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Research Cooperatives Serve the Forestry Community

BY DAVID BRIGGS

Research cooperatives and centers have a long history of success in serving the research needs of the forestry community in the Pacific Northwest. Typically, three factors underlie the formation of these organizations. First, there exists a universal need for baseline information such as basic long-term information to support models on growth, yield and wood quality of managed plantations; development of improved seedlings and seedling survival, and basic information on international markets. Second, the nature of the needed information is such



that obtaining it is a continuing or long-term activity. Many cooperatives/centers have continued far longer than the originators envisioned since the initial research often leads to new questions. Third, the experimental design and implementation, data collection and database management, and analysis and dissemination efforts needed exceeds the financial, land base, time and intellectual resources of any individual organization. Even when there were large vertically integrated companies with large acreages, they often found that the distribution of their lands, relatively small scientific staff, and cost to set up and conduct the research were such that collaboration with others was necessary.

Funding typically originates through two approaches. In Model A, federal or

state legislative action defines the purpose/mission of the cooperative/center and provides a funding appropriation. Examples at the University of Washington include the Center for International Trade in Forest Products, Rural Technology Initiative and Precision Forestry Cooperative. In Model B, an interested group of stakeholders defines the purpose/mission of the cooperative/center and creates a funding structure based on annual dues by each member. Examples are the Stand Management Cooperative and Northwest Tree Improvement Cooperative. These organizations commonly, and may be expected to, supplement the appropriated or member dues funding with competitive grants from other public/private sources. Finally, the host institutions and others may contribute significant time of scientists and facilities. As an example, over the past 24 years, the Stand Management Cooperative funding has averaged 62 percent member dues,

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PHOTO COURTESY OF TERRY SHAW

The Nutrition Coop studies fertilization and density management on one of its research plots.

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Research Cooperatives Serve the Forestry Community

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20 percent institutional contributions and 18 percent external grants.

Locating these organizations at universities provides a resource of specialized facilities and faculty talent, continuity over time, credibility through independent peer review of research, ability to attract external competitive grants from other sources and training of students who become the talent base of the future.

Members benefit greatly since their contributions are highly leveraged; a contribution of \$5,000 per year to a \$100,000 per year research program (member dues, institutional contribution and external grants) is getting \$20 of research per dollar invested. Generally, a faculty member at the host university is assigned to be director. Model A organizations commonly have an advisory board of appointed or voluntary individuals from a vari-

ety of stakeholder organizations that meet periodically to review the research program, and provide guidance on strategic planning and funding. Model B organizations are often somewhat different in that each dues-paying member has a representative on the advisory board, which through voting approves budgets, strategic plan and research programs. Some have formal bylaws specifying membership categories, intellectual property rights and other details.

Coordination and gap issues

Examination of the websites of College of Forestry at Oregon State University, College of Natural Resources at the University of Idaho, and College of Forest Resources at the University of Washington indicate that each has a variety of active research cooperatives/centers (see Table 1, pages 6-8). With the diverse missions and locations of these research organizations, concerns have been expressed that significant research questions: (1) are not being addressed by existing cooperatives; (2) seem to span across

or fall between the boundaries of existing cooperatives; and (3) may require funds that are not readily available. In particular, critically important integrative research and associated decision support models and tools do not seem to fit into the missions of existing cooperatives and may require a restructuring or different approach. Recognition of these issues has led to meetings and formation of new organizations to address them, which are briefly discussed here.

The first meeting to address these issues was held on Nov 27-28, 2001, by the Western Research Subcommittee of AF&PA's Forest Science and Technology Committee with goals to: (1) summarize industry research needs; (2) review programs of current research cooperatives; and (3) identify gaps and opportunities for future work.

Goal 1 was achieved through a survey of major industrial forest landowners prior to the meeting. A summary presented at the meeting placed responses into two emphasis areas. One area where industry research was needed was silviculture, wood quality and forest products research with respect to influences on productivity and quality, and associated integrative modeling. The other area of industry research needs was license to operate research with respect to regulatory and natural factors, and included research on issues related to riparian zones, chemicals, biodiversity and fire risk reduction measures.

Goal 2 was achieved by having research cooperative representatives present an overview of its mission, budget status and activities. These presentations are available at www.westernforestry.org/afpa/afpa_industrial_research_forum.html.

Goal 3 was achieved through breakout groups, which were asked to identify gaps between industry needs and existing cooperative capabilities. AF&PA Western Research Committee Report #1 summarizes the meeting and reports from the breakout groups. The Goal 3 exercise led to the following eight gaps.

1. Studies to evaluate the effects of combined treatments. This gap



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includes understanding how maximum productivity can be achieved and improving understanding of the linkages between production forestry and ecological values. Filling this gap will require integrated, interdisciplinary studies and developing financing mechanisms to support them.

2. Cross-cooperative coordination. This gap reflects the need and opportunity for research on phases of stand development and management that crosses the boundaries associated with the missions and structures of the individual cooperatives. This suggests the need for a new standard and structure for planning cooperative research to ensure that they are better integrated and coordinated.

3. Technology Transfer. An improved mechanism is needed to effectively distribute and implement results from cooperative research in the appropriate form to companies, the public, and legislative and rule-making groups. None of the cooperatives have the funding and personnel to accomplish this, and it is unlikely that any one of them could achieve the level of integration and synthesis cutting across research from others and effectively communicate the results.

4. Decision Support Tools. Growth models have been the primary method for synthesis of knowledge, but more is needed in terms of including, calibrating and validating these models for the effects of intensive silvicultural practices, genetic improvement and species mixtures, as well as the effects on product yield and quality. The models should also develop capability to produce results that can be related to production of forest services such as carbon sequestration and habitat structure.

5. Intensive Early Stand Management. The effects of early management on wood properties and subsequent product yield and quality are poorly known. These relationships need development along with tools that can assist in predicting and monitoring wood properties, product quality and value.

6. Nutrition Management. This gap reiterated the maximum productivity statement in Gap 1 and identified the need to develop information that would help in defining optimal nutrient regimes.

7. Alternative Silviculture Systems. This gap refers to the lack of information on productivity, wood quality, formation of service values and such by mixed species stands, variable retention silviculture and multi-aged stands.

8. Pest Management. This gap refers to pest issues in seed orchards, seedling nurseries and intensively managed forests.

After the 2001 Forum, discussions concerning Gap 2—the need for change from the disciplinary focus of many research projects and cooperatives to a more integrated, interdisciplinary approach—led to the Planted Forest Forum on February 8, 2007, where the following five “challenges” in industrial cooperative forest research were developed (Maguire 2008).


1. Research Fragmentation. Existing cooperatives address specific components of the spectrum of silvicultural regimes or strategies. In general, many of the more important questions do not fall within the mission of any single cooperative or they overlap the missions of two or more cooperatives. Economic return on a

given treatment depends on other treatments applied earlier, concurrently or later, so productivity and quality must be understood on the basis of the full silvicultural regime and not individual components.

2. Research Logistics. All possible treatments for full silvicultural regimes cannot be field tested; in fact, most possible treatment combinations cannot even be field tested. Consequently, inferences concerning likely performance or treatment regimes will rely on knowledge of fundamental mechanisms and processes. Field trials need to be designed very carefully with respect to testing hypothesized behavior of novel silvicultural systems.

3. Research Funding Mechanisms. Since research capacity with respect to intensive plantation silviculture has declined in the Pacific Northwest, inter-institutional arrangements are necessary to address many of the critical issues that require multi-disciplinary teams that can only be created from talent from different institutions.

4. Decision Making Tools. Although growth models continue to be devel-



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oped and updated from the various cooperative databases, there are deficiencies, including: (a) models lack comprehensiveness with respect to accommodating full silvicultural regimes; (b) mechanisms are poorly represented; and (c) many data sets are under-utilized. In addition, principles of forest growth and yield are more appropriately addressed through direct analysis and interpretation rather than from inferences derived from using either a complete growth model or its components. There is a need for bundled inventory, growth projection and harvest scheduling systems.

5. Condensation of Information from Research. The numerous publications from cooperatives and other research projects are often conflicting and poorly synthesized to provide further explanations or hypotheses that could lead to explanation. This is a result of lack of funding for synthesis efforts, limited human resources and reward systems in agencies and academia that preferentially value "new" science. Outreach and technology transfer programs are inadequate for many aspects of intensive plantation silviculture.

A key outcome of the Planted Forest Forum was the formation of the Center for Intensive Planted-forest Silviculture (CIPS) to address these challenges.

Related programs and developments

Two other programs have also had a significant impact on the coordination, prioritization and funding of research cooperatives/centers. The first is the AF&PA/USFS Agenda 2020 competitive research grant program, administered through the AF&PA Western Research Committee and USFS research. This program, which

began in 2002, has been very successful in providing a mechanism for establishing research priorities and fostering industry-university-USFS R&D collaboration. It needs to be continued and expanded.

The second is the Center for Advanced Forest Systems (CAFS), a National Science Foundation Industry/University Cooperative Research Center that began in 2007/08. It is a multi-university center that bridges top forestry research programs with industry to solve complex industry-wide problems. The academic partners are North Carolina State University, Oregon State University, Purdue University, Virginia Polytechnic Institute and State University, University of Georgia, University of Maine and University of Washington, and there are more than 60 industry partners. The mission of CAFS is to optimize genetic and cultural systems to produce high-quality raw forest materials for new and existing products by conducting collaborative research that transcends traditional species and disciplinary boundaries. CAFS provides a mechanism to bridge the various local/regional cooperative efforts across the nation, and providing a larger talent pool and resources for collaboration.

