OREGON

FOREST FACTS AND FIGURES

2009

PRODUCED BY THE OREGON FOREST RESOURCES INSTITUTE

This is the story of Oregon's Forests.

As a whole tree is more than the sum of its parts, the story of Oregon's forests is much more than the sum of this *Oregon Forest Facts & Figures*. At its foundation, the Oregon forest story is one of legacy, challenge and opportunity.

The legacy? Oregon is blessed with forests. Despite development and land conversion, fully 92 percent of the forestland that covered the state in 1850 remains in forest cover.

The challenge? Keeping it healthy. Keeping it productive for all its diverse values. And, despite enormous pressures to do otherwise, simply keeping it as forestland.

The opportunity? To continue the legacy. To yield even greater benefits. To nurture and manage forests for a wide range of values, uses, products and services.

Oregon Forest Facts & Figures tells the story of Oregon's forests through data and detail. It fills a need for accurate and current information about Oregon's forests in an at-a-glance, easy-to-access format.

Managed by professionals using world-leading technology, Oregon's forests provide riches that extend to economic vitality, high-quality jobs, green building products, community health, water quality, fish and wildlife habitat, outdoor recreation, and carbon sequestration. The environmental, social and economic benefits of Oregon's Forests are interdependent. To sustain one of them, we must sustain all of them.

Sincerely,

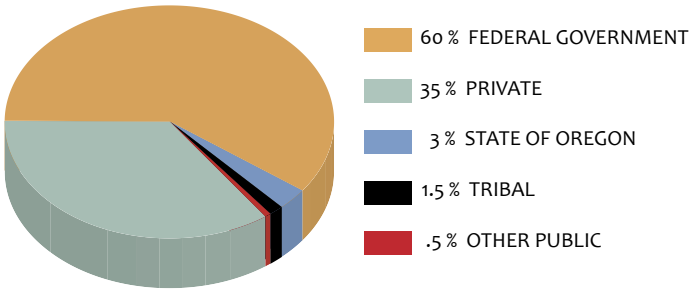
Mike Cloughesy
Director of Forestry
Oregon Forest Resources Institute

OREGON FOREST LAND AREA[1]

Oregon, the ninth largest U.S. state, spans 63,018,000 acres or 98,466 square miles. Nearly half of this is forested – 30,472,000 acres, or 48.4 percent. Oregon's forestland owners or managers include federal, state and local governments; Native American tribes; large private landowners; families; individuals; land trusts and other conservation organizations. Ownerships vary from a few acres to hundreds of thousands, even millions of acres in the case of Oregon's federal forestlands. The federal government manages and conserves about 30 percent of the land base of Oregon and about 60 percent of its forests for the citizens of the nation.

TOTAL LAND AREA	63,018,000 acres
Forestland	30,472,000
Other land (urban, cropland, grazing, etc.)	32,546,000
GOVERNMENT FORESTLAND	19,341,000 acres
Federal	
U.S. Forest Service national forestland	12,133,000
U.S. Forest Service reserved lands (e.g., wilderness)	2,139,000
U.S. Forest Service national grassland	11,000
National Park Service	159,000
Bureau of Land Management (reserved and unreserved)	3,760,000
U.S. Fish & Wildlife Service	16,000
Other federal	27,000
Total Federal Forestland	**18,245,000**
State	
State Forests	781,000
Other (parks, ODOT, College of Forestry)	159,000
Total State Forestland	**940,000**
County and Municipal Lands	156,000
PRIVATE FORESTLAND	10,668,000 acres
Large private landowners (≥ 5,000 acres)	6,000,000
Small private landowners (< 5,000 acres)	4,668,000
NATIVE AMERICAN TRIBAL FORESTLAND	463,000 acres
TOTAL FORESTLAND	30,472,000 acres

OREGON FORESTLAND BY OWNER (AS PERCENTAGES)

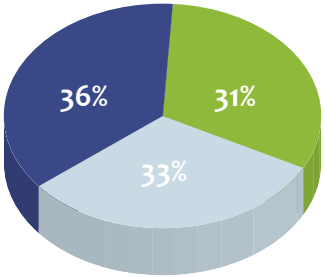


FORESTLAND MANAGEMENT CLASSIFICATIONS [2]

Oregon's forests are managed to reflect the interests and policies of different owners. The land base is divided into nearly equal portions for each management purpose:

WOOD PRODUCTION

Forests managed mostly for income or timber production by both large and small private owners and tribes; supply nearly 85 percent of the annual statewide timber harvest



MULTI-RESOURCE

Forests managed for multiple uses including recreation, water, wildlife habitat and timber production; primarily public, tribal and small private ownerships

RESERVE

Forests managed and conserved mostly for environmental or cultural attributes such as old-growth habitat with limited timber harvest; largely owned by the federal government and may be set aside for parks, wilderness riparian or endangered species habitat

OREGON'S FOREST PROTECTION RULES [3]

Oregon was the first state to enact comprehensive rules governing forest practices and protecting forest resources including water, fish, wildlife, soil and air. With strong support from industry leaders, the Oregon Legislature enacted the Oregon Forest Practices Act in 1971. Applying to all state and private forestlands, the Act and its accompanying rules are updated periodically to reflect new scientific knowledge and changing citizen preferences, with most revisions targeting increased protection for water quality, and habitat enhancement.

