

# OREGON'S FORESTRY PROFESSIONALS

Evolution and  
Growth of  
the Forestry  
Profession  
in Oregon



A Special Report  
of the Oregon  
Forest Resources  
Institute





## THE DIVERSE AND EXPANDING FIELD OF FORESTRY IN OREGON

Forestry as a profession in the United States dates back more than a century. The first school of forestry opened in 1898 at Cornell University. In 1906, forestry education arrived in Oregon with the establishment of a four-year undergraduate program at Oregon Agricultural College, later to become Oregon State University (OSU). Since that time, forestry has come to embrace engineering, chemistry, silviculture, hydrology, wildlife biology and many other disciplines as our values related to our forestland have expanded. This report profiles some of the many professionals working in the field of forestry today in Oregon.

The field's professional organization is the Society of American Foresters (SAF). Many of the forestry professionals featured in this report are active members of SAF. Gifford Pinchot and six other pioneer foresters founded SAF in 1900. Since then it has grown to represent some 15,000 members across the United States.

SAF strives to benefit society by advancing the science, education, technology, ethics and practice of forestry. National activities include curriculum guidelines and accreditation for degree programs related to forestry. SAF also sponsors a certification program for members who wish to further demonstrate their professional credentials and competency.

The Oregon Society of American Foresters (OSAF) has about 1,000 members and includes field foresters, researchers, administrators and educators who, in one way or another, help manage the state's nearly 28 million acres of public and private forests. Members work for federal, state or local governments; universities; small and large landowners; small businesses and large corporations. Many forestry students also are members of OSAF and benefit from the professional development and networking opportunities it provides.

OSAF holds regular local and statewide meetings and field trips to help members stay abreast of new technical developments as well as important public issues. In addition, OSAF supports activities that promote public understanding of forest resources and their management.

For more information about OSAF, visit [www.forestry.org](http://www.forestry.org).



## ROOTS OF AMERICAN FORESTRY

When Gifford Pinchot entered Yale in 1885 and decided to make forestry his profession, he did not have a single American role model. There was no profession of forestry in this country. “I had no more conception of what it meant to be a forester than the man in the moon,” he wrote. “But at least a forester worked in the woods and with the woods — and I loved the woods and everything about them.” Today, more than a century later, the profession has expanded in ways even Pinchot could not have imagined, but its practitioners are still bonded by the same love of the forest.

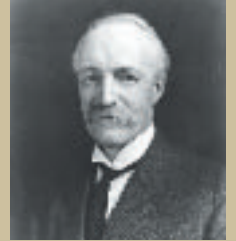
Pinchot — architect of the U.S. Forest Service and its first chief — was intent on making a profession of what until that time was little more than a rough and dangerous extractive enterprise with no objective other than clearing forests to make room for agriculture and meeting a growing nation’s need for wood. The science of forestry was unknown in America at the time and was not being taught at Yale or any other American university.

Following his graduation, a year of study in France exposed Pinchot to the European model of forestry, where management of forest resources had been practiced for centuries, and not just for producing wood. “In very early times,” Pinchot wrote, “the forest was preserved for the game it contained. Forestry then meant the art of hunting, and had very little to do with the care of trees.” He studied at L’Ecole Nationale Forestière in France and toured many European forests. The French school’s curriculum was heavily focused on silviculture — the care and cultivation of forest trees. There Pinchot observed his first planned forests under human management. He learned the theories of rotation and regeneration that ensured sustainable wood resources and a constant supply of trees to be harvested.

These concepts were unknown in America, where forests seemed limitless and no direct efforts were made to reforest harvested areas. Writing later about America’s forest resources, Pinchot said, “Before so large a part of them was destroyed they were, perhaps, the richest on the earth, and with proper care they are capable of being so again. Their power of reproduction is exceedingly good.”

### Early Forestry Education in America

Pinchot recognized that it would not be possible to bring the ordered forest landscapes of Europe to an America that had millions more acres of forestland and also was engaged in a mammoth industrial revolution fueled in large part



**Gifford Pinchot**  
First Chief, 1905-1910  
U.S.D.A. Forest Service

Gifford Pinchot is credited with bringing scientific forest management from Europe and making a profession of the field of forestry in America. “Not only does it [the forest] sustain and regulate the streams, moderate the winds and beautify the land,” he wrote, “but it also supplies wood, the most widely used of all materials. Its uses are numberless, and the demands which are made upon it by mankind are numberless also. It is essential to the well-being of mankind that these demands should be met. They must be met steadily, fully, and at the right time if the forest is to give its best service.”



**Bernhard Fernow**  
First Chief  
U.S. Division of  
Forestry

Bernhard Fernow is one of the founding figures of modern forest management in the United States. Born in Prussia, he is generally credited with bringing European forestry methods to this country and imparting those methods both through higher education — he founded the nation's first forestry school at Cornell University — and through professional journals he founded and edited, which would eventually become the *Journal of Forestry*. "It may be stated without fear of contradiction," he said, "that outside of food products no material is so universally used and so indispensable in human economy as wood. Indeed, civilization is inconceivable without an abundance of timber... From the cradle to the coffin, in some shape or other, it surrounds us as a convenience or a necessity."

by wood. But he knew that harvest and sustainability were compatible goals and that success would not be possible without a group of educated forestry professionals who could bring scientific principles to bear on the management and sustainability of the nation's forests.

Until 1898, any American wishing to study forestry had to go abroad, but in that year forestry schools opened at Cornell University in New York and at Biltmore in North Carolina. Two years later — thanks to a generous gift from the Pinchot family — a school of forestry was established at Yale and the profession of forestry in America was born. In that same year, 1900, Pinchot was instrumental in establishing the Society of American Foresters (SAF) — the nation's first organization for forestry professionals — which held its first meeting in his Washington, D.C., living room.