Other factors and future

The industry has experienced a shift of forestland ownership from vertically integrated firms to TIMO and REIT organizations. Consequently, there is a mix of owners with a more diverse set of objectives and time horizons and with a stronger demand for research with clear and immediate financial implications. Many organizations have either downsized or do not have scientific capability. Cooperatives may benefit since work may need to be outsourced. However, the reduced

level of industry R&D personnel also means that companies have fewer personnel to interpret, evaluate and translate cooperative research findings into information useful to their practicing foresters, and the cooperatives have little funding or the necessary skill to do this. This inadequacy underlies Gaps 3-4 from the 2001 forum and Challenge 5 from the 2007 forum.

Funding of cooperatives is challenging. Those relying on legislative appropriations find that legislative priorities and the critical mass of legislators that support appropriations can change quickly with elections and other factors. Those relying on dues from public/private landowners have been affected by the dynamic nature of forestland ownership. In general, funding has been unstable from year to year and the long-term average trend has been flat or declining. Consequently, cooperatives have not kept up with inflation and are becoming increasingly reliant on external grants, which can impose a serious problem if new grants are not forthcoming to replace expiring ones. All are very sensitive to economic conditions and the current downturn will be very challenging.

Conclusion

The use of research cooperatives/centers as an effective collaborative mechanism for public private sector organizations to partner with universities to address research needs has survived through the economic downturns of the early 1970s and '80s and will undoubtedly survive the current crisis as well. Over time some disappear, some undergo substantial restructuring and new ones appear as new issues and challenges emerge. ♦

David Briggs is Corkery Family chair and director of both the Precision Forestry Cooperative and Stand Management Cooperative at the University of Washington in Seattle. He can be reached at 206-543-1581 or dbriggs@u.washington.edu.

Citation

Maguire, D. 2008. CIPS Strategic Framework. Center for Intensive Planted-forest Silviculture. College of Forestry, Oregon State University, Corvallis, OR. 33pp.



The advertisement for Assisi Software features a logo on the left depicting a stylized forest scene with trees and a path. To the right of the logo, the text reads "Assisi Software" in a large, bold font, followed by "FOREST MANAGEMENT SOFTWARE" in a smaller, all-caps font. On the far right, there is a collage of several computer screen displays showing various software interfaces, including maps and data tables. At the bottom of the advertisement, a black banner contains the contact information: "PO Box 33815 • Portland, OR 97292 • 503.233.6417 • www.AssisiSoft.com".

Northwest Tree Improvement Cooperative Continues Tradition

BY KEITH JS JAYAWICKRAMA

The Northwest Tree Improvement Cooperative (NWTIC), established in 1986, continues a long tradition of applied cooperative tree improvement as successor to the IFA-Progressive Tree Improvement System started in 1966. The current membership is 35 companies and agencies.

Establishment of Douglas-fir first-cycle tests began in 1967 and continued to 1993. The earliest full-sib second cycle test was planted in 1984, but the rest were planted after 1996 with establishment scheduled to continue through 2011. Second-cycle Douglas-fir sites have been established from Skagit County near the Canadian border south to Lane and Coos counties (and eventually to southern Douglas county). The quality of second-cycle test site selection, establishment and maintenance has been emphasized to obtain the highest gains reasonably possible.

Data analysis is a vital service provided by NWTIC. Since 2003 NWTIC data analyses have been overhauled and modernized, implementing state-of-the-art Best Linear Unbiased Prediction (BLUP) methodology. This has made it possible to provide predicted genetic gains and combine data across breeding zones or across generations. Detailed reports are provided that explain and interpret the results.

Management of tree improvement data is another important service cooperators get from NWTIC. A large number of records are now housed in an SQL Server database with a Microsoft Access interface. Cooperators can access raw data, analyses (including predicted gains) and reports through a password-protected web interface.

Height, DBH, stem defect and wood density were routinely assessed in first-cycle tests. Two new traits (spring bud-break and fall cold hardiness) are being scored in second-cycle tests. Needle retention is assessed in the area of the northwest Oregon Coast exposed to Swiss needle cast disease. New non-destructive tools for assessing wood

stiffness in tree improvement have come available over the last 10 years. Using one such system, ranking of first-cycle progeny tests for acoustic velocity began in 2008 with 118 Douglas-fir progenies screened in their 35th year.

Age-15 data have been obtained from one realized genetic gain trial, and age-3 data from another. Both series had woodrun, intermediate and elite treatments and were established on six sites each. The age-15 showed realized percentage gains of 5.7, 7.8, 22.1 and 25.2, compared to predicted percentage gains from the progeny tests of 8.0, 10.0 and 23.7, by the elite treatment for height, DBH, volume and age-8 to age-15 annual volume increment respectively (no predicted gain for volume increment). The elite treatment had 5.8 percent (plot-mean basis) and 9.7 percent height gain (individual-tree basis) over the unimproved treatment based on the age-3 measurement of the younger trial.

Since 2001, NWTIC has aided the establishment/upgrading of 15 high-gain 1.5-generation or 2nd-generation production orchards, and has provided candidate selection lists for most of them. This impacts a substantial amount of the future reforestation in western Oregon.

NWTIC faculty has been first authors or co-authors on nine peer-reviewed publications and 21 conference/meeting presentations or other reports since 2000. NWTIC has also organized or helped organize workshops on wood quality, genetic gain in operational plantations and establishment and management of Douglas-fir seed orchards. Such workshops take relevant, practical technical information and make it accessible to busy practitioners in the tree improvement, forestry and wood-pro-

cessing fields. The NWTIC has collaborated with the Pacific Northwest Tree Improvement Research Cooperative, Swiss Needle Cast Cooperative and the Stand Management Cooperative on various projects.

The establishment of five 3rd-cycle breeding orchards (with a total of 300 selections grafted) is an exciting recent development; several more are to be established over the next few years. Most of the second-cycle cooperatives and NWTIC cooperators have decided to proceed to 3rd-cycle breeding and testing. Compared to a delay of 20-34 years from the start of individual first-cycle programs to establishment of second-cycle tests, the goal is to establish third-cycle tests within 15-18 years after second-cycle tests were planted.

Breeding and testing of western hemlock has been more or less a small-scale version of the Douglas-fir effort. First-cycle testing began in the 1970s, and a second-cycle program for the coastal strip of Oregon, Washington and southwest British Columbia was started in 1992. By the winter of 2009-10, age-10 data collection is to be completed for all these sites. ♦

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Table 1: List of research cooperatives/centers grouped by functionality.

Genetics Cooperatives

Name	Inland Empire Tree Improvement Cooperative (IETIC); est. 1968
Mission	To identify improved seed and trees for use in reforestation of forestlands that will yield more and better timber and products that will be less susceptible to damage by diseases, insects and other pests, and be more vigorous and more responsive to management. To develop and demonstrate methods and procedures for producing genetically improved forest trees, seed and other plant materials. To conserve, improve and utilize the forest tree genetic resource of the Northern Rocky Mountains.
Contact	Marc Rust, College of Natural Resources, University of Idaho, PO Box 441133, Moscow, ID 83844-1133; www.cnr.uidaho.edu/ietic ; 208-885-7109; mrust@uidaho.edu
Name	Northwest Tree Improvement Cooperative (NWTIC); est. 1986 to continue work initiated in 1966 by the IFA/PNW Progressive Tree Improvement Program
Mission	Oversee cooperative breeding of Douglas-fir, western hemlock and other species of the coastal forests of the PNW. Guide technical aspects of implementing these tree improvement programs. Analyze and interpret genetic test data. Store test data and breeding records. Provide expertise and training in tree breeding.
Contact	Keith JS Jayawickrama, Department of Forest Ecosystems and Society, Oregon State University, Corvallis, OR 97331; www.fsl.orst.edu/nwtic ; 541-737-8432; keith.jayawickrama@oregonstate.edu
Name	Pacific Northwest Tree Improvement Research Cooperative (PNWTIRC); est. 1983
Mission	Create a knowledge base concerning genetic improvement and breeding of PNW tree species. Develop reliable, simple and cost-effective genetic improvement methods and apply these methods to solve tree-breeding problems. Promote collaboration and communication among public agencies and private industries engaged in tree improvement in the region.
Contact	Glenn Howe, Department of Forest Science, Oregon State University, 321 Richardson Hall, Corvallis, OR 97331; www.fsl.orst.edu/pnwtirc ; 541-737-9001; glenn.howe@oregonstate.edu
Name	Tree Biosafety and Genomics Research Cooperative (TBGRC); est. 1994
Mission	To produce knowledge about gene function and genetic engineering technology that will increase the economic efficiency and environmental soundness with which societies produce wood from intensively managed forests. Focus is in poplar/cottonwood and eucalyptus.
Contact	Steven Strauss, Department of Forest Science, Oregon State University, Corvallis, OR 97331; www.cof.orst.edu/coops/tbgrc ; 541-737-6578; steve.strauss@oregonstate.edu

Silviculture, Nutrition and Growth & Yield Cooperatives

Name	Hardwood Silviculture Cooperative (HSC); est. 1988
Mission	Conducts silvicultural research on red alder in the PNW. The goal is to improve the management and production of red alder in pure and mixed species stands. To meet this goal, HSC has established a series of research installations throughout the PNW to develop the database necessary for a growth and yield model for managed red alder stands. This model would be able to evaluate management regimes under varied site qualities, growing conditions and management objectives.
Contact	David Hibbs, Department of Forest Ecosystems and Society, Oregon State University, Corvallis, OR 97331-5752; www.cof.orst.edu/coops/hsc ; 541-737-6077; david.hibbs@oregonstate.edu
Name	Intermountain Forest Tree Nutrition Cooperative; est. 1980
Mission	Understanding tree nutrition and developing fertilization and nutrient management prescriptions for conifers in the Inland Northwest. Objectives are to sustain and enhance forest productivity by developing tools to: 1) identify site factors controlling multi-nutrient availability, such as soils, climate, vegetative competition and stand density; and 2) conserve or augment nutrient capital using safe, efficient and effective management practices.
Contact	Mark Coleman, College of Natural Resources, University of Idaho, Moscow, ID 83844-1133; www.cnr.uidaho.edu/IFTNC/ ; 208-885-7604; mcoleman@uidaho.edu
Name	Stand Management Cooperative (SMC); est. 1985
Mission	The mission is to provide a continuing source of high-quality information on the long-term effects of silvicultural treatments and treatment regimes on stand and tree growth and development and on wood and product quality. To accomplish the mission, the SMC establishes series of research installations throughout the west side of the PNW and coastal B.C. The associated database supports development of models and other analyses of intensively managed conifer plantations.
Contact	David Briggs, College of Forest Resources, University of Washington, Seattle, WA 98195; www.standmgt.org ; 206-543-1581; dbriggs@u.washington.edu

