

Western Forester

January/February 2015

Oregon • Washington State • Inland Empire • Alaska Societies

Volume 60 • Number 1

What's New in Forest Products Research?

BY MIKE ARCHER

The year 2014 was an interesting one in the forest products industry, with new innovations and advances in several branches of research and development.



But what does the future hold? Will business sectors impacted by the US recession continue to recover? And what new products and services might be coming down the pike? Two industry experts, Dr. Chris Gaston, associate professor in the Department of Wood Science at Canada's University of British Columbia (UBC) and senior scientist at FPInnovations, and Dr. Ian de la Roche, an adjunct professor in the Department of Forest Resources Management at UBC and the former president and CEO of FPInnovations, peer into the future to predict what wood products research may yield over the next few years.

"The forest products industry is in the middle of a decade of exciting change that is creating renewed opportunities and new horizons," said Dr. Gaston. "We are seeing a return of some of our traditional markets like residential housing, but a permanent loss of some other markets like newsprint being replaced with digital and social media."

"The decade has also brought about new advances in engineered wood and paper and packaging products, as well as in new applications—the growth in tall buildings, a case in point."

What impact will these current and



PHOTOS COURTESY OF FPInnovations

Technology is driving new innovations and opportunities in a range of wood building systems and is being used in combination with CLT, glulam, steel, and concrete.

new demands for forest fiber have on future supplies? Clearly, under the current supply scenarios, demand is likely to outstrip supply. "The question of whether the planet will have enough wood has become a big issue," said Dr. de la Roche. "We are going to have

regional shortages, and Canada is going to be one of those places, particularly in the British Columbia/Alberta area because of the mountain pine beetle (MPB).

"Accessibility to Russian fiber

(CONTINUED ON PAGE 2)

What's New in Forest Products Research?

(CONTINUED FROM FRONT PAGE)

because of inadequate infrastructure makes accessing that supply problematic in the future," he continued.

"Nevertheless, there's a lot more surface on this planet to grow more trees and a lot more productive trees. More intensive forest management regimes and new technologies like genomics and drones equipped with lidar are going to play a greater role by improving not only the quality of the wood, but also the yield."

What do customers really want these days? "We need to continue to focus on our traditional end-use markets, yet balance these with ever increasing opportunities for value adding," said Dr. Gaston.

"We are seeing more competing demands on our fiber," he explained. "We are finding that we can't do them all, we are having to pick and choose those that contribute the most eco-

nomically, socially, and environmentally.

"We're talking about very high quality fiber used for furniture manufacturers down to the low-quality biomass used for biofuel. A good example of competing demands is the medium-density fiberboard (MDF) industry; with bioenergy demands driving up the prices of biomass, MDF manufacturers found their margins critically challenged."

Economic fluctuations can also impact the forest industry. "Since we are such an export-oriented economy, changes upward in the Canadian dollar hurt us, especially in our largest market: the United States," he observed. "Cost considerations add to the challenges, as the supply of Canada's lowest cost logs (British Columbia Interior and Alberta) ultimately become constrained by the MPB epidemic."

Export destinations are also changing. "Exports of lumber used to be all about the United States, followed by Japan," Dr. Gaston said. "Led by China,

non-US lumber exports have gone from 15% to 45% in less than 10 years.

"In 2005, the US consumed about 63 billion board feet of lumber, with 48 billion board feet going to new housing starts or renovations. In more recent years the consumption has dropped to as low as 33 billion board feet, with 20 billion board feet having to do with housing."

With the decline of the traditional residential market, wood use in non-residential construction has been coming into increased focus. "Non-residential construction is owned by steel and concrete, but a good deal of this construction could be using a wood-based solution, both structurally and non-structurally," Dr. Gaston stated. "This is an area that holds a lot of hope for the future."

A glimpse into the future

Now that we've seen where we stand today, what can we expect to see in the future? "Forest products are in the midst of a renaissance as we return back to a bio-economy after 150 years of a hydrocarbon economy based on fossil oil and gas," Dr. Gaston reflected. "Unrelenting growth in population and demand, particularly in developing countries; the drive to reduce our carbon footprint; and reliance on non-renewables and new technologies have all contributed to this phenomenon.

"Agricultural and woody biomass have become the primary feedstock of the bio-economy built around the bio-refinery as well as research, technology, consumer demand, and regulations that are providing the momentum for the development of new biofuels, biochemicals, and biomaterials.

"While pulp-based bioenergy and the bio-refinery initiatives have generated the most interest and activity of governments and industry in the past, going forward we expect to see considerably more emphasis placed on wood-based biomaterials, particularly in structural applications."

What sorts of processes will the wood industry add in the near future? "We are getting to the extreme of saying 'Let's take that tree apart and put it back together again with very defined properties and with an opportunity to



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/2015

Editor: Lori Rasor

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

State Society Chairs

Oregon: Matthew Krunglevich, 5286 Table Rock Rd., Central Point, OR 97502; 541-664-3328; matthew.krunglevich@oregon.gov

Washington State: Dick Hopkins, CF, Hopkins Forestry, PO Box 235, Mineral, WA 98355; 360-492-5441; hopkinsforestry@yahoo.com.

Inland Empire: Phil Aune, retired, 6249 Gunnar Ct., Nine Mile Falls, WA 99026; 509-464-1409; psaune@gmail.com

Alaska: Brian Kleinhenz, Sealaska Corporation, One Sealaska Plaza, Suite 400, Juneau, AK 99801; 907-586-9275 (o); brian.kleinhenz@sealaska.com

Northwest Council Members

District I: Keith Blatner, Professor and Program Leader for Forestry, School of the Environment, Washington State University, Pullman, WA 99164-99164; 509-595-0399 (c); 509-335-4499 (o); blatner@wsu.edu

District II: Ed Shepard, PO Box 849, Newberg, OR 97132; 971-832-3945; sssstr1@comcast.net

Please send change of address to:

Society of American Foresters
5400 Grosvenor Lane
Bethesda, MD 20814
301-897-8720

Anyone is at liberty to make fair use of the material in this publication. To reprint or make multiple reproductions, permission must be obtained from the editor. Proper notice of copyright and credit to the *Western Forester* must appear on all copies made. Permission is granted to quote from the *Western Forester* if the customary acknowledgement accompanies the quote.

Other than general editing, the articles appearing in this publication have not been peer reviewed for technical accuracy. The individual authors are primarily responsible for the content and opinions expressed herein.

Next Issue: Changing Technology and Mobile Applications

add incredible value to the fiber," Dr. Gaston revealed. "Products like glue-laminated timber, laminated veneer lumber, and cross-laminated timber (CLT) are excellent ways of adding value on a reasonably high volume, both structurally and visually.

"These opportunities are particularly high in commercial and multi-family residential structures. Both of these areas have led to good-news stories for our industry."

The size of wood buildings could also increase noticeably. "If you go to Chicago, Boston, and other cities you'll see that they used to build mid-rises out of wood timbers," Dr. de la Roche explained. "But then code changes due to fire concerns started to limit wood use in these higher-rise buildings. So it's been a real challenge to move from the low-rise residential up to what we call the mid-rise and to change codes to go from 4 to 6 and even 10 stories.

Dr. Gaston agreed. "Some are dreaming of building 30-story buildings out of wood. Even in the case of hybrids we could be using wood in a much bigger way for high rises. We can build these buildings and have them every bit as safe as a concrete building, but it comes at an expense. There's also the question of whether there's an appetite by the public to pay more for wood because it's a more environmentally green choice.

"There are also products that are emerging as hybrids between the solid wood and the pulp and paper sectors that are quite exciting in my opinion. These products, like green partition walls and wood-fiber based insulation, are a direct substitute for non-renewable based products."

Even more advanced biomaterials can be made on a nano-particle level. "That's the ultimate engineered wood product," Dr. Gaston explained. "Recent examples from FPInnovations include cellulose nano-crystals and cellulose filaments, both of which have exciting properties to be explored in the marketplace (for more details, visit <https://fpinnovations.ca/media/factsheets/Documents/cellulose-nanocrystals.pdf>).

"This renaissance is making wood products with much greater functionality and attributes thanks to exciting new technologies," he added.



The next generation of biomaterials:
According to Bill Reinert of Toyota, there are 750 million cars on the road today. By 2050, expect between 2.0-2.5 billion vehicles. Cellulose nanocrystals, the new renewable bio-composite, are lighter and stronger than current structure material and are used in vehicle production.

But there is a downside to all these potential innovations, as Dr. Gaston explained. "We've been able to make many advanced wood products for ages, but they're always going to be more expensive than non-renewables, certainly in the near term. And if society is not willing to pay more, applications will remain extremely challenging."

Focus on the Pacific Northwest

Despite the challenges ahead in wood products research, the outlook in the Pacific Northwest is good. "Structural applications in wood construction are obviously a big one, the bio-refinery is another," said Dr. de la

Roche. "I am particularly excited about the Northwest Advanced Renewable Alliance project on aviation biofuels funded through a US Department of Agriculture competitive grant. It's a holistic integrated approach engaging four states, researchers, and industry.

"Genomics and tree improvement will also be areas of increased emphasis," he continued. "Sustainable forest management and precision forest harvesting are particularly exciting prospects for the area.

"Universities in the Pacific Northwest have had a long and productive history in forest research and education and are now demonstrating their capability of meeting the technology and training needs of the new bio-economy."

The end of the beginning

Hopefully this introduction to new wood products research has given you some idea of where the wood industry is headed. But this was just the introduction. The following articles in this issue of the *Western Forester* will expand on these themes, looking at the current state of nanocellulose technology, an update on bio-refineries, and opportunities for mass timber constructing to expand beyond residential construction. ♦

Mike Archer is a freelance writer and owns and operates Archer Copywriting in Glendora, Calif. He can be reached at 626-915-4779 or marcher47@archercopywriting.com.

Mountain Pine Beetle Epidemic

The mountain pine beetle has infected and/or killed over 17.5 million hectares of Western Canadian pine forests:

- 53% of merchantable pine in British Columbia (~770 million m³) has been killed.
- The B.C. annual allowable cut (AAC) drops from 78 million m³ to approximately 50-60 million m³ by 2023-25.
- Plans are to ramp up to past levels after 2050.
- Alberta AAC is expected to drop by 5 million m³ as infestation advances east.
- Other pine species have been shown to be susceptible to attack. The epidemic has spread to Jack pine and could affect the whole boreal forest across Canada.
- A shelf-life shorter than predicted for pulp and lumber quality: fall back options include pellet production and power generation.

Source: FPInnovations and UBC

Nanotechnology from Trees: Nanocellulose

BY JOHN SIMONSEN

The forest products industry continues to find ways to increase the value of trees that come from the forest—such as the use of the relatively new science of nanotechnology. While there are many nanotechnology products on the market today (e.g., smart phones, tennis balls that don't deflate as fast, clear sun screens, and fabrics that don't get wet), few nanotechnology products utilize nanoparticles derived from biomaterials such as wood. However, that is about to change.

Of the many materials derived from the forest, the one that possesses perhaps the highest strength and stiffness is the cellulose crystal. If we look at a tree at increasingly smaller scales, we go through a cascade of shapes and sizes: cells, cell walls, fibers, lignin, microfibrils, nanofibrils (also called elementary fibrils), and then cellulose molecules (see Figure 1). Much



research and effort has gone into investigating and utilizing the tree at each of these different size levels. More recently, a lot of attention has been placed on the nanoscale materials. "Nano" is a prefix from the SI standard unit system that means 10^{-9} —thus a nanogallon would be 0.000000001 gallon. Similarly, a nanometer is 10^{-9} meters. This nanoscale size regime is the scale of large molecules, such as cellulose, and very small particles, called nanoparticles. When the nanoparticles are made of cellulose, they are called nanocellulose.

