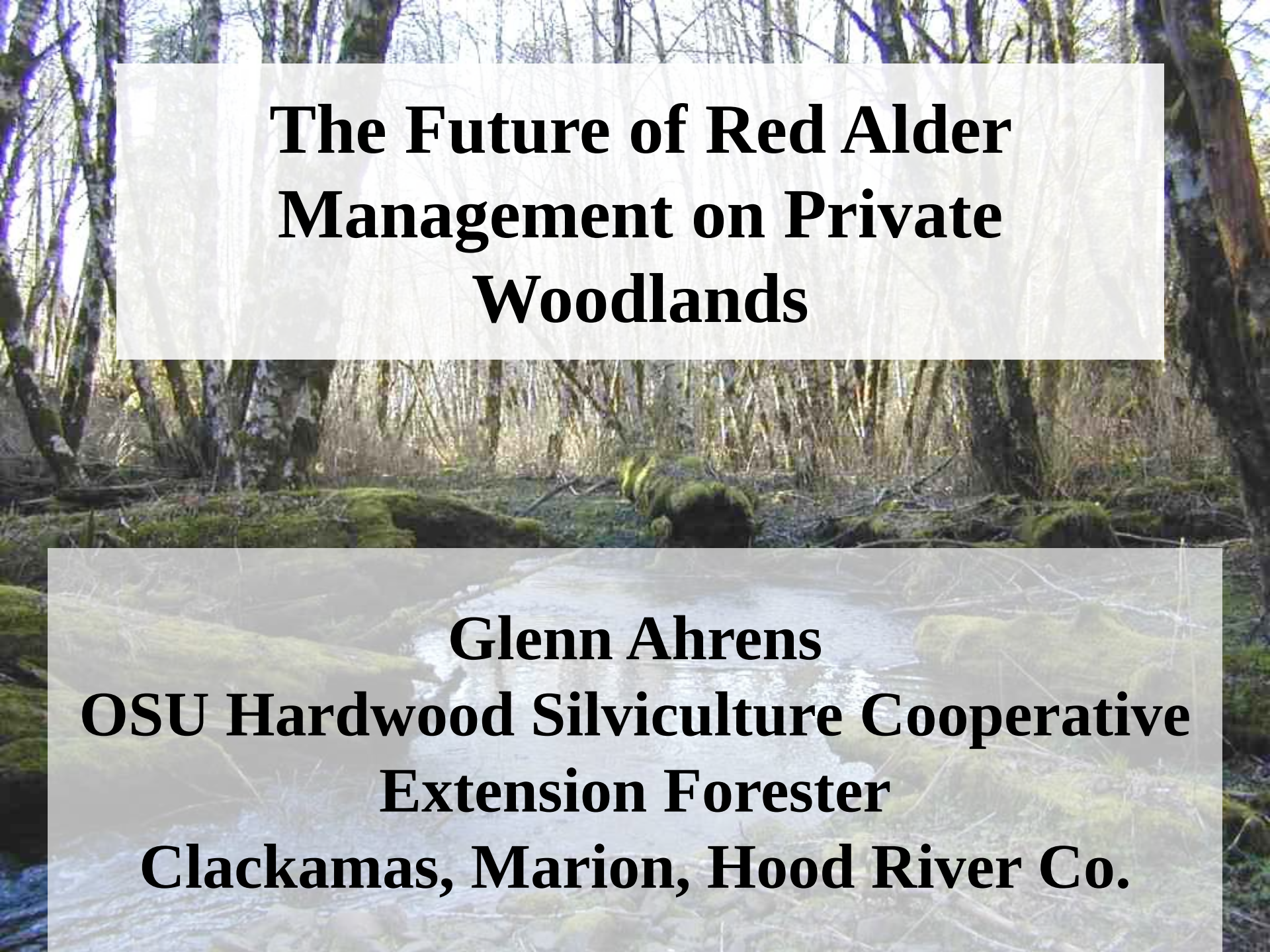


The Future of Red Alder Management on Private Woodlands

Glenn Ahrens
OSU Hardwood Silviculture Cooperative
Extension Forester
Clackamas, Marion, Hood River Co.