### **Birth of the Forest Service**

A friendship with Theodore Roosevelt that began when Roosevelt was governor of New York led to Pinchot's appointment as head of the Division of Forestry in the Roosevelt administration, and in 1905 he became the first chief of the newly established Forest Service. In Pinchot's vision, the new federal agency would require a cadre of educated, professional foresters to manage the nation's growing national forest system.

At a 2004 lecture at Oregon State University (OSU), historian Char Miller — author of *Gifford Pinchot and the Making of Modern Environmentalism* — said that the creation of a land management agency like the Forest Service in 1905 was a revolutionary act: "It was quite radical in terms of what preceded it." What Miller meant was that up until that time in America, cutting wood and clearing land was part of the country's ethos and had been since the Pilgrims brought an agricultural tradition to the rich, dense forests of New England and faced the need for fuel and farmland.

Pinchot put it more bluntly: "When I came home [from study in Europe in 1889], not a single acre of Government, state, or private timberland was under systematic forest management anywhere on the most richly timbered of all continents... To waste timber was a virtue and not a crime... What talk there was about forest protection was no more to the average American than the buzzing of a mosquito, and just about as irritating."

## **FORESTRY IN OREGON COMES OF AGE**

At the time Pinchot returned from study in France, the opening of the railroads to the Pacific Northwest had already created a strong market for the strong and

versatile Douglas-fir that grew here like nowhere else, and by 1896 the first course in forestry was taught in the botany department at Oregon Agricultural College (later to become OSU) in Corvallis. In 1906, a year after the U.S. Forest Service became a federal agency and only six years after Yale University opened its college of forestry in Connecticut, a four-year undergraduate and one-year graduate program in forestry were established at OSU. Two years later it became a department and in 1913 the School of Forestry. Forestry had become a profession in Oregon.

As in Europe, the early curriculum at OSU focused on the care and cultivation of forest trees. Forest engineering courses taught harvest methodology, access (roads and bridges) and transport of the raw product to mills. In 1927, the study of lumber manufacturing joined the curriculum, adding mill technology and the development of wood products to the course of study. All the while, of course, forest management moved from what had originally been called technical forestry to a more complex, interdisciplinary profession requiring broad knowledge of the ever-increasing and disparate fields of study that were becoming part of forestry's purview.

## THE FORESTRY PROFESSION EXPANDS

In a way, the expansion of the forestry profession is a result of the expansion of the public's values and expectations as they relate to the forest. Even Gifford Pinchot recognized some of these values, writing that instead of being "simply locked up and left to burn," national forests were established by Congress both as "a continuous supply of timber" and "for the purpose of securing favorable conditions of water flows." But the environmental movement that spawned a host of conservation measures in the second half of the 20th century — like the federal Clean Water Act and Endangered Species Act and, in Oregon, the landmark Oregon Forest Practices Act — shifted the focus to an even wider range of values from forests. It is no longer enough just to provide wood products for the economy in a sustainable manner. It also is necessary to ensure that water and air quality meet certain standards, that forest management practices protect habitat for fish and other species that depend on forest streams, that they protect habitat for an abundant and diverse wildlife population and that they provide for the recreation and spiritual nourishment of the public.

John Fedkiw, a policy adviser and analyst for the U.S. Forest Service, has likened the expansion of the forestry profession to a widening path. In this metaphor, the U.S. had no forestry at all as we began to take wood from our forests. We just cut trees for fuel and construction, cleared land for farming and urban develop-

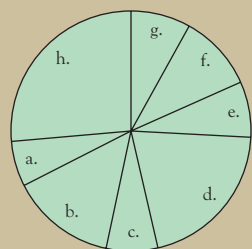


**John Muir**  
Naturalist and Writer

John Muir spent much of his life wandering the nation's forests, and his writings convey a sense of wonder at its richness and bounty. He is credited with imbuing in Theodore Roosevelt the same sense of respect for our forestland. He also was one of the first to write publicly about the need for proper forest management. Writing in 1897 about forest practices in Prussia, he said that "the state woodlands are not allowed to lie idle. On the contrary, they are made to produce as much timber as is possible without spoiling them. In the administration of its forests, the state righteously considers itself bound to treat them as a trust for the nation as a whole, and to keep in view the common good of the people for all time."

## Oregon Society of American Foresters Membership by Employer

With some 1,040 members (as of March 2005), the Oregon Society of American Foresters membership is broken down by employment sectors.



### By Employer

a. College/university	6.1%
b. Federal government	14.2%
c. Student	7.0%
d. Private industry	20.6%
e. Association/foundation	2.0%
f. No employer indicated	0.6%
g. Government-non U.S.	0.1%
h. Self employed	3.4%
i. Unemployed	0.1%
j. Other	1.3%
k. Consultant	10.4%
l. State/local government	7.9%
m. Retired	26.3%

ment, and gave no thought to managing forests for the future. At that point, the path was narrow. As society's expectations grew and expanded, the pathway widened. Professional foresters changed their management methods and priorities to respond to a wider range of uses and values.

This expansion of forest values has in turn demanded more of forest managers and expanded the forestry profession to include entirely new disciplines. For example, forest engineers have learned from fisheries biologists about protecting aquatic habitat and have responded by finding ways to construct and maintain roads to eliminate or minimize runoff and erosion that might deposit sediment in streams and degrade spawning beds (see profile on page 15). Forest hydrologists, who have expertise in matters pertaining to the quality and quantity of surface and ground water in forests, provide guidance on the installation of both culverts to facilitate fish passage and bridges that have minimal impact on forest streams (see profile on page 12). With the help of biologists, they are even learning to enhance aquatic habitat by the strategic placement of downed wood in stream channels, thus slowing stream flow and facilitating the creation of pools and backwaters for resting and spawning.

