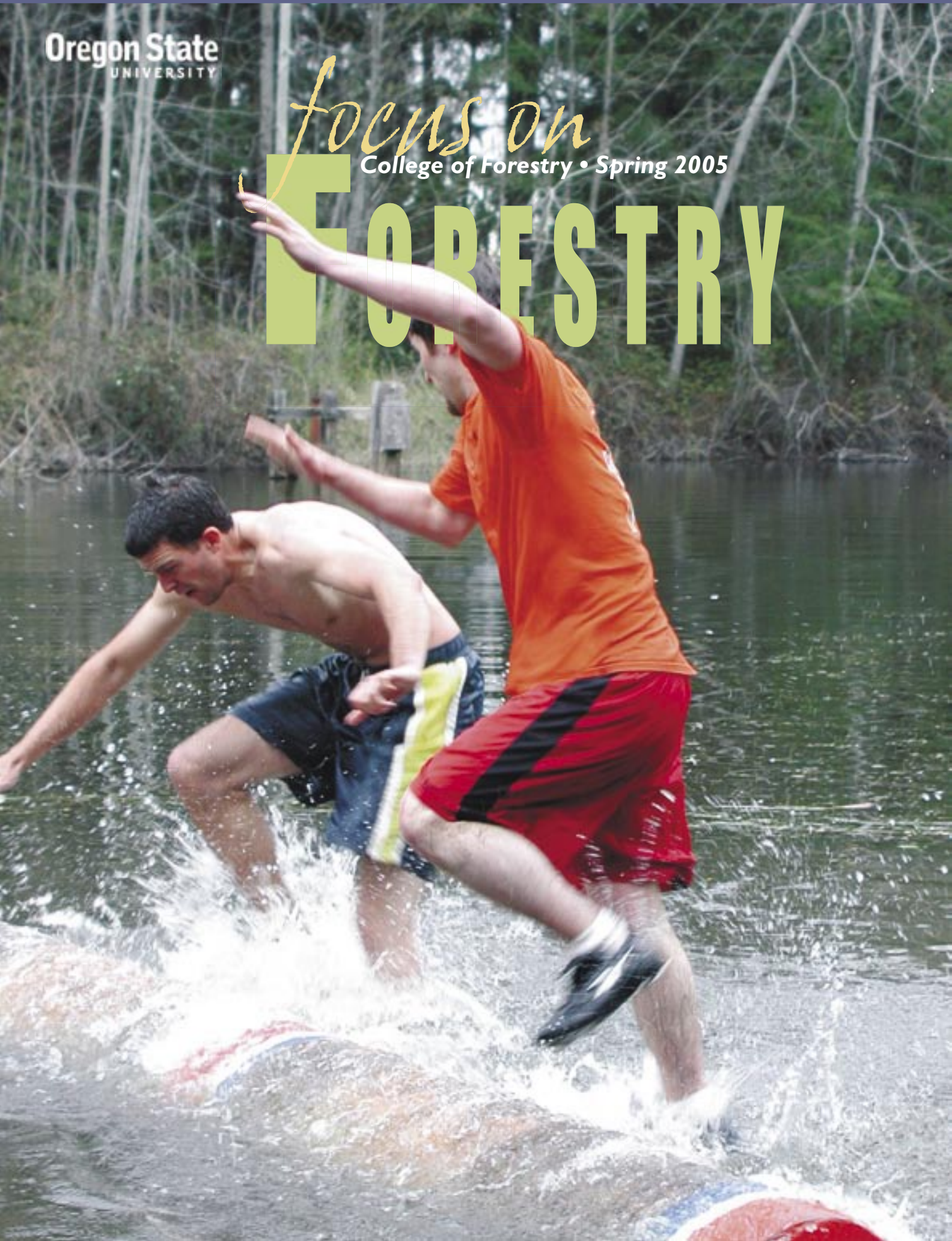


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See story, page 26.

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**Dean's Column**



Throughout the college, faculty members are collaborating with other scientists around the nation and the world to address some of our most important forest

resource challenges, and many are taking leadership roles. And our students are learning how to tackle some of the toughest forest resource challenges of the day. We highlight some of these student projects and faculty members in this issue.

For example, **Jim Wilson**, as vice president of the National Consortium for Research on Renewable Industrial Materials, plays a major role in creating a system that makes information about the environmental performance of all wood-based products available to the public for the first time.

**Maureen Puettmann** has been instrumental in data collection and analysis for this project. **Jeff McDonnell** holds two leadership positions with the International Association of Hydrological Scientists and is actively engaged in developing new models that will help us to better understand watershed behavior. **Paul Doescher** is collaborating with OSU faculty members in other disciplines and scientists from other institutions to discover ways to restore native species to the Intermountain West. These are just a few examples of OSU's movement toward greater collaboration and integration among experts, reflecting our desire to see forestry issues from a holistic perspective.

Other college faculty members provide valuable, in-depth insight into individual forestry issues.

**Darrell Ross** is making progress in using pheromones to manage bark beetle populations, and **Joe Karchesy** continues his important work in discovering new natural products from forest resources. **Glen Murphy** is looking at new ways to capture more of the value from our forest stands through innovative approaches to log inventory and merchandising. **Klaus Puettmann** focuses his efforts on projects with the goal of providing information to assist landowners in making wise land management decisions.

Also in this issue we look at what the College does to "put the polish" on our graduating seniors to prepare them for careers in forest resources, and we report on the new plan for our college forests. You'll also learn about the Oregon Forestry Education Program, which has been bringing forestry issues to Oregonians of all ages for over 25 years.

Wishing you a delightful spring season,

—Hal Salwasser

# New McDonald-Dunn Forest Plan

## Collaborative Efforts Yield Exceptional Results in Planning for College Forests

— Kate Thompson

It's been ten years since the current plan for McDonald-Dunn Forest was written, and in those ten years we've learned a lot about forest practices. Both scientific research and hands-on experience have given us a lot of new information, and the College of Forestry is taking that information, along with a lot of input from faculty, staff, students, forest landowners, alumni, neighbors and public users of the Forest, and putting it to use in a brand-new Forest Plan.

The Plan provides goals, objectives, and desired outcomes for different parts of the forest. Implementation details will be developed by teams of faculty and forest staff. **Rick Fletcher**, OSU Extension Staff Chair and Forester in Benton County, is chair of the Interdisciplinary Planning Team.

Rather than just sitting down at the Extension office and putting a new plan together, Fletcher and many others worked under the direction of the College of Forestry Executive Committee (FEC), and with OSU faculty and staff and the nearby community to get as much input as possible. They changed the way the land was allocated, moving to a management "theme" concept rather than using the three geographical zones of the previous Plan. Each theme has its own set of standards for measuring performance that can be used as a basis for adaptive management. Some acreage of each theme area was also distributed around so a variety of forest management strategies are near each other, making comparison of the themes for teaching purposes easier.

All of theme areas plus more than a dozen other special uses had to fall under the big-picture focus of sustainability and continuous improvement. Fletcher recalls **Norm Johnson** (Professor, Forest Resources) commenting that "this is the most complex forest plan I've ever been involved with!" It's been a long, involved journey, and the finalized McDonald-Dunn Forest Plan is almost ready for prime time.

Before the plan got to this point, though, there was a lot of work to be done. The Forest Executive Committee set the goals for forest management and made the optimization of teaching, research, and outreach values the preeminent goal. Initial faculty and public meetings to identify relevant planning issues and concerns, including a Web survey, then produced "boxes and boxes" of feedback to evaluate. Ongoing forest inventories were conducted, and a new way of allocating the land had to be put together. Instead of zones based on location, it was decided that areas would be divided into themes that reflect present industry and family forest practices; maximizing Douglas-fir growth and quality in certain places; maintaining visually sensitive areas in others; creating structurally complex forest with potential habitats for older-forest wildlife in yet others, and preserving old-growth areas for study. Overall, 20 percent of the forest is dedicated to several special areas, including snag, down wood, and riparian area research; invasive species containment strategies; sensitive species; oak savannah restoration; and others.

There are about 11,250 acres in "Mac Forest," so it was important to get as much as possible out of the relatively small area.

Revenue was important, since College Forests help fund the College of Forestry's computer help desk and services, the student Self-Learning Center and its graphics services, among others. There needed to be teaching opportunities for *all* of OSU, not just the College of Forestry. And since about 175,000 visitors come to the forest to play every year, it was necessary to take recreation into account as well.

Now that everything had been considered, it was time to put together the first draft of the Plan. When the committee sat down to draft the Plan, they laid it out with lots of white space and beautiful pictures of the area in and around the forest, for ease of reading. With **Debbie Johnson's** (GIS/College Forester, College Forests) help, the planners are currently in the process of making sure the language is understandable to the general public, not just foresters.

Once the draft Plan was finished the planners made it available to OSU faculty, College Forest staff, and the public. The planners not only held one public meeting with faculty and two with the general

### A Bridge to the Past and Future



The Beaver County Hot Air Band provided music and local dignitaries—including President of OSU **Ed Ray**, County Commissioners **Linda Modrell**, **Jay Dixon**, and **Annabelle Jaramillo**, and College of Forestry Dean **Hal Salwasser**—all turned out for the dedication of the attractive "new" McDonald-Dunn Forest Bridge on October 15, 2004. The old log-stringer bridge over Soap Creek had been removed nearly a year before because of safety concerns, leaving hikers, bikers, and equestrians without a bridge to Sulphur Springs trail. In the meantime, however, Benton County turned up with a spare: a steel truss bridge spanning Muddy Creek on Llewellyn Road, which was being replaced by something more suitable for heavy truck traffic. The Llewellyn Road bridge was relocated to the OSU College of Forestry's McDonald-Dunn Forest, where it now crosses Soap Creek at the head of Sulphur Springs Trail. The reuse of the bridge not only saves resources and materials that would otherwise have been put to waste, it provides safer access to the 22 miles of forest trails used by more than 175,000 recreational visitors every year.

## FORESTRY GOES BANANAS IN RECORD-BREAKING WIN!



*“Coupon Clippin’ Connie” Patterson (Natural Resources Coordinator) managed to amass a mountain of free food for the food drive, thanks to her extraordinary couponing skills.*

Once again, the College of Forestry has won the coveted Top Banana Award (for the most pounds of food donated) as well as the Pot of Gold Award (most cash contributed) from Linn Benton Food Share in the annual food drive. Together, we surpassed the goal set last year for contributions. We raised \$10,205.27 in cash and were credited with a whopping 54,999 pounds of food donated, topping last year’s record-setting effort of 46,887 pounds! Fund-raising events included the ever-popular soup lunches, silent auction, book sale, and a new, instant sensation, “The Brownie Judging Competition.” Thank you, everyone, for your participation and your generosity!

public, they posted the plan on the College Forests web site (with GIS maps and other materials) and emailed alumni and family forest owners to get their feedback as well. Altogether, there were about 160 responses, and after some concerns were voiced about the Upper Soap Creek drainage area, additional changes were made in the Plan.

The new McDonald-Dunn Forest Plan is in its final edit stages right now, but if you were to glance through it, one of the first things you’d notice is that a lot of the appendices are blank. This is on purpose! The planners want people to submit project proposals from which real-life applications can develop; the appendices will develop as the “theme teams,” as Fletcher calls them, to put their plans into action. This is yet another way that people working on the forest can take ownership of what they’re working on, rather than just telling them “do this.”

Right now, Fletcher is putting together an Executive Summary, to make the Plan even easier to read and follow, and Debbie Johnson is doing the final edits. Once the Plan is cleaned up, it will be re-posted on the College Forests web site, along with a new section about the public input process and how the Plan was changed based on public feedback. Fletcher thinks this new section is particularly important. “People need to know they’ve been heard,” he says.

If you want to see a copy of the May draft of the McDonald-Dunn Forest Plan along with supporting materials, check out the College Forests web site at <http://www.cof.orst.edu/resfor>. This web site is updated regularly, so check back from time to time to see new information. The final Plan should be available later this year.



