measurement/sample location emulates the location designated for Phase 3 (Forest Health Monitoring) plots (see Figure 1). A soil probe is used to measure the thickness of the unthawed layer or thaw depth. A 2-inch drill-driven corer is used to extract the organic layers and 4 inches of mineral soil. The depth of each of four organic layers (if present) and the sampled mineral soil is measured and collected. The four measured organic soil layers of interest are dead moss, root dominated duff, upper humified duff, and lower humified duff. Soil samples will be collected and analyzed to determine bulk density and carbon content. If mineral soil is not found within 40 inches of the surface a sample is not collected because the actual depth of the organic soil cannot be determined using the tools we have available. If an organic layer depth cannot be determined (e.g., deep Sphagnum peat) total carbon cannot be calculated.

The Interior Alaska Inventory Pilot Project will allow us to assess the practicality of measuring and monitoring total forest biomass (above and below ground) in interior Alaska.

Extensive information on the Interior Alaska Inventory Pilot can be found at www.fs.fed.us/pnw/workshops/interior-alaska-inventory/index.shtml. ◆

Ken Winterberger is a forester for the PNW Research Station's Forest Inventory and Analysis (FIA) Program at the Anchorage Forestry Sciences Laboratory in Anchorage, Alaska. He can be reached at 907-743-9482 or kwinterberger@fs.fed.us.

Potassium Fertilizer and Root Disease

BY AMY RAMSEY-KROLL,
DAN OMDAL, AND DICK HOPKINS

Amy Ramsey-Kroll

Dan Omdal

Dick Hopkins

Laminated root rot, caused by the fungus *Phellinus sulphurascens* or *Phellinus weirii*, is widespread throughout the range of Douglas-fir. It is a frequent and potentially disturbing agent in forests with a significant Douglas-fir component, especially those in western British Columbia, Washington, and Oregon. The disease is responsible for tree death, reduced growth, lower anticipated timber volume, increased susceptibility to windthrow, and unexpected tree failure. When infected trees die or are cut, the fungus may live saprophytically on dead and decaying roots for decades in colonized old stumps. Infections occur in newly planted and regenerating forests when the roots from the seedlings or saplings grow in contact with infected stumps or root systems from the preceding stand.

PHOTO COURTESY OF KYMBERLY HOFFMAN

An eight-year-old, 400 lbs/acre-equivalent potassium chloride fertilized and laminated root disease plot. This plot had some of the greatest growth (height and diameter) of the study plots because of its location in full sun and the added potassium fertilizer.

The impacts from laminated root rot are dependent upon the management objectives for a site. Scattered mortality from a root rot-caused opening may be desired because of the increased wildlife habitat or diverse forest conditions that result. In forests managed for timber volume, however, reduced growth and tree mortality from root disease may not be so desirable. Over the past several decades, many foresters have explored tree and forest-level treatments that could potentially reduce the impacts of the disease when found in undesirable locations. One strategy for mitigating the impacts of laminated root rot is planting non-susceptible species in areas with known root disease, another is to reduce the amount of fungus that is causing the root disease, and yet another is to help the host trees become more resistant to the pathogen. Previous studies have suggested that a change in root chemistry may minimize the susceptibility of western conifers to root rot.

Research exploring the relationships between host vigor, forest nutrition, and root disease-caused mortality began to receive considerable attention in the 1990s after a series of studies found correlations between root chemical ratios, soil nutrient applications, and reduced tree mortality in the presence of root disease. At that time, foresters began wondering if the

application of potassium might provide Douglas-fir with some resistance to laminated root rot. There was no data supporting or negating the impact of potassium fertilization on laminated root rot-caused mortality, so several studies in western Washington were initiated.

One study was cooperatively initiated by the Washington State Department of Natural Resources (DNR) and the Natural Resources program at the Green River Community College (the College) in 2002. The objective was to determine if the application of potassium would decrease the amount of Douglas-fir mortality caused by laminated root disease. Twenty-one plots, each 0.01 acre, were established around laminated root rot-infested Douglas-fir stumps in a concentration of five acres of century-old forest at the College. Each plot was planted with an average of 113 Douglas-fir seedlings. There were three replicated treatments: untreated control, 200 lbs/acre-equivalent of potassium chloride (KCl), and 400 lbs/acre-equivalent of KCl. Potassium was initially applied in 2003, then annually beginning in 2006. The silviculture students in the Natural Resources program at the College collected annual growth data on all seedlings, tracked mortality, and collected data on plot-level characteristics. Root systems of the trees removed from the plots were examined for root diseases when there was either: a) observed mortality; or b) plots were thinned or deconstructed.

Following 12 years of monitoring, the plots were deconstructed (i.e., all trees were pulled from the soil to inspect the roots for signs of disease) because the trees within the plots were growing too dense and had experienced mixed levels of growth-damaging, weather-related disturbances. While there was no significant statistical difference between the amount of potassium fertilization and root rot, a trend was observed for less tree mortality with increased potassium application. An average of 4.1 trees per plot were killed due to laminated root rot in plots with no potassium fertilizer, 2.3 trees per plot with 200 lbs/acre-equivalent of KCl, and 1.6 trees per plot with 400 lbs/acre-equivalent of KCl. Similar results with no statistical differences among treatments were observed in two other studies initiated in the late 1990s (see sidebar), but these studies only applied potassium fertilizer once during the course of the research.