Industrially, the material that comes closest to crystalline cellulose is known as microcrystalline cellulose (MCC), which has been used since its discovery in the 1960s for a variety of uses, mostly in the pharmaceutical and food industries. Almost every aspirin or other kind of tablet contains MCC as the drug carrier or as a processing aid.

MCC is derived from bleached, dissolving grade wood pulp that has been acid hydrolyzed. Under moderate conditions of acid hydrolysis, the cellulose in the pulp is degraded, but the rate of degree of polymerization (DP) reduction, i.e., fiber degradation, slows after

a certain point, called the level-off degree of polymerization (LODP). Here the cellulose consists of a large size distribution of crystals, mostly in the micron range. To produce cellulose nanocrystals (CNC), the hydrolysis is done in such a way that the crystals are charged. This then makes them disperse in water and form a stable suspension, that is, the particles float in water and don't settle out. It is possible to produce a reasonable yield of nanocrystals of cellulose by this method (typically about 30% based on the pure cellulose starting material and depending upon species and processing method).

These cellulose nanocrystals are the basic crystal units that exist in the crystalline domains of the wood cell wall. Their size varies with species, but is on the order of 3-20 nanometers (nm) in width and tens to hundreds of nm long.

It is also possible to produce nanocellulose material called cellulose nanofibers (CNF). Here the strong acids are not needed to break down the material. An enzyme pretreatment is followed by a high shear process (usually a powerful grinder) to unlock the elementary fibers in wood from each other. CNF sizes vary greatly from a few to hundreds of nanometers in diameter and they are usually microns long.

Research interest in nanocellulose is growing rapidly and many application areas are being explored (see Figure 2). One of the special properties of both forms of nanocellulose (CNC and CNF) is that they are smaller than the wavelength of light. Thus, when properly processed, they are transparent, which is useful in products such as windshields and helmet visors.

Examples of nanocellulose applications

CNF are currently being used by paper companies to improve the properties of paper, such as paper strength and internal sizing. Some companies make their own CNF and others purchase it from suppliers.

Japanese researcher Prof. Yano at Kyoto University is working with

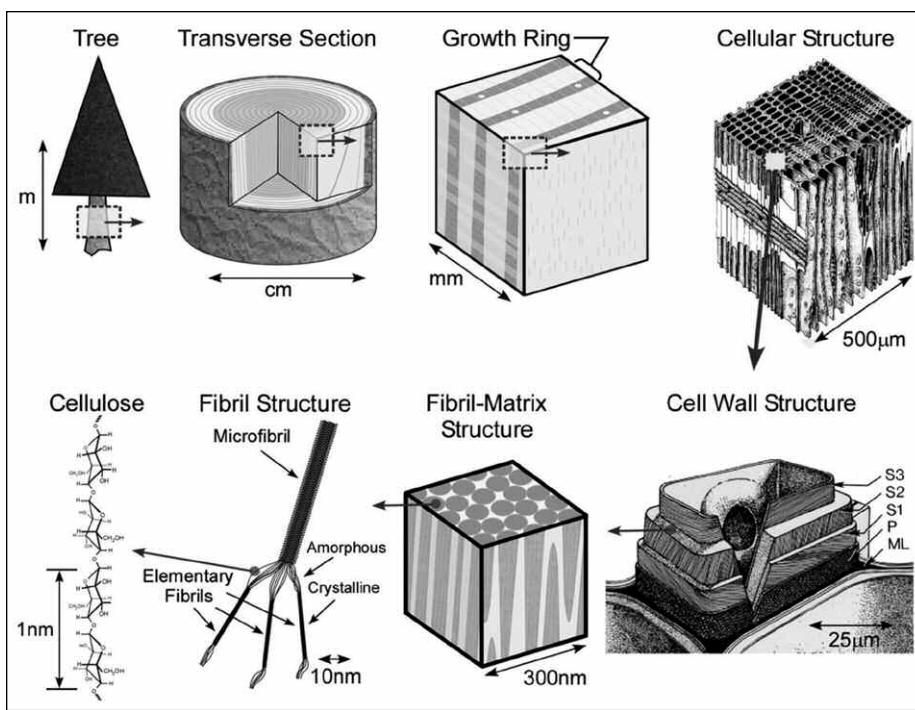


Figure 1. From tree to nanocellulose.

SOURCE: FROM ROBERT MOON, R. ASHLIE MARTINI, JOHN NAIRN, JOHN SIMONSEN, JEFF YOUNGBLOOD, 2011, CELLULOSE NANOMATERIALS REVIEW: STRUCTURE, PROPERTIES AND NANOCOMPOSITES. CHEMICAL SOCIETY REVIEWS, 40, 3941–3994.

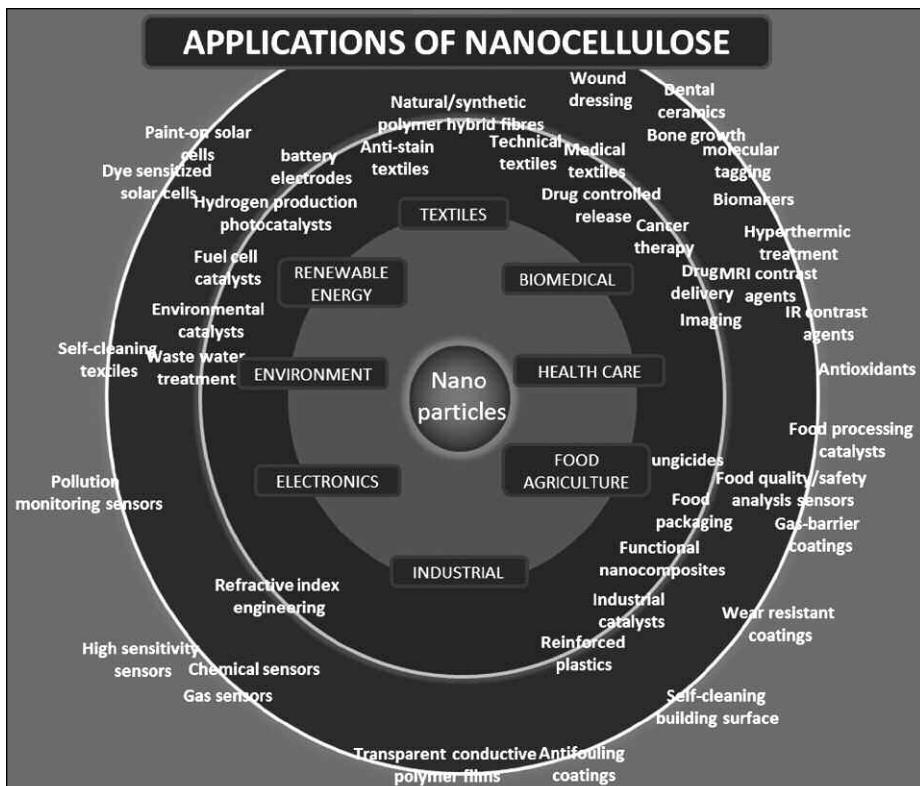
Toyota and other automobile companies to develop CNF-plastic composite materials to replace glass-filled plastics. The CNF-plastic materials will be of lighter weight, thus increasing car mileage.

CNF are also being investigated as modifiers for foods. For example, ice cream that contains CNF tastes just as good, but melts more slowly than regular ice cream. So perhaps someday you will be able to take your time and not worry about finishing your ice cream cone before it melts.

At Oregon State University CNF are used as components in coatings for a variety of fruits. This research is developing new coatings to prevent rain cracking in cherries. When it rains on almost-ripe cherries on the tree, they can swell and crack; cherry growers can lose up to 30% of their crop this way.

Other CNF-based food coating applications being investigated include reducing water loss and oxida-

(CONTINUED ON NEXT PAGE)



SOURCE: JOHN SIMONSEN

Figure 2. Applications of nanocellulose.

A state of fire

Oregon is coming off another brutal fire season.

What's going on in the forests? Why have wildfires grown so costly? Why have the risks worsened? What can we do?

Check out "State of Fire" to learn more – a 16-page report and a companion 11-minute video.

Find them at
OregonForests.org



**Oregon Forest
Resources Institute**



tion of coated foods in storage, thus improving the shelf life of citrus, apples, and even tropical foods such as mangos.

CNF are also under consideration for use as a sustainable, renewable packaging film to replace petroleum-based plastics.

CNF are being considered as components in flexible electronic displays, which should be hitting the market in the next few years. The CNF allows for a distortion-free display (or at least reduced) compared to traditional materials.

One interesting application for cellulose nanocrystals (CNC) is as a viscosity modifier for airplane deicing fluid. This application has been patented by Prof. Boluk at the University of Alberta in Canada. Because of their small size and needle-like shape, CNC are extremely shear thinning. The result is that when the deicing fluid is not moving, it tends to "set up" like a pudding. But when flowing, as in through a pump, the fluid flows easily. Thus, the deicing fluid is easily sprayed on the airplane, but

once there, it tends to cling. Because the deicing fluid stays on the wing longer, it improves the deicing properties of the fluid. In this way, trees help airplanes to fly safely.

CNC have also been formed into aerogels. An aerogel is a very light and porous material. One interesting application here is to chemically modify the CNC aerogels so they absorb oil. In a research setting they have been shown to absorb oils, such as in an oil spill. They also float on water, so are easily recovered. The oil can be squeezed or flushed out with a solvent, and the CNC aerogel can be reused multiple times. While not yet a commercial product, perhaps someday trees will help clean up oil spills.

CNC are also being investigated as additives for paints and coatings. Here they not only modify the viscosity (as in the deicer fluid), but can also increase the hardness of the coating.

A company based in Israel is developing a technology to make CNC aerogels starting from the sludge from a paper pulp factory. The sludge is processed and the CNC are extracted.

Then the company uses a patented and proprietary process to make aerogels reinforced with a resin or glue. They plan to sell their product in a variety of applications, including: (1) wind towers, where a light and strong material is needed inside the propeller blades; and (2) marine thermal insulation where high thermal insulation is important. Aerogels have some of the best thermal insulation properties known to man. So here trees may soon be helping to make wind energy more efficient and boats safer and more comfortable.

CNC have also been the subject of a number of patents for their use in oil drilling. They appear to have special properties that improve the efficiency of the drilling operation, mainly as a component of strengthening and stiffening the well hole after it is drilled. CNC are thus under consideration by the oil industry for fracking fluids and drilling muds in oil recovery operations.

CNC are also being developed as superplasticizers for concrete, which help concrete to flow smoothly when pumped, but to set up and stay in place after pumping. The CNC not only perform as well as currently used plastics-based superplasticizers, but they also increase the strength of the concrete by about 20%.

Many more applications for nanocellulose are being uncovered on a regular basis. Of course, not all of these research applications will develop to full commercialization, but it is a good bet that many of them will one day be commercial products that enhance our quality of life, reduce our dependence on petroleum, and provide for a more efficient utilization of our forests. Nanocellulose, derived from the forest, is finding its way to the important part it will play in the sustainable world of the future. ♦

John Simonsen is a professor with the Department of Wood Science and Engineering, Oregon State University, in Corvallis. He can be reached at 541-737-4217 or john.simonsen@oregonstate.edu.



