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Oregon's Forest Resources, 2001–2010: Ten-Year Forest Inventory and Analysis Report



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Cover: Reflection of Diamond Peak in Summit Lake, Klamath County, Oregon.

Photo by Mark Gasser.

Oregon's Forest Resources, 2001–2010: Ten-Year Forest Inventory and Analysis Report

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Abstract

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This report highlights key findings from a comprehensive vegetation survey of all forested land across the state of Oregon. A total of 5,180 forested field plots in Oregon were visited by Forest Inventory and Analysis (FIA) crews over a 10-year period from 2001 to 2010. Oregon has 30 million acres of forest, covering nearly half the state. The structure and composition of Oregon's forests differ considerably across the state, particularly east versus west of the Cascade Range. Western Oregon forests are dominated by higher productivity classes (85 to 224 cubic feet per acre annual growth) and are composed of Douglas-fir and western hemlock, while forests in the east typically exhibit lower productivity (0 to 84 cubic feet per acre annual growth) and are composed of ponderosa pine, western juniper, and lodgepole pine. The Forest Service and Bureau of Land Management administer the majority of forested land in Oregon; these public forests managed by federal agencies tend to have older, larger trees. Private owners, both corporate and noncorporate, own nearly half of the forested land in western Oregon, particularly in areas of high productivity. Understory vegetation in Oregon forests is more abundant in younger, moist forests. Non-native species are present in many of Oregon's forests, most notably cheatgrass in the east and Himalayan blackberry in the west. This report includes estimates of forest growth, removals, and mortality for ownership groups across the state. The FIA program will continue to revisit and remeasure all the field plots over 10 years to report on changes in Oregon's forest resources.

Keywords: Air pollution, biomass, carbon, dead wood, Douglas-fir, fire, forest land, insects, invasive plants, inventory, timber volume, timberland, Oregon.

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Introduction

What Information Does This Report Provide?

This report presents a summary of Oregon's forest resources across all ownerships and forest types. It highlights key forest characteristics, summarized from inventory field plots sampled across Oregon over a period of 10 years (2001 through 2010). In each section of the report, we summarize basic resource information on forest-related topics such as forested land area, ownership, timber volume, biomass, and carbon stocks; forest structure and function topics such as forest age, dead wood, and understory vegetation; and disturbance information such as tree damage, fire, and invasive plants. The appendix in this volume provides summary tables for many of the forest characteristics inventoried, and additional online appendices provide further summaries plus details on inventory methods and experimental design of previous and current FIA protocols.

The data summarized in this report were collected by the Pacific Northwest Forest Inventory and Analysis (FIA) program. FIA implemented an annual sampling strategy in Oregon in 2001 that systematically measured 10 percent of the plots on all forested lands in the state each year for 10 years. The previous report, *Oregon's Forest Resources, 2001–2005: Five-Year Forest Inventory and Analysis Report* (Donnegan et al. 2008), summarized the first 5 years of data from the first 50 percent of the plot measurements. This report updates the previous report and is the **first to include data from 100 percent of the FIA plots across all ownerships statewide**. Therefore, these data should not be compared directly to previous reports or datasets to assess change in our forest resources over time.

What Is Forest Inventory and Analysis (FIA)?

The FIA program was created within the U.S. Department of Agriculture Forest Service in 1928 (called "Forest Survey" at the time) to conduct assessments of all the Nation's forested lands for use in economic and forest management planning. The program was charged with collecting forest data on a series of permanent field plots, compiling and making data available to the public, and providing research and interpretations from those data. Four FIA units are responsible for inventories of all forested lands in the

conterminous United States, Alaska, and Hawaii; the U.S. territories of American Samoa, Commonwealth of the Northern Mariana Islands, Guam, Puerto Rico, and U.S. Virgin Islands; and the U.S.-affiliated Pacific Islands, which include the Federated States of Micronesia, Republic of the Marshall Islands, and Republic of Palau.

Starting in 2000, as required by the Agricultural Research Extension and Education Reform Act of 1998 (the "Farm Bill"), FIA implemented a new standardized national inventory method in which a portion of all plots in each state is measured each year. The effect of the standardization is that, for the first time in 70 years, all FIA units are using a common plot design, a common set of measurement protocols, and a standard database design for compiling and distributing data. Under this unified approach, FIA now provides consistent estimators of forest parameters across all forested lands in the United States.

The base set of FIA plots is spaced at approximate 3-mile intervals on a hexagonal grid across each state (fig. 1), spanning both publicly and privately owned forests, and includes lands reserved from management for wood production (e.g., national parks, wilderness areas, and natural areas). The FIA inventory cycle involves annual measurements of a systematic subsample of all plots, each representing 10 percent of the plots in each state. This report covers all 5,180 forested plots in Oregon (table A2-1; fig. 2) that were inventoried by FIA field crews between 2001 and 2010 (fig. 3). Additional information about previous and current annual inventories are available online at <http://www.fs.fed.us/pnw/rma/> and <http://fia.fs.fed.us/>.

Why Are Oregon's Forests Important?

Almost half of Oregon's land area is forested, and a variety of economic, ecological, and social benefits are derived from these forests. As human population continues to grow, we increase our reliance on healthy forests and the ecosystem services they provide, such as clean water, wildlife habitat, carbon sequestration, wood products, and recreation. Historically, the economy of the Pacific Northwest was largely based upon natural resources such as timber from forests (figs. 4 and 5), and natural resources remain an important piece of Oregon's economy. Oregon is the top U.S. producer

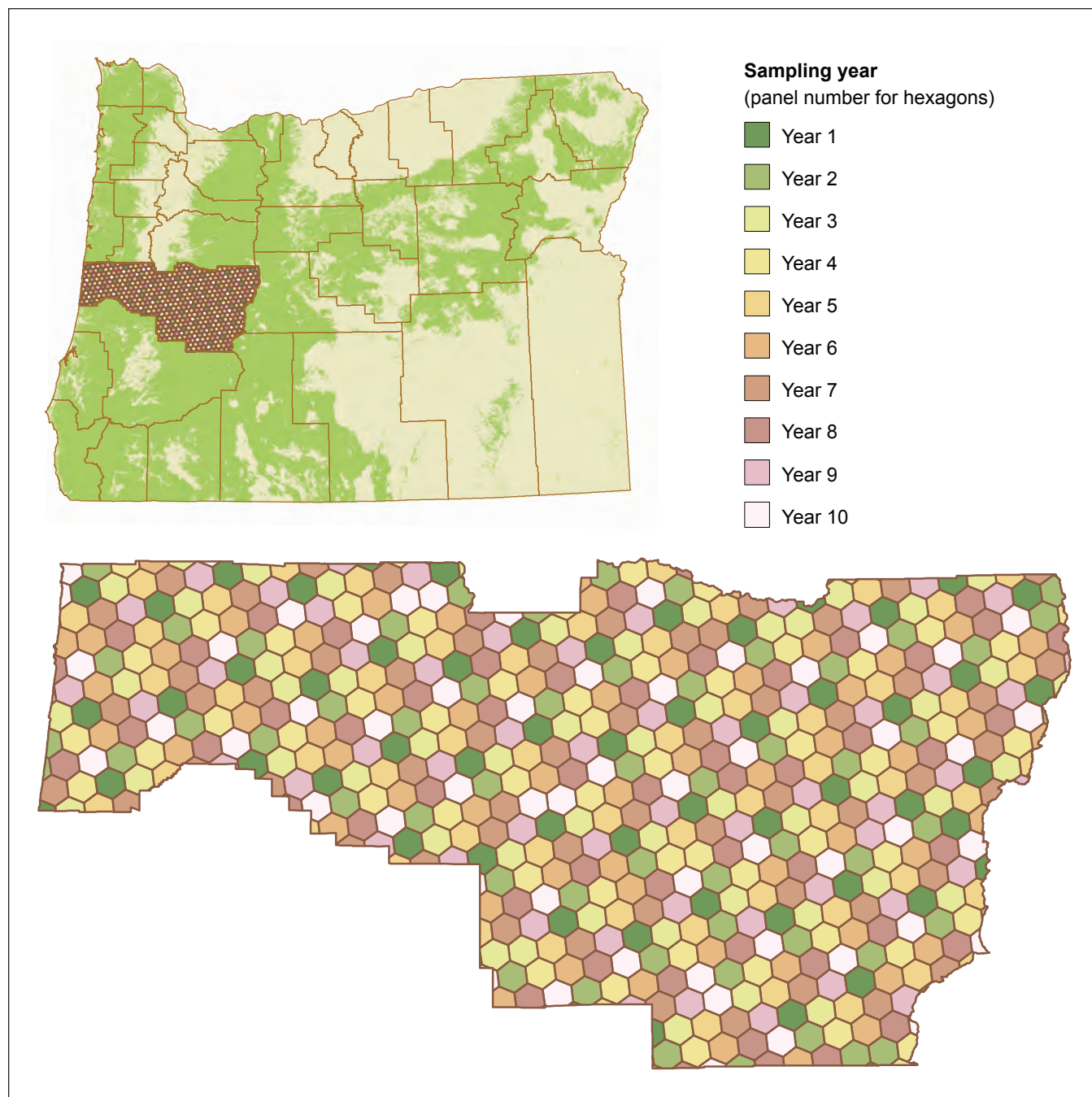


Figure 1—Example of the hexagonal grid that serves as the foundation of field plot assignment, with the cells shaded corresponding to each of the 10 annual measurement panels, magnified for Lane County, Oregon. All plots in one panel are sampled in 1 year.

J. Thompson

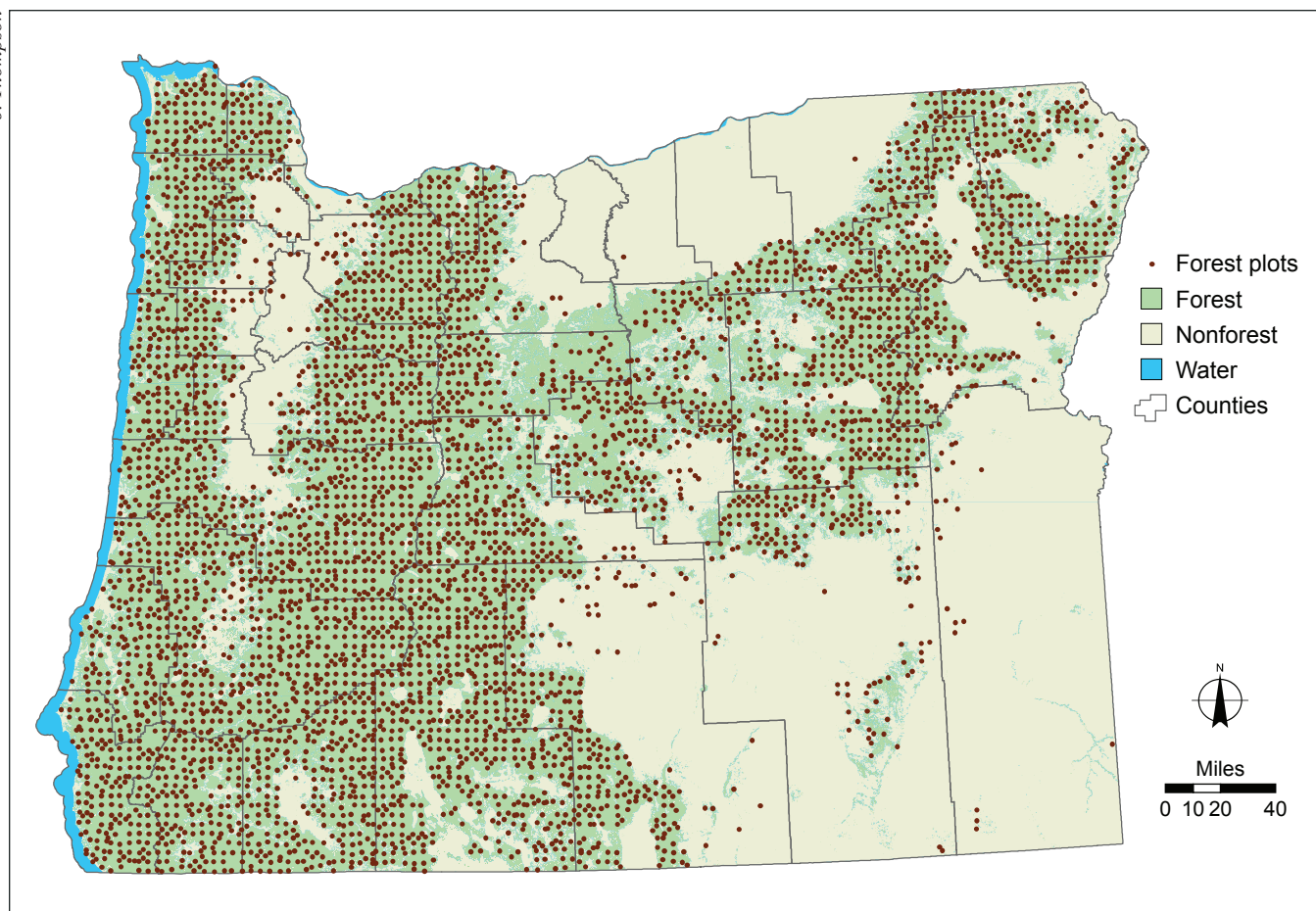


Figure 2—Approximate locations of all 5,180 accessible forested plots measured between 2001 and 2010 that provide the data used in this report (forest/nonforest geographic information system layer: Blackard et al. 2008).

Sharon Stanton



Figure 3—Forest Inventory and Analysis field crews take a wide variety of measurements on each plot visited.

*Photo courtesy of the Forest History Society, Durham,
North Carolina (image ID#FHS5495)*



Figure 4—Worker scales load of large logs on back of truck, Oregon in the 1930s.

*Photo courtesy of the Forest History Society, Durham,
North Carolina (image ID#FHS2715)*



Figure 5—Boy surveys hilltop after Oregon's Tillamook Burn, 1942.

of plywood and softwood lumber, and the forestry sector provides 3 percent (59,000) of all jobs statewide (Oregon Forest Resources Institute 2016). Biomass power plants generate electricity by burning wood waste from sawmills and logging operations. There are also nontimber forest products and financial benefits from ecosystem services, such as the regulation of water quality and quantity, carbon sequestration, soil creation, and soil retention.

Ecological benefits of the structure and function of forested ecosystems include providing habitat for plant and animal species. The vast expanses of continuous, coniferous forests over much of Oregon host species that include Roosevelt elk, black-tailed deer, American black bear, mountain lion, fisher, snowshoe hare, Pacific chorus frog, Oregon slender salamander, red-tailed hawk, pileated woodpecker, great horned owl, northern spotted owl, and northern flying squirrel. Oregon forests also support favorable habitat for fish such as salmon and steelhead trout by filtering runoff to streams, providing shade, improving water absorption, and retaining soils.

Oregon forests also provide a number of social benefits. Forests are used for recreational, cultural, and spiritual activities. Oregonians consider outdoor recreation an important part of their lifestyle, with high recreation rates and use of public lands throughout the Pacific Northwest.

What Do Oregon's Forests Look Like Today?

Where Are Oregon's Forests?

Forests cover about 30 million ac of Oregon's total land area of 63 million ac. The area of forest in Oregon is almost evenly divided between east and west of the Cascade Crest (fig. 6). The Oregon Coast Range ecoregion has the highest percentage of forested land in the state. Its proximity to the Pacific Ocean results in mild temperatures and high precipitation in the Coast Range, creating excellent growing conditions for trees. Conditions are also generally favorable for forest growth in the western Cascade Range, although cool temperatures limit productivity at higher elevations. East of the Cascades, moisture becomes a limiting resource, but there are still extensive forests throughout the Blue Mountains and other mountainous areas. In contrast,

the Columbia River basin and southeastern regions of the state are sparsely forested, and instead dominated by sagebrush-steppe habitat. Klamath, Douglas, and Lane Counties contain the most forested land area (fig. 7).

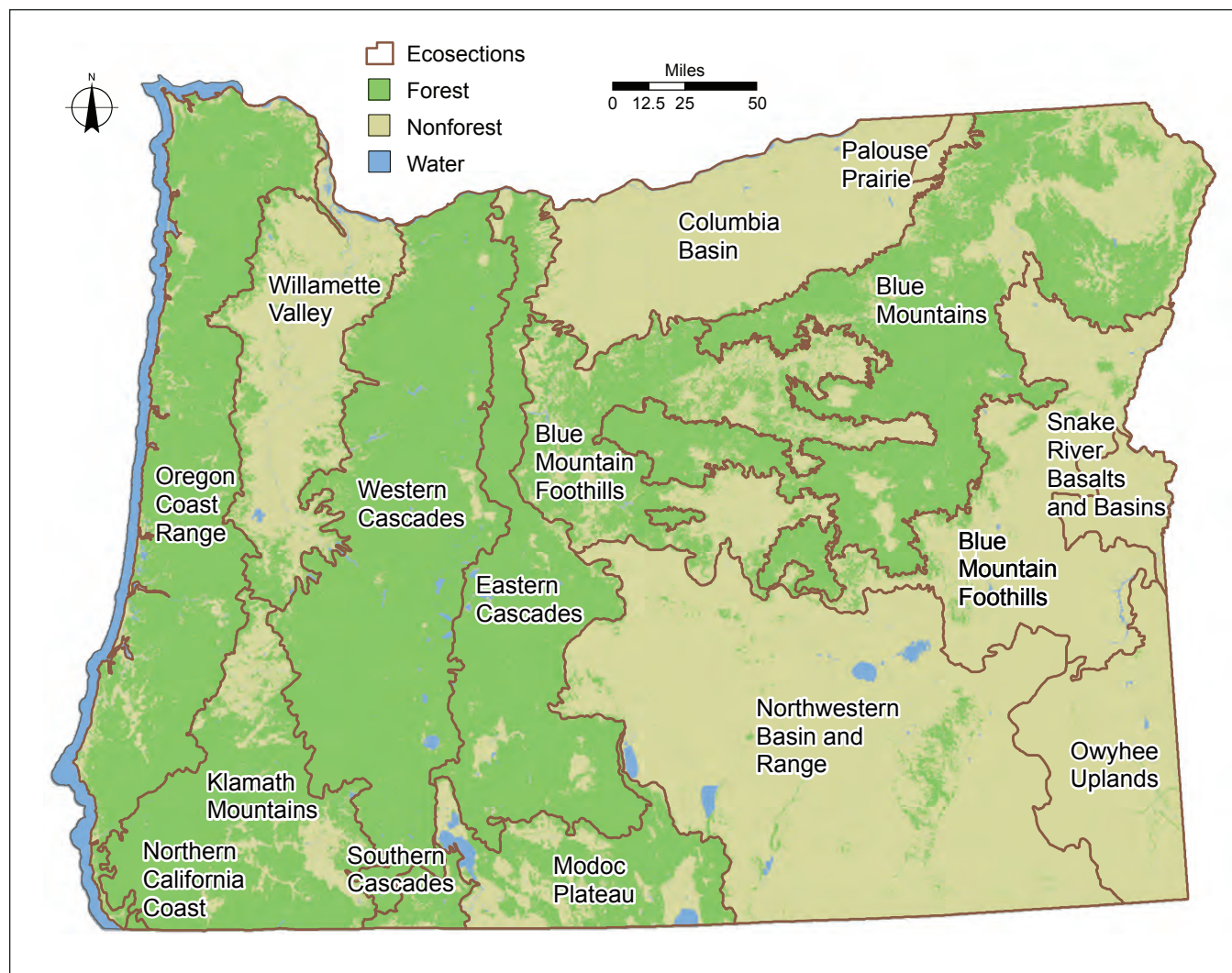
What Types of Forests Grow in Oregon?

The environment and vegetation of the Pacific Northwest are among the most diverse in North America, and Oregon boasts some of the most productive coniferous forests in the world. The FIA field crews identified nearly 50 different tree species across 12 dominant forest types in Oregon (fig. 8). About 86 percent of Oregon's forests are dominated by coniferous (softwood) forest types, covering nearly 26 million ac (fig. 9). These forests are composed predominantly of Douglas-fir (36 percent of all forested land area), ponderosa pine (17 percent), and fir/spruce/mountain hemlock (12 percent) forest types. Hardwood forest types cover an additional 3 million ac (12 percent of forested land area) (fig. 10). The major hardwood forest types are alder/maple (4 percent), western oak (3 percent), and tanoak/laurel (2 percent). About 3 percent of forested land is classified as nonstocked, meaning that less than 10 percent of the land has tree cover because of harvest or disturbances such as fire.

The diverse topography and strong climate gradients contribute to Oregon's high plant diversity. There is a distinct difference in forest types on either side of the Cascade Crest; Douglas-fir, hemlock/Sitka spruce, and alder/maple are major forest types in western Oregon, compared to ponderosa pine, western juniper, and lodgepole pine in eastern Oregon (figs. 11 and 12). The fir/spruce/mountain hemlock forest group is common at high elevations throughout the state, while western oak is found primarily in the relatively warm and dry inland valleys of western Oregon.

What Is the Volume, Biomass, and Carbon Storage of Wood in Oregon Forests?

The volume of wood in Oregon's forests can be an indicator of forest productivity, vigor, and structure. Tree volume is calculated using height and diameter measurements collected by FIA field crews, which in turn is used to estimate biomass, carbon storage, and capacity for production of wood products.



J. Chase

Figure 6—Oregon's ecosections (ecosection geographic information system layer: McNab et al. 2005; forest/nonforest geographic information system layer: Blackard et al. 2008).

J. Chase

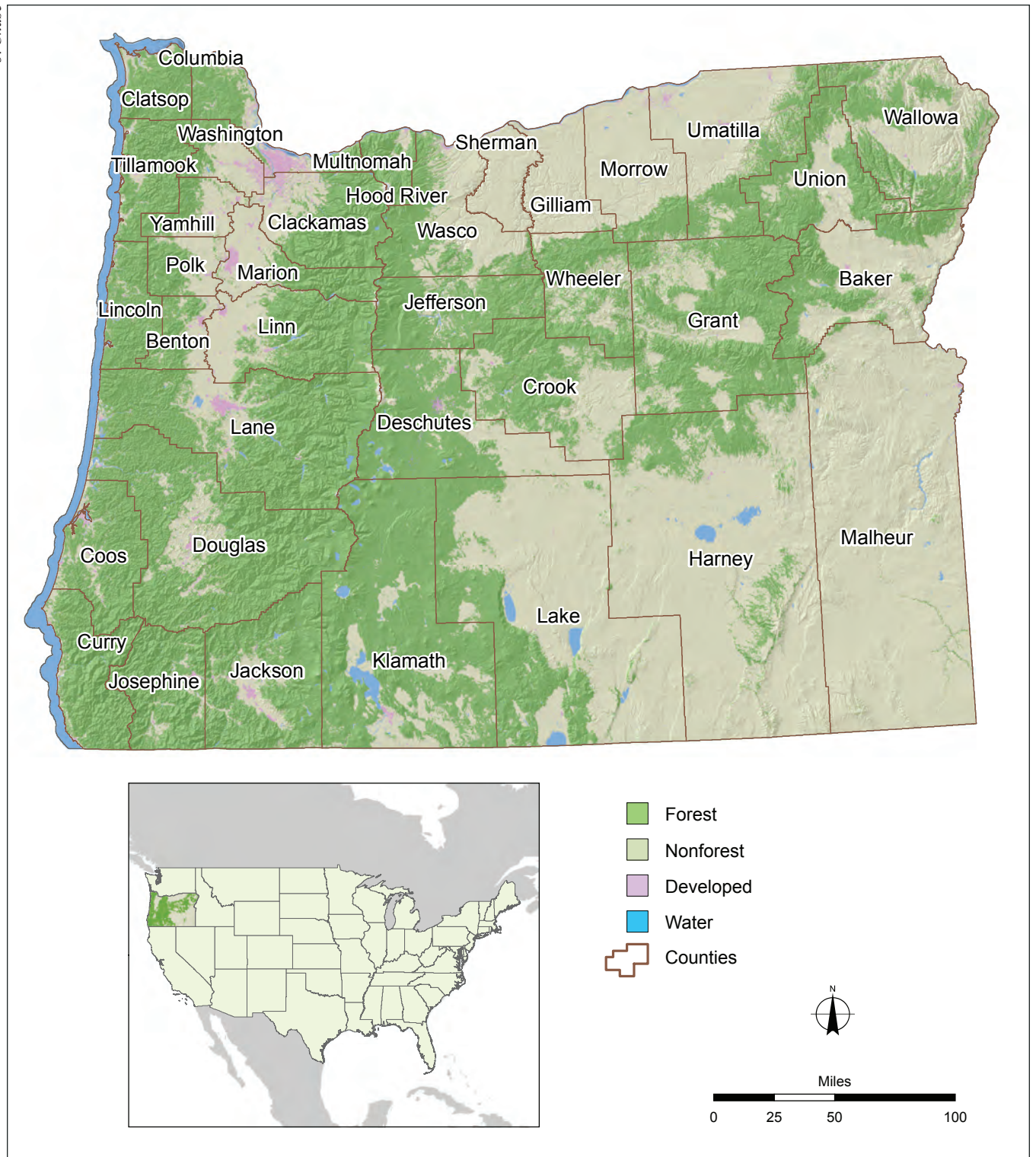


Figure 7—Oregon's land cover and counties (forest/nonforest geographic information system layer: Blackard et al. 2008; land cover layer: USGS MRLC-NLCD, Homer et al. 2007; relief layer: USGS NED, Gesch et al. 2002). All analyses dividing the state into western and eastern Oregon are done by county, with the division falling on the western boundary of Wasco, Jefferson, Deschutes, and Klamath Counties.

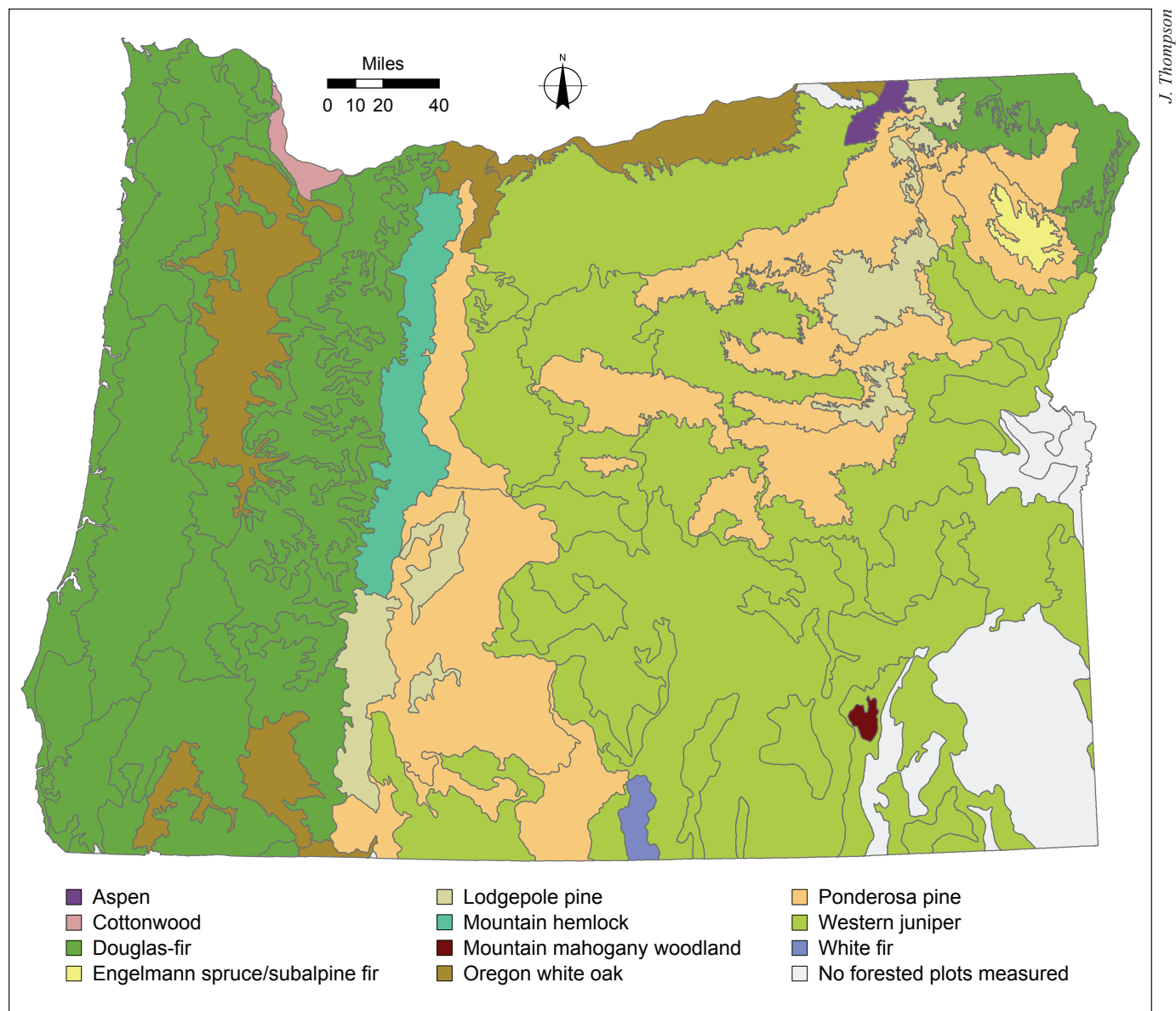


Figure 8—Dominant forest types and ecosections in Oregon (ecosection geographic information systems layer: McNab et al. 2005).

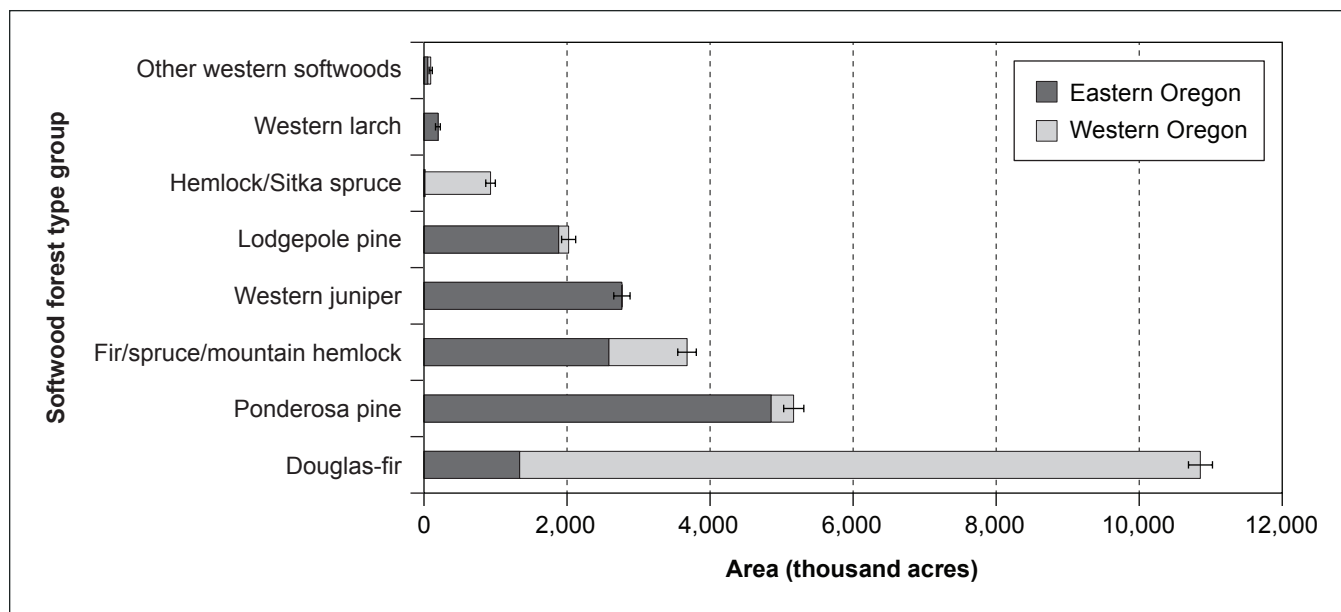


Figure 9—Area of softwood forest by forest type group/species in eastern and western Oregon, 2001–2010. Standard errors shown are for state totals, not divided by east/west.

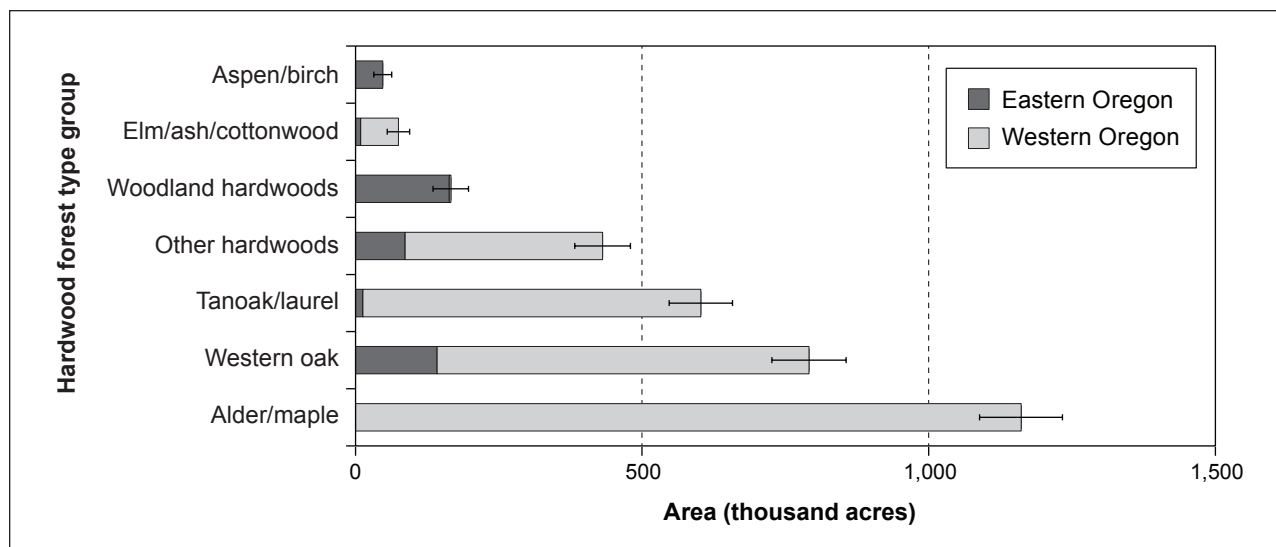
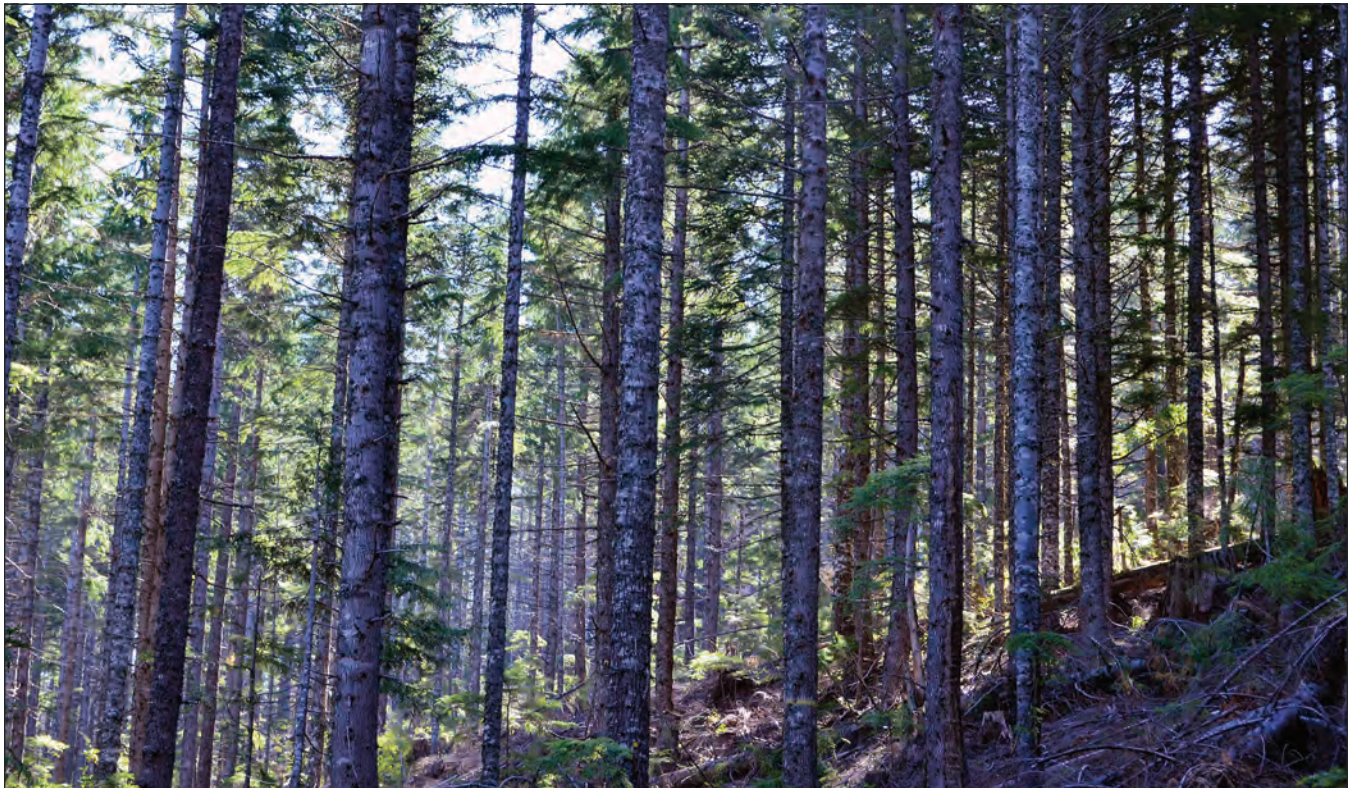


Figure 10—Area of hardwood forest by forest type group/species in eastern and western Oregon, 2001–2010. Other hardwoods include Pacific madrone, bitter cherry, and other infrequent hardwood forest types. Standard errors shown are for state totals, not divided by east/west.



Karen Waddell

Figure 11—Ponderosa pine is a key forest type found in eastern Oregon.



Sharon Stanton

Figure 12—Thinned western hemlock and Douglas-fir stand in western Oregon.

Oregon has approximately 100 billion net cubic feet of live-tree wood volume on forest land with a mean volume of about 3,400 ft³/ac (fig. 13). The greatest proportion of wood volume is found in commercially important softwood tree species such as Douglas-fir, true firs, pines, and western hemlock, which collectively make up 92 percent of all live-tree volume on Oregon forest land; the remaining 8 percent of live-tree volume is in hardwood species. The moist forests of western Oregon have three times greater net volume than those in eastern Oregon. The majority (56 percent) of live-tree volume is on national forest land, followed by corporate (15 percent) and other federal owners (14 percent). Across all ownerships, most tree volume is found on unreserved land. Forests dominated by large-diameter trees are more common on public lands (fig. 14).

Aboveground forest biomass and carbon accumulate in live trees, snags (standing dead trees), and down wood. Biomass estimates from comprehensive forest inventories are essential for quantifying the amount and distribution of carbon stocks, evaluating sources of sustainable fuel, and tracking net primary productivity. Total estimated above-ground biomass in live trees and dead wood across Oregon is 2.7 billion tons, the majority of which is contained in live trees (2.1 billion tons) (fig. 15). Statewide, softwood forest types have 10 times the amount of biomass and carbon as hardwood types. Douglas-fir is the most abundant tree species in Oregon, and therefore contributes the most to biomass and carbon storage across the state, while hemlock/Sitka spruce forests contain the most biomass and carbon on a per-hectare basis (figs. 16A and 16B).

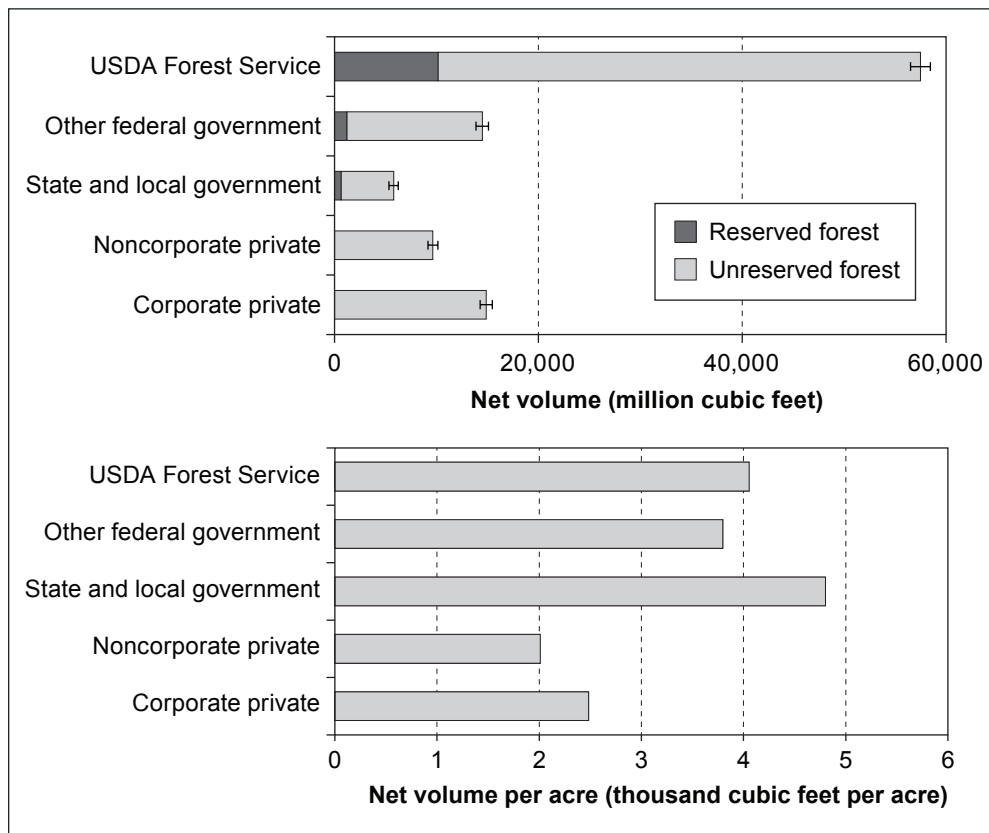


Figure 13—Total and per-acre net cubic volume of all live trees by ownership group, Oregon, 2001–2010.

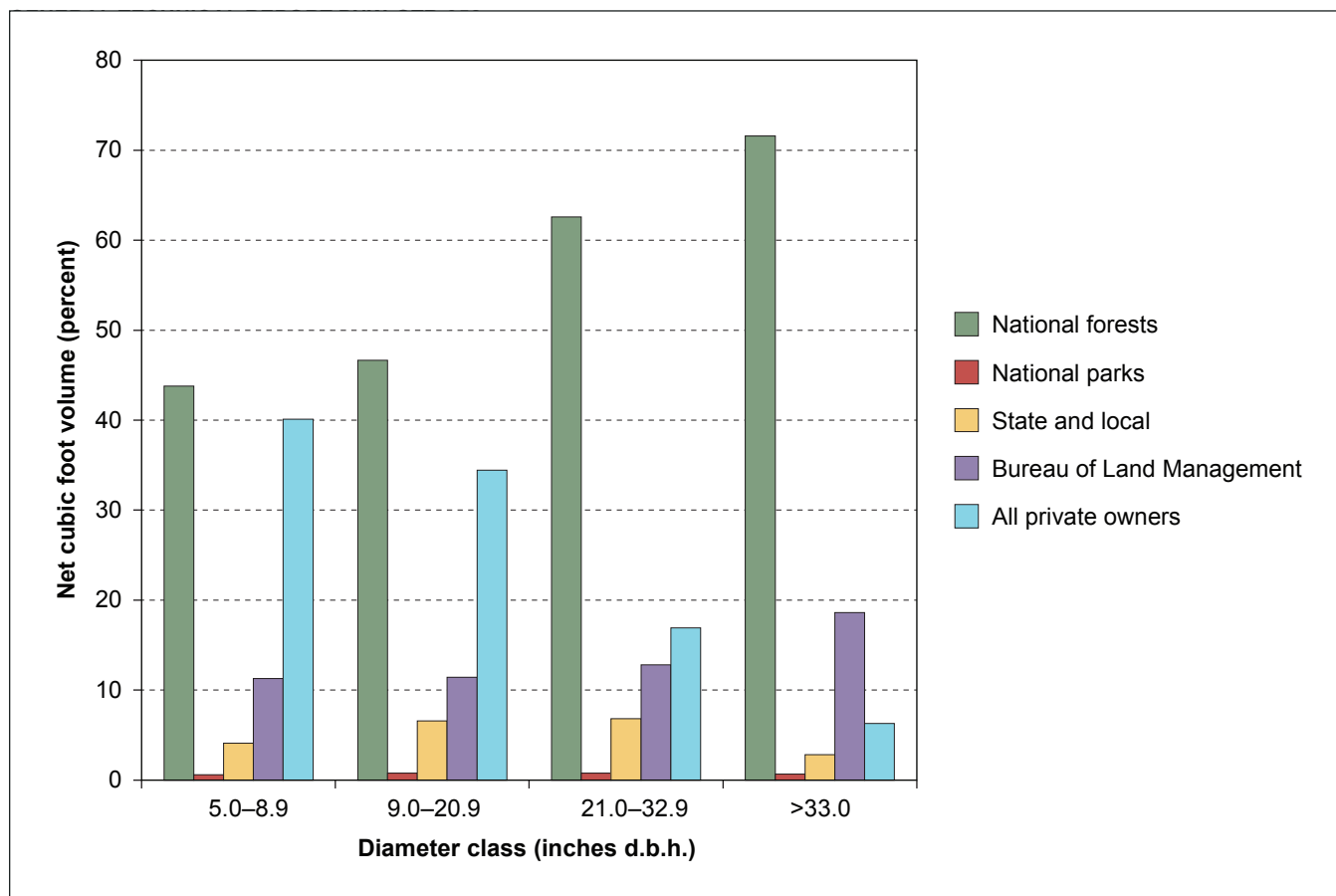


Figure 14—Percentage of volume by diameter class and owner group on forest land, Oregon, 2001–2010. d.b.h = diameter at breast height.

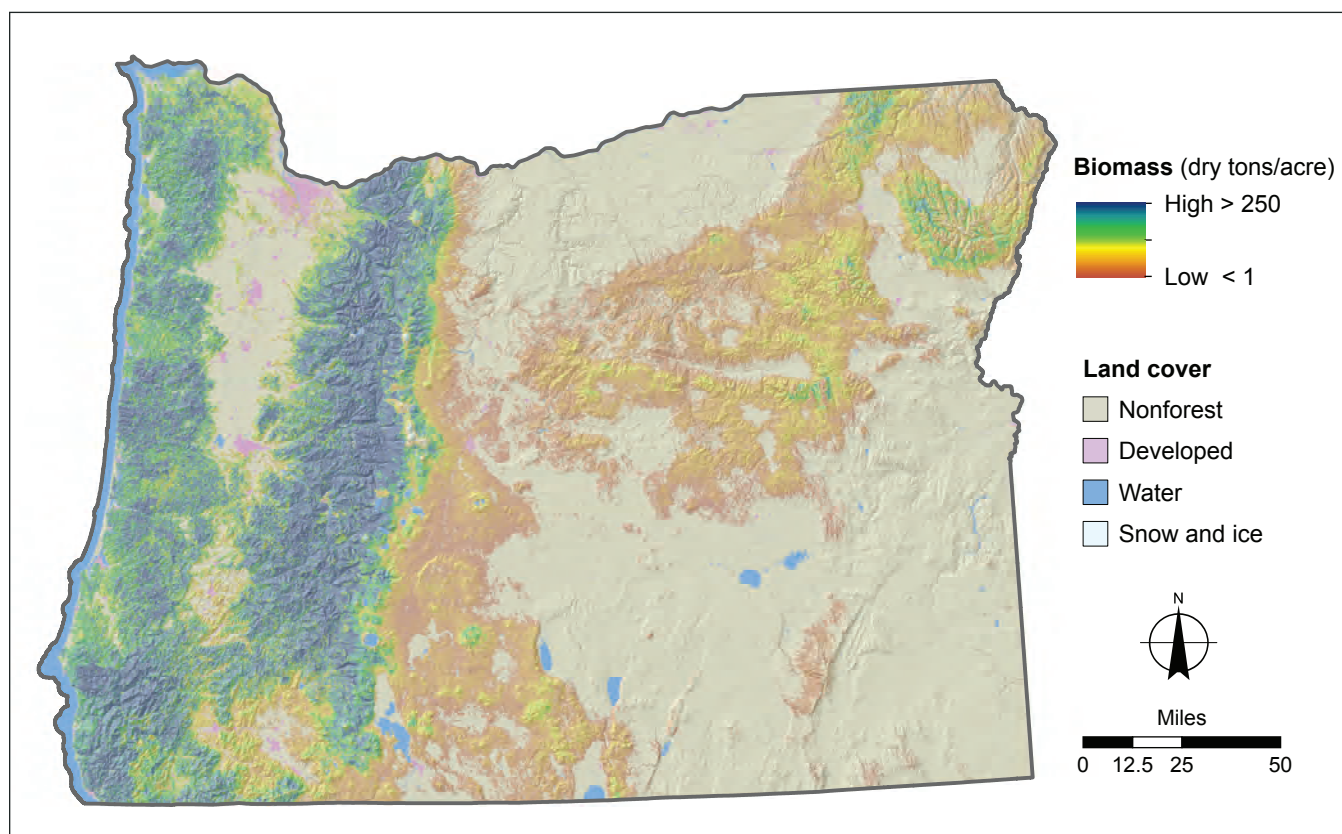


Figure 15—Estimated live-tree biomass (dry tons per acre) in Oregon, 2001–2010 (forest/nonforest geographic information system layer: Blackard et al. 2008; landcover layer: USGS MRLC-NLCD, Homer et al. 2007; relief layer: USGS NED, Gesch et al. 2002).