Integration and Synthesis Key to New Center

BY DOUG MAGUIRE

Research cooperatives in the Pacific Northwest have enjoyed almost four decades of support from industry and agencies due to an equally long record of success in establishing the science base for intensive silviculture. Each cooperative has specialized in a specific aspect of growing a timber crop; indeed, their appeal and success can largely be attributed to this keen focus on forest nutrition, tree improvement, nursery technology, stand density management, competing vegetation control, hardwood silviculture, Swiss needle



cast amelioration or precision forestry. Global competition in the wood products industry and the increasing value of forestland for alternative uses has intensified pressure for improved economic performance of forest management. This improved performance is usually viewed as return on investment in the form of land rent and silvicultural activities that enhance tree growth in volume and/or value.

Some silvicultural investments such as tree planting must be made to ensure establishment of a new stand, and others such as fertilization are implemented to boost growth. In reality, alternative silvicultural treatments compete for capital. For a given ownership or land base, therefore, the challenge to improving management efficiency becomes one of identifying

the combination of treatments and stand and site conditions that will yield the highest return. Research cooperatives are well designed to quantify growth responses to alternatives within a narrow class of treatments and to identify the set of best alternatives. They are less ideally designed to assess relative responses to alternative classes of treatments, e.g., competing vegetation control at age two versus fertilization at age 25.

To facilitate more comprehensive decisions and strategies for silvicultural treatments and long-term strategies for optimal regimes, much of the information from long-term field trials is summarized in growth and yield models. Growth models represent a creative blend of existing data and

(CONTINUED ON PAGE 8)

Regeneration Cooperatives

Name	Nursery Technology Cooperative (NTC); est. 1982
Mission	To improve the productivity of the Northwest's forests through the use of advanced seedling technology to achieve optimal regeneration. With an integrated program of coordinated studies, information sharing and technical assistance, the NTC focuses attention on all aspects of nursery management, especially its consequences in seedling field performance.
Contact	Robin Rose, Department of Forest Engineering, Resources and Management, Oregon State University, Corvallis, OR 97331; www.cof.orst.edu/coops/ntc ; 541-737-6580; robin.rose@oregonstate.edu
Name	Vegetation Management Research Cooperative (VMRC); est. 1993
Mission	To conduct applied reforestation research of young plantations from seedling establishment through crown closure with an emphasis on operational vegetation management. Promote reforestation success such that survival of wood crop biomass and growth are maximized while protecting public resources.
Contact	Robin Rose, Department of Forest Engineering, Resources and Management, Oregon State University, Corvallis, OR 97331; www.cof.orst.edu/coops/vmrc/home.htm ; 541-737-6580; robin.rose@oregonstate.edu

Other Cooperatives

Name	The Center for Intensive Planted-forest Silviculture (CIPS); est. 2007
Mission	To understand the interactive effects of genetics, silviculture, protection (from insects, disease and animal damage), competition, nutrition and soils on the productivity, healthy and sustainability of intensively managed planted forests.
Contact	Doug Maguire, Department of Forest Engineering, Resources and Management, Oregon State University, Corvallis, OR 97331-5752; www.fsl.orst.edu/cips ; 541-737-4215; doug.maguire@oregonstate.edu
Name	Precision Forestry Cooperative (PFC); est. 1999
Mission	The mission of the PFC is to develop advanced technologies to improve the quality and reliability of information needed for planning, implementation and monitoring of natural resource management to ensure sustainable forest management and increase the competitiveness of the forest sector.
Contact	David Briggs, College of Forest Resources, University of Washington, Seattle, WA 98195; www.standmgt.org ; 206-543-1581
Name	Swiss Needle Cast Cooperative (SNC); est. 1997
Mission	To conduct Swiss needle cast research for forestland owners in western Oregon and Washington. Conduct research on the biology, detection and management of Swiss needle cast in Douglas-fir. Conduct training and workshops on research and survey results. Provide newsletters and reports on research. Serve as a focal point for information on Swiss needle cast.
Contact	David Shaw, Department of Forest Engineering, Resources and Management, Oregon State University, Corvallis, OR 97331-5752; www.cof.orst.edu/coops/sncc ; 541-737-2845; dave.shaw@oregonstate.edu

New Center

(CONTINUED FROM PAGE 7)

current concepts about tree growth and development. Growth responses to stand density manipulations are well represented in current models, as are responses to nitrogen fertilization, although less consistently. Progress on representing genetic tree improvement has been made only recently (Gould et al. 2009), and the same can be claimed for the effects of competing vegetation (e.g., SMC variant of CONIFERS; www.fs.fed.us/psw/programs/ecology_of_western_forests/projects/conifers/). Much work remains to be done on integrating and synthesizing the tremendous amount of information available from research cooperatives, as well as that generated by other projects at region-

al universities and USDA-FS Research Stations (see Briggs, this issue).

The Center for Intensive Planted-forest Silviculture (CIPS) was formed in 2007 at Oregon State University to facilitate and coordinate comprehensive syntheses of information from a number of potential sources, including existing research cooperatives. The CIPS mission is to elucidate the interactive effects of genetics, silviculture, protection (from insects, disease and animal damage), competition, nutrition and soils on the productivity, and health and sustainability of intensively-managed, planted forests.

Sixteen companies and agencies currently support CIPS under a funding formula that makes it similar to research cooperatives. However, activities are focused on coordinating, facilitating, conducting and synthesizing

collaborative research between existing cooperatives, institutions and researchers. In essence, the goal is to achieve a higher level of integration of existing and future information while addressing long-term and interactive effects of all possible treatments constituting a silvicultural regime. CIPS aims to achieve this integration by developing and maintaining a comprehensive, science-based decision-support system for intensive silviculture of planted forests in the Pacific Northwest.

The framework for achieving this synthesis involves improved understanding of mechanisms driving growth and productivity. Part of the framework calls for better site characterization with respect to biophysical factors; for example, soil water holding capacity, precipitation, incident solar radiation and temperature

Centers, Consortiums, Working Groups and Others

Name	Pacific Northwest Tree Gene Conservation Group; est. 1995
Mission	To ensure that the adaptation and evolutionary potential of important regional tree species is maintained.
Contact	Brad St.Clair, USDA Forest Service, Pacific Northwest Research Station, 3200 SW Jefferson Way, Corvallis, OR 97331; www.westernforestry.org/afpa/lipow.ppt ; 541-750-7294; bstclair@fs.fed.us
Name	The Rural Technology Initiative (RTI); est. 2000
Mission	University of Washington and Washington State University Cooperative Extension developed RTI as a cooperative program to accelerate implementation of new technologies in rural forest resource-based communities.
Contact	Bruce Lippke, College of Forest Resources, University of Washington, Seattle, WA 98195; www.ruraltech.org ; 206-543-8684
Name	Olympic Natural Resource Center (ONRC); est. 1991
Mission	To demonstrate innovative management methods that successfully integrates environmental and economic interests into pragmatic, management and ocean resources.
Contact	John Calhoun, Olympic Natural Resource Center, College of Forest Resources, University of Washington, Forks, WA 98331; www.washington.edu/research/field/center.html ; 206-685-9477; jcalhoun@u.washington.edu
Name	The Northwest Environmental Forum; est. 2001
Mission	A collaborative meeting and work space to bring together decision makers and stakeholders to apply scientific and policy information to address critical environmental and natural resource issues.
Contact	Brian Boyle, College of Forest Resources, University of Washington, Seattle, WA 98195; www.nwenvironmentalforum.org
Name	The Center for Advanced Forest Systems (CAFS); est. 2007
Mission	Formed though the NSF Industry-University Cooperative Research Centers Program
Contact	David Briggs, 206-543-1581 and Glenn Howe, 541-737-9001; http://cnr.ncsu.edu/fer/cafs
Name	Consortium for Research on Renewable Industrial Materials (CORRIM)
Mission	This nonprofit corporation is organized by 15 research institutions developing all the environmental inputs and outputs for every stage of processing from forest regeneration and management, processing for energy or building materials, construction, maintenance and use, and recycling or end of life disposition.
Contact	www.corrim.org ; administration is currently housed at the College of Forest Resources, University of Washington, 206-543-8684
Name	Taskforce on Adapting Forest to Climate Change (TAFCC)
Mission	TAFCC is a group of scientists and land managers interested in understanding the potential effects of climate change on natural and planted forests in the western U.S. Mission is to provide public and private landowners with science-based management options suitable for meeting diverse management objectives under alternative climate change scenarios.
Contact	Daniel Chmura, Oregon State University; http://tafcc.forestry.oregonstate.edu/index.html ; 541-737-7524; daniel.chmura@oregonstate.edu

regime. It also includes morphological and physiological characteristics that are genetically determined by the species or family. Understanding the mechanisms by which site factors influence tree function and growth should provide better insights into levels of productivity that can be achieved by intensive management. Likewise, representing key morphological and physiological characteristics should provide direct links to availability and uptake of resources such as water and solar radiation, and to stem characteristics and growth processes that determine stem micro- and macro-anatomy and resulting quality of stem wood.