Fires in our forests have been studied extensively and to a large extent suppressed over the past century. The increase in the severity of fires in recent years has resulted in more research on the role of fire in our forests and the creation of new forestry-related careers in fields like fire ecology. Many foresters today have extensive responsibility for fire fighting and post-fire restoration — reforestation after trees have burned and ensuring the health of new seedlings until they are free to grow without risk of being overtaken by competing vegetation.

Wildlife biologists are now partners with forest managers, providing information to help them design harvest prescriptions that will promote species diversity and abundance (see profile on page 16). As foresters learn about habitat needs from wildlife biologists, they often can be proactive in protection by creating tree structure and species mixes that will result in desirable habitat for specific wildlife species.

The profession also has expanded as a result of technical advances (see profile on page 10). The development of laser scanning technology has enabled mill operators to position logs precisely for the most efficient cuts as they move through the saws. Although waste wood fiber from sawmills has long been turned into useful products like paper or composite wood products (particleboard, hardboard, medium-density fiberboard, etc.), wood chemists are constantly expanding the possibilities by researching and developing new adhesives, preservatives and other chemical-based

products used in wood products manufacturing (see profile on page 13).

It did not take long for forest managers to realize the potential application of satellite technology for long-term resource management planning. Today, foresters can analyze tree age and species mix over large areas of landscape from satellite imagery and can plan effective harvests accordingly. Computer technology has enabled planners to develop sophisticated modeling programs that will show them what a forest might look like in 20, 50, 100 or even 200 years as a result of specific actions undertaken today (see profile on page 17). Creating a forest landscape with stands of varied ages and classes benefits wildlife diversity, and foresters today use technology in achieving that goal. As a result of the growing use of technology in forest management, the field of forestry consulting has grown as well (see profile on page 11). Many landowners now hire consultants not only for their knowledge, but also for their access to and use of high-tech tools and equipment in making management recommendations.

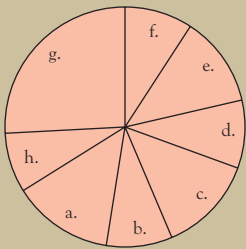
Even the traditional field of silviculture has grown. In the area of reforestation, for example, foresters now determine the ideal species mix to target when regenerating a harvested forest, and nursery managers provide seedlings from the best nearby seed sources to help ensure that they will flourish (see profile on page 7). The Oregon Forest Practices Act requires successful reforestation. In Oregon alone, foresters oversee the planting of more than 100 million seedlings every year, and reforestation success now approaches 100 percent.

Public demand for forest recreation has added yet another dimension to the forestry profession (see profile on page 9). That is one reason why OSU transferred the Resource Recreation Management Department from the Division of Health and Physical Education to the College of Forestry in 1973. Today, forestry careers exist in fields as diverse as cultural resource management and environmental education (see profile on page 18). Students at the OSU College of Forestry can study forest recreation and pursue careers as park or wilderness managers (see profile on page 14), wildland law enforcement officers and outdoor recreation planners, to name a few.

The expansion of values the public demands of the nation's forests continues to widen the path and in turn increase the number of disciplines the forestry profession embraces. Many of these are in public agencies like the U.S. Forest Service and the Bureau of Land Management that manage our national public land resources (see profile on page 8). Similar careers exist at the state and local levels. In Oregon, the Department of Forestry employs experts in multiple

### Oregon Society of American Foresters Membership by Position

The 1,040 members (as of March 2005), of the Oregon Society of American Foresters membership is broken down by the positions they hold.



#### By Position

a. Mid-level manager, administrator	13.6%
b. Researcher/educator	9.0%
c. Upper-level manager, administrator	13.1%
d. Staff specialist	9.2%
e. Field forester	12.2%
f. No position indicated	9.1%
g. Retired	25.9%
h. Field technician	1.8%
Owner	1.3%
Other	4.8%





**Theodore Roosevelt and Gifford Pinchot**  
The President and His First Forest Chief

The friendship between President Theodore Roosevelt (left) and Gifford Pinchot led to Pinchot's appointment, first as chief of the Division of Forestry and then first chief of the newly established Forest Service in 1905. With Roosevelt's support, Pinchot expanded and brought real professionalism to the new federal agency and popularized the concept of conservation, reflecting his concern for the protection of America's forests. During the five years of Pinchot's leadership, the nation's forest reserves grew from 60 units of federal reserves totaling 56 million acres to 150 national forests comprising 172 million acres.

disciplines who work in resource analysis and policy formulation and enforcement of the Oregon Forest Practices Act as well as public recreation, urban forestry and many others (see profile on page 19).

Of course, as forestry has grown as an industry, economics has played a larger and larger role. Bringing sophisticated economic modeling practices, portfolio strategies and marketing techniques to bear on the forest industry has created many opportunities for those interested in the business side of the profession (see profile on page 20).