*Forestry Executive Committee members signing off on the Plan. Left to right: (front row) Dave Lysne, Hal Salwasser, Rick Fletcher; (middle) Tresa Stevens, Jack Walstad; (back) Tom McLain, Tom Adams, Scott Reed, Steve Hobbs, John Hayes, Ed Jensen, Roger Admiral, Steve Tesch, Barb Gartner.*

### Congratulations to this year’s Dean’s Awards recipients!



#### *Individual Awards (pictured, left to right)*

Service: **Jay Sexton** (FS); Extended and Continuing Education: **Vivian Simon-Brown** (FR); Advising, Mentoring: **Claire Montgomery** (FR); **Steve Radosevich** (FS); Support: **Yvonne Havill** (FE) and **Jeff Hino** (FMC); FRA: Milo Clauson (WSE)

#### *Team Awards*

Research: Trophic Cascades: **Bob Beschta** (FE) and **Bill Ripple** (FR); Service: College Forests Management Team: **Dave Lysne, Carol Carlson, Jordana Chambers, Tom Edwards, Debbie Johnson, Eric Lamfers, Richard Symons, Trisha Wymore, Dave Young**; Service: McDonald-Dunn Planning Team: **Rick Fletcher, Gary Blanchard, Bill Emmingham, John Hayes, Becky Johnson, Debbie Johnson, Norm Johnson, Dave Lysne, Glen Murphy, Mike Newton, John Sessions**

## Forestry Field Trip

### Tour of Starker Forests Showcases Innovative Research and Opportunities for Collaboration



As all foresters know, there's only so much one can learn in the lab or behind a desk. For natural resource professionals, there's simply no substitute for getting out in the field now and again. With that in mind, two dozen people from the College of Forestry and Starker Forests met for a field trip in late October 2004. The tour, planned and hosted by Starker Forests, was designed to show innovative practices on Starker forestlands and provide an on-site forum for discussing opportunities for additional research collaboration between the College and Starker Forests.

"Oregon State is and should be positioned to help us accomplish more applied and basic research beneficial to intensive forest management and their social, economical, and ecological implications," noted **Barte Starker**. "What better way to make research needs known than with a field trip?"

Leading the Starker Forests group were alums **Bond** and Barte Starker, classes of '69 and '72 (Forest Management), **Mark Gourley**, forester, '78 (FM), and **Jennifer Noonan Beathe**, forester, '98 (FE). The College group included Dean **Hal Salwasser**, Department Heads **Tom Adams** (Forest Science), **Steve Tesch** (Forest Engineering), and **Jack Walstad** (Forest Resources), Director of the Oregon Forestry Education Program

(OFEP) **Susan Sahnaw**, and faculty from throughout the College. Participants boarded the Starker bus at 8:00 am on a cold, wet Saturday and headed for the woods.

The first official stop was on a road above an embedded culvert at Norton Creek. Barte Starker gave an introduction to Starker Forests and **Randy Hereford** ('77, FE) spoke about the Starker philosophy on roads. Jennifer Noonan Beathe talked about the innovative fish passage/culvert replacement program implemented by Starker Forests. In a pattern that would be repeated throughout the day, there was ample time for questions and discussion after the talks. Questions from the group centered on possibilities for collaborative research across disciplines, from forest engineering to fisheries and wildlife. At the next stop, Devitt Overlook, a brief sun break illuminated the landscape, providing a clear view of multi-species stands, an assortment of age classes, and orientation of leave patches. Coffee and pastries fueled the discussions that followed, as Barte Starker, **Gary Blanchard** ('61, FM), Randy Hereford, Mark Gourley, and **Fred Pfund** ('81, FM) talked about a variety of issues, including making snags in young stands; transportation issues and logging systems; predictability of stand density/quality; marketing older



**“Foresters at Starker Forests are driving science with leading-edge questions and their willingness to try unconventional practices.”**



*(Top) Jennifer Noonan Beathe talks about Starker Forests' innovative fish passage/culvert replacement program; (bottom) embedded culvert.*

timber; and management of multi-species stands.

Except for a lunch break around a welcome warming fire, the tour continued non-stop throughout the day, with short hikes to research plots for demonstrations and discussions of everything from public outreach, education and recreation to the management of understory vegetation; browse resistance, foliar nutrients and palatability of leaves for blacktailed deer; soil nutrient amendments that increase growth and disease resistance; topical application of elemental sulfur to combat Swiss Needle Cast fungus, and growth differences among treatments in Swiss Needle Cast plots. The final stop included candid discussions on future forestry research and possibilities for partnerships with College of Forestry faculty.

Highlights of the field trip varied, but there was something of interest for everyone. Professor **Doug Maguire** (Forest Science) found the concept of stand-specific treatments for intensive plantation silviculture intriguing, as well as the research on managing tree and stand nutrition. For Dean Salwasser, it was hearing about the impacts of the Albrecht calcium amendments, learning that fertilized trees can outgrow deer browse effects, and “seeing how Starker Forests makes adaptive management their standard operating procedure.” For Professor **John Bliss** (Starker Chair in Private and Family Forestry, Forest Resources), the field trip reinforced the strong connection between Starker Forests and the College, and provided an opportunity to ponder the links between global competition, a family company, and



*Mark Gourley (far right) gives the itinerary before the group boards the Starker bus.*

the well-being of a rural county. At the end of the day, college participants agreed it had been worthwhile to get a glimpse of the extent and creativity of research that goes on outside the university, along with a sense of the enthusiasm for innovation that Starker employees share. Furthermore, the trip underscored the value of joint projects and shared learning between companies such as Starker Forests and research at OSU. Such collaborations have the potential to provide benefits for all.

But perhaps the predominant take-home message came through learning more about “how a family-owned forest can experiment with and create new ideas that can then come to the university for scientific evaluation,” said Salwasser. The Starkers' contributions to the College and the community are well known, but it is important to recognize that they are leaders in forestry research as well.

“Foresters at Starker Forests are driving science with leading-edge questions and their willingness to try unconventional practices,” says **Roger Admiral** (Operations Director of the College of Forestry and Associate Director of the Forest Research Laboratory). “The company is also matching the governor's call for sustainable, economically viable, environmentally sound forestry.”



## Diversity Award for ICYI



*David Stemper, College of Forestry and director of the ICYI Natural Resource Clubs and Camps in the Northeast Portland Area and others receiving award in Washington, DC, February 2005.*

The Inner City Youth Institute (ICYI) was selected as the recipient of the United States Secretary of the Interior's Secretary's Annual Diversity Award for Partnership Achievement. ICYI is a collaborative partnership between the College of Forestry at Oregon State University, the Oregon/Washington Bureau of Land Management, and Region 6 of the U.S. Forest Service. The Partnership Achievement award is given to an individual, group, or organization outside the Department that has directly contributed to efforts "to build a more productive and challenging organization through the facilitation and improvement of diversity," said Secretary of the Interior **Gale A. Norton**. "ICYI has been selected for this award in recognition of the natural resource programming that your organization provides to youth in the Portland, Oregon area. We are particularly proud of the collaborative partnership ICYI has fostered. . . . [Your] efforts have surely contributed toward the improvement of diversity in the Department of the Interior. Thank you and keep up the good work." Congratulations, ICYI!

### Special Issue Spotlights College Research

The work of more than a dozen College of Forestry scientists is featured in the March 2005 issue of the *Journal of Forestry*. The special issue provides a synthesis of presentations from a symposium held in Portland, Oregon, on the potential and roles of intensively managed forest plantations in the Pacific Northwest. The symposium centered on four topic areas: biology, economics, environmental impact, and social issues. For more information about the special issue, go to the web at <http://www.safnet.org/periodicals/journal.cfm> (select: current issue and online archive)

## Life Cycle Analysis Shows Wood is Good

**A new report released by CORRIM (Consortium for Research on Renewable Industrial Materials) shows that wood is one of the most environmentally friendly building materials for use in home construction.**

—by Marie Oliver

Data used to create the report was collected and analyzed by **Maureen Puettmann**, research associate in Wood Science and Engineering, in collaboration with CORRIM partners and **Jim Wilson**, professor emeritus in WSE and vice president of CORRIM.

Puettmann says the research shows that steel framing used 17 percent more energy than wood construction for a typical house built in Minnesota, and concrete construction used 16 percent more energy than a house built with wood in Atlanta. Wood also has less global warming potential; steel is rated 26 percent and concrete is rated 31 percent higher than wood.

CORRIM consists of approximately 21 research entities, including universities, private industry, and government agencies. OSU was instrumental in its creation and continues to play a major role in its administration and research activities. CORRIM's mission is to develop a scientific base of information relating to the environmental performance of all wood-based products.

"We're looking at how to lessen the environmental burden, and determining the cost of doing that—environmentally or economically," says Wilson, who oversees all modeling, data collection, and reporting for CORRIM and participates in individual data collection, analysis, and assessment of various products. "With other partners, we're looking at all the impacts from growing trees, management, harvesting, transportation, manufacturing, construction, maintenance, and eventual demolition or recycling of products. The work we're doing substantially expands on earlier work that was funded by the National Research Council at the direction of **President Carter** to study energy, material use, and manufacturing in the energy crisis of the 1970s."

These new research efforts were in full swing by 2000 and the first phase,



on which the recently released report is based, is complete. It began with a survey of forest product manufacturers in Oregon and Washington and the south-east portion of the United States. "We did the Northwest and Southeast first because those are the breadbaskets of the forest products industry for manufacturing structural wood products," says Wilson.

Although CORRIM's standards called for a minimum participation level of 5 percent of the industry, they actually received 10-40 percent participation. "We received very strong support and cooperation from the industry to provide this data," says Wilson.

CORRIM's rigorous review process assures the accuracy of the data. Internal and external review processes with both national and international reviewers were followed before, during, and after the study.

Collected data is now being entered into an online database that is available to the public. The federal government is funding the effort to set up a database of all major products and processes in the United States. CORRIM relies on its Canadian partner, Athena Institute, to provide data on steel, concrete, and other nonforest products, but will start using the new U.S. data as it becomes available. Wilson and others are looking at ways to implement this data into environmental standards for building construction, product purchasing and manufacturing regulation.

"At present, public purchasing agencies and regulators are trying to make decisions without all this information and technical data," says Wilson. "We're trying to provide unbiased, accurate data so they can make their assessments wisely."

The next phase, says Wilson, will expand the geographic regions analyzed in order to include a broader array of criteria, such as forest types (e.g., soft-

woods and hardwoods) and industry types (e.g., adhesives, particle board, medium density fiberboard, hardwood lumber, hardwood flooring).

The methodology used to analyze forest products in this manner is called *life cycle analysis*. First, researchers gather quantitative data on processes and products, taking stock of all inputs (e.g., raw materials and fuels) and all outputs (e.g., co-products, emissions, and waste) from a process or the production of a product. “It’s similar to a budget—what goes in must come out somewhere,” says Puettmann. CORRIM’s partners use protocols that follow international standards so values are consistent across industries.

After the quantitative data is collected and analyzed, it is assessed in relationship to numerous environmental issues such as global warming, acidification, and resource use. Weighing such issues as how materials are grown, mined, processed, produced, and ultimately disposed of gives a better picture of their overall impact on the environment.

Wilson stresses that there is urgency in providing this information to the public. “When we started out with the original formation of CORRIM in 1998, we thought we would be so far ahead of the curve that we would have the data and the analysis fully completed before it was needed,” he says. “But the need is accelerating at such a fast rate for a variety of uses that we’re having a challenging time keeping up with all the different needs. We have a lot of very useful information, but now we need to get it into a format that others can use and understand.”

### Willamina Lumber Company Tour



*A group from the OSU College of Forestry and the Oregon Forest Resources Institute (OFRI) participated in a tour of Hampton Affiliate’s sawmill at Willamina on November 2, 2004. The group saw how state-of-the-science scanning and modeling programs are used to optimize the final products and value from second-growth logs coming into the mill. In one operation, logs were scanned seven times for optimal cuts from the time they entered the production line to when they left as dimension lumber. One of the scans programmed a high-tech saw that moved with the curvature of the log to produce flat boards with no curve left.*

*The College of Forestry group included Dean Hal Salwasser, Department Heads Tom McLain (Wood Science & Engineering) and Jack Walstad (Forest Resources), and Lisa French (OSU Foundation).*

### Farewell To A Magical Friend

When **Margie York** stood before a large group at Richardson Hall for the last time, no one in the audience fidgeted, teased their neighbors, or asked how much longer until lunchtime. Instead of colorful t-shirts, “wood cookies,” and many hundreds of elementary school children, there were flowers, cake, and many fond farewells from students and colleagues throughout the College.



York has served as the coordinator for Oregon Wood Magic, the Department of Wood Science & Engineering’s innovative and immensely popular educational program for third and fourth graders, since its inception. Like a certain energetic bunny, York has been not only the program’s most visible public presence, but the indefatigable force behind its success and growth over the past six years.

