

Pacific Northwest Forest Ownership and Composition

BY MARIN PALMER

Oregon and Washington are both densely forested states, each with about half of their land area in forestland. Oregon has 30 million and Washington has 22 million acres of forestland. Conifers dominate our forestlands, with Douglas-fir dominated stands making up over 35 percent of each state's forests, mainly on the west of the Cascade mountain crest. Fir/spruce/mountain hemlock forest types are prevalent in the high Cascades; hemlock/Sitka spruce is a component along the coast; and ponderosa pine covers much of the east-side, especially in Oregon.



The US Forest Service, Forest Inventory and Analysis (FIA) program conducts annual inventories of all forested lands across the United States and US territories. FIA is known as the nation's forest census, and is part of Forest Service Research and Development. It began as the Forest Survey in 1928 with an objective of conducting unbiased assessments of the nation's forested lands, and the first inventory of Oregon and Washington was completed in the 1930s.

derosa pine covers much of the east-side, especially in Oregon. The US Forest Service, Forest Inventory and Analysis (FIA) program conducts annual inventories of all forested lands across the United States and US territories. FIA is known as the nation's forest census, and is part of Forest Service Research and Development. It began as the Forest Survey in 1928 with an objective of conducting unbiased assessments of the nation's forested lands, and the first inventory of Oregon and Washington was completed in the 1930s.

The current program follows a national standard, with core data items collected on all forested lands in the United States. Data are collected on an annual basis except for the US-affiliated Pacific and Caribbean islands where logistics dictate a periodic inventory. In western states, a statistically valid sample is measured each year with the full set of field plots covered over the course of 10 years, in contrast to the 7-year cycle in the east. More information about the FIA program can be found at our national (www.fia.fs.fed.us/) or regional (www.fs.fed.us/pnw/rma/) websites. Also, see the Nov./Dec. 2013 issue of the *Western Forester*: FIA in the PNW (<http://bit.ly/2zpoUTR>). All estimates presented here are based



LORENZ FORESTRY

CHUCK LORENZ, CF 1770

Forest Management Planning & Operations, Inventory, Valuation for over 40 years

360-951-0117

c_4str@yahoo.com

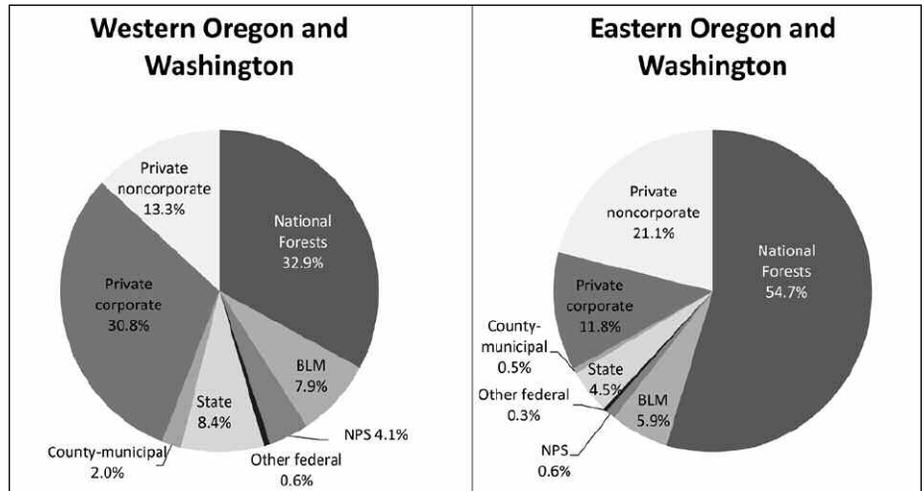


Figure 1. Forestland ownership distribution in Western Oregon and Washington versus Eastern Oregon and Washington, 2016.

FORESTS. A WAY OF LIFE






There's a simple way you can ensure healthy forests for generations to come while supporting the people and communities who depend on them.

Choose the Sustainable Forestry Initiative® (SFI) Standard for your working forest. The actions we take today determine the future of our forests.

Learn more at sfiprogram.org | wasfi.org




on the most recent full inventory cycle from 2007-2016.

Forest ownership trends are of interest because different owners or managers often have markedly different management goals. Most of the timber harvest in Oregon and Washington over the past 25 years

Norm Michaels Forestry LLC

Forest management to meet your goals

- Management Plans
- Reforestation
- Timber inventory
- Timber cruising

Over 40 years managing forests in Oregon and Washington

541-822-3528

nmichaels2@yahoo.com



occurred on private lands. Public lands tend to be managed with a variety of conservation and ecosystem services goals in mind (clean air and water, recreation, carbon sequestration, forage, timber, and non-timber forest products). Distribution of forestlands among broad owner groups (federal, state and local government, corporate private, and noncorporate private) has changed little since the start of FIA's annual inventory in 2000.