J. Chase

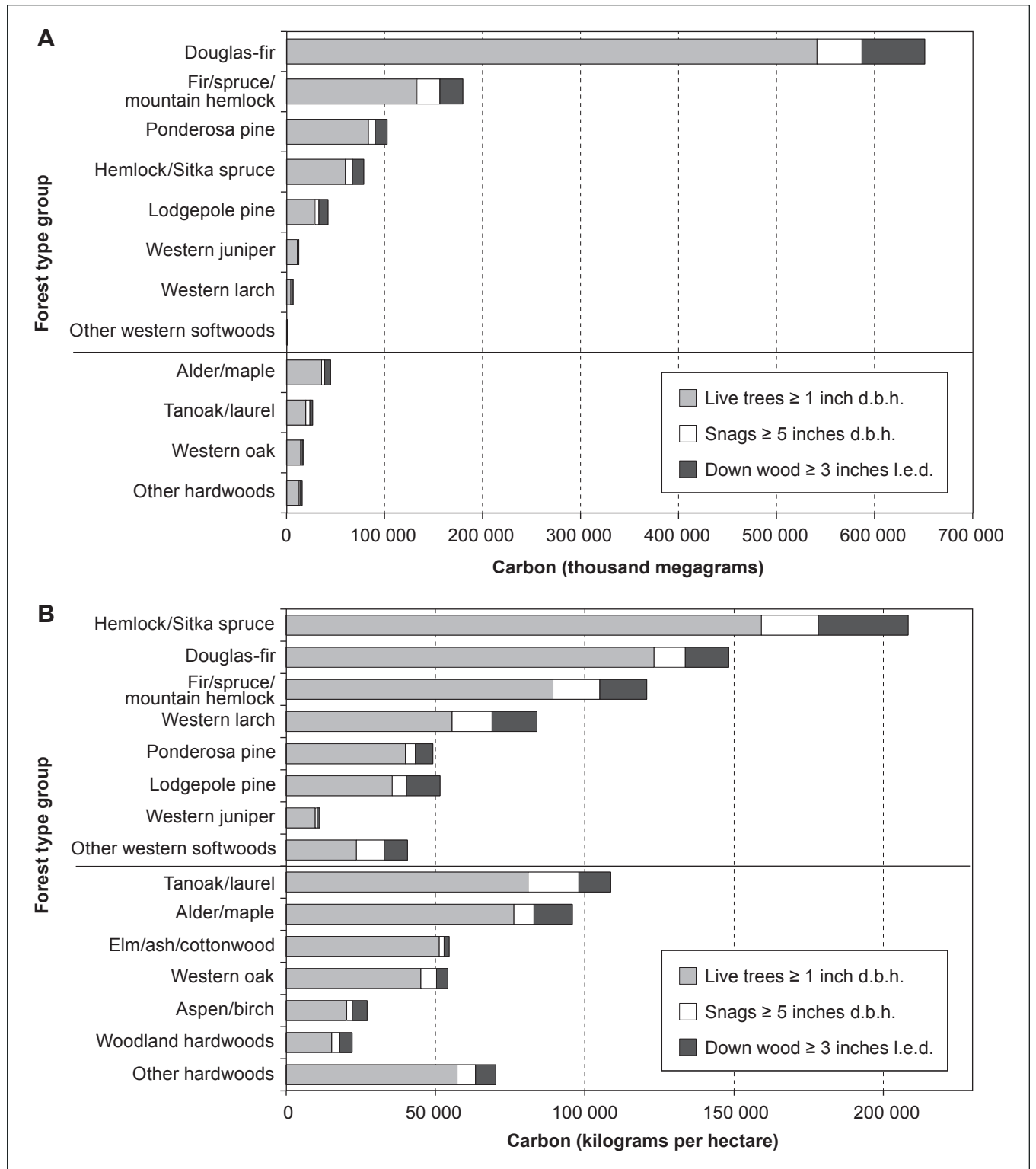


Figure 16—Total and per-hectare carbon mass of live trees, snags, and down wood by forest type group, Oregon, 2001–2010. d.b.h. = diameter at breast height; l.e.d. = large-end diameter.

How Much Dead Wood Is In Oregon Forests?

Dead wood, standing as snags or fallen on the forest floor, is an important component of forest structure. Dead wood in a forest provides habitat for wildlife and fungi, improves soil fertility through nutrient cycling and moisture retention, adds to fuel loads, and is a key structural element in mature forests. Dead wood resources can be assessed from a variety of perspectives—too much can be viewed as a fire hazard, and too little can be viewed as a lack of habitat. FIA provides estimates of the amount of both standing dead trees (snags) and down wood, as well as their decay status.

There are approximately 227 million tons of standing snags and another 367 million tons of down wood on forest land across Oregon (figs. 17 and 18). By comparison, there are about 2.1 billion tons of live tree biomass found on these forests. The majority of dead wood is found on forest land managed by the Forest Service (61 percent). Private owner-ships, both corporate and noncorporate, account for about 23 percent of the dead wood biomass. On a per-acre basis, Forest Service lands average about 27 snags and about 14 tons of down wood biomass (fig. 19). This is in contrast to private ownerships, which average about 11 snags and 10 tons of down wood biomass per acre. By stand age, maximum total biomass per acre in standing dead trees occurs in stands 161 to 200 years old for both hardwood and softwood forest types. The majority of coarse down wood pieces (≥ 3 inches in diameter) found on the forest floor are in the smallest diameter class (table A2-63).



Karen Waddell

Figure 17—Large down logs such as this example of a fallen Douglas-fir tree in Opal Creek contribute to key habitat and structural elements in mature forests of the region.

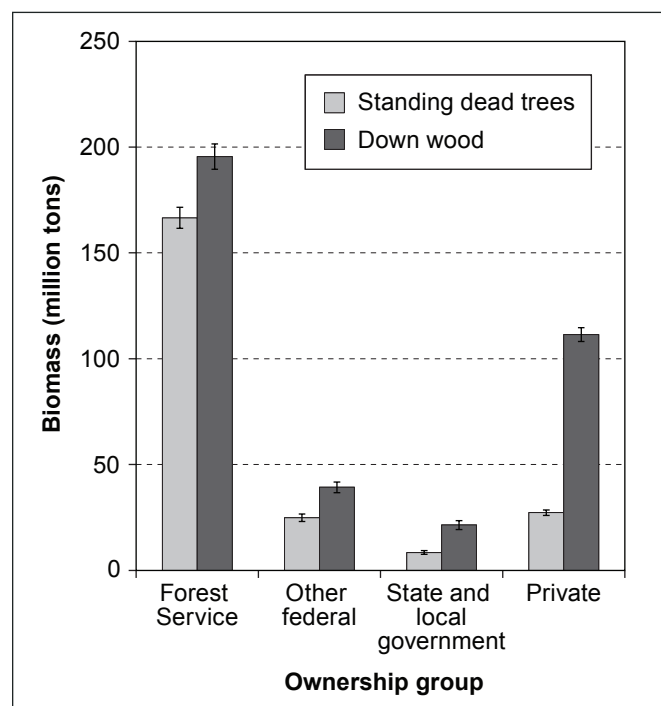


Figure 18—Total biomass (million tons) in standing dead trees (snags) and down wood by ownership group, Oregon, 2001–2010.

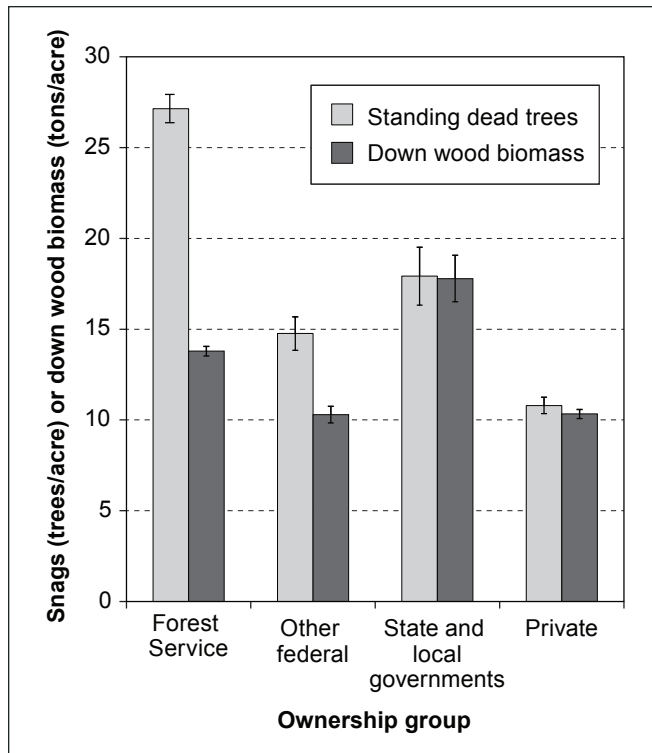


Figure 19—Average number of standing dead trees (snags) per acre and down wood biomass (tons) per acre by ownership group, Oregon, 2001–2010.

How Old Are the Trees in Oregon?

Stand age is defined as the average age of the dominant size class of trees and is often a function of the amount of time since the last harvest or other stand-replacing disturbances such as fires, insect outbreaks, or disease. In forests where disturbances that only kill portions of a stand are common, interpretation of stand age is less straightforward. FIA field crews count annual rings on increment cores from a subset of the trees in the dominant size class to estimate average forest stand age (fig. 20). The spatial distribution of tree ages varies across the state, resulting mainly from differences in disturbance histories, ownership patterns, and management strategies.

There are many areas of forests in Oregon that have never been commercially harvested. Even so, the majority of Oregon's forests, both hardwoods and softwoods, are less than 160 years old, with more than half of the state's forests less than 80 years old (fig. 21). Fifty-four percent of Douglas-fir and 80 percent of alder/maple stands are younger than 60 years old.



Michelle Gerdes

Figure 20—Field crew collecting an increment core to estimate age and growth rates.

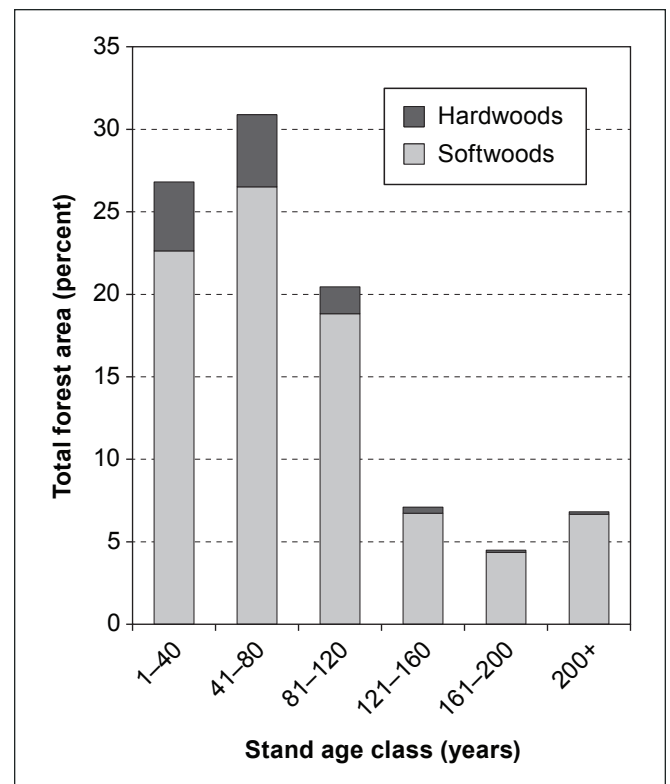


Figure 21—Percentage of forest area by stand age class for softwood and hardwood forest types, Oregon, 2001–2010.

Older Douglas-fir forests provide high structural diversity (fig. 22), with tree diameters covering a broad range of classes, and seedlings and saplings as the most abundant age class. Thirteen percent of Douglas-fir and 3 percent of alder/maple forest types are older than 160 years. Public forests tend to be older than forests on private lands. The majority of softwood stands greater than 200 years old are located in the Cascades and southwestern regions on Forest Service land (fig. 23).



Dan Coles

Figure 22—Old growth Douglas-fir stand in Mount Hood National Forest, Oregon. Old-growth stands typically have a complex stand structure including both large- and small-diameter trees and down wood.

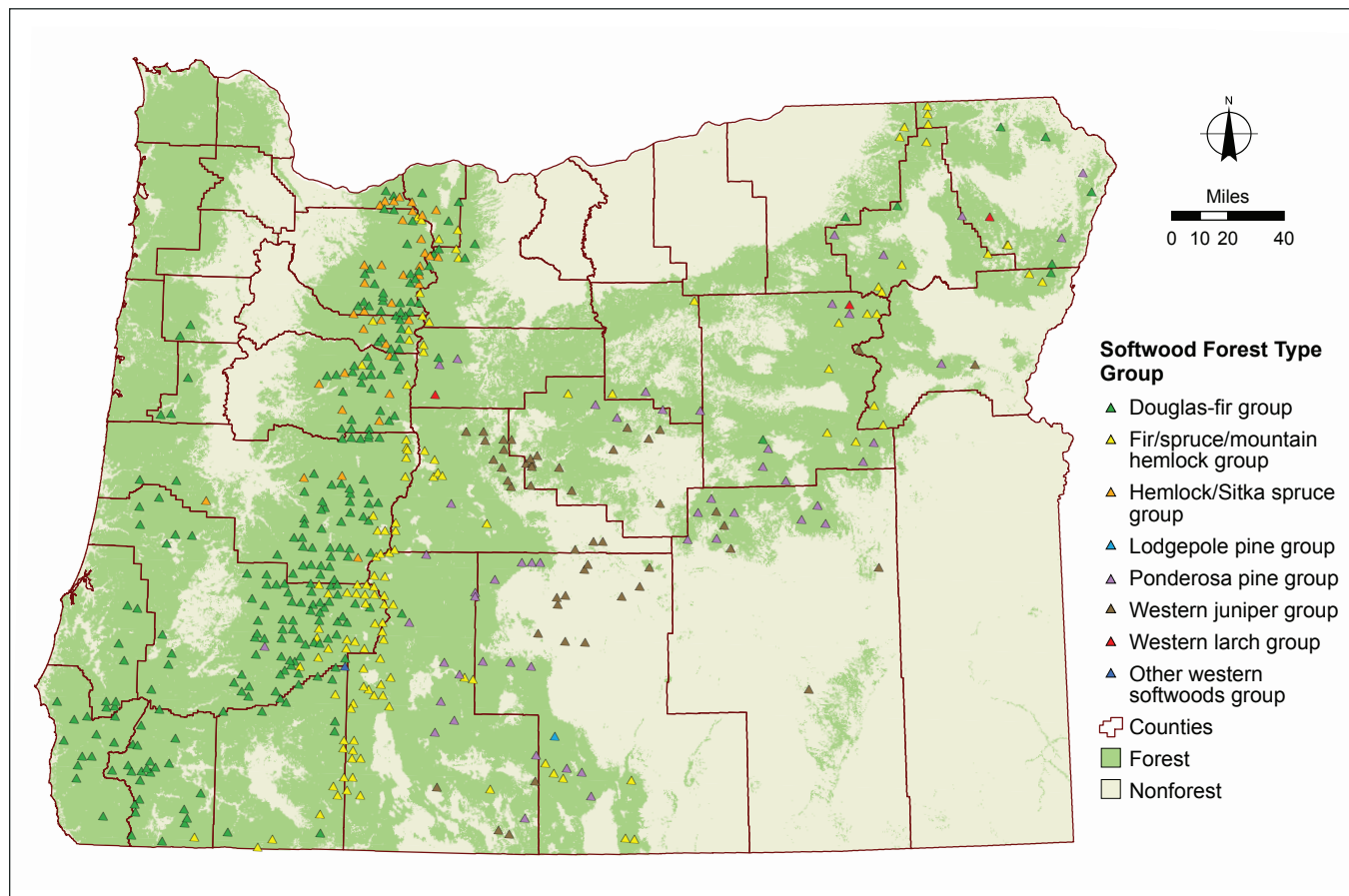


Figure 23—Distribution map of softwood stands greater than 200 years old, delineated by forest type (Blackard et al. 2008).

How Are Oregon's Forests Used?

Who Owns Oregon's Forests?

Oregon's forests are owned by a wide variety of public and private entities (fig. 24). Different ownership groups often have different management priorities, which result in variations in forest structure. Public owners include federal, state, and local governments. FIA reports on private ownership in two broad categories: corporate and noncorporate. Corporate ownership includes private forest lands owned by a company, corporation, legal partnership, investment firm, bank, timberland investment management organization (TIMO), or real estate investment trust (REIT), whereas all individual- or family-owned private parcels, including unincorporated partnerships, are classified by FIA as noncorporate.

More than half of Oregon's forests are administered by the U.S. Forest Service National Forest System or by the U.S. Department of the Interior Bureau of Land Management (fig. 25). Federally managed forests tend to be older and at higher elevations, and therefore have bigger trees on less-productive sites; about 4 percent of federal forest land is considered highly productive, compared to 17 percent of private lands. Federal owners manage the majority of the 2.35 million ac of reserved forest lands (those withdrawn by law from management for the production of wood products).

Other publicly owned forest lands include state and county forests and those administered by other federal agencies, such as the U.S. Fish and Wildlife Service, the Bonneville Power Administration, and the National Park Service. Probably the most notable in this ownership

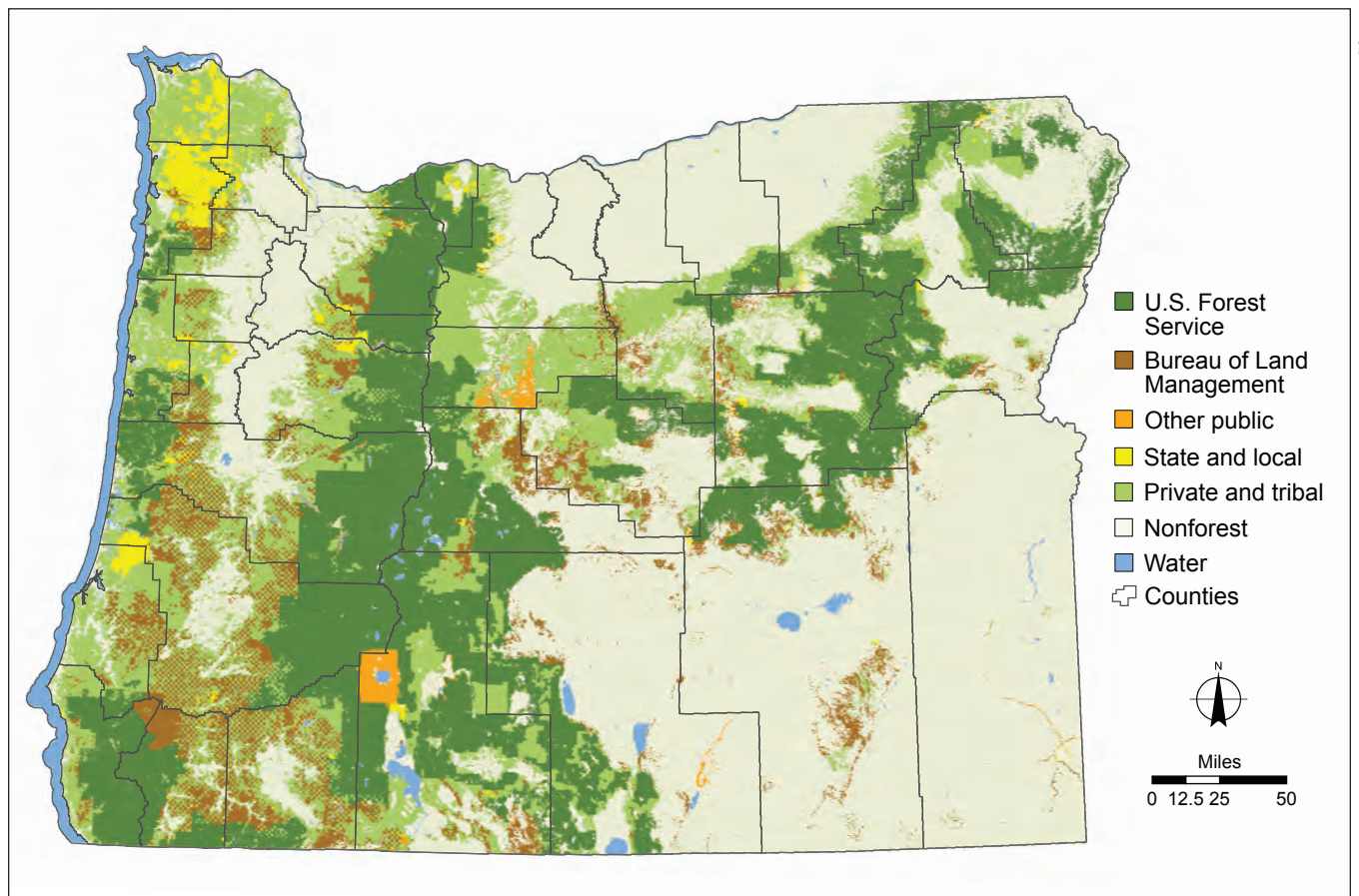


Figure 24—Oregon forest ownership categories (forest/nonforest geographic information system layer: Blackard et al. 2008; Ownership layer: BLM OR Management Ownership Dissolve Polygon).

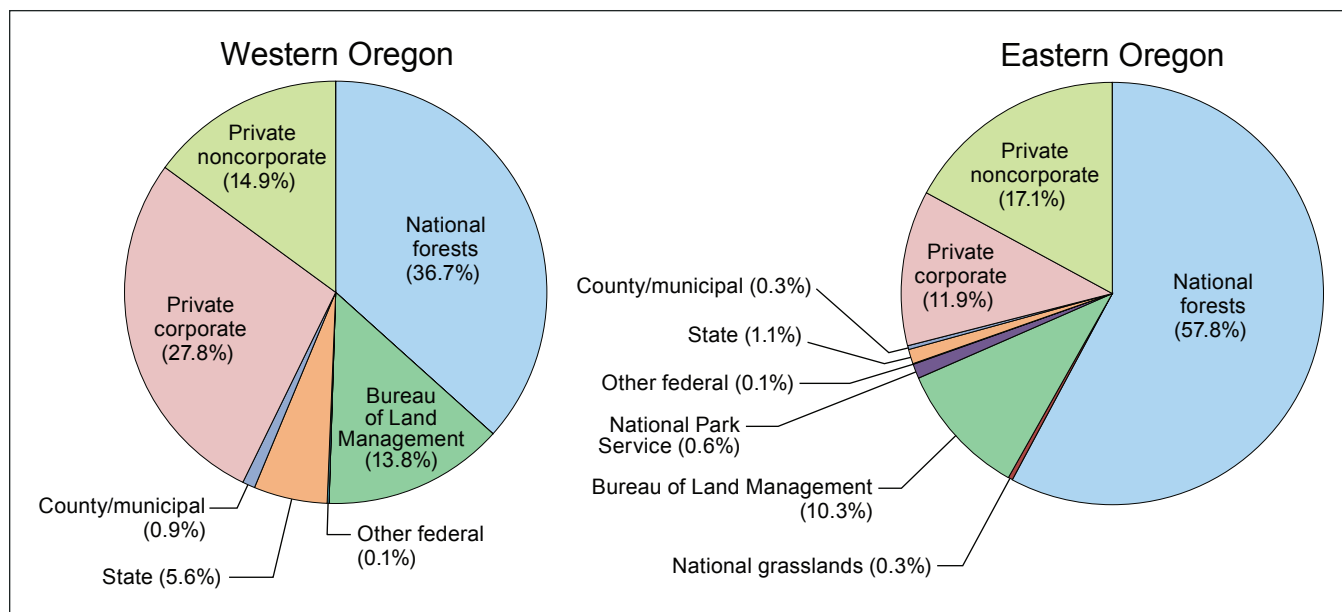


Figure 25—Percentage of forest land by owner group in eastern and western Oregon, 2001–2010.

group are Oregon's state-owned forest lands, managed by the Oregon Department of Forestry, with holdings such as the Tillamook, Clatsop, Elliott, Gilchrist, Santiam, and Sun Pass State Forests. The Gilchrist State Forest in Deschutes County was added in 2010 (comprising 43,200 ac of young ponderosa and lodgepole pine forest types). The state forest system includes more than 1 million ac, about 3 percent of Oregon's forested acreage. Private owners include families, individuals, conservation and natural resource organizations, unincorporated partnerships, associations, or clubs, corporations, and Native American tribes (fig. 26).

Corporations manage 20 percent of Oregon's forests. Recently, some large, publicly owned timber companies reorganized into REITs and TIMOs. Real estate investment trusts directly own forest land, whereas timberland investment management organizations manage lands owned by investors. The REITs and TIMOs own forest land as investment vehicles that compete with and complement alternative investments; these entities and their subsidiaries may or may not own wood-processing facilities.

The National Woodland Owner Survey (NWOS), a questionnaire-based survey conducted by FIA, provides insight into private family forest owners and their concerns,



Mark Gasser

Figure 26—Example of active management in a recently thinned stand on private timberland in Lane County, Oregon.

their current use and management, and their future intentions for their forests (Butler et al. 2016). Survey results from 2011 to 2013 show that families own 12 percent of Oregon's forested land. About 98 percent of family-owned forests are parcels of less than 500 ac, with the vast majority owning parcels of 50 or fewer acres that they use as their primary residence (fig. 27). The most recent NWOS information and results can be found at <http://www.fia.fs.fed.us/nwos/results/>.

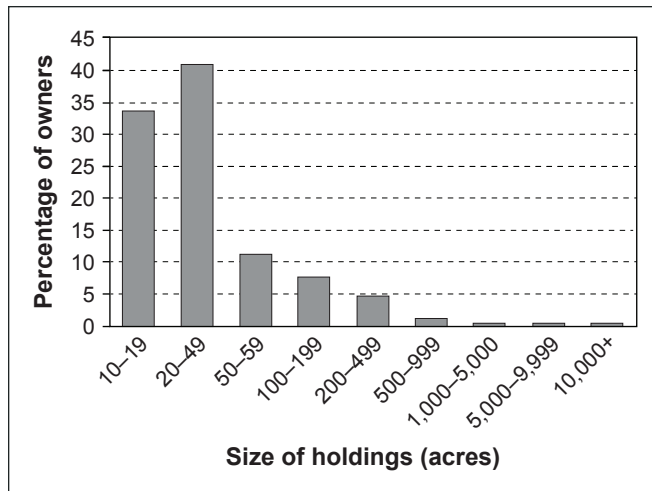


Figure 27—Percentage of family-owned forest holdings by parcel size class in Oregon, 2011–2013. Data source: Butler et al. (2016), 2013 survey summary table OR-6. <http://www.nrs.fs.fed.us/pubs/50674>.

How Much of Oregon's Forests Can Be Managed for Timber Harvest?

Timber and timber products such as paper, lumber, and fuel continue to play an essential role in Oregon's economy. Currently, 80 percent of Oregon's 30 million ac of forest land is classified as timberland (the productive component of forest land that is not withdrawn from management for the production of wood products by law or statute) (fig. 28). Western Oregon has the majority (77 percent) of the total net volume of unreserved timberland, especially in Douglas and Lane Counties (15 percent each).

Ownership is a critical element in determining the availability of timber for harvest and commercial use. Private owners manage 39 percent of all productive timberland in Oregon (corporate 5.8 million ac, noncorporate 3.5 million ac) (fig. 29) and currently have no forest land designated as reserved. However, the Oregon Forest Practices Act does require retention of some volume in harvest units and along fish-bearing streams. The U.S. Forest Service administers an additional 48 percent of timberland (11.6 million ac), which excludes reserved areas and is managed for multiple uses. Forested land officially designated as reserved includes national parks, federal wilderness areas, and federal wildlife refuges, totaling 8 percent of the forest land in the state.

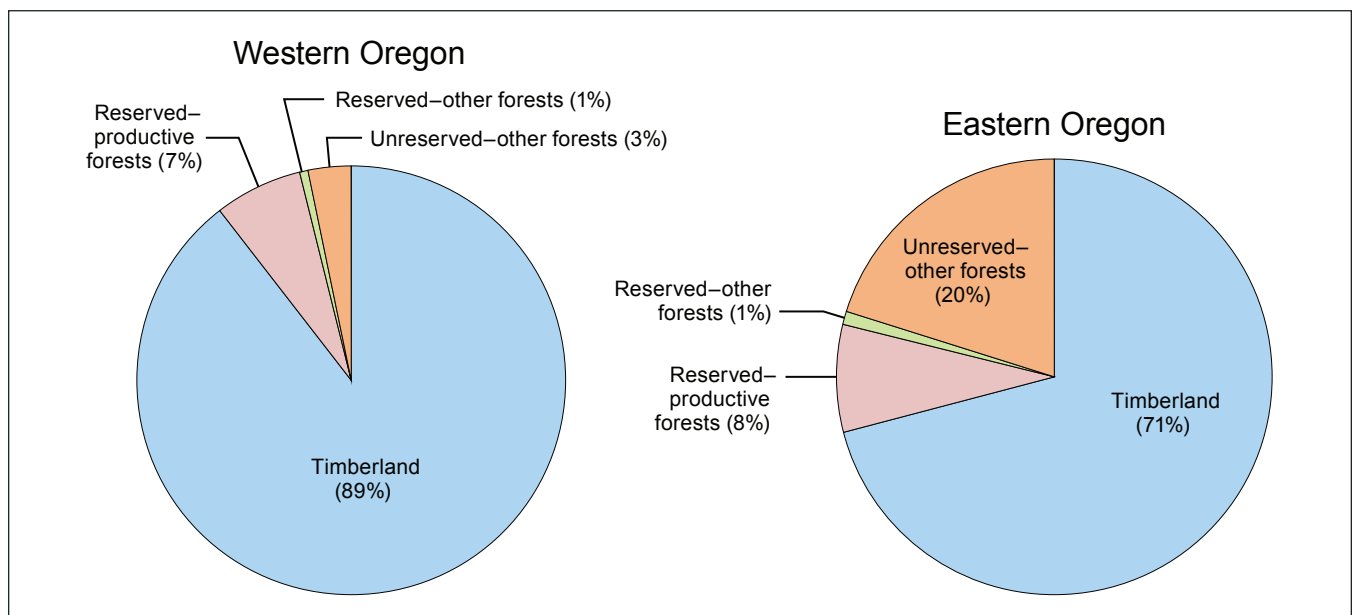


Figure 28—Proportion of forest land area by current land status, Oregon, 2001–2010.

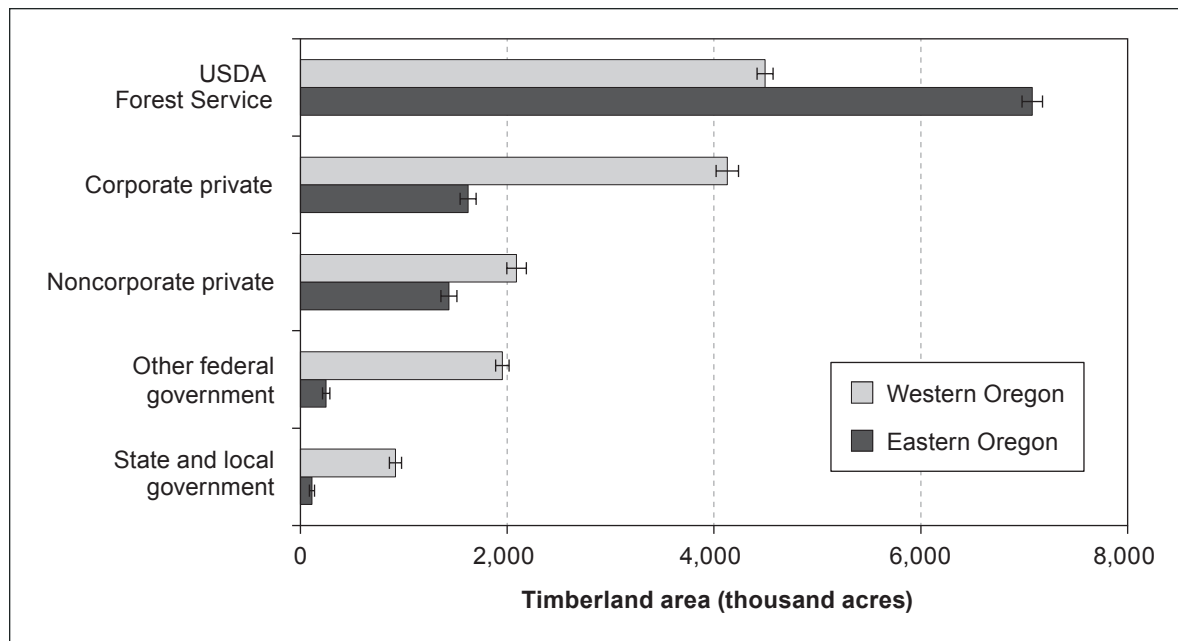


Figure 29—Area of timberland by ownership, eastern and western Oregon, 2001–2010.

Harvestable volume is the amount of wood found in sawtimber trees (larger diameter commercial species) on timberland. In the Pacific Northwest, sawtimber is measured by the Scribner log rule, which estimates volume in board feet. By tree species group, most of the wood volume (92 percent) found on timberland is in coniferous species (fig. 30). Douglas-fir has about 58 percent of all board foot volume in the state, more than 223 billion Scribner board feet (38.1 billion ft³). There are about 19 billion Scribner board feet (3.2 billion ft³) found in all hardwood tree species. Red alder makes up the majority of the wood volume found in hardwood species, with more than 11 billion Scribner board feet.

The average harvestable volume per acre on timberland for the state is about 16,000 Scribner board feet (2,900 ft³/ac). Despite managing relatively little acreage in timberland, state and local governments have some of the greatest volumes per acre, with the average being about 21,500 Scribner board feet per acre (3,900 ft³/ac) (fig. 31). Private ownerships (corporate and noncorporate owners) tend to manage their timberland with less volume per acre on average, about 9,300 Scribner board feet per acre (1,700 ft³/ac), largely because harvest results in younger stands.

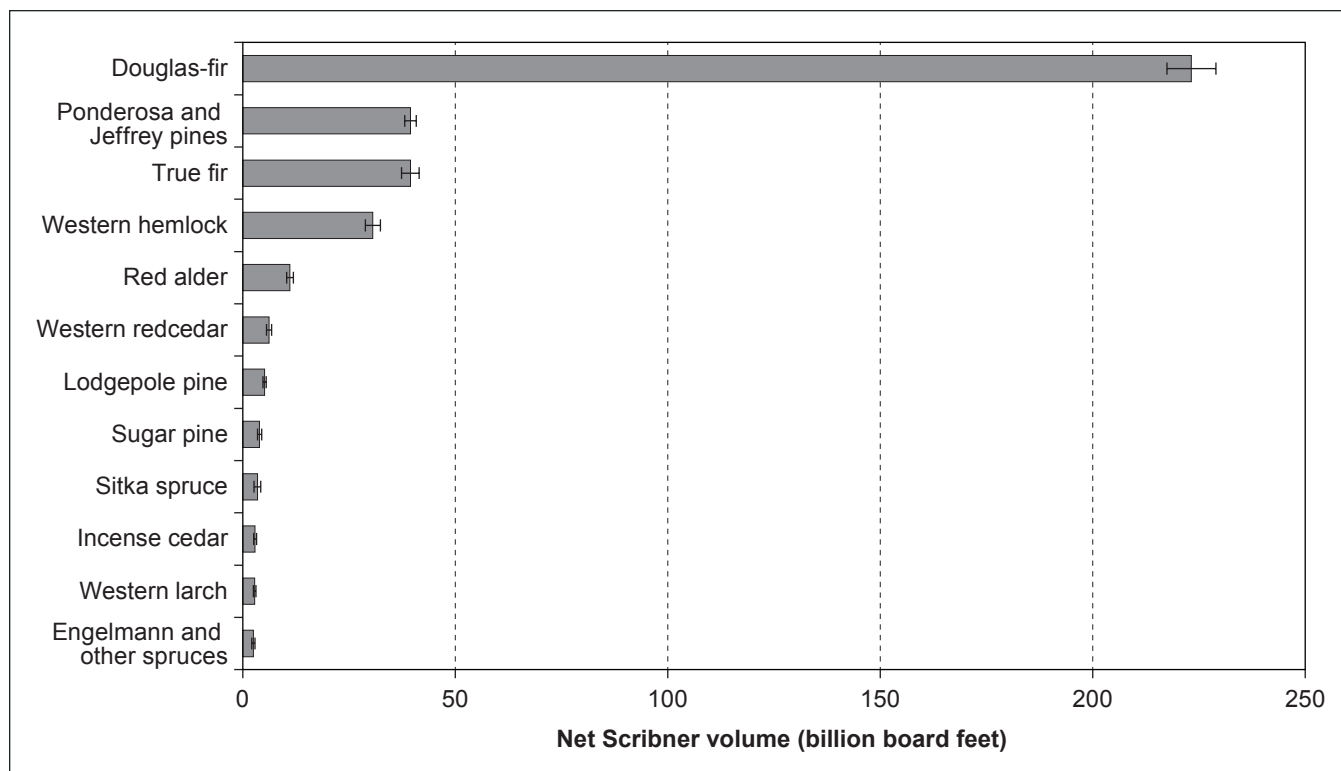


Figure 30—Scribner board foot volume found on timberland by species group (those contributing at least 1 percent of total volume), Oregon, 2001–2010.

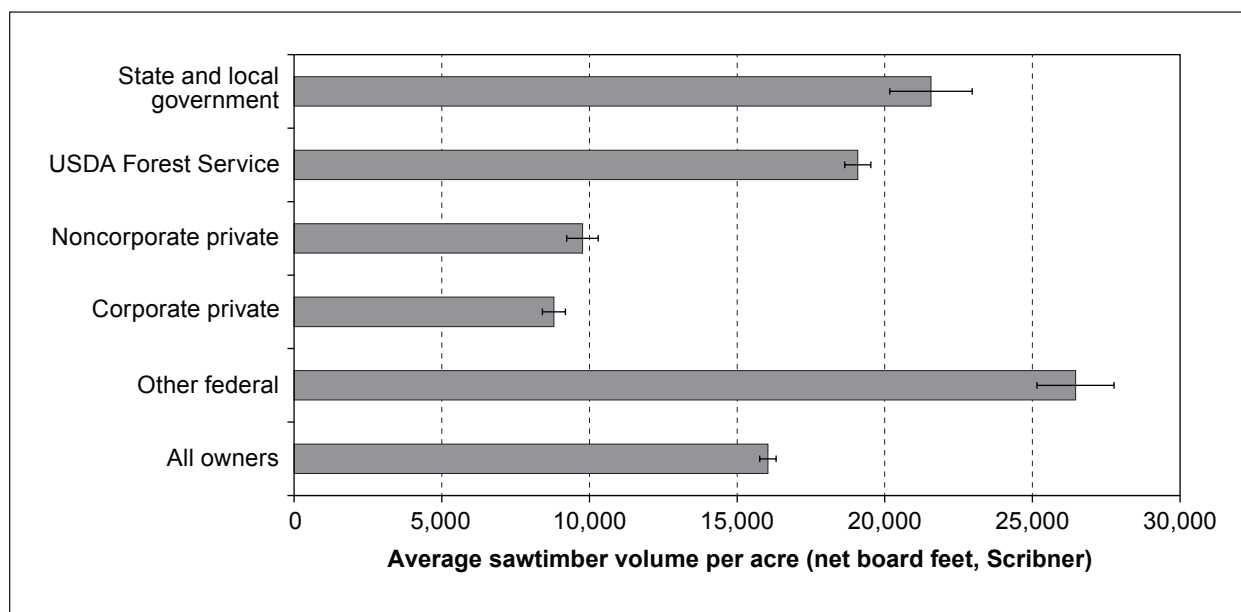


Figure 31—Average sawtimber tree volume per acre by ownership group (net board feet, Scribner), Oregon, 2001–2010.

What Are the Current Rates of Growth, Removals, and Mortality?

Changes in wood volume over time can be determined by examining growth, removals, and mortality of trees. These components are key factors in understanding how management, ecology, and climate change interact across the landscape to affect Oregon's forests. It is important to take into account that private forests are distinctly different from public forests in management practices as well as vegetation type, productivity, and topographic location. For example, the Forest Service manages extensive areas of wilderness and other reserved land that cannot be compared directly with privately owned forests managed for production of wood products.

When the sum of all tree removals and mortality exceeds growth, then total tree volume declines. In small areas, removals undertaken to reduce fire hazard or deter pest infestations may sometimes exceed growth in the short term. This trend, however, may be reversed in the long term by protecting against catastrophic mortality. Conversely,

widespread mortality caused by bark beetles, for example, may offset growth gains and thus prevent or delay attainment of ecological benefits such as sequestration of carbon or economic benefits such as forest products (fig. 32).

FIA conducted a forest inventory between 1995 and 1998 on private, state, and local government timberland. Owing to numerous differences between the current inventory and those prior measurements, comparing this inventory's volume estimates with those published from previous inventories will not produce valid change estimates. Differences include, for example, sampling different areas (forest land vs. timberland, with or without reserved land) and using different definitions (e.g., growing-stock). To estimate volume change despite these differences, we estimated net change based on revisited plots, relying on the algorithms and definitions of today's annual inventory. Between 2007 and 2010, FIA remeasured a subset of the 1990's inventory (398 forested plots; tables 1 through 3). The remeasurement period ranged from 8 to 15 years with an average of 11.2



Janelle Cossey

Figure 32—Growth of trees is offset by harvest and mortality. Tree mortality shown here was caused by the Biscuit Fire in southwest Oregon.

years. Note that many of the estimates listed for state and private land have larger sampling errors, so tables 1 through 3 and figures 33 and 35 must be viewed with this in mind.

The Forest Service installed a separate grid of plots on Pacific Northwest Region national forest lands in Oregon between 1993 and 1997 (Max et al. 1996) and remeasured them between 1999 and 2007. A change inventory was compiled using FIA procedures and classification from subsequent remeasurements using annualized FIA procedures (Gray and Whittier 2014). The mean remeasurement interval on plots used in this national forest analysis was 7.1 years.

Changes on private timberland (1995–1998 to 2007–2010)—

In western Oregon, growth on private timberland averaged 100.3 ft³/ac/year, and was similar between corporate and noncorporate timberland (98.4 and 104.9 ft³/ac/year, respectively) (fig. 33). Mortality losses were also very similar between corporate and noncorporate timberlands (10.2 and

13.5 ft³/ac/year, respectively). In contrast, removals (e.g., harvest) were almost twice as high on corporate versus noncorporate timberland (119.9 versus 66.9 ft³/ac/year). In general, growth exceeded mortality and removals on noncorporate timberland (24.5 ft³/ac/year), but not on corporate private timberland (-31.7 ft³/ac/year); albeit these differences in removals and growth are not statistically significant.

Private timberland in eastern Oregon was less productive than timberland in western Oregon (43.3 versus 100.3 ft³/ac/year, respectively) (table 1). Although noncorporate timberland was more productive than corporate timberland (54.2 versus 39.0 ft³/ac/year), corporate timberland had more than twice the amount of removals (38.1 versus 16.4 ft³/ac/year, respectively). On eastern Oregon corporate timberland, growth did not exceed removals and mortality (-4.8 ft³/ac/year), but it did on noncorporate timberland (24.5 ft³/ac/year). Neither change, however, is statistically significant. Similar trends were observed for biomass (table 3).

Table 1—Average annual volume (cubic feet) of growth, removals and mortality per acre per year on non-national-forest timberland, Oregon, 1995–1998 to 2007–2010

	Other federal		State and local		Private					
	Mean SE		Mean SE		Corporate		Noncorporate		Total private	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
<i>Cubic feet per acre per year</i>										
Eastern Oregon:										
Growth	71.99	22.69	67.02	21.54	39.04	5.51	52.24	7.94	43.28	4.6
Mortality	48.84	22.44	108.74	94.64	5.81	2.21	11.33	5.38	7.58	2.27
Removals	—	—	—	—	38.05	7.59	16.37	11.98	31.08	6.38
Net change	23.15	29.23	-41.73	114.67	-4.82	9.68	24.54	15.28	4.62	8.26
Western Oregon:										
Growth	—	—	148.69	21.94	98.39	9.51	104.9	14.31	100.27	7.94
Mortality	—	—	17.45	6.23	10.18	1.8	13.51	3.49	11.14	1.62
Removals	—	—	87.77	52.6	119.88	19.9	66.93	19.93	104.58	15.38
Net change	—	—	43.47	61.25	-31.67	24.51	24.45	27.55	-15.45	19.29
Total:										
Growth	71.99	22.69	140.05	20.22	81.69	7.08	88.41	10.41	83.7	5.85
Mortality	48.84	22.44	27.11	12.24	8.95	1.43	12.83	2.94	10.11	1.32
Removals	—	—	78.48	47.16	96.86	14.59	51.1	14.33	83.2	11.12
Net change	23.15	29.23	34.46	56.32	-24.12	17.84	24.48	19.52	-9.61	13.89

— = not available.
SE = standard error.

Table 2—Average annual volume (cubic feet) of growth, removals and mortality per year on non-national-forest timberland, Oregon, 1995–1998 to 2007–2010

	Other federal		State and local		Private					
					Corporate		Noncorporate		Total private	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Thousand cubic feet per year										
Eastern Oregon:										
Growth	19,368	7,416	7,443	4,530	66,807	9,973	42,341	8,594	109,148	12,559
Mortality	13,141	5,772	12,077	12,089	9,941	3,818	9,183	4,388	19,125	5,817
Removals	—	—	—	—	65,110	13,095	13,267	9,799	78,377	16,193
Net change	6,227	8,309	-4,635	12,910	-8,244	16,548	19,891	12,861	11,646	20,850
Western Oregon:										
Growth	—	—	139,610	26,584	430,090	43,631	186,418	31,745	616,509	52,161
Mortality	—	—	16,385	6,108	44,486	7,919	24,013	6,474	68,499	10,103
Removals	—	—	82,408	49,500	524,040	90,167	118,951	37,157	642,991	96,437
Net change	—	—	40,817	58,106	-138,436	107,577	43,455	49,288	-94,981	118,612
Total:										
Growth	19,368	7,416	147,052	26,967	496,897	44,756	228,759	32,888	725,657	53,652
Mortality	13,141	5,772	28,462	13,544	54,428	8,792	33,196	7,821	87,624	11,658
Removals	—	—	82,408	49,500	589,150	91,113	132,218	38,428	721,367	97,787
Net change	6,227	8,309	36,182	59,523	-146,680	108,842	63,345	50,938	-83,335	120,431

— = not available. SE = standard error.

Table 3—Average annual biomass (tons) of growth, removals and mortality per acre per year on non-national-forest timberland, Oregon, 1995–1998 to 2007–2010

	Other federal		State and local		Private					
					Corporate		Noncorporate		Total private	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Short tons per acre per year										
Eastern Oregon timberland: ^a										
Growth	1.38	0.51	1.21	0.37	0.80	0.13	0.95	0.15	0.85	0.10
Mortality	0.83	0.40	2.02	1.76	0.12	0.05	0.21	0.10	0.15	0.05
Removals	—	—	—	—	0.71	0.13	0.27	0.19	0.57	0.11
Net change	0.55	0.60	-0.80	2.12	-0.03	0.19	0.48	0.26	0.13	0.15
Western Oregon timberland:										
Growth	—	—	2.69	0.39	1.83	0.18	1.97	0.26	1.87	0.15
Mortality	—	—	0.33	0.12	0.21	0.03	0.27	0.07	0.23	0.03
Removals	—	—	1.60	0.95	2.19	0.36	1.26	0.36	1.92	0.28
Net change	—	—	0.76	1.10	-0.58	0.44	0.44	0.50	-0.28	0.35
Total:										
Growth	1.38	0.51	2.53	0.36	1.54	0.13	1.65	0.19	1.57	0.11
Mortality	0.83	0.40	0.51	0.23	0.18	0.03	0.25	0.06	0.20	0.03
Removals	—	—	1.43	0.85	1.78	0.26	0.95	0.26	1.53	0.20
Net change	0.55	0.60	0.60	1.01	-0.42	0.32	0.45	0.35	-0.16	0.25

— = not available. SE = standard error.

^a Ingrowth trees and trees 5 inches or greater at first measurement.