OREGON'S FOREST PRACTICES ACT REQUIRES:

REFORESTATION

Landowners must complete replanting within two years after harvest. On average, 40-50 million new trees are planted each year in Oregon's forests.

PROTECTION OF WATER RESOURCES

Timber harvesting, road building and chemical use are restricted near streams to protect fish and water quality.

PROTECTION OF WILDLIFE HABITAT

To provide nesting sites and habitat for birds, mammals and other animals, foresters and loggers must leave trees, snags and down logs in harvest units larger than 25 acres. Additionally, harvesting is modified near sensitive bird nesting, roosting or watering sites.

LIMITS ON CLEARCUTS

Clearcuts cannot exceed 120 acres within a single ownership, including the combined acreage of any clearcuts within 300 feet of each other. Once healthy, young trees grow to 4' tall, the young forest is no longer a "clearcut."

PROPER ROAD CONSTRUCTION AND MAINTENANCE

Strict regulations govern the location, construction, maintenance and repair of roads, primarily to limit road-related sediment delivery to streams for water qualtiy protection.

PROTECTING SALMON AND WATERSHEDS

In response to listings of coho and other salmon species under the federal Endangered Species Act, the Oregon Legislature and Governor joined with landowners to create the Oregon Plan for Salmon and Watersheds in 1997. The Oregon Plan seeks to restore salmon runs, improve water quality and achieve healthy watersheds through the joint efforts of government, landowners and citizen volunteers. Its emphasis on landowner voluntary measures that go beyond regulations and on engaging communities in the restoration and long-term stewardship of their watersheds makes it unique among state natural resource protection plans. Combined efforts led by forest landowners have resulted in treatment of more than 3,700 miles of stream banks and have made an additional 3,100 miles of stream accessible to fish due to improvements to culverts and other stream crossings.

KEY ELEMENTS OF THE PLAN:

- Voluntary restoration activities by private landowners (especially forest landowners), supported by local citizens, students, businesses and government
- Coordinated tribal, state and federal agency actions
- Continued monitoring
- Rigorous scientific oversight by independent scientists

WATERSHED RESTORATION OUTCOMES:[4]

	1999	2000	2001	2002	2003	2004	2005	2006	2007	Total*
Riparian miles treated	331	379	388	394	553	303	396	585	521	3749
Miles of road closures and decommissionings	373	321	321	205	191	133	96	128	276	2349
Miles of road improvements	802	761	606	1058	877	717	819	437	1074	7630
Fish passage: number of stream crossings improved	292	250	308	245	202	167	116	136	77	2223
Miles made accessible to fish due to stream crossing improvements	440	290	335	386	405	249	272	302	170	3131
Funding for completed and reported restoration (in millions)	$33.5	$40.6	$41.3	$58.2	$48.2	$62.4	$33.8	$62.4	$61.3	$388.7

*Yearly amounts do not add up to totals, because program began in 1997.

WATER QUALITY FROM OREGON FORESTS

Streams originating on forestlands supply water for Oregonians' drinking, irrigation and industrial needs. Forests and forestry practices can affect water quality. Healthy forests help develop and maintain healthy soils. In turn, these soils act as filters to purify water. Forest soils also act like sponges, absorbing water and then slowly releasing it to streams, thus helping to reduce flooding.

A 2008 U.S. Forest Service study[5] found relatively minor effects of forest harvest activities on peak stream flows and channel form and structure in the Pacific Northwest. The study compared forest harvest activities with other human-caused changes to streams and watersheds such as dams, urbanization and other direct modification of channels.

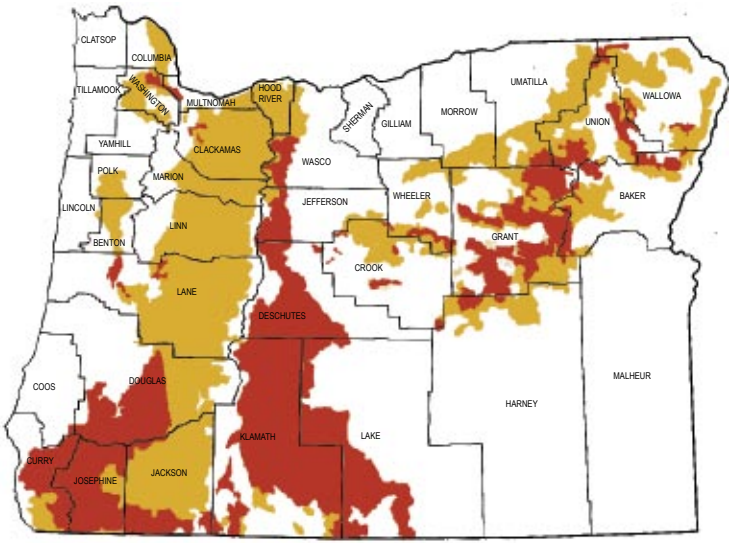
A 2001 Oregon State University review of forest watershed research and a survey of 30 major municipal water systems[6] found that the quality of water from Oregon forestlands is generally very high. Other findings of this study:

- Water quality is dynamic. High sediment levels can occur even in streams in undisturbed forest watersheds in Oregon, especially during large storms.
- Timber harvesting can temporarily increase streamflows, but measurable increases in flows from forest watersheds in Oregon are unlikely unless a large portion (25 percent or more) of the watershed is clearcut within a few years.
- Since forests can intercept and use significant amounts of water, permanent changes in forest cover – such as from development – can either increase or decrease local streamflows.

FOREST PROTECTION: FIRE, INSECTS, DISEASE, INVASIVE SPECIES

FIRE RISKS ON OREGON FORESTLAND[7]

Most of Oregon's forestland is considered at-risk for fire. This includes nearly 40 percent categorized as Class 3, areas that have missed two historic fire return intervals and are at high risk of uncharacteristically intense fire. At-risk forests contain dense, unnaturally overcrowded and dying trees, the result of a blanket policy of fire exclusion combined with a lack of active management of federal forests. At-risk forests burn more intensely and may convert mature forest wildlife habitat to shrub and young forest habitat, threaten homes and watersheds, increase risk to firefighters and adjacent land, and emit large amounts of carbon dioxide and other pollutants.



FIRE CONDITION CLASS 2 (missing 1 historic fire return interval)

FIRE CONDITION CLASS 3 (missing 2 or more intervals)

AVERAGE FIRE SIZE: FEDERAL FOREST VS. STATE FORESTLAND

On the national forests of the U.S. Forest Service's Pacific Northwest Region, the average size of a wildfire is about 133 acres (10-year average). On the forestlands protected by the Oregon Department of Forestry (ODF) and forest protection associations, the average fire size is about 24 acres (10-year average).

While the average size of wildfires on the two different types of lands differs, so do the two agencies' land management objectives. The primary charge of ODF and forest protective associations is to protect Oregon's state, private and Bureau of Land Management forestlands from wildfire with an aim to minimize damage to timber and other forest values. The U.S. Forest Service, on the other hand, manages the national forests for a variety of values, with timber production less of a priority. Also, private lands typically have more extensive road systems that afford easier access for equipment and crews.

FOREST FIRES AND ACRES BURNED (1992-2008)[8]

Year	Number of Fires	ODF Protected Acres Burned
1992	1,679	6,718
1993	820	2,848
1994	1,447	28,308
1995	997	4,803
1996	1,087	24,808
1997	794	1,410
1998	966	2,682
1999	1,171	9,528
2000	904	10,875
2001	1,261	51,438
2002	1,178	99,166
2003	1,177	9,346
2004	921	5,941
2005	827	11,588
2006	1,343	11,270
2007	1,241	55,013
2008	988	7,640
10-year avg.	1,054	21,324

This table shows total fires in Oregon and total acres burned on lands protected by the Oregon Department of Forestry and forest protective associations—primarily private land, but also including state-owned forests and Bureau of Land Management lands in western Oregon.

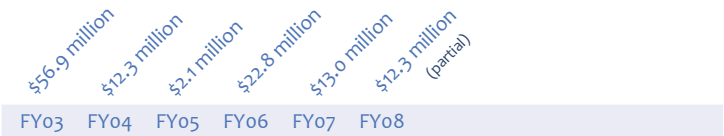
STATE FIREFIGHTING RESOURCES[9]

The Oregon Department of Forestry fire program is responsible for protecting 15.8 million acres of private and public forestland from wildfire, including some 3.5 million acres of wildland-urban interface. Whenever a wildfire becomes too large or complex for the capabilities of an ODF district, a landowner-financed fund provides extra resources, which can include helicopters, fire engines and hand crews.

During severe fire danger, ODF also draws on a special purpose appropriation of state funds that provides for retardant-dropping air tankers and other resources that can be placed where the immediate threat is highest. Unlike in other western states, Oregon landowners pay much of the cost of protecting their lands from wildfire.

STATE FIRE FIGHTING COSTS

Firefighting expenditures vary widely year to year, depending on the intensity of the fire season. Figures for the 2003 to 2008 fiscal years (July 1 through June 30) reflect that variation. FY 2003, for example, includes the 2002 calendar year fire season, the most severe in 50 years.



Annual costs listed above include initial costs, as well as extra costs for large fires (aircraft, incident management team deployments, extended attack) that are picked up by the landowner-financed Oregon Forest Land Protection Fund. They do not include costs paid by a special appropriation from the state's General Fund.

Over the past several decades, firefighting expense has increased significantly. An inflationary trend in equipment and personnel costs; expansion of the wildland-urban interface; hotter, drier summers; and fuel loading on federal forestlands have contributed to the rise.