Public forestlands are a substantial percentage of both Oregon's (64 percent) and Washington's (57 percent) land stewardship base. In Oregon, the largest public land stewards are the Department of Agriculture (USDA) Forest Service (47 percent) and Department of the Interior (USDI) Bureau of Land Management (12 percent). Washington forestlands also have a large portion managed by the USDA Forest Service (37 percent), but the Washington State Department of Natural Resources also manages close to 2.5 million forested acres (11 percent) in the state, and another 5 percent of forestland is managed by the USDI National Park Service.

Public and private ownership trends are very similar between the two Pacific Northwest states. Ownership patterns differ between east and west sides of the states, bisected by the Cascade Mountain crest (Figure 1). The abundant moisture from the Pacific coast to the Cascade crest creates highly productive growing conditions on the



**Forest Management Plans
Resource Inventories
Fish/Habitat Surveys
Alternate Plans
Stream Enhancement
Fish Passage
ESA Compliance**

360.456.4621

markt@fishsciences.net

www.fishsciences.net

Alaska Forest Ownership

Forest Inventory and Analysis (FIA) surveys Alaskan forests in the 37.8-million-acre coastal region that stretches 1,170 miles from Kodiak Island in the southwest to the Canadian border in the southeast. Over 15 million acres (40 percent) of coastal Alaska is forested. The majority (88 percent) of these forests are publicly administered, with almost 11



PHOTO COURTESY OF SARAH ELLISON, PNW-FIA PROGRAM

million acres of forestland in two national forests. Although only 11 percent of coastal Alaska forests are privately owned, these stands make up 24 percent of the productive, unreserved timberland in the region. Alaska's private forests are mostly owned by corporate entities (1,541,000 acres), with a small amount retained by noncorporate owners, such as individuals or Native tribes (221,000 acres).

Alaska's national forests are unique in both their size and composition. The Tongass National Forest in southeast Alaska includes around 10 million acres of forest and is the largest national forest in the United States. The highest-volume forest types on the Tongass are western hemlock, Alaska yellow-cedar, and mountain hemlock. The Chugach National Forest in south-central Alaska is roughly the size of New Hampshire and spans both the coastal rainforest and Alaska Range transition ecological provinces. Mountain hemlock types cover 70 percent of the Chugach, but small amounts of boreal black spruce and paper birch forest types also fall within the Chugach National Forest boundaries.

The PNW-FIA program has begun a periodic inventory of Interior Alaska in collaboration with the State of Alaska Department of Natural Resources, Division of Forestry, and NASA. This new project will inventory the remaining 15 percent of US forested land not yet covered in the FIA sample. The Interior Alaska effort will install about 4,500 new FIA plots on the ground over 12-15 years and supplement this data utilizing cutting edge remote sensing techniques (NASA's G-LiHT system) before moving into the re-measurement phase. More information about the Interior Alaska FIA project can be found on the PNW-RMA website: www.fs.fed.us/pnw/rma/main-topics/interior-Alaska/index.php. ♦



Forestry and Vegetation Management Specialists

- Forest Management Plans
- Timber Inventory and Appraisals
- Timber Sale Layout, Permitting and Administration
- Feasibility Studies on New Land Purchases
- Forest Land Management
- Growth and Yield Analysis
- GPS Mapping
- Vegetation Management

Galen M. Wright, ACF, SAF, Certified Forester No. 44 and Board Certified Master Arborist No. PN-0129BU

1.800.276.1723

www.waforestry.com • galenwfciaol.com • Olympia, WA

Serving Clients across the U.S. and Canada since 1991

westside of both states. Private corporate owners hold a larger share of westside forests, while over half of eastside forests are managed by the USDA Forest Service.

Publicly held lands in Oregon and Washington have remained fairly constant over time, although small parcels do swap in and out of public holdings. State forests in Oregon have undergone the most recent changes. The Gilchrist State Forest was purchased from private timberlands in 2010 and expanded as planned in 2015 by an adjacent donation from the Conservation Fund. The Elliott State Forest will remain in state management for now despite proposals for its sale in 2016 and early 2017.

Forest species composition differs between public and private forestlands in the region owing to a combination of ecological factors and management or disturbance histories. In both states, acreage of Douglas-fir forest types is well distributed among owner groups.