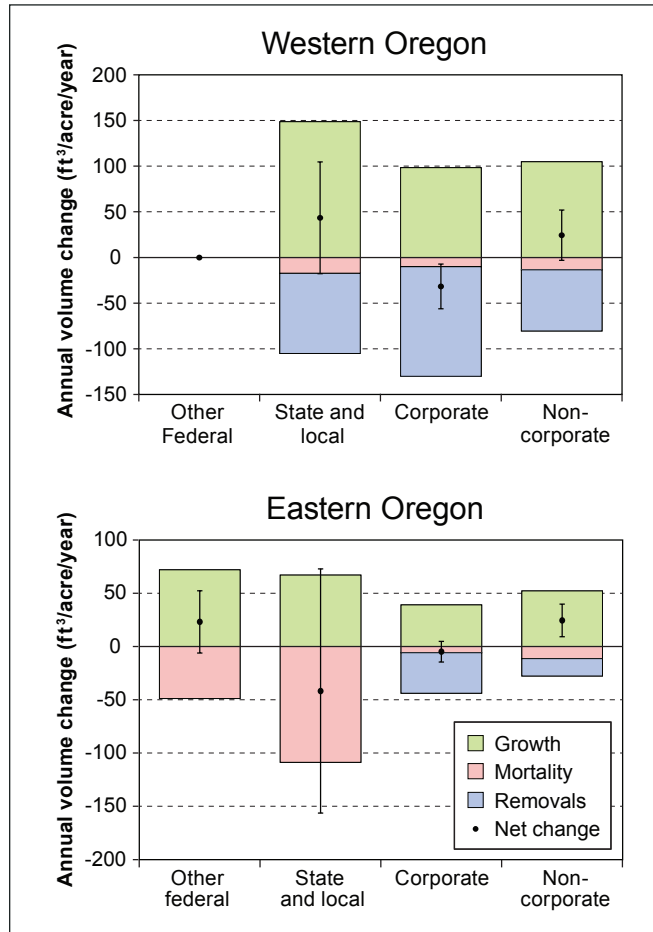


Figure 33—Average annual change in volume (cubic feet) of growth, mortality, and removals per acre per year on non-national-forest timberland between 1995–1998 and 2007–2010 by ownership in Oregon (error bars represent sampling error).

Changes on state and local government timberland (1995–1998 to 2007–2010)—

On average, state- and local-government-owned timberland was the most productive timberland in Oregon's forests (140.1 ft³/ac/year; table 1). Although growth exceeded removals and mortality by 34.5 ft³/ac/year on average, the trend was not statistically significant. Although mortality rates were relatively high on state and local government land compared to private land (27.1 versus 10.1 ft³/ac/year), the sampling error associated with this estimate was also very high (12.2 ft³/ac/year).

Figure 34—Average annual change in volume (cubic feet) of growth, mortality, and removals per acre per year on national forest land between 1993–1997 and 1999–2007 by land status in Oregon (error bars represent sampling error).

Changes on national forest timberland (1993–1997 to 1999–2007)—

Growth on timberland managed by the Forest Service averaged 66.9 ft³/ac/year, which was less productive than either state and local or private timber holdings (fig. 34; tables 4 through 6). National forest timberland in western Oregon was more productive (108.8 ft³/ac/year) than in eastern Oregon (40.9 ft³/ac/year). Mortality on national forest timberland (37.5 ft³/ac/year) was greater than on state and local timberland (27.1 ft³/ac/year) or private timberland (10.1 ft³/ac/year). Removals on national forest timberland (5.8 ft³/ac/year) were an order of magnitude lower than removals on state and local or private timberland, with a net result of large increases in wood volume on national forest lands. Geographic and land use patterns of change in biomass were similar to those of volume (table 6).

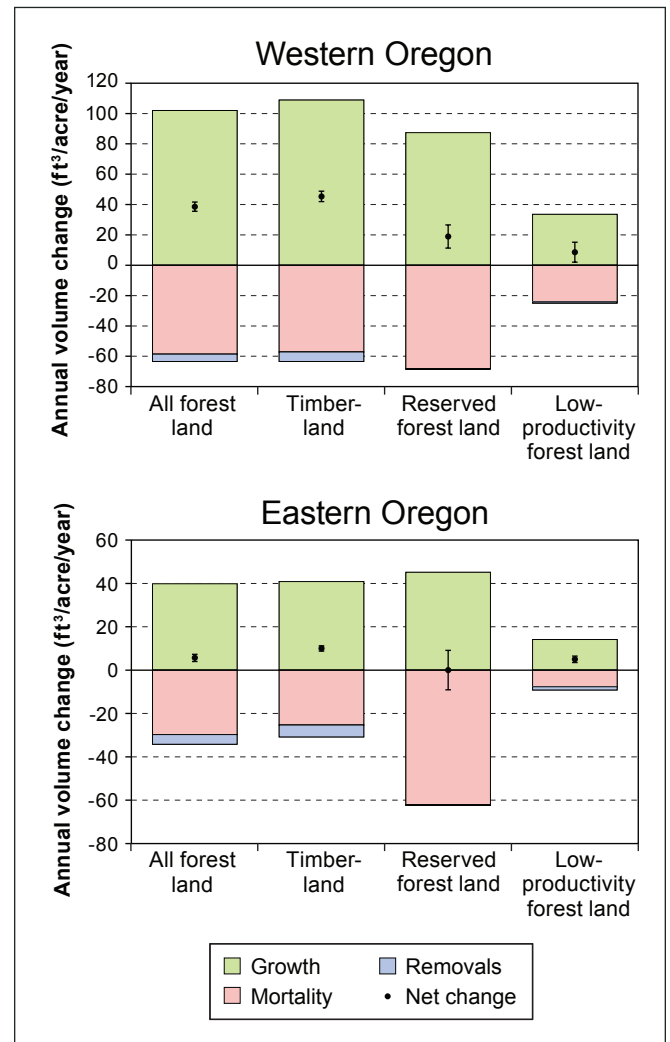


Table 4—Average annual volume (cubic feet) of growth, removals, and mortality per acre per year on National Forest System land, Oregon, 1993–1997 and 1998–2007

	Forest land		Timberland		Reserved forest land		Low-productivity forest land	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
<i>Cubic feet per acre per year</i>								
Eastern Oregon:								
Growth	39.86	0.44	40.86	0.43	45.11	1.87	14.14	0.94
Mortality	29.73	1.54	25.35	1.04	62.16	8.76	7.63	1.52
Removals	4.46	0.42	5.48	0.53	0.24	0.14	1.49	0.56
Net change	5.66 ^a	1.66	10.02 ^a	1.23	-17.30 ^a	9.09	5.01 ^a	1.50
Western Oregon:								
Growth	102.00	1.28	108.84	1.32	87.34	3.56	33.57	3.56
Mortality	58.57	2.53	57.11	2.71	68.37	6.87	24.12	5.70
Removals	4.83	1.10	6.36	1.45	0.03	0.03	0.86	0.55
Net change	38.60 ^a	3.06	45.37 ^a	3.40	18.95 ^a	7.64	8.59	6.59
Total:								
Growth	64.37	0.57	66.93	0.59	65.65	2.03	18.77	1.17
Mortality	41.11	1.37	37.53	1.22	65.18	5.61	11.56	1.82
Removals	4.61	0.50	5.82	0.65	0.14	0.07	1.34	0.44
Net change	18.66 ^a	1.57	23.58 ^a	1.51	0.33	5.97	5.86 ^a	1.94

— = not available. SE = standard error.

^a Estimate is significant, different from zero at the 95-percent significance level.

Table 5—Average annual volume (cubic feet) of growth, removals, and mortality per year on National Forest System land between 1993–1997 and 1998–2007

	Forest land		Timberland		Reserved forest land		Low-productivity forest land	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
<i>Thousand cubic feet per year</i>								
Eastern Oregon:								
Growth	344,187	4,267	278,943	3,432	57,795	2,962	7,449	661
Mortality	256,752	13,396	173,082	7,159	79,647	11,353	4,023	833
Removals	38,521	3,641	37,423	3,627	312	179	786	297
Net change	48,914 ^a	14,350	68,438 ^a	8,382	-22,164 ^a	11,633	2,640 ^a	805
Western Oregon:								
Growth	573,894	7,614	462,432	6,489	105,930	5,274	5,531	814
Mortality	329,532	14,358	242,644	11,584	82,914	8,576	3,974	1,028
Removals	27,197	6,163	27,018	6,162	38	38	141	92
Net change	217,164 ^a	17,241	192,770 ^a	14,563	22,979 ^a	9,315	1,416	1,094
Total:								
Growth	918,081	8,414	741,375	7,214	163,726	5,875	12,981	1,048
Mortality	586,284	19,586	415,726	13,604	162,561	14,186	7,997	1,323
Removals	65,718	7,156	64,440	7,149	350	183	928	311
Net change	266,079 ^a	22,418	261,208 ^a	16,794	814	14,899	4,056 ^a	1,358

— = not available. SE = standard error.

^a Estimate is significant, different from zero at the 95-percent significance level.

Table 6—Average annual aboveground live biomass (tons) of growth, removals, and mortality per acre per year on National Forest System land between 1993–1997 and 1998–2007

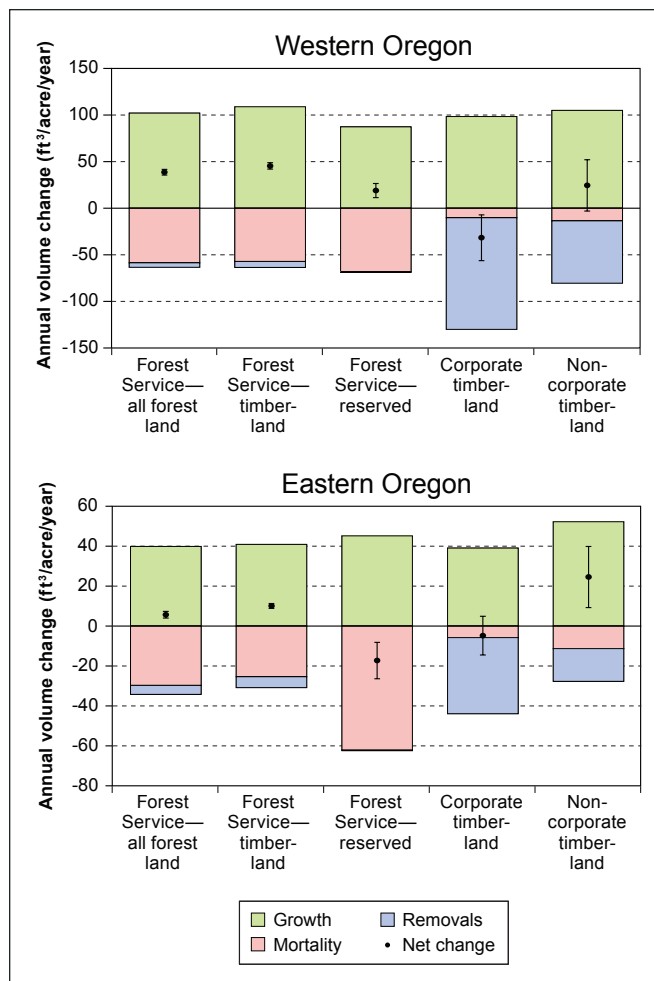
	Forest land		Timberland		Reserved forest land		Low-productivity forest land	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
<i>Short tons per acre per year</i>								
Eastern Oregon:								
Growth	0.73	0.01	0.76	0.01	0.80	0.03	0.28	0.02
Mortality	0.57	0.03	0.48	0.02	1.21	0.16	0.16	0.03
Removals	0.09	0.01	0.11	0.01	0.01	0	0.05	0.02
Net change	0.07 ^a	0.03	0.16 ^a	0.02	-0.42 ^a	0.17	0.07 ^a	0.03
Western Oregon:								
Growth	1.99	0.02	2.13	0.03	1.67	0.07	0.71	0.07
Mortality	1.24	0.05	1.21	0.05	1.44	0.15	0.60	0.15
Removals	0.10	0.02	0.14	0.03	0	0	0.02	0.01
Net change	0.65 ^a	0.06	0.79 ^a	0.07	0.23	0.16	0.09	0.16
Total:								
Growth	1.23	0.01	1.28	0.01	1.22	0.04	0.39	0.02
Mortality	0.83	0.03	0.76	0.02	1.32	0.11	0.26	0.04
Removals	0.10	0.01	0.12	0.01	0	0	0.04	0.02
Net change	0.30 ^a	0.03	0.40 ^a	0.03	-0.10	0.12	0.08 ^a	0.05

— = not available. SE = standard error.

^a Estimate is significant, different from zero at the 95-percent significance level.

Changes on national forest reserved forest (1993–1997 to 1999–2007)—

Growth on reserved forests under Forest Service management averaged 87.3 ft³/ac/year in western Oregon and 45.1 ft³/ac/year in eastern Oregon (fig. 35). Reserved forest growth in both western and eastern Oregon (100.3 and 43.3 ft³/ac/year, respectively) was similar to growth seen on private timberland. Mortality was greater than growth in Forest Service reserved forest in eastern Oregon, resulting in a significant decline in volume. Net volume change in Forest Service reserved forest in western Oregon was 19.0 ft³/ac/year, which was less than western Oregon state and local timberland (43.5 ft³/ac/year), but greater than private timberland (-15.5 ft³/ac year).



What Products Come From Oregon's Forests?

Oregon's timberlands—

Timberland productivity provides an estimate of the economic value of wood products of an area of forest land. Productivity is measured by site class, an indicator of a forest's potential annual growth that can be used to describe the capacity of timberland to produce wood. The majority of Oregon's timberlands are considered to be of low (47 percent; 12.4 million ac) to medium (41 percent; 10.8 million ac) productivity, capable of producing 20 to 164 ft³ of volume per acre per year (fig. 36). Productivity is much greater in western compared to eastern Oregon (fig. 37). Highly productive timberland (>165 ft³/ac/year) is a relatively small component of Oregon's forests (12 percent; 3.2 million ac). Most of the timberland area for hardwood forest types is in the medium site productivity classes. Douglas-fir

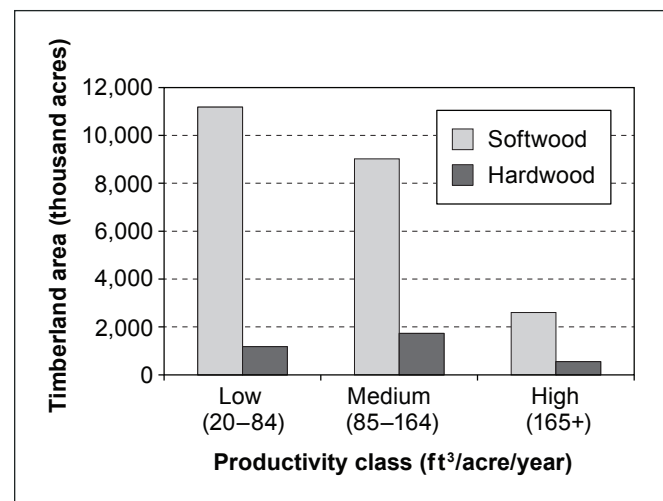


Figure 36—Forested land area of softwoods and hardwoods separated into three general productivity classes, Oregon, 2001–2010.

Figure 35—Combined average annual change in volume (cubic feet) of growth, mortality, and removals per acre per year on national forest land between 1993–1997 and 1999–2007 by land status compared to privately owned timberland between 1995–1998 and 2007–2010 in Oregon (error bars represent sampling error). Although volume changes are on an annual per-acre basis, note that Forest Service estimates of change cover a different time frame than private timberland.

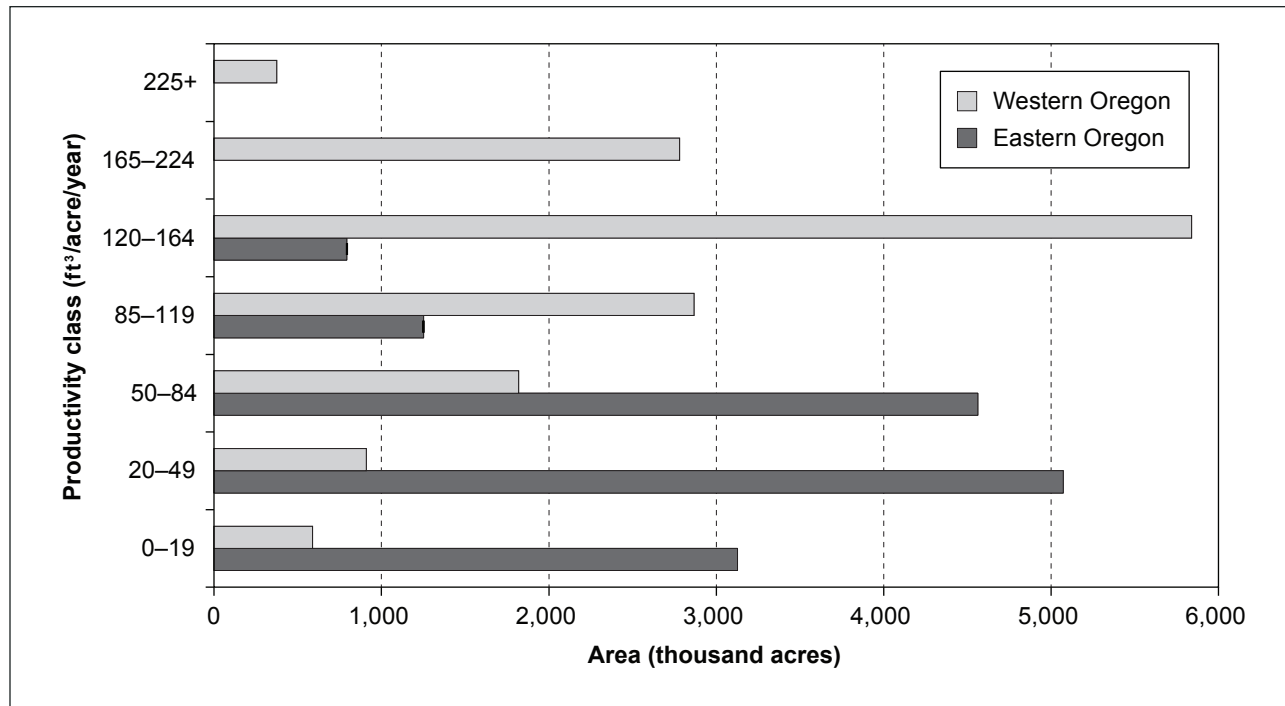


Figure 37—Forested land area by productivity class in western and eastern Oregon 2001–2010.

and alder/maple forest groups tend to have more acreage in the higher productivity classes, whereas lodgepole pine, ponderosa pine, and western juniper have considerably lower productivity per acre (fig. 38).

The majority (95 percent) of timberland managed by the Forest Service in Oregon is in low and medium site-productivity classes, with about 61 percent found on sites with 20 to 84 ft³ of growth per acre per year (fig. 39). Private ownerships also are primarily found on medium-productivity sites (about 46 percent). State forests tend to have a greater proportion of timberland in the highest classes (nearly 35 percent). Together, these timberlands contribute to the state's total timber harvest, which averaged 2.7 billion board feet annually from 2008 to 2010 (ODF 2011). Total sales value was about \$1.5 billion in 2006, with sawlogs accounting for 77 percent of the total (Gale et al. 2012).

Nontimber forest products—

Nontimber forest products (NTFPs) are those forest products not traditionally included as timber-based products, but still of economic and ecological importance. The most important commercial products in the region are evergreen boughs, floral greens, moss, and edible fungi (Alexander et al. 2011). Many NTFPs are collected for subsistence or personal use. Other categories include edible berries, medicinal plants, and specialty wood products such as firewood, burls, stumps, posts, and poles.

Salal, used as a floral green, is one of the most commonly harvested NTFPs in the state. It is also one of the predominant shrub species, estimated to cover 800,000 ac of forested land in Oregon (fig. 40). Other common shrubs include vine maple (950,000 ac), Cascade barberry/dwarf Oregon grape (550,000 ac), and salmonberry (400,000 ac). These four common shrubs comprise 50 percent on NTFP shrub cover. Among herbs, western swordfern covers 1.5 million ac, about 60 percent of all NTFP herb cover.

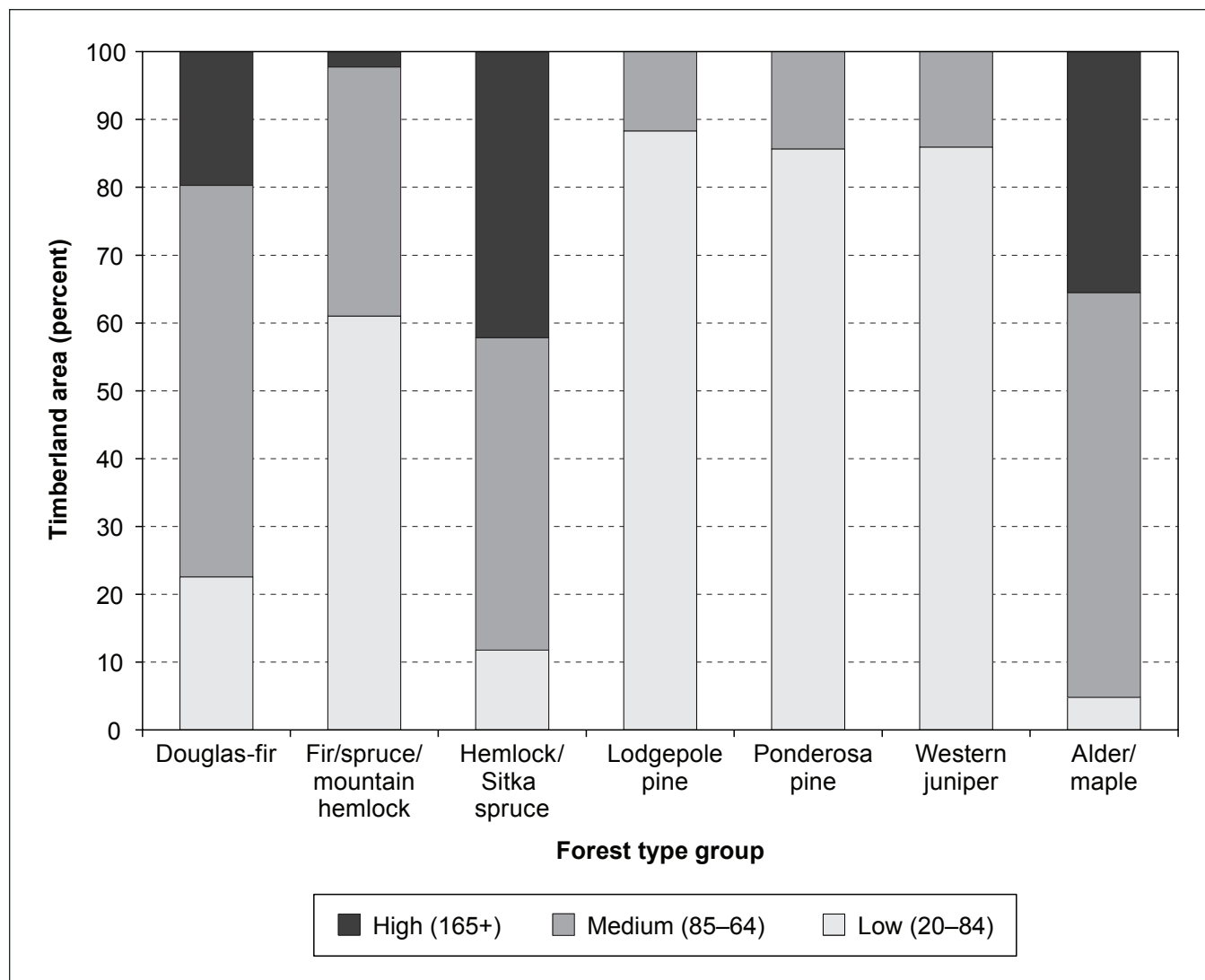


Figure 38—Distribution of timberland acres by forest group type and productivity class, Oregon, 2001–2010. Productivity classes are categorized by cubic foot volume growth per acre per year.

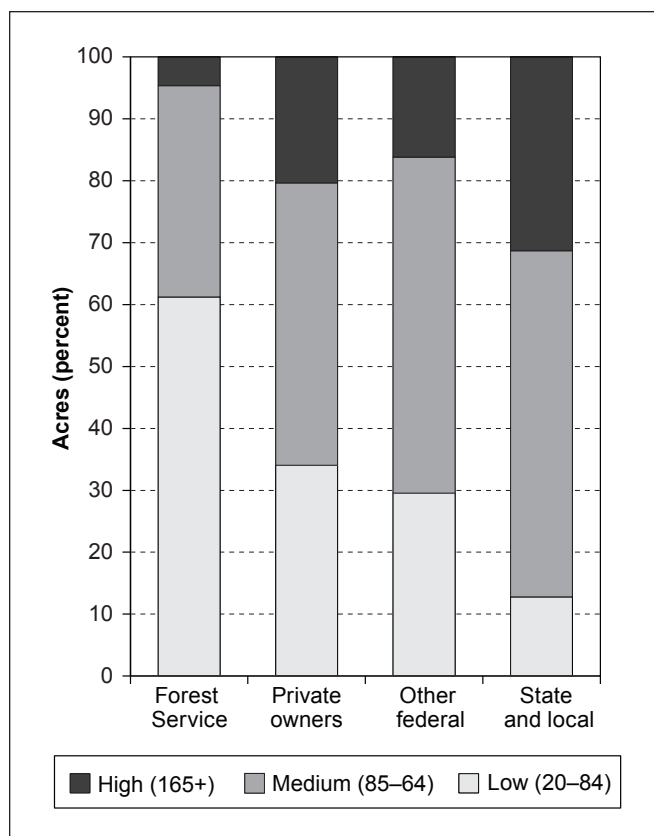


Figure 39—Percentage of timberland area in each productivity class by ownership group, Oregon, 2001–2010. Productivity classes are categorized by cubic foot volume growth per acre per year.

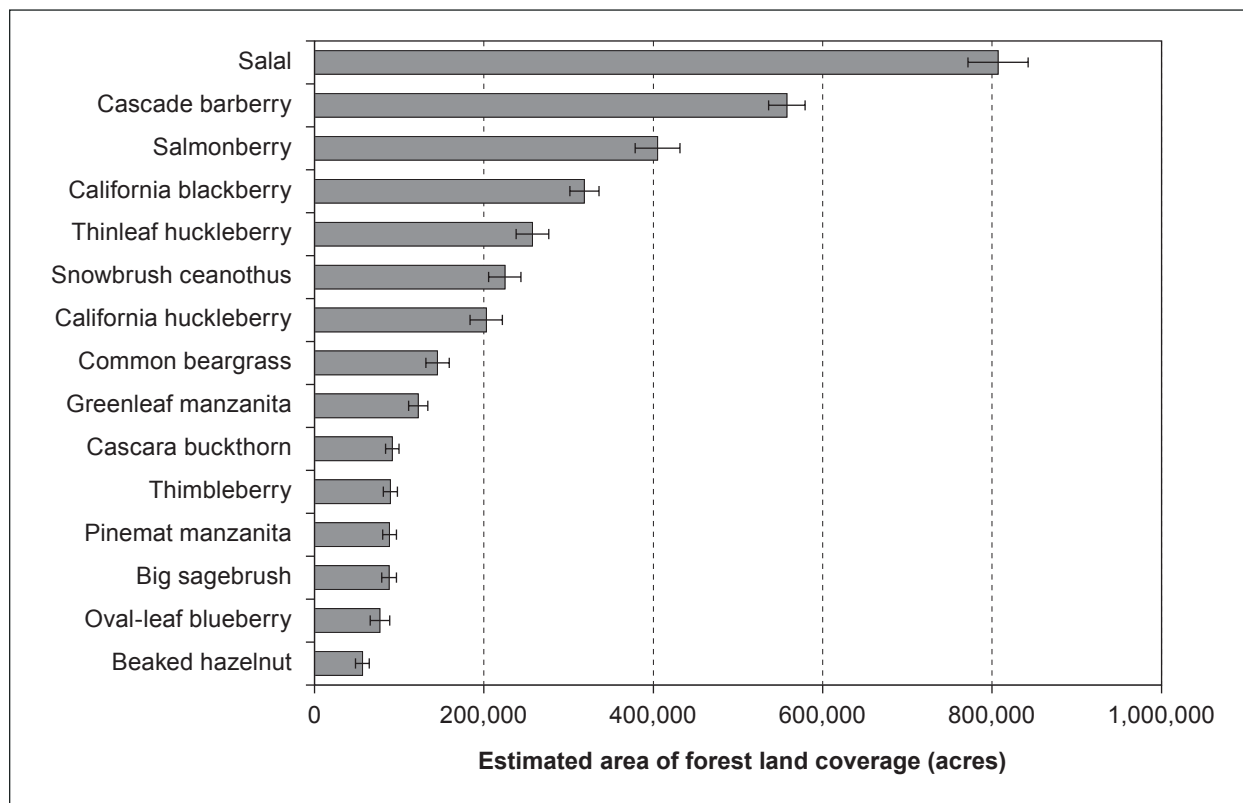


Figure 40—Total shrub cover (acres) of forest land by selected species used in nontimber forest products, Oregon, 2001–2010.

Where Is Understory Vegetation Found In Oregon Forests?

Understory vegetation is an important structural component in all forest ecosystems. The life form and density of understory vegetation has an impact on wildlife habitat, wildfire behavior, and competition between native and non-native plants. FIA crews sample understory vegetation on each forested plot (fig. 41). Total cover was estimated for tree seedlings and saplings and for the most common shrubs, forbs, and grasses.

Hardwood forests tended to have greater understory cover than softwood forests (fig. 42). Lodgepole pine and western larch forests tended to have greater cover of seedlings and saplings, at about 8 percent cover. The greatest cover of seedlings and saplings within hardwood forests was in tanoak/laurel forest types and averaged about 15-percent cover. The most shrub cover within hardwood forests is found within the moist forest types such as elm/ash/cottonwood and alder/maple. Each of these forest types tended to have an average shrub cover of about 50 percent, with total understory plant covers around 80 percent. Younger forests



USDA Forest Service Pacific Northwest Region

Figure 41—Bracken fern (Columbia River Gorge) is a common understory plant found throughout Oregon.

(0 to 39 years old) had relatively high understory vegetation cover (fig. 43). As forests get older and develop dense canopy cover, average cover for all understory vegetation types tends to decline; however, understory vegetation can thrive in canopy gaps opened up when large, old trees fall.

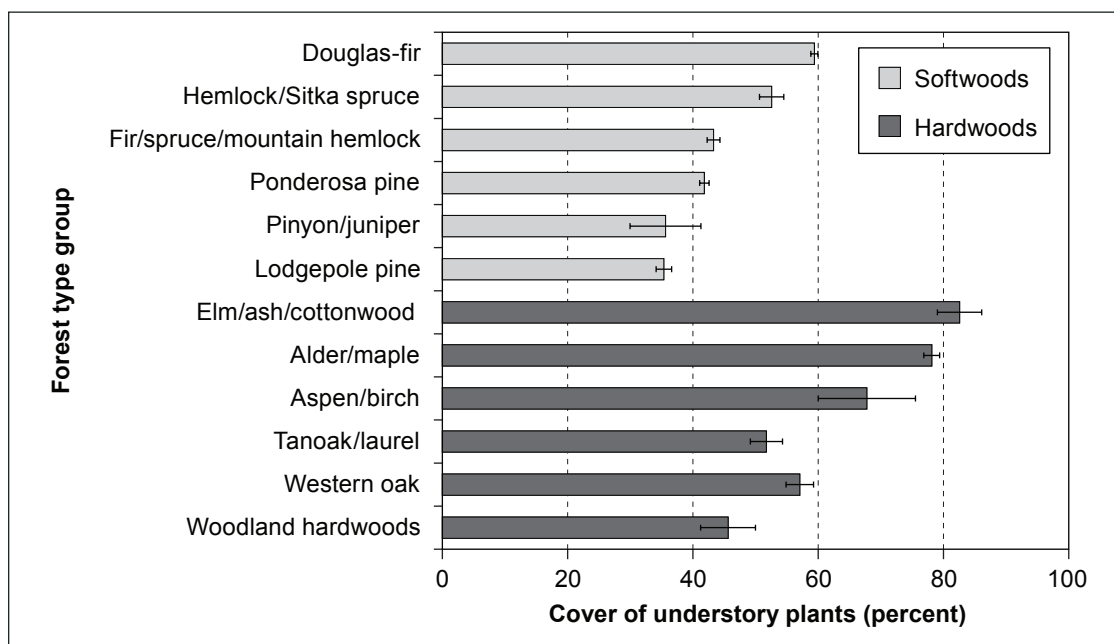


Figure 42—Percentage cover of understory vegetation by softwood and hardwood forest type group, Oregon, 2001–2010.

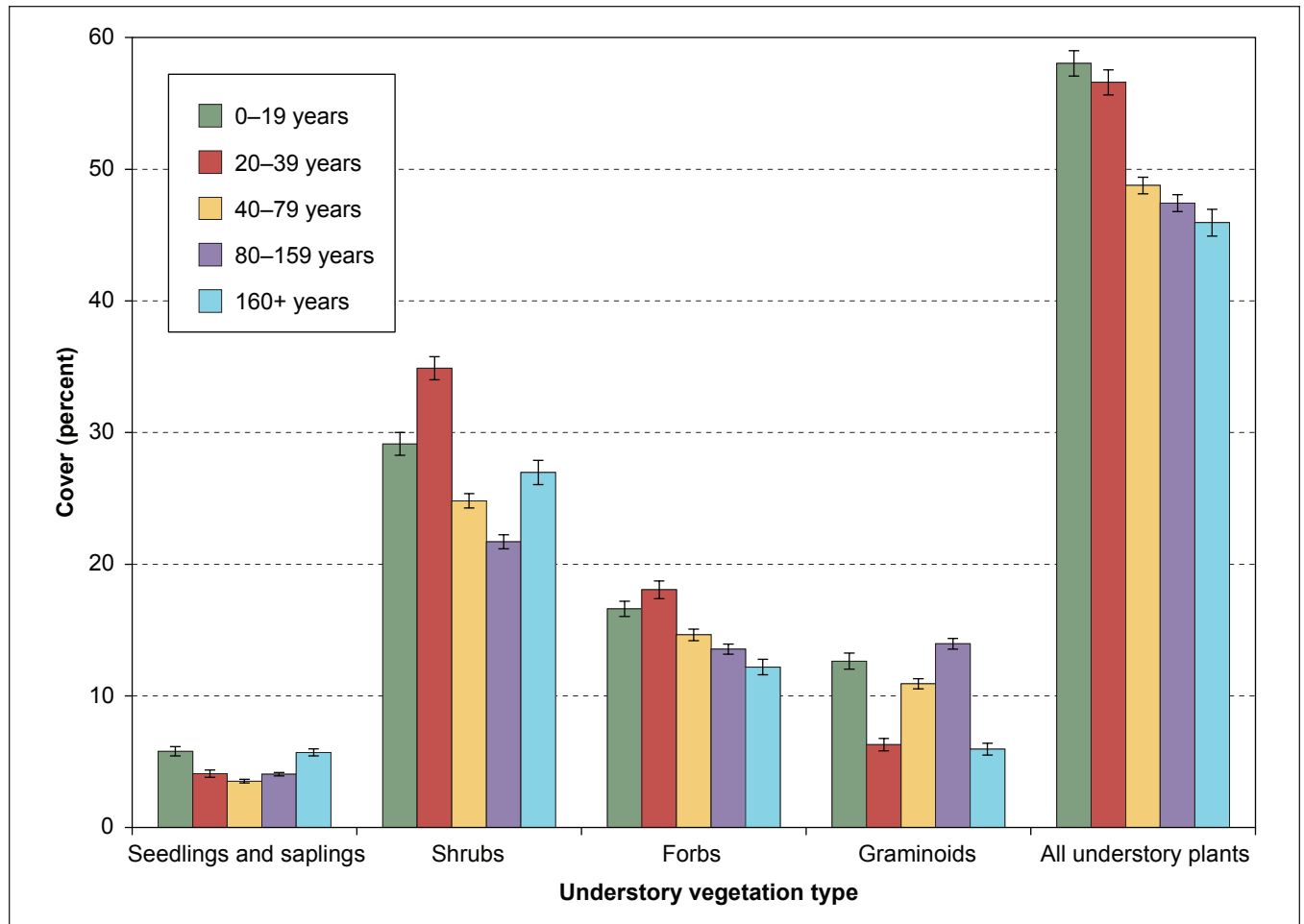


Figure 43—Percentage cover of understory vegetation life forms by forest age class on forest land, Oregon, 2001–2010.

How Have Disturbances and Stressors Shaped the Forests?

Which Invasive Species are Present In Oregon Forests?

Invasive, non-native plant species pose a threat to native forests throughout Oregon. The spread of non-native species to forested areas formerly occupied by native plants changes the composition, structure, and function in both natural and managed forests. Considerable effort is made to contain the undesirable effects of non-natives because they directly compete with native and planted species, including those desired for their ecological and economic benefits. Although most local effects from non-native species are relatively easy to quantify, statewide sampling and monitoring efforts

such as the FIA inventory plots are useful for understanding the abundance and distribution of these species across all forested landscapes and ownerships.

FIA records the most common species on each plot, and has also conducted intensive assessments of all species (including non-natives) on a subset of plots (Gray 2009). Because the definition of “invasive” is subjective, all readily identifiable species that were listed as non-native to the United States (USDA NRCS 2000) were selected for analysis (see Gray et al. [2011] for more detail on species analyzed and identification methods). Surveys indicate that 69 percent of all forested plots had one or more non-native species present. Non-native cover varied by ecoregion, with considerably higher cover in the Willamette Valley than in other ecoregions (fig. 44).

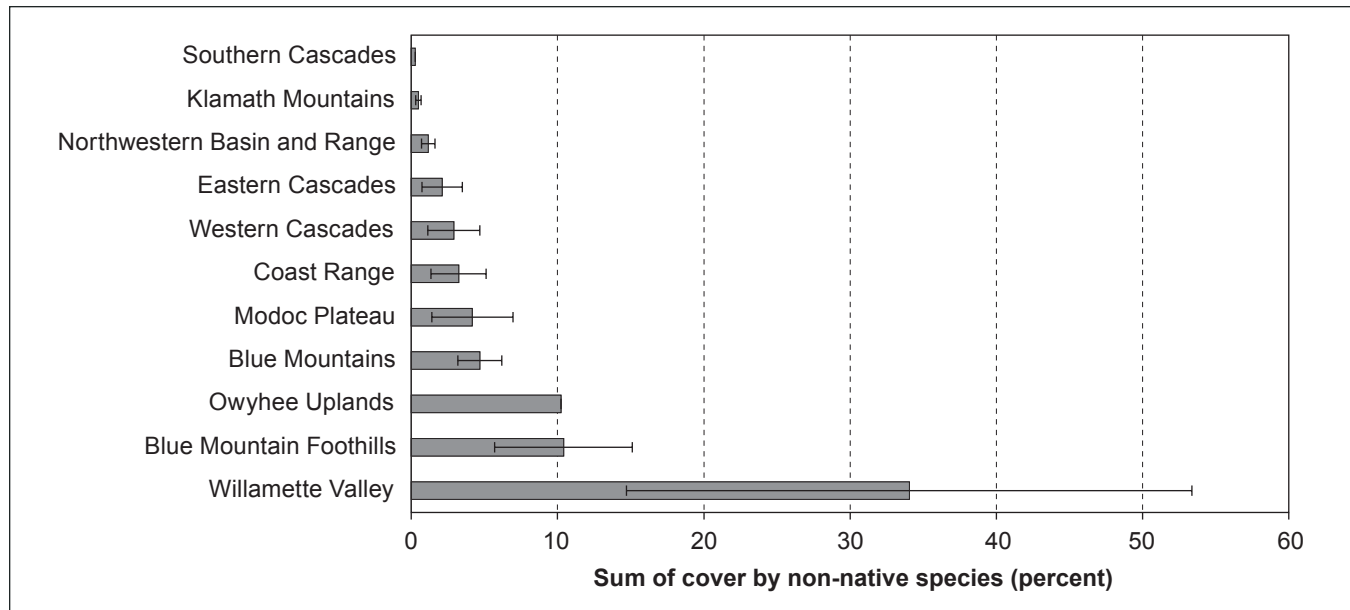


Figure 44—Percentage cover of non-native understory vegetation by ecoregion, Oregon, 2001–2010.

The most common invasive species were cheatgrass (*Bromus tectorum*) in dry forests and Himalayan blackberry (*Rubus armeniacus*) in moist forests, together covering over 350,000 acres of forested land (figs. 45 and 46). Most of the dominant invasive species are shade-intolerant, and tend

to dominate young and small-diameter stands. However, the importance of shade-tolerant species like English ivy (*Hedera* spp.), English holly (*Ilex aquifolium*), and garlic mustard (*Alliaria petiolata*) appears to be increasing as they spread into intact forested lands.

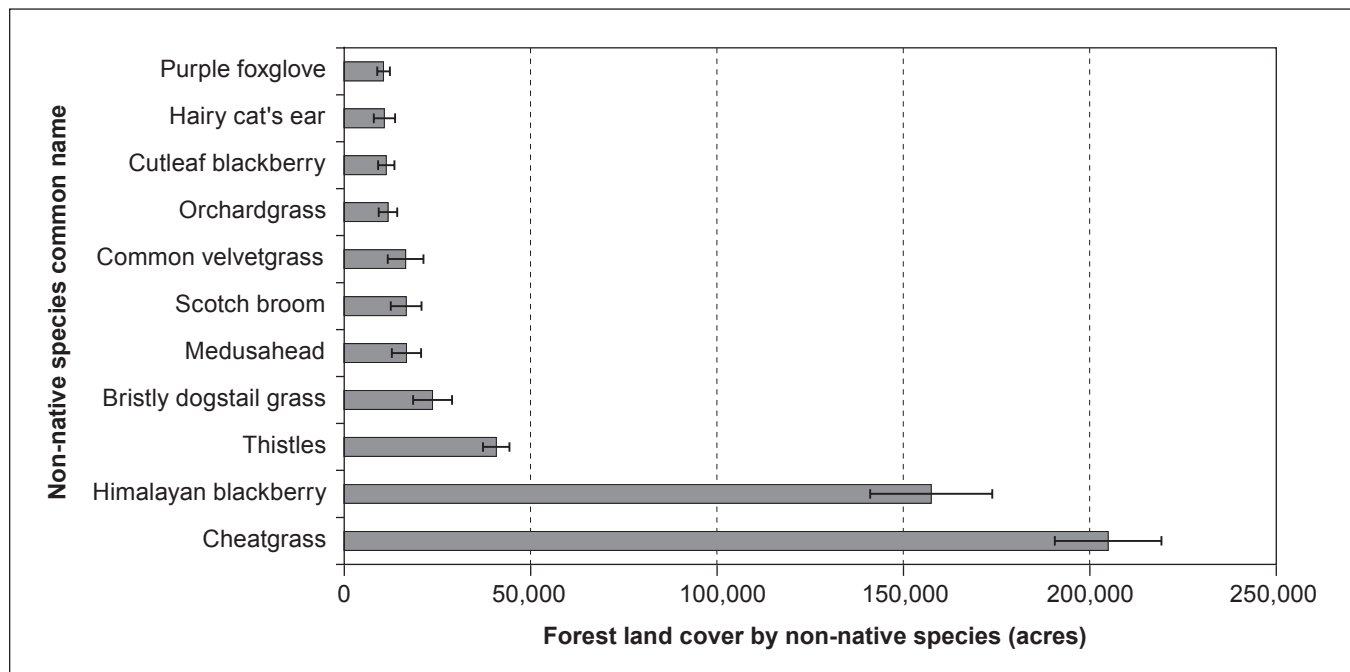


Figure 45—Most frequently found non-native invasive species on forest land, Oregon, 2001–2010.



Mark Gasser

Figure 46—Himalayan blackberry and Scotch broom are common weedy invasive understory plants in western Oregon.

How Many Trees Show Signs of Damage in Oregon Forests?

Detecting damage to trees is a critical means to assess overall forest health in terms of resilience, diversity, function, and resource sustainability. Mortality of individuals or stands of trees resulting from damage inflicted by native insects, disease, or abiotic stressors such as weather events can ultimately promote growth, regeneration, and diversity in Oregon's forests. FIA field crews assess live trees for presence and severity of damaging agents such as insects, disease, and dwarf mistletoe (fig. 47), as well as mapping root diseases when detected. The plot-based sampling design allows compilation of these data into overall estimation of acres affected at different severities, trees per acre, and the total volume affected by damage agents for specific tree species and across large geographic areas.

Overall, about 28 percent of all trees were affected by one or more damaging agents. Damages from animals, bark beetles, cankers, insect defoliators, dwarf mistletoe, foliage diseases, stem decays, root disease, and weather-related injury were most common (fig. 48). More than half of all damaged trees showed physical defects or injuries. Stem decays affected about 15 percent of the tree volume; dwarf mistletoe and root diseases each affected about 12 percent of the tree volume. All other recorded damage agents individually contributed less than 4 percent of the affected tree volume.

About 17 percent of the most commonly found conifer species in Oregon (Douglas-fir) had some form of damage, whereas lodgepole pine, the next most common conifer, had a 57-percent incident rate (fig. 49). For hardwood species, Pacific madrone had the highest incident rate (26 percent).



Sharon Stanton

Figure 47—Ponderosa pine branch showing mistletoe infection.

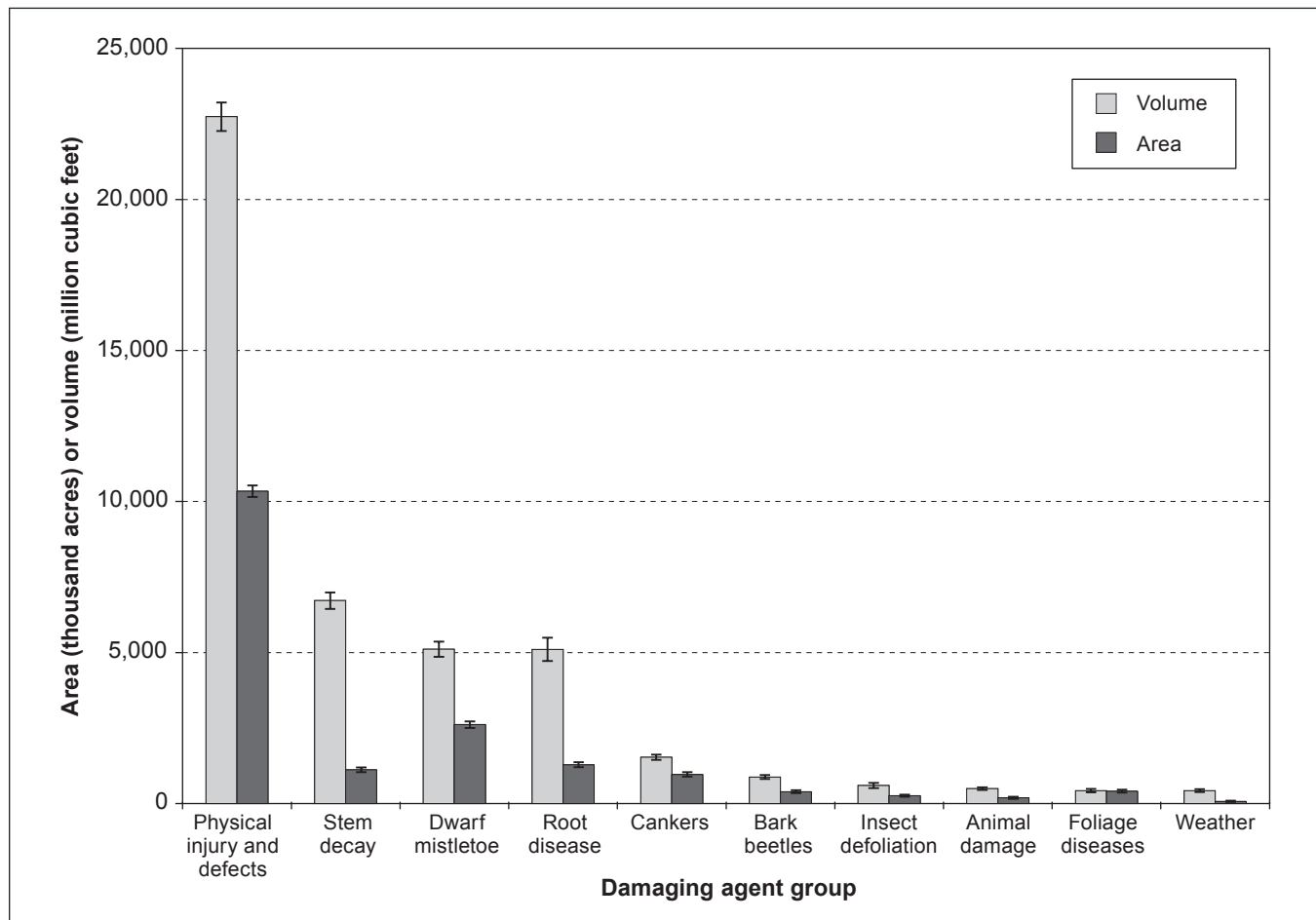


Figure 48—Area and volume of live trees affected by one more damage agents on forest land in Oregon, 2001–2010; volume is gross volume of live trees >5 inches diameter at breast height; area includes those with >25 percent of the basal area with damage.