CIPS is currently operating under a five-year (2009-2013) Strategic Plan and Strategic Framework that emphasizes site characterization and development of growth model components that represent mechanisms of response to silvicultural practices.

Objectives for 2009 include collaboration with the Nursery Technology and Vegetation Management Research Cooperatives on dynamic responses of young Douglas-fir and associated vegetation to varying degrees of competing vegetation control. In future years, collaborative efforts with the Northwest Tree Improvement Cooperative (NWTIC), Pacific Northwest Tree Improvement Research Cooperative (PNWTIRC) and the PNW Research Station will investigate approaches for quantifying physiological and morphological mechanisms that drive growth increases achieved by genetic tree improvement programs in Douglas-fir.

CIPS currently supports half of a post-doctoral research associate and half of a faculty research assistant. The ultimate goal of CIPS and associated cooperatives is to enhance the global competitiveness of Pacific Northwest forests and producers of forest products. To an increasing degree, our working forests compete not only with wood-producing forests in other geographic regions, but also

with alternative materials and alternative uses of the land. ♦

Doug Maguire is director of CIPS and Edmund Hayes Professor of Silviculture,

Department of Forest Engineering, Resources and Management at Oregon State University in Corvallis. He can be reached at 541-737-4215 or doug.maguire@oregonstate.edu.



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PFC Brings High Tech Tools to Forestry Sector

BY DAVID BRIGGS

The Precision Forestry Cooperative (PFC) is one of the Advanced Technology Initiative (ATI) centers established by the legislature of the State of Washington in 1999. ATI created a partnership between government, private industry and universities with the objective of creating or transforming industries in areas of greatest future opportunity for the state's economy by forming a bridge between cutting-edge research and education that is leveraged into economic benefits. Each ATI center was envisioned as an expertise cluster consisting of three to five faculty members and/or technical support staff organized around a particular theme and nationally recognized research leaders.

ATI created three centers at Washington State University in: (1) reproductive biology (\$1.0 million); (2) semiconductor manufacturing (\$1.0 million); and (3) precision agriculture (\$0.5 million); and four centers at the University of Washington in: (1) infectious diseases (\$1.0 million); (2) computer graphics, animation and digital media (\$1.0 million); (3) construction (\$0.5 million); and (4) forestry (\$0.5 million). The forestry center, located in the UW College of Forest Resources, was named the Precision Forestry Cooperative (PFC) to reflect the nature of the public, private and university collaboration envisioned by the legislature.

Precision forestry can be broadly defined as "integration of information and technology in a management system with the goal of managing spatial and temporal variability of forested landscapes for optimum economic, environmental and social benefits."

Precision forestry uses high technology sensing and analytical tools to support site-specific economic, environmental and sustainable decision making for the forestry sector. The mission of the PFC is to develop advanced technologies to improve the quality and reliability of information needed for planning, implementation and monitoring of natural resource management, to ensure sustainable forest management and increase the competitiveness of the forest sector.

PFC research focuses on technologies applicable to measuring attributes of forests and forested landscapes, monitoring how they change over time, and associated management and operational forest activities. Examples include:

- **Remote sensing.** LiDAR (aerial and terrestrial), IFSAR and satellite imagery for developing high resolution maps, detailed forest inventory and structure data (volume, biomass, biofuel, habitat), and assessments of forest health, fire risk and climate change.

- **High accuracy under-canopy GPS.** Geo-referencing field plots and ground features for linkage to remote sensing; high-precision tracking and monitoring of people, equipment and possibly wildlife. Collaboration with advanced GPS vendors to test forest applications.

- **Non-destructive testing of trees and logs for wood properties.** Evaluate tools to measure wood properties in standing trees and logs to predict energy and carbon content, and to predict stiffness and strength of products they contain.

- **Decision support:** Develop operational tools using LiDAR-derived maps and tree data to improve engineering planning and design, and develop

mathematical modeling methods to improve landscape-level understanding of trade-offs among forest outputs for improved tactical, strategic and policy decisions.

PFC funding during the 2007/09 biennium was \$2.4 million, of which the State of Washington ATI program provided \$500,000 for faculty salaries, research assistants and operations. The Corkery Family chair provided \$200,000 to attract and support outstanding graduate students and to fund undergraduate research experiences. External research grants and gifts totaled about \$1.7 million. During the biennium, seven Masters and three PhD students completed their degrees, and four Masters and eight PhD students are in residence.

The PFC has an executive board composed of representatives from a diverse mix of stakeholders that meets twice per year. It provides guidance on strategic planning and review of research programs. PFC faculty are David Briggs, PFC director, leading the non-destructive testing project; L. Monika Moskal, remote sensing and spatial statistics; Sandor Toth, natural resource informatics; Peter Schiess, forest engineering; and Jim Fridley, forest engineering. Three U.S. Forest Service PNW Research Station researchers are affiliated with the PFC: Hans-Erik Andersen, Robert McGaughey and Steve Reutebuch. The PFC closely collaborates with the Resource Management and Productivity Program Silviculture and Forest Models Team of the USFS Pacific Northwest Research Station and the Washington Department of Natural Resources. It also has close ties with the Stand Management Cooperative, which has long-term research trials throughout the region that provide an ideal field laboratory for PFC researchers to test technologies. ♦

David Briggs is Corkery Family chair and director of both the Precision Forestry Cooperative and Stand Management Cooperative at the University of Washington in Seattle. He can be reached at 206-543-1581 or dbriggs@u.washington.edu.



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The Inland Empire Tree Improvement Cooperative: Four Decades of Tree Improvement

BY MARC L. RUST

The Inland Empire Tree Improvement Cooperative (IETIC) was established in 1968 by a group of foresters who recognized the need for genetically improved seed sources to ensure healthy and productive forests for the future. IETIC uses classical plant breeding techniques including selection, testing and breeding to identify superior genotypes for inclusion in production seed orchards.

Initial efforts were focused on ponderosa pine (*Pinus ponderosa* var. *ponderosa*) tree improvement and our first progeny tests were established in 1974. During that same year, members voted to expand IETIC to include additional species (western white pine, western larch, Douglas-fir and lodgepole pine).

During the early years, members selected phenotypically superior "plus-trees," collected seed for progeny testing, and established and measured progeny tests. Our first generation progeny tests have provided valuable data and genetic material for establishing seed and breeding orchards.

Recent efforts have focused on addressing seed orchard management issues and providing opportunities for IETIC members to join forces to produce genetically improved seed. IETIC has established or funded important studies to develop flower induction techniques and examine the effectiveness of trunk-injected systemic insecticides for controlling seed and cone insects. In addition, IETIC has collaborated with the Forest Genetics Council of British Columbia to publish an extensive treatise on the reproductive biology of western larch. This publication, written for IETIC by John N. Owens, is designed to assist foresters and seed orchard managers interested in producing or enhancing larch seed crops. It is available at www.cnr.uidaho.edu/ietic/.

There is one thing that is certain about the future—it is uncertain. Concerns about the impact of climate change on native forests and the chal-



PHOTO COURTESY OF IETIC

Russ Hudson plants one of the first progeny tests established by IETIC in 1974.

lenges of competing in an increasingly large global market place will likely intensify the importance of our tree improvement efforts. In response, IETIC members have agreed that it is prudent to be sure the genetic materials we have developed over the past 40 years are secured for future use. To do

this, we are grafting the best genotypes from our testing program and planting them in a gene archive located on the University of Idaho School Forest. The IETIC Steering Committee recently voted to name this site the Russell H. Hudson Gene Archive to honor the man who was most instrumental in forming IETIC. Russ is now retired, but he was a key player in IETIC for a long time and his leadership and commitment to the program have left a lasting impression.

A lot has changed since IETIC was founded more than four decades ago. However, our members continue to realize the importance of improved seed sources to ensure healthy and productive forests for the future, and are committed to cooperative efforts to maintain a broad genetic base and achieve genetic gains through shared responsibilities and shared costs. ♦

Marc L. Rust is director of the Inland Empire Tree Improvement Cooperative, College of Natural Resources, University of Idaho, in Moscow. He can be reached at 208-885-7109 or mrust@uidaho.edu.



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VMRC: Investigating the Best Methods for Plantation Establishment Since 1993

BY ERIC DINGER

The Vegetation Management Research Cooperative (VMRC) has a dedicated group of professionals who work together to explore how plant competition for limited site resources impacts forest stand development. Our mission and primary goals were established to create sound silvicultural systems enabling the successful establishment of forest plantations that exceed legal reforestation requirements. This singular focus has governed the research program for the last 17 years balancing the practical needs of operational forest managers with the academic rigors of defensible science. Throughout this time, research results have helped to answer some of the important questions regarding vegetation management in the Pacific Northwest and produced 19 peer-reviewed publications and five graduate theses.