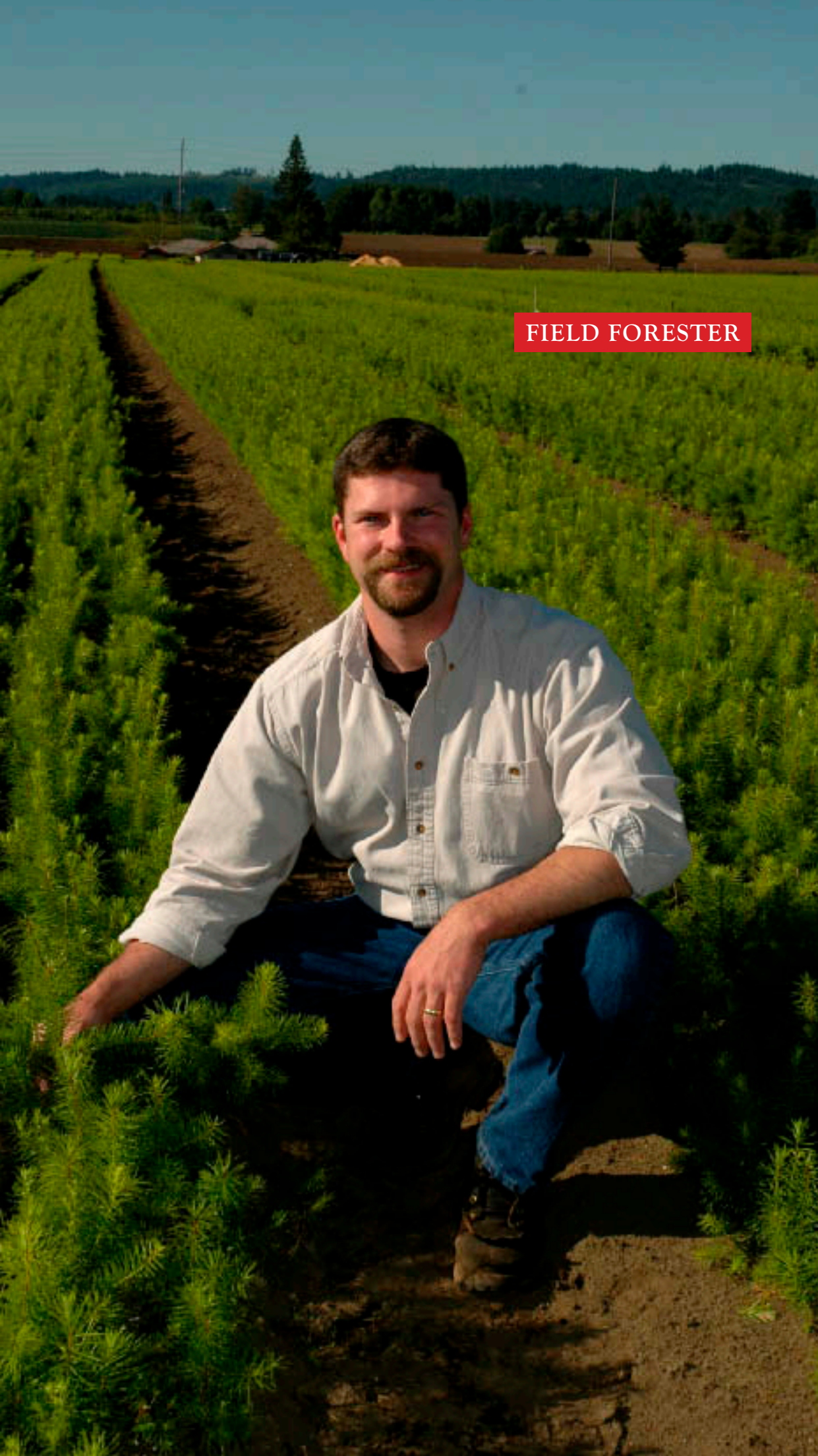
The College of Forestry at OSU today offers seven majors for undergraduates: Forest Management, Wood Science & Technology, Forest Engineering, Forest Engineering/Civil Engineering, Natural Resources and Forest Recreation Resources plus the Outdoor Recreation Leadership and Tourism program offered at the Cascades campus in Bend. Graduates of each of these programs have opportunities to work in every aspect of this complex field and, in fact, graduates of the OSU College of Forestry fill many forestry jobs within the state and around the world.

## FORESTRY IN THE FUTURE

Today, SAF accredits more than 100 programs of study at 48 universities nationwide offering specialized forestry education to their students. In addition, SAF recognizes 26 two-year associate's degree programs at 25 institutions nationwide. This greater diversification in forestry-related career options is a sign of growing interest in the nation's forest heritage and an expanding range of employer needs. In fact, as professors at the OSU College of Forestry witness the increasing employer demand for a wider range of forestry disciplines, they say there are not enough graduates to fill positions in some fields. In addition, a wave of retirements in the forest sector in the next decade is expected to open up many new management positions.

Many changes have occurred since forestry became a professional field and the Society of American Foresters was established a century ago. The profession has expanded with the development of new forest products, the internationalization of the industry and its markets, the resultant expansion of fields related to policy and economics, and the many new careers related to forest recreation. The foresters of a century ago have been joined by forest ecologists, engineers, hydrologists, wildlife biologists, watershed experts, urban foresters, design engineers, international marketing managers and policy analysts, to name just a few. New minds and new skills continue to bring new expertise to a dynamic profession working to keep forests sustainable and productive and to fill the needs of society for the many products that come from trees.





## FIELD FORESTER

**Eric Geyer**  
Forester  
Roseburg Forest Products  
Roseburg

Eric Geyer — shown here in a tree nursery monitoring the growth of Douglas-fir seedlings from seeds collected on his company's own forestland — is a field forester, a position where most practitioners develop their on-the-ground knowledge of managing forests. As a silviculturist, he is involved with the care and cultivation of forest trees on the roughly 200,000 acres of timberland that Roseburg Forest Products Company owns around Roseburg. RFP owns about 750,000 acres in Oregon and California.

It was an interest that came to him during a pre-med program in college. "I studied chemistry and biology and did scientific research," he said. "When I first read the definition of 'silviculture,' managing forests using scientific principles, the heavens opened up and I knew that I had found my career." He learned forest science in a master's program in forest management at OSU's College of Forestry. He worked between degrees as a Forest Service firefighter and, after completing his master's coursework, set chokers for two years on a logging crew. "Such field experience, along with a background in science, is a big plus for foresters who want to advance in their careers," he said.

"The work I do is a great fit with my interests because I deal with science and economics every day," he said. "Planting the right seedlings and maximizing their growth is both a challenge and an art."

Geyer is also proud of his profession and is an active member of the Society of American Foresters (OSAF). "I am passionate about forestry and the future of our profession," he said. Geyer is chair of OSAF's Umpqua Chapter and received its Chapter Achievement Award for 2004. In 2005, OSAF named him Oregon Forester of the Year.