Other data showed that the trees destructively removed from the plots also did not have any significant statistical differences among laminated root rot infections, but did show a trend for more infected trees in the control plots with no potassium fertilizer applied (an average of 5.1 infected trees vs. 3.6 infected trees in the plots with KCl applied). Tree growth (diameter) was similar among fertilization applications and tree height was greatest in plots applied with 400 lbs/acre-equivalent of KCl. Further investigations into the influence of root chemistry on susceptibility to laminated root rot may be warranted. ◆

Amy Ramsey-Kroll and Dan Omdal are forest pathologists, Resource Protection Division, Washington State Department of Natural Resources, in Olympia. Amy can be reached at 360-902-1309 or amy.kroll@dnr.wa.gov. Dan can be reached at 360-902-1692 or daniel.omdal@dnr.wa.gov. Dick Hopkins is partner, Hopkins Forestry, a forest management consulting business located in Mineral, Wash. He was affiliated with Green River Community College from 1993-2013. Dick can be reached at 360-492-5441 or hopkinsforestry@yahoo.com. *The authors would like to acknowledge all the Green River Community College students and staff who have participated and contributed to this research project over the past 12 years.*

Other Studies of Laminated Root Rot in Douglas-fir and Potassium Fertilization

Miller, R.E.; Harrington, T.B.; Thies, W.G.; Madsen, J. 2006. Laminated root rot in a western Washington plantation: 8-year mortality and growth of Douglas-fir as related to infected stumps, tree density, and fertilization. Res. Pap. PNW-RP-569. Portland, OR: U.S. Dept. of Agric. For. Serv. Pacific Northwest Research Station. 37p. www.fs.fed.us/pnw/pubs/pnw_rp569.pdf.

Thies, W.G.; Kelsey, R.G.; Westlind, D.J.; Madsen, J. 2006. Potassium fertilizer applied immediately after planting had no impact on Douglas-fir seedling mortality caused by laminated root rot on a forested site in Washington State. Forest Ecology and Management. 229: 195-201. www.fs.fed.us/pnw/pubs/journals/pnw_2006_thies001.pdf.

Council Welcomes New CEO

BY ED SHEPARD, JOHN WALKOWIAK, AND JOHNNY HODGES

The June 7-8 meeting of the SAF Council convened at the Rockville Hilton in Rockville, Md. President Dave Walters opened the meeting by introducing and welcoming our new chief executive officer, Matt Menashes. Matt came on board June 2 after a lengthy search process that involved a search committee, consultants, and interviews by SAF officers. Matt's selection was unanimously approved by Council. SAF owes a debt of gratitude to the search committee, led by past presidents Roger Dziegeleski and Joann Cox, for delivering a slate of highly qualified candidates for the CEO position; to the consultants that worked with Joann and others to narrow down the field of candidates; and to the officers who spent many hours reviewing and interviewing the final candidates before recommending Matt to Council. He is an impressive individual with a high level of experience running nonprofit organizations. He most recently served as chief operating officer of the Association of Fish and Wildlife Agencies in Washington, D.C.

Matt has hit the ground running and it was evident that he spent considerable time preparing for the Council meeting. He was well versed in the many issues discussed considering he had only been on the job for three days before the Council committee meetings started. He is full of energy and ideas on working with Council and the membership to move SAF forward.

As Council welcomed Matt, we also took the opportunity to thank staff in the national office that kept the boat afloat during the 9-10 months without a CEO. Special thanks go to Louise Murgia who served as the interim CEO, and John Barnwell who assisted Louise. We also met two new staff members: Nicole Davis was hired as the new staff accountant, and Taylor Hunter was introduced as the new forest policy intern.

Christopher Whited presented Council with media and communications materials to help SAF leadership spread the word internally on "Living the Brand." Christopher has developed a toolkit to help SAF leadership spread the word on our brand: "Thriving Forests. Essential Resources. Strong Communities." The toolkit includes a video, presentations, a playbook, and other resources. National staff and Council will be working to provide these materials to leaders.

Council has spent considerable time through the Ad Hoc Committee on Governance Documents, led by Kim Steiner (District 7 Representative), to update the existing articles of incorporation, constitution, and bylaws into new articles of incorporation, bylaws, and a policy and procedures manual. As a refresher, in 2010 the District of Columbia revised the law on incorporating nonprofits like SAF. So that SAF could come into compliance with the new law, SAF membership voted last

Left to right: 2014 Council representatives Johnny Hodges, Ed Shepard, and John Walkowiak.

fall to update the articles consistent with the new law. While doing this, it was decided to update the constitution and bylaws to bring them current with standard operations and terminology used by nonprofits.

Currently, our constitution reflects what standard terminology would call bylaws and would be the governance authority of SAF. The committee has revised the constitution by placing the governing authorities into bylaws and stripping procedure out of the bylaws and placing them in a document now called a "Policy and Procedures Manual," which are the day-to-day operations of the SAF that often change. The Ad Hoc Committee made the proposed changes to the articles and bylaws and presented them to Council.

Council unanimously accepted the recommendations and will be presenting them to the full membership in October to vote on. At the same time membership votes on these documents, there will be a vote on proposed changes to the categories of membership. The outcome of that vote will be incorporated into the new bylaws, if approved by membership.

Please pay close attention to this governance issue. This vote is very important. SAF staff will implement a communications plan to get the word out to members and is working diligently to be sure the changes are transparent to the membership. Be watching the *Source* throughout the summer for more information on this important decision. A change to the articles and bylaws requires a two-

thirds vote of the members. Feel free to contact your district representative if you have any questions.

Council was updated on the status of the sale of the Wild Acres property. Initially, the sale was to close as early as this past May. We found out in March that it would not close prior to the contract date of August 22, 2014. We recently learned that permitting time frames would delay the closing, likely until November, triggering a clause in the contract requiring the buyer to pay a penalty for the delay. The Finance Committee visited with key representatives of the buyer. Following this meeting, we are comfortable that the sale will go through this fall or early winter.