Ideas for research projects are driven by cooperative members and anyone in the VMRC is welcome to submit a one-page research proposal. VMRC staff at Oregon State University work with this member to develop the idea into a clear plan, which includes hypothesis testing, methods, statistics and budgetary costs. Once complete, this draft work plan is sent to all cooperative members for majority approval. The approved projects are then set up on cooperater lands. Currently, the VMRC is managing five research projects with 12 sites among them occurring primarily in Oregon and Washington. Generally, studies are managed for at least 15 years in an

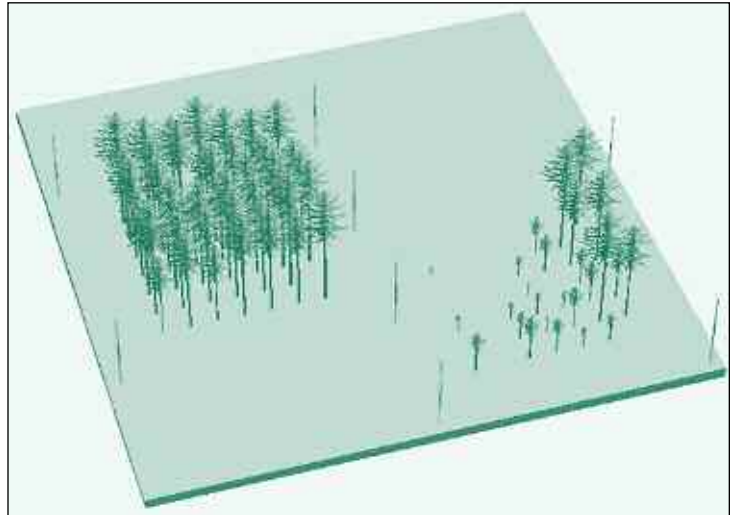


attempt to understand the longer-term impacts of vegetation management on stand development.

Herb I is the oldest VMRC study and its primary objective was to understand the area of tree-centered vegetation control necessary to maximize seedling growth. After only two years of herbicide treatment, increasing the area of control from one to five feet around each seedling has improved year-15 mean tree volume from 127 to 182 cubic decimeters. This represents a 143 percent increase in volume that still exists 13 years after herbicide treatments have ceased. The Stand Visualization System has helped to illustrate the impact these treatments can have on forest development (see Figure 1, an image of two plots that occur on the Summit, Ore., site). After the seedlings were planted, the plot on the left received two years of five foot tree-centered vegetation control whereas the adjacent plot on the right had none. The differences are impressive.

The Critical Period Threshold study was designed to ascertain the number of consecutive years of vegetation control necessary to maximize Douglas-fir growth (up to five). This study was re-measured during the winter of 2008/09, providing the year-8 results.

Figure 1: Two plots on the Herb I Summit site after 15 years of development. The plot on the left had two years of five foot tree-centered vegetation control and has a total volume of 8.2 m³. Seedlings in the plot on the right received no vegetation control and have a total volume of 0.8 cubic meters (m³).



On the Sweet Home site, one year of vegetation control has produced year-8 volumes of 15.5 cubic decimeters (dm³), but controlling vegetation for three or more years increased tree volume to over 40 dm³ (see Figure 2). Analysis of this data suggests that three years of vegetation control were required to maximize Douglas-fir seedling growth on this site. While additional years of vegetation control did increase growth beyond 40 dm³, the amount of improvement was not enough to be statistically significant.

In an operational context, vegetation is controlled through the use of herbicides in fall site preparation and spring release treatments. These regimes are applied to minimize the competition for limited site resources such as soil moisture and improve seedling growth. A study plan was developed to evaluate how common herbaceous vegetation control regimes, spanning a range of management intensities, impact the growing conditions seedlings experience. It was discovered that when competing vegetation was reduced below 20 percent, soil moisture and predawn xylem water potential (a measure of seedling stress) did not decline to levels that inhibited seedling growth at any point

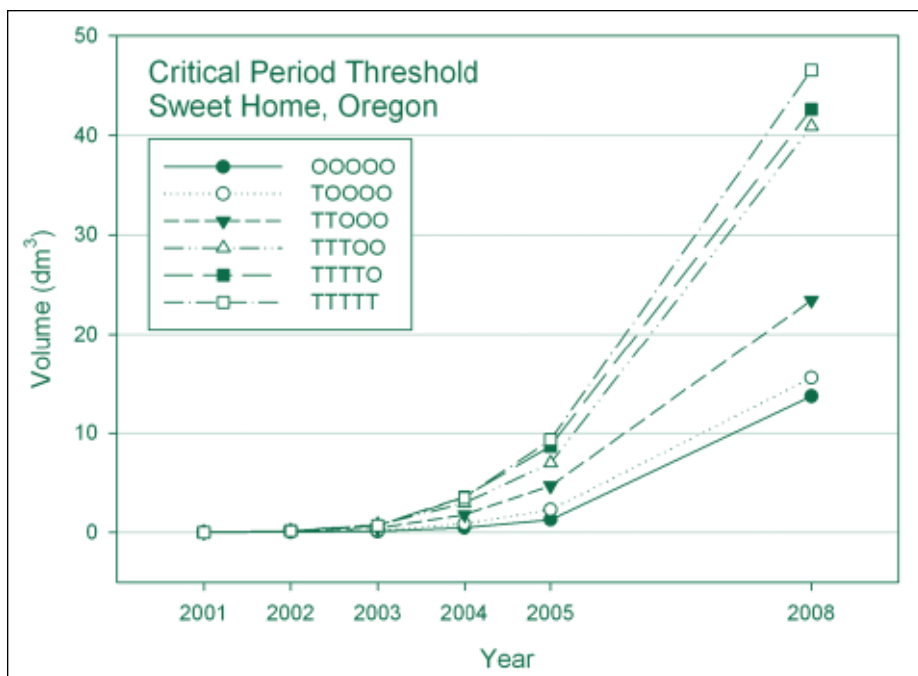
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Figure 2: Mean tree volume by treatment at the Sweet Home Critical Period Threshold site. Treatments were applied over the course of the first five years of establishment. "O" indicates that no vegetation control was done during that season while a "T" represents the application of herbicides during that year.



in the growing season (see Figure 3). Maintaining these low levels of vegetation competition for the first two years of establishment produced year-3 mean seedling volumes of 1,253 cubic centimeters (cm³). When compared to the no-action control, which had a mean seedling volume of 247 cm³, this response represented a 500 percent increase in growth.

Foresters may choose to hold over a

late-harvested unit, delaying the establishment of the next stand one year in order to obtain better vegetation control. The challenge with this management approach is that the next stand is missing one year of growth and may not be able to take advantage of the lower amounts of vegetation that often result from harvesting operations. A side-by-side comparison was set up in 2007 to test this management

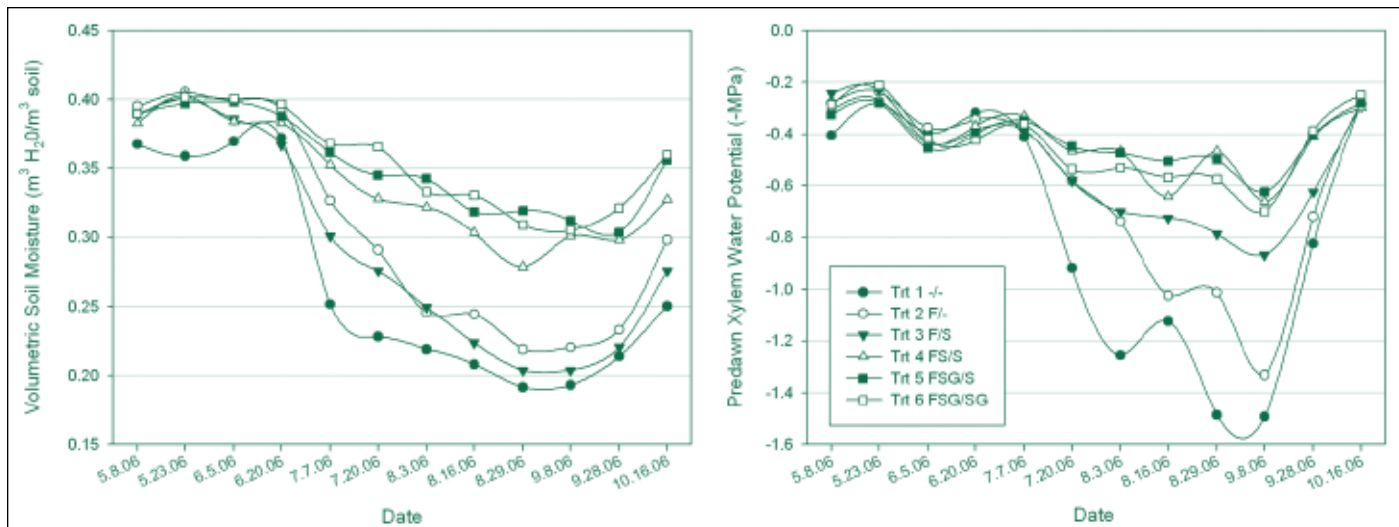
strategy and the growth of seedlings planted over the course of two years.

The newest VMRC study was set up this past winter near Belfair, Wash., and is looking at the combined effect of various levels of vegetation control on different stocktypes of container-grown seedlings. The valid economic comparisons between the cost of different stocktypes and their growth response to levels of vegetation control will be made possible through this study. Is it better to spend money on a larger seedling or on more intense vegetation control? Does it take both?

As these new studies grow and the older studies mature, the VMRC will continue providing research results that help foresters make sound vegetation management decisions. It is hoped that this information will provide some of the necessary tools that enable foresters to successfully establish plantations, which provide the economic foundation for their companies as well as the communities that depend on the forest industry. For more information about the VMRC, visit www.cof.orst.edu/coops/vmrc/home.htm. ♦

Eric Dinger is assistant director of the Vegetation Management Research Cooperative, Department of Forest Engineering, Resources and Management, Oregon State University, Corvallis. He can be reached at 541-737-6086 or eric.dinger@oregonstate.edu.

Figure 3: Soil moisture and seedling predawn xylem water potential results during the initial season of plantation establishment (2006). The no-action control (-/-) had vegetation cover >85% which decreased soil moisture and seedling xylem water potential. Treatments 4, 5 and 6 decreased vegetation cover below 20% retaining higher amounts of soil moisture and high xylem water potential across the growing season. Treatment regimes were applied as a fall site preparation (F) in 2005, spring releases (S) in 2006/07, and follow-up directed glyphosate releases (G) in 2006/07.