**Leslie Weldon**  
**Forest Supervisor**  
**U.S.D.A. Forest Service**  
**Bend**

In her capacity as Forest Supervisor of the 1.6-million-acre Deschutes National Forest in central Oregon, Leslie Weldon is the person responsible for the management of natural resources, business operations and customer service. This includes year-round management of diverse outdoor recreation experiences, forest health, fire suppression, timber sales, archeology, water quality, watershed health, geology and minerals, outreach and partnerships, fisheries and wildlife, and infrastructure management.

Growing up in a U.S. Air Force family, Weldon was instilled with a love of the outdoors and wildlife in an on-base Girl Scout troop in Japan. Her passion grew as an enrollee with the Youth Conservation Corps in southwest Virginia, and she eventually earned her degree in fisheries and wildlife biology at Virginia Tech.

While still in college, she was recruited by the U.S.D.A. Forest Service to do spotted owl inventories and fish habitat improvement on the Mt. Baker-Snoqualmie National Forest in western Washington state. From there she worked in various Forest Service land management positions in the Pacific Northwest, Montana and Washington, D.C., exploring her interests and building her experience. A women's leadership development course sponsored by the Society of American Foresters helped her realize her leadership potential and energized her to set and achieve high goals over her 23 years with the Forest Service.



**FOREST SUPERVISOR**



A man with a friendly smile, wearing a tan button-down shirt with a patch on the sleeve and dark pants, sits on a wooden bench in a forest. He is holding a large, unfolded map or document. The background shows a dense forest with tall trees and sunlight filtering through the branches.

## RECREATION COORDINATOR

**Clyde Zeller**  
District Recreation  
Coordinator  
Oregon Department  
of Forestry  
Tillamook State Forest

The growth of metropolitan areas in Oregon has increased demand for recreation, and Clyde Zeller's job is to address that need in the context of an actively managed forest like the Tillamook. He is the person responsible for planning and maintaining campgrounds, trails and trailheads, for example, as well as law enforcement and relations with neighboring landowners.

He says the field used to be just on-the-ground work but has expanded to include everything from the use of satellite technology in trail mapping to recreation policy, long-range planning and grant writing. Zeller's interest in forest recreation began when he was in his early 20s, holding a part-time job with the Portland Parks and Recreation Department. Following a degree in recreation and resource management at OSU's College of Forestry, he joined the Oregon Department of Forestry and helped write a comprehensive recreation plan for the Tillamook State Forest, ultimately becoming its recreation coordinator.

"Education is a necessity in my field," he says. "One has to understand public land management in the context of overall forest policy. My job is to expose the public to the forest and enhance their understanding of the way forests work. Hopefully my work will enhance their appreciation of the forest and help connect them with the natural world and Oregon's rich forest legacy."



**Jim Funck**  
Process Improvement  
Specialist  
Oregon State University  
Corvallis

“I love the science of wood processing,” said Jim Funck. “As much as the technology has changed over the past decades, we’re working on new ideas to improve the process even more.” His current research focus is on computerized scanning to optimize the processing of logs. Laser scanning of logs for best cuts has been a part of mill operations for some time, but evaluating the quality of individual boards still must be done by eye. Funck is working with a lumber grading system where cameras scan a length of board and actually analyze for defects and irregularities such as knots to help improve the overall processing. Such tools can help make Oregon wood products more attractive to an increasingly competitive global market.

Growing up in the forested southeastern part of Iowa, Funck initially thought he would be a field forester, but after starting his coursework, he found his wood products minor far more intriguing. He entered the work force for a while after college, but found that research was his real love and returned for a master’s degree and ultimately a doctorate.

Rather than seeking employment with a mill, he felt his place was in pure academic research. It was there he felt he could best contribute to the science of mill technology. In 1979 he took a job teaching at OSU, and never looked back.



**FORESTRY CONSULTANT**





## PROCESS IMPROVEMENT SPECIALIST

**Mike Barnes**  
Private Forestry Consultant  
Newberg

Mike Barnes says a forestry consultant needs to be a “jack of all trades”— knowledgeable and experienced enough to consult on a variety of forestry issues. He does large-scale consulting — on Astoria’s 4,000-acre municipal watershed, for example — and considerable work for family forest landowners, whose goals and objectives are many and diverse. “Over the years I’ve seen just about everything,” said Barnes. “One of the things I enjoy about this work is observing the wide variety of things landowners value about their forestland.”

Barnes helps his clients with harvest planning and implementation, reforestation and care of young stands, protecting wildlife and aquatic habitat, beautification projects for forestland with and without harvest objectives, and even the details of writing contracts, hiring contractors, financial analysis and marketing. As 2005 president of the Oregon Small Woodlands Association, Barnes is familiar with the varied objectives of family forest landowners.

When he’s not running his consulting business, Mike spends much of his time helping the World Forestry Center (WFC) — for whom he worked as a forester and assistant director for 15 years before starting his business — and WFC’s Magness Memorial Tree Farm near Portland. A graduate of the OSU College of Forestry, Barnes volunteers his time for the WFC, helping with the education activities and forestry tasks associated with the site.





**Liz Dent**  
Forest Hydrologist  
Oregon Department of  
Forestry  
Salem

A forest hydrologist is a scientist with expertise in matters pertaining to the quality and quantity of surface and ground water in forested watersheds. Hydrologists work for many types of employers in Oregon, both public and private. Liz Dent's work focuses on the formulation of policies that can help improve water quality on a statewide scale. Her current position with the Oregon Department of Forestry (ODF) enables her to use her background in "real world" research and monitoring needed to help inform policy decisions.