Alligare KNOW-HOW helps make Forestland Management more Productive

Alligare Product	Competitive Product
Imazapyr 4SL	Arsenal®AC
MSM 60 DF	Escort®
Rotary 2 SL	Chopper®/Stalker®
SFM 75	Oust®XP
SFM Extra	Oust®Extra
Triclopyr 4 EC	Garlon®4/Remedy®
Glyphosate 4	Roundup®Original

Arsenal, Chopper, and Stalker are registered trademarks of BASF Corporation. Escort and Oust are registered trademarks of El duPont deNemours and Company. Garlon and Remedy are registered trademarks of Dow AgroSciences. Roundup is a registered trademark of Monsanto Company.

Using Slash Piles to Make Chemical Products

An update on Northwest Advanced Renewables Alliance (NARA) activities

BY CHARLES BURKE,
SCOTT LEAVENGOOD, AND
VIKRAM YADAMA

There is a lot of talk in recent years about bio-refineries. In simple terms, think of a biorefinery as you would a petroleum refinery. The difference is that bio-refineries use renewable materials like crop and forest residues as inputs rather than petroleum. As a refinery, the facility converts the raw materials into a primary product—often a liquid fuel—and then there are numerous co-products that are sold directly or used as inputs for other chemical processes. For example, we know that petroleum refineries convert crude oil into gasoline, but they may also produce kerosene, lubricants, waxes, petroleum jelly, asphalt, and other products. The situation is similar with wood-based biorefineries; however, the processes, primary products, and co-products are still largely in the early stages of development and discussed later in this article.

Most of the approximately 450 biorefineries in the United States are first-generation biorefineries that use dedicated crops such as corn or canola to produce ethanol and biodiesel. Second-generation biorefineries are being developed that use non-food items like woody biomass as feedstock to produce energy, fuel, and chemical products.

In many parts of the western United States, there are an abundance of post-harvest residuals. The potential benefits associated with converting these low-value and underutilized forest



Charles Burke



**Scott
Leavengood**



Vikram Yadama

residuals into bio-based products include new jobs, energy security, and an economically viable way to remove slash from a harvest unit instead of burning it. The challenge, in addition to increasing efficiencies during the conversion process, is whether a wood-based biorefinery can be economically, socially, and environmentally sustainable with post-harvest residuals as the primary feedstock.

Economic sustainability

The Northwest Advanced Renewables Alliance (NARA) was funded by the USDA to determine the sustainability of wood-based biorefineries that use softwood-based post-harvest residuals as feedstock in the Washington, Oregon, Idaho, and Montana region. To evaluate the eco-

(CONTINUED ON NEXT PAGE)



TODAY'S MOST DESIRABLE TREES WEAR THE SFI® LABEL. NO WONDER THEY'RE IN DEMAND.

Once upon a time, certified wood products filled a small market niche. Nowadays, sustainable forestry practices are a basic requirement, and it's no passing fashion. That's why more than 152 million acres of North American forestland are now independently, third-party audited to the rigorous SFI® standard. Join our more than 200 SFI members. It's a new day in the forest.



**SUSTAINABLE
FORESTRY
INITIATIVE**

*Good for you.
Good for our forests.™*

Find out more at sfiprogram.org

nomics involved at the biorefinery level, NARA is calculating forest residual feedstock costs; unit costs associated with separating the simple sugars from the feedstock and using yeast to convert the simple sugars into isobutanol; and costs for producing products made from the alcohols and from the lignin-rich material left after the hydrolysis and fermentation steps. The flow of likely products from the NARA supply chain is depicted in Figure 1.

When these unit costs are compared to projected revenues, based on an open-market valuation of all potential products, an initial rate of return is estimated at 10.7%. Though low by investment standards and based on preliminary assumptions, this rate suggests that with improved cost reductions, a wood-based biorefinery is feasible. One way to reduce capital costs is to use existing facilities. The biochemical process to extract simple sugars from wood is similar in technology to that found at a pulp mill, and NARA is evaluating prospects to use existing infrastructure as depots to handle various steps in the conversion process.

Potential markets. With the woody biomass conversion scenario being explored by NARA, products are derived from multiple sources along the supply chain: one set of products, including transportation fuels, is developed from simple sugars; other products are from lignin-rich material generated as a byproduct after hydrolysis and fermentation; products like hog fuel, pellets, and mulch can be obtained prior to pretreatment.

Figure 2 indicates the markets and annual revenues that could be realized from a wood-based biorefinery based in the Pacific Northwest. Iso-paraffinic kerosene (biojet fuel) and octane would be generated from the isobutanol produced from the simple sugars. Polyethylene terephthalate (PET) can also be made from isobutanol and is currently used by Pepsi and Coca-Cola to make bio-plastic bottles. The lignosulfonates and activated carbon are produced from the lignin-rich material.

Figure 2 shows that the potential market for activated carbon is substantial. NARA researchers have shown that activated carbon is effective at absorbing mercury emitted from coal

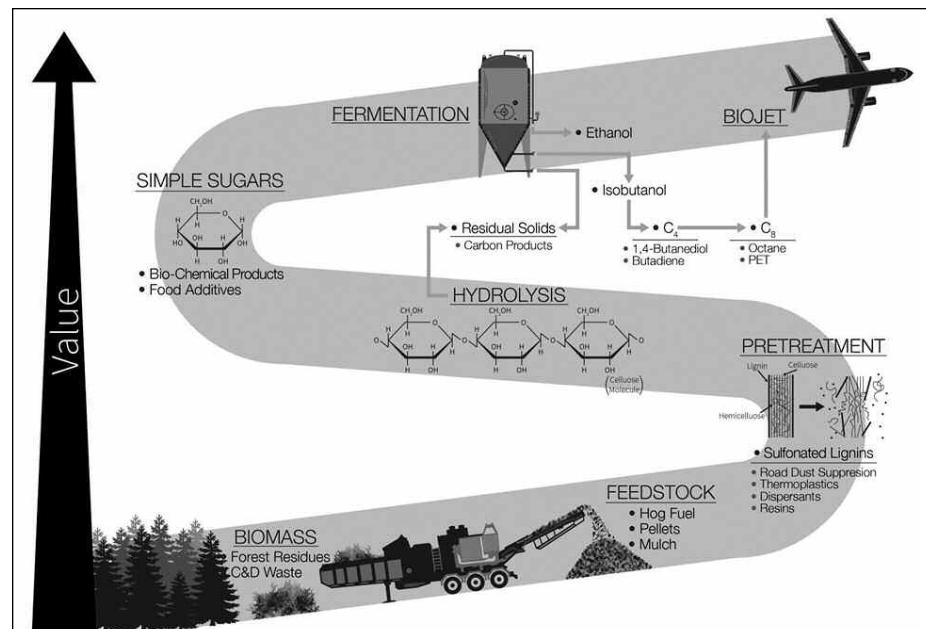


Figure 1. NARA Supply Chain Flow

SOURCE: NARA

flue gas. Demand for this material will likely expand due to EPA requirements for coal-burning facilities to reduce their mercury pollution. Materials for supercapacitors are another potential high-value market for the lignin-rich materials. NARA has identified over 20 potential products that could be derived from a wood-based biorefinery and the market potential for these products is being evaluated.

Feedstock costs and availability. Included with the costs of production

are feedstock costs that incorporate processing and transport to the biorefinery. In NARA's analysis, these costs represent approximately one-fifth of the total operational costs. NARA is funding research designed to improve efficiencies in forest biomass transportation including developing simulation tools to help land managers select the most cost-efficient machinery and site layout to process and haul post-harvest forest residuals. These simulations have shown that the costs of processing and

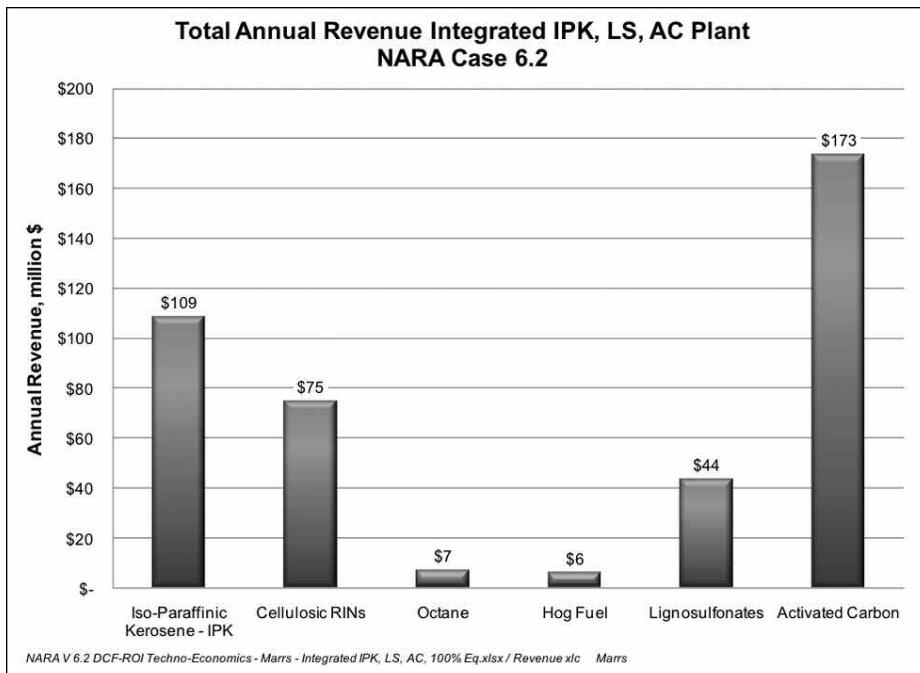


Figure 2. Contributions to annual revenue from multi-product integrated plant.

SOURCE: NARA

transporting slash can be reduced by as much as 30%. In addition, feedstock specifications such as chip size, moisture content, and contaminants are being determined so that managers and operators will have a clear understanding how to provide forest residual materials for a biorefinery.

NARA is also developing tools used to estimate slash potential given forestland composition and the amount of useable residuals in a slash pile. These tools, along with logging utilization studies, provide a clearer picture of how much biomass can be sustainably generated to support a biorefinery and allow land managers to predict the amount of slash available from their harvest. Based on the location of potential biomass and existing infrastructure, NARA is evaluating and ranking biorefinery and depot sites (solid depots to process slash and liquid depots to include production of simple sugars) in the Pacific Northwest. Initial site analyses have already taken place in the eastern Washington-western Montana region along with the western portion of Oregon and Washington. The site recommendation process is still ongoing. Current progress can be viewed at <https://nararenewables.org/features/supply-chain-analyses>.

Social sustainability

Even if economically sound, locating a wood-based biorefinery can only be possible if the surrounding community is willing and ready. To better predict a community's response to a biorefinery, NARA is developing and testing an innovative analysis tool used to predict a community's acceptance and readiness for a wood-to-biofuels and co-products infrastructure. The analysis tool along with an extensive Pacific Northwest stakeholder survey will help investors and economic development personnel locate biorefineries in areas that will benefit a majority of the surrounding community.

Environmental sustainability

For land managers to sustainably supply woody biomass to a biorefinery over the long haul, a clear understanding of how residual removal will affect the forest's productivity is needed. NARA has established a study site in

southern Oregon that will evaluate the long-term effects of soil compaction and forest residual removal on soil nutrient and moisture levels, tree productivity, wildlife, and microorganisms. Results from NARA-funded research that surveyed Douglas-fir plantation sites in the Pacific Northwest determined which soil types were most at risk from low productivity due to nutrient loss (those formed from glacial material were at highest risk). The research suggests that even with intensive residual removal, most soils still had abundant nutrient levels. Further studies are underway to determine how these soils remain productive.