However, the delay in the sale is causing some temporary budget problems. It was intended that income from investing the proceeds from the sale would result in a balanced 2014 budget. Council decided that rather than cut member programs in the short term, we would use our line of credit to cover any shortfalls and repay the line of credit with investment income next year.

The sale of the property will provide SAF with a sizeable endowment fund. We are making every effort to assure that the monies are invested wisely. To that end, the Finance Committee recommended investment guidelines to Council that will provide SAF with a stream of income over the years while striving to maintain and grow the principal. Council unanimously approved the investment guidelines.

The Committee on Forest Policy presented four policy statements for consideration: two for approval, one for retirement, and one for a decision on whether to rewrite or retire it. Position statements on "Herbicide Use on Forest Lands" and "Wildland Fire Management" were approved; the statement on "Utilization of Forest Biomass to Restore Forest Health and Improve US Energy Security" was retired; and the committee will rewrite the statement on "Professionals in Public Natural Resource Management Agencies."

This year's convention is shaping up to be an outstanding event. The convention is combined with the Canadian Institute of Forestry and co-located with the International Union of Forest Research Organizations. It will be held in Salt Lake City, Utah, on October 8-11. Information on convention can be found in the June issue of the *Source*. We encourage you to attend and recommend you get your hotel reservations soon. Because of the many events scheduled at this year's convention with CIF and IUFRO, Council will not meet during the Convention. The next meeting is scheduled for early December in Bethesda, Md.

Finally, Matt closed the meeting with early observations and priorities for his first 90 days. His early impressions are that SAF is in good fiscal shape considering the recent recession. We are facing many of the same issues that other nonprofits are facing. His immediate priorities include growing membership, increasing revenue, rolling out information on the changes to the articles of incorporation and bylaws for this fall's vote, and assuring that the new website is functional and has the substance that membership is asking for. Matt intends to be available to our membership any way he can. He is member oriented and wants to get to know as many members as he can as quickly as he can. If you end up in the same venue as Matt, please introduce yourself and get to know him. ◆

This Council report is a joint effort between District 1 Council Representative John Walkowiak, District 2 Council Representative Ed Shepard, and District 4 Council Representative Johnny Hodges. John Walkowiak, who serves on the Strategic Planning Committee and acts as a liaison to the Finance Committee, can be reached at 253-320-5064 or jewalkowiak@harbornet.com. Ed Shepard is a member of the Finance Committee and can be reached at 503-487-6423 or sssstr1@ comcast.net. Johnny Hodges is part of the "Magic Force" Committee that is a combination of the Leadership and Cultural Diversity committees; he can be reached at 970-226-6890 or jah.16@ live.com.

Menashes Named SAF CEO

The Society of American Foresters has hired Matthew E. Menashes as its new Chief Executive Officer. Menashes, who began his new role on June 2, succeeds SAF's previous executive, Michael Goergen, who left SAF in September 2013.

As chief executive officer, Menashes will work in partnership with the SAF Council and SAF staff to strengthen the organization and develop new strategies that add value and promote customer service and communication for SAF's membership. He will also be responsible for overseeing the daily operations at the SAF National Office, and in conjunction with the SAF president, serve as spokesperson for the Society and professional forestry.

Menashes comes to SAF from the Association of Fish and Wildlife Agencies (AFWA) in Washington, D.C., where he served as director of operations from 2010 to 2014. Before AFWA, he served as executive director of the National Estuarine Research Reserve Association and president and chief executive officer of the Paddlesports Industry Association.

The hiring concludes an extensive executive search performed by a search committee composed of SAF volunteer leaders working with the executive search firm Signature Search.

SAF President Dave Walters, CF, said Menashes is a voracious learner and strategic thinker who will implement the goals and set the direction for SAF as it works to ensure thriving forests across the nation, provide essential resources to natural resources professionals, and build strong communities among the forestry profession, its allies, related disciplines, and the public.

Menashes can be reached at mattm@safnet.org.

WSSAF Spends Time Outdoors at Pack Forest

BY DON HANLEY

The WSSAF had their annual meeting attended by foresters, students, spouses and friends on May 7-9. We welcomed student members from the newly reestablished University of Washington (UW) Student Chapter and those from Green River Community College. The meeting was held at The Center for Sustainable Forestry at Pack Forest. The program, under the theme of "Education and Research," focused on numerous presentations by UW faculty and others addressing current research and demonstrations of contemporary forestry. These presentations were excellent and provided ample time for questions and answers.

Augmented amongst the scientific presentations was an excellent presentation by Robert Edmonds, faculty emeritus, on the history of Pack Forest, and two off-site excursions to Northwest Trek Wildlife Park and Mt. Rainier Scenic Railroad/logging history museum.

A highlight of the meeting was the Thursday evening banquet where WSSAF Chair Joe Murray presented the Chapter of the Year award to the Mid-Columbia Chapter. Paula Hopkins, South Puget Sound Chapter, was selected the Forester of the Year. Six members were awarded 50-year Golden memberships: Wade Boyd, Michael Jackson, Gerald Monahan, Robert Chicken, John Helm, and Dean DeBell. Congratulations to all.

After a wonderful banquet dinner, Elizabeth Seely along with Pilot, the dog of Conservation Canines, demonstrated specialized talents seeking rare species scat for inventory and other scientific purposes.

Before the meeting, the WSSAF Executive Committee met and discussed many topics including WSSAF budget, WSSAF Foundation, Continuing Education Credit and CF Program, Olympic Peninsula working forest insert in tourism promotional materials, Northwest Office, usage of Constant Contact for internal communications to members, WSSAF membership, SAF Council Report, plans for the 2015 Annual Meeting to be held jointly with the Washington Chapter of The Wildlife Society April 15-17, and more.