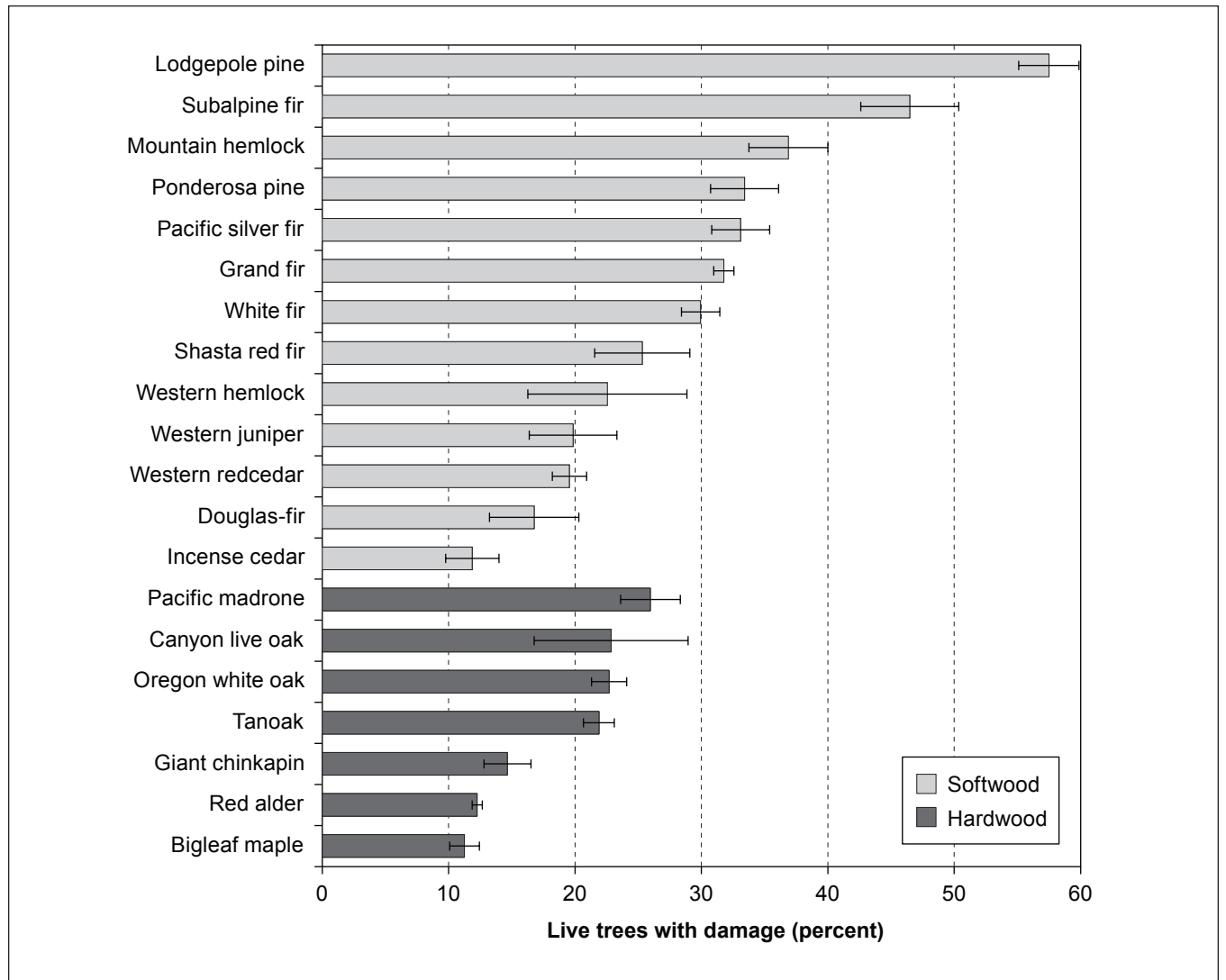


Figure 49—Percentages of live trees with damage by species, softwoods and hardwoods, Oregon, 2001–2010.

How Does FIA Monitor Air Pollution in Oregon Forests?

Excess nitrogen (N) from motor vehicle exhaust, animal manure, and crop fertilizers is a key air quality issue in the Pacific Northwest. Most terrestrial and marine systems are naturally N-limited, making N a fundamental driver of ecosystem productivity. Excess N from anthropogenic sources can reshape forest structure and function (Pardo et al. 2011). For example, fast-growing understory species are disproportionately favored from increased N, leading to a buildup in fuels, which alters fire cycles.

Lichens were first recognized as “health meters for the air” in 1866 by Finnish botanist William Nylander. Lichens are a composite organism—a fungus living in symbiosis with an alga or cyanobacterium (fig. 50). Their unique physiology makes lichens the “canaries in the coal mine” for monitoring changes in air quality owing to their high sensitivity to N deposition. Research using FIA data revealed that even small amounts of N (Fenn et al. 2010, Geiser et al. 2010) caused a replacement of native lichens with N-tolerant, “weedy” species. Today, large-scale monitoring programs commonly use lichen surveys as a budget-friendly supplement over instrumented air quality monitors.

Jane Terzibashian



Figure 50— Example of lichen growth in Lake County, Oregon. Lichen communities change with more nitrogen (N) deposition, causing a loss of species important to wildlife and nutrient cycling.

The FIA Program and the Forest Service Pacific Northwest Region Air Resources Management (ARM) program monitored tree-dwelling lichens at a subset of on- and off-grid FIA sites nationwide during 1993–2007, amounting to more than 9,000 surveys and 115,000 observations of 450 lichen species. This lichen research influences air-quality policy through quantification of critical loads—management guidelines that define how much N an ecosystem can tolerate before its most sensitive components are affected. Critical loads developed by FIA and ARM are used by the U.S. Environmental Protection Agency to develop secondary standards for N (U.S. EPA Integrated Science Assessment (ISA) for Oxides of Nitrogen and Sulfur Ecological Criteria) (USEPA 2008). The current goal of using data from lichen surveys is to define critical loads for all forested ecoregions of the United States. For more information,

please see <http://www.fs.fed.us/pnw/science/scifi131.pdf>.

Based on lichen data collected by FIA, air quality indices were generated for each ecoregion in the western Pacific Northwest. As a whole, the western Pacific Northwest and western Oregon had overall good scores on the air quality index, although there was considerable variability among ecoregions. The Eastern Cascades, Western Cascades, and Klamath Mountains had excellent air quality, while the Willamette Valley and Southern Cascades had poor quality, and the Coast Range had intermediate quality.

Where and When Has Recent Fire Occurred In Oregon Forests?

Wildland fire plays a significant role in shaping Oregon's forests. To assess the occurrence of wildfires on forest land across the state, FIA crews identify evidence of recent fire and estimate the years that fires have occurred. By compil-



Sharon Stanton

Figure 51—Late summer and smoke from multiple wildfires can be seen burning in the forests of Klamath County, Oregon.

ing these observations for all visited plots, it is possible to determine the average forest area and percentage of forest land burned each year in Oregon (fig. 51).

Between 1995 and 2009, the estimated average annual forested area that burned was about 147,000 ac across the state, or about 0.5 percent of its forested area (fig. 52). In 2002, the Biscuit Fire in the Siskiyou National Forest burned more than 400,000 ac, nearly eight times the average in the Southern Cascade Range region. The Biscuit Fire pushed the statewide total to more than 550,000 ac that year, almost 2 percent of forested lands and four times the statewide average. By region, there is high variability from year to year. Typically, eastern Oregon has more fires compared to the Southern Cascades and especially the Coast Range. In western Oregon, Jeffrey pine and tanoak forests burned much more frequently than other forest types, primarily because of the Biscuit Fire (fig. 53).

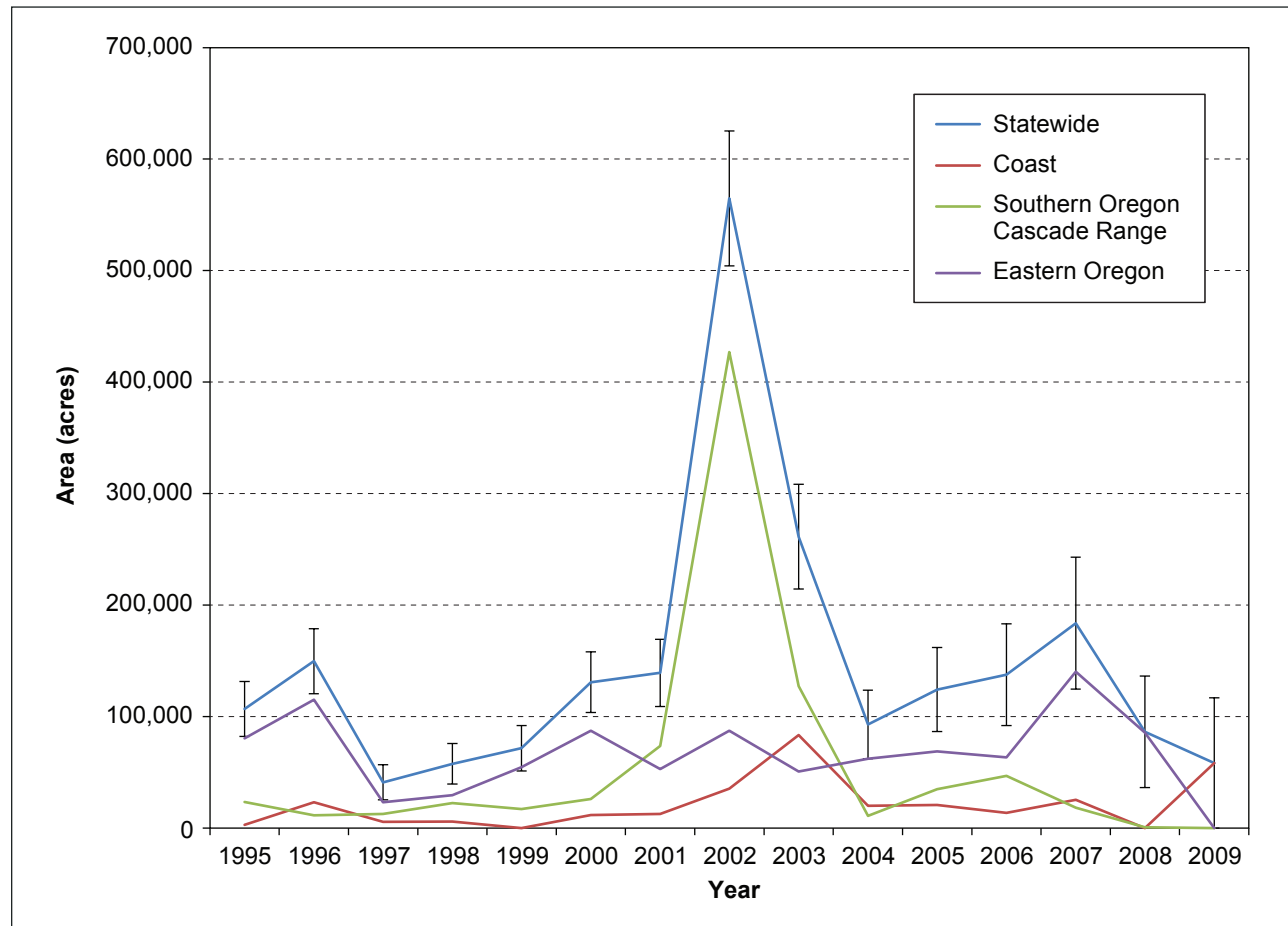


Figure 52—Area of forest burned by region on forested land in Oregon, 1995–2009.

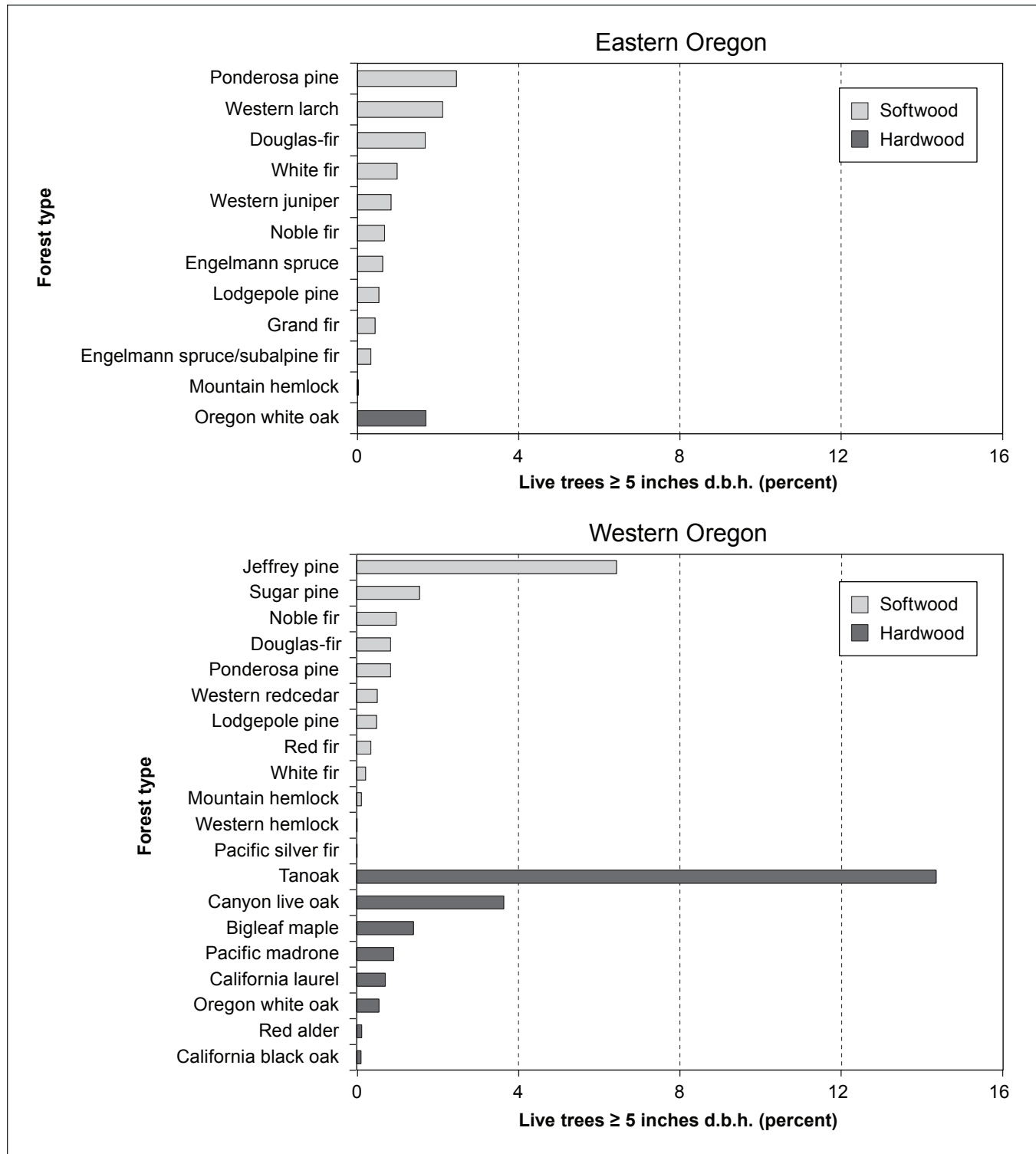


Figure 53—Percentage of trees by species with fire damage in eastern and western Oregon, 2001–2010. d.b.h = diameter at breast height.

Common and Scientific Plant Names

Life form	Common name	Scientific name
Trees:	Alder	<i>Alnus</i> spp.
	Ash	<i>Fraxinus</i> spp.
	Aspen, quaking aspen	<i>Populus tremuloides</i> Michx.
	Bigleaf maple	<i>Acer macrophyllum</i> Pursh
	Birch	<i>Betula</i> spp.
	Bitter cherry	<i>Prunus emarginata</i> (Dougl. ex Hook.) D. Dietr.
	California black oak	<i>Quercus kelloggii</i> Newberry
	Canyon live oak	<i>Quercus chrysolepis</i> Liebm.
	Cottonwood	<i>Populus</i> spp.
	Douglas-fir	<i>Pseudotsuga menziesii</i> (Mirbel) Franco
	Elm	<i>Ulmus</i> spp.
	Engelmann spruce	<i>Picea engelmannii</i> Parry ex Engelm.
	Giant chinkapin	<i>Chrysolepsis shrysophylla</i> (Dougl. ex Hook.) Hjelmqvist
	Grand fir	<i>Abies grandis</i> (Dougl. ex D. Don) Lindl.
	Hemlock	<i>Tsuga</i> spp.
	Incense cedar	<i>Calocedrus decurrens</i> (Torr.) Florin
	Jeffrey pine	<i>Pinus jeffreyi</i> Grev. & Balf.
	Lodgepole pine	<i>Pinus contorta</i> Dougl. ex Loud.
	Maple	<i>Acer</i> spp.
	Mountain hemlock	<i>Tsuga mertensiana</i> (Bong.) Carr.
	Oak	<i>Quercus</i> spp.
	Oregon white oak	<i>Quercus garryana</i> Dougl. ex Hook.
	Pacific madrone	<i>Arbutus menziesii</i> Pursh
	Pacific silver fir	<i>Abies amabilis</i> (Dougl. ex Loud.) Dougl. ex Forbes
	Ponderosa pine	<i>Pinus ponderosa</i> P.& C. Lawson
	Red alder	<i>Alnus rubra</i> Bong.
	Shasta red fir	<i>Abies magnifica</i> A. Murr. var. <i>shastensis</i> Lemmon
	Sitka spruce	<i>Picea sitchensis</i> (Bong.) Carr.
	Spruce	<i>Picea</i> spp.
	Subalpine fir	<i>Abies lasiocarpa</i> (Hook.) Nutt.
	Sugar pine	<i>Pinus lambertiana</i> Dougl.
	Tanoak	<i>Lithocarpus densiflorus</i> (Hook & Arn.) Rehd.
	True fir species	<i>Abies</i> spp.
	Western hemlock	<i>Tsuga heterophylla</i> (Raf.) Sarg.
	Western juniper	<i>Juniperus occidentalis</i> Hook.
	Western larch	<i>Larix occidentalis</i> Nutt.
	Western redcedar	<i>Thuja plicata</i> Donn ex D. Don
	White fir	<i>Abies concolor</i> (Gord. & Glend.) Lindl. ex Hildebr.

Life form	Common name	Scientific name
Shrubs:	Beaked hazelnut	<i>Corylus cornuta</i> Marshall
	Big sagebrush	<i>Artemisia tridentata</i> Nutt.
	Cascade barberry, dwarf Oregon grape	<i>Mahonia nervosa</i> (Pursh) Nutt.
	California blackberry, trailing blackberry	<i>Rubus ursinus</i> Cham. and Schltdl.
	California huckleberry	<i>Vaccinium ovatum</i> Pursh
	Cutleaf blackberry	<i>Rubus laciniatus</i> Willd.
	Dwarf mistletoe	<i>Arceuthobium</i> spp.
	English holly	<i>Ilex aquifolium</i> L.
	English ivy	<i>Hedera helix</i> L.
	Greanleaf manzanita	<i>Arctostaphylos patula</i> Greene
	Himalayan blackberry	<i>Rubus discolor</i> Weihe & Nees
	Kinnikinnick	<i>Arctostaphylos uva-ursi</i> (L.) Spreng.
	Oval-leaf blueberry	<i>Vaccinium ovalifolium</i> Sm.
	Pinemat manzanita	<i>Arctostaphylos nevadensis</i> Gray
	Salal	<i>Gaultheria shallon</i> Pursh
	Salmonberry	<i>Rubus spectabilis</i> Pursh
	Scotch broom	<i>Cytisus scoparius</i> (L.) Link
	Snowbrush ceanothus	<i>Ceanothus velutinus</i> Dougl. ex Hook.
	Thimbleberry	<i>Rubus parviflorus</i> Nutt.
	Thinleaf huckleberry	<i>Vaccinium membranaceum</i> Dougl. ex Torr.
	Vine maple	<i>Acer circinatum</i> Pursh
Forbs:	Brackenfern	<i>Pteridium aquilinum</i> (L.) Kuhn
	Bull thistle	<i>Cirsium vulgare</i> (Savi) Ten.
	Canada thistle	<i>Cirsium arvense</i> (L.) Scop.
	Common beargrass	<i>Xerophyllum tenax</i> (Pursh) Nutt.
	Garlic mustard	<i>Alliaria petiolata</i>
	Hairy cat's ear	<i>Hypochaeris radicata</i> L.
	Purple foxglove	<i>Digitalis purpurea</i> L.
	Swordfern	<i>Polystichum munitum</i> (Kaulfuss) K. Presl
	Thistles	<i>Cirsium</i> spp.
Graminoids:	Bristly dogstail grass	<i>Cynosurus echinatus</i> L.
	Cheatgrass	<i>Bromus tectorum</i> L.
	Common velvetgrass	<i>Holcus lanatus</i> L.
	Medusahead	<i>Taeniatherum caput-medusae</i> (L.) Nevski
	Orchardgrass	<i>Dactylis glomerata</i> L.

Acknowledgments

The authors thank all FIA crew members operating in Oregon during the 2001–2010 field seasons for their hard work, significant input to improved protocol, and persistent attention to data quality throughout 10 years of plot measurements (fig. 54). We also thank members of the Information Management team for compiling the Oregon raw plot measurements into meaningful, high-quality data that made this report possible. We give additional thanks to the analysts who helped design the inventory, quality assurance procedures, and compilation algorithms. Thanks are also due to the reviewers of this manuscript for their invaluable comments.



Gerard Dean

Figure 54—FIA field crew preparing for a hike to a field plot.

Metric Equivalents

When you know:	Multiply by:	To find:
Inches (in)	2.54	Centimeters
Feet (ft)	0.3048	Meters
Miles (mi)	1.609	Kilometers
Acres (ac)	0.405	Hectares
Board feet	0.0024	Cubic meters
Square feet (ft ²)	0.0929	Square meters
Square feet per acre (ft ² /ac)	0.229	Square meters per hectare
Cubic feet (ft ³)	0.0283	Cubic meters
Cubic feet per acre (ft ³ /ac)	0.06997	Cubic meters per hectare
Tons per acre	2.24	Megagrams per hectare

Literature Cited

Alexander, S.J.; Oswalt, S.N.; Emery, M.R. 2011.

Nontimber forest products in the United States: Montréal Process indicators as measures of current conditions and sustainability. Gen. Tech. Rep. PNW-GTR-851. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 36 p.

Blackard, J.; Finco, M.; Helmer, E.; Holden, G.;

Hoppus, M.; Jacobs, D.; Lister, A.; Moisen, G.; Nelson, M.; Riemann, R.; Ruefenacht, B.; Salajanu, D.; Weyermann, D.; Winterberger, K.; Brandeis, T.; Czaplowski, R.; McRoberts, R.; Patterson, P.; Tymcio, R. 2008. Mapping U.S. forest biomass using nationwide forest inventory data and moderate resolution information. *Remote Sensing of Environment*. 112(4): 1658–1677.

Butler, B.J.; Hewes, J.H.; Dickinson, B.J.; Andrejczyk, K.; Butler, S.M.; Markowski-Lindsay, M. 2016. USDA

Forest Service National Woodland Owner Survey: national, regional, and state statistics for family forest and woodland ownerships with 10+ acres, 2011–2013. *Resour. Bull. NRS-99*. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 39 p.

Donnegan, J.; Campbell, S.; Azuma, D. 2008. Oregon's

forest resources, 2001–2005: five-year forest inventory and analysis report. Gen. Tech. Rep. PNW-GTR-765. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 188 p.

Fenn, M.E.; Allen, E.B.; Weiss, S.B.; Jovan, S.; Geiser, L.H.; Tonnesen, G.S.; Johnson, R.F.; Rao, L.E.;

Gimeno, B.S.; Yuan, F.; Meixner, T.; Bytnerowicz, A. 2010. Nitrogen critical loads and management alternatives for N-impacted ecosystems in California. *Journal of Environmental Management*. 91: (12): 2404–2423.

Gale, C.B.; Keegan, C.E., III; Berg, E.C.; Daniels, J.; Christensen, G.A.; Sorenson, C.B.; Morgan, T.A.;

Polzin, P. 2012. Oregon's forest products industry and timber harvest, 2008: industry trends and impacts of the Great Recession through 2010. Gen. Tech. Rep. PNW-GTR-868. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 55 p.

Geiser, L.H.; Jovan, S.E.; Glavich, D.A.; Porter, M.K.

2010. Lichen-based critical loads for atmospheric nitrogen deposition in western Oregon and Washington forests, USA. *Environmental Pollution*. 158: 2412–2421.

Gesch, D.; Oimoen, M.; Greenlee, S.; Nelson, C.;

Steuck, M.; Tyler, D. 2002. The National Elevation Dataset. *Photogrammetric Engineering and Remote Sensing*. 68: 5–11.

- Gray, A.N. 2009.** Monitoring and assessment of regional impacts from exotic invasive plants in forests of the Pacific coast, USA. In: Kohli, R.K.; Jose, S.; Singh, H.P.; Batish, D.R., eds. *Invasive plants and forest ecosystems*. Boca Raton, FL: CRC Press: 217–235.
- Gray, A.N.; Barndt, K.; Reichard, S.H. 2011.** Non-native invasive plants of Pacific coast forests: a field guide for identification. Gen. Tech. Rep. PNW-GTR-817. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 91 p.
- Gray, A.N.; Whittier, T.R. 2014.** Carbon stocks and changes on Pacific Northwest national forests and the role of disturbance, management, and growth. *Forest Ecology and Management*. 328: 167–178.
- Homer, C.; Dewitz, J.; Fry, J.; Coan, M.; Hossain, N.; Larson, C.; Herold, N.; McKerrow, A.; VanDriel, J.N.; Wickham, J. 2007.** Completion of the 2001 National Land Cover Database for the conterminous United States. *Photogrammetric Engineering and Remote Sensing*. 73: 337–341.
- McNab, W.H.; Cleland, D.T.; Freeouf, J.A.; Keys, J.E., Jr.; Nowacki, G.J.; Carpenter, C.A., comps. 2005.** Description of ecological subregions: sections of the conterminous United States. [CD-ROM]. Washington, DC: U.S. Department of Agriculture, Forest Service. 80 p.
- Oregon Department of Forestry [ODF]. 2011.** Timber harvest data 1942–2015. <https://data.oregon.gov/Natural-Resources/Timber-Harvest-Data-1942-2015/v7yh-3r7a>. (26 May 2017).
- Oregon Forest Resources Institute. 2016.** Oregon forest facts and figures 2015–2016. Portland, OR. http://oregonforests.org/sites/default/files/publications/pdf/OFRI_FactsFigures_2015-16.pdf. (January 12, 2017).
- Pardo, L.H.; Fenn, M.E.; Goodale, C.L.; Geiser, L.H.; Driscoll, C.T.; Allen, E.; Baron, J.S.; Bobbink, R.; Bowman, W.D.; Clark, C.M.; Emmett, B.; Gilliam, F.S.; Greaver, T.L.; Hall, S.J.; Lilleskov, E.A.; Liu, L.; Lynch, J.A.; Nadelhoffer, K.J.; Perakis, S.S.; Robin-Abbott, M.J.; Stoddard, J.L.; Weathers, K.C.; Dennis, R.L. 2011.** Effects of nitrogen deposition and empirical nitrogen critical loads for ecoregions of the United States. *Ecological Applications*. 21: 8: 3049–3082.
- U.S. Department of Agriculture, Natural Resources Conservation Service [USDA NRCS]. 2000.** The PLANTS database. Baton Rouge, LA: National Plant Data Center. <http://plants.usda.gov>. [16 October 2017].
- U.S. Environmental Protection Agency [USEPA]. 2008.** 2008 Final report: integrated science assessment (ISA) for oxides of nitrogen and sulfur ecological criteria. EPA/600/R-08/082F. Washington, DC.

Appendix 1: Summary Data Tables

The values presented here should not be directly compared to the previous report (Donnegan et al. 2008) or datasets to assess change in forest resources over the past 5 years; the data presented here are a continuation of the full 10-year cycle following publication of the first *Oregon’s Forest Resources* report. The first 10-year cycle is now complete for all forested plots measured from 2001 to 2010. The following tables contain basic information about the forest resources of Oregon as they relate to the discussions of current forest issues and basic resource information presented in this report. These tables aggregate data to a variety of levels, including county, ecosection, owner group, and forest type, allowing Pacific Northwest Research Station Forest Inventory and Analysis (FIA) inventory results to be applied at various scales and used for various analyses. Data are also available for download in nonsummarized form at <http://www.fia.fs.fed.us>. The national FIA website (<http://www.fia.fs.fed.us/tools-data/default.asp>) contains a tool for querying the annual data from all states and generating custom tables or maps. Some of the tables in this appendix contain summaries of regional variables; data for regional variables are currently not included in the national FIA database (FIADB). Additional information on regional variables, field manuals, and local contact information is available at <http://www.fs.fed.us/pnw/rma/index.php>. Only some of the 2001–2010 tables are included in print. An additional 89 summary data tables as well as detailed FIA methods and sampling design have been published as an online supplement to this report.



Please note that information in the tables presented and in those generated from the FIADB may differ. As new data are added each year to the FIADB, any tables generated from them will be based on the current full set of data in the FIADB (e.g., 2003–2012, 2004–2013, etc.), whereas tables in this publication contain data from only 2001–2010. The user can take a snapshot of data from the FIADB by selecting the desired years and generating tables that are similar, but probably not identical, to those presented here, owing to quality assurance updates.

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Table A1-3—Area of forest land, by ownership and land status, Oregon, 2001–2010

Table A1-4—Area of forest land, by forest type group, ownership group, and land status, Oregon, 2001–2010

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Table A1-20—Aboveground biomass of live trees on forest land, by ownership and land status, Oregon, 2001–2010

Table A1-21—Aboveground biomass of dead trees on forest land, by ownership and land status, Oregon, 2001–2010

Table A1-22—Aboveground biomass of live trees on forest land, by county and land status, Oregon, 2001–2010

Table A1-23—Aboveground biomass of dead trees on forest land, by county and land status, Oregon, 2001–2010

Table A1-24—Average aboveground biomass per acre of live trees on forest land, by forest type group and ownership group, Oregon, 2001–2010

Table A1-25—Average aboveground biomass per acre of dead trees on forest land by forest type group and ownership group, Oregon, 2001–2010

Table A1-26—Average aboveground biomass per acre of live trees on forest land, by forest type group and stand size class, Oregon, 2001–2010

Table A1-27—Average aboveground biomass per acre of dead trees on forest land, by forest type group and stand size class, Oregon, 2001–2010

Carbon—

Table A1-28—Aboveground carbon mass of live trees on forest land, by ownership and land status, Oregon, 2001–2010

Table A1-29—Aboveground carbon mass of dead trees on forest land, by ownership and land status, Oregon, 2001–2010

Table A1-30—Average aboveground carbon mass per hectare of live trees on forest land, by forest type group and ownership group, Oregon, 2001–2010

Table A1-31—Average aboveground carbon mass per hectare of dead trees on forest land, by forest type group and ownership group, Oregon, 2001–2010

Down wood—

Table A1-32—Volume of down wood on forest land, by forest type group and down wood diameter class, Oregon, 2001–2010

Table A1-33—Biomass of down wood on forest land, by forest type group, ownership group, and land status, Oregon, 2001–2010

Table A1-34—Biomass of down wood on forest land, by county and land status, Oregon, 2001–2010

Table A1-35—Average volume per acre of down wood on forest land, by forest type group and down wood diameter class, Oregon, 2001–2010

Table A1-36—Average biomass per acre of down wood on forest land, by forest type group, ownership group, and land status, Oregon, 2001–2010

Table A1-37—Average biomass per acre of down wood on forest land, by ownership and land status, Oregon, 2001–2010

Table A1-38—Average biomass per acre of down wood on forest land, by county and land status, Oregon, 2001–2010

Combined dead trees and dead wood (standing dead trees and down wood)—

Table A1-39—Average biomass per acre of all dead wood (dead trees and down wood) on forest land, by county and land status, Oregon, 2001–2010

National forest—

Table A1-40—Area of forest land, by national forest and land status, Oregon, 2001–2010

Table A1-41—Net volume of live trees on forest land, by national forest and land status, Oregon, 2001–2010

Table A1-42—Aboveground biomass of live trees on forest land, by national forest and land status, Oregon, 2001–2010

Table A1-43—Biomass of down wood on forest land, by national forest and down wood diameter class, Oregon, 2001–2010

Table A1-44—Average net volume per acre of live trees on forest land, by national forest and land status, Oregon, 2001–2010

Table A1-45—Average aboveground biomass per acre of live trees on forest land, by national forest and land status, Oregon, 2001–2010

Timber products output and removals—

Table A1-46—Total roundwood output by product, species group, and source of material, Oregon, 2006

Table A1-47—Volume of timber removals by type of removal, source of material, species group, Oregon, 2006

Nontimber forest products—

Table A1-48—Estimated area of forest land covered by the most abundant vascular plant nontimber forest products, by plant group and species, Oregon, 2001–2010

Understory vegetation—

Table A1-49—Index of vascular plant species richness on forest land, by ecological section, Oregon, 2010

Table A1-50—Estimated area of forest land covered by selected non-native vascular plant species and number of sample plots, by life form and species, Oregon, 2001–2010

Evidence of fire—

Table A1-51—Forest land area on which evidence of fire was observed, by year and ecosection group, Oregon, 1995–2009

Table A1-1—Area of forest land, by county and land status, Oregon, 2001–2010

County	Land status											
	Unreserved forests						Reserved forests					
	Timberland		Other forest		Productive		Other forest		All forest land			
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
<i>Thousand acres</i>												
Western Oregon:												
Benton	289.2	40.5	6.2	6.2	295.3	40.9	—	—	—	—	295.3	40.9
Clackamas	708.8	56.7	—	—	708.8	56.7	139.7	26.6	139.7	26.6	848.5	58.3
Clatsop	441.1	48.6	2.0	1.8	443.1	48.8	2.2	2.3	2.2	2.3	445.3	48.8
Columbia	324.7	41.5	8.0	6.3	332.7	42.1	—	—	0.2	0.3	333.0	42.1
Coos	819.0	65.2	12.7	8.9	831.7	65.7	13.1	9.1	13.1	9.1	844.8	66.2
Curry	761.0	61.6	22.9	11.3	783.9	61.9	147.2	28.5	182.4	31.5	966.3	66.8
Douglas	2,574.0	100.2	65.5	19.6	2,639.5	101.0	103.6	24.0	127.3	26.4	2,766.8	101.5
Hood River	200.5	33.5	7.2	5.9	207.6	34.1	62.9	18.6	68.8	19.5	276.4	38.1
Jackson	1,251.4	78.4	206.8	34.3	1,458.3	84.6	54.6	17.6	73.5	20.7	1,531.8	86.1
Josephine	828.2	65.9	56.5	17.4	884.7	67.9	37.0	14.1	42.9	15.2	927.6	69.1
Lane	2,220.8	84.4	47.2	15.2	2,267.9	84.7	213.1	32.8	218.7	33.1	2,486.6	83.8
Lincoln	554.8	53.4	6.6	5.1	561.4	53.8	11.6	8.3	11.6	8.3	573.0	54.2
Linn	963.8	67.9	7.3	3.9	971.1	68.0	66.3	19.2	66.3	19.2	1,037.4	69.6
Marion	281.4	39.2	15.1	8.9	296.6	40.1	74.7	20.4	76.4	20.7	372.9	44.2
Multnomah	47.6	16.5	3.7	3.5	51.3	16.9	62.5	19.0	62.5	19.0	113.8	25.1
Polk	266.9	38.3	14.5	8.5	281.4	39.1	—	—	—	—	281.4	39.1
Tillamook	600.8	50.6	—	—	600.8	50.6	6.0	5.8	6.0	5.8	606.8	50.8
Washington	236.0	36.4	—	—	236.0	36.4	5.8	6.1	5.8	6.1	241.7	36.8
Yamhill	215.4	34.8	8.3	6.3	223.7	35.2	4.2	4.4	4.2	4.4	227.9	35.5
Total	13,585.2	120.2	490.6	50.8	14,075.9	113.6	1,004.7	69.3	1,101.6	72.5	15,177.5	90.0

Table A1-1—Area of forest land, by county and land status, Oregon, 2001–2010 (continued)

County	Land status													
	Unreserved forests						Reserved forests							
	Timberland		Other forest		Total		Productive		Other forest		Total			
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE		
Thousand acres														
Eastern Oregon:														
Baker	646.0	57.4	89.0	22.8	735.0	61.9	31.7	13.1	5.5	5.7	37.2	14.3	772.2	63.2
Crook	413.7	47.5	593.4	57.5	1,007.1	74.3	23.3	11.7	—	—	23.3	11.7	1,030.4	75.1
Deschutes	874.8	66.3	230.9	35.8	1,105.6	75.0	87.5	22.3	17.4	10.1	104.9	24.4	1,210.5	77.4
Gilliam	—	—	6.0	6.1	6.0	6.1	—	—	—	—	—	—	6.0	6.1
Grant	1,538.8	81.6	171.4	30.9	1,710.2	86.5	174.8	31.2	15.0	9.0	189.8	32.3	1,900.0	88.6
Harney	474.4	49.8	451.7	49.7	926.2	70.2	—	—	29.8	13.7	29.8	13.7	956.0	71.3
Jefferson	316.0	41.8	285.0	40.8	601.1	57.7	35.8	14.5	—	—	35.8	14.5	636.9	59.4
Klamath	2,310.4	97.6	291.0	41.8	2,601.4	103.7	353.8	40.4	36.4	14.5	390.2	42.0	2,991.6	105.0
Lake	1,116.1	73.1	357.1	45.7	1,473.1	85.5	11.6	8.2	19.1	11.1	30.7	13.8	1,503.8	86.4
Malheur	13.6	9.5	116.4	26.2	130.1	27.9	—	—	—	—	—	—	130.1	27.9
Morrow	196.0	33.5	5.8	5.7	201.7	34.0	—	—	—	—	—	—	201.7	34.0
Umatilla	594.1	55.1	12.3	8.4	606.3	55.6	13.8	8.0	—	—	13.8	8.0	620.1	56.1
Union	689.2	59.8	10.6	7.7	699.8	60.2	62.1	18.1	6.6	6.3	68.8	19.1	768.5	62.7
Wallowa	575.9	54.8	7.0	6.3	583.0	55.2	375.5	43.7	13.9	8.7	389.5	44.4	972.4	68.8
Wasco	417.8	47.6	148.5	29.1	566.3	54.7	5.8	5.8	—	—	5.8	5.8	572.1	55.0
Wheeler	321.5	42.4	207.1	34.7	528.5	54.6	5.8	5.8	—	—	5.8	5.8	534.3	54.9
Total	10,498.2	131.2	2,983.2	117.7	13,481.3	153.9	1,181.6	75.0	143.8	29.1	1,325.4	79.3	14,806.7	138.8
All counties	24,083.4	172.3	3,473.8	128.1	27,557.2	184.6	2,186.3	102.1	240.8	37.5	2,427.0	107.3	29,984.2	156.7

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50 ac was estimated.

Table A1-2—Area of forest land, by county and ownership group, Oregon, 2001–2010

County	Ownership group									
	National forest		Other federal		State and local government		Private		Total	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
<i>Thousand acres</i>										
Western Oregon:										
Benton	30.2	13.3	67.5	19.7	21.5	9.9	176.1	31.5	295.3	40.9
Clackamas	526.4	41.3	22.5	10.8	12.0	8.8	287.5	39.2	848.5	58.3
Clatsop	—	—	2.2	2.3	109.6	25.3	333.5	42.4	445.3	48.8
Columbia	—	—	5.6	5.9	10.8	7.7	316.5	41.2	333.0	42.1
Coos	64.4	19.2	166.8	31.3	81.0	21.7	532.6	52.0	844.8	66.2
Curry	573.5	47.4	42.2	16.2	17.1	9.8	333.6	43.0	966.3	66.8
Douglas	925.7	56.0	640.6	51.6	68.5	20.1	1,132.1	68.0	2,766.8	101.5
Hood River	199.9	31.4	—	—	24.8	12.7	51.7	17.6	276.4	38.1
Jackson	543.7	50.3	367.1	42.9	27.2	13.2	593.8	54.6	1,531.8	86.1
Josephine	372.0	42.6	311.9	40.2	42.3	16.3	201.4	32.6	927.6	69.1
Lane	1,326.1	53.7	253.6	29.9	44.7	16.2	862.2	57.4	2,486.6	83.8
Lincoln	203.2	32.1	13.1	9.2	34.9	14.0	321.8	40.3	573.0	54.2
Linn	430.8	44.5	89.0	22.6	20.9	11.5	496.7	47.9	1,037.4	69.6
Marion	189.1	30.5	8.7	7.1	28.8	13.0	146.3	28.4	372.9	44.2
Multnomah	66.7	19.1	4.9	5.2	13.0	8.8	29.1	12.9	113.8	25.1
Polk	—	—	45.9	16.4	13.3	9.3	222.1	34.4	281.4	39.1
Tillamook	91.3	22.3	22.7	11.6	324.2	33.9	168.7	31.0	606.8	50.8
Washington	—	—	7.6	7.0	93.1	23.1	141.1	28.0	241.7	36.8
Yamhill	21.5	11.0	50.7	17.3	10.5	7.6	145.2	27.8	227.9	35.5
Total	5,564.4	38.8	2,122.7	63.7	998.3	61.2	6,492.0	90.2	15,177.5	90.0
Eastern Oregon:										
Baker	610.8	55.0	58.2	18.8	5.5	5.1	97.8	23.6	772.2	63.2
Crook	360.5	43.2	299.3	40.3	13.1	9.1	357.4	45.0	1,030.4	75.1
Deschutes	874.6	64.1	183.5	32.0	12.0	8.2	140.6	28.2	1,210.5	77.4
Gilliam	—	—	—	—	—	—	6.0	6.1	6.0	6.1
Grant	1,515.8	75.4	48.9	17.3	15.8	9.7	319.5	42.6	1,900.0	88.6
Harney	460.8	48.7	345.7	43.0	42.0	16.3	107.4	25.4	956.0	71.3
Jefferson	221.7	34.7	5.8	6.3	—	—	409.4	47.5	636.9	59.4
Klamath	1,703.5	78.6	354.3	31.7	42.2	15.7	891.7	63.3	2,991.6	105.0
Lake	925.9	65.5	224.9	36.5	5.2	5.8	347.8	42.3	1,503.8	86.4
Malheur	—	—	82.9	22.3	15.9	9.7	31.3	13.7	130.1	27.9
Morrow	98.6	23.3	—	—	7.0	6.7	96.1	24.0	201.7	34.0
Umatilla	343.2	42.4	6.9	6.1	13.6	8.4	256.4	35.5	620.1	56.1
Union	508.3	50.6	1.1	1.0	6.2	6.3	252.8	36.1	768.5	62.7
Wallowa	688.4	56.9	5.3	4.7	5.9	5.9	272.9	37.9	972.4	68.8
Wasco	165.1	30.4	13.6	8.9	22.6	12.1	370.7	43.5	572.1	55.0
Wheeler	138.1	27.1	62.7	20.0	—	—	333.6	43.4	534.3	54.9
Total	8,615.3	70.8	1,693.0	79.6	207.1	35.1	4,291.3	96.6	14,806.7	138.8
All counties	14,179.7	77.3	3,815.7	99.6	1,205.4	70.5	10,783.4	129.8	29,984.2	156.7

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50 ac was estimated.

Table A1-3—Area of forest land, by ownership and land status, Oregon, 2001–2010

Ownership	Land status											
	Unreserved forests						Reserved forests					
	Timberland		Other forest		Total		Productive		Other forest		Total	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
Thousand acres												
USDA Forest Service:												
National forest	11,573.1	124.3	507.1	51.1	12,080.2	119.7	1,877.9	94.8	171.7	31.2	2,049.6	98.6
National grasslands	—	—	49.9	16.6	49.9	16.6	—	—	—	—	—	—
Total	11,573.1	124.3	557.1	53.1	12,130.1	119.3	1,877.9	94.8	171.7	31.2	2,049.6	98.6
Other federal government:												
Bureau of Land Management	2,188.4	72.7	1,308.6	76.8	3,497.0	100.7	74.5	20.6	49.3	17.6	123.7	27.1
Departments of Defense or Energy	0.1	0.1	—	—	0.1	0.1	—	—	—	—	—	—
National Park Service	—	—	—	—	—	—	146.0	22.1	19.5	11.0	165.5	23.7
U.S. Fish and Wildlife Service	—	—	—	—	—	—	10.0	7.4	0.2	0.3	10.2	7.4
Other federal	13.2	8.5	—	—	13.2	8.5	6.0	6.2	—	—	6.0	6.2
Total	2,201.7	73.2	1,308.6	76.8	3,510.3	101.0	236.4	31.8	69.0	20.8	305.5	37.3
State and local government:												
Local	134.7	28.1	28.6	12.6	163.3	31.2	17.8	10.6	—	—	17.8	10.6
State	891.1	57.7	74.1	21.1	965.1	61.4	54.2	17.6	—	—	54.2	17.6
Other public	5.0	5.1	—	—	5.0	5.1	—	—	—	—	—	—
Total	1,030.7	63.9	102.7	24.6	1,133.4	68.6	72.0	20.6	—	—	72.0	20.6
Corporate private	5,751.3	133.4	232.8	35.9	5,984.1	135.4	—	—	—	—	—	—
Noncorporate private:												
Nongovernmental conservation or natural resource organizations	320.3	43.2	—	—	320.3	43.2	—	—	—	—	320.3	43.2
Unincorporated partnerships, associations, or clubs	35.6	14.8	27.9	12.8	63.5	19.6	—	—	—	—	63.5	19.6
Native American	386.7	44.2	88.4	23.2	475.1	48.7	—	—	—	—	475.1	48.7
Individual	2,783.9	111.8	1,156.3	76.5	3,940.2	130.3	—	—	—	—	3,940.2	130.3
Total	3,526.6	122.3	1,272.7	79.9	4,799.2	139.1	—	—	—	—	4,799.2	139.1
All private	9,277.9	122.7	1,505.5	86.0	10,783.4	129.8	—	—	—	—	10,783.4	129.8
All owners	24,083.4	172.3	3,473.8	128.1	27,557.2	184.6	2,186.3	102.1	240.8	37.5	2,427.0	107.3
											29,984.2	156.7

— = not available. SE = standard error.