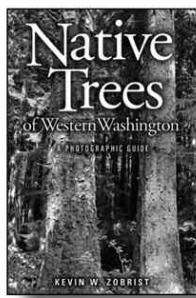
Economics and environmental sustainability are connected. A preliminary life cycle assessment (LCA) performed by NARA showed a 60% reduction to the carbon footprint of bio-jet fuel produced from softwood forest residuals compared to fossil-based fuel. This result shows that NARA's slash-to-fuel conversion pathway has the potential to meet the greenhouse gas reduction target specified in the US Energy Independence Act, a necessary step to qualify for renewable identification numbers (RINs) and for public procurement eligibility. RINs can contribute significantly toward profitability. NARA is refining the LCA models to verify whether these reductions in global warming potential will be realized.

Conclusions

As wood-based biorefineries become a reality, forest managers will have an economic incentive to manage forest residuals differently from the current practices of burning or keeping slash piles on site. Feedstock specifications and economics will drive changes in harvesting logistics to supply wood-based feedstocks. NARA is developing a suite of tools that will allow forest managers and landowners an opportunity to make the transition and become a wood-biomass supplier to this new industry. For more information, visit www.nararenewables.org. ♦

Charles Burke is NARA Communications and Publicity director. He can be reached at 509-335-3018 or ccburke@nararenewables.org. Scott Leavengood is on the NARA Outreach Team and is director of the Oregon Wood Innovation Center at Oregon State University. He can be reached at 541-737-4212 or scott.leavengood@oregonstate.edu. Vikram Yadama is an associate professor, NARA Outreach Team. He can be reached at 509-335-6261 or vyadama@wsu.edu. NARA is supported by an Agriculture and Food Research Initiative Competitive Grant # 2011-68005-30416 from the USDA National Institute of Food and Agriculture.

CONNECTING HISTORY & THE NORTHWEST



Native Trees of Western Washington

A Photographic Guide

Kevin W. Zobrist

Covering more than 30 species, the author confers a delightful, enlightening, and lavishly illustrated examination of regional indigenous trees—all from a forestry specialist's unique perspective.

Paperback • ISBN 978-0-87422-324-8 • \$18.95

6" x 9" • 160 pages

Available at bookstores,
online at wsupress.wsu.edu,
or by phone at 800-354-7360



WSU PRESS
WASHINGTON STATE UNIVERSITY

Modern Wood Materials for a Modern Wood Architecture

BY JOE MAYO

Talk to someone about wood construction and images of light wood stud framing will likely jump to mind. Not surprising, as most of our country's vast stock of single-family homes is built this way—from wood "sticks." For commercial and institutional buildings, however, wood has been avoided in favor of materials like steel and concrete. Why is this?

One might say that wood is not as strong as steel, yet its strength to weight characteristics are similar to steel and its compressive strength is similar to concrete when loaded parallel to its grain. Or, one might say that wood is combustible and not as safe as a concrete building, yet recent fire tests conducted by the American Wood Council (AWC) demonstrate that solid wood walls can last over three hours in simulated fire tests. Or, one might say it can't be used for tall buildings, yet high-rise structures from wood have been built or are under construction in countries like Australia and Norway.

The potential of wood is bound as much by perception as reality.



Since the advent of "modern" architecture, materials like concrete and steel have been favored due to their structural predictability, solidity, and perceived cleanliness. Modern engineered wood materials, however, also boast these features. While perceptions, especially in the United States, have been slow to change, wood buildings may be on the brink of a triumphant return based on activity in Europe, Canada, Australia, and New Zealand.

A high-rise 10-story wood building, for example, was recently completed in Melbourne, Australia. Germany and Austria have seen 8-story wood buildings completed, and studies there indicate that 20-, 30- and even 40-story wood buildings are technically achievable. Interest in wood buildings around the world has never been stronger, spurred in large part by new engineered wood materials that allow for more daring architecture and at the same time greater construction efficiencies. The old way to think of wood construction is sticks. For more ambitious architecture, we should now think of wood as large engineered panels and massive columns and beams.

Originally, the use of wood was governed by the growth limit of trees—columns and beams could only be as large as the tree that was harvested. Laminating pieces of wood together, either mechanically or by adhesives, has overcome this limitation and led to a revolution in material use. While glue-laminated timber has been around for some time, other engineered wood materials have recently become available or have been reinterpreted for larger buildings. These engi-



PHOTO COURTESY OF STRUCTURLAM

A cross-laminated timber (CLT) panel is lifted by a crane at the construction site.

neered wood materials are unique because they come in very large sizes—panels can be 40 feet or longer and columns can be as tall as a 7-story building or more, depending on a manufacturer's capability. Large format engineered wood materials collectively are known as *mass timber* products, and they have many advantages over traditional stick building.

The most talked about new mass timber product is cross-laminated timber or CLT. CLT can be explained as a kind of massive plywood panel replacing thin layers of veneers, typical in plywood, with dimensional finger-jointed lumber. Each layer of planed lumber is arranged at 90 degrees to the following layer and then glued together in an odd number of layers, either three, five, seven, nine or more layers with outer fibers parallel to the principal loading direction. These panels can be over a foot thick and used as walls, floors, or roofs. Because of their large

CRAMER FISH SCIENCES®
Oregon • California • Washington • Idaho • Alaska

Forest Management Plans
Resource Inventories
Fish/Habitat Surveys
Alternate Plans
Stream Enhancement
Fish Passage
ESA Compliance

360.456.4621
markt@fishsciences.net
www.fishsciences.net

503-684-8168
1-800-783-6818
11825 SW Greenburg Road, Suite 200
Tigard, OR 97223
www.nwforestryservices.com

Professional Forest Management Appraisals
 Timber Inventories and Cruising Mapping and GIS

format size, CLT can dramatically quicken the pace of construction, reduce the number of workers on a construction site, and lead to a quieter and cleaner construction process, thereby modernizing the building site.

Many engineered timber products that have been on the market for a number of years are also being reinterpreted for mass timber construction. Products like laminated veneer lumber (LVL), laminated strand lumber (LSL), and parallel strand lumber (PSL) have traditionally been cut into small pieces to be used as headers or columns. However, if left as a large format panel, these products can be used in a way similar to CLT to form entire walls, floors, roofs, or even massive columns and beams that possess excellent fire-resistant properties.

While many mass timber products use resins to bind wood fibers together, there are also adhesive-free options. Wood can be built-up into large panels or beams by nail-laminating (known as nail-laminated timber or NLT) them or by laminating layers of wood together with dowels (known as dowel-laminated timber or DLT). With the wide variety of mass timber products now available, architects and engineers can design increasingly ambitious projects.

A key advantage of mass timber architecture is prefabrication. Unlike a traditional sawmill that produces 2x4s as a commodity material, mass timber manufacturers custom size and cut individual orders on advanced Computer Numeric Controlled (CNC) machines based on the exact parameters of a specific project. For example, CLT for a job site will arrive pre-cut to exact dimensions with window and door openings so that erection can begin immediately. Not only does this increase the speed of construction, but it also fosters greater precision since all the pieces fit together with amazing accuracy to the millimeter (0.039 inch). CNC machines integrated with digital design and fabrication software are transforming wood manufacturing into a truly high-tech industry, highlighting that wood is as much a "modern" material as concrete or steel.

The use of steel and concrete has been common-place and unquestioned for years. Today we are in an era where we must foster more sustainable



PHOTO COURTESY OF KLH

Complete cross-laminated timber (CLT) building during construction.

choices. While technology is certainly driving innovation and interest in wood construction, sustainability and utilizing "green" materials are also important. Elaine O'Neil, in the September/October 2014 issue of the *Western Forester*, explained the carbon benefits of using wood—benefits that no other modern construction material can offer. As long as wood is grown and harvested sustainably, its use can actually be part of the solution to global climate change by sequestering carbon and reducing emissions. Unfortunately, the pace of innovation in mass timber design has been faster than building codes can adapt. Consequently, mass timber can be more difficult to utilize

because of building codes, despite its strength and adaptability.

To be a viable option and to bring mass timber into the mainstream, a variety of stakeholders, from architects and engineers, to material manufacturers and building code officials, must be educated. I hope that we can all be part of that dialogue: learning about and using mass timber products in a growing range of building types for a truly sustainable and modern architecture. ♦

Joe Mayo is an architect with Mahlum in Seattle, Wash. He can be reached at 206-441-4151 or jmayo@mahlum.com.



We bring experience with owners that care about their product and customers.

Approximately 10 million seedlings in annual production

1 container site (plugs), 2 bareroot/transplant sites (p+1, 1+1)

Contract growing and spec seedlings for forestry and Christmas tree production

LET US GROW YOUR SEEDLINGS

David Gerdes Mike Gerdes
inquiries@silvaseed.com

FORESTERS • NURSERYMAN • SEEDSMAN

SILVASEED COMPANY

P.O. Box 118 • Roy, WA 98580 • (253) 843-2246

"Serving Many of the Reforestation Needs of the World From This Location Since 1889"

OSU Begins Initiative for Forest Science Complex

Oregon State University, which is internationally recognized as a leading natural resources university, has begun an initiative to build a \$60 million complex to accelerate its forestry education programs and research on advanced wood products.

The Oregon Forest Science Complex will encompass renovation of existing OSU campus facilities as well as new construction; showcase innovative uses of wood in building design; and allow the College of Forestry to help meet the world's growing demand for energy efficient, tall buildings made from sustainable building products.

The project includes a \$30 million fundraising goal. Once philanthropic commitments are secured, OSU will seek matching bonds from the state. Bonding for the project was included in the governor's capital budget for consideration in the upcoming legislative session.

The initiative was announced January 6 in Portland, Ore., at the Oregon Leadership Summit of the Oregon Business Plan, by Thomas Maness, the Cheryl Ramberg Ford and Allyn C. Ford Dean of the College of Forestry.

"We are excited about leading a new national effort to advance the science and technology necessary to primarily use wood in the construction of 5- to 20-story buildings," Maness said. "Developing these new, competitively priced, environmentally friendly products will not only increase the value of Oregon's natural resources, but also grow jobs in our rural communities, with substantial benefits for our state."

Seeking new methods to reduce the carbon footprint of high-rise construction, architects and engineers from Austria to Canada, Norway and New Zealand have begun constructing buildings with exceptionally strong wood products. This "cross-laminated timber" is made of strips of wood glued together across the grain, and panels can be more than 1 foot thick and 80 feet long.

OSU already is a global leader in developing adhesives and manufacturing techniques for engineered wood products. The Oregon Forest Science Complex will boost the university's applied research efforts with a new Advanced Wood Products Laboratory. Envisioned as a 25,000-square-foot facility, it will include computer controlled and robotic manufacturing systems, plus a pilot plant designed as a learning laboratory for students.

The project also will create a life-sized example of what can be done with advanced wood products through a renovation of the College of Forestry's main academic facility, Peavy Hall.

"In addition to concerns about sustainability, there is a lot of interest in engineered wood construction because these spaces are beautiful, very inviting and healthy places to live and work," Maness said. "We want to show what you can do, and create a place that will be inspiring to our students as well as industry representatives."

New space is needed to serve OSU's growing numbers of undergraduate and graduate forestry students. Over the last decade the College of Forestry's enrollment has nearly doubled to

about 1,000 students, and to meet high demand for trained forestry professionals, OSU plans to further increase enrollment to 2,000.

"The Oregon Forest Science Complex illustrates the university's commitment to invest in its programs of greatest distinction and potential for local and global impact," said OSU president Ed Ray.