Special thanks to Dave Cass and Greg Ettl of the School of Environmental and Forest Sciences for securing numerous faculty and graduate student speakers. Additionally, we appreciate Terri McCauley and her conference center staff for their exceptional effort making all of us comfortable and well fed during our stay. And a big thanks to Dick and Paula Hopkins who served as program chair and general chair, respectively, and the rest of the annual meeting committee.

We would also like to acknowledge the financial contributions from the following meeting sponsors: West Fork Timber Company LLC, Weyerhaeuser Company, Hancock Forest Management, Merrill & Ring Timberlands, American Forest Management, Bureau of Land Management, Tom Hanson, Ken Osborn, and Green Crow Corp. ◆

Don Hanley is the WSSAF communications chair. He can be reached at don@wirechief.com.

Paula Hopkins was awarded the WSSAF Forester of the Year award at this year's annual meeting at Pack Forest.

Wade Boyd (left) and Mike Jackson were on hand to receive their 50-year Golden member awards at the WSSAF annual meeting.

PHOTOS COURTESY OF GARY OLANDER AND DON HANLEY

Large Crowd Attends the Oregon SAF Annual Meeting

BY MARK BUCKBEE

On April 30-May 2, over 200 forestry professionals, students, and guests gathered at the Seven Feathers Convention Center in Canyonville to hear from over 20 resource management scientists, professionals, and industry leaders on the theme of "Defining the Future of Northwest Forestry."

On the first afternoon, speakers John Gordon, Allyn Ford, Jim Geisinger, Chris Knowles, and Thomas Maness drew a generally optimistic picture of the potential of our managed forests, the forest products industry, and new forest products, while also laying out concerns with public timber supply, workforce availability, international economic forces, and other factors.

Thursday morning speakers Diane Haase, Mike Warjone, Tim Harrington, Cary Hart, and Fran Cafferata Coe identified new science, technology, and management practices to meet our goals of growing trees for wood supply and wildlife habitat. Following that, speakers Dave Loomis, Doug Bateman, George Ice, Gordon Reeves, and Dan Newton addressed fish population trends, water and fish responses to logging, and current and potential strategies for the future. In the final session, Paul Barnum, John Allen, Doug Robertson, Tom Tuchman, Bob Ragon, and Hal Salwasser addressed the future of federal land management in Oregon including the importance of these forests to local communities, public perceptions, collaborative management, and paths forward such as proposed federal legislation.

Thursday evening was the annual awards banquet. More information on the awards can be found on page 20. After the awards ceremony, DFPA District Manager Melvin Thornton gave an engrossing slide and film presentation on the 2013 Douglas Complex fire that burned approximately 48,000 acres in southern Douglas County.

On Friday, over 150 attendees participated in their choice of four tours: the Douglas Complex fire near Glendale, the BLM's Secretarial Pilot timber sales on Myrtle Creek, restoration forestry on the Tiller Ranger District, and wood processing facilities in southern Douglas County. Some participants visited these sites for the first time, others were returning to projects that they worked on during the past several years, and some such as Frank Price of Washington State SAF returned to forests and roads that he last worked on nearly 50 years ago!

The meeting hosted 12 vendors and exhibitors, and a particularly large and wide ranging number of posters (24). The Foresters' Fund and Oregon Special Projects Fund auction netted over $4,000, which will be used to fund projects that advance the mission of the SAF in Oregon and nationally.

Umpqua Chapter wishes to thank our presenters, our many and generous financial sponsors, the exhibitors and vendors, students and researchers who presented posters, Foresters' Fund donors, and all those planners who made this meeting a success. See you next April 29-May 1 in Eugene! ◆

Mark Buckbee is the general chair of the 2014 Annual Meeting Committee. He can be reached at buckbeefamily@msn.com.

Bill Hagenstein Celebrates 99th Birthday SAF-style

From left to right: Ed Shepard and Bob Alverts present the SAF Presidential Citation to Bill Hagenstein.

On April 22, District 2 Council Representative Ed Shepard and SAF Vice-President Bob Alverts had the pleasure of presenting the SAF Presidential Citation on behalf of SAF President Dave Walters to Bill Hagenstein for his 75 years of active SAF membership, his outstanding contributions to SAF and the forestry profession, and the occasion of his 99th birthday. All three are Portland Chapter members.

Bill spoke about meeting Gifford Pinchot at his first SAF National Convention in Washington, D.C. in 1940. Pinchot invited Bill to his home for lunch and they engaged in lively conversation, including Bill arguing with Pinchot against the federal government regulating private forestland, which Pinchot was considering.

"Bill remains an amazing man and outstanding role model for all foresters," said Bob Alverts.

Regional Forester Retires

Kent Connaughton, regional forester for the Pacific Northwest Region of the U.S. Forest Service based in Portland, retired on June 28.

Connaughton, 67, completed a 36 1/2-year career with the Forest Service that took him from Oregon to California to Washington, D.C., to Wisconsin, and back to the Northwest.

No successor has yet been named.

Connaughton was appointed regional forester for Oregon and Washington's 16 national forests, Crooked River National Grassland, and the Columbia River Gorge National Scenic Area in February 2011. Prior to that, he served as regional forester for the agency's Eastern Region headquartered in Milwaukee, Wisconsin. Connaughton began his career at the Pacific Northwest Research Station as a forest economics researcher.

He is a member of the Society of American Foresters (a Portland Chapter member) and was elected Fellow in 1991.

We Remember

Herbert C. Johnson 1924-2013

Herbert C. Johnston, age 89, died on December 11, 2013. Herb graduated from Washington State College (University) in 1950 with a bachelor's degree in forestry. Prior to college, he served in the US Army as an MP, then as an aerial gunner on a B-24 airplane.