Oregon Wood Magic is designed to educate elementary school teachers and their students about aspects of science and technology relative to wood and wood products. Visually stimulating and interactive, it encourages children to think about resource issues. As **Jeff Morrell** (Professor, WSE) notes, the interactive program now serves thousands of school children from Oregon and has expanded from OSU to reach students in Portland through a cooperative effort with the World Forestry Institute.

York’s departure this winter left the College with some large shoes to fill. But thanks in great part to her organizational abilities, a new coordinator will be able to step right into the well-run program.

“Margie left a great legacy of service to the College and to the thousands of Wood Magic kids who have enjoyed our program, says **Tom McLain** (Department Head, WSE). “We celebrate her time with us and look forward to building on the strong foundation that she leaves.”

Although York has moved on to even greater challenges with a local business, McLain adds, “don’t be surprised to see her as a volunteer when the school buses arrive.”

For more about Oregon Wood Magic, please go to <http://woodscience.oregonstate.edu/woodmagic/>



Successful Wood  
Science and  
Engineering  
Graduate  
Students —  
Congratulations!

Carlos Garcia, PhD

“Management of powder-post beetles, *Ninoderus minutus* F. in freshly cut bamboo”

Lotties Fallas-Cedeño, MS  
(with dual major in WS&E  
and FS)

“Water movement in the stem xylem in relation to xylem specific conductivity in four hardwood species”

Velmurugan “Velu”  
Palaniyandi, MS

“Cellulose-filled high density polyethylene”

James Rogers, MS

“Interfacial shear strength of wood plastic composites”

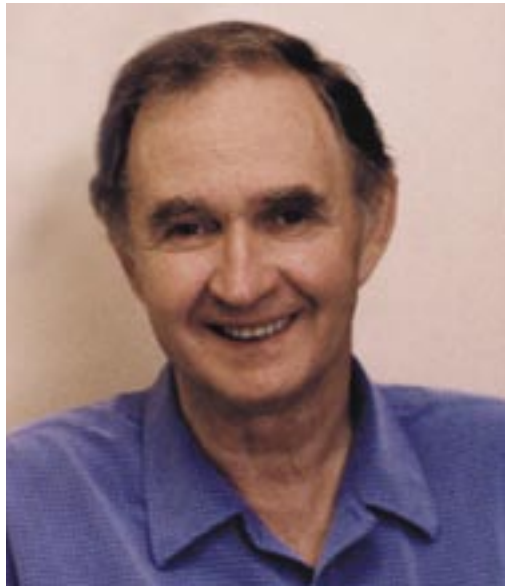
Peter Seaders, MS

“Performance of wood-framed shearwalls under monotonic, cyclic, and earthquake loads”

## Discovering New Natural Products

### The forest is a wonderfully, environmentally clean chemical factory

— by Marie Oliver



**J**oe Karchesy, associate professor in the Wood Science and Engineering Department has spent the last 20 years analyzing the scientific structures and biological activities of natural substances found in Pacific Northwest forests. His research focuses on the development of natural products from these forest resources.

“The forest is a wonderful, environmentally clean chemical factory,” says Karchesy, who wants to help make the forest products industry in Oregon more efficient and competitive by using mill residues and plants that may be grown in an agroforestry setting.

Karchesy says the forest can be viewed as a library of chemical structures and biological activities that have not been fully catalogued. “As we discover new chemical structures and their bioactivities, the value to people may occur in different ways,” he says. “We expect to find new medicines for future diseases that have not yet presented themselves to us, new materials for a future less dependent on petroleum, and scientific discoveries that will further science not only in forestry but in ways we do not yet fully understand.”

Natural products can be thought of as the extractable (non-structural) organic compounds in plants. These substances have long been used as herbal medicines, spices, and foods. They are also widely used in the development of modern drugs. A recent report notes that 78 percent of

antibiotics and 74 percent of anti-cancer drugs are either natural products or based on natural product structures. Some examples of “modern miracle drugs” made from trees include aspirin, quinine, and taxol. Karchesy stresses the pervasiveness of natural products in our everyday lives. “They are everywhere—in food, herbs, and scents,” he says. “They attract insects, repel insects, give us flavors, protect our health, and sometimes, unfortunately, they are toxic to us. All of this happens without us even thinking about chemistry. However, we’re seeing increasingly widespread interest in this topic as people become more aware of the health benefits of many of the plants we consume.”

Examples of widely used natural products include *beta*-sitosterol and derivatives from birch trees, which are used in medicines, dietary supplements, and “functional foods” to reduce cholesterol. Xylitol, which is also derived from birch trees, is used in “sugar-free” gum, toothpaste, and diabetic foods. Polyphenols from maritime pine bark are sold as expensive antioxidant health supplements. Most of the aforementioned products can be found in grocery stores. Hawthorne tree extracts are often used to reduce blood pressure and have recently been shown to act in the same way as ACE inhibitors.

Karchesy’s work in this field began with looking at the polyphenolic substances in Douglas-fir and red alder bark and how they might be used as adhesives. Since these substances were not widely studied at the time, his team developed new analytical methods and identified many molecular structures. Adhesives were produced, but they were found to be less cost-effective than petroleum-based materials. It soon became apparent that the real value of these substances may lie in their use as antioxidants, anti-hypertensives, or even anti-cancer compounds.

“You never know how your research will be used later,” he says. “Today our methods are still used to analyze the antioxidant polyphenols of medicinal value in chocolate, for example.”

Subsequent research by Karchesy and his colleagues has shown that some Douglas-fir and red alder polyphenols have anti-cancer activities. “While we probably won’t see new anti-cancer drugs on the market from these trees, these studies helped illuminate the role of polyphenols in anti-cancer activity,” he says.



*The use of natural botanical extracts has been the focus of Center for Disease Control researchers to control arthropods. Alaska yellow cedar extracts obtained from Oregon State University were screened against ticks, fleas, and mosquitoes to determine the ability of these extracts to kill and repel these disease vectors. One of the compounds, nootkatone, resulted in lethal concentrations comparable to synthetic pesticides. These compounds may represent a safe and effective alternative for controlling disease vectors. The fact that nootkatone is also considered "foodgrade" by the EPA, makes it a safe alternative to other synthetic compounds. (Pictured, left to right: **Javier Peralta** isolating compounds at Oregon State University and **Marc Dolan**, CDC testing compounds against ticks.)*

Karchesy is interested in developing products such as new, safer insecticides and repellents to protect human health, biocides for use in forestry and agriculture, enzyme inhibitors, and specialty chemicals—all natural products from Pacific Northwest trees and forest plants. Recent publications from his team include descriptions of antibiotic and anti-cancer compounds and the molecular structures of many new compounds.

Karchesy's current collaborators include visiting scientists from several countries, the OSU Colleges of Pharmacy and Veterinary Medicine, the USDA Forest Service PNW Research Station, Centers for Disease Control and Prevention, the Division of Vector-Borne Infectious Diseases, and the Confederated Tribes of Warm Springs sawmill and associated operations.



### Fulbright Award for Gartner

Professor **Barb Gartner** (Wood Science & Engineering) has been awarded a Fulbright Fellowship for lecturing and research at the Universidad Austral de Chile, in Valdivia. Gartner plans to spend a year there doing research and teaching. Her research will be on the desirability of different branch and knot patterns, which are controllable genetically. She will have strong connections with both industry and faculty scientists. Her teaching will include guest lecturing in wood quality and tree genetics courses, running a journal club for grad students and faculty, and running a workshop on incorporating active teaching methods into classes.

# Technology Aids Value Recovery

**“Today’s Pacific Northwest forest industry faces some tough economic challenges.”**

—by Marie Oliver



**Glen Murphy**, professor in Forest Engineering continues, “Over the last thirty years, millions of acres in the Pacific Northwest have been moved out of timber production to other land uses.” Add competition from a plethora of alternative raw and synthetic materials, plus expanding producers of timber for global markets, such as Brazil, Chile, and New Zealand, and it’s clear that the industry must remain competitive in order to survive.

Murphy believes that, to be competitive, the forest industry needs to control costs, sort and allocate logs to the most appropriate markets and milling processes, and maximize the wood value of the forest at the time of harvest. He says the world’s best harvesting operations using the best equipment—many of them in Scandinavia—are currently losing 4-5 percent of the wood value of forests at harvest. However, in some operations, up to 66 percent of the wood value is being lost through poor decision making. Recent studies of the Pacific Northwest showed 10 to 19 percent losses.

To support forest professionals in maintaining a competitive edge, Murphy’s research addresses issues of value recovery. His goal is to find ways of capturing the most value from every felled tree by

improving sorting methods and allocating logs to the most appropriate markets. Reflecting the worldwide trend toward mechanization, a current project involves the evaluation of highly sophisticated computerized harvesting equipment intended to improve the decision making process. “We now have a platform that is far more powerful than we’ve ever had in the forest,” says Murphy. “This allows us to do things we couldn’t do in the past.”

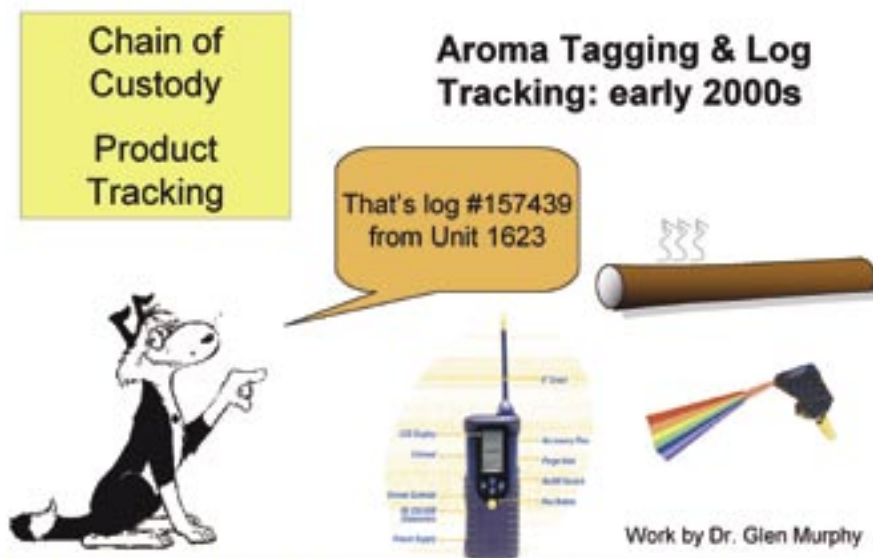
New technologies allow foresters to take precise, detailed measurements during the harvest. Current sensor technology is used to measure the shape and diameter of the stem at all points along its length as the tree is being stripped of its branches at approximately 14 feet per second. Newer models are being developed overseas that could increase that speed to 50 feet per second. These measurements are captured electronically and used to maximize use of the tree.

Another type of technology uses laser scanning to automatically detect knots on the stem—one of the determinants of log quality. Another uses acoustics, bounc-

ing sound waves through the stem to sort stronger material from weaker material. And yet another technology uses near-infrared technology to measure absorbed and reflected light, allowing scientists to determine the internal properties of the stem. “Smart sensors” speed up the process and increase the accuracy of decisions. “The human brain can deal with only so many bits of information at a time before it’s just too much,” says Murphy. “With computer systems, that’s not a problem; they don’t get tired.”

But capturing information about the stand is only part of the equation. Using a process he calls adaptive control, foresters could use the information they have collected during the harvest to make better decisions and adapt as necessary. Murphy explains: “As we’re working our way through the stand, we’re capturing information about the tree. We can either throw that information away, or we can harvest knowledge as well as harvest timber. We can use information we’ve collected to predict how we need to change to better meet market needs,

## Product Tracking



**With 25 scents could uniquely tag over 33 million logs**

improve productivity, and control costs. So we're adapting to the stand as we go."

After sorting, logs must be allocated and delivered to the right customer in order to capture the most economic value. To do that, logs must be tagged in some way to identify them. One current practice is to use bar codes, but Murphy says it's not an ideal system because sawmills have difficulty with the metal staples used to attach the bar codes to the logs. Applying a creative problem-solving technique, he came up with the idea of spraying logs with scent combinations, an identification system he calls aroma tagging. "With 25 scents, we can uniquely tag 33 million logs," he says. He is now working with chemists to find waterproof scents that will last long enough to get the logs to market and to test the feasibility of using electronic noses to detect them.

## Award for O'Leary

**John O'Leary** was awarded the Lifetime Achievement Award from the Council on Forest Engineering (COFE) at the last annual meeting.