My Background

- **Ecology and Management of Hardwoods, specialty area since 1984.**
- **Research, Extension & Consulting**

Oregon State University
Extension Service

Hardwood Silviculture Cooperative

OSU Hardwood Silviculture Cooperative

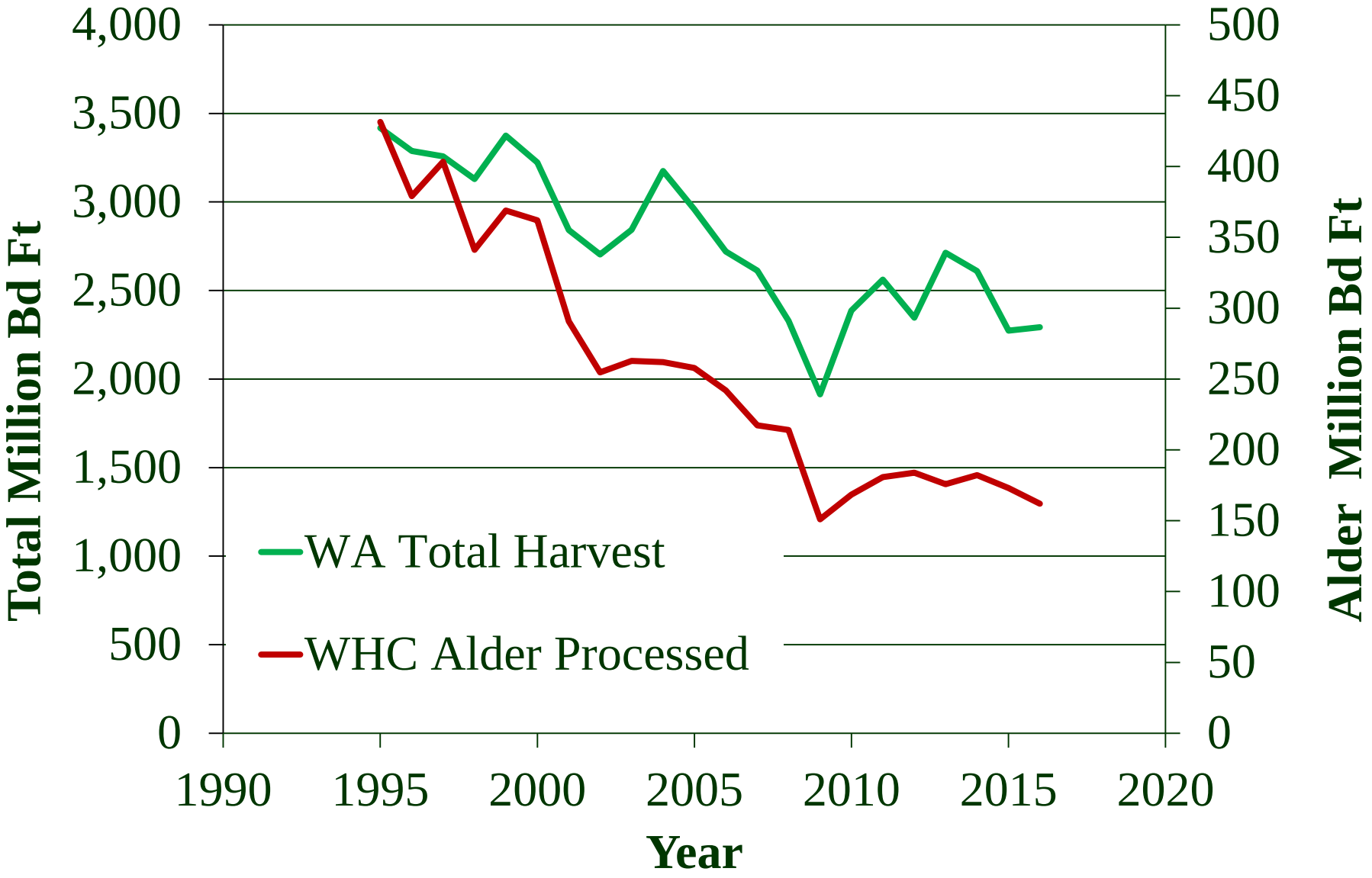
- Since1988, public and private forestry cooperators.
- Applied research, outreach education, and consulting on red alder stand management.
- Network of 32 long-term installations.
- Growth and yield model for managed stands of red alder.