Herb worked at the Washington State College tree nursery, on a Forest Service trail crew, and planted trees on state lands while in college. After graduation, Herb went to work for the Washington State Forestry Service (DNR) in Forks. He helped fight the Forks Fire, which stopped just short of burning down the town.

Milwaukee Land Company hired Johnston in 1951 as their Olympic Peninsula land manager, and in 1975, Herb was promoted to the Seattle office as general manager of Milwaukee's timberland holdings in Washington and Idaho. Herb was always happy to point to the successes of his managed forests. What is more renewable than a growing forest?

Johnston served as president of the Quillayute Valley School Board, was an active member of the SAF North Olympic Chapter, and was a Golden Member of SAF. He was proud of the Olympic Chapter's forward thinking in organizing the forestry learning day for Forks area fourth graders.

Jerome G. Davies 1936-2014

Jerry Davies, 77, passed away April 12 at his home in Seabeck, Wash., with his wife, Andrea, by his side. At Jerry's request, there will be no service.

Jerry enjoyed the many relationships he had with fellow foresters through SAF. His love of the outdoors and forestry were part of who he was.

Donations may be made to the Central Kitsap Food Bank, PO Box 748 Silverdale, WA 98383. ◆

Calendar of Events

National Tree Farmer Convention, July 17-19, Pittsburgh, PA. Contact: 202-765-3660, info@treefarmsystem.org, www.tree-farmsystem.org/tree-farmer-convention.

Woody Crops: Production Alternatives for Multiple Uses, July 17-19, Seattle, WA. Contact: www.woody-crops.org/UpcomingMeetings/.

CESCL: Certified Erosion and Sediment Control Lead Training, July 22-23, Aug. 12-13, Sept. 23-24, Oct. 14-15, or Nov.18-19, Bellevue, WA. Contact: Nathan Hardebeck, 425-270-3274, info@nwetc.org.

The Basics of Forest Land and Timber Appraisal, July 28-Aug. 1, Oregon State University, Corvallis, OR. Contact: WFCA.

ArcGIS 10: Geoprocessing-Advanced Techniques for Environmental Applications, Aug. 5-7, Olympia, WA. Contact: NETC.

OSAF Foundation Annual Golf Tournament, Aug. 22, Trysting Tree Golf Course, Corvallis, OR. Contact: Robin Tucker, 541-497-3717, rtucker160@gmail.com, www.forestry.org.

Lost in Translation: Biosolids Demystified, Sept. 7-9, Skamania Lodge, Stevenson, WA. Contact: Sally Brown, 206-477-5565, slb@u.washington.edu, and Mark Cullington, MarkCullington@KennedyJenks.com.

Forest Products Forum 4, Sept. 16, World Forestry Center, Portland, OR. Contact: Greg Lewis, 978-496-6335, glewis@getfea.com, http://wwotf.world-forestry.org/wwotf10/.

Who Will Own the Forest?10, Sept. 16-18, World Forestry Center, Portland, OR. Contact: Sara Wu, 503-488-2130, swu@worldforestry.org, http://wwotf.worldforestry.org/wwotf10/.

Access, Easements, Rights-of-Way, and Timber Trespass: What Every Forest Manager Needs to Know, Sept. 25, Grand Mound, WA. Contact: WFCA.

105th Pacific Logging Congress—7th In The Woods Show, Sept. 25-27, Molalla, OR. Contact: 425-413-2808, rikki@pacificloggingcongress.com.

Model Toxics Control Act: An Introduction, Oct. 8, Kirkland, WA. Contact: NETC.

SAF National Convention, Oct. 8-11, Salt Lake City, UT. Contact: Christopher Whited, 301-897-8720, whitedc@safnet.org, www.xcdsystem.com/saf/site14/.

Inland Empire SAF annual meeting, Oct. 26-28, Palouse Divide Lodge, Emida, ID. Contact: Tera King, 208-883-4488 x133, king@nmi2.com.

Pacific Northwest Reforestation Council, Nov. 16, Heathman Lodge, Vancouver, WA. Contact: WFCA.

Forestry/Songbird Symposium, Nov. 18, Linn County Expo Center, Albany, OR. Contact: Fran Cafferata Coe, 503-680-7939, fran@cafferataconsulting.com, www.cafferataconsulting.com.

2014 Field Technology Conference, Nov. 19-20, Holiday Inn Portland Airport, Portland, OR. Contact: WFCA.

Forestry Leadership Academy, Jan. 16-17, 2015, Oregon Garden Resort, Silverton, OR. Contact: Amanda Mattern, 503-224-8046, amanda@forestry.org.

Washington State SAF Legislative Reception, Jan. 22, Olympia, WA.

Contact Information

WFCA: Western Forestry and Conservation Association, 4033 SW Canyon Rd., Portland, OR 97221, 503-226-4562, richard@westernforestry.org, www.westernforestry.org.

NETC: Northwest Environmental Training Center, 425-270-3274, https://nwetc.org/.

Send calendar items to the editor at rasor@safnwo.org.

Contact: Ellie Lathrop, 360-274-3057, ellie.lathrop@weyerhaeuser.com.

2015 Washington SAF annual meeting, joint with Washington Chapter of The Wildlife Society, Apr. 15-17, Great Wolf Lodge, Grand Mound, WA. Contact: Peter Heide, 360-791-8299, peter@tkgforestry.com.

2015 Oregon SAF and Oregon Chapter of The Wildlife Society joint annual meeting, Apr. 29-May 1, Eugene Hilton, Eugene, OR. Contact: Dale Claassen, 541-954-6953, dale@ sperry-ridge.com, or Fran Cafferata Coe, 503-680-7939, fran@cafferataconsulting.com.

Inland Empire Annual Meeting Slated

The 2014 annual meeting of the Inland Empire SAF (IESAF) is scheduled for October 26-28 at the Palouse Divide Lodge near Emida, Idaho.