O'Leary earned a master's degree in Forest Engineering from Oregon State College in 1947, the same year he married his wife, **Margo** (OSC '47). He returned in 1949 to teach in Logging Engineering at OSC. O'Leary was awarded a Fulbright Fellowship to Europe in 1955, where he lectured in various universities and made lifelong friendships among such notables as Dean **Richard Plochmann** of Munich, Professor **Ivar Samset** of Norway, and Dr. **Kuenonen** of Switzerland. He maintained his European connections and brought many foresters (and new ideas) to OSU as a result. He was a valued member of the Forest Engineering faculty and touched the lives of many students until his retirement.

O'Leary was on the cutting edge of forest engineering throughout the years. He conducted research on the first trials of helicopters and balloon logging that were eventually to become standards of the industry. Stories are still fondly told of O'Leary's early trials with dropping logs into water from helicopters, however. His first attempts apparently were closer to aerial pile driving in an Oregon lake than to the now-standard practice of gently lowering logs by helicopter into waterways all over the world.

O'Leary started the Skyline Symposium in 1969 to bring researchers and practitioners together to address theoretical and real problems with this unique harvest system. The worst snowstorm in history to that point couldn't keep 500 people from attending the inaugural event. The 11th Skyline Symposium was held this year with the hosting rotating between OSU, the University of Washington, and the University of British Columbia Forest Engineering programs.

John O'Leary is a recognized pioneer in the profession of Forest Engineering, as acknowledged through the COFE Lifetime Achievement Award. Congratulations, John!



Breakfast with Friends at the Oregon Logging Conference

—by Jeff Keck

Early on a Friday morning in February, something special occurred at the Oregon Logging Conference in Eugene. Behind closed curtains on an elevated stage, beyond booths jammed with monstrous tires and shiny forklifts, a distinct group of people gathered. The scent of ham, eggs, potatoes, and coffee mixed with the murmur of conversation. Listening, one could overhear discussions of timber sales, employment opportunities, and work at the office. Others talked of their present family situations and recent happenings.

These people were the graduates, current students, and friends of the Forest Engineering Department at the College of Forestry at OSU. They had gathered to discuss topics and industry news related to the College. They had gathered to share stories and reunite old friendship. And, they had gathered to enjoy the food and hear about the college at the annual OSU Forest Engineering Department breakfast.

A broad spectrum of industry, agency, and consulting professionals, including graduates from the last 55 or so years attended the breakfast, along with other friends of the department. **Steve Tesch** (Forest Engineering Department Head) formally wel-

comed the group with news from the department and college. He mentioned the increased enrollment in the Forest Engineering Department and talked about the College Student Logging Program and its need for logging equipment donations. He also mentioned a new management plan for the McDonald-Dunn Forest and the strong job markets for Forest Engineering students and graduates. Tesch also extended invitations to the summer 2005 COFE meeting in Arcata, California, and the Skyline Symposium in April 2007 in Corvallis.

Attendees had a chance to introduce themselves to the group. Most introductions were short, but some of the alumni naturally had more to say. Several recent and upcoming graduates from OSU advertised their availability for work. Eventually though, the food was eaten and the breakfast concluded. The group of alumni, current students, and friends of the Forest Engineering Department slowly moseyed from the stage and dispersed into the growing crowd at the Oregon Logging Conference.

*Jeff Keck is a senior in Forest Engineering. His father, Gerry Keck ('76 FE), also attended the breakfast.*

Successful Forest  
Engineering  
Graduate  
Students —  
Congratulations!

Hamish Marshall, PhD

“An Investigation of  
Factors Effecting the  
Optimal Output Log  
Distribution from  
Mechanical Harvesting  
and Processing Systems”

Christopher Bielecki, MF

“Loggers and Logging  
Equipment for Wildland  
Fire Suppression”

Karina Bohle, MF

“Forecasting Harvesting  
Production Rates Using  
GIS: A Case Study in The  
McDonald-Dunn”

## A New Paradigm in Hydrology

**Scientists’ current understanding of how watersheds work was largely defined during the First International Hydrological Decade.**

—by Marie Oliver

**T**he First International Hydrological Decade encompassed a ten-year period of international research from the mid-1960s to the mid-1970s. That decade focused on gauging several thousand watersheds worldwide and measuring the quantity of water exiting the watershed and the overall water balance of these systems.

The Second International Hydrological Decade began in 2004, marking a major paradigm shift in the science of hydrology, says **Jeff McDonnell**, professor in Forest Engineering and Richardson Chair in Watershed Science. The second decade’s paradigm relies on a “Prediction in Ungauged Basins” (PUB), an approach spearheaded by the International Association of Hydrological Scientists (IAHS). McDonnell is on the PUB Science Steering Committee for IAHS and is president of the IAHS International Commission on Tracers.

“We’re on the brink of big changes in the hydrological sciences, both nationally and internationally,” says McDonnell. “Right now our models don’t take into account the plumbing of these watersheds. Our models are gross simplifications of how these complex systems work. When we try to predict water quantity and water quality together, we often get right answers for the wrong reasons.”

McDonnell collaborates with other scientists at OSU and around the world to attempt to understand the internal behaviors and characteristics of water within a watershed. “We’ve been obsessed

with these stream gauging stations,” he says. “We’ve focused on that to the exclusion of other things we can measure in a stream or in a watershed.”

The PUB approach seeks to learn how to evaluate water quality in addition to quantity, and to assess watersheds where no gauging stations exist. “We need to develop a more holistic understanding of watersheds, to understand the processes better,” says McDonnell. “If we know better the main components of the hydrological cycle—precipitation, evaporation, runoff, and so forth—we’ll be much more useful as a science.”

Factors such as the age of water in a stream make a big difference in how a watershed will respond to changes such as harvesting, construction, or agricultural development. “If the age of the stream water is very young [months old], the impact on the soil surface could be seen pretty quickly in the stream,” he says. “But if the age of the stream water is years to decades old, then perhaps that change might take a long time to show up in the stream channel.”

McDonnell’s group has been using isotope tracers to age-date water in watersheds of varying sizes in Oregon at the HJ Andrews experimental watersheds in order to determine whether there is a relationship between the age of the water and the size of the watershed. He and one of his recent PhD students, Kevin McGuire, found no relationship with increasing watershed size, but did see a significant relationship between the age of the



### McDonnell Directs Establishment of New Hydrology Observatory

**Jeff McDonnell**, COF professor and professional hydrologist, is leading a group of universities, government labs, and state agencies in proposing a multi-million dollar plan to establish a hydrological observatory in Oregon as part of the National Science Foundation’s new initiative to create four such laboratories nationwide. If funded, the Pacific Northwest Hydrological Observatory will pair the humid Willamette River basin with the semi-arid Deschutes River basin—a pairing that will provide for a marked contrast in climate and geology for testing scenarios of climate change, population growth, and land-use changes.

water in the stream and its internal watershed topography.

“I think this has big implications,” says McDonnell. “This is saying something rather fundamental about how watersheds in the western Cascades store and process their water. It also means that the larger watersheds are really simply an accumulation of lots of smaller watersheds.” Since millions of dollars and decades of research have gone into studying smaller headwater basins, this is good news. It means that what has been learned about smaller watersheds can be applied to larger watersheds as well.

McDonnell says one problem with the science has been that, until recently, hydrologists have assumed that all watersheds are alike. His group is comparing and contrasting watersheds in diverse landscapes such as the post-wildfire, semi-arid Entiat Watershed in central Washington, the wet and steep Maybeso Watershed in southeast Alaska, and the Mediterranean-like HJ Andrews Watershed in western Oregon.

“The idea is to compare and contrast these and other watersheds,” he says. “If we can see what’s similar and different about them, we can come up with better models that show how watersheds in these diverse areas might operate. Then we can tailor our management practices to specific watershed types.” It will also allow scientists to better predict the effects of global climate change.

McDonnell and others are ultimately interested in classifying watershed behavior. Because hydrology is such a young science, a classification system for watersheds has not yet been developed. “We think this is the key to management,” he says.



## Forest Engineering Trades Spaces



*Forest Engineering staff in new office: (left) Administrative/Academic Assistant Yvonne Havill; Office Manager Rayetta Beall; and newest employee, Administrative/Academic Assistant Lesley Nylin.*

The Forest Engineering Department office was moved into its remodeled and more spacious new home at 204 Peavy Hall this winter. Department Head **Steve Tesch** invites visitors to stop by and see what they’ve done with the place! (And for students or former students who may be wondering what happened to the “Gun Room” or student lounge—no worries. It’s still there, but across the hall in 215 Peavy.)

# At Home on the Range ... and in the Forest

## Rangeland researcher brings diverse skills and interests to native plant restoration studies

—by Marie Oliver



The College of Forestry might seem like an odd place for a rangeland researcher, but **Paul Doescher** feels right at home here. Doescher spent 20 years in OSU's Department of Rangeland Resources in the College of Agriculture, then transferred to the College of Forestry in early 2004. Luckily for the College, he brings a "range" of skills and interests that broaden the scope of the College's forest systems research efforts. He holds a bachelor's in forestry, a master's in resource conservation, and a PhD in range ecology.

"I consider myself an ecologist first," he says. This winter, he and **Stan Gregory** in the Department of Fisheries & Wildlife will be co-teaching a new class in ecological restoration. He also plans to co-teach a new Introductory Natural Resources course with **Ed Jensen** from the Department of Forest Resources.

Doescher worked for a few years in southwest Oregon on reforestation, but most of his research has focused on the "sagebrush steppe" of the Intermountain West, which includes eastern Oregon, Idaho, Nevada, Utah, and parts of Wyoming and California. "I have a particular love of the more arid systems—ponderosa pine, sagebrush, grasses, piñons, junipers, and so forth," he says.

His particular interest is in the restoration of native plant species where heavy grazing by domestic stock has created a friendly habitat for

invasive weeds such as cheat grass (also called downy brome) and set up a cycle of destructive wildfires. Cheat grass now dominates 20-25 million acres in the Great Basin area of the Intermountain West.

He says some rangelands in the Intermountain West that historically have burned only once every 75-100 years are now beginning to burn every five years or less. Conversely, forested areas of juniper and pinion that used to burn every 20 years now rarely burn at all, so adjacent sagebrush grasses are converting to woodland. "We're losing the entire native understory," says Doescher. "The whole fire frequency is all messed up—it has flip-flopped." The ecological implications of this flip-flopping are that it has dramatically altered wildlife habitat, reduced livestock forage, impacted watersheds, and affected the aesthetics of the region.



Doescher and others have been looking for ways to bring the native species back, a process similar to reforestation. "Many of the principles are the same, whether they be in a forestry setting or a rangeland setting," he says. "But it's much harder to do it on an arid land system than it is a forested system." Infrequent precipitation and lower quality soils make restoration in arid lands difficult.

Doescher is co-principle investigator on a \$2.9 million USDA grant to investigate restoration strategies in the intermountain region. The



purpose of the project is to find ways to convert areas that are now almost totally cheat grass by reintroducing native species. Scientists are seeding degraded landscapes with approximately 20 native grasses, forbs, and shrubs and testing to see which are the hardiest species.

“This is the first time anyone has worked with these available cultivars across this wide regional area,” he says. “We’re screening them for their adaptability.” Scientists have learned that native species are tolerant of low nitrogen levels, whereas the invasive weeds are not, so one treatment modality is to add carbon to the soil to encourage the native species to flourish and recapture their hold on the land.

Doescher is also collaborating with a team of interdisciplinary investigators sharing a \$12 million Joint Fire Sciences Research Program designed to try to prevent areas that are still inhabited by native species from succumbing to invasive species. The team is composed of ecologists, economists, sociologists, wildlife biologists, and hydrologists who are addressing the issue from several angles. Other OSU team members include sociologist **Bruce Shindler** (Forest Resources), ecologist **Rick Miller**, economist **John Tanaka**, and project lead **Jim McIver**.

Scientists will be doing a series of manipulations in large areas throughout the region to try to promote native species diversity and prevent the sites from being dominated by invasive species. “We’ve laid out the same common experiments across the Great Basin region,” he says. “This has allowed us to get serious funding to address a broad spectrum of issues and apply an experimental design that will generate results across a wide regional area.”

Doescher is strongly supportive of the collaborative approach and appreciates the opportunity to work with his colleagues in new and different ways. “My experiences in the past five years have really spoken to me about the need for an integrated approach to natural resource management,” he says.