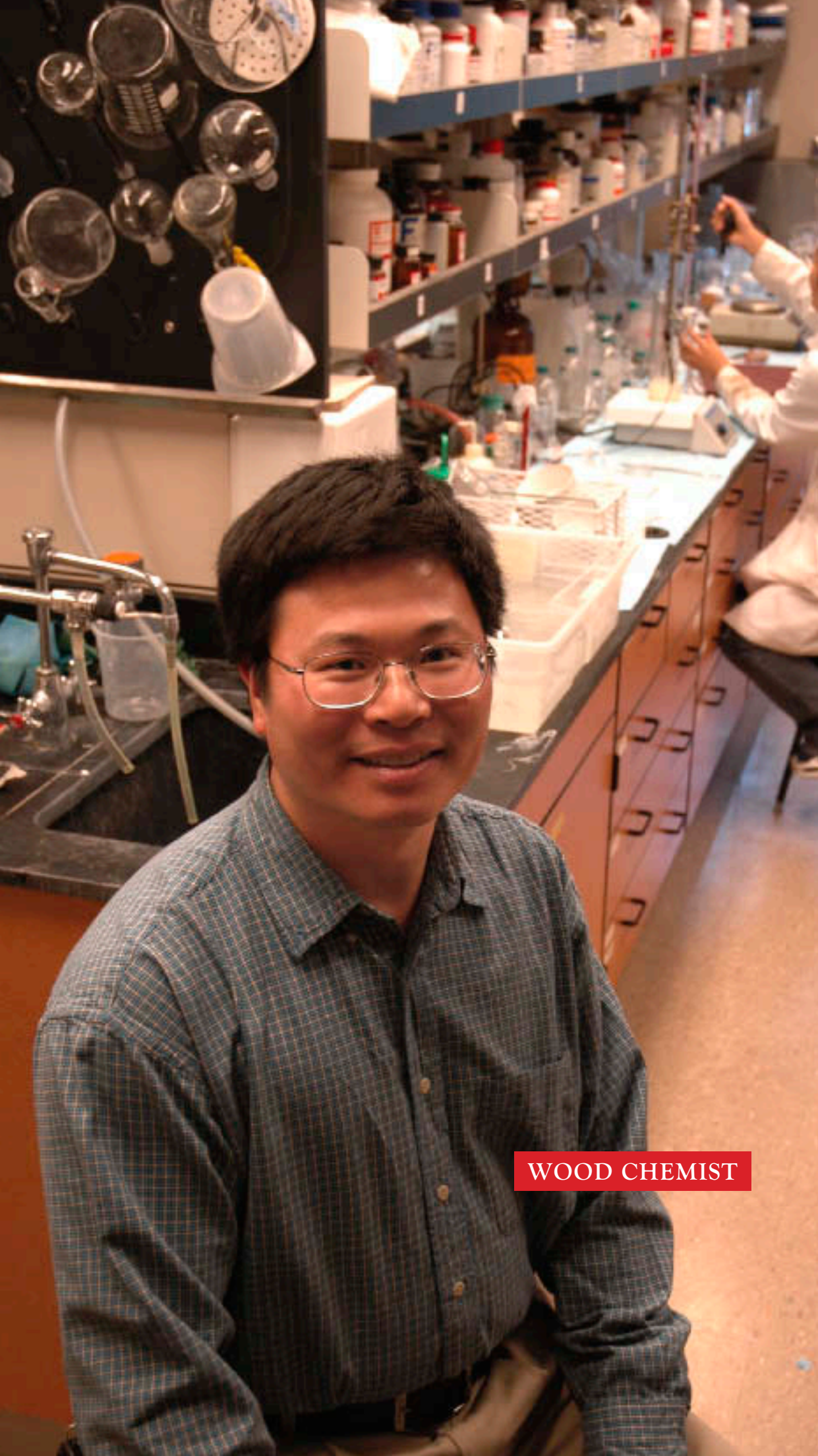
Her first work experience after college was with the Coastal Oregon Productivity Enhancement (COPE) project, where she was part of the team that evaluated the physical and biological consequences of converting hardwood forests to conifer forests in riparian zones. This was the first step in a career that now centers on informing policy affecting watershed issues.

She has worked in various research and monitoring capacities at ODF for 10 years, taking a leave of absence at one point to help formulate the Oregon Watershed Enhancement Board's set of aquatic environmental indicators. "Watershed issues change over time," she said, "but at the core are the quantity and quality of our water, riparian structure and function, and aquatic habitat and the fish that depend on it. Solving problems related to these issues is what makes my job so fulfilling."

## FOREST HYDROLOGIST







**Kaichang Li**  
Wood Chemist  
Oregon State University  
Corvallis

For Kaichang Li, it all started with a crabbing expedition with a friend. Lacking success, they turned to the next best thing on the Oregon coast — mussels. Li noticed — with his usual curiosity — the extraordinary strength with which they clung to rocks. Having earned degrees in both wood chemistry in the U.S. and organic synthesis in China, he had the ideal background for recognizing the potential of this adhesive — nothing commercially available possessed such staying power in such wet conditions.

Years later, having extensively studied the protein the mussels secrete, he has discovered how to manufacture a similar protein made from soybeans that may revolutionize the way many types of processed wood products are manufactured. His adhesive is currently being tested as a replacement for urea-formaldehyde resins in manufacturing plywood.

“So many discoveries start with taking an idea from one place and applying it to another,” said Li. “I was lucky to have studied in such widely varied fields and to have been able to recognize the possibilities when I saw them.” He spends his days mostly in his lab at the OSU College of Forestry, researching new applications for his ideas and working hand-in-hand with his graduate students and faculty research assistants.

**WOOD CHEMIST**



**Chris Sabo**  
Wilderness and Trails  
Specialist  
Bend-Fort Rock Ranger  
District  
U.S.D.A. Forest Service  
Bend

Referring to his job, which calls for camping out in the wilderness two to three days a week, Chris Sabo says, "People are jealous when they look at me — I have one of the best offices around." A wilderness ranger in the summer and research technician in the winter, both for the U.S. Forest Service, Sabo wears many hats and has been doing so since he came to the Deschutes National Forest in 1980.

