



INVESTING IN OREGON PEOPLE, ECONOMY, ENVIRONMENT

Oregon State University Forestry Research Laboratory

The Oregon Forest Research Laboratory pursues a mission that has evolved since 1941.

The Oregon Legislature has long recognized the value of Oregon's Living Legacy – 28 million acres of forested land and has taken an active interest in FRL research. Since 1941 the FRL mission has evolved to reflect the changing values of Oregonians.

- “Aid in the economic development of the state, to develop the maximum yields from the forests; and to obtain the fullest utilization of the resources”. (Oregon Legislature, 1941 authorization of the Forest Products Research Laboratory)

- “Shall institute and carry on research and experimentation to develop the maximum yield from the forestlands of Oregon, to obtain the fullest utilization of the forest resource, and to study air and water pollution...”. (ORS 526.215, 1961)

- “Encouraging forestry and restocking of forestlands to provide present and future benefits by enhancing the water supply, preventing erosion, providing habitat for wildlife, providing scenic and recreational opportunities and providing for needed products” (ORS 321.262, 1977)

- Forest resources across the landscape are used, developed and protected at a rate and in a manner that enables people to meet their current environmental, economic and social needs, and also provides that future generations can meet their own needs (FRL's application of ORS 184.421, 2001)

The faculty and staff of the FRL have utilized these expectations as a basis for multi-disciplinary research that will help sustain jobs and communities, foster recreational opportunities, support the natural values of Oregon citizens, and ensure a healthy and diverse environment. Our vision is to be the premier forest related research institution in the world. This vision promotes the core values of all who work here:

- We commit to sustaining forests and the functions, products, and values they provide for current and future generations. *We value forests.*

- We share a passion for learning through teaching, research, experience, and extended education. *We value learning.*

- We address complex forest resource challenges through collaboration across disciplines, institutions, and perspectives. *We value collaboration.*

- We recognize strength in diverse faculty, staff, students and ideas. We nurture the College community through communication and mutual respect. *We value people.*

- We serve the people of Oregon, the nation, and the world. *We value service.*

- We aspire to excellence, innovation and relevance in all that we do. *We value excellence.*



“The only way to enact science-based forest use rules that are prudent, necessary, and sufficient for the outcomes desired is to invest in focused research.”

— Hal Salwasser





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Forest Research Laboratory program areas protect and enhance natural resources, and promote economic capacity.

Scientists from a variety of disciplines work in five broad research areas to provide expertise to Oregon private landowners, primary and secondary industries, State, Tribal and Federal land management agencies, and governmental policy makers. Corvallis is a center for world-class natural resources research, so FRL scientists work in collaboration with dedicated researchers from Oregon State University, USFS Pacific NW Research Station, EPA, and USGS Forest and Rangeland Ecosystem Science Center. The five areas are:

Forest Regeneration

Oregon's forestlands include some of the most productive tree growing lands in the world. The most productive lands can be managed to be financially competitive with intensively managed plantations around the world. The goal for planted forests is to grow more wood on less acreage – freeing other acres for non-wood forest values. Current research focuses on development of genetically superior seedlings; improved understanding of conifer propagation; effective control of competing grasses, weeds and shrubs; and planting practices that optimize the growth of seedlings.

Forest Ecology, Culture and Productivity

Forestlands offer the best multiple use capability of any land type in Oregon. They comprise diverse ecosystems that deliver high quality water, clear air, abundant native fish, wildlife, other plant life, and carbon storage, as well as economic and recreational benefits. Research in this area aims to understand and maintain soil fertility; learn the impacts of organic decomposition on soil and air; better predict site growth capacity based on soils, vegetation management and climate; minimize ecosystem impacts through concise thinning and harvesting guidelines; and optimize the balance between the multiple uses and benefits of forest lands.