# Yellowstone Studies in the Spotlight

## Researchers combine hydrology, vegetation science, wildlife science, and animal behavior into a multidisciplinary approach for studying Yellowstone ecosystem

—by Kate Thompson

*“We reached the old wolf in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes-- something known only to her and to the mountain. I was young then, and full of trigger-itch; I thought that because fewer wolves meant more deer, that no wolves would mean hunters’ paradise. But after seeing the green fire die, I sensed that neither the wolf nor the mountain agreed with such a view.” - Aldo Leopold, A Sand County Almanac, 1949.*



Kate Thompson is a graduate student in Forest Resources.

When you’re a College of Forestry professor visiting the Northern Range in Yellowstone National Park, what you see depends on your academic specialty. In 1996, two College of Forestry professors—one from Forest Resources, one from Forest Engineering—were in the Northern Range at different times, for different reasons. Their observations led them into a combined research project that recently received the Dean’s Award for Excellence in Research and is garnering national attention.

**William Ripple** (Professor, Forest Resources) was helping doctoral candidate **Eric Larsen** (PhD, 2001) with his research on aspen decline at Yellowstone. When they examined the cores Larsen had taken from Yellowstone’s aspens, it appeared that aspen regeneration had stopped in the 1920s—around the time that wolves had been extirpated from the park.

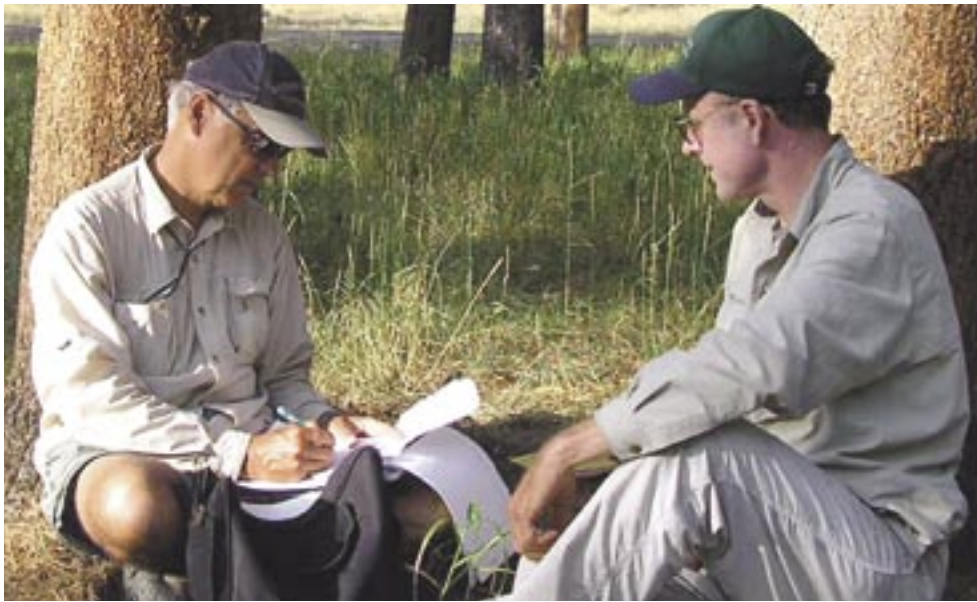
**Robert Beschta** (Professor Emeritus, Forest Engineering) noticed the erosion on the Lamar River and, as a hydrologist, was concerned about the condition of the riparian plant community there. While researching the history of the area, he started to notice the same thing that Ripple had noticed about aspens, only with cottonwoods. Again, their regeneration had been inhibited at about the time that the National Park Service had exterminated the wolves.

Beschta calls it “serendipity.” Ripple calls it an “a-ha” moment. The common realization led the two to work together on research that crosses academic boundaries. Their research is mixing hydrology, vegetation science, wildlife science, and animal behavior into a multidisciplinary approach to studying the Yellowstone ecosystem. Because they’re collecting data themselves, they can review results and adapt their hypotheses to field data on the fly. And what Beschta calls “adaptive research” is providing insight into the benefits of reintroducing wolves into their natural habitat.

Do wolves cause trees? Well, not directly. What wolves *do* cause is a change in elk migration patterns. Before the wolves were reintroduced to Yellowstone, elk had free run of the park, and ate wherever and whatever they wanted. Wolves, however, are the only predators in the park that will take down a healthy adult elk. So once the wolves were brought back, elk herds started staying in places where they had a clear, 360-degree view of their surroundings. The elk started moving to avoid the wolves; they weren’t browsing on the riparian plants any more; and alder, willows, and cottonwoods got a chance to start growing again.

This is what is known as a top-down trophic cascade, where the absence or presence of a large predator directly and indirectly affects an entire ecosystem. With the wolves gone, Yellowstone’s elk were flourishing, but they were having a damaging effect on the ecosystem as a whole. When the wolves were reintroduced, the equation started changing, and young sprouts of palatable browse species began to survive in places where they had been suppressed for many decades. Moving elk out of certain riparian areas by reintroducing the wolves to the park is providing more food and habitat for everything from beavers to butterflies.

Chances are you’ve seen stories about the Yellowstone wolves in your local newspaper or on the internet. If you haven’t, or if you want to learn more about Ripple’s and Beschta’s work, it has been featured on National Geographic’s *Strange Days on Planet Earth*. (Initial airings were April 20 and 27, 2005, on PBS, but check your local listings for possible repeats.) You can also go to the Leopold Project home page at <http://www.cof.orst.edu/leopold/>.



### Before

**Elk**

**BEFORE:** Without culling predators keeping them on their toes, elk now down lush willows and other vegetation along rivers and streams.

**AFTER:** More alert for wolves, elk spend less time feeding in some streamside areas and instead spread across the landscape.

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**Rivers and streams**

**BEFORE:** With plants chewed down and little vegetation to hold them in place, stream banks wash away and silt darkens water.

**AFTER:** Willows and other plants rebound, their roots stabilizing soil along the edges of streams.

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**Scavengers**

**BEFORE:** On their own for food.

**AFTER:** Each wolf in Yellowstone kills an average of two elk per month. Their leftovers become a feast for scavengers, including ravens, eagles and sometimes grizzly bears.

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**Coyotes**

**BEFORE:** In absence of wolves, coyotes multiply and take over the role of leading predator. But their influence on elk is not as great. Coyotes compete with foxes, depressing fox numbers.

**AFTER:** Wolves kill many coyotes. With coyotes depressed, rodents and other animals they once preyed on are left as prey for foxes, badgers and eagles.

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**Beavers**

**BEFORE:** Sparse streamside-greenery offers little for beavers to eat. Few Beavers remain to engineer dams.

**AFTER:** Plants lure more beavers. They build dams, creating ponds that slow streams. Water and plants attract songbirds. Silt settles out, leaving water cleaner, and deeper pools may be cooler and more hospitable for fish.

### After

Source: Oregon State University, National Park Service

**Successful Forest Resources Graduate Students — Congratulations!**

**Ryan Gordon, MS**

“Video: Communication Strategies for Fire Management: Creating Effective Citizen-Agency Partnerships”

**Peter Giampaoli, MS**

“The Extent and Implications of Specified Resource Site Protection in Oregon”

**Danielle Robbins, MS**

“Temporal and Spatial Variability of Historic Fire Frequency in the Southern Willamette Valley Foothills of Oregon”



**OSU Honors Forest Policy Specialist**

Professor **K. Norman Johnson** (Forest Resources) has been named “distinguished professor” by Oregon State University. This prestigious award is the highest honor the University can bestow on its faculty. A leading forest policy analyst, Johnson is the principal architect and author of a dozen major reports on forest management and policy that have helped shape modern forestry legislation and management policies of state, federal and tribal forest lands in the United States. He has advised numerous governors, legislators, and agency executives on forest policy issues. He led the multi-million dollar Coastal Landscape Assessment and Management Study (CLAMS) that became a model for integrated natural resource planning throughout the U.S., and has secured nearly \$4 million in grants and funding over the last 10 years alone. Professor Johnson is also an inspirational teacher, who often uses his connections to bring in federal agency administrators, timber company executives, and leaders of environmental organizations to meet with students.

The College of Forestry proudly congratulates Distinguished Professor Johnson!

**Governor Guest Lectures**

**Forestry Students Invite Former Governor to Speak for Discovery Seminar Series**

—by Susan Morr 

Former Oregon Governor **John Kitzhaber** spoke on the topic of “Watershed-scale Planning for Sustainable Forest Management” for the Discovery Seminar Series at the College of Forestry in February 2005. His lecture was the second in the five-part series, which is sponsored by OSU’s Sustainable Forestry Partnership (SFP) through a grant from the John D. and Catherine T. MacArthur Foundation.

This year’s theme was “Approaching Sustainability in Managed Forests.” The series speakers brought diverse expertise and perspectives on how best to manage forests, notes **Erin Kelly**, a graduate student in Forest Resources. Kelly and fellow graduate students **Lori Kayes** (PhD student, Forest Sciences), **Susan Morr ** (PhD student, FR), and **Melanie Stidham** (MS student, FR) were the organizers of this year’s series. Professor **Claire Montgomery** (Forest Resources) is the faculty sponsor for this one-credit course through the Department of Forest Resources, and Professor and Forestry Extension Program Leader and Executive Associate Dean **Scott Reed** and **Leon Liegel** are the SFP mentors. “The lecture series is a way for the College of Forestry to reach out to the local community and present information relevant to sustainable forestry,” says Kelly.

The students were able to book Governor Kitzhaber through The Foundation for Medical Excellence in Portland, where he is the first recipient of the John Kitzhaber, MD Chair on Health Care Policy. The governor accepted the invitation because of his current work on watershed-based natural resource planning for sustainability. He recently established the Kitzhaber Center at Lewis & Clark Law School in Portland, whose mission is to seek new ways to address natural resource issues that enhance environmental, economic and social sustainability.

Governor Kitzhaber’s comments were well received by the audience of nearly 200 members of the university and Corvallis communities. He addressed the need to find new tools that will enable collaboration across agencies and ownerships to craft more comprehensive and sustainable landscape-scale natural resource management plans. Developing sustainable watersheds, he argued, is an objective that can bring timber interests and the environmental community together. “You can’t provide timber, wildlife habitat, or water without sustainable watershed health,” he said.

Other speakers in the series this year were Larry Innes, representing the Innu tribe of Labrador, **Michael Washburn** of the Forest Stewardship Council who spoke about certification, and **Dominick DellaSala** of the World Wildlife Fund, who addressed sustainable planning from a conservation biology perspective.

More information on the Discovery Seminar Series is available at <http://www.forestry.oregonstate.edu/discoverysem.htm>. For more information about SFP, go to <http://www.cof.orst.edu/org/sfp>

*Susan Morr  is a doctoral student in Forest Resources at the College of Forestry; photo courtesy OSU Daily Barometer*



# Studies Address Complex Management Objectives

## Management objectives for private and public forestlands have changed dramatically over the past two decades.

—by Marie Oliver



Most landowners now consider more than one objective and these various objectives may at least partially conflict. Factors that have affected management practices include public influence on land use, legislation such as the Endangered Species Act, and increased knowledge of ecological issues.

“Landowners must now consider a broader array of issues than they did in the past,” says **Klaus Puettmann**, associate professor of silviculture and forest ecology in the Forest Science Department.

Puettmann, who came back to OSU four years ago after receiving his PhD here in 1990, focuses his research efforts on silvicultural practices as they relate to diverse and complex management objectives. He is involved in several studies that, over time, will provide information to assist landowners in making management decisions. He is looking at all current silvicultural practices to see whether they are still relevant, how they might need to be modified, and whether new practices might more efficiently achieve these newer, more complex objectives.

“I see management objectives as part of a gradient, and I want to quantify the tradeoffs as you move along this gradient,” says Puettmann. “Management will change from year to year, ownership to ownership, and stand to stand. The real challenge is to integrate the various aspects of ecosystem responses to all manip-

ulations.” For example, he wants to discover what the tradeoffs are in managing for factors such as healthy habitat, biodiversity, and profitability. He is working toward a system that will allow managers to customize the management prescription to achieve their objectives in a multi-use forest.

The bulk of Puettmann’s work at present focuses on density management. He is collaborating with **Paul Anderson** of the USDA Forest Service to study various reforestation practices in the aftermath of the Timbered Rock fire, which burned approximately 27,000 acres in the Elk Creek watershed in southern Oregon in July 2002. His team is studying how these practices influence tree growth, understory development, and fuel loading.