The meeting will start on Sunday, October 26, with the IESAF executive committee meeting and evening icebreaker. Monday, October 27, will include indoor presentations and discussions, and the awards banquet. Tuesday, October 28, will be devoted to a field tour.

The theme of "Ownership Changes: Challenges and Opportunities in Forestland Management" will offer opportunity for discussion on how ownership changes on private, state, and federal forestlands have influenced forest management practices and decisions. Speakers will also explore current trends on land acquisitions, trades, and dispositions.

The planning committee is busy finalizing all the details, so keep an eye on www.forestry.org/iesaf for more information. A hard-copy program and registration flyer will be mailed to all IESAF members.

For additional information, contact Tera King at 208-883-4488 x133 or king@nmi2.com.

Members and Cooperators Honored at OSAF Annual Meeting

Several members and cooperators were recognized for their contributions to the Society of American Foresters and forestry in Oregon at the Oregon SAF annual meeting awards banquet held April 29 at the Seven Feathers Casino Resort in Canyonville, Ore. Mike Cloughesy served as the Master of Ceremonies.

Forester of the Year Award: Werner Krueger. The Forester of the Year Award is presented annually to an OSAF member for contributing to both the profession and the public. This year's award winner is Werner Krueger, one of our annual meeting hosts and a forester's forester in the Roseburg area.

PHOTO COURTESY OF STEVE CAFFERATA

Werner Kruger (right) receives the Oregon SAF Forester of the Year award from OSAF Chair-elect Matt Krunglevich.

As an employee of the BLM for the past 10 years, Werner has held roles as a layout forester, contract administrator, and most recently, supervisory timber manager for the Roseburg District BLM Swiftwater Resource Area. He is also a wildland firefighter and has spent numerous summers fighting fires from Alaska to South Dakota.

Werner has been an active member of the Umpqua Chapter of SAF, serving as chair-elect and a two-year term as the chapter chair. He is a founding member of the Umpqua Forestry Coalition (formally the Hammerhead group), which was formed to educate and build consensus among a variety of opposing constituents on local forestry related issues. The group is currently working on fire and fuels management on the Umpqua National Forest.

Werner also finds the time to give back to his community and has served as a volunteer lacrosse coach for the Roseburg High School varsity boy's lacrosse team.

Werner exemplifies professionalism and respect in all aspects of his life. Within the BLM Werner is regarded as one of the leading experts on timber sale contracts, roads and rights-of-way negotiations and timber sale development. His exemplary work ethic, extensive knowledge of forest management, and vast experience and expertise with timber sale contracts has not only benefitted the public and cooperators who work with and for the BLM, but also his peers both within the BLM and the local community.

OSU Outstanding Student Award: Elijah Allensworth. Elijah has finished his BS in Forestry and is in his first year as a graduate student. He has been active in SAF as an undergraduate organizing activities on behalf of the student chapter. He has provided leadership in multiple areas including website, education, as an officer and as Job Fair coordinator, and has attended state and national SAF conventions. Elijah is a top student and demonstrates good citizenship and professionalism.

Community College Outstanding Student Award: Kyle Starr, Central Oregon CC. Kyle Starr is a student in the Forest Resource Technology Program at COCC. He is an excellent student and is about half way through the program. Kyle is a leader in the Forestry Club/SAF Student Chapter. At the beginning of the academic year during a slump in the student leadership of the Forestry Club, Kyle took it upon himself to reinvigorate the Forestry Club. He also serves as the current chair of the student chapter.

Lifetime Achievement Award: Edith "Edie" Neff. The OSAF Lifetime Achievement Award is presented in recognition of lifetime contributions to SAF and the forestry profession by an OSAF member. This year's honor was bestowed upon Edith (Edie) Converse Neff, who was nominated by the Capitol Chapter.

Long before 1978 when she became an official member of SAF, Edie diligently promoted forestry to the public. Her interest in the forest goes back to her childhood in the 1920s and '30s when she grew up on a farm with a large woodlot in New England; her family owned and operated a small lumber mill. Like most people of her generation, she put her ambitions on hold to help keep the family farm and business going during the lean years of the Great Depression.

In the early 1940s at the height of World War II, she began to pursue her dream by enrolling at the University of New Hampshire (UNH) to major in botany and biology. While working for the university's forestry department to pay her way through school, her supervisor recognized the depths of her interest in and aptitude for forestry and suggested she take a few classes in the subject. The "few" became "many" and she ended up with a minor degree in forestry, as well as majors in botany and biology. She was a leading student, but was not allowed to participate in the forestry field trips because forestry was then viewed—even by academia—as a "man's domain." At that time, Edie was one of just three women in the entire nation pursuing a forestry education.

Edie continued her work at UNH and went on to earn a Master of Science degree in plant physiology. During her studies, she visited Yale University where she met and married Yale graduate forester Allen Neff. The young Neff couple soon moved to Coquille, Ore., where Allen went to work cruising timber for the Oregon Department of Revenue, and they set about contributing to the nation's "Baby Boom."

Edie's interest and involvement in forestry continued and she volunteered with tree farm certification inspections and other services for woodland owners. She also helped establish the Oregon Women in Timber organization—often being the person inside the "Connie-Fir" mascot seen at events.

Edie has been an active SAF member

for 36 years, participating in Capitol Chapter activities and state and national events. Her presence and enthusiasm has inspired many young people interested in forestry to pursue their dreams—especially many women who have become leading professionals in public and private forestry and natural resource work.

PHOTO COURTESY OF STEVE CAFFERATA

Edie Neff and family celebrate Edie receiving the OSAF Lifetime Achievement award.