FIRE TREATMENT OPTIONS[7]

Forest managers use their understanding of the historic role of fire to manage forests sustainably into the future. Three common tools are used to limit wildfire severity and risks, and to enhance forest resiliency:

- Thinning
- Prescribed burning after thinning
- Mechanical treatments such as removal of brush and understory fuels

Cost of treatment options (per acre):

- Fighting wildfire: $5,000
- Prescribed burning: $300
- Thinning: $50-500

Unnaturally crowded Ponderosa pine forest

Prescribed burning after thinning

INSECTS: BARK BEETLES [10]

Bark beetles are native and important components of western forest ecosystems. However, severe droughts combined with unhealthy forest conditions have resulted in unprecedented levels of bark beetle-caused tree death across the West. In 2007, bark beetles damaged more than 500,000 acres of primarily lodgepole and Ponderosa pine in national forests on the eastern slopes of the Oregon's Cascade Range. This includes a massive mountain pine beetle infestation covering more than 330,000 acres in southern Oregon.


Photo: USDA Forest Service - Region 4 Archive


Photo: Dave Shaw

Forest damaged by bark beetle outbreak

BARK BEETLES AND FIRE

Forest health, bark beetles and wildland fire are connected. Unchecked tree growth leads to overstocked stands whose trees' needs exceed the supply of water and nutrients, creating stressed trees less able to fight off bark beetle attack. As bark beetle-killed trees fall, heavy surface fuel loads accumulate on the ground, increasing the potential for high-severity fire. In addition, fire-weakened trees also are more susceptible to attack by bark beetles and other pests.

A 2007 scientific literature review by U.S. Forest Service scientists, specialists and university researchers analyzed the effects of vegetation management to control and reduce the effects of bark beetle outbreaks. They concluded that forest health could be restored by the following actions:

- Thinning forest stands
- Prescribed burning after thinning
- Harvesting insect-infested trees
- Long-term forest stewardship to shift the balance toward uncrowded forests that are healthy and much more resilient to drought and bark beetle attacks.

DISEASE: SWISS NEEDLE CAST [11]

Swiss needle cast, a fungal disease native to Oregon, yellows Douglas-fir needles and causes them to prematurely drop from the tree. This ultimately reduces tree growth, survival and productivity, which can affect wildlife habitat and increase the risk of fire. The disease has attacked Douglas-fir forests on the west slopes of the Oregon Coast range since the late 1980s. In Oregon, losses due to Swiss needle cast are estimated to exceed 100 million board feet or $25 million per year.


Photo: Alan Kanaskie

Douglas-fir affected by Swiss Needle Cast

INVASIVE SPECIES [12,13]

Invasive species are plants, animals and microbes not native to Oregon which out-compete native species for resources, reproduce prolifically, dominate regions and ecosystems, and may cause harm to humans, the environment and the economy.

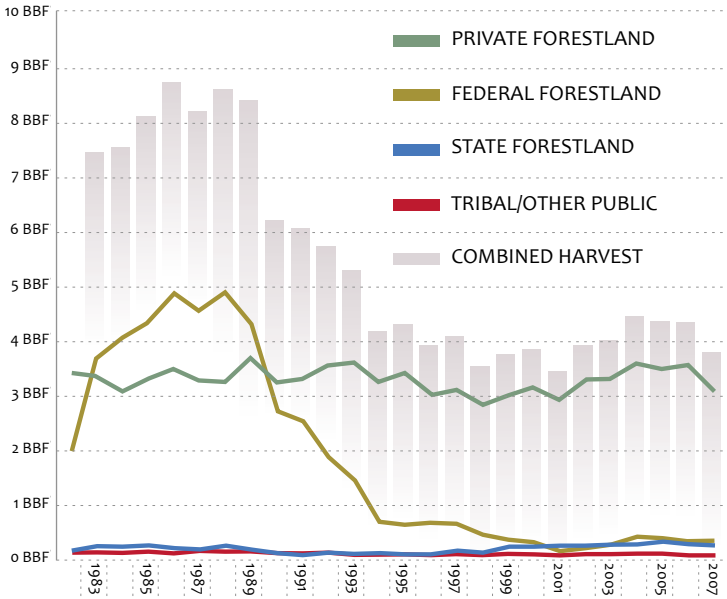
While most of America's worst invasive species, including zebra mussel, gypsy moth and kudzu, are not currently well established in Oregon, a number of nonnative invasive plant species have intruded in Oregon forestlands. The most common invasive plant in western Oregon forests is Himalayan blackberry, and the most common in eastern Oregon is cheatgrass. Other invasive species commonly affecting Oregon forests include:

- Scotch broom
- Gorse
- Japanese knotweed
- Reed canary grass
- English Ivy
- False-brome

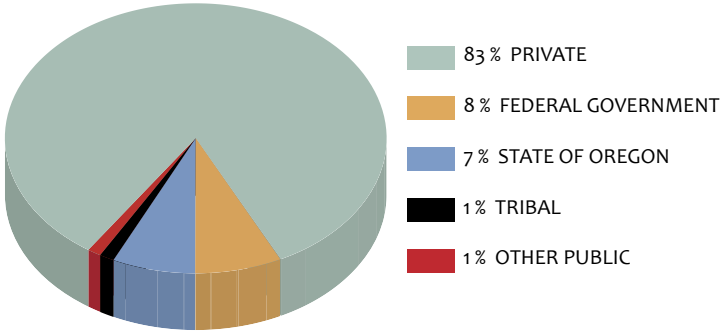
The Oregon Invasive Species Council provides a forum for state agencies, local governments, universities, industries and other groups involved in invasive species management to coordinate their efforts. The council has developed an Oregon Invasive Species Action Plan.