In a related study, he is working in cooperation with the Oregon Department of Forestry (ODF) to investigate how best to achieve diverse stand structure within young, intensively managed Douglas-fir stands. Current ODF practices are to regenerate stands using a traditional approach focused on full stocking and tree and stand growth, switching later to manage for layered, older forest structures. Puettmann and other scientists are attempting to determine whether it makes sense to maintain diverse conditions during the early plantation stage, rather than trying to recover these conditions later. The study includes scrutiny of the costs and tradeoffs in terms of timber production.

The team started with a retrospective study, documenting the understory of established stands. They then produced gaps in the stands (a prescribed treatment for providing for diversity and habitat structure) and are studying what happens over time. “Standard forestry practice would aim to close the gap,” says Puettmann. “We’re looking at what we gain or lose if you try to maintain it.”

*(continued on page 23)*



## Successful Forest Science Graduate Students—Congratulations!

### Scott Bergen, PhD

“Spatial and Temporal Dynamics of Anthropogenically Influenced Forests of the Brazilian Amazon”

### Fen-Hui Chen, PhD

“Effects of Wood Control on Vegetation Dynamics in Pacific Northwest Conifer Plantations”

### Thomas Pypker, PhD

“The Influence of Canopy Structure and Epiphytes on the Hydrology of Douglas-fir Forests”

### Daniel Sarr, PhD

“Multiscale Controls on Woody Riparian Vegetation: Distribution, Diversity, and Tree Regeneration in Four Western Oregon Watersheds”

# Using Pheromones to Manage Bark Beetles

—by Marie Oliver



At low population densities, bark beetles serve important ecological functions. But when forest conditions cause their populations to escalate out of control, they can increase to very large numbers and kill thousands or even millions of trees across vast areas.

In the past few years, large wildfires throughout the Pacific Northwest and northern Rocky Mountains have created optimal conditions for the insects by weakening huge numbers of trees, says **Darrell Ross**, forest entomologist and associate professor in Forest Science. As a result of these favorable conditions for the insects, the Douglas-fir beetle has reached high population densities in many areas.

For several years, Ross has been working with the USDA Pacific Northwest Research Station (PNW) to identify naturally produced chemicals that can be used by forest managers to control Douglas-fir beetle populations. The team has found a solution that uses the beetles' own chemistry—aggregation and anti-aggregation pheromones—to attract and repel the insects to meet management objectives.

Pheromones are the chemicals many insects use to communicate with each other within a particular species. Females release the aggregation pheromone when they have located a suitable host, attracting other females and males to the tree. The beetles bore through the bark, excavating tunnels and laying their eggs. The young larvae feed on the moist phloem tissue that lies between the bark and the wood.

“When they utilize a tree, they utilize it entirely,” says Ross. “They must have live trees or trees that have recently died, where the phloem tissue is still moist and fresh.” Once the larvae develop into adults, they emerge and find a new tree to inhabit.

After they mate, the beetles stop producing the aggregation pheromone and the males begin producing an anti-aggregation pheromone, abbreviated MCH. This pheromone acts like a “no vacancy” sign for late-arriving beetles who are responding to the aggregation pheromone. Attracted insects switch to a neighboring tree, or fly elsewhere in the forest to look for a suitable host.

MCH was identified in the late 1970s and originally was used to treat downed logs to keep them intact until they could be removed the following season. Ross, collaborating closely with **Gary Daterman** of the PNW Research Station, tested it operationally and found it to be a highly effective treatment to protect live trees. It comes in a small plastic pouch that is stapled to the trees. MCH was registered with the EPA in 1999 and was available for operational use for the first time in 2000. Since then it has been used throughout the Pacific Northwest and the Rocky Mountains with great success—the first treatment of its type to be used anywhere in the world.

“It’s designed for high-valued trees, like those in campgrounds or residential areas,” says Ross. “It works just like a natural system, diffusing out of the pouches and covering the area. Beetles think the area is already infested and they either move on through or attack trees elsewhere.”

In contrast, Ross and his collaborators use the aggregation pheromones to attract and trap beetles rather than repel them. For



instance, a manager may treat some high valued areas with MCH and use traps in areas that may be deficient in snags or perhaps be scheduled for harvest—areas where it wouldn't disrupt the management plan if a number of trees were killed.

"We've made a lot of progress in developing the trapping programs, but there's still a lot of work to be done," says Ross. "We still have many questions about the most efficient way to place the traps, and so forth. We're continuing to do research to try to get a better understanding of what the trap catches mean in terms of tree mortality around the traps."

Ross has done similar work with mountain pine beetle and spruce beetle pheromones, although the Douglas-fir beetle research has been the most successful so far. Additionally, his most recent research encompasses other means of biological control for various insects that pose a threat to forest resources.

(continued from page 21)

Other studies address practices for stands in later stages of development—35- to 40- and 60- to 70-year-old stands. These studies are attempting to determine what kind of treatment would accelerate a conversion from a dense monoculture of Douglas-fir to a more diverse, late-successional habitat.

Key questions in Puettmann's studies address spatial issues. These questions include: "If we have a gap, how far out does it influence the microclimate or vegetation, and how does that distance differ with gap size? How does it change if the stand around the gap is dense or open? And how does it change between 20-year-old stands versus 50-year-old stands?" Puettmann says that understanding the spatial link and how it changes over time is crucial.

He also emphasizes the importance of accounting for random elements in ecosystem development, such as a drought occurring during the spring after seed fall—events that can't be predicted and change from year to year. "Simulation models that predict mean responses only make sense if you have homogeneous conditions," he says. "If you want complex conditions, the mean response is not very useful. The challenge is how to integrate these stochastic elements into management practices."

As part of the college's Planted Forest Productivity Enhancement and Value Initiative, Puettmann is also involved in an extensive literature study to review what is known about various management practices and how they interact in intensively managed forestry plantations. The initial objective of the study is to learn where scientists should steer future research efforts and to set the stage for expanded research efforts in this area.



## Successful Forest Science Graduate Students—Congratulations!

### Liane Beggs, MS

"Vegetation Response Following Thinning in Young Douglas-fir Forests of Western Oregon: Can Thinning Accelerate Development of Late-Successional Structure and Composition"

### Sarah Lobser, MS

"Vegetation Characteristics Expressed through Transformed MODIS Data: A MODIS Tasseled Cap"

### Suzanna Melson, MS

"Live-Tree Carbon in the Pacific Northwest: Estimates and Uncertainties"

### Alexa Michel, MS

"Morphological Characteristics of Ponderosa Pine and Lodgepole Pine Regeneration Nine Years after Stand Density Reduction at Three Sites in Central Oregon"

### Jamison Tuitele-Lewis, MS

"The Biology and Ecology of *Potentilla recta* in the Blue Mountains of Northeastern Oregon"

### Jeannette Tuitele-Lewis, MS

"Agroforestry Farming in American Samoa: A Classification and Assessment"

# Capstone Courses “Finish” Students

—by Marie Oliver

As students progress toward a bachelor’s degree in forestry, they are exposed to a broad range of ideas and disciplines, and they develop skills in a variety of areas. Senior project courses, also called capstone courses, provide an opportunity for senior students to integrate and demonstrate all they have learned over the years.

Although each department designs their capstone course differently, they all have the same objective: to prepare students to enter the “real world” of forest-related occupations. Each course requires students to integrate the knowledge they have gained in previous coursework, complete a major writing assignment, and present their final project to the class or the department as a whole.

For example, the Forest Resources capstone course gives students an opportunity to address a sticky, multi-resource management problem, where they must deal with real conflicts between potential land uses. “We use a real forested area with a real management problem—a snapshot of a controlled environment similar to situations they’re going to encounter when they go to work,” says **Darius Adams**, professor and instructor for the Forest Resources capstone course.

The 10-week class requires students to develop a management plan that best meets the owner’s objectives while recognizing all the different interactions between resources. “It’s an opportunity for them to wade into a project like this and see what the difficulties are,” says Adams. “It gives them a chance to bring together all the many tools and knowledge they have gained from various classes and bring that to bear on a specific problem.”

The course also gives Forest Resource seniors an opportunity to work collaboratively in an interdisciplinary team to meet their multifaceted objective. “They must work in an integrated fashion across disciplines,” says Adams. “It isn’t always easy. The students come from different educational backgrounds, viewpoints on what

to look at, what’s important in terms of management emphasis. It’s pretty clear that this course fills an important additional educational role for the students.”

The Forest Engineering approach is slightly different. The capstone class meets for two terms, and seniors work independently for their final project. It gives seniors an opportunity to integrate the knowledge they’ve gained throughout their education into a larger project with minimal instruction.

“The project has an open design to promote critical thinking and engineering problem-solving skills,” says **Kevin Boston**, assistant professor and instructor for the Forest Engineering capstone course. In the first term, students must prepare a tactical and operational harvesting plan for a 1,000-acre area that meets specific environmental and economic goals and objectives. In the second term, they are assigned a smaller project where they prepare bids as if they were stumpage buyers on 100 acres. The project involves fieldwork, data collection, and analysis—all skills that most likely will be required in the early phase of a career in forest engineering.

“The general feedback we get from graduates after they start their first professional job is that it’s just like their capstone project,” says Boston.

Boston says many students initially feel uneasy with the minimal direction they are given for fulfilling this assignment. “I sense they struggle with the openness—it’s a complicated, multi-step process that makes them uncomfortable, and that’s by design,” he says. “I want them to come out of the capstone project with an improved sense of their own ability to meet a challenge.”

In a third variation on capstone courses, Natural Resources seniors complete a course where they are exposed to decision-making philosophies and strategies, the roles of personal and professional ethics in decision-making, factors in natural resources decisions, and the impacts of certain decisions. The course requires strong class participation, weekly reading and reflective writing assignments, and a team project.

“My goal for the class is to give the students both personal and practical information that they can immediately use,” says **Viviane Simon-Brown**, sustainable living educator with Forestry Extension and instructor for the Natural Resources capstone course. “I expect that the texts we use in class will go with them to their new jobs. And I make myself available to consult with them when they run into ‘real life’ natural resource decision dilemmas.”

The Wood Science & Engineering Department requires seniors to complete a three-course series during which they conduct an intensive literature review, collect and analyze data, prepare a written report, and make a final presentation to the department. Students attack a wide range of problems ranging from controlled laboratory studies to operations that involve testing manufacturing variables in a full scale mill operation. Students select their own topics—mostly from their summer work experiences—and work closely with industrial cooperators to bring the real world to the problem. Many find that their project leads them to their first job.

To obtain an International degree, students must write a rigorous and integrative senior thesis that demonstrates a fundamental and comprehensive understanding of global issues and cross-cultural considerations.

## Another Win for Wolf



College of Forestry student **Wolf Read**, senior, (Natural Resources, with Natural History Museology option), has won an Undergraduate Research, Innovation, Scholarship, and Creativity (URISC) Award for the second year in a row. The prestigious awards, which include funding for research, are given by the Vice Provost for Research and Incentive Programs at OSU. Read’s award winning proposal was titled “Wind Effects on an Old Growth Stand at the T. T. Munger Research Natural Area,

Gifford Pinchot National Forest, Washington.” His research advisor is Professor and Ruth H. Spaniol Chair in Renewable Natural Resources **Barbara Bond** (Forest Science). Congratulations, Wolf!

# Forestry Groups Offer Something for Everyone

—by Zane Bloom

There are several clubs and activities offered by the College of Forestry; there's an organization for almost any forestry-related interest. They include the Forestry Club, Xi Sigma Pi, American Society of Photogrammetry and Remote Sensing, Forest Recreation Club, Natural Resources Club, Society of American Foresters, and the Forest Products Society.

Each group has a specific focus, ranging from outdoor recreation to mapping sciences. Becoming involved in any of the various clubs opens up doors for many students. Not only do members become more involved and aware of their particular field, but they establish interconnections and relationships with the faculty, staff, and professionals. Within the clubs there's a very important social aspect between the fellow students as well. "You have a chance to relax with all of your friends outside of school," **Tim Drake**, the President of the Forestry Club, remarked.

The Forestry Club also orchestrates events between other schools, such as the Fall Frost. Drake said, "We hosted the region-wide logging competition. It was fun getting to know people from neighboring schools and testing out everyone's skills."