Protecting Forests and Watersheds

Forestlands are not static, never-changing places; natural and human disturbances along with yearly growth and death of plants and animals cause constant change – some of which is desirable and some not. Non-native invasive plants, diseases and insects enter our forests from around the globe. Extended drought coupled with high densities of trees and shrubs has increased the likelihood of fires that damage forests, expose soils to erosion, degrade water quality and reduce habitat for fish and wildlife. Heavy use of lands for commercial or recreational purposes can damage soils, streams and air quality. Research in this area centers on developing silvicultural methods to improve forest resilience to drought, pests, and fires, and designing management practices that prevent or minimize damage from fire and human activity.

Evaluating Forest Uses, Practices and Policies

The value of Oregon's forests and forest lands to environmental, social and economic health is undisputable. The challenge is achieving a balance of uses that satisfies the diverse expectations of the public in a way that sustains and optimizes each value. Research in this area is designed to help landowners, businesses, policy makers and the public better understand the realities, constraints and opportunities associated with the multiple uses of forestlands. Current studies include supply and demand for forest products, economic and social consequences of production alternatives, timber growth and yield, taxation and investment implications, environmental impact of wood-based construction versus steel and concrete, and techniques for reducing conflicts over forest uses and allocations.

Wood Processing and Product Performance

Oregon produces superior quality wood due to our native species, growing conditions and manufacturing processes. New products, job creation, market expansion and manufacturing improvements are the focus of research in this area. Scientists are developing formaldehyde-free adhesives for plywood and wood composite materials; identifying environmentally safer preservatives for poles and millwork; minimizing wood waste through improved sawing and milling equipment; evaluating wood chemicals for medicinal breakthroughs; and engineering wood construction techniques for improved durability/safety in earthquakes and hurricanes.



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Forests provide a sustainable and stable leg to a diverse Oregon economy in both rural and urban areas.

National and international business cycles have repeatedly demonstrated that cities, states and nations with single source economies suffer greater during downturns than those with diverse economies. Global factors, and recent Federal policies will prevent Oregon's forest sector from having the economic dominance that it did 20 years ago. However, Oregon's forest sector is still a significant and sustainable portion of the state's economy that provides an important employment network across the state. Consider some facts regarding Oregon's forests and related industries:

- Oregon has 28 million acres of forest – 46% of the state's land area
- 8.7 million acres are managed as reserves for environmental, habitat and scenic values, where tree harvest is prohibited or severely constrained
- 9.2 million acres are managed for multiple values; environment, habitat, recreation and timber harvest
- 10.1 million acres of industrial and family-owner forestlands are managed under strict protection laws for production of wood and wood products.
- Forest sector direct Total Industrial Output (TIO) \$12.6 billion
- Forest sector indirect multiplier effect, additional \$9.7 billion
- Forest sector produces 85,600 direct jobs
- Forest sector produces 190,000 direct and indirect jobs (9% of Oregon employment)
- Forest sector average wage = \$40,525; average state wage = \$34,840
- Forest sector represents at least 25% of the employment base in 60% of Oregon counties.
- Forest sector represents more than 50% of the employment base in 42% of Oregon counties.

- Long-term sustainable growth of timber on harvestable lands is at least 5 billion board feet per year
- Recent average timber harvest on these lands is 3.8 billion board feet per year

Oregon's living legacy can sustain, and even improve, the above economic values while meeting desired social and environmental benefits. The Oregon Forest Research Laboratory is positioned to provide even greater contributions to successful and balanced management of Oregon's forestlands. Forest and watershed health research is essential to ensure that Oregon's forests achieve optimum growth and environmental protection. Research must increase along the urban interface where wildfire threatens public safety and property, and where natural resource values are at risk from fires and human actions. Development of new products and production methods can increase value-added manufacturing that provides strong wages for Oregon workers, and keeps Oregon businesses competitive in the global market. Finally, the knowledge gained through FRL research can be readily transferred to forest managers, industry, policy makers and Oregon's future workforce and leaders through the OSU College of Forestry and OSU Forestry Extension.



"... the forest sector remains integral to Oregon's economic vitality through the 21st century — for both the State's rural and urban communities."
— E.D. Hovee