TIMBER HARVEST BY OWNERSHIP [14]

From the post-World War II years until 1989, timber harvests in Oregon generally exceeded seven to nine billion board feet annually. Since 1990, timber harvest on federal lands have dropped dramatically by over 90 percent, due to a major shift in management emphasis, while harvests from private lands remained at a stable, sustainable level. Harvest levels from combined public and private forests now total less than 4 billion board feet annually. More than 80 percent of Oregon's timber harvest comes from private forestlands, with about 10 percent from federal lands and 10 percent from other public and tribal lands.



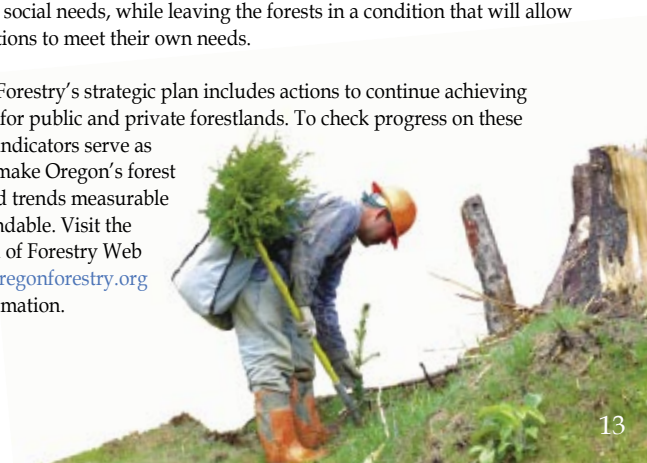
PERCENTAGE OF CURRENT HARVEST BY OWNER



SUSTAINABLE FOREST MANAGEMENT [15]

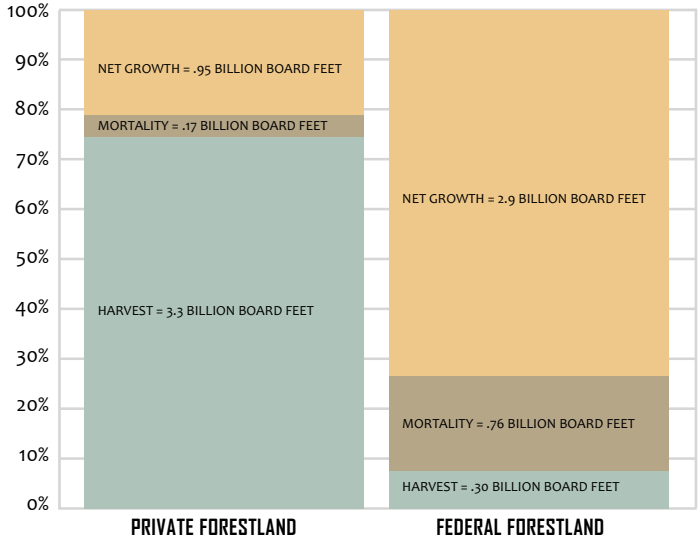
According to the Oregon Board of Forestry, sustainable forest management means that forest resources across the landscape are used, developed and protected at a rate and in a manner that enables Oregonians to meet their current environmental, economic and social needs, while leaving the forests in a condition that will allow future generations to meet their own needs.

The Board of Forestry's strategic plan includes actions to continue achieving sustainability for public and private forestlands. To check progress on these strategies, 19 indicators serve as yardsticks to make Oregon's forest conditions and trends measurable and understandable. Visit the Oregon Board of Forestry Web site at www.oregonforestry.org for more information.



SUSTAINABLE TIMBER HARVEST [13,16]

TIMBER REMOVALS AND MORTALITY (as % of Gross Annual Growth)



This graph shows net growth – the difference between what is grown in Oregon forests and what is harvested or dies – on private and federal lands. On private lands, much of the growth is harvested, little goes to mortality and a fair portion goes to increase the amount of standing timber volume. On federal lands, little is harvested, a large amount goes to mortality and most goes to increase the standing timber volume. In young forests in western Oregon, high growth can be considered positive. But when forests are already overcrowded, as is the case on many acres of federal land in eastern and southern Oregon, high net growth increases fire risk and can aggravate forest health problems.

FOREST PRODUCT USES [17]

Forest resources make up 47 percent of the total raw materials used in manufacturing in the United States. Nearly 100 percent of a tree can be used to make wood and other forest products.