Table A1-4—Area of forest land, by forest type group, ownership group, and land status, Oregon, 2001–2010

Ownership group and land status																														
Forest type group	USDA Forest Service						Other federal						State and local government						Private corporate						Private noncorporate					
	Timberland			Other forest land			Timberland			Other forest land			Timberland			Other forest land			Timberland			Other forest land			Timberland			Other forest land		
	Total	SE		Total	SE		Total	SE		Total	SE		Total	SE		Total	SE		Total	SE		Total	SE		Total	SE		Total	SE	
Thousand acres																														
Softwoods:																														
Douglas-fir	3,618.3	104.1	568.9	54.1	1,528.9	67.7	58.2	18.3	631.5	53.3	28.4	13.2	3,012.5	108.1	6.7	5.2	1,395.0	83.4	5.6	6.0	10,854.1	167.7								
Fir/spruce/mountain hemlock	1,965.8	96.6	894.7	68.4	70.4	20.0	103.3	21.4	21.8	11.4	5.8	6.1	406.9	48.8	—	—	190.1	33.3	21.9	11.5	3,680.6	129.8								
Hemlock/Sitka spruce	303.9	38.1	78.9	20.8	59.6	18.0	6.0	6.2	56.3	17.8	18.1	10.1	319.5	41.9	—	—	90.5	22.3	—	—	932.7	68.8								
Lodgepole pine	1,274.9	77.3	237.2	36.4	43.4	15.7	66.6	19.3	14.6	9.6	6.8	6.4	283.5	40.0	8.4	7.4	74.2	19.9	15.2	9.8	2,024.8	98.8								
Ponderosa pine	3,225.5	109.2	149.2	28.5	172.5	30.4	16.9	9.0	48.4	16.7	—	—	804.3	63.2	16.7	10.0	722.6	60.4	13.5	9.0	5,169.5	141.4								
Western juniper	160.3	29.2	235.8	33.7	27.9	12.7	1,159.1	71.4	5.2	5.8	78.5	21.7	25.4	12.2	101.7	24.1	81.5	22.3	891.9	67.7	2,767.2	113.4								
Western larch	104.1	22.8	56.9	18.1	—	—	—	—	—	—	—	—	19.9	10.8	—	—	16.1	10.2	—	—	197.0	32.5								
Other western softwoods	27.0	11.3	39.7	15.0	—	—	7.6	7.1	—	—	—	—	4.6	5.1	—	—	1.0	1.1	14.8	9.2	94.7	22.7								
Total	10,679.8	130.4	2,261.4	102.6	1,902.7	73.7	1,417.7	77.4	777.8	57.8	137.5	28.7	4,876.6	129.6	133.5	27.5	2,570.9	108.1	962.9	70.6	25,720.7	189.8								
Hardwoods:																														
Alder/maple	158.8	25.7	8.2	6.0	42.5	14.8	2.2	2.3	171.8	29.4	7.4	6.4	368.2	43.0	7.8	5.6	385.3	43.9	8.6	5.2	1,160.9	72.2								
Aspen/birch	10.7	7.5	5.3	5.6	0.8	0.8	15.9	9.1	—	—	—	—	6.8	6.6	—	—	7.7	5.8	0.5	0.4	47.7	15.8								
Elm/ash/cottonwood	—	—	0.4	0.4	—	—	0.2	0.3	—	—	4.2	4.4	2.1	1.9	9.9	5.6	56.0	17.9	2.1	1.8	74.9	19.4								
Tanoak/laurel	203.5	32.2	129.0	26.2	54.7	17.7	—	—	—	—	—	—	119.4	25.6	—	—	96.0	22.9	—	—	602.4	55.3								
Western oak	78.6	20.1	42.0	15.1	113.0	25.8	50.7	17.0	20.9	10.9	18.2	10.0	71.9	20.3	72.5	20.2	101.5	22.5	221.6	34.2	791.0	64.8								
Woodland hardwoods	20.9	9.8	31.7	12.8	6.5	6.5	42.5	16.5	—	—	—	—	5.2	5.8	9.1	7.1	35.5	15.1	14.9	9.3	166.4	31.1								
Other hardwoods	42.0	14.4	30.1	12.6	65.4	19.4	24.3	11.8	31.7	13.5	1.4	1.5	82.1	22.2	—	—	118.0	25.7	35.9	14.9	430.9	48.6								
Total	514.5	47.7	246.7	35.6	282.9	39.0	136.0	28.1	224.4	34.0	31.2	12.7	655.8	57.6	99.3	22.7	800.1	62.9	283.5	38.7	3,274.3	119.0								
Nonstocked	378.8	44.1	98.6	23.1	16.2	8.4	60.4	18.9	28.6	12.5	6.0	6.1	219.0	33.8	—	—	155.5	28.7	26.2	12.5	989.2	71.8								
All forest types	11,573.1	124.3	2,606.7	109.3	2,201.7	73.2	1,614.0	82.9	1,030.7	63.9	174.7	32.1	5,751.3	133.4	232.8	35.9	3,526.6	122.3	1,272.7	79.9	29,984.2	156.7								

Table A1-5—Area of forest land, by forest type group and stand age class, Oregon, 2001–2010

Forest type group	Stand age class (years)													
	1–20		21–40		41–60		61–80		81–100		101–120		121–140	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
Thousand acres														
Softwoods:														
Douglas-fir	1,990.7	96.2	2,367.6	106.3	1,536.7	88.3	935.5	70.7	1,192.7	78.7	576.6	55.9	412.8	46.8
Fir/spruce/mountain hemlock	162.6	29.7	194.7	32.1	318.1	43.4	518.8	53.8	654.3	59.6	359.1	43.7	276.5	38.8
Hemlock/Sitka spruce	99.8	21.8	216.4	34.6	200.4	33.8	79.0	20.5	60.5	18.1	54.9	16.9	13.8	8.7
Lodgepole pine	373.2	43.8	330.7	42.2	378.7	46.3	416.1	47.6	351.4	43.6	116.9	25.7	27.7	12.5
Ponderosa pine	306.3	40.2	393.3	46.2	851.5	67.1	1,381.0	84.9	1,163.4	78.2	312.9	41.5	182.9	31.8
Western juniper	87.5	21.9	181.3	33.1	510.2	54.6	782.7	65.8	526.5	55.2	169.4	31.4	77.8	21.3
Western larch	45.3	15.9	17.2	9.4	13.7	9.3	8.4	6.3	42.6	14.7	23.8	11.2	11.4	8.2
Other western softwoods	8.1	5.8	12.2	8.2	8.7	6.5	8.1	6.2	18.9	10.0	18.8	10.5	7.6	7.1
Total	3,073.6	119.5	3,713.4	133.1	3,818.1	138.2	4,129.8	142.0	4,010.3	137.9	1,632.5	92.4	1,010.4	73.3
Hardwoods:														
Alder/maple	258.0	37.1	362.3	41.8	309.2	39.7	123.7	25.0	33.8	11.9	19.8	10.8	9.8	5.6
Aspen/birch	11.3	7.9	7.9	6.4	7.7	5.9	10.7	7.7	9.4	5.7	—	—	—	—
Elm/ash/cottonwood	20.6	9.4	13.8	9.3	2.7	1.8	20.5	10.4	8.8	6.2	—	—	—	—
Tanoak/laurel	202.5	33.0	88.5	22.2	123.6	26.7	53.2	17.0	70.5	19.3	11.3	8.0	12.8	8.8
Western oak	62.5	18.1	48.1	16.6	197.8	33.3	221.1	35.5	153.0	29.6	34.6	13.6	48.7	16.8
Woodland hardwoods	6.8	6.0	14.8	8.9	26.9	11.6	27.3	13.2	68.4	20.2	5.6	6.0	4.5	4.5
Other hardwoods	56.0	17.9	100.0	23.7	94.8	23.7	93.1	22.8	51.1	16.4	21.4	10.6	3.2	3.3
Total	617.8	56.8	635.5	56.5	762.6	62.8	549.5	54.6	394.9	46.0	92.8	22.6	79.0	20.6
Nonstocked	—	—	—	—	—	—	—	—	—	—	—	—	—	—
All forest types	3,691.4	128.9	4,348.8	140.1	4,580.7	148.6	4,679.3	150.8	4,405.2	144.1	1,725.2	95.1	1,089.4	76.0

— = not available. SE = standard error.

Table A1-5—Area of forest land, by forest type group and stand age class, Oregon, 2001–2010 (continued)

Forest type group	Stand age class (years)											
	141–160		161–180		181–200		201 plus		Unknown		All classes	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
Thousand acres												
Softwoods:												
Douglas-fir	380.4	45.0	176.6	31.0	254.8	37.3	1,022.0	70.3	7.7	6.5	10,854.1	167.7
Fir/spruce/mountain hemlock	274.5	39.2	180.1	32.3	276.7	39.9	465.2	50.5	—	—	3,680.6	129.8
Hemlock/Sitka spruce	24.1	12.0	5.8	3.9	34.7	13.7	143.4	26.5	—	—	932.7	68.8
Lodgepole pine	12.6	8.3	5.8	5.8	11.7	8.3	—	—	—	—	2,024.8	98.8
Ponderosa pine	208.4	34.2	94.5	22.7	106.1	24.2	169.1	30.4	—	—	5,169.5	141.4
Western juniper	89.0	23.1	45.3	16.5	102.6	25.3	185.0	33.1	9.9	7.6	2,767.2	113.4
Western larch	17.3	10.0	—	—	5.9	5.9	11.3	8.2	—	—	197.0	32.5
Other western softwoods	—	—	5.9	6.0	—	—	6.4	6.3	—	—	94.7	22.7
Total	1,006.2	73.5	514.0	53.3	792.6	66.3	2,002.4	98.1	17.6	10.0	25,720.7	189.8
Hardwoods:												
Alder/maple	12.2	7.1	17.0	9.8	3.4	2.4	11.6	7.8	—	—	1,160.9	72.2
Aspen/birch	—	—	—	—	0.8	0.8	—	—	—	—	47.7	15.8
Elm/ash/cottonwood	8.2	7.3	—	—	—	—	—	—	0.4	0.5	74.9	19.4
Tanoak/laurel	4.4	4.4	6.3	6.1	—	—	29.4	11.3	—	—	602.4	55.3
Western oak	4.6	4.5	—	—	—	—	—	—	20.5	9.5	791.0	64.8
Woodland hardwoods	5.3	5.6	—	—	—	—	—	—	6.8	6.2	166.4	31.1
Other hardwoods	—	—	7.4	6.6	3.9	4.3	—	—	—	—	430.9	48.6
Total	34.8	13.2	30.6	13.3	8.1	5.0	40.9	13.6	27.7	11.4	3,274.3	119.0
Nonstocked	—	—	—	—	—	—	—	—	989.2	71.8	989.2	71.8
All forest types	1,041.0	74.6	544.7	54.9	800.7	66.5	2,043.3	98.9	1,034.5	73.3	29,984.2	156.7

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50 ac was estimated.

Table A1-6—Number of live trees^a on forest land, by county and land status, Oregon, 2001–2010

County	Land status											
	Unreserved forests						Reserved forests					
	Timberland		Other forest		Productive		Other forest		Total		All forest land	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
<i>Thousand trees</i>												
Western Oregon:												
Benton	60,048.8	10,905.3	5,890.2	5,876.4	65,939.0	12,352.4	—	—	—	—	65,939.0	12,352.4
Clackamas	314,243.1	40,384.5	—	—	314,243.1	40,384.5	49,283.4	11,624.9	49,283.4	11,624.9	363,526.5	40,937.6
Clatsop	157,011.9	22,817.7	—	—	157,011.9	22,817.7	112.3	113.3	112.3	113.3	157,124.2	22,817.7
Columbia	101,654.2	21,791.3	273.1	271.6	101,927.3	21,803.0	—	—	5.1	5.9	101,932.4	21,802.7
Coos	276,674.7	30,782.4	3,692.5	2,749.9	280,367.1	30,891.7	2,263.2	1,585.4	2,263.2	1,585.4	282,630.3	30,914.1
Curry	454,094.2	55,998.9	7,915.7	6,832.7	462,009.9	56,194.7	64,169.6	23,989.4	1,128.7	1,021.0	527,308.3	60,360.8
Douglas	938,941.0	53,550.9	38,366.7	14,599.5	977,307.7	55,115.0	48,135.8	13,336.9	12,368.7	6,947.5	1,037,812.2	56,173.5
Hood River	82,860.2	17,548.8	1,503.1	1,098.5	84,363.3	17,575.2	29,577.7	10,041.9	—	—	113,941.0	19,806.4
Jackson	512,850.5	44,288.7	49,812.6	12,952.3	562,663.1	45,890.7	14,855.7	5,420.5	10,360.9	6,090.5	587,879.7	46,387.2
Josephine	489,198.7	52,961.0	19,147.1	10,581.1	508,345.7	53,939.4	10,463.9	6,173.3	142.2	142.6	518,951.8	54,226.3
Lane	667,243.4	39,399.1	17,475.6	8,868.1	684,719.0	40,030.4	79,597.4	15,833.9	7,121.1	7,372.0	771,437.4	41,704.3
Lincoln	157,393.7	20,398.3	169.5	156.4	157,563.2	20,403.3	1,675.3	1,450.2	—	—	159,238.4	20,442.3
Linn	313,906.2	33,286.4	1,234.1	880.1	315,140.3	33,291.8	20,409.1	8,604.2	—	—	335,549.5	34,132.9
Marion	72,903.4	12,661.0	4,804.0	3,927.9	77,707.4	13,250.5	39,660.9	14,857.4	175.9	177.0	117,544.2	19,501.3
Multnomah	12,028.4	5,099.7	44.0	41.6	12,072.4	5,099.9	23,282.0	9,108.4	—	—	35,354.4	10,400.0
Polk	71,843.4	14,571.5	6,864.8	4,044.2	78,708.2	15,058.9	—	—	—	—	78,708.2	15,058.9
Tillamook	134,758.0	15,364.3	—	—	134,758.0	15,364.3	204.7	212.5	204.7	212.5	134,962.6	15,365.1
Washington	47,764.2	8,929.9	—	—	47,764.2	8,929.9	1,332.7	1,400.8	—	—	49,096.9	9,029.4
Yamhill	55,112.4	12,334.8	1,026.8	982.6	56,139.2	12,355.7	343.5	357.9	—	—	56,482.6	12,360.9
Total	4,920,530.4	111,067.0	158,219.5	26,268.0	5,078,749.9	111,554.6	385,367.2	39,893.9	31,302.6	11,865.2	5,495,419.7	112,640.9

Table A1-7—Number of live trees^a on forest land, by species group and diameter class, Oregon, 2001–2010 (continued)

Species group	Diameter class (inches)									
	13.0–14.9		15.0–16.9		17.0–18.9		19.0–20.9		21.0–22.9	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
<i>Thousand trees</i>										
Softwoods:										
Douglas-fir	105,602.6	3,433.9	79,574.2	2,667.5	56,791.9	2,113.5	42,262.6	1,647.9	29,749.1	1,340.7
Engelmann and other spruces	1,971.0	357.2	1,937.0	358.7	1,129.5	211.2	731.9	181.2	890.8	237.7
Incense cedar	3,369.1	483.4	1,659.2	314.9	1,129.9	231.1	1,111.2	226.1	756.5	174.6
Lodgepole pine	10,523.0	914.0	4,561.1	524.3	2,487.7	356.7	895.4	203.2	560.4	150.8
Ponderosa and Jeffrey pines	39,379.6	1,855.7	24,109.7	1,226.4	16,141.9	944.0	11,150.0	742.1	7,511.1	596.1
Sitka spruce	2,097.5	444.7	1,646.4	413.8	1,690.0	431.8	793.6	227.7	1,243.2	298.1
Sugar pine	425.8	124.1	615.7	209.2	343.4	112.3	391.8	129.8	89.8	58.0
True fir	34,177.1	1,624.5	23,269.7	1,231.4	18,315.9	1,070.4	12,426.2	846.3	9,133.8	715.2
Western hemlock	20,947.2	1,459.2	16,289.8	1,198.5	10,293.1	844.5	7,315.9	630.0	5,329.6	525.1
Western juniper	8,314.3	664.9	5,742.1	550.2	4,121.1	455.4	2,400.0	327.6	1,263.3	228.4
Western larch	2,193.4	375.3	2,292.9	323.7	1,482.2	280.9	1,322.1	264.0	570.0	158.0
Western redcedar	3,079.5	442.5	2,565.4	355.0	1,972.3	296.5	1,438.7	299.0	1,178.1	225.4
Other western softwoods	11,168.6	1,071.1	8,912.6	994.2	6,964.6	783.1	5,470.5	664.4	3,451.5	451.7
Total	243,248.6	4,656.3	173,175.8	3,634.8	122,863.6	2,901.4	87,709.9	2,274.1	61,727.2	1,846.9
Hardwoods:										
Cottonwood and aspen	333.2	145.0	198.5	104.8	197.0	85.9	183.1	83.7	107.7	62.8
Oak	3,220.0	439.8	2,508.2	379.6	1,296.0	318.3	952.7	205.8	775.0	231.2
Red alder	13,536.6	1,138.0	8,018.6	765.2	3,915.5	460.0	3,072.4	417.3	880.1	190.1
Woodland hardwoods	1,232.5	290.7	778.4	203.8	336.3	126.3	103.8	62.8	143.7	73.2
Other western hardwoods	13,766.0	979.4	8,226.3	802.5	5,036.8	546.7	2,006.2	304.0	2,490.6	359.8
Total	32,088.4	1,615.1	19,730.1	1,204.5	10,781.7	798.3	6,318.1	567.7	4,397.1	484.0
All species groups	275,337.0	4,881.8	192,905.9	3,777.8	133,645.2	3,015.3	94,028.1	2,356.8	66,124.3	1,901.3
									49,018.1	1,529.5

Table A1-7—Number of live trees^a on forest land, by species group and diameter class, Oregon, 2001–2010 (continued)

Species group	Diameter class (inches)											
	25.0–26.9		27.0–28.9		29.0–30.9		31.0–32.9		33.0–34.9		35.0–36.9	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
Thousand trees												
Softwoods:												
Douglas-fir	17,682.3	942.6	12,440.9	798.0	9,876.0	551.6	7,543.9	358.2	6,636.1	310.6	5,592.1	276.9
Engelmann and other spruces	208.2	42.2	116.4	28.5	109.0	31.4	85.1	27.8	64.5	21.2	51.5	24.3
Incense cedar	308.0	103.0	544.0	147.0	202.9	76.0	201.8	36.5	172.6	34.9	133.5	30.7
Lodgepole pine	43.9	20.1	24.0	12.0	32.8	16.4	5.8	5.8	—	—	6.6	6.3
Ponderosa and Jeffrey pines	3,965.1	219.6	3,470.7	210.6	2,700.4	165.9	1,958.7	138.1	1,504.5	111.0	925.1	85.9
Sitka spruce	531.0	221.2	425.1	149.0	215.8	83.8	147.3	36.1	130.4	35.7	61.3	21.2
Sugar pine	241.0	85.1	237.3	92.3	207.6	73.2	123.6	36.2	133.9	31.2	122.7	29.4
True fir	4,437.7	369.8	3,357.4	317.1	2,739.8	251.8	1,679.9	142.2	1,249.0	117.8	937.5	105.2
Western hemlock	2,966.3	335.0	1,998.8	288.1	1,235.0	181.2	892.4	97.7	600.3	89.8	389.9	56.0
Western juniper	611.3	77.4	453.9	61.9	314.2	48.8	207.3	42.6	181.2	38.0	93.1	27.1
Western larch	282.8	54.9	167.6	32.9	146.2	33.5	124.3	34.7	45.7	21.7	39.4	17.2
Western redcedar	1,164.9	249.1	694.4	171.0	541.4	112.1	471.0	77.3	356.3	64.7	273.9	54.2
Other western softwoods	1,466.8	212.9	1,155.7	192.0	912.5	157.8	445.9	65.5	344.1	57.5	188.2	45.5
Total	33,909.3	1,154.9	25,086.4	993.8	19,233.7	716.5	13,886.9	445.0	11,418.6	378.8	8,815.1	331.1
Hardwoods:												
Cottonwood and aspen	8.2	7.3	127.0	67.5	43.3	40.8	28.6	16.3	32.9	17.7	—	—
Oak	508.2	158.9	85.0	57.6	96.3	54.1	69.7	21.0	13.1	9.1	12.6	9.0
Red alder	642.2	161.0	193.9	85.1	149.0	68.2	29.8	13.3	25.3	12.7	18.8	10.9
Woodland hardwoods	—	—	—	—	—	—	—	—	—	—	—	—
Other western hardwoods	879.6	199.0	637.6	155.3	292.6	92.3	234.0	45.5	54.9	20.5	127.3	28.3
Total	2,038.2	304.2	1,043.5	197.3	581.2	133.3	362.1	56.5	126.1	31.1	158.7	31.6
All species groups	35,947.5	1,194.6	26,129.8	1,011.8	19,814.9	727.4	14,249.0	448.7	11,544.7	380.8	8,973.8	332.7

Species group	Diameter class (inches)															
	5.0–6.9		7.0–8.9		9.0–10.9		11.0–12.9		13.0–14.9		15.0–16.9		17.0–18.9		19.0–20.9	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
Thousand trees																
Softwoods:																
Douglas-fir	54,428.8	2,570.1	36,082.1	1,833.3	22,705.4	1,322.3	13,703.3	843.3	10,029.8	688.1	7,702.3	594.9	6,336.3	522.3	5,521.4	477.4
Engelmann and other spruces	1,511.5	359.7	848.8	323.2	650.8	207.5	343.7	121.4	380.6	125.6	310.5	104.5	103.9	60.5	208.4	85.9
Incense cedar	1,891.6	524.1	693.4	193.0	781.1	208.5	364.0	116.0	118.9	66.0	73.2	51.6	169.6	93.3	203.0	121.6
Lodgepole pine	25,881.6	2,131.7	17,231.8	1,465.2	12,307.6	1,192.3	6,211.5	864.9	3,238.1	465.9	1,261.1	271.8	483.1	139.7	148.5	73.6
Ponderosa and Jeffrey pines	11,838.5	1,203.7	6,490.9	655.7	4,014.8	518.5	3,172.0	478.4	2,036.3	299.2	1,489.7	273.1	986.4	186.6	711.8	167.0
Sitka spruce	1,456.6	437.1	735.9	200.3	818.9	369.9	343.3	146.9	280.7	134.1	117.8	67.5	—	—	76.8	52.3
Sugar pine	373.5	125.8	466.1	171.7	299.0	104.8	89.7	57.9	142.5	87.2	142.2	71.0	198.7	100.0	160.8	76.8
True fir	33,861.2	2,620.8	22,379.8	1,688.5	15,160.5	1,122.5	11,350.1	844.0	8,352.7	727.0	5,460.7	553.5	4,560.7	458.2	2,842.7	355.2
Western hemlock	9,649.1	1,445.9	5,220.1	762.0	3,359.6	434.0	1,928.7	294.8	847.7	176.3	924.0	208.0	745.3	165.1	643.3	160.2
Western juniper	1,635.5	268.9	1,408.0	272.5	787.8	180.9	421.7	126.5	520.1	148.7	314.7	121.4	140.6	72.5	115.1	67.0
Western larch	1,651.3	301.9	1,826.4	402.6	1,326.3	292.4	1,055.6	245.2	493.1	132.8	602.0	161.7	558.4	147.8	209.4	85.7
Western redcedar	717.7	183.2	555.5	141.7	333.2	108.0	167.5	77.9	138.9	87.5	177.0	79.9	100.3	60.3	193.5	83.5
Other western softwoods	10,827.5	1,149.4	7,599.7	888.1	5,687.6	726.3	4,333.2	539.8	3,474.0	467.1	2,627.5	427.0	1,927.4	323.8	1,755.4	301.3
Total	155,724.3	5,179.1	101,538.5	3,374.3	68,232.5	2,476.4	43,484.4	1,720.5	30,053.4	1,305.2	21,202.8	1,052.0	16,310.5	857.0	12,790.1	737.1
Hardwoods:																
Cottonwood and aspen	663.7	227.9	220.2	129.6	180.7	98.8	182.0	95.5	35.7	35.5	35.7	35.5	—	—	—	—
Oak	5,612.7	899.0	2,176.5	517.6	1,286.5	315.7	818.3	221.1	155.5	77.5	191.5	98.6	217.2	91.4	129.0	70.7
Red alder	6,258.3	763.5	4,356.9	545.2	2,111.4	337.2	1,508.7	286.1	776.2	193.3	629.5	178.5	260.2	109.2	236.9	92.7
Woodland hardwoods	2,680.1	443.7	2,019.4	387.2	960.9	229.0	697.2	173.8	204.8	99.2	155.8	94.2	—	—	—	—
Other western hardwoods	22,906.4	2,439.4	10,292.1	1,254.3	4,803.4	693.5	2,669.8	419.6	1,136.4	269.6	744.6	172.4	367.2	118.3	217.0	115.6
Total	38,121.3	2,924.5	19,065.1	1,539.6	9,342.9	887.0	5,876.0	603.9	2,308.6	355.8	1,757.2	293.4	844.5	184.9	583.0	163.9
All species groups	193,845.6	6,024.1	120,603.6	3,708.9	77,575.4	2,604.6	49,360.4	1,811.9	32,362.0	1,352.4	22,960.0	1,089.9	17,155.0	876.7	13,373.1	756.6

Table A1-8—Number of dead trees^a on forest land, by species group and diameter class, Oregon, 2001–2010 (continued)

Species group	Diameter class (inches)											
	21.0–22.9		23.0–24.9		25.0–26.9		27.0–28.9		29.0–30.9		31.0–32.9	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
<i>Thousand trees</i>												
Softwoods:												
Douglas-fir	4,088.5	408.1	3,211.6	339.9	3,269.6	344.1	2,640.0	305.3	2,261.7	248.2	1,591.7	113.6
Engelmann and other spruces	173.2	78.1	121.2	61.7	105.6	41.6	95.6	42.6	33.4	14.0	17.2	10.0
Incense cedar	142.2	71.0	76.9	50.6	128.5	68.8	12.4	8.5	72.0	38.6	31.0	13.8
Lodgepole pine	176.8	79.5	47.7	36.5	22.4	11.6	20.5	11.4	—	—	5.8	5.8
Ponderosa and Jeffrey pines	830.5	179.7	747.9	151.3	469.4	64.2	400.4	53.9	362.4	49.4	231.2	38.0
Sitka spruce	—	—	35.2	35.4	—	—	—	—	99.9	61.2	12.4	8.8
Sugar pine	119.6	66.3	144.4	72.4	11.0	8.2	84.0	56.0	41.8	36.2	41.9	17.9
True fir	2,840.8	351.7	1,557.4	223.1	1,107.1	172.0	908.1	137.8	767.3	115.6	494.4	61.5
Western hemlock	273.0	110.4	236.4	90.0	103.9	60.9	206.1	86.2	249.3	84.8	160.5	34.2
Western juniper	42.2	40.3	68.5	42.3	63.8	22.1	28.2	13.0	18.1	10.8	40.2	18.7
Western larch	169.0	77.0	128.6	53.8	88.7	24.3	59.3	20.4	41.3	17.6	37.3	17.3
Western redcedar	226.6	91.3	105.1	61.4	37.2	38.1	70.4	70.8	41.1	35.9	78.7	24.7
Other western softwoods	1,176.8	227.9	521.8	124.3	542.4	121.2	424.0	115.3	420.2	100.9	216.7	45.3
Total	10,259.2	663.2	7,002.5	481.4	5,949.7	427.6	4,949.0	395.9	4,408.4	323.3	2,959.0	153.0
Hardwoods:												
Cottonwood and aspen	—	—	—	—	—	—	—	—	—	—	—	—
Oak	35.5	35.6	108.3	63.7	83.4	54.9	—	—	—	—	—	—
Red alder	112.4	65.3	87.2	57.1	102.6	62.8	113.3	64.8	47.9	43.2	—	—
Woodland hardwoods	—	—	—	—	—	—	—	—	—	—	—	—
Other western hardwoods	118.7	67.6	35.6	35.7	113.0	65.9	84.3	57.1	12.9	9.1	—	—
Total	266.7	100.5	231.2	92.8	299.1	106.3	197.6	86.3	60.8	44.1	—	—
All species groups	10,525.8	669.9	7,233.7	489.7	6,248.8	440.1	5,146.6	404.9	4,469.3	326.3	2,959.0	153.0
											2,689.0	145.9
											2,272.4	135.7

Table A1-9—Number of growing-stock trees^a on timberland, by species group and diameter class, Oregon, 2001–2010

Species group	Diameter class (inches)															
	5.0–6.9		7.0–8.9		9.0–10.9		11.0–12.9		13.0–14.9		15.0–16.9		17.0–18.9		19.0–20.9	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
Softwoods:																
Douglas-fir	284,301.4	9,673.5	242,674.8	8,165.2	191,446.7	6,281.6	139,074.1	4,700.1	97,753.7	3,346.2	73,258.2	2,563.9	51,739.3	2,036.7	37,807.0	1,570.5
Engelmann and other spruces	4,055.9	702.3	2,728.4	538.1	2,703.1	539.6	2,026.0	357.9	1,648.7	338.5	1,481.5	322.0	888.4	191.0	496.5	149.6
Incense cedar	11,973.5	1,189.7	6,405.7	741.0	5,101.7	628.7	2,869.3	382.7	3,027.2	468.2	1,448.5	291.6	1,060.1	225.8	969.0	196.7
Lodgepole pine	115,347.2	7,802.8	66,880.5	4,257.0	36,254.8	2,320.9	16,688.4	1,215.5	7,598.4	771.2	3,576.8	461.3	1,495.6	263.2	613.0	169.8
Ponderosa and Jeffrey pines	119,052.8	5,824.5	85,287.1	3,567.2	69,843.0	2,872.9	47,789.9	2,131.0	37,965.7	1,837.1	23,250.3	1,215.6	15,582.4	935.4	10,426.9	718.9
Sitka spruce	3,056.6	519.4	2,406.3	553.6	2,115.2	604.8	1,789.5	430.2	1,701.5	397.1	1,296.8	382.5	1,135.1	293.7	406.8	140.6
Sugar pine	1,743.8	456.1	1,445.3	327.0	956.9	267.5	477.9	164.9	390.2	119.0	567.3	204.8	295.0	103.8	356.2	124.8
True fir	121,407.6	5,915.8	80,084.4	3,844.5	53,425.0	2,655.7	38,537.2	1,989.4	26,111.6	1,409.3	17,907.7	1,091.7	14,424.3	963.0	9,499.1	755.3
Western hemlock	58,938.3	3,525.6	44,451.9	2,679.5	32,386.3	2,134.0	25,710.3	1,795.6	19,237.7	1,406.0	15,115.3	1,170.0	9,643.0	831.6	6,671.1	613.8
Western juniper	8,294.3	955.7	6,111.6	795.2	3,825.2	552.8	2,083.9	346.0	1,396.4	252.1	957.5	233.7	546.7	152.3	240.8	92.1
Western larch	3,580.9	567.5	3,568.8	491.9	3,273.2	505.3	2,822.3	399.7	1,703.2	336.6	2,010.1	301.1	1,061.4	223.9	1,045.3	235.8
Western redcedar	11,325.3	1,238.8	7,247.1	808.2	4,367.6	563.1	4,318.4	552.9	2,758.8	425.0	2,321.5	344.0	1,759.1	279.9	1,232.1	283.1
Other western softwoods	24,007.6	2,578.6	14,126.1	1,705.6	8,809.4	1,114.4	7,853.4	1,058.1	4,251.7	597.7	2,780.6	477.9	2,278.0	369.7	2,054.3	350.2
Total	767,085.3	15,895.5	563,418.1	11,189.0	414,508.3	8,219.4	292,040.5	6,054.9	205,544.8	4,467.5	145,972.1	3,434.6	101,908.5	2,706.6	71,818.1	2,089.6
Hardwoods:																
Cottonwood and aspen	885.9	345.1	311.4	165.2	643.8	279.4	400.4	216.9	260.1	135.1	112.7	87.2	117.1	66.3	102.1	62.9
Oak	24,059.5	2,401.9	13,235.2	1,460.2	6,516.7	947.0	3,687.4	519.3	2,139.4	356.9	1,434.1	265.0	772.3	179.9	557.0	156.4
Red alder	44,560.9	3,457.8	34,452.6	2,567.7	25,723.4	1,855.9	19,315.5	1,527.7	13,316.0	1,134.6	7,682.9	758.6	3,617.7	445.3	2,885.7	408.0
Other western hardwoods	102,255.0	5,120.0	63,386.4	3,595.2	37,335.3	2,340.2	21,278.0	1,636.9	12,688.3	947.7	7,581.7	774.9	4,691.2	523.2	1,816.3	287.3
Total	171,761.3	6,758.3	111,385.6	4,705.6	70,219.0	3,159.8	44,681.3	2,310.7	28,403.7	1,544.4	16,811.3	1,132.8	9,198.4	717.6	5,361.0	531.2
All species groups	938,846.5	17,669.1	674,803.7	12,185.4	484,727.3	8,721.6	336,721.8	6,388.1	233,948.5	4,708.5	162,783.3	3,583.8	111,106.9	2,815.6	77,179.0	2,174.7

Table A1-9—Number of growing-stock trees^a on timberland, by species group and diameter class, Oregon, 2001–2010 (continued)

Species group	Diameter class (inches)															
	21.0–22.9		23.0–24.9		25.0–26.9		27.0–28.9		29.0–30.9		31.0–32.9		33.0–34.9		35.0–36.9	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
Thousand trees																
Softwoods:																
Douglas-fir	26,457.9	1,271.0	20,096.3	1,112.1	15,648.3	907.9	10,756.3	701.3	8,763.0	525.0	6,573.0	328.2	6,055.9	303.4	4,960.6	263.6
Engelmann and other spruces	645.2	181.8	341.0	121.6	121.1	29.8	64.4	21.1	74.6	28.1	50.7	23.9	40.6	17.6	40.2	22.9
Incense cedar	681.3	166.9	315.3	117.6	302.2	102.9	424.6	131.6	114.9	53.5	181.8	34.8	144.5	31.1	110.0	25.6
Lodgepole pine	449.0	136.5	123.0	53.0	38.1	19.3	17.7	10.2	32.8	16.4	5.8	5.8	—	—	—	—
Ponderosa and Jeffrey pines	7,076.1	582.1	5,644.9	420.0	3,682.3	215.1	3,154.2	201.8	2,462.5	159.3	1,821.9	134.5	1,355.7	105.5	830.1	82.5
Sitka spruce	722.4	198.0	367.9	142.0	211.2	103.8	187.0	84.1	104.2	55.1	118.1	27.1	88.0	28.1	55.8	20.5
Sugar pine	89.8	58.0	392.2	118.9	241.0	85.1	201.7	85.3	187.7	72.5	117.8	35.7	126.7	30.5	103.7	27.5
True fir	6,443.5	593.0	4,845.7	449.2	3,366.2	333.6	2,486.8	281.6	1,982.9	221.9	1,074.3	112.0	853.9	97.0	653.3	80.3
Western hemlock	4,784.1	507.4	3,867.9	431.7	2,574.6	316.7	1,821.0	278.4	1,067.7	169.1	788.7	92.2	520.8	83.5	348.8	53.4
Western juniper	245.4	93.6	144.9	65.8	65.2	25.7	51.2	22.4	16.9	12.8	11.3	8.1	9.0	7.6	5.9	5.9
Western larch	365.6	114.7	416.5	121.6	212.6	48.1	110.3	25.3	88.3	25.8	100.7	30.5	11.1	11.4	16.6	12.7
Western redcedar	1,144.9	222.8	922.7	200.3	1,063.3	231.8	592.8	153.2	448.7	103.5	408.1	72.7	298.8	60.0	212.9	48.1
Other western softwoods	1,589.8	319.9	1,343.5	268.9	623.6	140.9	587.1	148.2	375.7	108.5	214.3	50.8	160.4	39.9	93.5	29.9
Total	50,694.8	1,701.8	38,821.7	1,415.0	28,149.7	1,093.3	20,455.1	888.3	15,719.8	668.2	11,466.5	410.1	9,665.5	362.3	7,431.4	307.6
Hardwoods:																
Cottonwood and aspen	107.7	62.8	45.1	38.5	8.2	7.3	127.0	67.5	43.3	40.8	11.3	8.3	26.7	16.5	—	—
Oak	182.3	83.2	43.3	40.8	191.8	100.5	85.0	57.6	59.3	38.8	39.9	15.9	13.1	9.1	5.4	6.0
Red alder	845.4	186.7	839.8	231.0	495.0	134.7	160.8	77.9	149.0	68.2	23.7	12.0	18.8	10.9	13.3	9.3
Other western hardwoods	2,279.3	343.2	930.4	200.4	803.1	192.0	589.7	149.2	273.3	91.6	204.0	43.5	54.9	20.5	113.3	26.7
Total	3,414.7	413.2	1,858.7	318.1	1,498.0	259.9	962.3	189.7	524.9	127.5	278.9	51.0	113.5	29.8	132.0	28.8
All species groups	54,109.6	1,748.7	40,680.4	1,444.3	29,647.7	1,126.8	21,417.4	907.7	16,244.7	679.1	11,745.4	413.8	9,779.0	364.3	7,563.4	309.0

Table A1-9—Number of growing-stock trees^a on timberland, by species group and diameter class, Oregon, 2001–2010 (continued)

Species group	Diameter class (inches)															
	37.0–38.9		39.0–40.9		41.0–42.9		43.0–44.9		45.0–46.9		47.0–48.9		49.0 +		All classes	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
Thousand trees																
Softwoods:																
Douglas-fir	4,106.6	227.6	3,093.5	182.1	2,719.7	174.4	2,247.2	150.5	1,782.1	132.2	1,751.0	129.0	5,875.7	377.9	1,238,942.2	25,803.5
Engelmann and other spruces	24.8	15.1	5.6	6.0	11.9	8.3	—	—	—	—	5.9	5.9	—	—	17,454.4	2,383.7
Incense cedar	123.1	30.1	89.3	23.3	105.7	26.9	79.2	22.0	76.9	23.9	41.9	15.7	203.6	51.4	35,849.3	2,891.8
Lodgepole pine	5.8	5.8	—	—	—	—	—	—	—	—	—	—	5.9	5.9	249,132.9	13,984.6
Ponderosa and Jeffrey pines	478.3	57.9	310.4	46.2	205.8	39.3	96.4	24.0	76.0	22.6	29.4	13.1	102.2	32.2	436,524.2	13,757.7
Sitka spruce	43.4	18.7	50.0	20.0	69.5	24.0	58.6	25.5	45.3	16.8	38.2	23.9	154.1	76.0	16,221.5	2,751.1
Sugar pine	74.1	21.1	56.6	20.2	84.1	25.9	63.9	19.7	47.2	16.6	76.2	21.5	170.1	39.4	8,265.2	1,246.2
True fir	466.5	69.6	262.6	45.1	163.0	37.1	141.6	28.7	77.9	23.0	58.1	18.5	88.9	24.3	384,362.1	15,312.7
Western hemlock	244.2	48.1	163.2	31.3	168.4	34.9	105.2	26.7	55.6	18.5	63.0	21.2	69.4	20.3	228,796.5	10,924.2
Western juniper	5.9	5.9	5.9	5.9	—	—	—	—	—	—	—	—	—	—	24,018.1	2,454.3
Western larch	5.3	5.6	11.5	8.2	—	—	—	—	—	—	5.9	5.9	—	—	20,409.5	1,855.5
Western redcedar	250.0	45.7	162.4	34.4	147.9	33.6	65.4	22.1	100.7	24.6	43.0	18.2	208.1	49.5	41,399.8	3,426.3
Other western softwoods	74.5	26.9	78.0	29.4	44.9	19.5	24.1	14.6	19.6	13.7	55.6	28.6	96.9	35.2	71,542.7	7,003.3
Total	5,902.6	265.1	4,289.1	207.7	3,720.9	202.5	2,881.4	167.6	2,281.3	146.0	2,168.2	141.0	6,975.0	412.4	2,772,918.5	37,407.1
Hardwoods:																
Cottonwood and aspen	5.8	6.0	16.5	13.3	5.8	6.0	—	—	—	—	—	—	7.3	6.9	3,237.9	857.4
Oak	12.0	8.8	6.0	6.2	—	—	—	—	—	—	—	—	6.1	6.3	53,045.7	4,709.9
Red alder	—	—	—	—	—	—	—	—	—	—	—	—	19.8	11.3	154,120.2	8,421.8
Other western hardwoods	72.9	23.0	31.2	13.8	67.6	22.2	14.1	9.5	27.2	13.1	—	—	14.1	9.5	256,507.1	12,049.5
Total	90.6	25.3	53.7	20.2	73.3	23.0	14.1	9.5	27.2	13.1	—	—	47.4	17.4	466,910.9	15,627.2
All species groups	5,993.2	266.5	4,342.7	208.5	3,794.2	203.4	2,895.5	167.9	2,308.5	146.4	2,168.2	141.0	7,022.5	412.9	3,239,829.4	40,504.7

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50 trees were estimated.

^a Includes live growing-stock trees of commercial species that are ≥ 5 inches in diameter at breast height; excludes trees that are classified as rough or rotten-cull.

Table A1-10—Net volume of live trees^a on forest land, by ownership and land status, Oregon, 2001–2010

Ownership	Land status													
	Unreserved forests						Reserved forests							
	Timberland		Other forest		Total		Productive		Other forest		All forest land			
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE		
Million cubic feet														
USDA Forest Service:														
National forest	46,771.9	1,018.7	564.9	94.5	47,336.9	1,013.6	9,816.5	662.7	336.6	95.3	10,153.2	667.5	57,490.0	967.0
National grasslands	—	—	3.0	2.1	3.0	2.1	—	—	—	—	—	—	3.0	2.1
Total	46,771.9	1,018.7	567.9	94.6	47,339.8	1,013.6	9,816.5	662.7	336.6	95.3	10,153.2	667.5	57,493.0	967.0
Other federal government:														
Bureau of Land Management	12,821.5	623.2	411.0	50.3	13,232.5	621.1	394.4	126.7	17.6	8.7	411.9	127.0	13,644.4	613.4
National Park Service	—	—	—	—	—	—	680.0	113.3	73.1	64.3	753.1	119.5	753.1	119.5
U.S. Fish and Wildlife Service	—	—	—	—	—	—	9.8	6.9	1.1	1.3	11.0	7.0	11.0	7.0
Other federal	51.2	39.3	—	—	51.2	39.3	28.2	29.2	—	—	28.2	29.2	79.4	49.0
Total	12,872.7	624.4	411.0	50.3	13,283.7	622.3	1,112.4	172.6	91.8	64.9	1,204.1	176.9	14,487.8	615.5
State and local government:														
Local	416.0	124.3	10.3	6.5	426.3	124.5	130.9	83.9	—	—	130.9	83.9	557.2	150.0
State	4,688.9	378.5	26.4	12.8	4,715.3	378.7	513.8	206.4	—	—	513.8	206.4	5,229.1	421.1
Other public	0.3	0.3	—	—	0.3	0.3	—	—	—	—	—	—	0.3	0.3
Total	5,105.2	396.9	36.7	14.4	5,141.9	397.2	644.6	222.8	—	—	644.6	222.8	5,786.6	445.7
Corporate private	14,692.9	599.2	174.2	65.7	14,867.0	601.0	—	—	—	—	—	—	14,867.0	601.0
Noncorporate private:														
Nongovernmental conservation or natural resource organizations	838.3	171.6	—	—	838.3	171.6	—	—	—	—	—	—	838.3	171.6
Unincorporated partnerships, associations, or clubs	134.1	73.8	4.0	2.6	138.1	73.8	—	—	—	—	—	—	138.1	73.8
Native American	1,116.7	185.2	66.1	35.6	1,182.7	187.1	—	—	—	—	—	—	1,182.7	187.1
Individual	7,009.7	427.7	473.9	63.0	7,483.6	429.5	—	—	—	—	—	—	7,483.6	429.5
Total	9,098.7	492.2	543.9	72.3	9,642.7	493.9	—	—	—	—	—	—	9,642.7	493.9
All private	23,791.6	675.6	718.1	97.2	24,509.7	674.1	—	—	—	—	—	—	24,509.7	674.1
All owners	88,541.5	1,346.5	1,733.6	145.2	90,275.1	1,340.0	11,573.5	719.5	428.4	115.3	12,001.9	725.0	102,277.0	1,304.5

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50,000 cubic feet were estimated.

^a Includes all live trees ≥5 inches in diameter at breast height, consisting of growing-stock, rough-cull, and rotten-cull tree classes.

Table A1-11—Net volume of dead trees^a on forest land, by ownership and land status, Oregon 2001–2010

Ownership	Land status									
	Unreserved forests					Reserved forests				
	Timberland		Other forest		Total	Productive		Other forest		Total
	Total	SE	Total	SE	Total	Total	SE	Total	SE	Total
<i>Million cubic feet</i>										
USDA Forest Service:										
National forest	6,348.5	232.2	218.2	48.6	6,566.7	234.9	161.4	117.2	30.5	2,165.1
Total	6,348.5	232.2	218.4	48.6	6,566.9	234.9	161.4	117.2	30.5	2,165.1
Other federal government:										
Bureau of Land Management	1,001.8	85.4	47.8	10.7	1,049.6	85.5	17.0	2.3	1.5	37.2
Departments of Defense or Energy	—	—	—	—	—	—	—	—	—	—
National Park Service	—	—	—	—	—	—	101.1	10.0	9.7	111.1
U.S. Fish and Wildlife Service	—	—	—	—	—	—	—	—	—	—
Other federal	6.0	4.3	—	—	6.0	4.3	1.9	—	—	1.9
Total	1,007.8	85.5	47.8	10.7	1,055.6	85.6	28.5	12.3	9.8	150.3
State and local government:										
Local	32.8	12.2	—	—	32.8	12.2	3.2	—	—	3.2
State	334.7	40.4	0.9	0.8	335.6	40.4	37.8	—	—	37.8
Other public	—	—	—	—	—	—	—	—	—	—
Total	367.5	42.2	0.9	0.8	368.4	42.2	41.0	—	—	41.0
Corporate private	715.1	45.5	20.4	8.3	735.5	46.1	—	—	—	—
Noncorporate private:										
Nongovernmental conservation or natural resource organizations	64.0	15.7	—	—	64.0	15.7	—	—	—	—
Unincorporated partnerships, associations, or clubs	9.2	4.9	0.3	0.3	9.5	4.9	—	—	—	—
Native American	127.5	31.5	25.8	16.1	153.3	35.0	—	—	—	—
Individual	313.5	27.5	27.4	7.6	340.9	28.4	—	—	—	—
Total	514.2	44.4	53.5	17.8	567.7	47.4	—	—	—	—
All private	1,229.2	60.6	74.0	19.6	1,303.2	63.0	—	—	—	—
All owners	8,953.0	256.2	341.1	53.5	9,294.1	259.2	2,226.9	129.5	32.1	2,356.4
										167.3
										11,650.5

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50,000 cubic feet were estimated.

^a Includes all dead trees ≥5 inches in diameter at breast height; smaller dead trees were not measured in this inventory.

Table A1-12—Net volume of live trees^a on forest land, by county and land status, Oregon, 2001–2010

County	Land status											
	Unreserved forests						Reserved forests					
	Timberland		Other forest		Total		Productive		Other forest		Total	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
<i>Million cubic feet</i>												
Western Oregon:												
Benton	1,928.5	353.0	60.9	60.8	1,989.4	358.0	—	—	—	—	—	—
Clackamas	3,666.3	373.3	—	—	3,666.3	373.3	1,280.3	266.4	—	—	1,280.3	266.4
Clatsop	1,866.9	276.7	—	—	1,866.9	276.7	5.7	5.7	—	—	5.7	5.7
Columbia	992.1	198.4	4.8	4.8	996.8	199.9	—	—	1.1	1.3	1.1	1.3
Coos	3,615.0	438.3	17.9	13.9	3,632.9	438.3	72.2	50.7	—	—	72.2	50.7
Curry	3,632.9	380.6	21.5	20.9	3,654.4	379.9	706.2	196.3	9.6	5.8	715.8	196.3
Douglas	13,852.2	721.9	109.3	42.4	13,961.5	721.7	772.5	215.3	80.5	54.5	853.0	221.1
Hood River	771.0	159.1	7.2	6.1	778.2	159.2	464.1	147.9	—	—	464.1	147.9
Jackson	5,185.3	421.4	161.8	35.6	5,347.0	422.5	263.4	87.0	28.9	23.1	292.3	90.0
Josephine	3,046.4	315.3	50.3	26.5	3,096.7	316.3	183.8	89.7	1.1	1.1	184.9	89.7
Lane	13,751.1	727.2	128.2	50.6	13,879.3	725.9	2,186.7	399.7	30.3	31.3	2,217.0	400.1
Lincoln	3,124.5	442.5	9.9	7.3	3,134.4	442.6	178.4	145.5	—	—	178.4	145.5
Linn	5,135.4	503.7	6.3	4.4	5,141.8	503.7	342.4	131.2	—	—	342.4	131.2
Marion	1,513.1	275.6	43.9	26.4	1,557.0	276.8	561.3	189.5	2.5	2.5	563.8	189.8
Multnomah	313.2	144.3	0.1	0.0	313.2	144.3	510.5	166.1	—	—	510.5	166.1
Polk	1,117.5	257.5	47.9	33.8	1,165.4	259.4	—	—	—	—	—	—
Tillamook	3,387.9	349.1	—	—	3,387.9	349.1	19.4	20.1	—	—	19.4	20.1
Washington	1,182.9	219.3	—	—	1,182.9	219.3	28.1	29.6	—	—	28.1	29.6
Yamhill	1,183.6	249.4	17.2	11.7	1,200.8	249.6	23.6	24.6	—	—	23.6	24.6
Total	69,265.6	1,266.4	687.2	112.2	69,952.8	1,260.1	7,598.4	647.0	154.0	67.2	7,752.4	649.2
											77,705.2	1,215.6

Table A1-12—Net volume of live trees^a on forest land, by county and land status, Oregon, 2001–2010 (continued)

County	Land status											
	Unreserved forests						Reserved forests					
	Timberland		Other forest		Total		Productive		Other forest		Total	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
<i>Million cubic feet</i>												
Eastern Oregon:												
Baker	1,201.7	149.3	30.8	11.1	1,232.5	149.7	60.0	45.0	—	—	60.0	45.0
Crook	660.4	95.2	117.0	16.8	777.4	96.7	65.9	42.0	—	—	65.9	42.0
Deschutes	1,579.5	181.0	138.1	46.4	1,717.6	185.8	313.4	97.3	31.8	24.1	345.3	100.0
Grant	2,811.7	186.8	74.2	23.5	2,885.9	187.4	369.0	86.2	28.1	17.0	397.1	87.7
Harney	809.7	111.0	120.9	21.6	930.6	113.4	—	—	3.9	1.9	3.9	1.9
Jefferson	558.5	109.1	57.6	17.7	616.2	110.0	116.4	59.5	—	—	116.4	59.5
Klamath	4,263.7	284.1	192.5	48.8	4,456.2	287.1	1,647.6	212.5	177.3	87.6	1,824.9	222.8
Lake	1,926.2	175.9	103.1	19.6	2,029.4	176.5	44.9	37.8	18.0	11.8	62.9	39.6
Malheur	5.4	3.9	29.3	10.5	34.7	11.2	—	—	—	—	—	—
Morrow	269.1	57.9	11.9	12.3	281.0	59.1	—	—	—	—	—	—
Umatilla	965.7	124.9	22.3	19.9	988.1	126.4	35.2	23.1	—	—	35.2	23.1
Union	1,324.4	150.7	5.7	4.4	1,330.1	150.8	264.1	81.2	2.9	2.7	267.0	81.2
Wallowa	1,107.4	140.0	1.7	1.7	1,109.1	140.0	1,031.7	159.6	12.4	9.6	1,044.0	159.8
Wasco	1,387.5	219.4	108.1	38.2	1,495.7	221.9	14.1	14.1	—	—	14.1	14.1
Wheeler	404.9	78.4	33.1	6.6	438.0	78.8	12.8	12.9	—	—	12.8	12.9
Total	19,275.8	467.0	1,046.5	92.2	20,322.3	466.3	3,975.1	314.9	274.4	93.6	4,249.5	322.7
All counties	88,541.5	1,346.5	1,733.6	145.2	90,275.1	1,340.0	11,573.5	719.5	428.4	115.3	12,001.9	725.0
											102,277.0	1,304.5

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50,000 cubic feet were estimated.

^a Includes all live trees ≥ 5 inches in diameter at breast height, consisting of growing-stock, rough-cull, and rotten-cull tree classes.