IFTNC Focuses on Forest Site Type Nutrition and Productivity

BY MARK COLEMAN

The Intermountain Forest Tree Nutrition Cooperative (IFTNC) is a research cooperative composed of public and private land management organizations. The common interest is in diagnosing forest site nutrient availability by site types to prescribe appropriate treatments to achieve management objectives. IFTNC research concentrates on conservation of nutrients through proper harvesting, site preparation, stand establishment and density control, as well as enhancement through fertilization. Evaluation of multi-nutrient availability is key to optimizing vigorous forest growth under the diverse site conditions found in the intermountain northwest, which ranges from the east side of the Cascades to the west side of the Rocky Mountains. The IFTNC has established over 250 long-term study areas during 30 years of activity in Oregon, Idaho, Washington and Montana.

The following projects highlight the direction and scope of IFTNC research.

Nutrient Effects on Future Forest Productivity

Maintaining site nutrient supply capacity is critical to sustaining forest productivity and health. Site nutrient supply may be degraded by silvicultural and harvest management operations

that extract significant proportions of nutrient stocks. For example, harvest operations that remove whole trees to the landing may have greater impact than bole-only harvests because of significant removal of nutrient-rich tops and limbs to landings. Impacts of whole-tree harvest nutrient extractions are expected to have lower impacts on sites with high nutrient stocks compared with those of low nutrient stocks. However, there is little information available comparing high and low sites. Forest harvest nutrient removals and site nutrient stocks can be determined, but questions remain over the relative impact of these removals' site nutrient supply capacity and sustaining site yield into the future.

The Nutrient Effects on Future Forest Productivity project involves a core experiment of long-term plots established on newly harvested sites comparing bole-only versus whole-tree final harvesting. Study sites are located on soil/rock types that have been shown to have either poor or good nutrient productivity. In conjunction with harvest treatment comparisons, various post-harvest silvicultural treatment options are established within the newly harvested areas. Each of these silvicultural treatments can affect a site's nutrient status and therefore its productivity. The long-term study is designed to monitor nutrient

pools and growth productivity on a series of permanent plots classified by level of slash retention across the various harvest and silvicultural treatment units and options. The objective is to develop guidelines for various site types that land managers can use to assess probable impact of management operations on nutrient retention and future growth.

Geospatial Site Type Classification Systems for Forest Nutrition Management

Soil nutrient management through conservation or enhancement with fertilizers has proven to be one of the most useful methods to maintain or significantly increase forest stand productivity and reduce mortality in many conifer species across a range of soil parent material types in the Inland Northwest. The IFTNC has developed balanced nutrient (multi-nutrient) management prescriptions based upon current geologic parent material mapping and multi-nutrient study trials on IFTNC cooperator's lands within the Inland Northwest. These prescriptions provide general guidelines based on our understanding of mineral nutrition of forest growth across multiple soil parent materials.

These prescriptions can be influenced by the presence of combinations of surficial soil parent material deposits that characteristically differ from the underlying parent material. Common surficial deposits in the Inland Northwest include glacial, alluvial and lacustrine deposits, volcanic



Slash nutrient loading of bole-only compared to whole-tree harvesting.

PHOTO COURTESY OF TERRY SHAW

ash and loess. Site type classifications that integrate surficial soil properties, geology, soil moisture regimes and fertilizer response can facilitate the development of site-specific guidelines for nutrient capital conservation and fertilizer prescription.

The goal of the geospatial site type classification project is to integrate various site characteristics to provide best management productivity practices to forest landowners. The objectives are to: (a) integrate existing digital geospatial data layers available through collaborating agencies to develop site type characteristics; (b) define management regimes based on stand productivity and response to amendments from past field research; and (c) prepare management tools based on available data and refine management recommendations as additional data becomes available.

Sustainable Forest Bioenergy

The IFTNC is part of a multi-disciplinary, inter-organizational group of collaborators that include the Rocky Mountain Research Station, Umpqua National Forest, Renewable Oil International® LLC and the University of Montana studying the utilization of forest biomass to produce an energy product. The biomass to biofuels project is a developing forest management option to help reduce fire hazard forest fuel loads on public lands while producing a sustainable source of bioenergy.

Portable pyrolysis units convert biomass into bio-oil in the woods. A byproduct of pyrolysis is bio-char, which is equivalent to the charcoal found in fire ecosystems. Bio-char retains most of the carbon and nutrients contained in biomass and can be used as a soil amendment, which can be left at the field site to maintain soil fertility and sequester carbon in the soil. Replacing fossil fuel with bio-oil and storing carbon in soil with bio-char draws down atmospheric carbon more than other renewable energy schemes. The affects of forest biomass removal and onsite amendment with bio-char are keystone objectives of this collaborative research effort.

Site Type Initiative and Nutrition

Much of silviculture involves optimizing growing space of trees in forest



PHOTO COURTESY OF TERRY SHAW

Bio-char research plot treatment application on the Umpqua National Forest.

stands. Silvicultural treatments or management practices such as planting density and mid-rotation thinnings affect site nutrient availability and therefore forest growth and productivity. IFTNC site type initiative research is focused on defining nutrient availability of various site types and developing site-type management classifications and prescriptions that integrate soil, geology and forest moisture regimes.

Goals for integration of site-type with density management are three fold: 1) develop species-specific density management guidelines for various site types, where site is defined by rock and soil moisture-temperature regimes; 2) target tree nutrient status

at various densities on a given site type determined through foliage sampling and estimates of canopy density; and 3) determine which stocking and nutrition combinations maximize young forest stand productivity. ♦

Mark Coleman is director of the Intermountain Forest Tree Nutrition Cooperative, College of Natural Resources, University of Idaho, in Moscow. He can be reached at 208-885-7604 or mcoleman@uidaho.edu. Terry Shaw (tshaw@uidaho.edu) and Mark Kimsey (mkimsey@uidaho.edu) serve as staff of the cooperative and also contributed to this article.



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Myriad Items Addressed at Council Meeting

BY CHUCK LORENZ

The SAF Council met at Wild Acres in Bethesda, Maryland, on May 30-31. All voting members of Council were present, as well as Bill Rockwell, chair of the Forest Science and Technology Board (FSTB).

Council ratified the following letters sent since the February Council meeting. Each of these letters may be read in full on the SAF's website at eforester.org under the Policy link.

1) Gail Kimball, chief of the Forest Service—forest health project under the American Recovery and Reinvestment Act (Stimulus package);

2) Senators Bingaman and Murkowski, Senate Committee on Energy and Natural Resources—regarding the renewable electricity standard and the definition of forest biomass;

3) Senator Ron Wyden (OR)—regarding proposed Oregon Restoration and Old Growth Protection Act; and

4) Representatives Waxman and Barton, House Energy and Commerce Committee—regarding the Renewable Electricity Standard (RES) and the forest biomass definition.

As of May 14, the National SAF redesigned website has been up and running. It has a new look and new features, and will continue to evolve as

items such as the weekly Policy Report are added.

Executive Vice President (EVP) Michael Goergen reported on the Wild Acres property. In March, Montgomery County placed portions of the property under Historic Preservation, including the main building, carriage house and caretaker's cottage. The designation adds a level of review to any future development of the affected property. In the short-term, SAF will contract for maintenance work on the caretaker's cottage and exterior painting of the main building.

SAF's auditor, Paul West, presented the 2008 audited financial report. Operating revenue for 2008 slightly exceeded expenses. Like most other entities, SAF's investment portfolio was down. Due to the changes implemented by the Finance and Investment Committee several years earlier, our losses were significantly less than under previous investment policy.

The Finance and Investment Committee—Chair Clark Seely, Roger Dziengeleski, Mark Elliott and I—met with one of our financial advisors. The committee will receive proposals for alternate investment strategies in the coming weeks and will review and present recommendations to the Council in September.

EVP Michael Goergen and director of Marketing Christopher Whited gave a status report on membership, SAF database and technology upgrades. With the current economic situation, SAF has expanded its practices of offering alternate payment options for membership renewal. Christopher Whited (whitedc@safnet.org) is the contact. One of the more recent changes for unit leaders is the opportunity to access membership lists from the SAF website. Membership lists will continue to be updated monthly and may be accessed any time. Conference call capability has been upgraded, allowing for calls involving up to 120 participants. Local units are encouraged to utilize the system; coordinate through Brittany Brumby (brittany@safnet.org) or Louise Murgia (murgial@safnet.org) at National SAF.

The slate of Fellow nominees was reviewed and new Fellows were elected. The new Fellows will be recognized at the Fellows Breakfast at the upcoming National Convention. Discussion continues regarding the Fellow nomination criteria and election process. President Bernie Hubbard will chair a committee to discuss improvements in the process. Opinions and ideas will be solicited from the District Fellows Committees.

Other national awards were discussed. FSTB presented nominees for the Barrington Moore Memorial Award, Award in Forest Science, and Technology Transfer Award. Council approved the nominees. These awards will be presented during the National Convention in Orlando, FL.

Director of Policy Erica Rhoad presented the Committee on Forest Policy (CFP) report. Council reviewed and approved a revised position statement on Professionals in Public Natural Resources Management Agencies. CFP is developing a position statement of the unintended consequences of forestry laws using high grading as an example. CFP member Doug MacLeery presented a proposal for a task force on Forest Sector Competitiveness. Council requested CFP and volunteers from Council bring a more focused propos-



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al including a proposed Task Force charter back for Council review in September.

FSTB Chair Bill Rockwell gave the committee report. Included in the committee's activities are: incorporating Unit Science and Technology into FSTB activities; planning National Convention activities for 2009 & 2010—graduate research symposium, Working Group officers meeting including Unit Science and Technology members; and work with CFP on five position papers. FSTB is also working on emerging issues with primary focus in three areas: (1) understanding global connections; (2) repercussions of biomass for energy; and (3) the power of statistics. Council approved a proposal by FSTB to develop a Task Force charter on biomass energy implications. The charter will be reviewed in September.