Research Award: John Bailey. The OSAF Research Award is presented for outstanding achievement in any branch of science leading to advancement in either the science or practice of forestry in Oregon. John has been a professor at Oregon State University since 2006 with split responsibility for teaching and research in silviculture and wildland fire science. His education began at Virginia Tech before moving to Oregon to work in 1985 and later returning to school at OSU for his PhD. He left for his first faculty position at Northern Arizona University from 1997-2006, but returned to OSU for his current position. Through all these years, he has been active in the SAF at chapter, state, and national levels and has advised student chapters for decades.

PHOTO COURTESY OF STEVE CAFFERATA

The 2014 Research award was presented to John Bailey (right) by OSAF Chair-elect Matt Krunglevich.

John has shown outstanding achievement in promoting a resurgence of fire science and management research at OSU. He is a principal investigator on dozens of fire-related research projects in the state and region examining everything from prefire fuel treatments effects on fire behavior to post-fire coarse wood and fuel dynamics to active prescribed burning. These projects involve dozens of graduate students in five different departments across campus. Many of these students gather weekly as part of the "pyromaniacs," which he advises.

Tough Tree Award: Doug Grafe. OSAF's Tough Tree Award is presented to members of SAF who have demonstrated sustained, excellent professional performance in an extremely adverse work climate.

Doug has a bachelor's degree in forest resources and conservation from the University of Florida and has been an SAF member since 1992. Since coming to Oregon, he has worked as a forester for the city of Albany, with private industry, and for the Oregon Depart-ment of Forestry for over 10 years.

In 2010 Doug became ODF's Fire Operations manager. The department protects just over half of Oregon's forests from fire—16 million acres with a value of more than $60 billion. Doug's role is to ensure the readiness and mobilization of the state's complete and coordinated fire protection system when fires get big. During fire season, this position is on call 24 hours a day, 7 days a week. Doug has demonstrated a sustained excellent, professional performance in this high stress position through four fire seasons.

Forestry Appreciation Award: This award is presented to individuals outside of SAF deemed to have contributed significantly to the advancement of forestry in Oregon. Two award winners were selected this year.

Norie Dimeo-Ediger. Norie has worked for the Oregon Forest Resources Institute for 13 years where she coordinates the K-12 education programs that include OFRI's Oregon Teacher on Summer Assignment, a program that places teachers in a six-week summer job.

She works with students K-12 and at the college and university level, public schools, and non-formal education institutions such as the Oregon Zoo to provide professional development for teachers in science education.

Norie is currently developing forest curriculum supported by the Oregon Department of Education and Oregon FFA to be used by high school agriculture science and technology teachers.

Melvin Thornton and the Douglas Forest Protective Association Crew. Melvin Thornton, DFPA's district manager and his DFPA crew demonstrated leadership in both public and private timberland resource protection last summer with their efforts coordinating with the ODF Incident Management Team(s) assigned to the Douglas Complex Fires. During one of the most difficult fire seasons in recent southwestern Oregon history, Melvin and DFPA both individually and collectively accomplished this work while continuing to provide a successful initial attack protection program on the rest of their district.

Melvin worked tirelessly from daylight to dark ensuring both ends of his accountability were serviced. His DFPA crew followed this leadership and ensured all functions of the organization and their firefighting mission were accomplished. This amount of personal dedication and passion to protecting our timberland resources is deserving of special recognition.

Chapter Achievement Award: No chapters were nominated for this award, hence there was not a winner this year. (Editorial comment from Awards Co-chairs Tim Keith and Glenn Lahti: There was a lot of outstanding work done around the state this past year—step forward next year and take credit for your achievements!) ◆

High School FFA Forestry Competition Tests Skills

State competition for Washington State high school FFA in Forestry occurred on May 2. The winning team advances to national competition that will be in Louisville, Kentucky, in October. Competition is standardized on nine criteria: general knowledge written exam, chainsaw parts/safety/trouble shooting, compass and pacing, tool/equipment identification, tree identification, map interpretation, forest pests/injuries, timber inventory (including volume calculation), and a team presentation on the topic of how to manage a Douglas-fir stand that has Phellinus and/or Armillaria diseases.

PHOTO COURTESY OF DICK HOPKINS

Future Farmers of America students test their forestry tools knowledge at the state FFA forestry competition as judge Loren Hiner stands by (far right).

First place went to Chelan High School, Mt. Baker High School (Team 1) placed in second place, and third place was Wake Robin (Longview), coached by WSSAF member John Gross. Eleven teams participated with the Colville team traveling the farthest.

The event was hosted at the Tacoma School District's 330-acre Lincoln Tree Farm by WSSAF members Paula and Dick Hopkins. Judges were WSSAF members Loren Hiner, Jocko Burks, Don Hanley, Bob Wistoski, and Gene McCaul.

Vines Joins World Forestry Center

Eric Vines has been selected executive director of the World Forestry Center in Portland, Ore. He started his new position on May 19 and replaces Gary Hartshorn who retired last September after being with the World Forestry Center for 10 years.

Vines comes to the organization with a vast array of entrepreneurial, strategic planning, fundraising, and creative visioning experience. "We are delighted Eric will be joining the World Forestry Center team. His business savvy and diverse set of skills and experiences are exactly what we need to bring a fresh perspective to the organization and lead it into a new direction," said John Warjone, board chair of the Forestry Center.

In his role Vines will be responsible for the overall administration and management of the center, broadening its audience, and developing resources for the organization to carry out its mission. In reflecting on his new role, Vines said: "Scientists and economists agree that the future health of our planet's forests will determine the future health of people. I believe the Forestry Center has the opportunity to play a major role in those discussions."