Table A1-13—Net volume of live trees^a on forest land, by forest type group and stand size class, Oregon, 2001–2010

Forest type group	Stand size class							
	Large-diameter stands		Medium-diameter stands		Small-diameter stands		All classes	
	Total	SE	Total	SE	Total	SE	Total	SE
<i>Million cubic feet</i>								
Softwoods:								
Douglas-fir	57,274.9	1,329.5	1,567.2	136.5	352.9	46.2	59,195.0	1,318.0
Fir/spruce/mountain hemlock	14,272.4	681.3	254.4	57.3	185.3	31.0	14,712.1	682.8
Hemlock/Sitka spruce	6,725.6	608.1	81.6	32.2	22.1	10.5	6,829.2	609.8
Lodgepole pine	1,559.0	159.4	685.2	84.4	305.3	33.0	2,549.5	179.4
Ponderosa pine	9,090.3	355.3	181.0	27.6	180.6	28.8	9,451.9	354.9
Western juniper	759.3	55.1	34.6	7.6	45.9	7.7	839.8	55.7
Western larch	439.9	106.4	16.0	14.6	22.9	9.2	478.9	107.6
Other western softwoods	78.3	35.5	11.0	7.2	5.6	3.5	94.8	36.4
Total	90,199.7	1,357.1	2,830.9	175.3	1,120.6	71.5	94,151.2	1,330.6
Hardwoods:								
Alder/maple	3,390.7	309.4	632.9	96.1	41.8	15.6	4,065.3	319.8
Aspen/birch	13.5	13.6	14.8	9.3	9.5	5.8	37.8	17.5
Elm/ash/cottonwood	141.5	62.8	8.3	6.3	5.1	2.6	154.8	63.2
Tanoak/laurel	1,249.0	217.2	379.0	89.9	46.7	14.0	1,674.8	232.8
Western oak	777.7	134.7	308.0	48.3	59.4	15.5	1,145.1	142.9
Woodland hardwoods	83.2	20.7	2.0	1.5	9.7	5.9	94.9	21.6
Other hardwoods	397.6	91.2	357.3	89.5	78.2	23.1	833.1	128.4
Total	6,053.2	407.0	1,702.2	163.9	250.4	35.8	8,005.8	427.4
Nonstocked	—	—	—	—	—	—	120.1	24.6
All forest types	96,252.9	1,349.7	4,533.1	235.3	1,371.0	79.4	102,277.0	1,304.5

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50,000 cubic feet was estimated.

^aIncludes all live trees ≥ 5 inches in diameter at breast height, consisting of growing-stock, rough-cull, and rotten-cull tree classes.

Table A1-14—Net volume of live trees^a on forest land, by forest type group and ownership group, Oregon, 2001–2010

Forest type group	Ownership group														
	USDA Forest Service			Other federal		State and local government		Corporate		Noncorporate		Private			
	Total	SE		Total	SE	Total	SE	Total	SE	Total	SE	Total	SE		
Million cubic feet															
Softwoods:															
Douglas-fir	30,054.0	992.4		11,042.6	621.2	3,981.6	404.6	9,181.1	514.3	4,935.6	415.0	14,116.7	615.9	59,195.0	1,318.0
Fir/spruce/mountain hemlock	12,369.1	634.4		1,139.2	197.9	94.5	51.4	575.4	91.5	533.9	121.1	1,109.3	149.7	14,712.1	682.8
Hemlock/Sitka spruce	3,475.0	461.2		428.0	143.7	594.4	194.4	1,836.2	282.8	495.6	145.0	2,331.8	314.5	6,829.2	609.8
Lodgepole pine	1,990.0	155.0		224.1	66.6	30.2	20.8	177.8	33.1	127.4	44.6	305.2	54.7	2,549.5	179.4
Ponderosa pine	6,909.1	298.0		506.5	119.5	142.8	54.9	822.5	85.1	1,071.0	123.8	1,893.5	144.0	9,451.9	354.9
Western juniper	229.7	36.2		310.1	30.7	21.3	7.6	47.8	15.0	230.9	24.6	278.7	28.4	839.8	55.7
Western larch	469.7	107.5		—	—	—	—	1.7	1.3	7.5	5.2	9.2	5.4	478.9	107.6
Other western softwoods	64.9	28.2		23.5	22.1	—	—	5.6	6.2	0.8	0.6	6.4	6.2	94.8	36.4
Total	55,561.6	979.9		13,674.1	629.0	4,864.8	438.3	12,648.0	570.2	7,402.8	464.1	20,050.7	666.6	94,151.2	1,330.6
Hardwoods:															
Alder/maple	690.5	136.5		122.8	46.9	767.6	148.8	1,350.7	199.8	1,133.7	156.8	2,484.4	246.1	4,065.3	319.8
Aspen/birch	14.3	9.4		3.6	1.9	—	—	1.5	1.4	18.4	14.6	19.8	14.6	37.8	17.5
Elm/ash/cottonwood	—	—		1.1	1.3	23.6	24.6	4.3	3.2	125.8	58.1	130.1	58.2	154.8	63.2
Tanoak/laurel	908.1	180.7		154.0	72.8	—	—	373.4	105.2	239.3	72.8	612.7	126.7	1,674.8	232.8
Western oak	183.0	48.0		248.8	67.8	52.5	28.5	242.6	86.5	418.2	73.5	660.8	112.8	1,145.1	142.9
Woodland hardwoods	32.9	11.0		19.1	11.1	—	—	4.7	3.7	38.2	14.5	42.9	14.9	94.9	21.6
Other hardwoods	53.4	22.0		261.9	77.6	57.5	28.6	228.5	76.7	231.9	59.8	460.4	96.6	833.1	128.4
Total	1,882.2	226.4		811.3	131.0	901.2	154.6	2,205.7	249.3	2,205.4	200.6	4,411.1	305.6	8,005.8	427.4
Nonstocked	49.3	10.7		2.4	1.4	20.6	16.4	13.4	5.2	34.5	13.9	47.9	14.8	120.1	24.6
All forest types	57,493.0	967.0		14,487.8	615.5	5,786.6	445.7	14,867.0	601.0	9,642.7	493.9	24,509.7	674.1	102,277.0	1,304.5

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50,000 cubic feet was estimated.

^a Includes all live trees ≥ 5 inches in diameter at breast height, consisting of growing-stock, rough-cull, and rotten-cull tree classes.

Table A1-15—Net volume of live trees^a on forest land, by species group and diameter class, Oregon, 2001–2010

Species group	Diameter class (inches)															
	5.0–6.9		7.0–8.9		9.0–10.9		11.0–12.9		13.0–14.9		15.0–16.9		17.0–18.9		19.0–20.9	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
Million cubic feet																
Softwoods:																
Douglas-fir	739.9	25.6	1,730.9	58.2	2,664.6	87.4	3,254.0	112.4	3,486.1	119.7	3,714.2	132.7	3,501.3	137.7	3,450.1	143.3
Engelmann and other spruces	12.2	1.7	20.5	3.3	37.8	6.2	57.5	9.1	60.9	11.7	88.2	16.8	68.6	13.4	54.5	13.8
Incense cedar	28.1	2.8	33.2	3.8	44.2	5.5	41.1	5.5	59.2	8.6	41.4	8.0	36.5	7.7	50.9	10.5
Lodgepole pine	336.3	23.0	548.9	33.6	586.1	36.4	448.9	31.9	296.8	27.0	172.9	20.2	124.4	18.4	57.4	13.4
Ponderosa and Jeffrey pines	172.7	8.4	345.7	14.8	567.4	23.6	662.3	30.4	833.0	40.8	741.1	39.0	712.9	42.9	660.1	45.2
Sitka spruce	8.4	1.5	17.6	4.2	30.7	7.9	49.9	12.3	63.1	14.4	68.2	19.2	109.0	34.9	62.6	18.5
Sugar pine	3.6	1.1	6.6	1.5	8.5	2.6	7.0	2.4	10.5	3.1	18.7	6.4	14.5	4.9	22.0	7.6
True fir	331.8	14.9	592.8	26.4	787.3	35.8	967.0	45.7	1,006.9	50.1	964.3	52.7	1,016.4	63.5	917.6	65.3
Western hemlock	157.1	9.6	345.9	21.5	486.4	32.8	677.1	48.9	778.8	56.8	832.0	62.7	712.6	62.3	635.7	58.2
Western juniper	38.3	2.5	68.6	4.4	87.0	6.2	82.3	6.3	79.8	6.7	69.5	7.0	60.5	7.6	42.4	6.2
Western larch	11.0	2.1	30.2	4.6	48.8	7.1	67.1	9.0	70.1	11.9	98.5	14.5	86.9	16.5	96.6	19.1
Western redcedar	28.6	3.1	48.3	5.4	57.2	7.2	84.6	11.0	79.7	12.2	93.8	13.2	94.4	14.8	92.9	20.8
Other western softwoods	74.4	5.8	135.4	11.5	200.5	18.6	281.9	26.7	280.4	27.9	329.2	37.4	355.9	40.1	352.9	44.5
Total	1,942.4	40.8	3,924.5	77.9	5,606.4	110.1	6,680.8	139.2	7,105.3	151.4	7,232.1	167.9	6,894.1	180.2	6,495.7	182.0
Hardwoods:																
Cottonwood and aspen	3.3	1.0	4.3	1.9	9.7	3.7	10.0	5.2	11.3	5.4	8.0	5.1	10.8	5.2	11.6	6.1
Oak	112.2	10.1	120.5	11.6	100.6	11.9	89.8	11.3	83.8	12.5	87.4	14.7	68.1	20.8	52.0	11.7
Red alder	135.0	10.5	279.1	21.1	397.1	29.5	456.3	37.4	455.3	39.2	373.4	37.0	228.3	27.9	212.9	31.1
Woodland hardwoods	9.8	1.4	15.6	2.2	13.2	2.5	12.1	2.3	9.2	2.4	7.3	2.0	4.2	1.6	1.9	1.2
Other western hardwoods	333.7	17.2	459.3	26.7	477.2	30.5	430.8	31.9	373.2	27.6	319.7	32.8	261.1	30.1	129.2	20.2
Total	594.0	22.9	878.8	36.1	997.9	43.9	998.9	50.6	932.8	50.2	795.7	52.6	572.6	46.5	407.7	39.9
All species groups	2,536.4	47.6	4,803.3	86.2	6,604.3	117.3	7,679.8	146.2	8,038.1	158.8	8,027.8	174.2	7,466.7	187.2	6,903.4	188.1

Table A1-15—Net volume of live trees^a on forest land, by species group and diameter class, Oregon, 2001–2010 (continued)

Species group	Diameter class (inches)											
	37.0–38.9		39.0–40.9		41.0–42.9		43.0–44.9		45.0–46.9		47.0–48.9	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
<i>Million cubic feet</i>												
Softwoods:												
Douglas-fir	1,613.3	85.8	1,361.9	78.2	1,269.5	81.1	1,168.8	74.8	994.0	72.7	1,081.7	78.2
Engelmann and other spruces	11.7	5.4	4.9	3.5	5.0	3.6	—	—	—	—	3.6	3.6
Incense cedar	29.8	7.5	28.7	6.8	33.1	8.3	27.6	7.9	29.8	9.7	17.1	6.2
Lodgepole pine	0.6	0.6	—	—	—	—	—	—	—	—	—	—
Ponderosa and Jeffrey pines	188.2	21.5	133.2	18.4	94.1	16.8	48.1	11.5	41.5	12.1	20.4	8.5
Sitka spruce	25.7	9.2	22.1	7.9	39.5	14.3	38.1	14.8	24.0	8.9	25.1	14.2
Sugar pine	29.4	8.2	33.7	10.0	38.9	12.1	35.6	11.2	37.2	12.5	61.8	17.2
True fir	226.4	29.9	172.6	26.3	116.6	22.1	102.8	20.2	73.0	18.7	47.0	13.1
Western hemlock	106.8	19.7	65.4	12.5	80.1	16.4	58.7	14.0	48.3	17.0	31.6	10.6
Western juniper	1.6	0.6	1.0	0.7	0.1	0.1	0.8	0.6	1.8	1.2	0.3	0.3
Western larch	3.7	2.7	6.5	3.8	—	—	—	—	—	—	3.1	3.1
Western redcedar	71.2	12.8	44.8	9.2	57.6	12.2	29.3	10.0	41.1	10.0	22.9	8.4
Other western softwoods	46.8	11.6	35.8	12.0	26.8	11.9	11.1	6.4	10.3	6.8	28.9	13.8
Total	2,355.1	100.1	1,910.4	88.7	1,761.4	93.6	1,520.9	84.0	1,301.1	82.0	1,343.6	84.7
Hardwoods:												
Cottonwood and aspen	1.8	1.9	5.1	4.4	3.5	2.7	4.8	5.0	5.2	5.5	—	—
Oak	6.8	4.2	5.1	3.4	—	—	—	—	—	—	—	—
Red alder	—	—	—	—	—	—	—	—	—	—	—	—
Woodland hardwoods	—	—	—	—	—	—	—	—	—	—	0.5	0.5
Other western hardwoods	26.0	8.0	13.9	6.0	23.9	8.5	9.8	5.9	16.0	7.8	—	—
Total	34.6	9.2	24.0	8.1	27.4	8.9	14.6	7.7	21.3	9.5	0.5	0.5
All species groups	2,389.6	100.6	1,934.4	89.0	1,788.8	93.9	1,535.5	84.3	1,322.3	82.4	1,344.1	84.7
											5,983.0	363.4
											102,277.0	1,304.5

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50,000 cubic feet was estimated.

^a Includes all live trees ≥ 5 inches in diameter at breast height, consisting of growing-stock, rough-cull, and rotten-cull tree classes.

Table A1-16—Average net volume per acre of live trees^a on forest land, by forest type group and stand size class, Oregon, 2001–2010

Forest type group	Stand size class							
	Large-diameter stands		Medium-diameter stands		Small-diameter stands		All classes	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
<i>Cubic feet per acre</i>								
Softwoods:								
Douglas-fir	6,916.61	112.35	1,439.57	72.92	237.70	28.12	5,453.70	99.27
Fir/spruce/mountain hemlock	4,604.02	131.99	1,394.21	224.68	465.36	55.66	3,997.18	123.96
Hemlock/Sitka spruce	8,241.72	377.39	2,196.84	429.64	277.35	117.38	7,322.00	370.92
Lodgepole pine	2,313.06	118.26	1,401.79	87.42	354.20	25.61	1,259.12	63.10
Ponderosa pine	2,096.07	52.53	605.54	48.70	338.38	42.77	1,828.40	48.05
Western juniper	392.16	20.78	139.10	23.50	78.80	10.56	303.47	16.04
Western larch	3,533.42	429.96	2,032.37	395.00	354.60	101.81	2,430.53	371.15
Other western softwoods	1,429.26	443.89	880.88	477.01	201.98	80.31	1,000.62	295.16
Total	4,667.97	60.49	1,197.15	48.57	277.86	15.01	3,660.52	49.58
Hardwoods:								
Alder/maple	4,673.61	193.17	2,125.29	175.34	303.55	103.70	3,501.97	168.73
Aspen/birch	4,633.86	4,633.86	988.93	168.63	318.43	146.55	792.82	300.63
Elm/ash/cottonwood	3,355.10	1,023.77	1,259.85	126.87	193.39	41.79	2,066.27	674.34
Tanoak/laurel	5,811.70	482.92	2,992.39	313.36	179.19	47.09	2,780.01	296.93
Western oak	2,748.35	276.04	949.20	86.20	323.72	63.93	1,447.61	136.28
Woodland hardwoods	718.90	91.60	148.68	103.49	260.68	112.54	570.14	76.97
Other hardwoods	3,093.06	295.39	2,556.71	365.60	480.85	109.50	1,933.21	200.99
Total	4,001.55	155.22	1,842.81	114.20	298.85	35.82	2,445.07	99.69
Nonstocked	—	—	—	—	—	—	121.42	23.20
All forest types	4,619.59	56.99	1,378.51	48.65	281.47	13.88	3,411.03	44.24

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 0.005 cubic feet per acre was estimated; the average was calculated using a ratio of means formula across plots within forest type groups.

^a Includes all live trees ≥ 5 inches in diameter at breast height, consisting of growing-stock, rough-cull, and rotten-cull tree classes.

Table A1-17—Average net cubic volume per acre of dead trees^a on forest land, by forest type group and stand size class, Oregon 2001–2010

Forest type group	Stand size class							
	Large-diameter stands		Medium-diameter stands		Small-diameter stands		All classes	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
<i>Cubic feet per acre</i>								
Softwoods:								
Douglas-fir	560.10	22.37	89.19	16.27	181.92	48.21	461.14	18.42
Fir/spruce/mountain hemlock	846.20	36.93	180.25	47.13	465.53	111.47	772.00	34.08
Hemlock/Sitka spruce	947.14	94.86	207.15	117.35	183.31	68.39	852.55	85.23
Lodgepole pine	283.84	38.87	248.71	44.03	212.13	40.71	244.83	24.27
Ponderosa pine	166.98	13.21	54.98	14.64	137.64	38.31	157.47	11.82
Western juniper	24.49	3.94	17.11	7.90	7.59	3.02	20.27	2.94
Western larch	845.90	252.24	266.17	71.99	306.23	129.94	645.66	171.14
Other western softwoods	837.09	366.14	—	—	202.47	135.88	542.67	224.76
Total	473.43	12.81	119.27	13.18	187.49	23.68	396.04	10.29
Hardwoods:								
Alder/maple	363.39	45.71	159.26	34.31	237.96	139.86	296.16	34.74
Aspen/birch	684.86	684.86	102.29	31.00	30.85	13.78	93.27	42.96
Elm/ash/cottonwood	121.80	68.91	—	—	12.70	12.70	72.99	42.13
Tanoak/laurel	440.86	59.18	309.54	75.25	1,002.04	233.15	656.25	109.75
Western oak	192.78	35.17	214.84	45.71	269.01	103.27	219.52	33.04
Woodland hardwoods	129.85	40.47	68.46	32.91	160.08	91.72	131.60	35.29
Other hardwoods	275.85	98.92	201.21	45.47	302.76	120.94	261.80	56.46
Total	311.06	26.70	202.35	23.37	477.37	87.59	322.95	26.84
Nonstocked	—	—	—	—	—	—	411.15	87.52
All forest types	461.64	12.01	142.60	11.66	237.36	24.86	388.55	9.59

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 0.005 cubic feet per acre was estimated; the average was calculated using a ratio of means formula across plots within forest type groups.

^a Includes all dead trees ≥ 5 inches in diameter at breast height; smaller dead trees were not measured in this inventory.

Table A1-18—Net volume of growing-stock trees^a on timberland, by species group and diameter class, Oregon, 2001–2010

Species group	Diameter class (inches)											
	5.0–6.9		7.0–8.9		9.0–10.9		11.0–12.9		13.0–14.9		15.0–16.9	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
<i>Million cubic feet</i>												
Softwoods:												
Douglas-fir	712.4	25.2	1,656.2	56.9	2,540.7	86.1	3,080.8	110.5	3,255.9	117.6	3,449.5	127.8
Engelmann and other spruces	8.1	1.4	14.3	2.8	30.7	5.7	41.6	7.6	51.7	11.2	67.3	15.1
Incense cedar	24.4	2.4	27.9	3.3	39.4	5.0	33.9	4.7	53.9	8.4	37.0	7.6
Lodgepole pine	267.7	20.4	427.3	29.2	444.7	30.7	321.9	24.4	210.3	22.7	137.1	17.8
Ponderosa and Jeffrey pines	166.9	8.3	332.9	14.6	548.8	23.1	641.3	30.1	804.1	40.3	717.4	38.7
Sitka spruce	7.4	1.3	13.8	3.5	24.2	7.1	34.4	9.0	46.0	11.7	51.6	17.2
Sugar pine	3.4	1.1	6.3	1.5	8.2	2.6	7.0	2.4	9.9	3.1	17.5	6.3
True fir	254.9	13.2	461.5	23.4	610.1	31.9	732.0	39.0	770.3	42.8	742.9	46.2
Western hemlock	144.8	9.3	318.9	20.9	456.7	32.4	623.2	47.4	723.2	55.4	772.0	61.3
Western juniper	9.4	1.2	17.0	2.3	20.2	2.9	16.2	2.9	16.7	3.1	13.2	3.2
Western larch	8.3	1.3	23.3	3.3	41.3	6.5	57.8	8.4	53.9	10.6	86.6	13.6
Western redcedar	26.5	3.0	45.3	5.3	50.4	6.8	78.8	10.7	73.2	11.7	86.3	12.8
Other western softwoods	39.6	4.2	63.0	7.9	81.6	11.1	132.0	18.3	105.9	15.5	107.6	19.4
Total	1,673.9	38.6	3,407.6	74.3	4,896.8	106.6	5,800.9	134.8	6,175.1	146.9	6,285.9	161.0
Hardwoods:												
Cottonwood and aspen	1.9	0.7	2.0	1.0	8.6	3.6	8.7	5.1	9.8	5.3	6.4	4.8
Oak	61.1	6.1	77.1	9.2	69.3	10.5	68.0	10.1	60.0	10.6	54.1	10.3
Red alder	132.9	10.5	275.1	21.1	381.6	28.7	447.3	37.2	451.6	39.2	360.7	36.7
Other western hardwoods	298.6	15.3	409.3	24.1	428.2	27.2	405.9	31.6	350.6	27.2	300.8	32.0
Total	494.6	19.9	763.5	33.6	887.9	41.0	929.9	50.2	872.0	49.7	722.0	50.7
All species groups	2,168.5	44.9	4,171.1	82.7	5,784.7	113.7	6,730.8	142.4	7,047.1	155.0	7,007.9	167.6
											6,433.0	177.8
											5,857.9	177.5

Species group	Diameter class (inches)															
	21.0–22.9		23.0–24.9		25.0–26.9		27.0–28.9		29.0–30.9		31.0–32.9		33.0–34.9		35.0–36.9	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
Million cubic feet																
Softwoods:																
Douglas-fir	2,713.7	137.0	2,615.5	153.9	2,427.7	149.5	1,908.5	133.3	1,860.3	113.4	1,617.0	84.5	1,691.8	90.8	1,565.4	87.6
Engelmann and other spruces	59.7	16.5	39.8	13.5	18.3	4.5	11.2	3.8	15.4	5.9	13.4	6.4	10.6	4.6	13.5	7.6
Incense cedar	35.4	8.8	24.6	9.2	28.7	10.1	42.2	13.8	14.4	7.0	28.2	5.6	24.2	5.2	22.8	5.4
Lodgepole pine	37.2	12.1	11.2	4.6	3.4	1.8	2.0	1.2	3.9	2.0	0.5	0.5	—	—	—	—
Ponderosa and Jeffrey pines	541.7	46.8	549.8	40.3	458.0	28.2	472.7	31.7	445.5	29.5	380.7	28.6	338.2	27.0	237.2	24.1
Sitka spruce	60.6	18.6	29.9	11.5	20.3	10.1	24.2	11.0	23.5	13.1	21.1	5.0	20.8	6.5	16.6	6.7
Sugar pine	7.5	4.9	41.7	12.8	31.8	11.8	35.9	15.5	36.9	14.5	26.4	8.0	36.3	9.0	33.9	9.0
True fir	604.0	58.6	571.7	56.3	495.8	52.3	426.2	53.9	408.5	49.7	256.9	28.7	225.6	26.7	206.2	25.8
Western hemlock	526.9	58.5	512.6	59.2	405.7	51.6	336.9	52.9	233.9	38.1	200.2	23.9	149.5	23.8	118.8	18.6
Western juniper	6.3	2.5	3.8	1.6	3.0	1.3	2.2	0.9	0.8	0.6	0.7	0.5	0.5	0.4	0.3	0.3
Western larch	30.7	9.8	47.9	14.2	30.3	7.1	17.7	4.1	17.0	5.2	21.0	6.9	2.1	2.1	3.7	3.0
Western redcedar	81.5	16.2	91.9	20.9	119.2	26.3	69.1	18.8	75.1	17.5	71.6	12.5	63.7	12.7	48.0	11.5
Other western softwoods	145.3	30.2	146.0	30.5	89.9	21.4	83.2	21.3	71.2	20.3	47.1	11.3	39.0	10.8	25.3	8.1
Total	4,850.6	174.0	4,686.3	184.7	4,132.0	174.2	3,432.1	161.6	3,206.4	143.1	2,684.8	101.5	2,602.1	104.6	2,291.8	100.3
Hardwoods:																
Cottonwood and aspen	11.8	7.2	4.8	4.6	0.6	0.5	23.4	13.0	9.5	8.9	2.4	1.8	7.9	5.2	—	—
Oak	10.8	5.2	3.1	3.0	19.3	12.4	11.6	8.7	12.0	8.8	7.7	3.3	2.8	2.3	1.8	1.9
Red alder	78.0	17.9	87.7	24.3	61.2	16.9	23.0	11.4	21.3	9.8	4.6	2.3	3.7	2.2	3.2	2.3
Other western hardwoods	209.7	32.9	110.8	25.2	109.9	26.6	80.6	21.9	53.0	19.7	43.5	9.9	11.6	4.5	35.4	8.7
Total	310.2	39.4	206.4	36.3	191.0	34.8	138.5	29.1	95.8	25.4	58.2	11.2	25.9	7.5	40.4	9.2
All species groups	5,160.8	178.2	4,892.8	187.4	4,323.0	177.9	3,570.6	164.3	3,302.2	145.1	2,743.0	102.3	2,628.1	105.0	2,332.1	100.7

Table A1-19—Net volume of growing-stock trees^a on timberland, by species group and ownership group, Oregon, 2001–2010

Species group	Ownership group											
	USDA Forest Service			Other federal			State and local government			Private		
	Total	SE		Total	SE		Total	SE		Total	SE	All owners
												Total SE
<i>Million cubic feet</i>												
Softwoods:												
Douglas-fir	22,898.1	778.6		9,361.1	531.6		3,425.6	334.7		8,416.5	440.4	48,668.5 1,068.1
Engelmann and other spruces	413.6	60.0		0.2	0.2		—	—		27.9	15.0	508.1 69.6
Incense cedar	364.9	48.2		216.3	54.9		22.8	13.1		116.7	21.9	791.8 79.0
Lodgepole pine	1,643.6	106.2		20.5	8.0		22.1	12.3		177.0	31.2	1,984.0 118.8
Ponderosa and Jeffrey pines	6,174.7	223.7		406.4	69.9		136.8	45.6		734.1	67.4	8,478.6 261.1
Sitka spruce	273.2	113.3		—	—		54.1	21.4		315.3	89.3	761.9 153.8
Sugar pine	445.2	64.3		213.3	51.2		1.0	1.1		41.6	16.9	711.7 84.1
True fir	6,934.0	375.2		576.2	135.5		97.0	34.5		679.1	81.9	8,840.0 415.1
Western hemlock	3,330.9	249.2		875.5	118.1		508.0	109.1		1,980.0	223.5	7,142.5 377.2
Western juniper	80.1	11.1		4.2	2.1		0.9	1.0		14.5	4.6	128.0 14.0
Western larch	489.7	58.8		1.7	1.7		1.6	1.0		36.0	9.3	584.8 61.5
Western redcedar	884.4	109.4		171.3	40.4		25.9	11.2		231.5	49.5	1,501.8 137.0
Other western softwoods	1,412.2	172.2		59.8	28.6		7.9	8.1		45.4	19.8	1,627.9 181.4
Total	45,344.7	1,000.6		11,906.4	605.3		4,303.8	363.9		12,815.4	545.7	81,729.4 1,305.5
Hardwoods:												
Cottonwood and aspen	23.4	11.0		9.9	9.0		5.3	5.8		13.4	7.9	127.2 29.5
Oak	73.5	16.5		131.0	23.2		38.0	25.2		88.1	24.3	542.2 56.6
Red alder	473.1	70.0		190.7	39.8		619.6	84.7		930.7	98.0	2,767.3 164.4
Other western hardwoods	809.3	94.2		626.0	67.0		137.8	34.6		842.7	92.9	3,302.3 176.7
Total	1,379.2	123.5		957.6	84.1		800.7	99.3		1,874.9	149.4	6,739.1 258.6
All species groups	46,723.9	1,018.3		12,864.1	623.8		5,104.5	396.9		14,690.3	599.1	88,468.5 1,345.9

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50,000 cubic feet was estimated.

^a Includes live growing-stock trees of commercial species that are ≥ 5 inches in diameter at breast height; excludes trees that are classified as rough-or rotten-cull.

Table A1-20—Aboveground biomass of live trees^a on forest land, by ownership and land status, Oregon, 2001–2010

Ownership	Land status									
	Unreserved forests					Reserved forests				
	Timberland		Total			Productive		Other forest		
	Total	SE	Total	SE	Total	Total	SE	Total	SE	All forest land Total SE
<i>Thousand tons</i>										
USDA Forest Service:										
National forest	945,091.3	19,944.7	13,520.2	2,115.7	958,611.5	19,825.2	12,978.8	7,335.2	1,960.9	203,300.4 13,082.0 1,161,911.9 18,751.8
National grasslands	—	—	112.7	62.0	112.7	62.0	—	—	—	112.7 62.0
Total	945,091.3	19,944.7	13,633.0	2,116.3	958,724.2	19,824.6	12,978.8	7,335.2	1,960.9	203,300.4 13,082.0 1,162,024.6 18,751.0
Other federal government:										
Bureau of Land Management	261,384.2	12,192.9	12,904.8	1,509.4	274,289.0	12,154.8	8,065.5	2,535.9	583.7	275.0 8,649.2 2,550.7 282,938.2 11,972.6
National Park Service	—	—	—	—	—	—	13,597.2	2,279.9	1,555.0	1,334.4 15,152.2 2,425.0 15,152.2 2,425.0
U.S. Fish and Wildlife Service	—	—	—	—	—	—	364.5	258.3	18.4	21.1 382.9 259.2 382.9 259.2
Other federal	1,068.1	760.7	—	—	1,068.1	760.7	507.4	525.7	—	507.4 525.7 1,575.6 924.7
Total	262,452.4	12,215.8	12,904.8	1,509.4	275,357.2	12,177.7	22,534.5	3,460.0	2,157.1	1,362.6 24,691.7 3,567.9 300,048.8 12,015.2
State and local government:										
Local	8,609.0	2,453.0	284.3	159.0	8,893.3	2,459.0	2,316.6	1,500.7	—	2,316.6 1,500.7 11,209.8 2,877.2
State	90,869.7	7,215.6	759.4	349.6	91,629.2	7,223.9	9,274.8	3,695.4	—	9,274.8 3,695.4 100,904.0 7,914.1
Other public	19.9	20.4	—	—	19.9	20.4	—	—	—	— 20.4 19.9 20.4
Total	99,498.6	7,591.7	1,043.7	384.1	100,542.4	7,601.0	11,591.4	3,988.4	—	11,591.4 3,988.4 112,133.7 8,392.0
Corporate private	305,702.6	11,689.2	4,672.5	1,594.2	310,375.1	11,745.2	—	—	—	— 310,375.1 11,745.2
Noncorporate private:										
Nongovernmental conservation or natural resource organizations	17,968.5	3,523.2	—	—	17,968.5	3,523.2	—	—	—	— 17,968.5 3,523.2
Unincorporated partnerships, associations, or clubs	2,636.7	1,416.6	120.8	80.6	2,757.6	1,418.9	—	—	—	— 2,757.6 1,418.9
Native American	21,810.6	3,490.1	1,466.6	712.4	23,277.1	3,528.9	—	—	—	— 23,277.1 3,528.9
Individual	146,767.0	8,462.2	13,691.6	1,621.9	160,458.6	8,539.2	—	—	—	— 160,458.6 8,539.2
Total	189,182.8	9,684.8	15,279.0	1,769.4	204,461.9	9,748.5	—	—	—	— 204,461.9 9,748.5
All private	494,885.5	12,980.3	19,951.5	2,368.3	514,837.0	12,951.4	—	—	—	— 514,837.0 12,951.4
All owners	1,801,927.8	26,126.2	47,533.0	3,533.6	1,849,460.7	25,977.0	230,091.2	14,000.5	9,492.3	2,387.9 239,583.4 14,122.8 2,089,044.2 25,080.2

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50 bone-dry tons was estimated.

^aIncludes all live trees ≥ 1 inches in diameter at breast height, consisting of growing-stock, rough-cull, and rotten-cull tree classes. Aboveground biomass of the tree from ground to tip, includes stem wood, bark, and branches; calculated with regional biomass equations.

Table A1-21—Aboveground biomass of dead trees^a on forest land, by ownership and land status, Oregon, 2001–2010

Ownership	Land status													
	Unreserved forests						Reserved forests							
	Timberland		Other forest		Total		Productive		Other forest		Total			
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE		
Thousand tons														
USDA Forest Service:														
National forest	121,941.3	4,453.8	4,289.5	1,013.5	126,230.8	4,517.5	38,106.8	3,046.6	2,240.0	577.5	40,346.8	3,090.3	166,577.6	5,017.8
National grasslands	—	—	6.0	6.4	6.0	6.4	—	—	—	—	—	—	6.0	6.4
Total	121,941.3	4,453.8	4,295.5	1,013.6	126,236.9	4,517.5	38,106.8	3,046.6	2,240.0	577.5	40,346.8	3,090.3	166,583.7	5,017.8
Other federal government:														
Bureau of Land Management	20,730.0	1,730.4	1,113.9	229.1	21,843.9	1,734.0	724.2	345.7	61.5	40.6	785.7	348.0	22,629.6	1,746.9
National Park Service	—	—	—	—	—	—	1,822.1	417.4	198.9	193.7	2,021.0	437.2	2,021.0	437.2
Other federal	136.3	99.4	—	—	136.3	99.4	76.3	79.1	—	—	76.3	79.1	212.6	127.0
Total	20,866.3	1,733.2	1,113.9	229.1	21,980.2	1,736.8	2,622.6	547.7	260.4	197.9	2,883.0	564.4	24,863.2	1,795.5
State and local government:														
Local	680.4	253.1	—	—	680.4	253.1	59.3	42.8	—	—	59.3	42.8	739.7	256.6
State	6,997.4	830.2	22.9	20.8	7,020.3	830.4	711.1	347.6	—	—	711.1	347.6	7,731.4	890.9
Total	7,677.8	867.8	22.9	20.8	7,700.7	868.0	770.4	350.2	—	—	770.4	350.2	8,471.1	926.9
Corporate private	15,332.3	959.5	465.5	182.0	15,797.8	974.3	—	—	—	—	—	—	15,797.8	974.3
Noncorporate private:														
Nongovernmental conservation or natural resource organizations	1,283.7	310.0	—	—	1,283.7	310.0	—	—	—	—	—	—	1,283.7	310.0
Unincorporated partnerships, associations, or clubs	212.3	114.6	9.6	9.2	222.0	114.9	—	—	—	—	—	—	222.0	114.9
Native American	2,342.7	564.2	472.2	278.8	2,814.9	623.0	—	—	—	—	—	—	2,814.9	623.0
Individual	6,499.8	546.3	670.4	174.0	7,170.2	569.2	—	—	—	—	—	—	7,170.2	569.2
Total	10,338.6	840.8	1,152.2	328.5	11,490.8	894.1	—	—	—	—	—	—	11,490.8	894.1
All private	25,670.8	1,210.6	1,617.7	374.9	27,288.6	1,252.7	—	—	—	—	—	—	27,288.6	1,252.7
All owners	176,156.3	4,961.7	7,050.0	1,104.8	183,206.3	5,029.5	41,499.8	3,115.0	2,500.4	610.5	44,000.2	3,160.8	227,206.5	5,505.7

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50 bone-dry tons was estimated.

^aIncludes all dead trees ≥ 5 inches in diameter at breast height; smaller dead trees were not measured in this inventory. Aboveground biomass is estimated from ground to actual height, includes stem wood, bark, and branches; calculated with regional biomass equations.

Table A1-22—Aboveground biomass of live trees^a on forest land, by county and land status, Oregon, 2001–2010

[illegible]

Table A1-22—Aboveground biomass of live trees^a on forest land, by county and land status, Oregon, 2001–2010 (continued)

County	Unreserved forests				Reserved forests				All forest land					
	Timberland		Other forest		Total		Productive		Other forest		Total		Total	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
Thousand tons														
Eastern Oregon:														
Baker	24,603.5	2,929.1	922.1	331.7	25,525.5	2,946.8	1,097.9	837.5	—	—	1,097.9	837.5	26,623.4	3,050.1
Crook	13,224.1	1,836.9	3,941.2	499.2	17,165.3	1,903.5	1,353.3	889.3	—	—	1,353.3	889.3	18,518.5	2,092.4
Deschutes	32,685.6	3,617.7	3,398.3	938.1	36,083.8	3,716.7	6,318.9	1,945.9	815.9	558.8	7,134.8	2,019.4	43,218.7	4,141.4
Grant	56,823.4	3,660.2	1,941.5	556.5	58,764.9	3,682.5	7,924.2	1,732.7	654.7	418.1	8,578.9	1,777.6	67,343.8	3,921.7
Harney	15,530.7	2,094.8	3,411.3	541.1	18,941.9	2,167.6	—	—	119.9	58.0	119.9	58.0	19,061.8	2,167.9
Jefferson	10,726.9	2,042.4	1,625.2	431.5	12,352.1	2,076.4	2,299.2	1,193.6	—	—	2,299.2	1,193.6	14,651.3	2,388.8
Klamath	89,955.2	5,726.9	5,701.3	1,237.0	95,656.5	5,818.2	33,974.8	4,390.9	3,780.9	1,838.9	37,755.7	4,620.9	133,412.2	6,716.3
Lake	40,180.6	3,595.8	3,155.4	555.4	43,336.0	3,627.1	1,252.0	1,011.1	455.7	285.2	1,707.7	1,050.5	45,043.7	3,755.7
Malheur	101.5	71.0	806.8	274.9	908.3	283.9	—	—	—	—	—	—	908.3	283.9
Morrow	5,889.1	1,205.6	262.2	269.8	6,151.4	1,233.5	—	—	—	—	—	—	6,151.4	1,233.5
Umatilla	19,712.8	2,372.7	509.8	416.9	20,222.6	2,407.1	696.3	457.2	—	—	696.3	457.2	20,918.9	2,447.4
Union	27,521.8	2,924.0	117.6	88.7	27,639.4	2,924.4	4,974.4	1,522.6	67.4	64.1	5,041.8	1,524.0	32,681.2	3,258.0
Wallowa	22,681.8	2,721.1	64.0	60.9	22,745.9	2,721.6	19,458.3	2,979.6	345.9	211.8	19,804.2	2,985.0	42,550.0	3,959.0
Wasco	27,675.2	4,217.8	3,136.6	877.0	30,811.8	4,287.6	314.7	316.4	—	—	314.7	316.4	31,126.5	4,298.0
Wheeler	8,441.0	1,551.4	1,084.0	213.0	9,525.0	1,569.2	227.9	229.1	—	—	227.9	229.1	9,752.9	1,585.7
Total	395,753.0	9,024.6	30,077.3	2,173.3	425,830.4	9,021.0	79,891.8	6,299.1	6,240.4	1,997.8	86,132.2	6,484.4	511,962.6	9,372.5
All counties	1,801,927.8	26,126.2	47,533.0	3,533.6	1,849,460.7	25,977.0	230,091.2	14,000.5	9,492.3	2,387.9	239,583.4	14,122.8	2,089,044.2	25,080.2

Note: Totals may be off because of rounding; data are subject to sampling error; — = fewer than 50 bone-dry tons was estimated. ^a Includes all live trees ≥ 1 inches in diameter at breast height, consisting of growing-stock, rough-cull, and rotten-cull tree classes. Aboveground biomass of the tree from ground to tip, includes stem wood, bark, and branches; calculated with regional biomass equations.

Table A1-23—Aboveground biomass of dead trees^a on forest land, by county and land status, Oregon, 2001–2010

County	Unreserved forests						Reserved forests					
	Timberland		Other forest		Total		Productive		Other forest		Total	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
<i>Thousand tons</i>												
Western Oregon:												
Benton	1,523.9	434.7	56.4	56.3	1,580.3	438.0	—	—	—	—	—	—
Clackamas	7,695.7	1,171.2	—	—	7,695.7	1,171.2	3,485.2	913.9	—	—	3,485.2	913.9
Clatsop	2,862.5	506.1	—	—	2,862.5	506.1	—	—	—	—	—	—
Columbia	740.0	200.0	14.6	14.5	754.5	203.4	—	—	—	—	—	—
Coos	4,694.5	900.5	17.2	12.4	4,711.7	900.4	84.8	79.5	—	—	84.8	79.5
Curry	6,929.7	1,227.0	980.2	711.6	7,909.8	1,395.0	2,019.0	778.9	745.8	381.8	2,764.8	864.0
Douglas	22,981.5	1,943.1	606.5	379.5	23,588.0	1,973.4	2,883.4	1,350.9	119.3	80.2	3,002.7	1,352.0
Hood River	1,932.1	669.9	2.6	2.7	1,934.7	669.9	2,055.7	795.9	—	—	2,055.7	795.9
Jackson	12,647.9	1,473.3	891.3	264.3	13,539.2	1,494.1	625.9	330.8	35.2	28.0	661.1	332.0
Josephine	11,566.7	2,106.4	510.0	279.8	12,076.7	2,120.8	842.9	418.1	55.4	55.6	898.3	421.5
Lane	23,585.8	2,097.4	429.5	212.2	24,015.3	2,100.4	4,816.8	883.8	98.7	102.1	4,915.5	887.2
Lincoln	3,756.6	616.5	—	—	3,756.6	616.5	446.0	359.4	—	—	446.0	359.4
Linn	11,691.7	1,513.8	2.1	1.8	11,693.8	1,513.8	1,171.4	443.5	—	—	1,171.4	443.5
Marion	2,763.4	621.1	210.2	154.5	2,973.6	638.0	2,254.4	883.8	1.3	1.3	2,255.7	884.1
Multnomah	942.1	715.4	—	—	942.1	715.4	2,015.7	862.8	—	—	2,015.7	862.8
Polk	1,490.2	664.6	21.4	17.9	1,511.5	664.8	—	—	—	—	—	—
Tillamook	6,194.5	936.1	—	—	6,194.5	936.1	29.7	30.9	—	—	29.7	30.9
Washington	1,090.2	278.4	—	—	1,090.2	278.4	10.9	11.5	—	—	10.9	11.5
Yamhill	1,277.4	354.1	—	—	1,277.4	354.1	—	—	—	—	—	—
Total	126,366.2	4,383.5	3,741.9	930.2	130,108.1	4,432.2	22,741.8	2,510.7	1,055.7	407.7	23,797.5	2,538.3
											153,905.6	4,712.5

Table A1-23—Aboveground biomass of dead trees^a on forest land, by county and land status, Oregon, 2001–2010 (continued)

County	Unreserved forests						Reserved forests						All forest land	
	Timberland		Other forest		Total		Productive		Other forest		Total			
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE		
Thousand tons														
Eastern Oregon:														
Baker	2,322.6	417.5	242.4	188.8	2,564.9	456.8	638.9	443.0	—	—	638.9	443.0	3,203.8	630.2
Crook	2,329.6	530.8	203.6	60.3	2,533.2	534.3	939.5	584.3	—	—	939.5	584.3	3,472.6	788.9
Deschutes	3,460.0	736.6	617.3	313.5	4,077.4	797.0	942.2	331.6	507.4	309.8	1,449.7	451.5	5,527.0	905.3
Grant	9,492.1	1,016.4	306.6	260.3	9,798.8	1,044.1	2,529.6	621.1	139.7	90.1	2,669.3	626.9	12,468.1	1,189.7
Harney	897.0	231.4	191.5	66.1	1,088.5	241.1	—	—	—	—	—	—	1,088.5	241.1
Jefferson	3,086.7	745.0	399.6	270.5	3,486.2	789.4	1,118.8	769.3	—	—	1,118.8	769.3	4,605.0	1,099.1
Klamath	7,778.5	1,071.9	435.8	155.1	8,214.3	1,081.0	5,338.0	894.0	592.3	294.2	5,930.2	926.8	14,144.5	1,400.4
Lake	5,079.8	767.1	338.8	101.8	5,418.6	778.8	303.6	219.7	39.3	31.0	342.9	221.9	5,761.5	806.7
Malheur	22.1	22.4	65.4	36.0	87.5	42.4	—	—	—	—	—	—	87.5	42.4
Morrow	1,178.5	474.7	94.7	97.4	1,273.2	484.2	—	—	—	—	—	—	1,273.2	484.2
Umatilla	4,485.5	940.2	158.2	144.4	4,643.7	950.1	136.1	111.5	—	—	136.1	111.5	4,779.8	955.6
Union	2,989.9	494.0	2.5	2.5	2,992.3	493.9	1,115.4	402.1	—	—	1,115.4	402.1	4,107.8	630.8
Wallowa	2,976.1	575.9	53.7	51.1	3,029.8	578.1	5,204.2	879.7	166.1	126.1	5,370.3	887.8	8,400.0	1,043.3
Wasco	2,365.4	530.9	183.7	76.3	2,549.1	535.8	242.7	244.0	—	—	242.7	244.0	2,791.8	587.9
Wheeler	1,326.4	372.6	14.4	14.7	1,340.8	372.9	249.1	250.4	—	—	249.1	250.4	1,589.9	449.0
Total	49,790.1	2,332.3	3,308.1	596.1	53,098.2	2,385.3	18,758.0	1,843.8	1,444.7	454.4	20,202.7	1,883.6	73,301.0	2,854.2
All counties	176,156.3	4,961.7	7,050.0	1,104.8	183,206.3	5,029.5	41,499.8	3,115.0	2,500.4	610.5	44,000.2	3,160.8	227,206.5	5,505.7

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50 bone-dry tons was estimated.
^a Includes all dead trees ≥ 5 inches in diameter at breast height; smaller dead trees were not measured in this inventory. Above-ground biomass is estimated from ground to actual height, includes stem wood, bark, and branches; calculated with regional biomass equations.

Table A1-24—Average aboveground biomass per acre of live trees^a on forest land, by forest type group and ownership group, Oregon, 2001–2010

Forest type group	USDA Forest Service		Other federal		State and local government		Private							
	Mean	SE	Other federal		State and local government		Corporate		Noncorporate		All private		All owners	
							Mean	SE	Mean	SE	Mean	SE	Mean	SE
Tons per acre														
Softwoods:														
Douglas-fir	144.06	3.57	139.75	5.12	117.49	7.01	62.68	2.52	72.57	3.97	65.81	2.13	109.95	1.90
Fir/spruce/mountain hemlock	85.56	2.63	133.47	10.90	75.75	11.90	32.07	2.85	48.79	6.30	37.80	3.00	79.71	2.31
Hemlock/Sitka spruce	179.35	11.64	130.59	23.59	142.85	22.37	109.94	8.69	105.04	16.61	108.86	7.73	142.02	6.83
Lodgepole pine	33.65	1.38	41.53	6.61	26.31	9.53	17.64	1.69	34.01	6.33	21.48	2.09	31.71	1.20
Ponderosa pine	39.14	1.12	53.59	8.74	54.44	7.16	21.74	1.40	29.18	2.18	25.26	1.29	35.63	0.92
Western juniper	14.29	1.32	8.30	0.58	7.33	1.45	9.96	2.02	6.93	0.47	7.28	0.48	8.72	0.38
Western larch	58.29	7.04	—	—	—	—	7.11	3.33	15.34	1.16	10.79	2.53	49.61	6.62
Other western softwoods	20.90	5.79	59.05	59.05	—	—	24.33	0.00	2.60	1.26	7.47	4.99	21.05	5.33
Total	86.24	1.38	83.90	3.27	102.75	6.13	52.28	1.78	43.31	2.04	48.57	1.31	74.01	0.95
Hardwoods:														
Alder/maple	82.44	8.47	55.51	9.01	79.80	6.69	69.61	5.83	56.61	4.35	62.96	3.66	68.07	3.00
Aspen/birch	16.17	4.37	9.16	3.78	—	—	15.67	15.67	42.31	19.75	30.13	12.60	18.11	5.05
Elm/ash/cottonwood	—	—	76.61	76.61	108.42	108.42	11.23	5.22	48.53	17.65	42.14	14.82	45.75	14.42
Tanoak/laurel	70.65	11.14	70.99	22.61	—	—	84.89	13.05	62.79	11.43	75.04	9.04	72.25	7.25
Western oak	44.13	7.61	45.11	8.32	35.14	13.04	41.96	11.38	36.29	3.86	38.04	4.43	40.29	3.41
Woodland hardwoods	15.46	2.45	8.95	3.85	—	—	7.48	2.93	17.91	2.53	15.60	2.40	13.60	1.75
Other hardwoods	18.42	6.25	78.59	12.89	47.21	12.83	66.51	13.19	43.02	7.33	51.19	6.86	51.11	5.19
Total	59.09	5.65	51.14	5.88	69.22	6.14	63.80	4.64	46.83	2.72	53.80	2.53	55.89	2.14
Nonstocked	2.18	0.39	0.74	0.43	11.58	7.53	1.25	0.42	3.76	1.37	2.39	0.68	2.48	0.45
All forest types	81.95	1.32	78.63	2.94	93.03	4.99	51.87	1.63	42.60	1.63	47.74	1.13	69.67	0.85

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 0.005 bone-dry tons per acre was estimated; the average was calculated using a ratio of means formula across plots within forest type groups.

^a Includes all live trees ≥ 1 inches in diameter at breast height, consisting of growing-stock, rough-cull, and rotten-cull tree classes. Aboveground biomass of the tree from ground to tip, includes stem wood, bark, and branches; calculated with regional biomass equations.