Products made from trees grown in Oregon number in the thousands. Products include the familiar, such as lumber, plywood and paper, and the not-so familiar, such as pharmaceuticals, rayon and chewing gum.

TYPES OF IMPORTANT PRODUCTS MADE FROM TREES HARVESTED IN OREGON:

- Structural lumber and other softwood products used in construction, such as dimensional lumber, solid beams, laminated beams, joists, laminated veneer lumber, finger-jointed lumber and other engineered structural softwood
- Millwork lumber includes a variety of softwood and hardwood lumber for products such as doors, windows, cabinets, furniture, siding, flooring, moldings, fencing, shipping pallets, lathe and other millwork (pencils, musical instruments)
- Plywood and paneling from softwood and hardwood veneer or other composite panels such as particleboard and hardboard
- Posts, poles and timbers, such as utility poles, house logs, fence posts, pilings, treated timbers, cross-arms and railroad ties
- Wood composite products from low-value wood, blended with glues and compounds, such as siding, roofing, medium-density fiberboard and molding
- Pulp and paper products from wood fiber including packaging, printing paper, newsprint, tissue, toweling, absorbents, adhesives, fluff pulp and cellulose products such as rayon, cellophane, food additives and pharmaceuticals
- Biomass energy is a major Oregon product, as most mills burn wood waste to generate heat and electricity for manufacturing

FORESTS, CARBON AND CLIMATE CHANGE [18]

Many scientists and policymakers are concerned about concentrations of heat-trapping "greenhouse gases" such as carbon dioxide which have increased in our atmosphere over the past 200 years. Current concentrations of atmospheric carbon dioxide are higher than any time in the last 850,000 years. According to NOAA and NASA data, average surface temperature has increased by about 1.2 to 1.4ºF in the past 100 years. Many scientists believe this warming can be attributed to the increase in atmospheric carbon dioxide.

If greenhouse gases continue to increase, climate models predict that the average temperature at the Earth's surface could increase from 3 to 7ºF above 1990 levels by the end of this century. These increases can potentially lead to undesireable changes in global climate.

Scientists believe that trees and forests, because of their superior ability to absorb and store carbon, may ease the effects of climate change.

- Trees act as a carbon sink by removing the carbon from carbon dioxide gas and storing it as cellulose in the trunk and roots while releasing oxygen into the air.
- Wood from trees continues to store atmospheric carbon after it is made into lumber and other long-lived forest products.
- Forests in the United States absorb and store about 750 million metric tons of carbon dioxide each year, an amount equivalent to 10 percent of the country's emissions of this gas.
- Forest management techniques to store carbon or reduce carbon emissions include reducing forest densities to keep trees healthy and minimize fire risk and insect problems; reforesting quickly after disturbance; conserving forestland; reforesting unused or marginal agricultural land (known as afforestation); substituting wood-derived products and energy for fossil-fuel-derived products and energy; and using forest management strategies to enhance carbon sequestration.

SUSTAINABILITY CERTIFICATION PROGRAMS [19]

While Oregon forestland owners must comply with state and federal environmental laws, they may also voluntarily meet additional standards of forest sustainability by enrolling in a forest certification system. These private programs provide consumers with credible evidence of forest products produced through sustainable forestry practices. These certification systems apply independent, third-party standards and public transparency. The evidence of this is often documented in a label on the product, also known as an "ecolabel."

Among some 40 different certification programs worldwide, America's three largest systems are the Sustainable Forestry Initiative (SFI), the American Tree Farm System (ATFS) and the Forest Stewardship Council (FSC). A 2001 study showed that Oregon forest practices, mandated by state law, meet or exceed requirements of the FSC and SFI certification systems in a number of categories, particularly water and air quality, replanting, endangered species protection and fire control. Both the SFI and ATFS are endorsed by the internationally recognized European-based Programme for the Endorsement of Forest Certification (PEFC).

Oregon acres certified in the three major forest certification systems:

Sustainable Forestry Initiative	2,521,494 acres
American Tree Farm System	959,000 acres
Forest Stewardship Council	586,570 acres
Total Certified	4,067,064 acres

BIOMASS ENERGY / BIOFUELS [20, 21]

Woody biomass includes the waste generated from logging or thinning activities in forests. A 2006 study estimated that 4.25 million acres (about 15 percent of Oregon's forestland) have the potential to profitably harvest useful woody biomass through thinning excess trees. The bonus of this biomass harvest would be reducing the risk of uncharacteristically intense forest fires and pest epidemics. The Nature Conservancy (TNC) estimates that 25 million acres of Oregon's forests and woodlands need active treatment by thinning or prescribed burning, though not all of this is commercially feasible at this time. Other sources of woody biomass include wood waste generated at wood products plants as well as juniper woodlands, logging slash and discarded wood and yard debris. TNC estimates that up to 6 million acres of western juniper-dominated rangelands are candidates for restoration and could yield significant biomass.