A number of the clubs also take field trips and enjoy different elements of forestry through travel and camping. "A lot of the field trips we go on have a neat atmosphere. We go on trips the members picked out based on they're interests," Drake explained. The Forest Recreation Club (alongside the Forestry Club and Wood Science) recently took a trip to Sun River and stayed in a cabin for three nights. "It was a blast and I'm sorry for anyone that did not go," said **Doug Andreas**, a new club member. Forest Recreation is organized around finding new ways to appreciate the outdoors, they enjoy mountain biking, skiing and spelunking (cave exploring) in addition to camping trips. Other clubs focus less on recreation and more on education. **Jessica Halofsky**, a member of Xi Sigma Pi, said "The club (Xi Sigma Pi) went on a trip to the Wind River Canopy Crane and was given a tour of the forest with **Jerry Franklin** of the University of Washington."

Most of the clubs focus on the community and offer and organize events within it to show appreciation. "We get a lot through the community," Drake said, "especially the alumni. We want to be able to give back to those who've helped us out." And they do. The Forestry Club members take part in volunteer woodcuts for local residents.

Several of the clubs meet regularly to promote education and awareness of forestry issues. Andreas clarified, "the meetings are not just blah,



blah. They can be very humorous at times. . . Similar clubs I have participated in were just too formal, and to the book. It's not like that here." Meetings don't only allow for discussion forums on hot topics, but a chance for the members to brainstorm different activities to get involved in. "The more and more meetings I go to, the more excited I get for the next event," Andreas commented on the meet-ups.

Education is a priority of the College of Forestry clubs as well. **Amy Hoffman**, the President of the Natural Resources Club declared, "Our future goals include promoting discussion of natural resource issues through guest speakers and educational trips." Hoffman reinstated the club in the fall of 2004, "I wanted something that involved fish and wildlife, education, forestry, agriculture, and so much more," she explained.

Xi Sigma Pi also plans to "initiate a tutoring service for forestry students by the end of the year," says Halofsky. Clubs, such as the Forest Products Society, Natural Resources Club, the Society of American Foresters (SAF) and Xi Sigma Pi, focus on professionalism, by creating opportunities for students to build experience within their field, and establish associations with professional foresters. This helps students become better prepared, once they've graduated, and are ready to step out into their careers. Halofsky defined "the goal of spring trips and fire side chats is to educate members about the forestry profession." Joining clubs is a great way to get involved in a student's field of interest, the community, the professional world, extended research, the generation of ideas, and extracurricular activities. There's something for everybody in the clubs at the College of Forestry.

*Zane Bloom is an English major at OSU.*

## Job Fair Facilitates Summer Employment

Representatives from 28 employers came to campus for February Job Fair to talk with students about summer employment opportunities. The event, chaired this year by senior **Anna Starker**, is sponsored by the student chapter of the Society of American Foresters. By spring break each year, most students have been placed and can begin making preparations for their summer break from classes. "The job fair is an excellent opportunity for employers to see the majority of our undergraduate students," says Student Services Advisor **Clay Torset**. "It also allows our students to apply for a variety of summer positions. They get quite a few choices about what their experience will be so they can pick something meaningful that will help them develop additional skills through their summer work experience."

**Angie Hoffard**, now a junior in Forest Management, says she is very pleased with the job she found through participation in the 2004 Job Fair. "I got to do just about everything: harvest boundaries, road layout, property lines, stream buffers, stocking surveys, GIS work, GPS work—basic skills you'd use in forestry related jobs," she says. **Tim Drake**, a senior in Forest Management, says he thinks the job fair has been an excellent venue to get himself out into the job market and see the kinds of employment are available upon graduation. "The experiences I have gained through my employment have not only allowed me to apply some of the material from my course work, but have also helped focus my career path," he says.

**Congrats on Conclave!**



Seven states were represented at this year's Conclave (California, Oregon, Washington, Nevada, Idaho, Montana, and Colorado) and more than 150 competitors participated. Conclave is an annual event where forestry clubs from the Pacific Northwest come together and tour local forest-related activities. The event is hosted by a different school each year, which

gives students the opportunity to learn about forest practices throughout the region. The University of Washington hosted Conclave at the Pack Forest, just outside of Eatonville.

Conclave includes a three-day-long timber sports competition, with events such as double buck, single buck, Jack & Jill, underhand chopping, vertical chopping, choker race, axe throw, pole climb, birling, limber pole, power saw, caber toss, pulp toss, timber cruise, traverse, and dendrology. The College of Forestry at OSU had only five competitors at Conclave, but all of them "came out like a ball of fire," says one spectator. OSU's competitors were **Amanda Briese** (FM), **Angie Hof-fard** (FM), **Jona Briggs** (NR), **Nick Gerritsen** (FM/F&W), and **Gary Williamson** (WST). Amanda and Nick beat 34 other competitors in the Jack & Jill event and won the title with lightning speed. Amanda and Angie won second place in the women's double buck by two-tenths of a second. Angie and Gary pulled for fifth place in the Jack & Jill. Gary and Jona won fifth place in the men's double buck—even though it was their first time sawing together. Nick scored the second highest in men's log rolling. Nick has been training with several professionals up in Portland in a heated pool in the log rolling event. He also won fourth place in the choker race and placed in several other events. Gary Williamson won the title in the power saw race, the single buck, and the underhand speed chop. He also placed second in the vertical hard hit, fifth in underhand speed, fifth in men's double buck, fifth in the choker race, and fifth in the Jack & Jill event.

The Stihl manufacturing company also sponsors a collegiate Stihl Series Competition at Conclave, which consists of three different events: single buck, underhand speed chop, and the power saw race. This competition is separate from the rest of the show. Each school selects the best competitor in those three events, and the person with the most points at the end of the challenge wins the Collegiate Stihl Series. OSU's Gary Williamson won every event in the Stihl Competition. He is one of six people in North America to be selected to compete in the National Collegiate Stihl Series Competition in Lake Charles, Louisiana, in August 2005. This event will be televised on ESPN, so it's a great opportunity for a little publicity for OSU and the College of Forestry. Congratulations to the OSU Logging Sports Team and Go Beavs!



*Clockwise, from top left: Gary and Nick with broken axe; Amanda, single bucking, with Gary coaching; Amanda, Angie, and Jona with forester from Spokane Community College; Nick, tree climbing; and Gary, power sawing. All photos courtesy Amanda Briese.*

# Oregon Forestry Education Program



**F**or over 25 years, the College of Forestry at OSU has played a major role in enhancing the quality and quantity of forestry and natural resources education in Oregon. The Oregon Forestry Education Program (OFEP), administered by the College, provides workshops that increase K-12 educators' understanding, knowledge, and skills so they can prepare children to make informed decisions, exhibit responsible behavior, and take constructive action concerning the future of Oregon's forests.

"Our goal is to build people's understanding and knowledge about the diversity and complexity of forest systems," says **Susan Sahnaw**, director of OFEP. "We focus on providing educators with the materials, information, and resources that

will increase their confidence and capacity for teaching about forest and forest-related topics and issues in the classroom."

In addition to serving those who teach in formal classroom settings, OFEP's workshops are available to teachers in after-school programs such as 4-H, Campfire Girls, and Title III Extension programs. OFEP also takes the program to teachers-in-training at institutions of higher learning throughout Oregon.

Sahnaw's role as director is to build collaborative partnerships with universities, schools, and other forestry education programs in order to take advantage of all available resources in bringing these programs to educators.

OFEP's workshops introduce teachers to a national award-winning natural resources curriculum called Project Learning Tree (PLT), which uses hands-on, thought-provoking, interdisciplinary activities to explore the role of trees and forests in our lives and to teach critical thinking skills. The comprehensive PLT curriculum guide for K-8 provides approximately 100 activities that are cross-referenced by discipline, grade level, concept, skill, indoor/outdoor, and story line. The only way teachers can get the curriculum is to go to one of OFEP's workshops.

"The PLT guide is available only by attending a workshop because we know they are more apt to use it if they have experienced it. Teachers are busy and may not have time to get thoroughly acquainted with the curriculum on their own," says Sahnaw. In the workshop, teachers learn about how the curriculum is organized, participate in four to six of the activities, and explore a topic related to Oregon's forests. The materials are all correlated to Oregon's Benchmarks and Standards and ensure that teachers have an

opportunity to develop a plan for incorporating the materials into a teaching unit before they leave.

Each PLT activity provides background information on the subject, a list of all materials that will be needed to perform the activity, step-by-step instructions, enrichment activities, information about how to assess student learning, and a list of related activities.

"It's a great curriculum," says Sahnaw. "It's been well-developed and well-tested. It's easy for teachers to use and helps them meet the goals they have for their students. It has been thoroughly evaluated and tested over the years with positive results."

Some workshop facilitators around the state are trained volunteers, but others, such as Extension workers, teach the workshops as part of their jobs. The facilitator assesses when workshops should happen in their area by talking to teachers and schools, and sets a date for the workshop. They then contact OFEP, which helps the facilitator to market the workshop.

In addition to the standard PLT workshops, OFEP offers topic-related workshops, such as "Fire in the Pacific Northwest" and "Watersheds." These workshops use PLT, but also incorporate other materials and curriculum specific to that topic. Many of them are "place-based," which means the curriculum uses the learner's local environment as the focal point of study.

"We want to connect people to local topics, subjects, and issues they read about in the newspapers," says Sahnaw. "We provide opportunities for them to explore the topic through the curriculum, presentations by resource specialists, and field trips to help them make the link between the curriculum and what's happening in their backyard."



### New Employees in Outreach Education



**Jenni Heinen** and **Ann Dunn** have joined the Outreach Education staff. Jenni manages the registration component while Ann tracks the financial aspects of the office. Both have a wealth of experience in their specialty. Jenni most recently coordinated registration for the OSU supported TEAM OREGON motorcycle Safety Program. Ann comes to us from the United Kingdom where she was financial manager for an event lighting company. With this staff addition, the Outreach Education Office is well positioned to support a variety of technology transfer events.

Ann Dunn is conversant in a number of languages. Along with long-time staff member, **Nathalie Gitt**, the Outreach staff can assist those needing to communicate in French, Spanish, Flemish, Swedish, Polish and the United Kingdom version of English. If you have not met Jenni or Ann, stop by 202 Peavy Hall and introduce yourself.

### Best Wishes, Emily!



**Emily Cosci**, who started working for OFEP in 1997 as program coordinator and worked her way up to assistant director, recently took job as Watershed Education Coordinator for Marion-Polk County Extension. She was an integral part of the department for many years, and we will miss her.

*(continued from page 27)*

Sahnaw stresses that the PLT curriculum teaches students how to think, not what to think. It is designed to raise awareness, develop understanding, and promote creative and critical thinking,” she says. “The learning activities in the guide are designed for students to discover, explore, analyze, and make decisions for themselves.”

Thanks to generous funding from the Oregon Forest Resources Institute, PLT is now free to participants. Funds are available to reimburse school districts for substitute costs incurred while teachers attend one of the 6-hour workshops. OFEP also administers the Oregon Forest Institute for Teachers, which is a collaborative program among private, state, and national forests, and universities. It offers 3-day to week-long intensive workshops that involve teachers in more hands-on activities. “We study forest land ownership, forest values, forest ecosystems, and forest management through interactive field study and activities designed to be used in the classroom,” says Sahnaw.

OFEP trains 800-1,000 teachers per year from all over the state, at all grade levels and in all disciplines.

### Artist Aces Award



Kudos to **Sandra Arbogast**, graphic artist in the Forestry Communications Group, for winning a silver medal in this year’s Association for Communications Excellence in Agriculture, Natural Resources and Life & Human Sciences (ACE) international contest. The award was for a 20-foot-long poster, *Long Term Science Monitoring*, which she designed and prepared for USGS-FRESC. Congratulations, Sandie, on this prestigious award!

# Family Forest Owners Growing New Scholarship Fund

## Oregon Small Woodlands Association scholarship to benefit future forest managers

—by Sara Zaske



**Mike Barnes**, '71, does not plant trees on his Washington County land for himself or even for his children. He does it for his grandchildren.

Owning forested land is a forward-thinking venture to say the least. Barnes is also planning for the future by helping to launch the Oregon Small Woodlands Association Scholarship Fund at Oregon State University.

“Education is important to continue what we’ve spent lifetimes trying to build,” he said. “We want to create a solid base for good forestry and good stewardship.”

In February, the board of Oregon Small Woodlands Association, or OSWA, voted unanimously to launch the scholarship fund, and Barnes, as the Association’s president, contributed the initial gift. In the coming months, OSWA will be asking its members and other interested people to help build the fund to an endowed level of \$500,000, which will be invested to support annual scholarships benefiting forestry students for generations to come.