HOPKINS FORESTRY
 Forest Managers performing herbicide application, young stand management, harvest management, contract compliance, inventories, and forestry/natural resources education

WASHINGTON FORESTRY EVERGREEN STATE
 WASHINGTON 4ESTMGR EVERGREEN STATE

Dick & Paula Hopkins
360-492-5441
 hopkinsforestry@yahoo.com

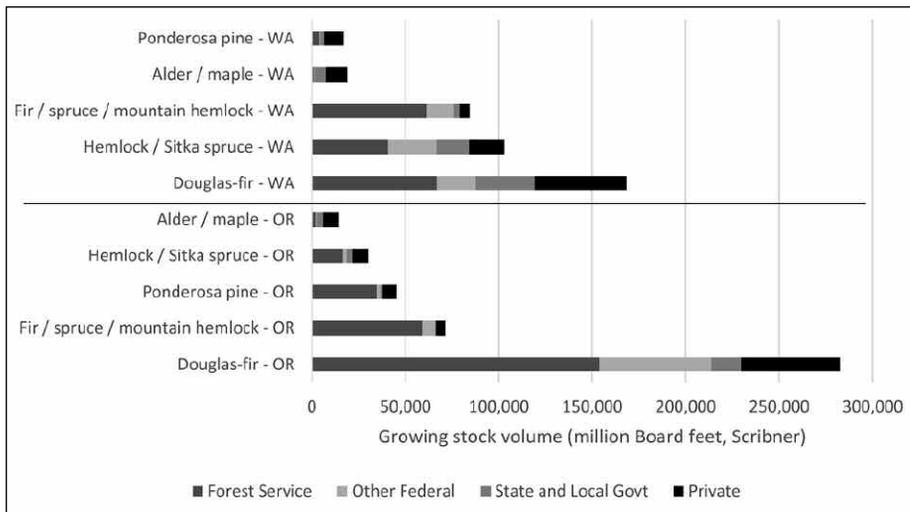


Figure 2. Net volume of growing-stock trees (Scribner rule) for highest volume forest type groups in Washington and Oregon, 2016.

Fir/spruce/mountain hemlock forest types are common at higher elevations along the Cascade crest and fall primarily on National Forestlands. A larger share of alder/maple forests occur on lower-lying private lands (Figure 2). Public lands in Washington and Oregon hold 81 and 75 percent of the states' standing board foot volume, respectively, which is a higher per acre share than on private lands. This translates to older, more densely stocked stands with around twice the volume per acre on public lands than private lands (Table 1). Six years of re mea-

sured field plot data are now available from the annual Pacific Northwest FIA inventory, and these data can be used to provide detailed estimates of forest growth, removals, and mortality. While average annual growth is similar between ownership categories

Table 1. Average net boardfoot volume per acre (Scribner rule) of sawtimber trees on timberland, Oregon and Washington, 2016.

Ownership Group	Oregon	Washington
	<i>Board feet per acre, Scribner rule</i>	
USDA Forest Service	19,682	22,194
Other federal	30,201	26,788
State and local government	22,119	20,991
Private including tribal	9,252	10,744
All forest owners	16,653	16,103

Total for all forest owners is the average volume over all forested acres.

Integrated Resource Management
Consulting Foresters & Restoration Ecologists

"Since 1993"
 Philomath, OR
 541 929-3408

- Forest Management & Restoration
- Forest Inventory & Unit Layout
- FPS & Database Development
- Experts in FPA Layout Compliance in OR & WA
- GIS & GPS Mapping
- Custom DPP Applications
- Grade & Appraisal Cruising
- Logging Systems Analysis

Marc Barnes, marc@irmforestry.com - CA RPF #2538 www.irmforestry.com

Cafferata Consulting, LLC
Practical Environmental Solutions

We provide practical solutions for wildlife and other natural resource management. Our goal is to provide you with the highest level of service and the most effective solution to any natural resource concern.

WE SPECIALIZE IN:

- Developing wildlife programs for forest certification including SFI and American Tree Farm System
- Wildlife Surveys
- GIS Services

www.cafferataconsulting.com
 fran@cafferataconsulting.com • 503-680-7939

GREEN CROW
www.greencrow.com

Certifiably Proud of the Washington Tree Farm Program

on the east- and westside of both states, there are clear differences in how much volume is lost to mortality or removals (harvest) (Figure 3). Net change is positive, meaning that total live tree volume per acre is increasing, for all categories except public lands in eastern Washington where mortality exceeded growth. The net growth to removals ratio is much higher on public than on private lands, except for public lands in eastern Washington. Interpreting the cause of high mortality in eastern Washington for this period would need deeper analysis, but it is likely that the large acreages burned by wildfires in this region during 2014 and 2015 contributed heavily to these mortality numbers.