SHORT-TERM USE:

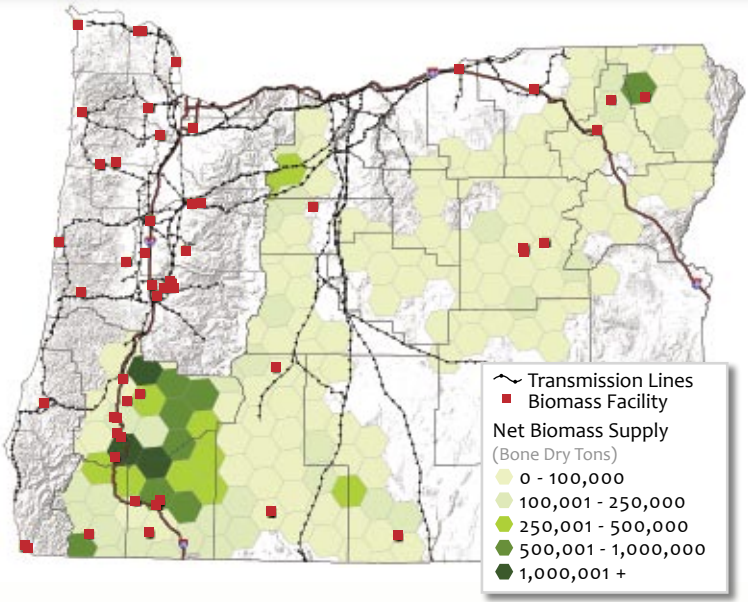
Woody biomass is currently used as a fuel for generating electricity and steam in manufacturing and as heat for large-scale buildings such as schools, hospitals, prisons and college campuses.

LONG-TERM USES:

A potential long-term use is converting woody biomass to biofuels and bioproducts to replace fossil fuels.

BENEFITS OF USING WOODY BIOMASS:

- Reduces wildfire and natural resource losses
- Improves forest health, fire resiliency and wildlife habitat
- Helps meet Oregon's renewable energy and climate change goals
- Shrinks firefighting and management costs
- Provides jobs and revitalizes rural economies



SOFTWOOD LUMBER PRODUCTION [22]

The forest industry in Oregon is the largest in the nation, accounting for 18 percent of total U.S. softwood lumber production.

	1999	2000	2001	2002	2003	2004	2005	2006	2007
Oregon	**6,056**	**5,927**	**6,056**	**6,177**	**6,532**	**7,156**	**7,433**	**7,033**	**6,176**
Washington	4,224	4,384	4,257	4,625	4,898	5,455	5,729	5,130	4,763
California	3,216	3,216	2,731	2,634	2,654	2,763	2,674	2,421	2,312
Georgia	2,899	2,773	2,547	2,657	2,427	2,595	2,668	2,590	2,309
Alabama	2,238	2,343	2,190	2,224	2,169	2,432	2,472	2,433	2,242
Arkansas	2,079	2,133	2,133	2,153	2,396	2,419	2,578	2,420	2,215
Mississippi	2,494	2,395	2,219	2,071	2,169	2,252	2,400	2,224	1,998
Idaho	1,975	1,896	1,833	1,906	1,949	1,964	1,959	2,027	1,780
North Carolina	1,823	1,565	1,765	1,849	1,865	1,960	2,026	1,846	1,752
Texas	1,385	1,390	1,291	1,375	1,460	1,568	1,622	1,788	1,652

(Numbers above represent millions of board feet)

U.S. SOFTWOOD LUMBER DEMAND AND SUPPLY [22]

The United States is a net importer of wood products. We consume more wood than we produce. In total, the United States produces about two-thirds of the lumber it consumes. More than 30 percent of the softwood lumber imported comes from Canada.

	2001	2002	2003	2004	2005	2006	2007	% for 2007
Demand (U.S. total)	53,619	55,837	56,763	61,555	64,355	60,472	52,220	100%
Supply (U.S. sources)	33,544	34,857	35,553	38,040	39,657	37,666	33,835	65%
Imports	20,075	20,980	21,210	23,515	24,678	22,806	18,385	35%

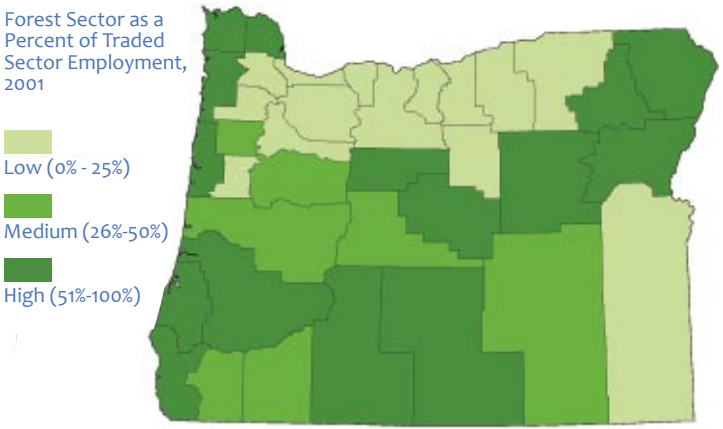
(Numbers above represent millions of board feet. Columns may not add to totals due to rounding)

ECONOMICS OF FOREST SECTOR [23]

The forest sector accounts for 6.9 percent of Oregon's total industrial output, and is the state's second largest "traded sector," producing income for goods and services sold out of state. Oregon's primary wood products (lumber, veneer and plywood), secondary wood products (doors and windows), and forestry services (consulting, firefighting and reforestation) contribute $12.6 billion annually to the state's economy in 2000, the latest year for which this has been assessed.