The fund is a natural fit for the organization that represents non-industrial,

forest landowners, a group that owns nearly half of the state’s privately held, forested acres. OSWA has more than 2,500 members, many of whom are families who have managed Oregon forests for decades. Since land is their legacy to their children and grandchildren, small woodland owners have a strong interest in sustainable management to achieve a balance of social, environmental, and economic benefits.

While they may literally grow up in the forest, many small woodland owners rely on the world-class education available at OSU’s College of Forestry to help meet the challenges of forest management. Barnes, his brother, **John**, '77, and his son, **Seth**, '03, are all OSU forestry graduates.

“Most family forest owners are that way,” said Barnes. “We try to keep the next generation involved. It is the only way to keep the forest legacy continuing from one generation to the next.”

With rising tuition costs, maintaining that vital link with an OSU education has become difficult for many students and their families. Over the last three years, constrained state resources have led to tuition and fee hikes of nearly 25 percent. When taking into account the expense of room, board, and books, attending college can cost more than \$15,000 a year.

At the same time, enrollment in the College of Forestry has increased by 9 percent in the last year, underscoring the necessity of expanding scholarships to help students complete their studies.

“There’s a significant need,” said Barnes. “A large percentage of OSU students rely heavily on grants, scholarships and loans, so I think it’s important to help offset the higher and higher costs of getting an education.”

The OSWA scholarships will be open to any in-state forestry students demonstrating a financial need with a preference given to students whose families own Oregon

forestland. Since the scholarships will help educate future managers of Oregon’s forests, all Oregon residents will benefit.

To build momentum, OSWA member and long-time OSU supporter, Ned Hayes, has offered to match Barnes’ initial gift. These funds will enable the first award this spring, but there is still a long way to go to create an enduring fund for the next generation of forestry students. All donations are welcome. Contributions can be in the form of cash, appreciated securities, or planned gifts. Land owners can also contribute timber and proceeds from thinning. Gifts of forestland will be considered on a case-by-case basis. For more information, contact **Lisa French**, Director of Development for the College of Forestry at the OSU Foundation, 541.737.2900.



### OSWA Scholarship Awarded

Forest Engineering sophomore **Carl Gerig** is the first OSWA scholarship recipient. Gerig’s family owns 30 acres of forested land in Albany. Congratulations, Carl!

## Our Sincere Thanks ...

**Robert Model** of Cody, Wyoming, has made a \$500,000 personal pledge to establish the Boone and Crockett Wildlife Ecosystem Health Fund. The purpose of the fund will be to complement the existing Robert and Anna Mealey/Boise Cascade Ecosystem Health Fund by studying native fish and wildlife relationships to forest and rangeland ecosystem health, with the goal of enhancing the welfare of such animals and the ecosystems on which they depend. The Boone and Crockett Wildlife Ecosystem Health program will be an interdisciplinary effort between the College of Forestry and the College of Agricultural Sciences. Model is the president of the Boone and Crockett Club.

**Edmund "Ned" and Harriet "Sis" Hayes, Jr.** have made an additional gift of \$100,488 to support the Edmund Hayes Professorship in Silviculture Alternatives Fund. The purpose of the professorship is to improve science-based forest management by discovering and disseminating knowledge about silviculture alternatives.

**Marvin and Marcia Coats** have made a gift of \$50,000 to benefit the Willamette Industries Legacy Scholarship Fund. Plans are underway to award the first round of scholarships in 2005. The Willamette Industries Legacy scholarships will be awarded to juniors and seniors who are majoring in forestry, engineering or business and, who have a desire to work in the forest products industry following graduation.

**Richard Strachan** has made an additional gift of \$30,000 via **The Gibbet Hill Foundation** for the Lee Harris Memorial Laboratory and, an additional gift of \$10,000 for the Gibbet Hill Endowment Fund in Forest Engineering.

**Michael and Jane Newton** have made a gift of \$30,000 to establish the Newton Forest Research Fellowship Fund. The fund will benefit a graduate research assistant who is actively involved with the long-term silvicultural research programs in the Department of Forest Science.

**Laurence G. Sprunt** has made an additional gift of \$20,290 to the B.D. Mitchell and H.R. Blacketer Memorial Scholarship award.

**Professor Phillip Sollins** has made additional gifts of \$16,327 to benefit tropical ecosystems research.

**Dave and Connie Bowden** have made a gift of \$10,500 to establish the Dave and Connie Bowden Forest Engineering Scholarship Fund. The scholarship fund will benefit juniors and seniors who are Forest Engineering majors.

**The Walker Family Foundation (Wendell and Barbara Walker)** have made an additional gift of \$10,000 to benefit the OSU Extension Forestry, Master Woodland Manager Program Endowment. Income from the endowment is used to update and improve the training and support received by Master Woodland Managers.

**Emeritus Professor Richard and Doris Waring** have made an additional gift of \$10,000 to establish the Richard and Doris Waring Forest Science Student Travel Award Fund.

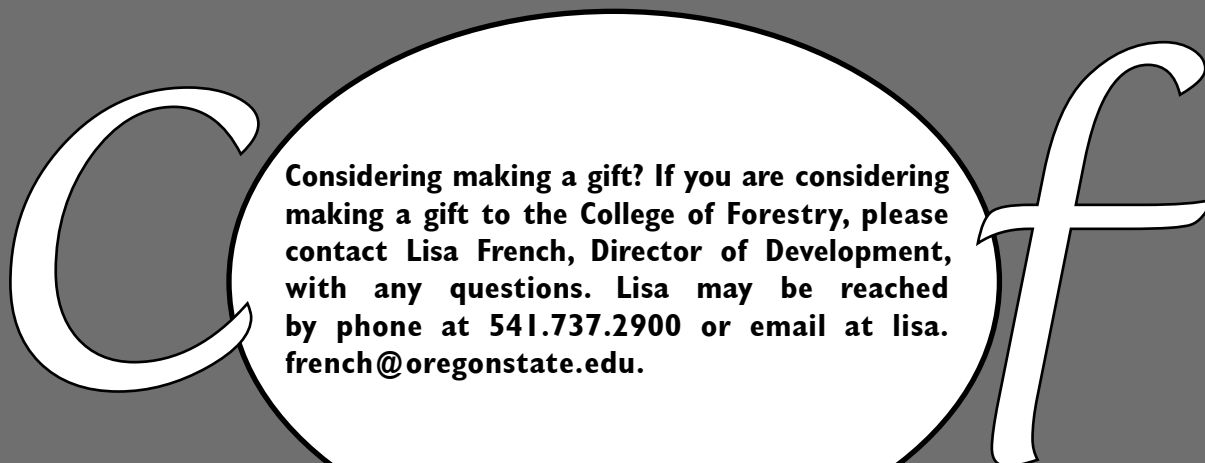
**Sam Wheeler** has made an additional gift of \$10,000 to the Willamette Industries Legacy Scholarship Fund.

**Wiancko Family Donor Advised Fund** donated \$10,000 to benefit Ecological Research focused on wolves and ecoregions.

**John and Judith Sessions** have made a gift of \$9,520 to the Forest Engineering department to be used to support undergraduate student retention and to support student preparation for the state licensing professional examinations.

**John and Margaret Christie** have made an additional gift of \$9,367 to the Robert F. Tarrant Graduate Fellowship Fund in Forest Science.

**Mrs. Priscilla Duncan** has made an additional gift of \$5,000 to benefit the Forestry Legacy Endowment Fund.



# Passing of Philanthropist and Friend

In Memoriam

## Loran LaSells Stewart

January 10, 1911 - January 2, 2005

**L. L. “Stub” Stewart**, one of Oregon’s most dedicated and distinguished citizens, died January 2, 2005, at the age of 93.

Stewart was born on January 10, 1911, in Cottage Grove, Oregon, to **LaSells** and **Jessie Hills Stewart**. He was the oldest of three children. He graduated from high school in Cottage Grove in 1928, and earned his degree in logging engineering from Oregon Agricultural College (now Oregon State University) in 1932. He married **Dorothy McDonald** in 1936. She died in 1999.

Stewart worked as an engineer with the U.S. Forest Service from 1933 until 1941, with postings in Lane County, John Day, Baker City, and Lakeview. He served as a U.S. Army field artillery officer in India, China, and Burma during World War II, and made the rank of lieutenant colonel. After the war, he came back to Oregon to work as a timber salesman for Pope & Talbot.

In 1946, Stub Stewart, his brother **Faye**, and brother-in-law **Larry Chapman** purchased Bohemia Lumber Company from LaSells Stewart and other partners. The new owners transformed the logging company into a multimillion-dollar enterprise with more than 2,000 employees and mills throughout Oregon and northern California. Stub Stewart was named company president in 1950. Over the years, the company diversified into such operations as modular home construction, land development, balloon logging, laminated beam manufacturing and marine construction. Bohemia was sold to Willamette Industries and Sierra Pacific Industries in 1991.

Along with the rest of his family, Stub Stewart was a major donor to his alma mater, and gifts from the family helped with the construction and operation of OSU’s LaSells Stewart Center. Stub Stewart’s generous contributions to OSU totaled more than \$1.5 million, including gifts to the College of Forestry, the Center for Gene Research, the College of Agriculture, the College of Science, and athletics. He and his wife established the Stewart Faculty Development Fund, which allowed professors to expand their research, and he and his brother established the Stewart Professorship for Gene Research in 1990.

Stewart passionately believed that private success brought with it the obligation of public service. In addition to his generous financial contribution, he contributed countless hours of



his time. While engaged as the president and chairman of the board of Bohemia, Stewart also served in the Oregon House of Representatives from 1951 to 1957, on the State Board of Higher Education from 1970 to 1977, and on various incarnations of the State Parks and Recreation Commission for 30 years. He has been credited with being the father of Oregon’s landmark Beach Bill that protected public access to the state’s beaches and with being a driving force behind efforts to expand Oregon’s public parklands. He served on the boards and in leadership positions of dozens of professional, charitable, and commu-

nity organizations, including Sacred Heart Medical Center and The Nature Conservancy.

Stewart also served as an advisor to four consecutive deans of forestry and four OSU presidents. “The contributions he made to Oregon State University covered a spectrum of things,” said **George Brown**, Emeritus Dean of the College of Forestry, who worked with Stewart when he chaired the Forest Research Laboratory advisory committee. “He was a far-sighted person who had the best interest of Oregon at heart,” Brown said. “Oregonians were beneficiaries of his time, effort and philanthropy,” Brown said. “I’d put him in the same category as Mark Hatfield and Tom McCall.”

Among the numerous recognitions bestowed upon Stub Stewart over the years are Oregon State University’s Distinguished Service Award and the E.B. Lemon Distinguished Alumni Award, the University of Oregon’s Pioneer Award, the First Citizen Award from the cities of Eugene and Cottage Grove, and the Secretary of the Interior Citation Award for Conservation Service, and Oregon Philanthropist of the Year.

In a statement commemorating Stub Stewart’s many years of public service, Oregon Governor **Ted Kulongoski** recalled Winston Churchill’s observation that “We make a living by what we get, but we make a life by what we give.”

Stub Stewart is survived by two sons, **LaSells “Bud”** of Cottage Grove and **Steven** of Eugene; a sister, **Dorothy Chapman Stewart** of Cottage Grove; two grandchildren; and four great-grandchildren.

# Outreach Education Event Calendar 2005

**July 10-23, San Francisco, CA**

IFEI - Pacific Northwest, USA Forest Harvesting Study Tour

**July 19-21, Corvallis, OR**

Western Forest Genetics Association and Northwest Seed Orchard Managers Association Annual Meeting

**October 5-7, Corvallis, OR**

Oregon Wood Magic

**October 6-7, Roseburg, OR**

Hinkle Creek Watershed Study Conference

**October 18-20, Bend, OR**

Regeneration of Interior Forests: Principles and Techniques

To find out more, visit <http://outreach.cof.orst.edu/schdevtdates.php>

## Calling All Alums!

Please send in your news and photos for the "Class Notes" section. If you have news you'd like to share about retirement, a new degree, job, address, marriage, addition to the family, or if you'd just like to say hello to friends and classmates, please fill out the enclosed postcard and drop it in the mail. Having a reunion or meeting for a tailgater with classmates? We'd enjoy sharing your photos in the Summer **Focus**. You may also send your news and photos via email to [FocusOnForestry@oregonstate.edu](mailto:FocusOnForestry@oregonstate.edu). Please include your class year and major—and, if you include your address, please let us know whether you'd like to have it published as well. Your news will be organized by class year and will be featured in the Summer 2005 **Focus on Forestry**. Thanks, and we look forward to hearing from you!

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