"Sometimes people think that forestry was important for Oregon's past but don't realize that it remains critical to our economy today, and may become even more important in the future," Ray said. "We are very proud of OSU's contributions to the sector and are eager to build on this rich heritage, carrying out our mission as a 21st century land grant university."

Last year OSU was named the world's seventh best university for forestry and agriculture by Quacquarelli Symonds (QS) World University Rankings, in a survey of more than 200 schools.

Fundraising for the Oregon Forest Science Complex will be led by the Oregon State University Foundation. The foundation recently concluded The Campaign for OSU, in which more than 106,000 donors made gifts exceeding \$1.1 billion.

Fundraising efforts are now focused on targeted special initiatives that advance the university's Strategic Plan for creating transformative student learning experiences and building on the institution's areas of greatest strength and potential impact, such as forest science.

For additional information, contact Thomas Maness at 541-737-1585 or thomas.maness@oregonstate.edu. ♦

GeneTechs
Richard W. Counter Professional Forester

FOREST

• Management Consultant
• Inventories and Appraisals
• Genetic Tree Improvement
• Feasibility Studies

1600 NW Skyline Blvd., Portland, Oregon 97229 (503) 297-1660

LORENZ FORESTRY
CHUCK LORENZ, CF 1770

Forest Management Planning & Operations, Inventory, Valuation for over 40 years

360-951-0117
c_4str@yahoo.com

Election Results Are In

The ballots have been tallied and results are in for national and state elections.

In Oregon SAF, Matt Krunglevich, fire protection planner for the Oregon Department of Forestry, Southwest Oregon District, moves into the chair position for the year. Steve Pilkerton, forest engineer/operations manager for the OSU College Forests, was elected chair-elect for 2015; he will advance into the chair position in 2016. Sam Delano, an Oregon State University student in the Renewable Materials program, was elected delegate-at-large. Sam will graduate in June and start work for Timber Products Company. Sam also serves as the national student representative to the Board.

In Washington State SAF, Dick Hopkins, partner, Hopkins Forestry (forest management consulting), will serve as chair in 2015. John Walkowiak will serve as chair-elect.



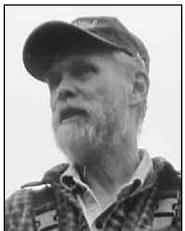
Matt Krunglevich



Steve Pilkerton



Sam Delano



Dick Hopkins

Alaska SAF has two-year terms for their leadership. Brian Kleinhenz, a silviculture and quantitative forester for Sealaska Corporation, slides into the chair position for 2015-2016. Elections are pending for the chair-elect position.

In the Inland Empire SAF, Phil Aune, retired from the USDA Forest Service, becomes chair this year. Bill Love was elected chair-elect. After retiring from the Idaho Department of Lands as a private forestry specialist and chief-Forestry



Brian Kleinhenz



Phil Aune



Bill Love

Assistance Bureau, he now works part-time as a consulting forester with Inland Forest Management, Inc.

On the national level, Bob Alverts from Oregon SAF is the president of SAF. Clark Seely, formerly of Oregon SAF now residing in Florida, was elected vice president. Dave Walters moves into the immediate past president slot. Members approved the three referendum measures placed on the ballot.

Four Board (formerly Council) members were also elected including Keith Blatner from District 1, representing Washington State, Inland Empire, and Alaska; Jim Thennes from District 4; Kurt Gottschalk from District 7; and Wayne Bell from District 10. Ed Shepard enters his second year as District 2 board member. ♦



Keith Blatner



Ed Shepard

FOREST RESOURCES TECHNOLOGY

• SAF Accredited •

Ron Boldenow, Ph.D., C.F., Forestry
Rebecca Franklin, Ph.D., Dendrochronology
Bret Michalski, M.S., Wildlife Science

<http://cocc.edu/forestry> E-mail: bmichalski@cocc.edu (541) 383-7756

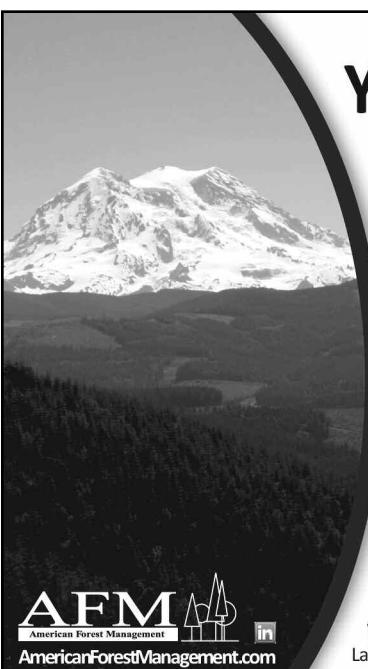
CENTRAL OREGON COMMUNITY COLLEGE



Bend, Oregon

Your *best* source for:

- Forest and Land Management
- Real Estate Services
- Environmental Services
- Wood Flow Services
- Wildlife Services
- Investment Services
- Technical and Data Services
- Appraisal Services



Chehalis Office
360-740-3757

Kirkland Office
425-820-3420

With offices throughout the Southeast, Northeast, Pacific Northwest, Lake States, Hawaii and Appalachian Regions of the United States.

SPERRY RIDGE
NATURAL RESOURCE MANAGEMENT

- Land Use
- Land Exchanges
- Due Diligence
- Timber Cruising/Inventory
- Harvest Unit Layout
- Resource Assessments
- Feasibility Analysis
- **Forestland Real Estate**
(Licensed in Oregon)

(541) 505-3377
www.SperryRidge.com

AFM
American Forest Management
AmericanForestManagement.com

Renewed Energy Surrounds December Board Meeting

BY JOHN WALKOWIAK, ED SHEPARD, AND JOHNNY HODGES

The SAF Board of Directors held their final meeting of the year on December 6-8, 2014, in Bethesda and Rockville, Maryland. To match the terminology used in our new Articles of Incorporation and Bylaws, which were approved by membership in October, we will no longer use the terms "Council" or "Executive Vice-President." These have been replaced by "Board of Directors" and "CEO."

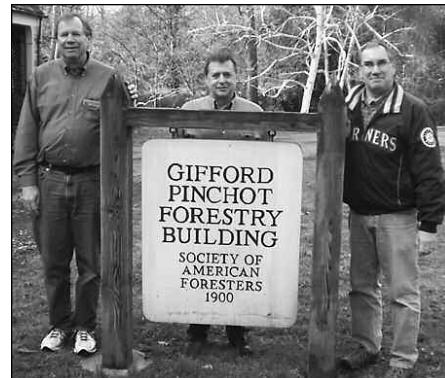
The sale of the Wild Acres property surrounding our national office in Bethesda was finalized on November 25. New net proceeds from the sale were just over \$13.8 million. Former SAF Executive Vice-President Michael Goergen stopped by our meeting one evening to celebrate the sale. Michael said the first discussion of selling the property began in 1974, the year he was born. Michael continued to assist with the sale even after his resignation last year. CFO Jorge Esguerra was instrumental in closing the sale. The sale proceeds, along with SAF's other reserves, are being invested in a diverse portfolio managed by M&T Bank and guided by the Board Finance Committee that works with CEO Matt Menashes and SAF staff. Using a small portion of these funds, we are making some wise investments to enhance staff capacity to grow SAF programs

that will meet member needs and generate new revenue. These specifically include membership and local unit support services. Our long-term reserves are also expected to generate funding that will be added to our annual operating budget.

Matt Menashes reported on his first six months on the job. He has focused on the national staff, learning the history of SAF, the property sale, and the Salt Lake City convention. Matt has also reviewed SAF programs that are not profitable and is looking at programs we can add to generate revenue. Our primary revenue producers, other than membership dues, are accreditation, certification, and the national convention. Our goal is to reduce reliance on dues.

Christopher Whited, SAF senior director of marketing and membership, gave a presentation on "Knowing Our Members." Some statistics stand out:

- SAF is 85% Caucasian and 80% male.
- Approximately 60% of our members are older than 50 and 20% of our members are retired.
- Our membership in 2014 was about 11,500, a decrease from 2013.
- Major membership categories include 45% Gold, 20% Silver, and 12% Students.
- We now have over 200 Platinum members.



Left to right: 2014 Board Members Johnny Hodges, Ed Shepard, and John Walkowiak.

The Board spent two hours discussing changes in forestry and how SAF can be more relevant to partners with leadership of four organizations headquartered in the D.C. area: Mary Wagner, associate chief of the US Forest Service; Tom Martin, CEO, American Forest Foundation; Lynn Wilson, executive director, Association of Consulting Foresters; and Scott Steen, CEO of American Forests.

Highlights from our conversations include:

- Be a good partner to partners.
- There are too many voices in the forestry sector and we don't tell our story well.
- We need a translator to explain science to the policy worlds.
- We need to develop a consensus policy agenda for forest conservation.

Justine Gartner and Greg Brown, co-chairs of the Membership and Credentialing Task Force, presented their final report to the Board. The objective of the task force was: "to develop and recommend an action plan that maintains the organization's core values and the Brand Promise to formally recognize as peers natural resources professionals for membership. The plan should address protection of SAF's roots, culture, and professional character, as well as do nothing to diminish the identity of a forester." They outlined 17 recommendations to the Board. The report, along with some explanatory notes, will be available soon.

Dr. Richard Standiford gave a summary of the Forest Education Summit held at the University of California, Berkeley in May 2014. The purpose of the meeting was to produce recom-



Forestry and Vegetation Management Specialists

- Forest Management Plans
- Timber Inventory and Appraisals
- Timber Sale Layout, Permitting and Administration
- Feasibility Studies on New Land Purchases

- Forest Land Management
- Growth and Yield Analysis
- GPS Mapping
- Vegetation Management

Galen M. Wright, ACF, SAF, Certified Forester No. 44 and
Board Certified Master Arborist No. PN-0129BU

1.800.276.1723

www.waforestry.com • gallen@waforestry.com • Olympia, WA

Serving Clients across the U.S. and Canada since 1991

mendations on forest science and forestry education and to provide guidance to the development of university curriculum. Results of the Summit will be published in a special edition of the *Journal of Forestry* in 2015. For more information, visit <http://ucanr.edu/berkeleysummit>.

The board passed a 2015 budget submitted by Matt Menashes and recommended by the Finance Committee. The budget also assumes reasonable revenue from membership, convention, accreditation/certification, publications, and interest, while holding expenses. The board also approved use of some of the property proceeds to invest in SAF staff including their own professional development. In addition, effective December 15, Corey Ruple was hired to lead Membership Services, with Christopher Whited shifting his focus to marketing and sales. A Meeting Services manager is funded to allow staff to focus on membership and revenue development. Even with this investment, the budget forecasts a surplus at the end of 2015. We also anticipate a small surplus from the 2014 operating budget.

John Walkowiak presented a report from the Strategic Planning Committee on governance and Board size. There are currently 11 districts and each district should represent between 7% and 11% of the total voting membership. The Board is to review the districts at least every 10 years and adjust boundaries as necessary. Three districts fall slightly outside of this range, but the committee does not recommend any restructuring of district boundaries at this time. The committee recommends that the Board examine providing more membership services to those districts that are spread thin due to membership numbers or geographic distances.

Since the SAF bylaws have been revised, there was a question whether state societies now need to revise their bylaws. The National Office will research the question and provide advice to the state societies; no changes are recommended at this time.

The topic of liability insurance for local unit activities was discussed. Most board members felt that many state societies are unaware of the need for liability insurance for some of their

events. The National Office will discuss options with Dan O'Leary, SAF's insurance agent, and provide guidance to state societies. The National Office will look for options to reduce costs and make it easier for local units to be adequately insured.