Wood products manufacturing comprises 50 percent or more of the manufacturing employment in 15 of Oregon's 36 counties. Because of high wages and the prevalence of forest products companies in rural areas, logging jobs are particularly important to rural economies, especially on the North Coast, Southern Oregon, Eastern Oregon and the Willamette Valley, in order of relative importance.

FOREST PRODUCTS TRADED SECTOR EMPLOYMENT BY COUNTY [23]



FOREST PRODUCTS DIRECT EMPLOYMENT [24]

The state's forest sector employs at least 63,549 Oregonians. We say "at least" because the data from the Oregon Employment Department do not fully count many self-employed, contractor and other forest sector workers — in jobs such as transportation, heavy construction, business services and farm labor. Using an employment factor developed by an econometric model (IMPLAN), we estimate total direct employment in forestry and wood products in 2007 at about 76,500 jobs.

These jobs account for some 4 percent of jobs in Oregon and 5 percent of the state's labor income. The total economic output supported directly and indirectly by Oregon's forest sector is about $22 billion, or about 11 percent of the total value of goods and services produced in Oregon.

Category	2007 average employment	2007 average payroll	2007 average pay
Forestry and logging, private	7,380	$315,539,280	$42,756
Forestry and logging, state government	233	$10,224,040	$43,880
Support activities	4,470	$124,163,190	$27,777
Wood product manufacturing	29,713	$1,165,076,443	$39,211
Paper manufacturing	6,174	$411,404,490	$66,635
Federal natural resources and mining	3,463	$196,109,690	$56,630
Furniture and related product manufacturing	7,735	$258,658,400	$33,440
Lumber and wood merchant wholesalers	3,389	$243,387,813	$71,817
Paper wholesalers	385	$24,217,270	$62,902
Custom architectural woodwork and millwork	607	$27,353,241	$45,063
Total	**63,549**	**$2,776,133,857**	**$43,685**

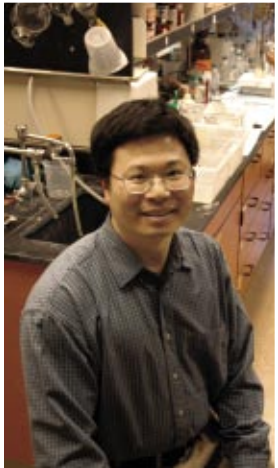
FOREST PRODUCT WAGES [24]

Annual wage income adds up to $2.8 billion. The forest products sector pays an average wage of $43,685 — 10 percent higher than the state's average wage of $39,566.

WORKFORCE, JOBS AND CAREERS

Oregon's forest sector offers a variety of job opportunities for high school, college and post-graduate students. Rising global demand for wood products, product and process innovations, new markets and incentives for well-managed forests are likely to create even more opportunities in the future. In addition, a wave of retirements in the field is expected over the next decade, opening up many more positions. The wide range of forest sector jobs means that positions are available with a variety of employers. Diverse job opportunities include land management, wood and paper manufacturing, engineering, biology, recreation, mechanical/electrical, new product development, research, education and other aspects of forestry, logging and forest product manufacturing.

Kaichang Li
Wood Scientist & Engineer
Oregon State University



Jim Remington
Timber Faller
Cross & Crown, Inc.

Leslie Weldon
External Affairs Officer
U.S. Forest Service

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THE FACT IS...

Oregonians have done many of the right things to sustain our forests, and this legacy enabled us to enter the 21st century with much of our forests intact. But will we pass that legacy to our heirs?

Our forests face unprecedented challenges, from near and far. Around the globe and here at home, forests are threatened by conversion to non-forest uses. Millions of acres of federal forests are over-crowded, bug-infested and vulnerable to catastrophic wildfire. Rural Oregon communities are losing vital forest sector jobs and their economic stimulus.

More than ever, we need actively managed healthy forests. As the pages of *Oregon Forest Facts & Figures* show, forests sustained by skilled professionals provide a myriad of important benefits and services: forest products, clean air and water, family-wage jobs, fish and wildlife habitat, outstanding recreation and much more.

Oregonians realize this. We can have both: a healthy environment and a healthy economy. Our understanding of forests must include all of these values. Our forests can sustain us – if we sustain them.

OREGON FOREST RESOURCES INSTITUTE

Oregon Forest Resources Institute
317 S.W. Sixth Avenue, Suite 400
Portland, OR 97204
(971) 673-2944
1-800-719-9195
www.oregonforests.org

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