After majoring in natural resources management at Antelope Valley Community College in California, Sabo started as a seasonal employee with the Forest Service. His work involved both recreation and timber — cruising timber, doing diagnosis, stand exams and inventory. He later earned a degree in forest management from Central Oregon Community College.

Sabo is involved in trail use, particularly the winter trails program. "It's a diverse and satisfying career," he said, "and not without its challenges. My primary responsibility is for the resource and keeping in mind what's best for it, but the forest is a public treasure and I also need to look at what the public wants as well. It's something of a balancing act, but from the time I came camping here as a kid and went to my first campfire program, I knew I wanted to be that ranger up there."

## WILDERNESS AND TRAILS SPECIALIST







## FOREST ENGINEER

**Jennifer Noonan Beathe**  
Forest Engineer  
Starker Forests, Inc.  
Corvallis

When Starker Forests needs to make improvements on its forest roads, construct a new road, replace a culvert or build a bridge, they call on forest engineer Jennifer Beathe. Beathe and other forest engineers like her are trained to apply engineering principles in a forest setting and to create and care for the complex infrastructure that makes efficient and low-impact timber harvest possible.

Beathe began her career at a time when salmon runs in Oregon were being threatened. Among other things, the Oregon Plan for Salmon and Watersheds called for forest landowners to inventory their road systems. That task fell to Beathe.

Once the inventory was complete, Beathe planned for and supervised the necessary upgrading on Starker's road system. Part of that work involved replacing culverts that were hindering fish passage. In those cases, Beathe profiled the stream to find its natural gradient and then determined the size and style of the culvert needed and supervised its construction.

Beathe earned her degree at OSU's College of Forestry, having completed her six months of required internship at Starker Forests. She was offered a full-time job with Starker after graduation and calls her career a great one for someone with proficiency in math and science and a love of the forest. "Being in the woods is full of unexpected pleasures," she says, "whether it's coming on a beautiful vista or discovering fish spawning. Even on the rainiest of days, something happens to make me love my job."



**Mike Rochelle**  
Wildlife Biologist  
and Habitat Specialist  
Weyerhaeuser  
Albany

Although Mike Rochelle always has been interested in studying animals and wildlife, it was a different animal that drew him to the forestry sector — people. “I grew up around forestry and came to see that everyone in this field entered into it because they love the resource,” said Rochelle, whose father is a wildlife biologist too. “The love of the outdoors, of the trees and the land is what seems to drive everyone who studies forestry.”

Rochelle received both bachelor’s and master’s degrees in zoology at Washington State University with a focus on wildlife. After a stint with the Washington State Department of Natural Resources as a regional wildlife biologist, he found his current job with Weyerhaeuser Company. He spends his days ensuring the well-being of the wildlife in and around potential harvest sites, planning how best to maintain habitat for forest wildlife, surveying for threatened and endangered species and generally protecting the diverse needs of the wildlife on company land.

He is a strong believer in the compatibility of managed forests and wildlife diversity and abundance, and he enjoys being part of a team that includes wildlife well-being as one of its management goals.



**LANDS MANAGER**





## WILDLIFE BIOLOGIST AND HABITAT SPECIALIST

**Pete Sikora**  
Lands Manager  
Giustina Resources  
Eugene

As lands manager for family-owned Giustina Resources, Pete Sikora is able to look at the big picture in managing his company's nearly 100,000 acres of forestland in Oregon and Washington. Even in small companies like Giustina, technology plays a large role in forest management. "There's no substitute for the on-the-ground observations of a skilled forester," Sikora said, "but Geographic Information System (GIS) technology and the computer have become invaluable aids in helping us do a better job of modeling stand growth and planning harvest activities."

Sikora has Giustina's on-the-ground data connected to his office for maximum efficiency. He has a detailed forest inventory including key measurements and growth predictions for each stand of trees. He can combine that data with GIS overlays of harvest units and myriad other factors, all at the touch of a button on his laptop, which has become a valuable forester's tool in the office and the field.

Interested in studying forest management, he was lured by the reputation of OSU's College of Forestry and graduated in 1980 — just at the time of an economic downturn in the housing and lumber markets. "It was a tough time to come into the work force," he said, "but I think the industry as a whole came out of the period much stronger and better able to compete in a global market." Part of that adjustment, he said, was a huge leap in efficiency through improvements in technology.





**Julie Woodward**  
Rediscovery Forest  
Education Specialist  
Oregon Forest Resources  
Institute  
Silverton

“Although I do spend time in a traditional classroom, my office and main classroom, as well as my laboratory, are all in the forest,” said environmental educator Julie Woodward. In her position with the Oregon Forest Resources Institute, Woodward manages the Oregon Garden Rediscovery Forest. The demonstration forest helps Oregon Garden visitors understand tree growth and forest development, the various management techniques applied by forest landowners and the products and other values that come from Oregon’s forests. Woodward provides forestry education for K-12 students, plans and conducts teacher workshops to help integrate forestry education into their curriculum, organizes public events for public education and interpretation, and provides training for family forest landowners.

Her career path began at OSU, where she completed a double major in business and forestry. An internship with the Society of American Foresters in Washington, D.C., taught her about forest policy and forestry on the national scale. She worked as a forester for both private and public organizations but discovered that teaching students and adults in a forest setting was the combination she liked best.

“The perfect complement to the three ‘R’s of education,” she said, “are the three ‘S’s of forestry education: science, stewardship and sustainability. The passion of many environmental educators is helping people connect with Oregon’s diverse forest resources.”

## ENVIRONMENTAL EDUCATOR







**Paul Ries**  
Urban Forester  
Oregon Department  
of Forestry  
Salem

"An urban forester can be a crucial contributor to city planning," said Paul Ries of his profession. "Trees are a part of the infrastructure of any city." Ries' enthusiasm for trees in urban settings is apparent, and he is full of convincing facts. For example, shoppers in a business district that has trees will, on average, spend 11 percent more than in an identical one with no trees. A tree-lined street maintains a lower temperature, helps attract business and customers to communities, enhances tourism, reduces storm-water runoff and provides animal habitat. "Trees within urban areas can be just as important to their environment as those in a forest," he said.