Council approved amendment to the Charter of the Certification Review Board (CRB) placing long-term oversight of Continuing Forestry Education under CRB; Council also approved an amendment to the Charter of the Educational

Policy Review Committee (EPRC), placing monitoring of professional and technical education under EPRC. Both of these are consistent with prior Council actions with regards to moving from Recognition to Accreditation for technical programs and making the CFE review policy permanent.

At the request of the Committee on Accreditation and the EPRC, Council approved the formation of a Task Force to evaluate a proposal for accreditation of programs in terrestrial ecology.

EVP Michael Goergen presented the plans for incorporating leadership training into the 2009 National Convention. A one-day Leadership Academy will be held on Tuesday, September 29, with the opportunity to schedule individual sessions with seminar leader Jeff Burcuvitz during the convention. The Leadership Development Committee, co-chaired by Vice President Michael Lester and past-Council member Kirk David, will focus on website development, online training and local leadership training.

The Council Committee on

Strategic Planning reviewed the progress on coordinating the strategic plan and the SAF budget. For 2010, the strategic plan will focus efforts in five areas: Communications, Emerging Issues, Property Management, Leadership and Membership. District 11 Council Member Jan Davis presented work the Louisiana SAF had done incorporating the revised strategic plan into their activities.

Finally, Council approved meeting dates for 2010: February 6-7 in Bethesda, MD; June 12-13 in Coeur d'Alene, ID; October 27 in Albuquerque, NM; and December 4-5 in Bethesda, MD.

As always, District 2 Council member Clark Seely and I are available to answer questions and discuss Council activities. ♦

*District 1 Council Representative
Chuck Lorenz can be reached at 360-951-0117 or c_4str@yahoo.com.*

*District 2 Council Representative Clark
Seely can be reached at 503-945-7203
or cseely@odf.state.or.us.*

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We Remember

Peter Higgins 1954-2009

Matthew Peter Higgins, 55, died April 26 after a courageous four-year battle with cancer. He was born in Baker City, Ore., on April 9, 1954, and attended St. Frances Academy and Baker High School, Eastern Oregon University and then Oregon State University, graduating in 1978 with a degree in forest management.

Upon graduation he worked for the U.S. Forest Service until January 1979 when he began his 30-year career with Georgia-Pacific, which eventually merged into Plum



Creek Timber. He started his career at Georgia-Pacific as a geneticist at the Cottage Grove nursery where he helped establish the tree improvement and seed orchard program. His most recent position was silviculture manager for Oregon Operations at Toledo. He and his family lived in Cottage Grove and Creswell before moving to Corvallis 13 years ago. He was an active member of St. Mary's Catholic Church in Corvallis.

His love of the land was evident in the over 30 years that he worked in the wood products industry. Mr. Higgins was involved in numerous committees including the Oregon Forest Industrial Council, past president of West Oregon Forest Protection Association, past chair of Concerned Landowners of Lincoln County, and the Nursery Tech, Genetics, Swiss Needle Cast, Stand Management and Vegetation Management cooperatives. He was a long-standing member of the Society of American Foresters. He developed and ran the partnership between SOLV and

Plum Creek Timber for garbage clean up on the Siletz River. He helped the Baber Mountain ATV Club develop a network of trails on private timberlands near Toledo.

Matt was excited about life and lived every day to the fullest. He was compassionate and touched the lives of everyone with his kind and gentle nature. He had a unique ability to connect with people and had a positive impact on those around him.

In the last few years, he faced many trials due to his illness. He met those trials with grace and fortitude, and relied on the strength of his faith as well as the love of his family and friends. He was thankful for the many wonderful people he met on his journey. Matt loved OSU athletics, the outdoors, and spending time with his family and friends. He was planning to walk the American Cancer Relay for Life on May 15 with his team "Marching for Matt."

He is survived by his wife of almost 27 years, Nancy; sons Michael and Kyle, his mother, Esther Higgins, sisters Mary, Patty, Catherine and Frances, and brothers John, Tim and Tom.

One of his fondest quotes was: "Life is not always what we expected it to be, but as long as we are here we should smile and be grateful."

Donations can be made in memory of Matt to the OSU Foundation Matt Higgins Fellowship Fund, 850 S.W. 35th St. Corvallis, OR 97333.

August "Stork" Storkman

Stork Storkman, an SAF Golden Member from the South Puget Sound Chapter, passed away May 15, 2009, in Tacoma, Wash.

He was born in Glenn's Ferry, Idaho, and was a veteran of World War II. He graduated from the University of Washington in forestry in 1950.

After graduation, Stork worked for St. Paul and Tacoma Lumber Company, which became part of St. Regis. He was encouraged to join SAF by his uncle, Norm "Jake" Jacobson. And when his daughter and son-in-law, D and Al Becker, obtained their forestry degrees from "the U," they followed him into SAF.

He was especially proud of identifying the world's largest Pacific yew, *Taxis brevifolia*, and arranging to have it officially measured and recorded.

In 1982, Stork and his wife Bev retired to Gig Harbor, Wash. They celebrated their 65th wedding anniversary in February. In addition to Bev, Stork is survived by their three children—D Becker, Jaime Storkman and Marti Anderson, and four grandchildren. ♦

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Calendar of Events

Western Forest Genetics Assoc. Annual Meeting, Aug. 10-13, Asilomar, CA. Contact: Tongli Wang, 604-822-1845, tlwang@interchange.ubc.ca.

Northwest Forest Soils Council Summer meeting, Aug. 26-28, Forks/Sappho, WA. Contact: Scott Holub, scott.holub@weyerhaeuser.com.

Environmental Initiatives for 2009 and Beyond: A Look at Recent and Emerging Environmental Regulations and their Impact, Sept. 11, Seattle, WA. Contact: The Seminar Group, 800-574-4852, www.theseminargroup.net.

Who Will Own the Forest? 5, Sept. 14-16, Portland, OR. Contact: Angie DiSalvo, 503-488-2137, adisalvo@worldforestry.org.

Lumber Quality and Control, Sept. 21-22, Corvallis, OR. Contact: OSU Conference Service, 541-737-9300, conferences@oregonstate.edu.

Best Management Practices for Soil Productivity in the Douglas-fir Region, Sept. 22, Shelton, WA. Contact: WFCA.

ArcPad Seminar, Sept. 23-24, Beaverton, OR. Contact: Atterbury.

Growth and Yield Workshop, Sept. 23-25, Corvallis, OR. Contact: FBRI.

SAF National Convention, Sept. 30-Oct. 4, Orlando, FL. Contact: Corey Hughley, 866-897-8720 x108, hughleyc@safnet.org.

NAAEE Annual Conference, Oct. 7-10, Portland, OR. Contact: Ashley Dayer, 541-324-0281, www.eeao.org/naaee2009.aspx.

Professional Timber Cruising Seminar, Oct. 21-22, Beaverton, OR. Contact: Atterbury.

Planning Workshop, Nov. 4-6, Corvallis, OR. Contact: FBRI.

Water and Land Use in the PNW: Integrating Communities and Watersheds, Nov. 4-6, Stevenson, WA. Contact: www.swwrc.wsu.edu, water-center@wsu.edu.

Partners in Community Forestry National Conference, Nov. 9-11, Portland, OR. Contact: Arbor Day Foundation, 888-448-7337, conferences@arborday.org.

Practical Applications of Wildlife Management on Working Forests, Dec. 2, Eugene, OR, co-sponsored by Emerald SAF Chapter and OFRI. Contact: Fran Cafferata Coe, 503-224-3445, fcoe@masonbruce.com.

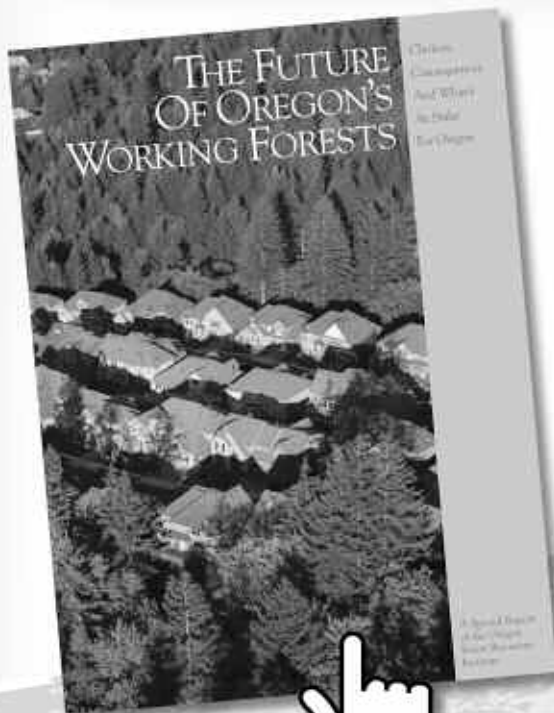
Contact Information

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

FBRI: Forest Biometrics Research Institute, PO Box 1688, Corvallis, OR 97339, 541-754-1200, www.forestbiometrics.com.

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, **Western Forester**, 4033 SW Canyon Rd., Portland, OR 97221; fax 503-226-2515; rasor@safnwo.org.



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2009 OSAF Conference a Big Success

BY MEAGAN CONRY

Eric Geyer, chair for the 2009 OSAF Annual conference and meeting, summed it up well when he said, "The Umpqua Chapter stepped up during difficult economic times to offer a top-tier program. The ultimate success of the conference was tied directly to the many volunteers who turned in a tremendous effort. Getting the right people is the key, and we are fortunate to have so many of the right people in Douglas County. From my perspective, the backbone of SAF is professionalism, and our volunteers, donors and attendees displayed the character and strength of SAF in Oregon."