Sam Delano, student representative to the board, and Jim Thinnnes, incoming board member from District 4, are working on a national mentoring program for students and SAF career professionals.

The board requested that the CEO research a pilot project that would allow student members in their last semester of college to take the Certified Forester (CF) exam at no cost and become Conditional Certified Foresters. If they passed the exam and remained a member of SAF during their conditional period, they would become a CF.

As we move into 2015, several changes in leadership have taken place at the national level. Bob Alverts from Tigard, Ore., takes over as president of SAF. Clark Seely of New Smyrna Beach, Florida, starts his term as vice-president; Clark spent most of his career working in Oregon for the Department of Forestry. Joann Cox has

completed her term as immediate past-president and will rotate off the Board while Dave Walters becomes the immediate past-president.

John Walkowiak's three-year term as the representative for District 1 has ended. He is replaced by Keith Blatner of Pullman, Wash. Keith's contact information is blatner@wsu.edu and 509-335-4499. Johnny Hodges' term as the representative for District 4 also ended in 2014. Jim Thinnnes of Littleton, Colorado, was elected to replace him. Jim can be reached at jimthinnnes2@gmail.com or 303-972-0351. ♦

This board report is a cooperative effort between District 1 Board Member John Walkowiak, District 2 Board Member Ed Shepard, and District 4 Board Member Johnny Hodges. John Walkowiak can be reached at 253-320-5064 or jewalkowiak@harbornet.com. Ed Shepard can be reached at 503-487-6423 or sssstr1@comcast.net. Johnny Hodges can be reached at 970-226-6890 or jah.16@live.com.

STARKER FORESTS
Growing Forests, Not Just Trees

Future Wood Products –
If They Can Make It We Can Supply It

www.starkerforests.com

From the SAF President and Vice-President

BY BOB ALVERTS AND CLARK SEELY

December 9, 2014—We are delighted and excited to serve our SAF colleagues and work with an excellent new Board of Directors (formerly Council) in our respective roles for 2015. But first, we want to acknowledge the excellent work of 2014 President Dave Walters and Immediate Past President Joann Cox for their leadership efforts, and particularly in hiring an outstanding Chief Executive Officer (CEO) in Matt Menashes. Matt has hit the ground running and is doing a great job of leading SAF. We also want to acknowledge the excellent job that Louise Murgia did as interim Executive Vice-President following Michael Goergen's departure.

Our theme for 2015 is "Growing the Pie" in all its dimensions and includes eight major priorities:

- 1) Being responsive to member needs and delivering key, relevant services (learning opportunities, forums for communications, an effective website);
- 2) Retaining current members and recruiting new ones, particularly younger members;
- 3) Continuing our strong policy, education, and science programs;
- 4) Growing relationships and partnerships with allied professional societies and related organizations;
- 5) Generating new sources of revenue to expand SAF's financial health and stability;
- 6) Continuing to examine SAF's governance structure and developing a new SAF Board Policy and Governance manual;
- 7) Preparing for and delivering a strong national convention in Baton Rouge and state society meetings; and
- 8) Identifying and preparing future



Bob Alverts



Clark Seely

SAF leaders. We want to play the rookies!

We consider these priorities in the context of a financial position that has never been better, and provides new opportunities for SAF thanks to the work of previous SAF Councils and respective Finance Committees that provided investment guidelines on account management, SAF finance staff, and the generous donations of members and friends of SAF. Over the past several years, which included one of the nation's worst recessions, our financial reserve accounts have increased by 85 percent to an amount just under \$3.7 million. And while we have struggled to keep our annual budgets from operating in a deficit on a cash basis, largely due to revenue declines tied to a continued reduction in membership over a number of decades, we have also worked hard to keep expenses down and nearly constant.

Just last week we added significant new cash to our portfolio, as we closed on the sale of the surplus property at the SAF national headquarters with new net assets to SAF of \$13.8 million. These resources are being invested in a diverse portfolio managed by M&T Bank and guided by the Board Finance Committee that works with Matt and SAF staff. We owe our special thanks to Michael Goergen for leading this effort from the outset, and also to Louise Murgia, Jorge Esguerra, and Matt for getting this important work done on our behalf. Using a small portion of these funds, we are making some wise investments to enhance SAF staff capacity to grow SAF programs that will meet member needs and generate new revenue. These specifically include membership, marketing, and local unit support services.

Regarding major challenges we face, there is one area of strong interest by all members—the condition of the SAF website. As much as we want the website to be fully functional, and we are working hard to make it so, it remains a complex and challenging task. There has been good progress on the member portal and online membership renewals are generally working

well. But other dimensions of the website and the associated databases, which provide key and relevant information for the website to function as we want it to, remain a technical challenge and will require more time to get right. But we will keep after this until it is fully functional and effective.

Within the framework of the new bylaws just approved by the membership, the SAF Board is also working on a first-ever Board Policy and Governance manual to guide our work and that of the CEO. It will help guide the Board in being more strategic, spending time on achieving SAF's "end" goals. The Board's Strategic Planning, Finance, and Audit committees will work hard to achieve these goals along with the efforts of the House of Society Delegates, Forest Science and Technology Board, Policy Committee, and Student Congress.

Forestry, like engineering, education and medicine, is a profession that includes many disciplines and specialties. Because of this, there is room for every interest and personality in this broad profession. Think of the benefits to SAF if each of us recruited one or two non-member students or natural resource professional colleagues or coworkers. We need them, and they need us, so please do your part to help grow the pie!

Again, we are incredibly excited about this upcoming year and the new opportunities it will bring. To be successful though, we need your continued involvement, engagement, and participation in your organization. Please keep in contact with us and let us know how we can serve you better. Remember, it's a great time to be a SAFer! ♦



Bob Alverts can be reached at balverts@teleport.com; Clark Seely can be reached at cseely2@cfl.rr.com.

Reflections and Opportunities for SAF

BY JOHN WALKOWIAK

As my three-year tenure as District 1 Council/Board Representative comes to an end I want to share my thoughts on the experience and what opportunities lay ahead for SAF.

At the beginning of my term in 2012, SAF finances were in tough shape with deficit budgets being required to just maintain operations and basic membership services. Everyone from the Council and National Office staff faced the brutal facts of declining membership, reduced forestry school enrollment, and the need to diversify our revenue—and we knew that we needed to be bold and change course in order for SAF to remain relevant. With Michael Goergen's departure as executive vice president in June 2013, we also had to locate a new leader for our organization.

The bold changes have embarked



SAF in a new and exciting strategic direction that focus our energies on broadening our membership to all forestry professionals, to be better stewards of our financial resources, to renew and seek partnerships with others, and to expand services to our members. With your support we have made some hard decisions such as selling the surplus headquarters property and investing the proceeds not only for SAF financial security in the future, but to invest in new membership services that will be developed over the next 12 months. We successfully addressed our legal requirements as a nonprofit organization with the passage of new Articles of Incorporation and Bylaws with overwhelming support from the membership. A revenue development subcommittee has successfully launched campaigns for increasing non-dues revenue. Throughout all of these changes we did not raise membership dues. Finally, we hired Matt Menashes as our new CEO, an association guy to run SAF like a business.

In my travels over the past three

years, I found a hardworking and dedicated National Office staff of competent professionals. We are lucky they remained the course with us during the tough economic times. I found dedicated local state and chapter leaders that give their personal time for SAF to remain relevant and yes, fun for all of us. Finally, I found the students at our PNW forestry schools at the Associates, Baccalaureate, and Graduate levels enthusiastic and wanting to explore the forestry profession.

Like the five-year mission from Star Trek, we have to remain bold in our exploration for success. Learn from the past and look toward a bright future. Please be engaged and engage others as SAF grows into the future. Thank you all for your past support and I urge you to stay in touch with our new District 1 Board member Keith Blatner at 509-335-4499 or blatner@wsu.edu. ♦

John Walkowiak can be reached at jewalkowiak@harbornet.com.

What Do You Want to Read About This Year?

The SAF Northwest Office Committee met over the summer and determined future themes for the *Western Forester*—an important duty of this committee. Whether your interest is in changing technology or managing riparian forests, the year 2015 should have something for everyone. Now that themes are set, the best story ideas come from our readers. Please take a moment to review the upcoming topics and provide some input on the types of articles you'd like included. Ideas and comments can be sent to Lori Rasor at rasor@safnwo.org.

Western Forester 2015+ Publication Schedule

Issue	Theme	Deadline	Date Mailed to Members
Jan/Feb 2015	What's New in Wood Products Research?	N/A	January 29
March/April/May	Changing Technology and Mobile Applications	February 23	April 21
June/July/August	Is Multiple-use Forestry Dead?	June 1	July 7
September/October	Experimental Forests	August 3	September 8
November/December	Managing Riparian Forests: Why and Why Not?	October 5	November 10
Jan/Feb 2016	Fuel Treatments	November 16, 2015	January 12, 2016
March/April/May	Political Implications for the Upcoming 2016 Election Year	February 22	April 26



We Remember

Estella Morgan 1959-2014

Estella Morgan, 55, passed away unexpectedly on November 4, 2014, in a woods accident. She was born Sept. 10, 1959, in Coos Bay. She attended Eastside Elementary School, Millicoma Middle School, and then graduated from Marshfield High School in 1977. She then went on to obtain an associate degree in forestry at Southwestern Oregon



Community College.

In 1981, Estella was married to Randy Jameson. They made their home in Coos Bay and Oklahoma. In 1983, Estella gave birth to their daughter Lindsey. In August 1984, Randy died in Alaska while commercial fishing.

Estella met her husband, Lance Morgan, of Coquille, while attending forestry classes at Southwestern Oregon Community College. They were married June 28, 1986. Estella gave birth to their twin daughters, Adrienne and Amber, in April 1987.

Estella was actively involved in the community, most notably in Bunker Hill PTO and as a Court Appointed Special Advocate (CASA) for children. She was an active member of Eastside Christian Assembly where she volunteered as their gardener and IT manager. She was always careful to ensure that everything at the church was in smooth working order. She was also actively involved

with the Society of American Foresters.

Estella was employed by the Bureau of Land Management for the last 30 years, rising to her most recent position as Coos Bay District cruiser/appraiser. She loved her job working in the forests of the south coast. Estella was a driven individual that did all tasks in high gear and with ambition, whether work or hobbies.

Her many recreational pursuits included kayaking, gardening (she was always very proud of her flowers), hunting, fishing, bicycling, hiking, travel, and raising chickens. During times of inclement weather, she enjoyed folk dancing, making candles, canning, cooking, and quilting (she made many quilts for her family). She was caring, generous, and took care of many people in their times of need. She adored and loved her family and took time to make that clear. Two of her favorite pursuits were entertaining her grandchildren and loving her little dogs.

Estella was preceded in death by her father, Richard Brown; brother, Max Brown; and first husband, Randy Jameson.

She is survived by her husband of 28 years, Lance Morgan of Coos Bay; daughters and sons-in-law Lindsey and Shane Tyner of Coquille, Adrienne and Ben Carnahan of North Bend, and Amber Morgan of Coos Bay; mother, LaVerna Brown; and grandchildren, Cameron, Alyssa, and Aspen.

In lieu of flowers, donations can be made to CASA of Coos County, 379 N. Adams St., Coquille, OR 97423.

Paul Egan 1927-2014

Paul Henry Egan, 86, of Milwaukie, Ore., passed away on September 2 at Providence Portland Medical Center.