Table A1-25—Average aboveground biomass per acre of dead trees^a on forest land, by forest type group and ownership group, Oregon, 2001–2010

Forest type group	Ownership group											
	USDA Forest Service			State and local government			Private					
	Mean	SE		Mean	SE		Mean	SE		Mean	SE	
<i>Tons per acre</i>												
Softwoods:												
Douglas-fir	15.86	0.79		7.96	0.91		2.74	0.23		3.11	0.36	
Fir/spruce/mountain hemlock	16.31	0.71		3.98	2.47		2.11	0.37		6.54	1.82	
Hemlock/Sitka spruce	28.63	3.33		11.59	3.35		6.49	0.92		6.81	2.10	
Lodgepole pine	5.12	0.52		0.12	0.09		0.72	0.27		1.65	0.47	
Ponderosa pine	3.72	0.32		1.51	0.97		0.98	0.21		1.68	0.30	
Western juniper	0.95	0.26		—	—		0.04	0.03		0.22	0.06	
Western larch	14.40	3.40		—	—		1.55	0.77		—	—	
Western white pine	12.24	8.03		—	—		—	—		—	—	
Other western softwoods	10.06	4.84		—	—		—	—		—	—	
Total	11.42	0.35		6.88	0.75		2.45	0.16		2.25	0.21	
Hardwoods:												
Alder/maple	12.71	2.78		9.91	2.43		4.55	0.70		3.05	0.63	
Aspen/birch	1.57	0.57		—	—		—	—		6.04	3.10	
Elm/ash/cottonwood	—	—		—	—		—	—		1.86	1.02	
Tanoak/laurel	22.71	4.34		—	—		7.15	1.92		3.64	1.17	
Western oak	9.75	2.93		0.90	0.46		3.52	0.80		3.01	0.57	
Woodland hardwoods	2.14	1.09		—	—		1.41	0.52		3.88	1.31	
Other hardwoods	10.21	4.30		5.62	3.74		3.24	1.10		3.63	0.83	
Total	15.40	2.17		7.81	1.86		4.45	0.51		3.17	0.34	
Nonstocked	14.91	3.26		5.08	3.19		0.83	0.26		0.55	0.22	
All forest types	11.75	0.35		7.03	0.69		2.64	0.15		2.39	0.17	

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 0.005 bone-dry tons per acre was estimated; the average was calculated using a ratio of means formula across plots within forest type groups.

^a Includes all dead trees ≥ 5 inches in diameter at breast height; smaller dead trees were not measured in this inventory. Aboveground biomass is estimated from ground to actual height, includes stem wood, bark, and branches; calculated with regional biomass equations.

Table A1-26—Average aboveground biomass per acre of live trees^a on forest land, by forest type group and stand size class, Oregon, 2001–2010

Forest type group	Stand size class							
	Large-diameter stands		Medium-diameter stands		Small-diameter stands		All classes	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
<i>Tons per acre</i>								
Softwoods:								
Douglas-fir	137.91	2.15	36.40	1.64	7.96	0.72	109.95	1.90
Fir/spruce/mountain hemlock	90.97	2.46	34.67	4.67	12.74	1.30	79.71	2.31
Hemlock/Sitka spruce	159.17	6.93	48.17	7.87	9.88	3.13	142.02	6.83
Lodgepole pine	45.80	2.11	36.83	2.25	17.80	1.20	31.71	1.20
Ponderosa pine	40.16	1.02	15.96	1.49	9.87	1.10	35.63	0.92
Western juniper	11.08	0.48	4.67	0.72	2.60	0.26	8.72	0.38
Western larch	69.07	7.68	47.88	6.28	12.35	2.08	49.61	6.62
Other western softwoods	27.51	8.15	18.57	9.25	9.32	3.31	21.05	5.33
Total	92.66	1.16	30.57	1.13	10.13	0.46	74.01	0.95
Hardwoods:								
Alder/maple	87.97	3.44	45.97	3.36	10.98	2.51	68.07	3.00
Aspen/birch	83.25	0.00	21.09	2.16	10.24	2.84	18.11	5.05
Elm/ash/cottonwood	70.50	22.52	39.17	9.40	7.57	2.02	45.75	14.42
Tanoak/laurel	145.29	11.01	84.63	8.15	6.06	1.72	72.25	7.25
Western oak	71.90	6.77	29.22	2.58	11.14	2.00	40.29	3.41
Woodland hardwoods	16.93	2.07	3.89	3.06	6.76	2.41	13.60	1.75
Other hardwoods	81.24	8.26	70.02	8.51	11.06	2.00	51.11	5.19
Total	86.60	3.29	47.96	2.76	9.18	0.92	55.89	2.14
Nonstocked	—	—	—	—	—	—	2.48	0.45
All forest types	92.22	1.09	35.45	1.16	9.97	0.41	69.67	0.85

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 0.005 bone-dry tons per acre was estimated; the average was calculated using a ratio of means formula across plots within forest type groups.

^a Includes all live trees ≥ 1 inches in diameter at breast height, consisting of growing-stock, rough-cull, and rotten-cull tree classes. Aboveground biomass of the tree from ground to tip, includes stem wood, bark, and branches; calculated with regional biomass equations.

Table A1-27—Average aboveground biomass per acre of dead trees^a on forest land, by forest type group and stand size class, Oregon, 2001–2010

Forest type group	Stand size class							
	Large-diameter stands		Medium-diameter stands		Small-diameter stands		All classes	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
<i>Tons per acre</i>								
Softwoods:								
Douglas-fir	11.25	0.44	1.95	0.34	3.76	0.98	9.29	0.36
Fir/spruce/mountain hemlock	15.40	0.66	3.31	0.81	8.11	1.83	14.01	0.61
Hemlock/Sitka spruce	18.87	1.85	3.99	2.16	3.82	1.40	16.99	1.67
Lodgepole pine	4.71	0.61	4.40	0.72	3.83	0.74	4.26	0.42
Ponderosa pine	3.12	0.24	1.21	0.33	2.70	0.74	2.97	0.22
Western juniper	0.55	0.08	0.42	0.18	0.20	0.08	0.47	0.06
Western larch	15.35	4.30	5.76	1.51	6.08	2.51	11.93	2.94
Western white pine	23.67	12.67	—	—	1.14	0.79	12.24	8.03
Other western softwoods	8.84	4.60	—	—	5.68	3.67	6.56	2.96
Total	9.14	0.24	2.34	0.24	3.59	0.45	7.65	0.20
Hardwoods:								
Alder/maple	7.34	0.90	3.31	0.70	4.56	2.56	5.98	0.68
Aspen/birch	12.42	0.00	1.84	0.56	0.58	0.26	1.70	0.78
Elm/ash/cottonwood	2.38	1.34	—	—	0.29	0.21	1.44	0.82
Tanoak/laurel	10.74	1.49	6.71	1.53	23.03	5.54	15.21	2.60
Western oak	4.29	0.72	4.52	0.86	5.49	2.00	4.66	0.64
Woodland hardwoods	2.51	0.72	1.33	0.58	2.46	1.38	2.40	0.60
Other hardwoods	6.27	2.02	4.64	0.98	5.59	2.16	5.49	1.06
Total	6.66	0.55	4.33	0.46	10.35	2.00	6.95	0.60
Nonstocked	—	—	—	—	—	—	7.91	1.67
All forest types	8.96	0.23	2.90	0.22	4.75	0.51	7.58	0.18

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 0.005 bone-dry tons per acre was estimated; the average was calculated using a ratio of means formula across plots within forest type groups.

^a Includes all dead trees ≥ 5 inches in diameter at breast height; smaller dead trees were not measured in this inventory. Aboveground biomass is estimated from ground to actual height, includes stem wood, bark, and branches; calculated with regional biomass equations.

Table A1-28—Aboveground carbon mass^a of live trees^b on forest land, by ownership and land status, Oregon, 2001–2010

Ownership	Land status													
	Unreserved forests					Reserved forests								
	Timberland		Other forest		Total	Productive		Other forest		Total	All forest land			
	Total	SE	Total	SE	Total	Total	SE	Total	SE	Total	Total	SE		
Thousand megagrams														
USDA Forest Service:														
National forest	428,693.4	9,046.9	6,132.8	959.7	434,826.2	8,992.7	88,889.8	5,887.2	3,327.2	889.5	92,217.1	5,934.0	527,043.2	8,505.8
National grasslands	—	—	51.1	28.1	51.1	28.1	—	—	—	—	—	—	51.1	28.1
Total	428,693.4	9,046.9	6,183.9	959.9	434,877.3	8,992.4	88,889.8	5,887.2	3,327.2	889.5	92,217.1	5,934.0	527,094.4	8,505.5
Other federal government:														
Bureau of Land Management	118,563.9	5,530.7	5,853.6	684.7	124,417.5	5,513.4	3,658.5	1,150.3	264.8	124.7	3,923.3	1,157.0	128,340.8	5,430.8
National Park Service	—	—	—	—	—	—	6,167.7	1,034.2	705.4	605.3	6,873.0	1,100.0	6,873.0	1,100.0
U.S. Fish and Wildlife Service	—	—	—	—	—	—	165.3	117.2	8.3	9.6	173.7	117.6	173.7	117.6
Other federal	484.5	345.0	—	—	484.5	345.0	230.2	238.5	—	—	230.2	238.5	714.7	419.4
Total	119,048.4	5,541.1	5,853.6	684.7	124,902.0	5,523.8	10,221.7	1,569.5	978.5	618.1	11,200.1	1,618.4	136,102.1	5,450.1
State and local government:														
Local	3,905.0	1,112.7	129.0	72.1	4,034.0	1,115.4	1,050.8	680.7	—	—	1,050.8	680.7	5,084.8	1,305.1
State	41,218.5	3,273.0	344.5	158.6	41,563.0	3,276.7	4,207.1	1,676.2	—	—	4,207.1	1,676.2	45,770.1	3,589.8
Other public	9.0	9.2	—	—	9.0	9.2	—	—	—	—	—	—	9.0	9.2
Total	45,132.6	3,443.6	473.4	174.2	45,606.0	3,447.8	5,257.8	1,809.2	—	—	5,257.8	1,809.2	50,863.9	3,806.6
Corporate private	138,666.7	5,302.2	2,119.4	723.1	140,786.1	5,327.6	—	—	—	—	—	—	140,786.1	5,327.6
Noncorporate private:														
Nongovernmental conservation or natural resource organizations	8,150.5	1,598.1	—	—	8,150.5	1,598.1	—	—	—	—	—	—	8,150.5	1,598.1
Unincorporated partnerships, associations, or clubs	1,196.0	642.6	54.8	36.5	1,250.8	643.6	—	—	—	—	—	—	1,250.8	643.6
Native American	9,893.3	1,583.1	665.2	323.2	10,558.5	1,600.7	—	—	—	—	—	—	10,558.5	1,600.7
Individual	66,573.5	3,838.4	6,210.5	735.7	72,784.0	3,873.4	—	—	—	—	—	—	72,784.0	3,873.4
Total	85,813.3	4,393.0	6,930.6	802.6	92,743.9	4,421.9	—	—	—	—	—	—	92,743.9	4,421.9
All private	224,480.0	5,887.9	9,050.0	1,074.2	233,530.0	5,874.7	—	—	—	—	—	—	233,530.0	5,874.7
All owners	817,354.4	11,850.8	21,561.0	1,602.9	838,915.4	11,783.2	104,369.3	6,350.6	4,305.7	1,083.1	108,675.0	6,406.1	947,590.4	11,376.4

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50 megagrams was estimated.

^a Total aboveground carbon mass of the tree from ground to tip, includes stem wood, bark, and branches; calculated by applying a factor of 0.5 to aboveground biomass estimated from regional biomass equations, and converting to metric units. Convert megagrams of carbon to tons of biomass by multiplying by 2.204586. The result will be approximate because of rounding.

^b Includes all live trees ≥ 1 inches in diameter at breast height, consisting of growing-stock, rough-cull, and rotten-cull tree classes.

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50 megagrams was estimated.

^a Total aboveground carbon mass of the tree from ground to tip, includes stem wood, bark, and branches; calculated by applying a factor of 0.5 to aboveground biomass estimated from regional biomass equations, and converting to metric units. Convert megagrams of carbon to tons of biomass by multiplying by 2.204586. The result will be approximate because of rounding.

^b Includes all dead trees ≥ 5 inches in diameter at breast height; smaller dead trees were not measured in this inventory.

^a Total aboveground carbon mass of the tree from ground to tip, includes stem wood, bark, and branches; calculated by applying a factor of 0.5 to aboveground biomass estimated from regional biomass equations, and converting to metric units. Convert megagrams of carbon to tons of biomass by multiplying by 2.204586. The result will be approximate because of rounding.

^b Includes all dead trees ≥ 5 inches in diameter at breast height; smaller dead trees were not measured in this inventory.

Table A1-30—Average aboveground carbon mass^a per hectare of live trees^b on forest land, by forest type group and ownership group, Oregon, 2001–2010

Forest type group	Ownership group															
	USDA Forest Service			Other federal			State and local government		Private							
	Mean	SE		Mean	SE		Mean	SE	Mean	SE	Mean	SE				
Kilograms per hectare																
Softwoods:																
Douglas-fir	161,469.55	3,996.68		156,646.54	5,738.40		131,689.36	7,851.92	70,251.57	2,823.40	81,342.42	4,452.01	73,766.17	2,384.84	123,240.02	2,131.22
Fir/spruce/mountain hemlock	95,899.36	2,951.25		149,597.71	12,213.17		84,908.76	13,343.33	35,947.18	3,193.23	54,683.59	7,062.38	42,364.98	3,359.36	89,347.76	2,591.81
Hemlock/Sitka spruce	201,022.50	13,050.91		146,368.96	26,438.85		160,121.56	25,069.27	123,224.89	9,741.41	117,732.47	18,615.84	122,013.00	8,661.24	159,190.73	7,652.57
Lodgepole pine	37,718.98	1,542.21		46,548.02	7,403.68		29,492.53	10,683.36	19,777.64	1,892.31	38,120.32	7,096.65	24,076.15	2,343.49	35,543.03	1,343.23
Ponderosa pine	43,874.88	1,254.94		60,064.35	9,794.31		61,016.73	8,029.65	24,364.88	1,565.12	32,710.00	2,438.75	28,310.18	1,444.38	39,940.23	1,032.82
Western juniper	16,019.44	1,478.94		9,306.38	648.83		8,220.21	1,626.99	11,160.99	2,265.39	7,762.42	527.14	8,154.72	539.60	9,776.51	430.38
Western larch	65,339.55	7,891.81		—	—		—	—	7,968.18	3,729.92	17,189.50	1,295.35	12,092.29	2,839.42	55,611.35	7,421.92
Other western softwoods	23,421.00	6,485.78		66,182.92	66,182.92		—	—	27,267.33	27,267.33	2,911.24	1,408.93	8,371.28	5,592.61	23,590.21	5,971.10
Total	96,660.22	1,552.08		94,040.63	3,667.98		115,169.74	6,868.87	58,598.91	1,997.45	48,540.74	2,290.70	54,438.73	1,468.98	82,955.55	1,061.62
Hardwoods:																
Alder/maple	92,405.63	9,498.08		62,221.05	10,093.66		89,443.94	7,495.29	78,018.71	6,536.51	63,450.18	4,875.89	70,564.88	4,097.11	76,298.22	3,358.24
Aspen/birch	18,123.01	4,896.93		10,262.36	4,234.35		—	—	17,561.46	17,561.46	47,422.28	22,140.27	33,775.82	14,119.49	20,300.00	5,659.99
Elm/ash/cottonwood	—	—		85,874.79	85,874.79		121,529.92	121,529.92	12,591.37	5,849.70	54,399.92	19,781.51	47,231.48	16,614.25	51,282.79	16,161.14
Tanoak/laurel	79,187.17	12,483.13		79,572.22	25,347.06		—	—	95,145.57	14,630.88	70,373.83	12,816.93	84,106.30	10,133.95	80,980.38	8,128.92
Western oak	49,469.27	8,525.46		50,567.76	9,322.35		39,392.02	14,620.44	47,034.16	12,757.92	40,681.55	4,331.67	42,643.14	4,963.38	45,163.88	3,821.77
Woodland hardwoods	17,330.99	2,749.76		10,026.63	4,312.18		—	—	8,384.83	3,284.70	20,074.21	2,832.20	17,484.02	2,686.27	15,240.17	1,960.55
Other hardwoods	20,644.00	7,003.86		88,083.81	14,448.31		52,919.33	14,383.92	74,553.04	14,781.08	48,214.88	8,212.13	57,379.01	7,685.41	57,288.40	5,817.46
Total	66,230.97	6,328.99		57,317.80	6,592.82		77,581.31	6,879.77	71,512.10	5,204.93	52,484.72	3,043.36	60,298.64	2,833.15	62,645.33	2,395.97
Nonstocked	2,442.92	434.31		832.03	482.82		12,982.82	8,437.92	1,404.15	465.74	4,209.60	1,537.49	2,676.45	760.85	2,781.08	504.51
All forest types	91,854.80	1,474.84		88,139.19	3,298.89		104,270.81	5,598.57	58,135.28	1,825.48	47,752.55	1,824.84	53,514.37	1,262.79	78,092.55	951.50

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 0.005 kilograms per hectare was estimated; the average was calculated using a ratio of means formula across plots within forest type groups.

^a Total aboveground carbon mass of the tree from ground to tip, includes stem wood, bark, and branches; calculated by applying a factor of 0.5 to aboveground biomass estimated from regional biomass equations, and converting to metric units. Convert kilograms per hectare of carbon to tons per acre of biomass by multiplying by .00089. The result will be approximate because of rounding.

^b Includes all live trees ≥ 1 inches in diameter at breast height, consisting of growing-stock, rough-cull, and rotten-cull tree classes.

Table A1-31—Average aboveground carbon mass^a per hectare of dead trees^b on forest land, by forest type group and ownership group, Oregon, 2001–2010

Forest type group	Ownership group									
	USDA Forest Service			State and local government			Private			
	Mean	SE		Mean	SE		Corporate	Noncorporate	All private	All owners
							Mean	SE	Mean	SE
Kilograms per hectare										
Softwoods:										
Douglas-fir	17,779.21	889.71		8,923.57	1,020.30		3,070.38	259.38	3,481.17	408.71
Fir/spruce/mountain hemlock	18,279.95	799.90		4,458.11	2,770.60		2,361.07	416.76	7,326.95	2,040.86
Hemlock/Sitka spruce	32,085.51	3,729.37		12,989.64	3,755.52		7,279.27	1,026.44	7,637.35	2,354.85
Lodgepole pine	5,738.74	586.31		130.67	98.74		807.17	304.52	1,848.85	527.52
Ponderosa pine	4,167.45	353.15		1,687.68	1,082.02		1,101.17	234.04	1,884.29	338.00
Western juniper	1,065.32	288.11		—	—		49.90	29.78	251.52	71.61
Western larch	16,140.14	3,811.83		—	—		1,735.28	862.20	—	—
Other western softwoods	12,309.60	4,984.28		—	—		—	—	—	—
Total	12,796.37	387.54		7,714.91	842.35		2,741.95	183.73	2,523.34	235.86
Hardwoods:										
Alder/maple	14,245.25	3,116.44		11,103.19	2,718.54		5,105.26	783.36	3,420.06	708.45
Aspen/birch	1,754.25	640.38		—	—		—	—	6,767.53	3,472.09
Elm/ash/cottonwood	—	—		—	—		—	—	2,088.38	1,145.83
Tanoak/laurel	25,453.89	4,867.98		—	—		8,008.64	2,146.56	4,084.20	1,307.63
Western oak	10,927.75	3,278.98		1,006.41	512.06		3,940.17	900.29	3,374.50	635.66
Woodland hardwoods	2,403.94	1,218.72		—	—		1,579.06	579.77	4,348.56	1,466.34
Other hardwoods	11,445.57	4,817.26		6,302.05	4,195.27		3,636.53	1,238.18	4,063.39	932.40
Total	17,260.24	2,437.30		8,752.86	2,080.70		4,987.17	569.61	3,553.65	377.44
Nonstocked	16,716.62	3,655.42		5,697.77	3,578.11		932.27	292.12	614.58	248.50
All forest types	13,167.97	395.31		7,877.11	772.79		2,959.04	171.59	2,683.69	194.47
									2,836.49	128.15
									8,493.42	207.13

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 0.005 kilograms per hectare was estimated; the average was calculated using a ratio of means formula across plots within forest type groups.

^a Total aboveground carbon mass of the tree from ground to tip, includes stem wood, bark, and branches; calculated by applying a factor of 0.5 to aboveground biomass estimated from regional biomass equations, and converting to metric units. Convert kilograms per hectare of carbon to tons per acre of biomass by multiplying by .00089. The result will be approximate because of rounding.

^b Includes all dead trees ≥ 5 inches in diameter at breast height; smaller dead trees were not measured in this inventory.

Table A1-33—Biomass of down wood^a on forest land, by forest type group, ownership group, and land status, Oregon, 2001–2010

Forest type group	Ownership group											
	U.S. Forest Service				Other federal				State and local government			
	Timberland		Other forest land		Timberland		Other forest land		Timberland		Other forest land	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
<i>Thousand tons</i>												
Softwoods:												
Douglas-fir	63,236.6	2,663.6	8,683.1	1,162.1	26,123.0	1,724.3	433.1	168.1	13,231.4	1,604.4	574.5	277.4
Fir/spruce/mountain hemlock	34,530.5	2,101.9	14,088.0	1,393.4	1,234.7	393.4	1,451.0	380.9	452.2	263.0	51.6	54.2
Hemlock/Sitka spruce	10,819.0	1,923.5	2,974.1	1,000.7	1,732.6	574.7	23.8	24.6	2,260.9	880.8	129.8	86.9
Lodgepole pine	17,124.1	1,307.5	3,061.9	559.3	225.9	101.0	767.3	261.5	78.8	51.6	2.0	2.0
Ponderosa pine	23,489.7	1,225.6	924.9	234.3	1,144.3	269.0	103.1	80.0	282.1	118.8	—	—
Western juniper	568.3	146.2	465.3	201.9	201.3	119.1	1,699.0	491.2	11.0	12.2	38.0	19.0
Western larch	1,763.1	477.8	958.8	329.2	—	—	—	—	—	—	—	—
Other western softwoods	467.6	325.1	79.9	38.4	—	—	84.1	79.1	—	—	—	—
Total	151,998.9	3,739.1	31,236.0	2,137.9	30,661.9	1,784.2	4,561.4	652.4	16,316.3	1,753.7	795.9	295.8
Hardwoods:												
Alder/maple	3,022.7	677.3	68.2	49.1	628.7	248.1	2.1	2.1	3,445.2	790.2	39.7	38.4
Aspen/birch	78.3	64.5	2.7	2.9	—	—	108.5	55.7	—	—	—	—
Elm/ash/cottonwood	—	—	—	—	—	—	—	—	—	—	20.0	20.9
Tanoak/laurel	3,093.5	737.1	482.9	124.9	1,056.3	472.9	—	—	—	—	—	—
Western oak	476.3	174.0	238.3	108.3	735.0	195.5	178.8	85.7	72.7	44.5	79.6	58.7
Woodland hardwoods	149.6	75.3	190.2	96.2	12.8	12.9	164.0	89.9	—	—	—	—
Other hardwoods	382.5	161.8	140.2	68.3	782.4	287.8	76.4	46.7	242.5	119.3	—	—
Total	7,202.9	1,017.2	1,122.4	206.2	3,215.2	634.4	529.9	145.7	3,760.4	800.1	139.4	73.2
Nonstocked	2,742.4	454.6	1,206.9	414.0	4.6	2.9	287.1	142.5	431.3	233.5	—	—
All forest types	161,944.2	3,766.7	33,565.4	2,180.9	33,881.7	1,819.0	5,378.3	679.7	20,508.0	1,844.1	935.2	305.1

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50 bone-dry tons was estimated; for details on DWM biomass calculation see *FIA Methods and Design Supplement*.

^a Includes down wood with diameters ≥ 0.1 inch.

Table A1-34—Biomass of down wood^a on forest land, by county and land status, Oregon, 2001–2010

County	Land status										
	Unreserved forests					Reserved forests					
	Timberland		Other forest		Total	Productive		Other forest		Total	
	Total	SE	Total	SE		Total	SE	Total	SE		
Thousand tons											
Western Oregon:											
Benton	4,102.3	732.7	130.5	130.2	4,232.8	742.9	—	—	—	4,232.8	742.9
Clackamas	13,457.8	1,509.9	—	—	13,457.8	1,509.9	3,015.8	897.7	—	3,015.8	897.7
Clatsop	9,083.0	1,300.9	3.1	2.9	9,086.1	1,300.9	2.1	2.1	—	2.1	2.1
Columbia	3,785.4	645.6	16.1	13.2	3,801.6	648.3	—	—	—	—	648.3
Coos	12,959.6	1,397.2	77.9	55.0	13,037.5	1,397.6	35.5	27.0	—	35.5	27.0
Curry	8,014.8	906.8	79.5	47.5	8,094.4	906.1	960.7	249.6	100.6	1,061.3	253.8
Douglas	41,617.3	2,233.5	523.0	217.4	42,140.3	2,236.6	1,862.4	492.1	186.3	2,048.6	498.8
Hood River	4,012.2	1,404.5	16.7	14.7	4,028.8	1,404.5	1,268.6	465.7	3.9	1,272.5	465.8
Jackson	14,814.3	1,227.9	886.3	217.3	15,700.6	1,243.2	568.4	209.5	56.1	624.4	212.3
Josephine	9,344.2	1,062.8	117.2	55.1	9,461.4	1,063.6	375.6	163.3	0.5	376.1	163.3
Lane	42,624.5	2,403.6	472.7	187.8	43,097.2	2,400.9	3,440.3	620.2	39.2	3,479.6	620.5
Lincoln	9,142.2	1,123.6	24.9	24.9	9,167.1	1,123.5	223.8	191.0	—	223.8	191.0
Linn	19,368.8	1,862.1	10.3	8.8	19,379.1	1,862.0	890.4	330.3	—	890.4	330.3
Marion	4,111.9	767.5	112.9	82.8	4,224.8	770.7	1,055.8	358.4	5.3	1,061.2	359.0
Multnomah	1,045.1	481.8	2.3	2.2	1,047.4	481.8	2,932.9	1,122.3	—	2,932.9	1,122.3
Polk	3,805.9	712.0	48.5	34.7	3,854.4	712.3	—	—	—	—	712.3
Tillamook	14,833.5	1,595.4	—	—	14,833.5	1,595.4	41.4	43.0	—	41.4	43.0
Washington	3,516.5	947.3	—	—	3,516.5	947.3	51.6	54.2	—	51.6	54.2
Yamhill	3,145.6	640.8	45.2	46.6	3,190.8	641.9	20.0	20.9	—	20.0	20.9
Total	222,784.8	4,536.4	2,567.2	404.9	225,352.0	4,513.2	16,745.3	1,746.1	391.9	17,137.2	1,748.3

Table A1-34—Biomass of down wood^a on forest land, by county and land status, Oregon, 2001–2010 (continued)

County	Land status												
	Unreserved forests					Reserved forests							
	Timberland		Other forest		Total	Productive		Other forest		Total			
	Total	SE	Total	SE	SE	Total	SE	Total	SE	Total	SE		
Thousand tons													
Eastern Oregon:													
Baker	4,996.6	620.8	187.5	88.5	5,184.1	626.6	258.3	136.6	—	258.3	136.6	5,442.4	639.4
Crook	3,903.0	624.3	612.8	101.1	4,515.8	635.4	473.2	296.9	—	473.2	296.9	4,989.0	699.2
Deschutes	8,912.7	997.7	522.5	174.6	9,435.2	1,009.3	1,525.1	458.8	134.0	1,659.1	464.5	11,094.3	1,093.5
Grant	15,789.1	1,153.5	319.3	128.4	16,108.4	1,156.6	2,799.6	592.0	195.9	2,995.5	604.5	19,103.9	1,252.4
Harney	3,167.0	417.3	797.2	188.4	3,964.2	460.7	—	—	9.7	9.7	7.5	3,973.9	460.7
Jefferson	3,144.6	636.1	445.3	195.8	3,590.0	661.8	604.7	287.4	—	604.7	287.4	4,194.7	720.4
Klamath	20,177.4	1,184.8	1,806.2	559.0	21,983.6	1,293.8	4,808.4	723.3	535.8	5,344.2	758.0	27,327.8	1,421.0
Lake	11,101.9	979.0	786.8	220.5	11,888.7	1,000.5	137.9	99.7	52.9	190.8	106.4	12,079.5	1,004.3
Malheur	114.9	97.9	148.3	67.1	263.2	118.7	—	—	—	—	—	263.2	118.7
Morrow	2,234.0	547.8	41.3	42.5	2,275.3	549.2	—	—	—	—	—	2,275.3	549.2
Umatilla	6,070.2	805.7	175.6	139.7	6,245.9	816.7	219.4	155.9	—	219.4	155.9	6,465.3	830.1
Union	8,349.5	971.8	90.0	79.3	8,439.5	974.4	604.2	189.9	0.4	604.6	189.9	9,044.1	987.4
Wallowa	5,396.4	719.1	40.0	38.1	5,436.4	720.0	4,094.1	645.3	69.7	4,163.8	646.0	9,600.3	951.7
Wasco	5,364.9	801.4	515.7	209.1	5,880.6	821.4	122.3	122.9	—	122.3	122.9	6,002.9	830.3
Wheeler	2,941.1	696.3	86.6	31.1	3,027.7	697.0	237.9	239.1	—	237.9	239.1	3,265.6	736.3
Total	101,663.4	2,483.3	6,575.2	753.6	108,238.6	2,530.5	15,885.0	1,319.0	998.3	16,883.4	1,343.1	125,122.0	2,573.3
All counties	324,448.2	5,143.1	9,142.4	855.4	333,590.6	5,143.8	32,630.3	2,188.1	1,390.2	34,020.5	2,204.5	367,611.2	5,154.8

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50 bone-dry tons was estimated; for details on DWM biomass calculation, see *FIA Methods and Design Supplement*.

^a Includes down wood with diameters ≥ 0.1 inch.

Table A1-35—Average volume per acre of down wood on forest land, by forest type group and and down wood diameter class, Oregon, 2001–2010

Forest type group	Down wood diameter class (inches)											
	Fine-wood size class ^a						Coarse-wood size class ^b					
	0.1—2.4		0.25—0.9		1.0—2.9		3.0—9.0		10.0—19.0		≥ 20.0	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
<i>Cubic feet per acre</i>												
Softwoods:												
Douglas-fir	11.52	0.24	64.35	1.33	199.11	5.86	241.21	5.01	551.24	12.05	1,180.47	39.95
Fir/spruce/mountain hemlock	8.45	0.29	63.26	1.99	205.72	6.59	356.95	12.87	769.54	27.35	750.15	44.43
Hemlock/Sitka spruce	12.52	0.84	84.72	11.79	199.91	17.71	340.94	21.09	954.26	51.20	2,562.73	265.07
Lodgepole pine	5.26	0.24	53.48	2.40	198.85	9.09	509.59	25.91	444.12	27.86	134.06	15.28
Ponderosa pine	2.43	0.09	35.83	1.06	125.70	4.02	173.52	5.84	226.75	9.67	256.75	17.07
Western juniper	1.41	0.08	14.87	0.97	50.90	13.77	17.92	2.05	36.68	4.48	33.52	7.90
Western larch	4.97	0.92	55.91	7.72	206.71	27.61	617.48	76.36	818.65	127.77	241.90	70.08
Other western softwoods	2.46	1.04	23.19	4.68	56.74	14.24	92.45	27.87	230.67	87.31	567.25	298.11
Total	7.63	0.12	52.80	0.85	168.90	3.34	247.22	4.20	468.95	7.89	768.14	21.42
Hardwoods:												
Alder/maple	7.36	0.45	64.78	4.60	165.62	10.83	180.25	10.81	429.69	32.06	1,180.10	127.91
Aspen/birch	2.61	0.58	37.13	8.60	151.03	48.49	218.18	46.50	320.00	115.45	72.24	46.20
Elm/ash/cottonwood	9.56	3.16	71.84	30.75	74.60	28.27	73.90	21.29	100.67	33.43	22.58	22.48
Tanoak/laurel	10.55	0.92	70.55	11.62	185.57	19.11	206.77	22.21	342.22	36.89	744.77	122.77
Western oak	4.68	0.48	31.73	3.15	104.26	12.57	103.32	9.66	161.95	19.90	156.61	35.04
Woodland hardwoods	3.64	0.56	34.17	4.94	113.91	19.51	92.66	20.64	222.69	91.92	170.92	70.97
Other hardwoods	6.57	0.82	44.52	3.89	156.48	21.09	205.25	30.02	268.95	28.20	392.11	101.98
Total	6.99	0.30	53.39	3.02	148.34	6.87	163.50	7.72	308.11	16.01	655.13	55.90
Nonstocked	5.70	1.00	68.58	22.33	216.61	25.90	207.12	16.68	309.79	33.17	304.89	51.83
All forest types	7.50	0.12	53.39	1.08	168.23	3.07	236.76	3.74	446.13	7.08	740.51	19.32
											1,652.52	24.33

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; the average was calculated using a ratio of means formula across plots within forest type groups.

^a The diameter of each piece was visually estimated before being counted within each size class. Counts were used as input to volume equations for fine-wood.

^b Diameter classes are based on the diameter at the large end of the piece for decay classes less than 5, and based on the transect diameter for decay class 5 pieces. The diameter of each piece was measured and recorded to the nearest inch. Because of this, class breakpoints for 9, 10, 19 and 20 actually represent 0.4 inches above and below the value. For example, 9 represents 8.6 to 9.4 inches.

Forest type group	Ownership group and land status																	
	U.S. Forest Service			Other federal			State and local government			Private								
	Timberland		Other forest land	Timberland		Other forest land	Timberland		Other forest land	Timberland		Other forest land						
Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE					
Tons per acre																		
Softwoods:																		
Douglas-fir	17.477	0.566	15.263	1.433	17.086	0.843	7.437	1.607	20.952	1.865	20.247	1.945	13.222	0.406	14.501	8.229	15.730	0.309
Fir/spruce/mountain hemlock	17.566	0.631	15.746	0.991	17.550	2.169	14.047	2.329	20.742	4.455	8.961	8.961	13.020	0.925	12.679	6.824	16.263	0.455
Hemlock/Sitka spruce	35.598	4.227	37.704	8.797	29.059	4.379	3.969	3.969	40.187	8.555	7.182	2.805	22.146	1.804	—	—	28.969	1.944
Lodgepole pine	13.431	0.611	12.907	1.249	5.201	1.318	11.523	2.023	5.397	0.209	0.290	0.033	9.208	1.157	5.956	0.173	12.195	0.479
Ponderosa pine	7.283	0.289	6.197	1.029	6.634	1.018	6.115	2.670	5.829	1.373	—	—	5.473	0.285	8.346	2.317	6.684	0.206
Western juniper	3.546	0.630	1.973	0.802	7.227	2.369	1.466	0.414	2.114	2.114	0.484	0.200	2.718	0.613	0.995	0.147	1.540	0.204
Western larch	16.938	2.442	16.839	2.202	—	—	—	—	—	—	—	—	11.304	4.453	—	—	15.880	1.699
Other western softwoods	17.300	9.548	2.012	0.625	—	—	11.114	11.114	—	—	—	—	11.546	2.480	1.093	0.154	7.518	3.200
Total	14.232	0.303	13.813	0.711	16.115	0.729	3.218	0.435	20.978	1.745	5.788	1.767	11.754	0.300	1.692	0.290	12.634	0.187
Hardwoods:																		
Alder/maple	19.035	2.919	8.309	2.498	14.777	2.959	0.921	0.921	20.056	2.890	5.397	0.756	11.362	1.078	6.486	2.264	13.675	0.954
Aspen/birch	7.295	2.529	0.516	0.516	—	—	6.837	2.836	—	—	—	—	7.301	1.254	—	—	6.201	1.365
Elm/ash/cottonwood	—	—	—	—	—	—	—	—	—	—	4.761	4.761	3.001	0.780	3.854	2.790	3.211	0.764
Tanoak/laurel	15.205	2.717	3.744	0.634	19.319	6.182	—	—	—	—	—	—	13.909	1.496	—	—	12.661	1.294
Western oak	6.057	1.501	5.675	1.982	6.504	0.910	3.524	1.227	3.474	0.931	4.375	1.786	7.502	1.338	3.603	0.657	5.235	0.476
Woodland hardwoods	7.167	2.931	5.991	2.127	1.978	1.978	3.856	1.495	—	—	—	—	7.033	2.430	3.835	1.432	5.381	0.951
Other hardwoods	9.106	2.466	4.662	1.062	11.959	2.563	3.142	1.133	7.656	1.640	—	—	9.716	1.428	2.298	0.641	8.473	0.891
Total	14.000	1.519	4.550	0.586	11.367	1.617	3.897	0.752	16.759	2.435	4.471	1.111	10.557	0.691	3.623	0.537	9.995	0.481
Nonstocked	7.240	0.837	12.245	3.074	0.286	0.165	4.752	1.778	15.092	5.252	—	—	13.894	1.843	1.620	0.803	10.026	0.891
All forest types	13.993	0.289	12.877	0.642	15.389	0.671	3.332	0.393	19.897	1.430	5.355	1.415	11.653	0.275	2.181	0.257	12.260	0.170

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 0.0005 bone-dry tons per acre was estimated; the average was calculated using a ratio of means formula across plots within forest type groups; for details on DW/M biomass calculation, see *FLA Methods and Design Supplement*.

^a Includes down wood with diameters ≥ 0.1 inch.

Table A1-37—Average biomass per acre of down wood^a on forest land, by ownership and land status, Oregon, 2001–2010

Ownership	Land status											
	Unreserved forests						Reserved forests					
	Timberland			Total			Productive			Total		
	Mean	SE		Mean	SE		Mean	SE		Mean	SE	
<i>Tons per acre</i>												
USDA Forest Service:												
National forest	13.993	0.289		6.339	0.759		13.672	0.279		15.588	0.824	
National grasslands	—	—		0.636	0.191		0.636	0.191		—	—	
Total	13.993	0.289		5.828	0.707		13.618	0.279		15.588	0.824	
Other federal government:												
Bureau of Land Management	15.439	0.674		1.906	0.389		10.375	0.491		8.675	1.665	
National Park Service	—	—		—	—		—	—		12.490	1.414	
U.S. Fish and Wildlife Service	—	—		—	—		—	—		4.745	1.162	
Other federal	7.251	0.117		—	—		7.251	0.117		3.969	3.969	
Total	15.389	0.671		1.906	0.389		10.363	0.490		10.746	1.070	
State and local government:												
Local	11.248	1.964		0.866	0.380		9.428	1.795		10.879	3.071	
State	21.298	1.606		1.254	0.716		19.759	1.532		11.519	3.013	
Other public	3.093	3.093		—	—		3.093	3.093		—	—	
Total	19.897	1.430		1.146	0.529		18.198	1.348		11.361	2.396	
Corporate private	13.532	0.372		4.572	0.926		13.184	0.363		—	—	
Noncorporate private:												
Nongovernmental conservation or natural resource organizations	14.148	1.413		—	—		14.148	1.413		—	—	
Unincorporated partnerships, associations, or clubs	9.690	2.572		0.748	0.579		5.758	2.027		—	—	
Native American	13.684	1.517		5.919	2.590		12.239	1.366		—	—	
Individual	7.226	0.383		1.449	0.158		5.531	0.291		—	—	
Total	8.588	0.382		1.744	0.244		6.773	0.304		—	—	
All private	11.653	0.275		2.181	0.257		10.331	0.247		—	—	
All owners	13.472	0.195		2.632	0.224		12.105	0.177		14.925	0.725	
										5.774	1.145	
										14.017	0.677	
										12.260	0.170	

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 0.0005 bone-dry tons per acre was estimated; the average was calculated using a ratio of means formula across plots; for details on DWM biomass calculation, see *FIA Methods and Design Supplement*.

^a Includes down wood with diameters ≥ 0.1 inch.

Table A1-38—Average biomass per acre of down wood^a on forest land, by county and land status, Oregon, 2001–2010

County	Land status											
	Unreserved forests						Reserved forests					
	Timberland			Total			Productive			Other forest		
	Mean	SE		Mean	SE		Mean	SE		Mean	SE	
<i>Tons per acre</i>												
Western Oregon:												
Benton	14.187	1.518		14.332	1.493		—	—		—	—	
Clackamas	18.987	1.560		18.987	1.560		21.582	4.822		—	—	
Clatsop	20.590	1.847		20.505	1.846		0.921	0.921		—	—	
Columbia	11.659	1.302		11.425	1.280		—	—		—	—	
Coos	15.824	1.146		15.676	1.133		2.709	0.807		—	—	
Curry	10.532	0.849		10.326	0.831		6.527	1.171		2.857	0.857	
Douglas	16.168	0.604		15.965	0.596		17.972	2.286		7.874	1.493	
Hood River	20.013	6.118		19.403	5.931		20.182	4.342		0.670	0.399	
Jackson	11.838	0.644		10.766	0.589		10.408	1.759		2.971	0.569	
Josephine	11.283	0.903		10.694	0.863		10.145	1.878		0.089	0.089	
Lane	19.193	0.817		19.003	0.803		16.141	1.481		7.112	7.112	
Lincoln	16.479	1.223		16.329	1.222		19.266	9.070		—	—	
Linn	20.096	1.316		19.957	1.309		13.419	3.124		—	—	
Marion	14.612	1.814		14.246	1.738		14.135	2.642		3.195	3.195	
Multnomah	21.978	6.279		20.418	6.026		46.935	11.832		—	—	
Polk	14.259	1.663		13.698	1.610		—	—		—	—	
Tillamook	24.689	1.794		24.689	1.794		6.859	0.900		—	—	
Washington	14.902	3.268		14.902	3.268		8.961	8.961		—	—	
Yamhill	14.605	1.699		14.263	1.652		4.761	4.761		—	—	
Total	16.399	0.301		16.010	0.293		16.667	1.332		4.042	0.803	
										15.556	1.243	
										15.977	0.285	

Table A1-39—Average biomass per acre of all dead wood (dead trees and down wood)^a on forest land, by county and land status, Oregon, 2001–2010 (continued)

County	Land status													
	Unreserved forests						Reserved forests							
	Timberland		Other forest		Total		Productive		Other forest		Total		All forest land	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Tons per acre														
Eastern Oregon:														
Baker	11.331	1.027	4.829	2.221	10.543	0.967	28.308	11.148	—	—	24.096	10.351	11.197	1.077
Crook	15.066	1.829	1.376	0.171	6.999	0.909	60.567	17.408	—	—	60.567	17.408	8.212	1.138
Deschutes	14.144	1.305	4.937	1.842	12.221	1.132	28.192	3.913	36.884	6.033	29.633	3.494	13.730	1.128
Grant	16.429	0.931	3.652	2.075	15.149	0.885	29.643	3.297	22.360	8.218	29.068	3.135	16.540	0.885
Harney	8.566	0.741	2.189	0.439	5.455	0.503	—	—	0.326	0.201	0.326	0.201	5.296	0.492
Jefferson	19.719	3.001	2.964	1.168	11.773	1.847	48.108	18.765	—	—	48.108	18.765	13.817	2.189
Klamath	12.100	0.624	7.705	2.022	11.608	0.602	28.678	2.630	30.952	8.388	28.891	2.524	13.863	0.659
Lake	14.499	0.870	3.152	0.705	11.749	0.747	38.089	2.037	4.829	2.086	17.400	7.323	11.864	0.747
Malheur	10.050	3.052	1.835	0.629	2.696	0.860	—	—	—	—	—	—	2.696	0.860
Morrow	17.415	3.723	23.503	1.468	17.590	3.621	—	—	—	—	—	—	17.590	3.621
Umatilla	17.769	1.994	27.215	12.829	17.960	1.974	25.812	9.241	—	—	25.812	9.241	18.134	1.944
Union	16.453	1.256	8.752	4.722	16.337	1.243	27.680	5.157	0.057	0.057	25.012	5.180	17.113	1.230
Wallowa	14.537	1.452	13.323	1.042	14.523	1.434	24.762	2.341	16.904	5.946	24.481	2.276	18.511	1.298
Wasco	18.503	1.948	4.710	1.372	14.886	1.602	62.964	62.964	—	—	62.964	62.964	15.373	1.658
Wheeler	13.275	2.360	0.488	0.192	8.265	1.581	84.008	84.008	—	—	84.008	84.008	9.087	1.765
Total	14.427	0.343	3.313	0.353	11.967	0.286	29.195	1.541	16.986	3.870	27.870	1.460	13.391	0.297
All counties	20.786	0.313	4.661	0.428	18.754	0.284	33.840	1.562	16.159	2.686	32.086	1.456	19.833	0.283

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 0.005 bone-dry tons per acre was estimated; the average was calculated using a ratio of means formula across plots; for details on DWM biomass calculation, see *FIA Methods and Design Supplement*.

^a Includes dead trees ≥ 5 inches in diameter at breast height and down wood ≥ 0.1 inches in diameter at the transect intersection.

Table A1-40—Area of forest land, by national forest and land status, Oregon, 2001–2010

National forest	Land status									
	Unreserved forests					Reserved forests				
	Timberland		Other forest		Total	Productive		Other forest		Total
	Total	SE	Total	SE	Total	Total	SE	Total	SE	Total
<i>Thousand acres</i>										
Deschutes	1,199.6	72.9	49.1	16.2	1,248.7	73.9	31.7	29.0	13.0	209.2
Fremont	942.5	64.8	96.2	22.6	1,038.8	68.0	13.0	—	—	29.8
Klamath	23.9	11.2	—	—	23.9	11.2	—	—	—	—
Malheur	1,198.2	69.7	54.2	16.2	1,252.4	71.2	19.7	15.0	9.0	84.3
Mount Hood	762.0	51.6	6.6	6.3	768.5	51.8	33.9	5.9	5.7	263.3
Ochoco	648.0	57.8	69.9	18.8	718.0	60.6	40.9	—	—	40.9
Rogue River	529.5	49.5	24.1	11.1	553.6	50.8	48.4	6.4	6.3	54.8
Siskiyou	739.9	53.2	57.0	17.9	796.9	53.9	160.4	41.1	15.5	201.5
Siuslaw	605.5	51.2	—	—	605.5	51.2	36.5	5.9	6.0	42.4
Umatilla	756.5	60.7	17.6	10.1	774.1	61.4	156.2	—	—	156.2
Umpqua	825.6	59.1	18.4	10.3	844.1	59.6	82.7	17.7	10.2	100.5
Wallowa-Whitman	1,203.5	71.6	53.5	16.9	1,257.0	72.9	420.6	26.1	12.1	446.7
Willamette	1,185.0	60.3	34.1	14.0	1,219.1	60.9	318.5	7.2	5.9	325.6
Winema	953.4	65.0	26.4	12.0	979.8	65.7	76.9	17.4	10.1	94.3
Crooked River	—	—	49.9	16.6	49.9	16.6	—	—	—	—
National Grassland	—	—	—	—	—	—	—	—	—	—
All national forests	11,573.1	124.3	557.1	53.1	12,130.1	119.3	1,877.9	171.7	31.2	2,049.6
										98.6
										14,179.7
										77.3

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50 ac was estimated.

Table A1-41—Net cubic volume of live trees^a on forest land, by national forest and land status, Oregon, 2001–2010

National forest	Land status													
	Unreserved forests						Reserved forests							
	Timberland		Other forest		Total		Productive		Other forest		Total			
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE		
Million cubic feet														
Deschutes	2,239.6	210.5	123.9	56.6	2,363.5	216.1	682.3	147.5	100.6	54.5	782.9	156.3	3,146.4	255.8
Fremont	1,883.0	176.1	44.2	15.5	1,927.2	176.5	132.9	64.5	—	—	132.9	64.5	2,060.1	186.1
Klamath	92.1	44.0	—	—	92.1	44.0	—	—	—	—	—	—	92.1	44.0
Malheur	2,401.1	175.4	40.9	17.0	2,442.0	175.7	184.5	68.0	28.1	17.0	212.6	70.0	2,654.7	185.3
Mount Hood	4,677.8	402.9	21.2	20.2	4,699.1	403.4	2,147.0	310.8	—	—	2,147.0	310.8	6,846.0	395.9
Ochoco	1,119.2	127.2	27.4	15.3	1,146.6	128.0	84.2	44.2	—	—	84.2	44.2	1,230.8	134.9
Rogue River	3,086.6	346.6	35.5	17.5	3,122.1	347.5	230.6	85.4	23.0	22.7	253.5	88.3	3,375.6	356.9
Siskiyou	4,081.9	424.6	35.9	22.0	4,117.9	423.6	700.0	184.8	10.7	5.9	710.7	184.8	4,828.6	445.1
Siuslaw	5,028.4	545.4	—	—	5,028.4	545.4	456.5	209.7	5.9	5.9	462.4	209.8	5,490.8	576.9
Umatilla	1,530.6	166.2	34.8	23.4	1,565.3	167.5	391.1	88.2	—	—	391.1	88.2	1,956.4	185.7
Umpqua	6,187.6	559.5	32.8	27.1	6,220.4	559.7	523.7	152.9	74.6	54.1	598.3	160.8	6,818.7	562.3
Wallowa-Whitman	2,434.6	194.1	38.3	14.4	2,472.9	194.2	1,178.9	170.8	15.3	10.0	1,194.2	171.0	3,667.1	243.7
Willamette	9,638.5	633.3	91.8	42.6	9,730.3	631.9	2,697.5	416.8	32.8	31.4	2,730.3	417.3	12,460.6	662.1
Winema	2,370.9	219.6	38.1	23.6	2,409.0	220.4	407.4	120.6	45.7	35.2	453.0	125.3	2,862.0	247.9
Crooked River	—	—	3.0	2.1	3.0	2.1	—	—	—	—	—	—	3.0	2.1
National Grassland														
All national forests	46,771.9	1,018.7	567.9	94.6	47,339.8	1,013.6	9,816.5	662.7	336.6	95.3	10,153.2	667.5	57,493.0	967.0

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50,000 cubic feet was estimated.