Examining recent trends in forestland area and composition between ownership groups leads to the question of how these trends have



ARBOR INFO LLC
Providing information about trees and forests

Tom Hanson
 Tom.Hanson@ArborInfo.com
 206-300-9711
www.arborinfo.com

changed since regional land use and forest management plans were instituted over the past 30 years. Historic forestland ownership trends are difficult to compare to the present because periodic FIA inventories used different forestland definitions and focused mainly on commercial timberland. While some forestland has been lost to development or agriculture in each state, the total amount of forestland and its distribution among public and private owners has stayed fairly steady since the original forest inventory carried out in the 1930s. FIA's annual inventory system, which includes standard measurements taken consistently throughout the United States, will provide an improved method for comparisons into the future. ♦

Marin Palmer is a forest inventory analyst with the USDA Forest Service Forest Inventory and Analysis Program in Portland, Ore. She can be reached at 503-808-2025 or mmpalmer@fs.fed.us.

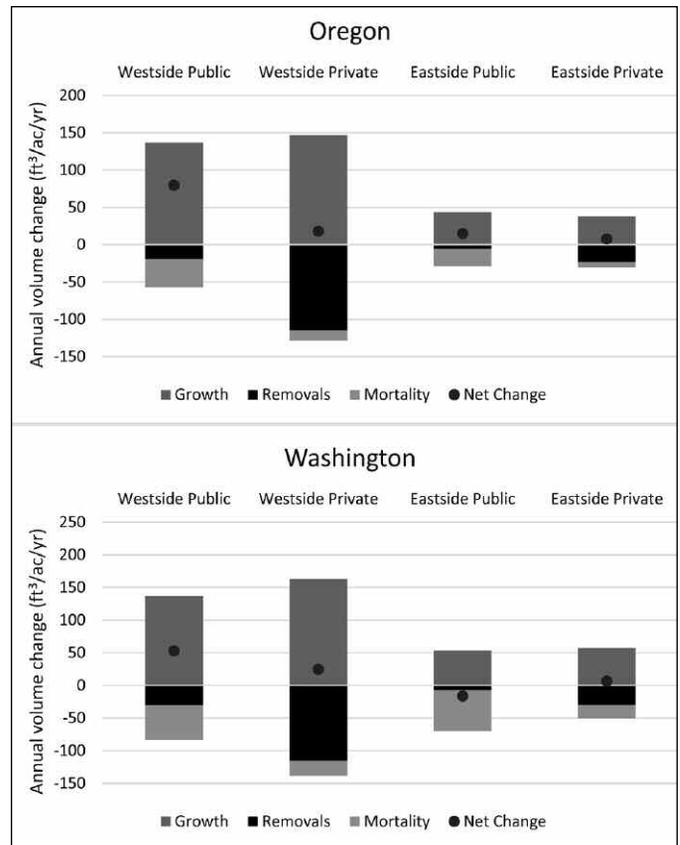


Figure 3. Average annual volume of growth, removals, and mortality on forestland in Oregon and Washington for 2001-2006 plots remeasured 2011-2016. Net change, shown as a dot, equals gross growth minus removals and mortality.

Restore our federal forests to restore our rural communities

Healthy Forests



Healthy Communities

Join us @ HealthyForests.Org

ATTERBURY CONSULTANTS, INC.
"Professional State-of-the-Art Forestry" Beaverton, Oregon

www.atterbury.com • 503-646-5393

<p>Appraisals & Consulting</p> <ul style="list-style-type: none"> • Harvest Level Projections • Due Diligence • Timberland Sales • Loan Analysis & Monitoring • Wood Supply Studies • Software Support 	<p>Cruising & Inventory</p> <ul style="list-style-type: none"> • Foresters are Highly Trained with Current Technology • Tract, Stand, & Log Volume, Stocking, & Statistics Analysis • Reforestation • Database Development
<p>GIS Mapping & Analyses</p> <ul style="list-style-type: none"> • Mill, Public, & Large Landowner Locations • Custom Maps & GIS Data • Overlay process, View & Watershed Analysis • 3D Mapping 	<p>Seminars & Training</p> <ul style="list-style-type: none"> • Continuing Education Credit • ArcPad in 1 day • Professional Timber Cruising • SuperACE • Individual or Group Training Available
<p>Software & Products</p> <ul style="list-style-type: none"> • Timber Cruising—SuperACE & Pocket SuperEASY • ESRI & MapSmart • Forestry Tools, Rangefinders, BAF Devices, Data Collectors & GPS Units 	