Paul was a loving father, husband, grandfather, and friend to all. He was born in Syracuse, New York, to Michael and Mary Egan. He served in the US Navy from 1946-1947 and worked in the forestry industry for 34 years.

He graduated from New York State College of Forestry (Syracuse University) with a bachelor of science in 1951. In 1952 he graduated from Oregon State University with a Masters in Forestry. Upon graduation from OSU, he worked for Dwyer Lumber Company and then Publishers Paper Company after the company acquired Dwyer Lumber. He retired in 1986 as the forest operations manager, but was most happy when he was working in the woods. Paul was a long-time volunteer for Providence Milwaukie Hospital and ushered for 37 years at St. John the Baptist Catholic Church in Milwaukie. ♦

Jackson and Prochnau, Inc.

Since 1954

*Feasibility Studies & Investment Analysis World Wide.
Inventory, Appraisals, Engineering, Management, Log Marketing*

www.jacksonandprochnau.com
Albany, OR Tel: 541-926-3320

Scott@jacksonandprochnau.com
Olympia, WA Tel: 360-352-9680

WILBUR-ELLIS®
Ideas To Grow With™

CHOOSE OPENSIGHT® FOR OUTSTANDING CONTROL

Opensight® Herbicide is now labeled for forest site preparation in Oregon, Idaho, and Washington states. Outstanding control of many broadleaf weeds, plus inhibition of Scotch broom seed germination!

Bruce Alber | 503-227-3525
Western OR & Western WA

Joel Fields | 509-928-4512
Eastern WA, ID & MT

Carl Sostrom | 509-928-4512
Eastern WA, ID & MT

Scott Johnson | 916-991-4451
California

Jerry Gallagher | 530-570-5977
California

George Severson | 541-810-8387
Southern OR, Northern CA

For information only. Not a label. Prior to use, always read and follow the product label directions.
WILBUR-ELLIS Logo and Ideas to Grow With are registered trademark of Wilbur-Ellis Company. Opensight is a registered trademark of Dow AgroSciences LLC. K-0914-125

Calendar of Events

14th Annual Foresters Forum, Feb. 4-6, Coeur d'Alene Resort, Coeur d'Alene, ID. Contact: Jennifer Childers, 208-660-2158, info@forestersforum.com, www.foresters-forum.com.

Silviculture by Objectives: Options and Outcomes, Feb. 5, Linn County Expo Center, Albany, OR. Contact: Amanda Mattern, amanda@forestry.org, www.forestry.org/oregon/Workshops/Silviculture2015.

Using ArcPad in Forestry Seminar, Feb. 10-11, Beaverton, OR. Contact: Atterbury Consultants.

Professional Timber Cruising with SuperACE, Feb. 12-13, Beaverton, OR. Contact: Atterbury Consultants.

Joint Inland Empire and Montana SAF Leadership Conference, Feb. 13-14, Lutherhaven, Coeur d'Alene, ID. Contact: Phil Aune, psaune@gmail.com.

CESCL: Erosion and Sediment Control Training, Feb. 14-15 in Portland, OR or Mar. 3-4 in Tacoma, WA. Contact: NWETC.

Cable Logging, Feb. 17-20 in Corvallis, OR or Apr. 7-10 in McCall, ID. Contact: FEI.

Logging, Construction, Trucking, and Heavy Equipment Expo, Feb. 19-21, Lane County Convention Center and Fairgrounds, Eugene, OR. Contact: 541-686-9191, www.oregonloggingconference.com.

Pacific Salmonids: Ecology, Feb. 23-24, Portland, OR. Contact: NWETC.

Unit Planning and Layout, Feb. 23-26 in Corvallis, OR. Contact: FEI.

Pacific Salmonids: Spawning Habitat Restoration, Feb. 25-27, Portland State University, Portland, OR. Contact: NWETC.

Inland Empire Reforestation Council annual meeting, Mar. 3, Coeur d'Alene Resort, Coeur d'Alene, ID. Contact: Bill Pittman, bpittman@stimson-lumber.com or WFCA.

Inland Empire Tree Improvement Cooperative meeting, March 4, Coeur d'Alene, ID. Contact: www.cnr.uidaho.edu/ietic.

American Tree Farm System Inspector Training, Mar. 12, Cle Elum, WA. Contact: Andy Perleberg, 509-667-6658, andyp@wsu.edu, http://ext.nrs.wsu.edu/news/events/continueducation.htm.

17th Annual Loggers Workshop, Mar. 18, Colville, WA. Contact: Emily Burt, 509-775-5235, emburt@wsu.edu, http://ext.nrs.wsu.edu/news/events/continueducation.htm.

Small Log Conference, Mar. 24-26, Coeur d'Alene, ID. Contact: Tom Waddell, 406-546-5977, www.forestbusinessnetwork.com/our-events/2015-small-log/.

Analyzing Forest Products Markets and Forecasting Log Prices in the PNW, March 25, Portland, OR. Contact: WFCA.

Alaska SAF annual meeting, March 25-27, Pike's Waterfront Lodge, Fairbanks, AK. Contact: Jim Schwarber, james.schwarber@alaska.gov.

27th Annual Family Forest Land-owners and Managers Conference and Exposition, Mar. 30-31, Moscow, ID. Contact: www.idahoforestowners.org.

Intermountain Logging Conference and Equipment Show, Apr. 8-10, Spokane Valley, WA. Contact: Julie Schwanz, 208-245-3425, julie@intermountainlogging.org, http://intermountainlogging.org/conference.

Forest Growth and Yield Models—What makes them fail and what makes them work? April 13-14, Portland, OR. Contact: WFCA.

Washington State 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, www.forestry.org/washington/2015meeting.

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@sperryridge.com or Fran Cafferata Coe, 503-680-7939, fran@cafferataconsulting.com.

Management and Remediation of Contaminated Sediments, June 11-12, Bellevue, WA. Contact: NWETC.

Contact Information

Atterbury Consultants: Atterbury Consultants, Inc., 3800 SW Cedar Hills Blvd., Suite 145 Beaverton, OR 97005, 503-646-5393, dsandefur@atterbury.com, www.atterbury.com.

FEI: Forest Engineering Inc., 620 SW 4th Street, Corvallis, OR 97333, 541-754-7558, office@forestengineer.com, www.forestengineer.com.

NWETC: Northwest Environmental Training Center, 1445 NW Mall St., Suite 4, Issaquah, WA 98027, 425-270-3274, https://nwetc.org.

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

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

Before you decide, find out what you have! Affordable Timber Cruising.



Adam's Timber Service specializes in full harvest on all types of forest land, sustainable forest management, and reforestation.

**Professional Forestry Management
Accurate Timber Cruising / Appraising
Timber Harvesting, Layout, Permitting**

**Timber Sales and Log Marketing
Road Construction - Maintenance
Forest Land Management**

We purchase land and standing timber

(360) 636-7766

www.adamstimerservice.com - Longview, WA - adam.timber@live.com

University of Washington Student Chapter Holds Symposium

BY DON HANLEY

The University of Washington's SAF Student Chapter conducted the UWSAF 2014 Student Symposium in late November on the UW campus. Six student presentations showcased the outstanding quality and diversity of graduate-level research at UW's School of Environmental and Forest Sciences.

Student presenters included:

Jim Conan (PhD Student) presented results from research he is conducting in Florida to map fire hazard at Eglin Air Force Base in northwestern Florida. Mapped fuel types are also placed within pathways that reflect how fuels can change under different management and natural disturbance regimes.

Luyi Li (MS Student) conducted research to understand the impact of site characteristics and management on Douglas-fir plantations with the focus of evaluating soil parent material and nitrogen fertilization influences. The study was analyzed with paired-tree design in western Washington and Oregon with the Stand Management Cooperative at University of Washington, Center for Intensive Planted-forest Silviculture at Oregon State University, and US Forest Service Pacific Northwest Research Station. The outcomes provide information for wood property model construction and further research in assessing stand conditions on Douglas-fir plantations. She presented some results in growth parameters and wood property respects.

Emilio Vilanova (PhD Student) presented the results of a collaboration project that took place between 2011 and 2012 with the Forestry Department of the Food and Agriculture Organization of the United Nations (FAO), where



PHOTO COURTESY OF DON HANLEY

Attendees listen as six UW Student presentations highlight the evening program at the UWSAF 2014 Student Symposium.

FAO carried out a review study entitled "*The silviculture in the Amazon rainforest: Current status and recommendations for policy and the practice*" to gather updated information about the "state of the art" regarding the silviculture of natural forests in this region. Emilio presented results for Venezuela's case.

Nichole Studevant (MFR Student) presented an overview of a project management plan for a 33-acre unit, which is part of a larger ecological thinning project in the Cedar River Municipal Watershed. The prescription was linked to the objectives of the larger project and to the watershed's Habitat Conservation Plan. The steps needed to complete this project included forest inventory, FVS modeling to predict future conditions, written documents with maps, field layout, and the development of a Forest Practices Application and Notification.

Abraham Ngu (MFR Student) exhibited the forest stewardship plan for Henry's Ridge—Black Diamond—Ravensdale Retreat, 645 acres of forested land owned by King County Parks in Black Diamond/Maple Valley. Among alternative treatments, recommendations include a variable density

thin in Douglas-fir stands as they approach maximum biomass accumulation. This plan was the centerpiece of Applied Forest Ecology, a three-credit class offered last spring, in partnership with King County Parks

Rachel Roberts' (MS Student) research looked at the natural resource management conflict in the Olympic Experimental State Forest (OESF). The cognitive psychology theory of framing views such as conflicts to be a result of misalignment between different stakeholders' perception of which issues make up this conflict. In order to address this conflict, we construct different groups' frames of the problem so that they are clearly defined and can be compared to find common ground and disagreements.

The event was organized by the UWSAF Chapter Committee of Sam Israel, chair; Hollis Crampo, co-chair; Marisa Bass, treasurer; Zach Bass, secretary; and Colin Kirkmire, regional student representative. Hollis Crampo served as master of ceremonies.

On behalf of those members in attendance from the North Puget, South Puget, and Southwest Washington chapters, we wish to thank the UWSAF Chapter for organizing this very informative meeting and serving an excellent student-prepared meal. ♦

 **Integrated Resource Management**
Consulting Foresters & Restoration Ecologists

•Forest Management & Restoration
•Forest Inventory & Unit Layout
•FPS & Database Development
•Experts in FPA Layout Compliance in OR & WA

•GIS & GPS Mapping
•Custom DPP Applications
•Grade & Appraisal Cruising
•Logging Systems Analysis

Marc Barnes, marc@irmforestry.com - CA RPF #2538 www.irmforestry.com

"Since 1993"
Philomath, OR
541 929-3408

Don Hanley served as the WSSAF Communications chair in 2014 and is a South Puget Sound Chapter member. He can be reached at dhanley618@gmail.com.

A Unique Opportunity Coming in April

BY PETER HEIDE

The Washington State SAF Annual Meeting, held jointly with the Wildlife Society, is scheduled for April 15-17. The theme "Forestry and Wildlife Management—Working Together Toward Common Goals," sets the stage for the program. The meeting will be an exceptional opportunity to learn more about how forestry can support much-needed early seral habitats, the battle in the woods to control barred owls, wolves in Washington, hoof rot in elk, and more. It is also a chance catch up on University of Washington forestry and wildlife research, mix with wildlife professionals, and get the latest in field forestry technology—all of that in just a couple of days.