^a Includes all live trees ≥ 5 inches in diameter at breast height, consisting of growing-stock, rough-cull, and rotten-cull tree classes.

Table A1-42—Aboveground biomass of live trees^a on forest land, by national forest and land status Oregon, 2001–2010

National forest	Land status													
	Unreserved forests						Reserved forests							
	Timberland		Other forest		Total		Productive		Other forest		Total			
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE		
	Thousand tons													
Deschutes	46,385.9	4,195.9	2,701.9	1,153.9	49,087.8	4,310.9	13,857.2	2,977.1	2,236.2	1,171.6	16,093.4	3,178.8	65,181.2	5,128.1
Fremont	38,744.1	3,574.7	1,184.8	408.3	39,928.8	3,587.2	3,092.0	1,486.8	—	—	3,092.0	1,486.8	43,020.8	3,840.7
Klamath	2,011.9	982.6	—	—	2,011.9	982.6	—	—	—	—	—	—	2,011.9	982.6
Malheur	46,827.9	3,339.7	1,103.5	448.5	47,931.5	3,355.0	3,649.4	1,305.6	654.7	418.1	4,304.2	1,368.4	52,235.6	3,541.6
Mount Hood	93,158.8	7,851.5	429.9	409.2	93,588.8	7,861.0	43,038.9	6,215.2	—	—	43,038.9	6,215.2	136,627.7	7,730.8
Ochoco	21,753.1	2,404.3	709.6	317.6	22,462.7	2,424.1	1,690.6	924.3	—	—	1,690.6	924.3	24,153.3	2,583.9
Rogue River	63,013.6	6,955.4	748.1	392.2	63,761.7	6,969.8	5,224.4	1,973.4	472.8	466.6	5,697.2	2,027.9	69,458.9	7,224.2
Siskiyou	91,091.4	9,053.5	1,034.3	678.9	92,125.7	9,029.5	15,937.7	4,092.3	258.1	150.2	16,195.8	4,092.2	108,321.5	9,493.4
Siuslaw	96,601.9	10,429.9	—	—	96,601.9	10,429.9	8,078.9	3,746.8	132.2	132.7	8,211.0	3,749.0	104,812.9	10,944.3
Umatilla	30,271.6	3,082.3	748.4	492.2	31,020.1	3,113.3	8,047.9	1,689.4	—	—	8,047.9	1,689.4	39,068.0	3,466.2
Umpqua	127,259.8	11,293.4	757.8	596.3	128,017.6	11,297.7	10,563.5	3,046.8	1,445.6	1,005.8	12,009.2	3,180.9	140,026.8	11,325.9
Wallowa-Whitman	50,479.8	3,810.8	1,059.6	390.6	51,539.4	3,818.4	22,344.2	3,221.6	413.3	220.4	22,757.5	3,226.5	74,296.9	4,692.6
Willamette	188,855.5	12,242.1	1,971.2	885.8	190,826.7	12,213.3	52,305.9	7,918.0	663.6	637.3	52,969.5	7,927.9	243,796.2	12,716.2
Winema	48,636.1	4,404.0	1,071.1	635.0	49,707.1	4,437.4	8,134.5	2,405.0	1,058.6	765.6	9,193.1	2,516.3	58,900.2	4,995.5
Crooked River	—	—	112.7	62.0	112.7	62.0	—	—	—	—	—	—	112.7	62.0
National Grassland														
All national forests	945,091.3	19,944.7	13,633.0	2,116.3	958,724.2	19,824.6	195,965.2	12,978.8	7,335.2	1,960.9	203,300.4	13,082.0	1,162,024.6	18,751.0

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50 bone-dry tons was estimated.

includes all live trees ≥ 1 inches in diameter at breast height, consisting of growing-stock, and rotten-cull tree classes. Aboveground biomass of the tree from ground to tip, includes stem wood, bark, and branches; calculated with regional biomass equations. Aboveground biomass of the tree from ground to tip, lower than 50 years old was estimated. Rotations may be off because of rounding, and are subject to sampling error, SE. Standard error, SE.

Table A1-43—Biomass of down wood on forest land, by national forest and down wood diameter class, Oregon, 2001–2010

National forest	Down wood diameter class (inches)											
	Fine-wood size class ^a						Coarse-wood size class ^b					
	0.1—2.4		0.25—0.9		1.0—2.9		3.0—9.0		10.0—19.0		≥20.0	
	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE	Total	SE
	<i>Thousand tons</i>											
Deschutes	66.6	5.4	739.2	59.5	2,217.7	182.2	3,882.0	351.2	5,595.1	575.4	3,558.1	448.4
Fremont	35.7	3.6	439.6	39.0	1,525.5	143.0	2,112.5	217.7	3,250.2	356.4	2,942.5	404.7
Klamath	2.8	1.7	12.0	5.9	41.3	19.4	23.0	11.9	22.4	16.7	11.9	11.3
Malheur	46.2	4.2	647.3	50.5	2,056.9	156.4	3,121.1	312.2	3,845.7	378.8	3,047.0	354.2
Mount Hood	151.8	13.1	685.0	47.6	1,834.0	155.4	2,341.0	211.4	6,708.2	516.2	12,244.8	1,770.5
Ochoco	17.5	2.2	283.3	32.6	1,026.7	124.8	1,197.6	150.0	1,887.1	284.9	2,999.3	560.9
Rogue River	61.5	7.9	375.2	40.5	1,255.8	139.2	936.9	119.2	2,388.7	306.0	3,469.6	554.0
Siskiyou	129.9	11.4	593.9	52.5	1,727.1	155.0	1,249.2	122.5	2,411.1	252.3	4,826.9	769.1
Siuslaw	81.9	9.7	468.5	55.6	756.7	97.8	797.8	91.3	2,619.4	318.0	7,767.3	1,026.9
Umatilla	41.5	4.5	474.7	47.7	1,677.1	188.9	4,185.1	500.8	5,028.7	549.9	2,121.3	301.7
Umpqua	109.1	9.6	637.7	53.2	1,840.8	153.2	2,164.4	212.2	4,484.7	399.0	8,063.4	909.9
Wallowa-Whitman	80.5	6.2	841.8	72.1	2,679.0	200.9	5,201.8	441.9	6,266.1	539.5	3,268.0	375.9
Willamette	195.7	13.8	1,057.7	68.6	2,671.6	204.4	2,959.5	193.1	9,331.2	582.3	16,536.2	1,444.9
Winema	62.2	6.0	548.4	45.6	1,875.2	161.6	2,493.3	235.7	3,486.3	409.2	2,559.5	448.5
Crooked River	0.6	0.3	7.5	3.5	9.1	4.9	1.4	1.5	13.2	10.2	—	—
National Grassland												
All national forests	1,083.2	24.7	7,811.5	146.2	23,194.6	459.7	32,666.6	825.3	57,338.0	1,317.3	73,415.7	2,781.6
											195,509.5	3,784.6

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 50 bone-dry tons was estimated; for details on DWM biomass calculation see *FIA Methods and Design Supplement*.

^a The diameter of each piece was visually estimated before being counted within each size class. Counts were used as input to volume equations for fine-wood.

^b Diameter classes are based on the diameter at the large end of the piece for decay classes less than 5, and based on the transect diameter for decay class 5 pieces. The diameter of each piece was measured and recorded to the nearest inch. Because of this, class breakpoints for 9, 10, 19 and 20 actually represent 0.4 inches above and below the value. For example, 9 represents 8.6 to 9.4 inches.

Table A1-44—Average net volume per acre of live trees^a on forest land, by national forest and land status, Oregon, 2001–2010

National forest	Land status											
	Unreserved forests						Reserved forests					
	Timberland		Other forest		Total		Productive		Other forest		Total	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
	<i>Cubic feet per acre</i>											
Deschutes	1,867.06	135.09	2,521.16	815.67	1,892.80	133.58	3,786.27	476.98	3,471.76	1,057.64	3,742.69	436.68
Fremont	1,997.86	128.19	459.43	121.27	1,855.31	120.47	4,455.03	965.55	—	—	4,455.03	965.55
Klamath	3,860.95	517.68	—	—	3,860.95	517.68	—	—	—	—	—	—
Malheur	2,003.92	91.94	755.07	199.85	1,949.91	89.66	2,661.51	611.01	1,874.06	108.38	2,521.36	508.86
Mount Hood	6,139.21	377.65	3,225.84	3,225.84	6,114.25	374.65	8,339.60	556.71	—	—	8,152.90	574.53
Ochoco	1,727.02	124.35	392.57	187.54	1,597.05	118.18	2,057.49	752.03	—	—	2,057.49	752.03
Rogue River	5,829.16	378.34	1,475.94	415.85	5,639.90	371.35	4,763.93	766.89	3,604.87	3,604.87	4,629.04	686.24
Siskiyou	5,517.19	424.52	630.65	329.70	5,167.69	409.74	4,364.31	824.31	260.28	104.71	3,527.01	716.55
Siuslaw	8,304.30	532.17	—	—	8,304.30	532.17	12,511.94	2,689.20	988.24	988.24	10,901.20	2,771.07
Umatilla	2,023.29	151.47	1,975.73	675.68	2,022.21	148.78	2,503.15	322.50	—	—	2,503.15	322.50
Umpqua	7,494.25	419.70	1,780.30	1,057.29	7,369.65	416.07	6,329.96	867.43	4,209.92	1,857.06	5,955.83	810.29
Wallowa-Whitman	2,022.88	108.12	715.90	136.50	1,967.24	104.61	2,803.26	271.86	584.63	284.60	2,673.46	262.46
Willamette	8,133.75	372.61	2,693.41	593.19	7,981.60	367.56	8,470.68	790.36	4,565.70	1,022.80	8,384.63	777.82
Winema	2,486.77	157.90	1,442.03	553.94	2,458.59	154.69	5,298.00	731.22	2,625.90	1,340.34	4,805.12	691.12
Crooked River	—	—	59.62	36.10	59.62	36.10	—	—	—	—	—	—
National Grassland	—	—	—	—	—	—	—	—	—	—	—	—
All national forests	4,041.45	78.22	1,019.40	135.98	3,902.66	75.33	5,227.49	242.24	1,960.26	422.41	4,953.75	229.02
											4,054.59	67.98

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 0.005 cubic feet per acre was estimated; the average was calculated using a ratio of means formula across plots.

^a Includes all live trees ≥ 5 inches in diameter at breast height, consisting of growing-stock, rough-cull, and rotten-cull tree classes.

Table A1-45—Average aboveground biomass per acre of live trees^a on forest land, by national forest and land status, Oregon, 2001–2010

National forest	Land status										
	Unreserved forests					Reserved forests					
	Timberland		Other forest			Productive		Other forest		Total	
	Mean	SE	Mean	SE	Mean	Mean	SE	Mean	SE	Mean	SE
<i>Tons per acre</i>											
Deschutes	38.669	2.609	54.994	15.058	39.312	2.578	9.506	77.155	21.053	76.933	8.693
Fremont	41.108	2.549	12.310	3.080	38.439	2.393	20.950	—	—	103.657	20.950
Klamath	84.321	13.528	—	—	84.321	13.528	—	—	—	—	—
Malheur	39.081	1.683	20.374	5.195	38.272	1.639	11.352	43.625	8.049	51.041	9.474
Mount Hood	122.262	7.211	65.306	65.306	121.774	7.154	11.225	—	—	163.435	11.574
Ochoco	33.567	2.255	10.149	3.630	31.286	2.142	16.353	—	—	41.312	16.353
Rogue River	119.005	7.288	31.084	9.797	115.182	7.172	18.903	74.186	74.186	104.024	17.028
Siskiyou	123.120	8.761	18.148	10.411	115.612	8.494	17.753	6.278	2.747	80.380	15.572
Siuslaw	159.536	10.063	—	—	159.536	10.063	49.655	22.295	22.295	193.578	50.195
Umatilla	40.017	2.590	42.552	13.126	40.074	2.548	5.091	—	—	51.507	5.091
Umpqua	154.134	8.222	41.171	22.117	151.671	8.154	16.501	81.542	31.854	119.537	15.319
Wallowa-Whitman	41.943	1.954	19.801	3.302	41.000	1.889	5.063	15.815	5.193	50.947	4.870
Willamette	159.371	7.074	57.817	10.755	156.531	6.973	14.356	92.483	20.880	162.669	14.140
Winema	51.014	3.079	40.523	14.019	50.731	3.021	14.666	60.873	26.389	97.510	13.545
Crooked River	—	—	2.258	0.975	2.258	0.975	—	—	—	—	—
National Grassland	—	—	—	—	—	—	—	—	—	—	—
All national forests	81.663	1.516	24.473	2.905	79.037	1.461	104.355	42.715	8.319	99.191	4.383
										81.950	1.316

Note: Totals may be off because of rounding; data are subject to sampling error; SE = standard error; — = fewer than 0.005 bone-dry tons per acre was estimated; the average was calculated using a ratio of means formula across plots.

^a Includes all live trees ≥ 1 inches in diameter at breast height, consisting of growing-stock, rough-cull, and rotten-cull tree classes. Aboveground biomass of the tree from ground to tip, includes stem wood, bark, and branches; calculated with regional biomass equations.

Table A1-46—Total roundwood output by product, species group, and source of material, Oregon, 2008

Product and species group	Source of material			All sources
	Growing-stock trees		Other sources	
	Sawtimber	Poletimber		
Thousand cubic feet				
Sawlogs:				
Softwoods	562,764	43,467	10,283	616,515
Hardwoods:	19,714	1,523	304	21,541
Total	582,478	44,989	10,587	638,055
Veneer logs:				
Softwoods	133,420	2,087	2,313	137,819
Hardwoods:	0	0	0	0
Total	133,420	2,087	2,313	137,819
Pulpwood:				
Softwoods	59,180	6,576	934	66,689
Hardwoods:	13,175	1,464	208	14,847
Total	72,356	8,040	1,142	81,537
Composite Panels:				
Softwood	0	0	0	0
Hardwood	0	0	0	0
Total	0	0	0	0
Poles and posts:				
Softwoods	639	1,610	46	2,295
Hardwoods:	0	0	0	0
Total	639	1,610	46	2,295
Other miscellaneous:				
Softwoods	3,331	370	76	3,778
Hardwoods:	24	3	0	27
Total	3,355	373	76	3,804
Total industrial products:				
Softwoods	759,334	54,109	13,651	827,095
Hardwoods:	32,913	2,989	512	36,415
Total	792,248	57,099	14,164	863,510
Fuelwood ^a :				
Softwoods	33	2	36,478	36,512
Hardwoods:	0	0	920	920
Total	33	2	37,398	37,432
All products:				
Softwoods	759,367	54,111	50,129	863,607
Hardwoods:	32,913	2,989	1,432	37,335
Total	792,280	57,100	51,562	900,942

Note: Data are subject to sampling error.

^a Includes residential fuelwood consumption reported by U.S. Energy Information Administration, <http://www.eia.gov/state/seds/seds-data-complete.cfm?sid=US#Consumption>.

Table A1-47—Volume of timber removals by type of removal, source of material, species group, Oregon, 2008

Removal type	Source of material						All sources		
	Growing-stock			Other sources					
	Softwoods	Hardwoods	Total	Softwoods	Hardwoods	Total	Softwoods	Hardwoods	Total
<i>Thousand cubic feet</i>									
Roundwood products:									
Saw logs	606,231	21,236	627,468	10,283	304	10,587	616,515	21,541	638,055
Veneer logs	135,507	0	135,507	2,313	0	2,313	137,819	0	137,819
Pulpwood	65,756	14,639	80,395	934	208	1,142	66,689	14,847	81,537
Fuelwood ^a	34	0	34	36,478	920	37,398	36,512	920	37,432
Posts, poles, and pilings	2,249	0	2,249	46	0	46	2,295	0	2,295
Miscellaneous products	3,702	27	3,728	76	0	76	3,778	27	3,804
Total	813,478	35,902	849,381	50,129	1,432	51,562	863,607	37,335	900,942
Logging Residues	30,525	1,347	31,872	190,835	9,335	200,171	221,360	10,683	232,043
Total, all removals	844,003	37,250	881,253	240,965	10,768	251,733	1,084,968	48,017	1,132,985

Note: Data are subject to sampling error.

^a Includes residential fuelwood consumption reported by U.S. Energy Information Administration, <http://www.eia.gov/state/seds/seds-data-complete.cfm?sid=US#Consumption>.

Table A1-48—Estimated area of forest land covered by the most abundant vascular plant nontimber forest products, by plant group and species, Oregon, 2001–2010

Plant group and scientific name	Common name	Total	SE
<i>Acres</i>			
Tree seedlings and saplings:			
<i>Abies amabilis</i>	Pacific silver fir	59,792	6,886
<i>Abies concolor</i>	White fir	47,468	3,569
<i>Abies grandis</i>	Grand fir	93,177	5,576
<i>Lithocarpus densiflorus</i>	Tanoak	113,618	12,488
<i>Pinus contorta</i>	Lodgepole pine	147,738	10,583
<i>Pinus ponderosa</i>	Ponderosa pine	96,839	4,731
<i>Pseudotsuga menziesii</i>	Douglas-fir	192,201	8,680
<i>Tsuga heterophylla</i>	Western hemlock	107,979	6,606
Shrubs:			
<i>Acer circinatum</i>	Vine maple	958,192	35,940
<i>Amelanchier alnifolia</i>	Saskatoon serviceberry	60,833	5,066
<i>Arctostaphylos nevadensis</i>	Pinemat manzanita	88,550	8,143
<i>Arctostaphylos patula</i>	Greenleaf manzanita	122,553	11,220
<i>Artemisia tridentata</i>	Big sagebrush	88,002	8,711
<i>Ceanothus velutinus</i>	Snowbrush ceanothus	224,784	19,125
<i>Chimaphila umbellata</i>	Pipsissewa	66,766	3,930
<i>Corylus cornuta</i>	Beaked hazelnut	56,603	8,048
<i>Frangula purshiana</i>	Cascara buckthorn	91,768	7,983
<i>Gaultheria shallon</i>	Salal	807,120	35,576
<i>Holodiscus discolor</i>	Oceanspray	200,827	10,359
<i>Mahonia nervosa</i>	Cascade barberry	557,704	21,611
<i>Rosa gymnocarpa</i>	Dwarf rose	54,719	3,389
<i>Rubus parviflorus</i>	Thimbleberry	89,602	8,252
<i>Rubus spectabilis</i>	Salmonberry	405,070	26,497
<i>Rubus ursinus</i>	California blackberry	318,702	17,070
<i>Symphoricarpos albus</i>	Common snowberry	301,953	16,384
<i>Vaccinium membranaceum</i>	Thinleaf huckleberry	257,353	19,416
<i>Vaccinium ovalifolium</i>	Oval-leaf blueberry	77,214	11,529
<i>Vaccinium ovatum</i>	California huckleberry	202,912	19,056
<i>Vaccinium parvifolium</i>	Red huckleberry	150,171	6,690
<i>Vaccinium scoparium</i>	Grouse whortleberry	227,037	18,987

Table A1-48—Estimated area of forest land covered by the most abundant vascular plant nontimber forest products, by plant group and species, Oregon, 2001–2010 (continued)

Plant group and scientific name	Common name	Total	SE
<i>Acres</i>			
Herbs:			
<i>Achillea millefolium</i>	Common yarrow	83,387	3,665
<i>Arnica cordifolia</i>	Heartleaf arnica	129,334	8,216
<i>Athyrium filix-femina</i>	Common ladyfern	18,564	2,860
<i>Balsamorhiza sagittata</i>	Arrowleaf balsamroot	28,146	3,991
<i>Blechnum spicant</i>	Deer fern	23,803	2,830
<i>Chamerion angustifolium</i>	Fireweed	15,978	3,747
<i>Claytonia sibirica</i>	Siberian springbeauty	25,382	5,059
<i>Fragaria</i>	Strawberry	22,378	2,411
<i>Fragaria vesca</i>	Woodland strawberry	52,510	3,443
<i>Fragaria virginiana</i>	Virginia strawberry	51,745	3,729
<i>Polystichum munitum</i>	Western swordfern	1,459,189	44,635
<i>Pteridium aquilinum</i>	Western brackenfern	251,969	14,509
<i>Thalictrum occidentale</i>	Western meadow-rue	18,574	2,006
<i>Xerophyllum tenax</i>	Common beargrass	145,275	13,865

Note: Data are subject to sampling error; SE = standard error.

Table A1-49—Index of vascular plant species richness on forest land, by ecological section, Oregon, 2010

Ecological section	Number of plots	Species richness/plot		Total richness	Species turnover	Native richness/plot		Non-native richness/plot		Native species cover (sum)		Non-native cover (sum)	
		Mean	SE			Mean	SE	Mean	SE	Mean	SE	Mean	SE
Blue Mountain Foothills	5	35.8	8.9	123	3.4	19.2	5.5	5.8	1.9	46.3	7.7	10.4	4.7
Blue Mountains	29	52.7	3.3	472	9.0	41.0	3.0	3.9	0.8	100.6	9.2	4.7	1.5
Eastern Cascades	18	26.0	3.5	232	8.9	20.8	2.8	0.8	0.4	59.3	6.1	2.1	1.4
Klamath Mountains	13	44.5	4.7	219	4.9	36.2	3.6	1.8	0.7	142.1	9.6	0.5	0.2
Modoc Plateau	7	33.6	4.9	138	4.1	24.4	5.2	1.7	0.6	48.9	5.0	4.2	2.8
Northwestern Basin and Range	3	31.0	6.1	59	1.9	22.3	5.2	1.3	0.3	54.4	9.5	1.2	0.5
Oregon and Washington Coast Ranges	16	40.1	4.5	208	5.2	33.6	3.3	3.4	1.1	191.2	6.9	3.2	1.9
Owyhee Uplands	1	29.0	—	29	—	19.0	—	2.0	—	56.0	—	10.3	—
Southern Cascades	1	86.0	—	86	—	80.0	—	3.0	—	64.9	—	0.3	—
Western Cascades	22	50.5	5.0	341	6.8	42.9	4.6	1.8	0.5	148.5	13.0	2.9	1.8
Willamette Valley	6	59.7	6.6	200	3.4	37.3	6.3	11.8	3.0	187.2	32.0	34.0	19.3

Note: Data are subject to sampling error; SE = standard error; — = Value can not be estimated. Native and non-native species values only include vegetation records identified to the species level. Species' cover at the plot level were summed with no overlap assumptions (total cover could exceed 100 percent).

Table A1-50—Estimated area of forest land covered by selected non-native vascular plant species and number of sample plots^a, by lifeform and species, Oregon, 2001–2010

Plant group and scientific name	Common name	Area covered		Number of plots
		Total	SE	
Acres				
Shrubs:				
<i>Cytisus scoparius</i>	Scotch broom	16,636	4,125	53
<i>Ilex aquifolium</i>	English holly	949	289	19
<i>Rubus armeniacus</i>	Himalayan blackberry	157,482	16,397	283
<i>Rubus laciniatus</i>	Cutleaf blackberry	11,300	2,208	72
Forbs:				
<i>Cirsium</i>	Thistle	21,538	4,384	148
<i>Cirsium arvense</i>	Canada thistle	7,174	2,641	41
<i>Cirsium vulgare</i>	Bull thistle	12,093	2,616	137
<i>Digitalis purpurea</i>	Purple foxglove	10,559	1,708	113
<i>Hypericum perforatum</i>	Common St. Johnswort	6,173	997	93
<i>Hypochaeris radicata</i>	Hairy cat's ear	10,805	2,861	36
<i>Lactuca serriola</i>	Prickly lettuce	1,216	628	10
<i>Leucanthemum vulgare</i>	Oxeye daisy	2,477	713	26
Grasses:				
<i>Aira caryophyllea</i>	Silver hairgrass	7,448	2,310	22
<i>Brachypodium sylvaticum</i>	Slender false brome	612	362	8
<i>Bromus briziformis</i>	Rattlesnake brome	5,133	1,554	23
<i>Bromus tectorum</i>	Cheatgrass	204,929	14,308	640
<i>Cynosurus echinatus</i>	Bristly dogstail grass	23,723	5,201	91
<i>Dactylis glomerata</i>	Orchardgrass	11,747	2,487	69
<i>Holcus lanatus</i>	Common velvetgrass	16,493	4,806	46
<i>Taeniatherum caput-medusae</i>	Medusahead	16,724	3,923	47
<i>Ventenata dubia</i>	North Africa grass	4,068	1,438	22

Note: Data are subject to sampling error; SE = standard error. Estimates are likely low for all species because only plants present at >3 percent cover on a subplot were recorded, and because most grasses and some forbs can be difficult to identify to species outside of their short flowering seasons.

^a Total number of sample plots with accessible forest land was 5,180.

Table A1-51—Forest land area on which evidence of fire was observed, by year and ecosection group, Oregon, 1995–2009

Year	Ecosection group							
	All groups		Coast		Southern Oregon Cascades		Eastern Oregon	
	Total	SE	Total	SE	Total	SE	Total	SE
<i>Acres</i>								
Land with evidence of fire:								
1995	106,717	24,658	2,966	3,297	23,246	11,759	80,505	21,433
1996	149,660	29,211	23,175	11,722	11,410	8,325	115,075	25,431
1997	41,045	15,761	5,469	5,662	12,536	8,796	23,039	11,789
1998	57,577	18,148	5,826	5,843	22,385	11,374	29,367	12,886
1999	71,553	20,486	7	7	17,039	10,216	54,507	17,756
2000	130,742	27,215	11,641	8,259	26,107	12,106	87,212	22,216
2001	139,142	30,029	12,694	9,007	73,637	22,056	52,810	18,309
2002	564,686	60,565	35,437	16,153	426,859	52,333	87,259	25,077
2003	261,283	46,971	83,330	26,464	127,199	32,819	50,754	20,823
2004	92,890	30,680	19,904	14,198	10,834	10,311	62,151	25,182
2005	124,217	37,773	20,579	14,868	34,924	19,850	68,714	28,501
2006	137,574	45,566	13,673	14,154	46,759	26,283	63,338	31,378
2007	183,703	59,132	25,214	23,729	18,316	18,383	140,173	50,947
2008	86,216	50,011	—	—	720	763	85,495	50,005
2009	58,255	58,429	58,255	58,429	—	—	—	—
Average	147,017	10,193	21,211	5,101	56,798	5,283	66,693	7,103

Note: Data are subject to sampling error; SE = standard error; — = fewer than 500 ac was estimated.

Glossary

abiotic—Pertaining to nonliving factors such as temperature, moisture, and wind.

aerial photography—Imagery acquired from an aerial platform (typically aircraft or helicopter) by means of a specialized large-format camera with well-defined optical characteristics. The geometry of the aircraft orientation at the time of image acquisition is also recorded. The resultant photograph will be of known scale, positional accuracy, and precision. Aerial photography for natural resource use is usually either natural color or color-infrared, and is film based or acquired using digital electronic sensors.

air quality index—Value or set of values derived from a multivariate model that examines the composition of lichen communities at each plot to provide a relative estimate of air quality.

artificial regeneration—An artificially regenerated stand is established by planting or artificial seeding.

aspect—Compass direction that a slope faces.

basal area—The cross-sectional area of a tree's trunk.

biodiversity—Variety and variability among living organisms and the ecological complexes in which they occur. Diversity can be defined as the number of different items and their relative frequencies. <http://www.epa.gov/OCEPAterms/bterms.html>. (21 March 2008).

bioenergy—Renewable energy made available from materials derived from biological sources. <http://en.wikipedia.org/wiki/Bioenergy>. (21 March 2008).

biomass—The aboveground weight of wood and bark in live trees 1.0 inch diameter at breast height (d.b.h.) and larger from the ground to the tip of the tree, excluding all foliage. The weight of wood and bark in lateral limbs, secondary limbs, and twigs under 0.5 inch in diameter at the point of occurrence on sapling-size trees is included in

the measure, but on poletimber- and sawtimber-sized trees this material is excluded. Biomass is typically expressed as green or oven-dry weight in tons (USDA FS 2006).

biosite index, ozone—A value calculated from the amount and severity of ozone injury at a site (biosite) that reflects local air quality and plant response and therefore potential risk of ozone impact in the area represented by that biosite (Campbell et al. 2007).

board foot—A volume measure of lumber 1 foot wide, 1 foot long, and 1 inch thick ($12\text{ in} \times 12\text{ in} \times 1\text{ in} = 144\text{ cubic inches}$). <http://www.ccffa-oswa.org/B.html>. (21 March 2008).

bole—Trunk or main stem of a tree.

carbon mass—The estimated weight of carbon stored within wood tissues. On average, carbon mass values are about half of biomass values for trees, and are summarized as thousand tons or mean tons per acre.

carbon sequestration—Incorporation of carbon dioxide into permanent plant tissues.

coarse woody material—Down dead tree and shrub boles, large limbs, and other woody pieces that are severed from their original source of growth. Coarse woody material also includes dead trees that are supported by roots, severed from roots, or uprooted, and leaning > 45 degrees from vertical (USDA FS 2006).

corporate forest land—An ownership class of private forest lands owned by a company, corporation, legal partnership, investment firm, bank, timberland investment management organization (TIMO), or real-estate investment trust (REIT).

crown—The part of a tree or woody plant bearing live branches or foliage.

crown dieback—Recent mortality of branches with fine twigs, which begins at the terminal portion of a branch and proceeds toward the trunk. Dieback is only considered when it occurs in the upper and outer portions of the tree (USDA FS 2006).

crown fire—Fire that spreads across the tops of trees or shrubs more or less independently of a surface fire. Crown fires are sometimes classed as running (independent or active) or dependent (passive) to distinguish the degree of independence from the surface fire (Helms 1998).

current gross annual growth—The total growth of a given stand of trees, within a defined area, over the period of 1 year.

cyanolichens—Lichen species containing cyanobacteria, which fixes atmospheric nitrogen into a form that plants can use.

damage—Damage to trees caused by biotic agents such as insects, diseases, and animals or abiotic agents such as weather, fire, or mechanical equipment.

defoliation—Premature removal of foliage.

diameter at breast height (d.b.h.)—The diameter of a tree stem, located at 4.5 feet above the ground (breast height) on the uphill side of a tree. The point of diameter measurement may vary on abnormally formed trees (USDA FS 2006).

diameter at root collar (d.r.c.)—The diameter of a tree (usually a woodland species), measured outside of the bark at the ground line or stem root collar (USDA FS 2006).

dieback—Progressive dying from the extremity of any part of the plant. Dieback may or may not result in death of the entire plant (Helms 1998).

disturbance—Any relatively discrete event in time that disrupts ecosystem, community, or population structure and changes resources, substrate availability, or the physical environment (Helms 1998).

down woody material (DWM)—Dead material on the ground in various stages of decay, including coarse and fine woody material. Previously named down woody debris (DWD). The DWM indicator for Forest Inventory and Analysis includes measurements of depth of duff layer, litter

layer, and overall fuelbed; fuel loading on the microplot; and residue piles (USDA FS 2006).

ecological region—A top-level scale in a hierarchical classification of ecological units subdivided on the basis of global, continental, and regional climatic regimes and broad physiography. Ecological regions (ecoregions) are further subdivided into domains, divisions, and provinces. The next level down in the hierarchy, subregion, is divided into ecological sections (ecosections) and subsections (Cleland et al. 1997).

ecosection—A level in a hierarchical classification of ecological units for a geographic area delineated on the basis of similar climate, geomorphic processes, stratigraphy, geologic origin, topography, and drainage systems (Cleland et al. 1997).

ecosystem—A spatially explicit, relatively homogeneous unit of the Earth that includes all interacting organisms and components of the abiotic environment within its boundaries. An ecosystem can be of any size: a log, a pond, a field, a forest, or the Earth's biosphere (Helms 1998).

elevation—Height above a fixed reference point, often the mean sea level.

erosion—The wearing away of the land surface by running water, wind, ice, or other geological agents.

federal forest land—An ownership class of public lands owned by the U.S. government (USDA FS 2006).

fine woody material (FWM)—Down dead branches, twigs, and small tree or shrub boles <3 inches in diameter not attached to a living or standing dead source (USDA FS 2006).

fire regime—The characteristic frequency, extent, intensity, severity, and seasonality of fires within an ecosystem (Helms 1998).

fixed-radius plot—A circular sampled area with a specified radius in which all trees of a given size, shrubs, and other items, are tallied (USDA FS 2006).

forb—A broad-leaved herbaceous plant, as distinguished from grasses, shrubs, and trees (USDA FS 2006).

forest industry land—An ownership class of private lands owned by a company or an individual(s) operating a primary wood-processing plant (USDA FS 2006).

forest land—Land that is at least 10 percent stocked by forest trees of any size, or land formerly having such tree cover, and not currently developed for a nonforest use. The minimum area for classification as forest land is 1 acre. Roadside, streamside, and shelterbelt strips of timber must be at least 120 feet wide to qualify as forest land (USDA Forest Service 2006).

forest type—A classification of forest land based on and named for the tree species that forms the plurality of live-tree stocking (USDA FS 2006).

forest type group—A combination of forest types that share closely associated species or site requirements (USDA FS 2006).

fuel treatment—Any manipulation or removal of wild-land fuels to reduce the likelihood of ignition or to lessen potential fire damage and resistance to control; e.g., lopping, chipping, crushing, piling, and burning. Synonym: fuel modification, hazard reduction (Helms 1998).

fuelwood—Wood salvaged from mill waste, cull logs, branches, etc., and used to fuel fires in a boiler or furnace.

fungus—Member of a group of saprophytic and parasitic organisms that lack chlorophyll, have cell walls made of chitin, and reproduce by spores; includes molds, rusts, mildews, smuts, and mushrooms. Fungi absorb nutrients from the organic matter in which they live. Not classified as plants; instead fungi are placed in the Kingdom: Fungi (Goheen and Willhite 2006).

geospatial—The combination of spatial software and analytical methods with terrestrial or geographic datasets.

Often used in conjunction with geographic information systems and geomatics.

graminoid—Grasses (family Gramineae or Poaceae) and grasslike plants such as sedges (family Cyperaceae) and rushes (family Juncaceae).

grassland—Land on which the vegetation is dominated by grasses, grasslike plants, or forbs.

greenhouse gas—A gas, such as carbon dioxide or methane, that contributes to potential climate change. <http://www.epa.gov/OCEPaterms/gterms.html>. (21 March 2008).

growing stock—All live trees 5 inches d.b.h or larger that are considered merchantable in terms of saw-log length, and grade; excludes rough and rotten-cull trees (USDA FS 2006).

hardwood—Tree species belonging to the botanical subdivision Angiospermae, class Dicotyledonous, usually broad-leaved and deciduous (USDA FS 2006).

increment borer—An auger-like instrument with a hollow bit and an extractor, used to extract thin radial cylinders of wood (increment cores) from trees having annual growth rings, to determine increment or age (Helms 1998).

interpolation—A method of reallocating attribute data from one spatial representation to another. Kriging is a more complex example that allocates data from sample points to a surface.

invasive plant—Plants that are not native to the ecosystem under consideration and that cause or are likely to cause economic or environmental harm or harm to human, animal, or plant health. <http://www.invasivespeciesinfo.gov/docs/council/isacdef.pdf>. (21 March 2008).

ladder fuel—Combustible material that provides vertical continuity between vegetation strata and allows fire to climb into the crowns of trees or shrubs with relative ease. Ladder fuels help initiate and ensure the continuation of a crown fire (Helms 1998).

lichen—An organism consisting of a fungus and an alga or cyanobacterium living in symbiotic association. Lichens look like masses of small, leafy, tufted or crust-like plants (USDA FS 2006).

live trees—All living trees, including all size classes, all tree classes, and both commercial and noncommercial species for tree species listed in the FIA field manual (USDA FS 2006).

mean annual increment (MAI) at culmination—A measure of the productivity of forest land expressed as the average increase in cubic feet of wood volume per acre per year. For a given species and site index, the mean is based on the age at which the MAI culminates for fully stocked natural stands. The MAI is based on the site index of the plot (Azuma et al. 2004).

mensuration—Determination of dimensions, form, weight, growth, volume, and age of trees, individually, or collectively, and of the dimensions of their products (Helms 1998).

mesic—Describes sites or habitats characterized by intermediate moisture conditions; i.e., neither decidedly wet nor dry.

microclimate—The climate of a small area, such as that under a plant or other cover, differing in extremes of temperature and moisture from the larger climate outside (Helms 1998).

MMBF—A million board feet of wood in logs or lumber.

model—(1) An abstract representation of objects and events from the real world for the purpose of simulating a process, predicting an outcome, or characterizing a phenomenon. (2) geographic information system (GIS) data representative of reality (e.g., spatial data models), including the arc-node, georelational model, rasters or grids, polygon, and triangular irregular networks (Helms 1998).

mortality—The death of trees from natural causes, or subsequent to incidents such as storms, wildfire, or insect and disease epidemics (Helms 1998).

municipal land—Land owned by municipalities or land leased by them for more than 50 years (USDA FS 2006).

national forest lands—Federal lands that have been designated by Executive order or statute as national forest or purchase units and other lands under the administration of the U.S. Department of Agriculture, Forest Service, including experimental areas and Bankhead-Jones Title III lands (Azuma et al. 2004).

Native American lands—Tribal lands, and allotted lands held in trust by the federal government. Native American lands are grouped with farmer-owned and miscellaneous private lands as other private lands (Azuma et al. 2004).

native species—Plant species that were native to an American region prior to Euro-American settlement. For vascular plants, they are the species that are not present on the USDA Natural Resources Conservation Service (NRCS) (2000) list of non-native species (see **non-native species**) (USDA NRCS 2000).

net primary production (NPP)—NPP represents the amount of chemical energy that is available to consumers in an ecosystem. It is the remaining energy from gross primary productivity discounting the loss of energy required by primary producers for respiration.

net volume—Gross volume less deductions for sound and rotten defects. Growing-stock net volume is gross volume (in cubic feet) less deductions for rot and missing bole sections on poletimber and sawtimber growing-stock trees. Sawtimber net volume is gross volume (in board feet) less deductions for rot, sweep, crook, missing bole sections, and other defects that affect the use of sawtimber trees for lumber (Azuma et al. 2004).

noncensus water—Lakes, reservoirs, ponds, and similar bodies of water 1.0 ac to 4.5 ac in size. Rivers, streams, canals, etc., 30.0 to 200 feet wide.

noncorporate forest land—Private forest land owned by nongovernmental conservation or natural resource organizations; unincorporated partnerships, associations, or clubs; individuals or families; or Native Americans.

nonforest inclusion—An area that is not forested and is less than 1.0 ac and does not qualify as its own condition class (USDA FS 2006).

nonforest land—Land that has never supported forests or formerly was forested and currently is developed for non-forest uses. Included are lands used for agricultural crops, Christmas tree farms, cottonwood plantations, improved pasture, residential areas, city parks, constructed roads, operating railroads and their right-of-way clearings, powerline and pipeline clearings. The area must be at least 1.0 ac in size and 120.0 feet wide.

non-native species—Plant species that were introduced to America subsequent to Euro-American settlement. Non-native vascular plants are present on the USDA (USDA Natural Resources Conservation Service 2000).

nonstocked areas—Timberland that is less than 10 percent stocked with live trees. Recent clearcuts scheduled for planting are classified as nonstocked area (Azuma et al. 2004).

nontimber forest products (NTFP)—Species harvested from forests for reasons other than production of timber commodities. Vascular plants, lichens, and fungi are the primary organisms included in NTFPs.

old-growth forest—Old-growth forest is differentiated from younger forest by its structure and composition, and often by its function. Old-growth stands are typified by the presence of large older trees; variety in tree species, sizes, and spacing; multiple canopy layers; high amounts of standing and down dead wood; and broken, deformed, or rotting tops, trunks, and roots (Franklin et al. 1986).

other forest—Forest land that is unproductive (land not capable of producing more than 20 cubic feet of wood per acre per year). In tables where reserved and unreserved forest land are not broken out, 'other forest' includes all reserved forest land as well as unproductive forest land.

other private forest lands—Lands in private ownership and not reported separately. These may include coal companies, land trusts, and other corporate private landowners (USDA FS 2006).

overrun—Difference between the log scale of a shipment of timber and the actual volume of lumber obtained from it.

overstory—That portion of the trees, in a forest of more than one story, forming the uppermost canopy layer (Helms 1998).

owner class—A variable that classifies land into categories of ownership. Current ownership classes are listed in the FIA field manual (USDA FS 2006).

owner group—A variable that combines owner classes into the following groups: Forest Service, other federal agency, state and local government, and private. Differing categories of owner group on a plot require different conditions (USDA FS 2006).

ownership—A legal entity having an ownership interest in land, regardless of the number of people involved. An ownership may be an individual; a combination of persons; a legal entity such as corporation, partnership, club, or trust; or a public agency. An ownership has control of a parcel or group of parcels of land (USDA FS 2006).

ozone (O₃), tropospheric—A regional, gaseous air pollutant produced primarily through sunlight-driven chemical reactions of nitrogen oxide (NO₂) and hydrocarbons in the troposphere (the lowest layer of the atmosphere). Ozone plays a significant role in greenhouse warming and urban smog and causes foliar injury to deciduous trees, conifers, shrubs, and herbaceous species (Air and Waste Management Association 1998).

pathogen—Parasitic organism directly capable of causing disease.

photointerpretation (aerial photography)—A process where points, or areas of interest on an aerial photograph are studied to determine information about land cover. The FIA program uses photo interpretation to determine whether field plots are forested or not, the possible forest type and size class, and in analysis for land cover and land use changes.

prescribed burn—Deliberate burning of wildland fuels in either their natural or their modified state and under specified environmental conditions, usually to make the site less susceptible to severe wildfire. Synonym: controlled burn, prescribed fire (adapted from Helms 1998).

productive forest land—Forest land that is producing or capable of producing in excess of 20 cubic feet per acre per year of wood at culmination of mean annual increment (MAI) without regard to reserved status (USDA FS 2006).

public land—An ownership group that includes all federal, state, county, and municipal lands (USDA Forest Service 2006).

quadrat—The basic 3.28 square feet sampling unit for the Phase 3 Vegetation Indicator (USDA FS 2006).

rangeland—Expansive, mostly unimproved lands on which a significant proportion of the natural vegetation is native grasses, grass-like plants, forbs, and shrubs. Rangelands include natural grasslands, savannas, shrublands, many deserts, tundra, alpine communities, coastal marshes, and wet meadows. <http://en.wikipedia.org/wiki/Rangeland>. (21 March 2008).

regeneration (artificial and natural)—The established progeny from a parent plant, seedlings, or saplings existing in a stand, or the act of renewing tree cover by establishing young trees naturally or artificially. May be artificial (direct seeding or planting) or natural (natural seeding, coppice, or root suckers) (Adapted from Helms 1998).

remote sensing—Capture of information about the Earth from a distant vantage point. The term is often associated with satellite imagery but also applies to aerial photography, airborne digital sensors, ground-based detectors, and other devices.

reserved forest land—Land permanently reserved from management for the production of wood products by statute. Examples include national wilderness areas, national parks and monuments, and state parks.

richness—The number of different species in a given area, often referred to at the plot scale as alpha diversity and at the region scale as gamma diversity (USDA NRCS 2000).

riparian—Related to, living in, or associated with a wetland, such as the bank of a river or stream or the edge of a lake or tidewater. The riparian biotic community significantly influences and is influenced by the neighboring body of water (Helms 1998).

sampling error—Difference between a population value and a sample estimate that is attributable to the sample, as distinct from errors due to bias in estimation, errors in observation, etc. Sampling error is measured as the standard error of the sample estimate (Helms 1998).

sapling—A live tree 1.0 to 4.9 inches in diameter (USDA FS 2006).

saw log—A log meeting minimum standards of diameter, length, and defect for manufacture into lumber or plywood. The definition includes logs with a minimum diameter outside bark for softwoods of 7 inches (9 inches for hardwoods) (Azuma et al. 2004).

sawtimber trees—Live softwood trees of commercial species at least 9.0 inches in d.b.h. and live hardwood trees of commercial species at least 11.0 inches in diameter breast height. At least 25 percent of the board foot volume in a sawtimber tree must be free from defect. Softwood trees must contain at least one 12-foot saw log with a top diameter of

not less than 7 inches outside bark; hardwood trees must contain at least one 8-foot saw log with a top diameter of not less than 9 inches outside bark (Azuma et al. 2004).

Scribner rule—The common board-foot log rule used to determine sawtimber volume. Scribner volume is estimated in terms of 32-foot logs for softwoods and 16-foot logs for hardwoods.

seedlings—Live trees <1.0 inch diameter at breast height and at least 6 inches in height (softwoods) or 12 inches in height (hardwoods) (USDA FS 2006).

shrub—Perennial, multi-stemmed woody plant, usually less than 13 to 16 feet in height, although under certain environmental conditions shrubs may be single-stemmed or taller than 16 feet. Includes succulents (e.g., cacti) (USDA FS 2007).

shrubland—A shrub-dominated vegetation type that does not qualify as forest.

slope—Measure of change in surface value over distance, expressed in degrees or as a percentage (Helms 1998).

snag—Standing dead tree ≥ 5 inches diameter at breast height and ≥ 4.5 feet in length, with a lean of < 45 degrees. Dead trees leaning more than 45 degrees are considered to be down woody material. Standing dead material shorter than 4.5 feet are considered stumps (USDA FS 2007).

species group—A collection of species used for reporting purposes (USDA FS 2006).

species turnover—A measure of difference in species composition among plots within an area (e.g., ecological section). Also known as beta diversity. Species turnover is calculated by dividing the total number of species in an area by the mean number of species per plot (USDA NRCS 2000).

specific gravity constants—Ratio of the density (weight per unit volume) of an object (such as wood) to the density of water at 4 °C (39.2 °F) (Helms 1998).

stand age—Average age of the live dominant and codominant trees in the predominant stand size class (USDA FS 2006).

stand size class—A classification of stands based on tree size. Large-diameter stands have the majority of trees at least 11.0 inches diameter at breast height for hardwoods and 9.0 inches diameter at breast height for softwoods; Medium-diameter stands have the majority of trees at least 5.0 inches diameter at breast height but not as large as large-diameter trees; and small-diameter stands have the majority of trees less than 5.0 inches diameter at breast height.

state land—An ownership class of public lands owned by states or lands leased by states for more than 50 years (USDA FS 2006).

stocked/nonstocked—In the FIA program, a minimum stocking value of 10 percent live trees is required for accessible forest land (USDA FS 2007).

stocking—(1) At the tree level, the density value assigned to a sampled tree (usually in terms of numbers of trees or basal area per acre), expressed as a percentage of the total tree density required to fully use the growth potential of the land. (2) At the stand level, the sum of the stocking values of all trees sampled (Bechtold and Patterson 2005).

stratification—A statistical tool used to reduce the variance of the attributes of interest by partitioning the population into homogenous strata (Bechtold and Patterson 2005).

succession—The gradual supplanting of one community of plants by another (Helms 1998).

surface fire—A fire that burns only surface fuels, such as litter, loose debris, and small vegetation (Helms 1998).

sustainability—The capacity of forests, ranging from stands to ecoregions, to maintain their health, productivity, diversity, and overall integrity in the long run, in the context of human activity and use (Helms 1998).

terrestrial—Of or relating to the Earth or its inhabitants; of or relating to land as distinct from air or water. <http://www.merriam-webster.com/dictionary/terrestrial>. (21 March 2008).

timberland—Forest land that is producing or capable of producing >20 cubic feet per acre per year of wood at culmination of mean annual increment (MAI). Timberland excludes reserved forest lands (USDA FS 2006).

transect—A narrow sample strip or a measured line laid out through vegetation chosen for study (Helms 1998).

tree—A woody perennial plant, typically large, with a single well-defined stem carrying a more or less definite crown; sometimes defined as attaining a minimum diameter of 3 inches and a minimum height of 15 feet at maturity. For FIA, any plant on the tree list in the current field manual is measured as a tree (USDA FS 2006).

understory—All forest vegetation growing under an overstory (Helms 1998).

unproductive forest land—Forest land that is not capable of producing in excess of 20 cubic feet per acre per year of wood at culmination of MAI without regard to reserved status (USDA FS 2006).

unreserved forest land—Forest land that is not withdrawn from harvest by statute or administrative regulation. Includes forest lands that are not capable of producing in excess of 20 cubic feet per acre per year of industrial wood in natural stands (Smith et al. 2004).

vascular plant—A plant possessing a well-developed system of conducting tissue to transport water, mineral salts, and sugars. http://www.biology-online.org/dictionary/Vascular_plant. (21 March 2008).

wilderness—(1) According to the Wilderness Act of 1964, “a wilderness, in contrast with those areas where man and his works dominate the landscape, is hereby recognized as an area where the Earth and its community of life are un-

trammelled by man, where man himself is a visitor who does not remain.” (2) A roadless land legally classified as a component area of the National Wilderness Preservation System and managed to protect its qualities of naturalness, solitude, and opportunity for primitive recreation. Wilderness areas are usually of sufficient size to make maintenance in such a state feasible (Helms 1998).

wildfire—Any uncontained fire, other than prescribed fire, occurring on wildland. Synonym: wildland fire (adapted from Helms 1998).

wildland—Land other than that dedicated for uses such as agriculture, urban, mining, or parks (Helms 1998).

wildland forest—A large continuous tract of forest with few or no developed structures on it. Delineated on aerial imagery for the purpose of detecting land use change. The Pacific Northwest Forest Inventory and Analysis program and the Oregon Department of Forestry jointly use a minimum of 640 ac with fewer than five developed structures to designate wildland forest.

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