The 2009 Conference, a three-day event in Canyonville, hosted nearly 200 attendees and presenters from around the world. Conference-goers



PHOTO COURTESY OF GARY SPRINGER

Several OSAF members received state awards and special recognition at the annual conference in Canyonville. Shown left to right are Marc Vomocil, Starker Forests, 2008 OSAF Chair recognition; Casey Davis, Oregon State University student, SAF OSU Student Member of the Year Award; Jake Gibbs, Lone Rock Timber, Forester of the Year Award; Dick Sherman, an educator from the McMinnville area and with Associated Oregon Forestry Clubs (high schools), Forestry Appreciation Award; Eric Geyer, Roseburg Resources, 2009 Annual Conference Chair recognition; and David Wells, Tillamook/Clatsop chapter representative, Chapter of the Year Award. Not pictured is Ed Shephard, BLM, who received the Tough Tree Award.



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Steyton
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enjoyed engaging sessions dedicated to global forestry issues and PNW silviculture. Conference presentations can be downloaded from www.forestry.org/or/annual/index.php.



PHOTO COURTESY OF MIKE CLOUGHESY

OSAF Chair Mark Buckbee (left) and Past Chair Marc Vomocil enjoy some time at the annual meeting.



PHOTO COURTESY OF MIKE CLOUGHESY

OSAF Conference Chair Eric Geyer welcomes OSAF meeting attendees.

As always, the Foresters' Fund silent auction was a great source of entertainment and revenue. Thanks to the generosity of many donors, the Foresters' Fund raised \$3,453 and an additional \$598 was raised for the OSAF Foundation.

The Conference culminated with the 2009 dinner and awards banquet. ♦

Meagan Conry was the publicity chair of the OSAF Conference. She can be reached at 541-464-3242 or meagan_conry@blm.gov.



PHOTO COURTESY OF MIKE CLOUGHESY

Exhibitor Bob McNitt demos his forest seedling network.

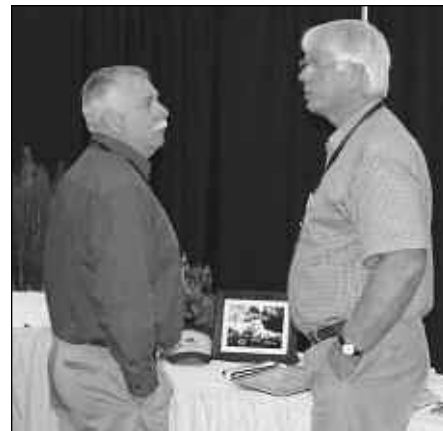


PHOTO COURTESY OF MIKE CLOUGHESY

Rick Barnes and Dave Schmidt catch up during a conference break.

Golden Members Honored



Portland Chapter Chair Roger Lord presents Bob Tokarczyk with his 50-year SAF award.



Admiralty Inlet Chapter Chair Mike Cronin presents Jerry Prout (right) his 50-year certificate.



Emerald Chapter member George Francis receives his 50-year award from Dan Schults.



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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.

Biomass Definition. The Inland Empire SAF has sent letters to Representatives Jay Inslee and Greg Walden regarding the definition of biomass in the American Clean Energy Security Act of 2009. The letters were signed jointly by IESAF Chair Britton Petit and Policy Committee Chair Jay O'Laughlin.

It was noted that the U.S. House of Representatives Committee on Energy and Commerce has improved the definition compared to the original draft bill, especially with regard to private lands, but there still are concerns regarding the exclusion of federal lands. If mature stands on federal lands are excluded from meeting the Renewable Energy Standard, U.S. Forest Service managers will be denied most of their opportunities to reduce risks from insect and disease infestations and wildfires burning in uncharacteristically heavy fuels, the letter stated. Byproducts from hazardous fuel treatments on currently accessible public lands in the Inland Empire region could provide a sustainable supply exceeding 500,000 dry tons of biomass per year. While not representing the Inland Empire region directly, Reps. Inslee (WA) and Walden (OR) serve on the committee considering the legislation. Contact: Richard Reid, IESAF Communications chair, 509-758-2411; rreid66519@aol.com.

OSAF Offers Comments on Federal and State Issues. Over the past few months the OSAF Policy and Legislation Committee helped develop and submit comments to policy and decision makers on several major issues. The committee worked with SAF Policy Director Erica Rhoad to review and respond to Senator Ron Wyden's legislative proposal on federal forest management. Among the concerns raised was the highly prescriptive language of the proposed bill, which included specific diameter and age limits for cutting individual trees. The joint letter from OSAF and national SAF also called attention to the report released recently by the Federal Forestry Advisory Committee (FFAC) of the Board of Forestry, which includes several notable policy recommendations. The letter is available at www.eforester.org/fp/positionstatements.cfm#FFM and the FFAC report is at <http://egov.oregon.gov/ODF/BOARD/FFAC.shtml>.

OSAF offered testimony to state legislative committees on the Oregon Department of Forestry budget and on HB 2761, a bill concerning site productivity assessments for land use planning. OSAF normally does not advocate for or against specific bills and instead provides a professional perspective on issues raised by legislative proposals involving forests. OSAF also submitted comments in response to the Board of Forestry's "Issue Scan," which raised concerns about state budgets and related needs for enhanced priority and decision making by the board. The OSAF comments and testimony are available at www.forestry.org. Contact: Paul Adams, OSAF Policy chair, 541-737-2946; paul.adams@oregonstate.edu.

Thinning on Public Lands; Congressional Delegation Tour. OSAF has been working on a position

statement on thinning, prompted in part by recent legislative and other proposals that would limit timber harvesting on public lands solely to thinning. Strict age- or diameter-based harvest restrictions also have been a key feature of some current or proposed policies, and raise concerns that silvicultural prescriptions under such restrictions may not achieve desired management objectives. The position statement could be approved by the OSAF Executive Committee by the time you read this, given the importance of public forest management in Oregon. Also related to the latter, OSAF has planned and invited its Congressional delegation to attend a forestry field trip during the August recess when representatives usually return to their home states. Among the key tour stops and discussions will be fire and forest health issues on federal lands, including the management challenges presented by rigid harvest restrictions. Each of OSAF's position statement, as well as a PDF of the Forestry Issues booklet containing the entire set, are available at www.forestry.org (note: draft positions may be posted in the "members only" section). Contact: Paul Adams, OSAF Policy chair, 541-737-2946; paul.adams@oregonstate.edu.

Washington Policy Update. The Washington State Legislature adjourned on April 26 after passing the 2009-2011 biennial budget of approximately \$72 billion. This budget included \$6 billion in state spending cuts and \$3 billion in federal stimulus funding due to greatly reduced tax revenues from the sputtering economy. Natural resource agencies, such as DNR, Ecology, Fish and Wildlife, and Parks, will receive 20-30 percent less state general funding. This budget will result in staff reductions, ranging from DNR forest practices technical assistance and forest health implementation to Fish and Wildlife law enforcement and hunter education programs. State Parks are counting on voluntary motor vehicle registration donations to keep them open.

Also during this legislative session, the following bills of interest to natural resources were passed and signed by Governor Chris Gregoire:

- SHB 1038 provides improvements to the permitting process involving

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- SHB 1484 allows the DNR to acquire upland forest land conservation easements involving T&E species habitat.

- HB 2165 allows the DNR to establish forest biomass energy projects—one on the eastside and one on the westside.

- SSB 5368 requires all counties to value property annually for property tax by January 2014 and physical inspection at least once every six years.

- SB 5562 gives private forest landowners the right to practice active forestry.

- ESB 6166 allows the DNR to increase contract logging on trust lands from 10-20 percent of its planned annual volume.

- ESSB 6170 provides environmental tax incentives for hog fuel, forest-derived biomass and log trucking businesses.

For more specifics on these and other state legislative actions, visit www.leg.wa.gov.

WSSAF Activities. The WSSAF Policy Committee, chaired by John Ehrenreich, is now reviewing expired, drafted and potentially new WSSAF Position Statements involving Forest Health and Active Forest Management, State Trust Lands Management, Forester Registration and Licensing, Wildland Urban Interface, Biomass, and pending National Forest Plans. The Policy Committee hopes to craft two or three revised or new position statements by August 1 for WSSAF Executive Committee review. WSSAF members are encouraged to go to www.forestry.org to check out existing position statements and provide input to John Walkowiak, chair-elect, jewalkowiak@harbornet.com. ♦

Bill Horn Named Washington Forester of the Year

Bill Horn, Jr. has been selected as the 2009 Forester of the Year. The award considers SAF activities, advising and attitude.



In the past year, Bill assisted with the design and implementation of the new "Biomass in Washington" display for the Washington State SAF. He served on the Biomass Poster Committee that secured a \$5,000 Foresters' Fund grant to offset display costs. He is a regular volunteer at the Western Washington Fair booth that educates the public about the SAF and contemporary forestry issues. He also serves as the WSSAF Member at Large.

Bill provided invaluable experience and support in a professional and good-natured approach at Executive Committee and South Puget Sound Chapter meetings. He suggested topics for chapter meetings, provided comments and insight at meetings, and was always ready to share his experience from his long and distinguished service to SAF and career in forestry.

In a continuing capacity to SAF over the years, Bill's attendance at chapter/state meetings and conferences is enviable and remarkable. Notably, he is ready to help in any way necessary without fuss or drawing attention to himself. Bill has been a proponent of the Certified Forester program and professionalism of SAF. He served on the national SAF Committee on Registration and Licensing, and the Washington State SAF Licensing Committee. He continues to advocate

and mentor professionally.

Congratulations to Bill for being honored as Forester of the Year. ♦



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