The meeting also offers opportunity for your family. We have arranged for a limited number of rooms to be available for meeting participants at the Great Wolf Lodge from April 14 through 16 at a rate about half of the regular price. Each room accommodates four people and includes full indoor water park access. The Great Wolf Lodge is located off of I-5 between Olympia and Centralia.

On Tuesday, April 14, The Wildlife Society, with the help of some patient foresters, is putting on a pre-meeting Forestry 101 class for biologists. The class is designed to help wildlife (and fish) biologists understand you. So if you know someone who would benefit, have them contact Bill Vogel at bill_vogel@fws.gov.

The meeting kicks off Wednesday at 12:30 p.m. with a box lunch presentation by Department of Fish and Wildlife Veterinarian Kristen Mansfield discussing hoof rot disease in Washington's elk population. She will cover what is known about the cause, the status, and a prognosis for the disease.

Attendees will have a choice Wednesday afternoon of science presentations covering forest management and threatened and endangered species including owls, murrelets, wolves, and others, or a series of speakers assembled by Jake Verschuyl and Blake Murden presenting cutting-



PHOTO COURTESY OF GREAT WOLF LODGE

Great Wolf Lodge in Grand Mound, Wash.

edge research on early seral ungulate and migratory bird habitats in intensively managed forests. This second one is a must attend for industry foresters.

Wednesday evening our sponsors are hosting an icebreaker reception for everyone attending the meeting. Refreshments and hors d'oeuvres that just might satisfy your need to go out for dinner are included.

Thursday morning everyone will gather for a plenary session where Paul Hanson, USFWS in Oregon; Brian Kernohan, Hancock Forest Management; Kyle Blum, DNR deputy supervisor; and others will address forestry and wildlife management cooperation, conflict, and opportunity. Our luncheon speaker is Bill Richardson, Senior Lands Program manager for the Rocky Mountain Elk Foundation.

Thursday afternoon is another opportunity to get technical with a choice of learning what's new in GPS and forest measurement technology,

an update on forestry research and education at UW, or a workshop on conducting adaptive management.

An entertaining awards banquet and fundraising auction for both SAF and TWS will follow the no-host social Thursday evening.

Friday morning features membership breakfast meetings for both organizations followed by an SAF field tour with everyone invited. The tour will complement our theme with a focus on wildlife in the managed forest.

Don't miss this opportunity to learn, network, and have fun at the Great Wolf Lodge. Online registration will be available soon. Visit www.forestry.org/washington/2015meeting/ for registration information, or contact Jim Hotvedt at hotvedt9@yahoo.com. ♦

Peter Heide is the general chair of the 2015 WSSAF annual meeting. He can be reached at peter@tkgforestry.com.



**Connecting Forest Landowners with
Seedlings, Services and Contractors**

DISCOVER Our Interactive Website
www.forestseedlingnetwork.com

BUY/SELL SEEDLINGS • FIND VENDOR SERVICES & CONTRACTORS • VALUABLE RESOURCES



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.

Revised O&C Lands Bill Dies in Senate; Professional Concerns Persist.

Senator Ron Wyden's O&C lands bill (S1784) cleared the Energy and Natural Resources Committee in November but failed to be added to an omnibus bill before the 113th Congress adjourned in December 2014. In May, Oregon SAF (OSAF) sent a letter to Sen. Wyden about S1784 and a subsequent letter was sent about a similar bill (S2734). Issues of concern to OSAF persisted in all versions of Wyden's bills, and included highly prescriptive constraints such as age-based restrictions on cutting of individual trees, which would micromanage forestry unlike any other technical profession in the US, create new opportunities for legal challenges, and become a "lock with no key" in areas where trees pass the age limits prior to harvest. Wyden's bills followed a simi-

lar one by Rep. Peter DeFazio (portions of HR1526) that passed the full House in September 2013. New O&C bills must now be introduced in both chambers of the 114th Congress and OSAF will work to minimize such issues of concern to forestry professionals. Contact: Paul Adams, OSAF Policy chair, adamspaulw@gmail.com.

OSAF Approves Updated Thinning and Landslides Position Statements.

In September, the OSAF Executive Committee approved updated versions of the position statements on "Thinning on Public Lands in Oregon" and "Landslides on Forest Lands." The modifications were relatively minor and focused on updating the reference lists and fine-tuning the background discussions. The position on thinning remains important given ongoing concerns about timber harvesting on public lands and related attempts to restrict harvest through arbitrary and inflexible diameter or age limits. Similarly, concerns about forestry and landslides were renewed by the massive and destructive slide that occurred near Oso, Washington, in March 2014. All members are encouraged to review OSAF's position statements and use them to articulate a professional perspective when discussing forest resource issues with people outside the profession. The revised position state-

ments and an updated booklet with all current OSAF positions are available at www.forestry.org/oregon/policy/position/. Contact: Paul Adams, OSAF Policy chair, adamspaulw@gmail.com.

Federal Forest Policy

Workshop Held. A workshop for Northwest SAF leaders and interested members took place Thursday, January 15 at the Oregon Garden to discuss and develop some legislative concepts for federal forest management. The idea is for the profession to be more proactive in providing leadership at the front end of forest policy development, versus simply reacting to legislative proposals developed by others in the absence of a broad base of professional input. Such a step seems timely both in terms of the persistent interest in and need for substantive changes in federal forest management as well as with the changes in Congressional leadership in the new year. Contact: Paul Adams, OSAF Policy chair, adamspaulw@gmail.com.

WSSAF Working Forests Conference and Landslide

Testimony. On November 12, the WSSAF held its first "Working Forests for the 21st Century" conference. This was a one-day information-packed event held in Lacey, Wash. Speakers examined topics on forest science for the future, climate change adaptation, forest infrastructure and markets, innovations in wood architecture, early successional habitat, carbon sequestration, and examples of Tribal, community, and family working forests. Special thanks go to Ellie Lathrop for the idea and to Ellie, Joe Murray, Elaine Oneil, Mike Warjone, Lori Rasor, and Karen Terwillegger who made it happen. Speaker presentations can be found at www.forestry.org/washington/workingforests.

Harry Bell testified at the November Washington Forest Practices Board meeting as they deliberated over guidance for landslide protection. Contact: Harry Bell, WSSAF Policy chair, harry@greencrow.com. ♦

CRITERION® RD 1000

Tired of not being able to see through an old-style cruise instrument in wet weather? Ask about trading in a used Relaskop®

Call to set up a free demo!
503.521.0888
www.resourcesupplyllc.com
jon@resourcesupplyllc.com

Resource Supply LLC

Thank You Northwest Office Supporters!

The SAF Northwest Office would like to thank the following SAF units, organizations, companies, and individuals for their generous in-kind and financial contributions in 2014 in support of the goals of the office.

The SAF Northwest Office provides a variety of services to members in the Oregon, Washington State, Inland Empire, and Alaska Societies. Its goals are to strengthen and support SAF state societies and chapters so they can be effective and efficient as they work to achieve the Society's mission.

We greatly appreciate your continued support.

Paul Adams	Tom Parke
Ann Forest Burns	Dick Powell
Bob Devlin	Jim Rombach
George Chesley	Robert Sanders
Kent Connaughton	Mick Sears
Bob Devlin	Zane Smith
Roger Fearn	Gary Springer
Stephen Fitzgerald	SAF National Office
Hancock Forest Management	Starker Forests
Bob Madsen	Bob Tokarczyk
Bob McNitt	Umpqua Chapter, OSAF
Norm Michaels	Washington State SAF
Vincent Naughton	
Tom Nygren	

**Norm Michaels
Forestry LLC**

Forest management to meet your goals

- Management Plans
- Reforestation
- Timber inventory
- Timber cruising

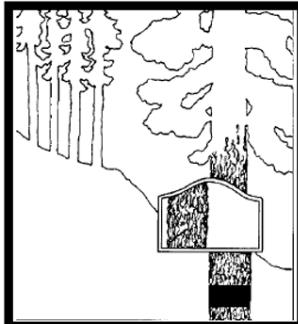
Over 40 years managing forests in Oregon and Washington

541-822-3528
nmichaels2@yahoo.com

Variable Probability Sampling

March 30-April 3, 2015

Oregon State University, Corvallis, Oregon



65 years of forestry education on Variable Probability Sampling

With Dr. John Bell

Contact Dr. Bell at 541-758-4939
or email johnbell@proaxis.com

Dr. Kim Iles

250-753-8095 or e-mail kiles@island.net

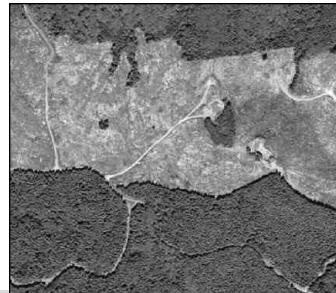
Go here for more information and to register online:
<http://blogs.oregonstate.edu/variableprobability2015>

Questions about registration: OSU Conference Services
541-737-9300 or email conferences@oregonstate.edu

2014 NAIP Imagery Available NOW for Oregon

(Less than \$13.00 per county for the State Set)

The 2014 Oregon NAIP imagery is 1 meter, orthorectified, color imagery for ArcPad, ArcView, ArcGIS, and MapInfo. We've enhanced it to run on Pocket PCs for all counties in Oregon. See your GPS position anywhere in a county. Up to 10 or more counties can be placed on an SD or CF card. Call Jon Aschenbach at 503-521-0888 for prices of projections besides State Plane NAD83 South Zone, NAD83 North Zone, and UTM.



2014 Oregon NAIP Original

- UTM or NAD83/N MrSID format
- \$40/County or \$495/State Set
- 1 Meter Resolution!!!

2014 Oregon NAIP for Pocket PCs

- Run entire counties in ArcPad
- UTM & State Plane, NAD83, Feet
- \$40/County or \$495/State Set

Advantages of NAIP Imagery for Pocket PCs:

- Bring up an entire county of imagery in ArcPad
- Fast refresh rates so you don't wait much
- Licensed to allow you to put it on several PCs & data collectors (Just don't sell it or give it away)
- Less than \$13.00 per county with the State Set
- MrSID format for maximum efficiency
- California 2014 & Washington 2013 available

Resource Supply, LLC

11607 SW Winter Lake Dr., Tigard, OR 97223

www.resourcesupplyllc.com Video: www.ruggedready.com

Email: jon@resourcesupplyllc.com

Call: 503-521-0888 Today!

SPECIAL!!!

Buy both the Original and a Pocket PC version—just \$595.⁰⁰

(Delivered on free loaner external drive. Just plug into USB port)
New 500 Gigabyte USB external drive available for only \$99.00

Resource
+
Supply



SOCIETY OF AMERICAN FORESTERS

Western Forester

4033 S.W. Canyon Road
Portland, Oregon 97221

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

PRINTED ON
RECYCLED PAPER

LASER RANGEFINDERS FOR TIMBER CRUISING



TruPulse® 360° B

Calculates horizontal distance and height, and contains a built-in compass for 3-D missing line values, azimuth measurements and mapping applications.



3800 SW Cedar Hills Blvd., Suite 145
Beaverton, OR 97005

Visit: www.atterbury.com
Call: 503.646.5393

APPRAISALS & CONSULTING:

Timberland Appraisals – Due Diligence – Timber Management

GIS MAPPING & ANALYSES:

Timber Typing – Timberland Owners & Mill Locations

CRUISING & INVENTORY:

Highly Trained with Current Technology – Client-Tailored Reports

SOFTWARE & PRODUCTS WE USE:

Authorized ESRI, Laser Technology (LTI) & TDS Dealer

SEMINARS & TRAINING:

Continuing Education Credit – ArcPad for Foresters – Timber Cruising