Vines stepped down as executive director of the Gray Family Foundation where he transitioned the organization from a donor-advised fund of the Oregon Community Foundation to a new nonprofit structure. Prior to that, Vines was executive director at the Sitka Center for Art and Ecology in Otis, Ore., where he helped refine the organizational purpose and mission.

Vines has a Master's of business in finance and entrepreneurship from the University of Oregon and a Bachelor of Arts in physics and mathematics from Whitman College in Walla Walla, Wash. ◆

The World Forestry Center is a 501(c)(3) nonprofit educational organization whose mission is to educate and inform people about the world's forests and trees, and environmental sustainability. With 30 employees, the Center is located on a 5.5 acre campus in Portland's Washington Park that includes its 20,000 square foot Discovery Museum and the World Forest Institute. The Center also owns and operates the Magness Memorial Tree Farm in Sherwood, Ore.

Policy Scoreboard

Editor's Note: To keep SAF members informed of state society policy activities, Policy Scoreboard is a regular feature in the Western Forester. *The intent is to provide a brief explanation of the policy activity—you are encouraged to follow up with the listed contact person for detailed information.*

Oregon SAF Submits Comment Letter on O&C Lands Bill. In May, Oregon SAF (OSAF) sent a letter to Senator Ron Wyden with comments about S1784, which he introduced late last year to direct the management of BLM O&C lands that span about 2.4 million acres in western Oregon. Wyden's bill follows a similar bill by Rep. Peter DeFazio (portions of HR1526) that passed the full House in September. Although OSAF has not taken a formal position on either bill, the letter expressed a number of important concerns about S1784 from a professional perspective. A fundamental issue is the bill's allocation of widely contrasting management objectives to fixed locations on the landscape, an approach that overlooks the realities of managing ecosystems with complex cycles of growth, disturbance, death, and renewal. Thus, OSAF recommended an ecological approach that would allow forest conditions and related benefits to "move around the landscape" in a more natural pattern.

Another serious concern with the land allocations is the highly prescriptive constraints that would permanently apply to both land areas, including age-based restrictions on cutting of individual trees. These constraints would legislate and micromanage silviculture unlike any other technical profession in the U.S., and reflect a narrow and out-of-date view of the profession that contrasts with the reality of its diverse and evolving science and practice. Although S1784 is intended to limit litigation that impedes effective management, its detailed and rigid requirements would appear to raise many more, rather than fewer opportunities for legal challenges. Similarly, the age-based restrictions could become a "lock with no key" in areas where trees pass the age limits prior to harvest. The restrictions on road construction and emphasis on road closures also have little justification and overlook the importance of roads as a capital investment to provide efficient access for resource management, wildfire control, safety, and public use.

The scope of conservation lands and constraints on the other lands raise serious questions about the timber harvests that could be sustained in the coming decades under S1784. A very clear economic focus is given under the O&C Act of 1937, yet the complex directives in S1784 would markedly constrain this focus. Further, it perpetuates the misconception that active management, including commercial timber harvest, is largely incompatible with key environmental functions and values. Similarly, S1784 does not reflect the vital role of federal lands in providing an exceptionally green resource. Instead, it perpetuates the view that federal timber production is an environmental liability rather than a source of much broader benefits. Thus, the OSAF letter emphasizes that an updated and comprehensive paradigm for federal forest policy is needed to pointedly support active management with significant forest product outputs as one of the most positive and sustainable human endeavors for serving both society and the environment. Given the limited time in the current legislative calendar and other factors, the outlook for S1784 and HR1526 is unclear. The text, current status, and other background on these bills can be found at www.congress.gov, www.wyden.senate.gov and http://defazio.house.gov/. Contact: Paul Adams, OSAF Policy chair, 541-737-2946; paul.adams@oregonstate.edu. ◆

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4033 S.W. Canyon Road
Portland, Oregon 97221

Non-Profit Org.
U.S. POSTAGE
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PORTLAND, OR
PERMIT NO. 16

PRINTED ON
RECYCLED PAPER

THE LASER TECHNOLOGY SURVIVAL GUIDE TO FIELD WORK

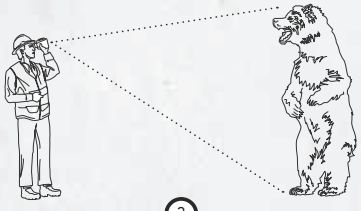
SURVIVING A GRIZZLY BEAR ENCOUNTER

1

Use your TruPulse laser, in distance mode, to see how far away the bear is.

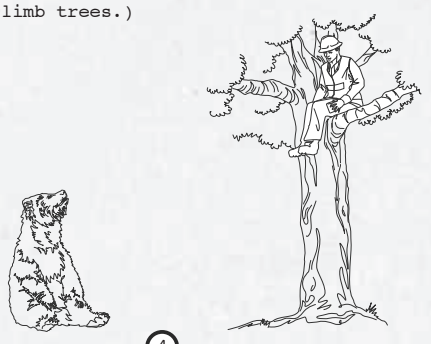
2

From that data, decide if you should run, or if you need to climb a tree. (NOTE: Make sure it's a grizzly. Other bears climb trees.)



3

If you chose to climb, measure the bear's height using your TruPulse's height routine.



4

Climb a tall enough tree and hang out until the bear gets bored and leaves. (NOTE: To pass the time, measure the height of other surrounding trees.)

SOME DAYS IN THE FIELD ARE MORE EXCITING THAN OTHERS. Whether you're out cruising timber or flagging sale boundaries, you're bound to encounter the unexpected. Not to worry though. The power and versatility of LTI lasers let you adapt to ever-changing conditions and situations while still having confidence in the data you log. To explore our complete line of forestry products, visit www.lasertech.com/stories/atterbury . While you're there, share your craziest day in the field, and be registered to win LTI equipment.