Ries was studying journalism in college when he took a few classes involving the outdoors. That experience helped him discover his passion, and he switched his course of studies to forestry and recreation. As it turned out, he ended up in a growing field of forestry where he can utilize both his forestry and writing background — urban forestry.

Ries spends much of his time writing literature and leading classes for community education, giving talks on urban forestry and consulting on issues. He works with the Oregon Department of Forestry's regional urban foresters and with city planners, park managers and city foresters in his role as director of the state's Urban and Community Forestry Program.

**URBAN FORESTER**



## TIMBERLAND INVESTOR

**Matthew Donegan**  
Co-President  
Forest Capital Partners  
Portland/Boston

Matt Donegan, who brings a unique set of skills to his work, represents a new breed of forestry professional. Not only is he a practicing professional forester, but a seasoned investment manager as well. With an undergraduate degree in forestry and an MBA degree in forest industries management and finance, Donegan and his partner are principals of an independent investment firm that acquires and manages large-scale, investment-grade forests across North America. Among the company's 2.1 million acres of forestland are 600,000 in Oregon.

"I always loved the outdoors and have a strong interest in conservation," he said, "but in college I found myself drawn to the economics of forestry. I became fascinated by the business aspect of the profession and the link between different ownership structures and the way forests are managed." Donegan put that knowledge to work in structuring Forest Capital Partners in 2000.

The company is intentionally a pure timber operator with no investment in mills and other manufacturing facilities. Management decisions are focused on the long-term values of the forest that extend well beyond economics. The company's forestland is third-party certified for sustainability, and its staff includes wildlife biologists, silviculturalists and even forestland grazing and cattle specialists. Employees are rewarded for good stewardship as well as financial performance.

"We also work hard to find the right investors," Donegan said, "highly educated clients with long-term interests. Patience is critical to acquiring and selling land, as well as timing timber sales."





## EXAMPLES OF FORESTRY POSITIONS CURRENTLY HELD BY GRADUATES FROM VARIOUS DEGREE PROGRAMS OFFERED IN OREGON:

### **ASSOCIATE OF SCIENCE DEGREE**

(Mt. Hood or Central Oregon  
Community College)

Forestry Aide  
Forest or Natural Resource Technician  
Forest Conservation Worker  
Forest Inventory  
Forest Engineering Technician/Aide  
Forest Road Survey Technician  
Mapping; Computer Data Entry Technician  
Outdoor Recreation Technician  
Outdoor Recreation Leadership  
Restoration Projects Technician  
Reforestation Technician

### **BACHELOR OF SCIENCE DEGREE**

(OSU College of Forestry)

#### **Forest Management**

Agroforester  
Consulting Forester  
Communications Specialist  
Environmental Educator  
Extension Forester  
Forest Ecologist  
Fire Management Officer  
Forest Economist  
Forest Land Appraiser  
Forest Manager  
Forest Policy Analyst  
Naturalist  
Nursery Manager  
Public Affairs Officer  
Planner  
Reforestation Forester  
Remote Sensing/GIS Specialist  
Research Scientist  
Silviculturist  
Timber Sale Planner  
Urban Naturalist or Forester  
Wildlife Habitat Specialist

### **Wood Science & Technology**

Design Engineer  
Editor, Trade Journal  
Environmental Health and Safety Manager  
Human Resources Manager  
International Marketing Manager  
Management Trainee  
Mill Manager  
Plant Engineer  
Product Development Specialist  
Production Foreman  
Project Engineer  
Quality Control Technician  
Sales/Marketing Manager  
Technical Director  
Technical Services Manager  
Total Quality Manager  
Vice President, Research & Development  
Wood Technologist

#### **Forest Engineering**

Consulting Engineer  
Forest Engineer  
Forest Hydrologist  
Forest Operations Manager  
Forest Transportation Planner  
Harvesting Specialist  
Land Use Manager  
Structures Design Engineer  
Surveyor  
Timber Harvest Contractor  
Timber Supply Manager  
Timber Sale Planner

#### **Forest Recreation Resources**

Backcountry Guide  
Cultural Resource Manager  
Ecotourism Specialist  
Environmental Educator  
Environmental Interpreter  
Naturalist  
Park Manager  
Public Affairs Officer  
Recreation Manager  
Remote Sensing/GIS Specialist  
Ski Area Manager  
Tourism Development Specialist  
Wilderness Manager  
Wildland Law Enforcement Officer

### **Natural Resources**

Budget Analyst  
Communications Specialist  
Environmental Consultant  
Environmental Educator  
Environmental Lobbyist or Lawyer  
Extension Agent  
Forest/Rangeland/Fire Ecologist  
Forest Research Scientist  
Land Use Planning/GIS  
Public Affairs (Information) Officer  
Urban/Wildland Forester or Naturalist

### **MASTER OF SCIENCE DEGREE, MASTER OF FORESTRY DEGREE OR DOCTORATE**

(OSU College of Forestry)

Fire Ecologist  
Forest Ecologist  
Forest Economist  
Forest Nursery Specialist  
Forest Pathologist  
Forest Pest Management Specialist  
Forest Regeneration Specialist  
Forest Scientist  
Forest Statistician  
Forest Tree Physiologist  
Forest Hydrologist  
Landscape Ecologist  
Photogrammetrist  
Remote Sensing/GIS Specialist  
Research General Engineer  
Silviculturist  
Surveyor  
Teacher  
Technical Director  
Tree Geneticist  
University Professor  
Vegetation Management Specialist  
Wood Chemist  
Wood Engineering Designer  
Wood Products Development Specialist  
Wood Products Pathologist





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