Future of Alder Management

Outline

- Hardwood resource legacy from past practices and current trends.
- Hardwood management and harvesting behavior of private and public landowners.
- Key Issues & Priorities for future efforts to sustain hardwood resources.
- Tools to help landowners and foresters manage the hardwood resource.

Annual Timber Harvest - W. Washington



Sources: WA DNR Timber Harvest Reports, WHC Tons of Logs Processed conversion to Bd.Ft. assumed 8.1 tons/mbf & WHC report = 90% of actual WA alder logs

2013 Western Washington Hardwood Assessment for WHC

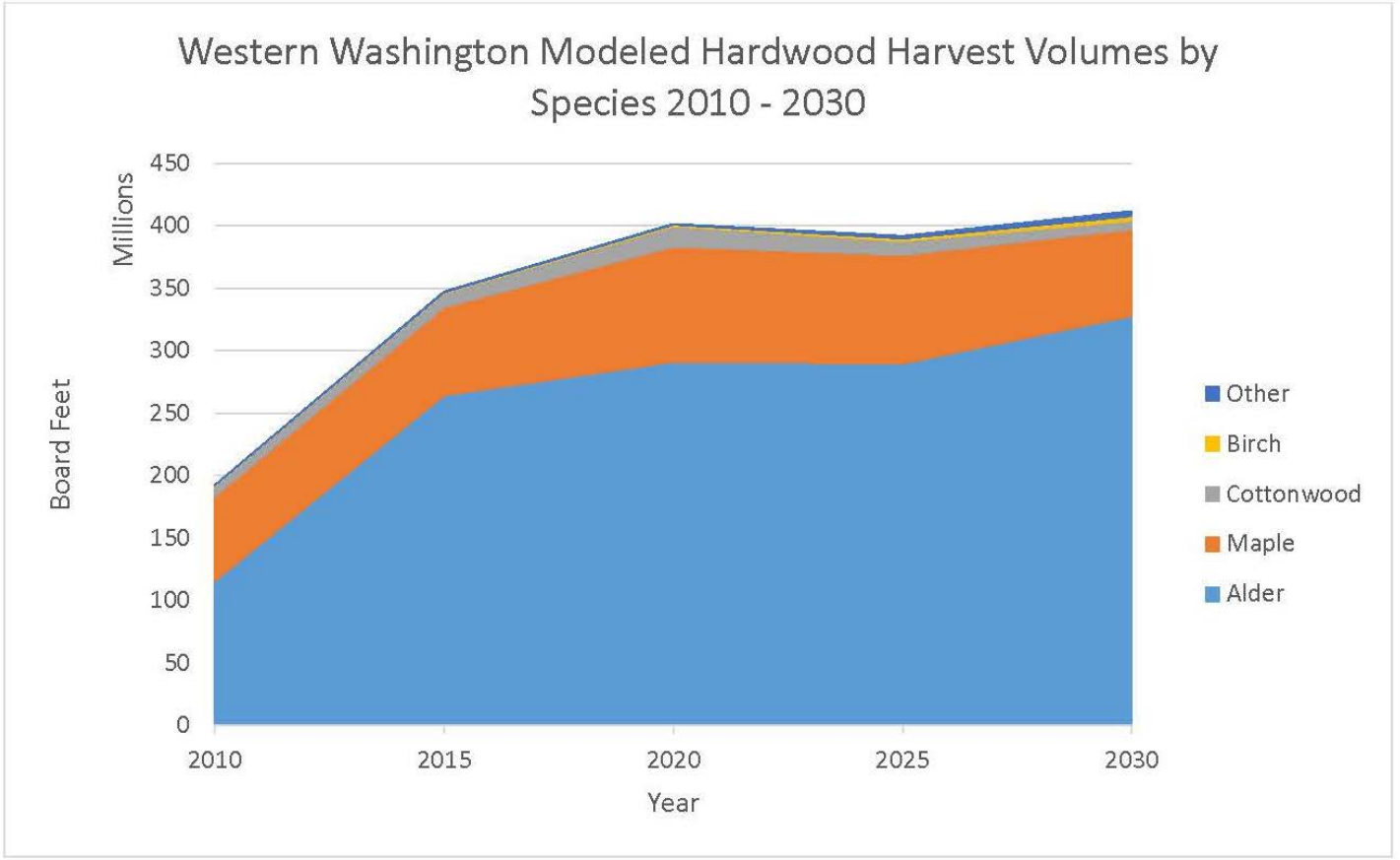
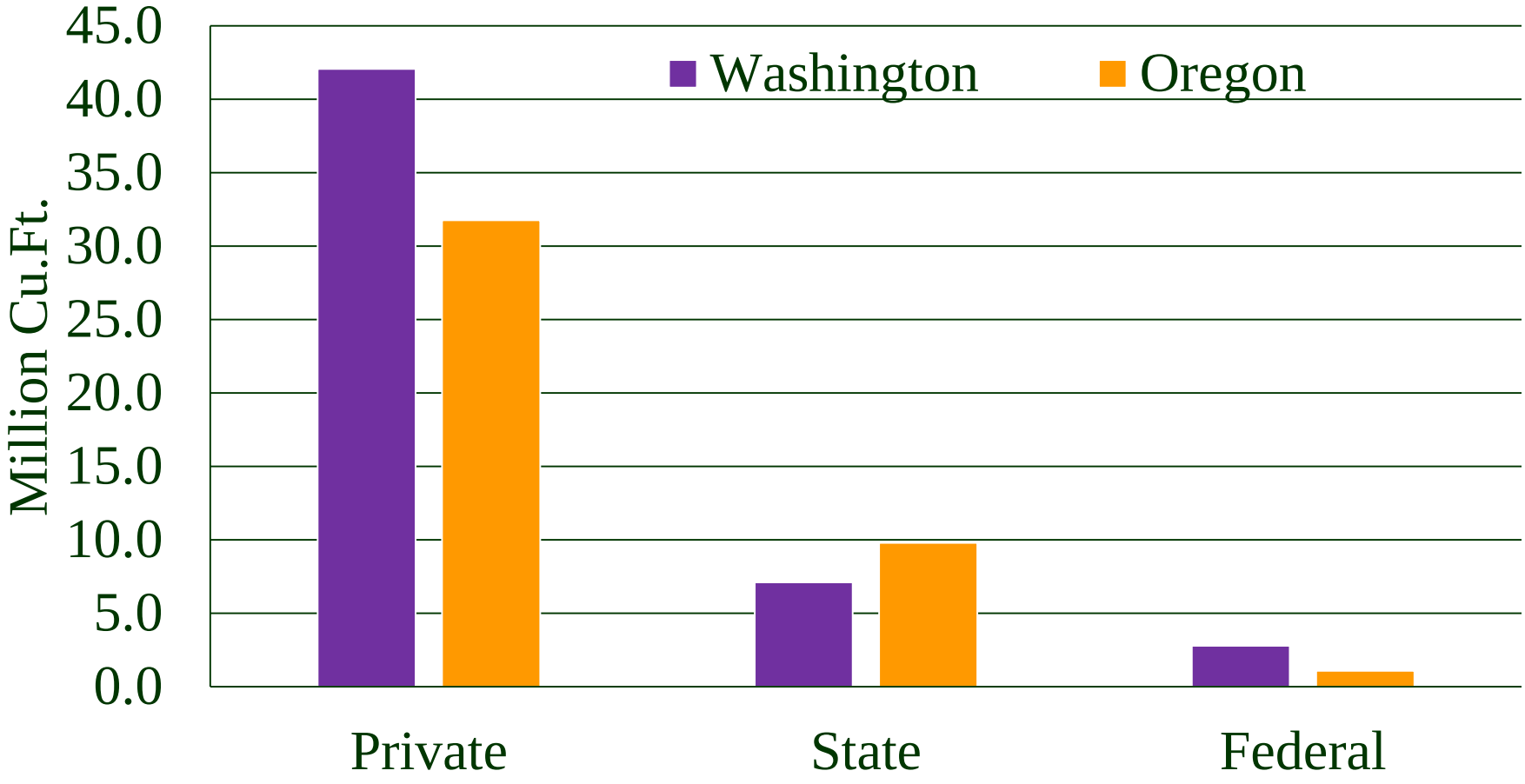


Figure 6. Modeled hardwood harvest volumes by species 2010 - 2030.

Table 6. Modeled hardwood harvest volumes by species 2010 - 2030.

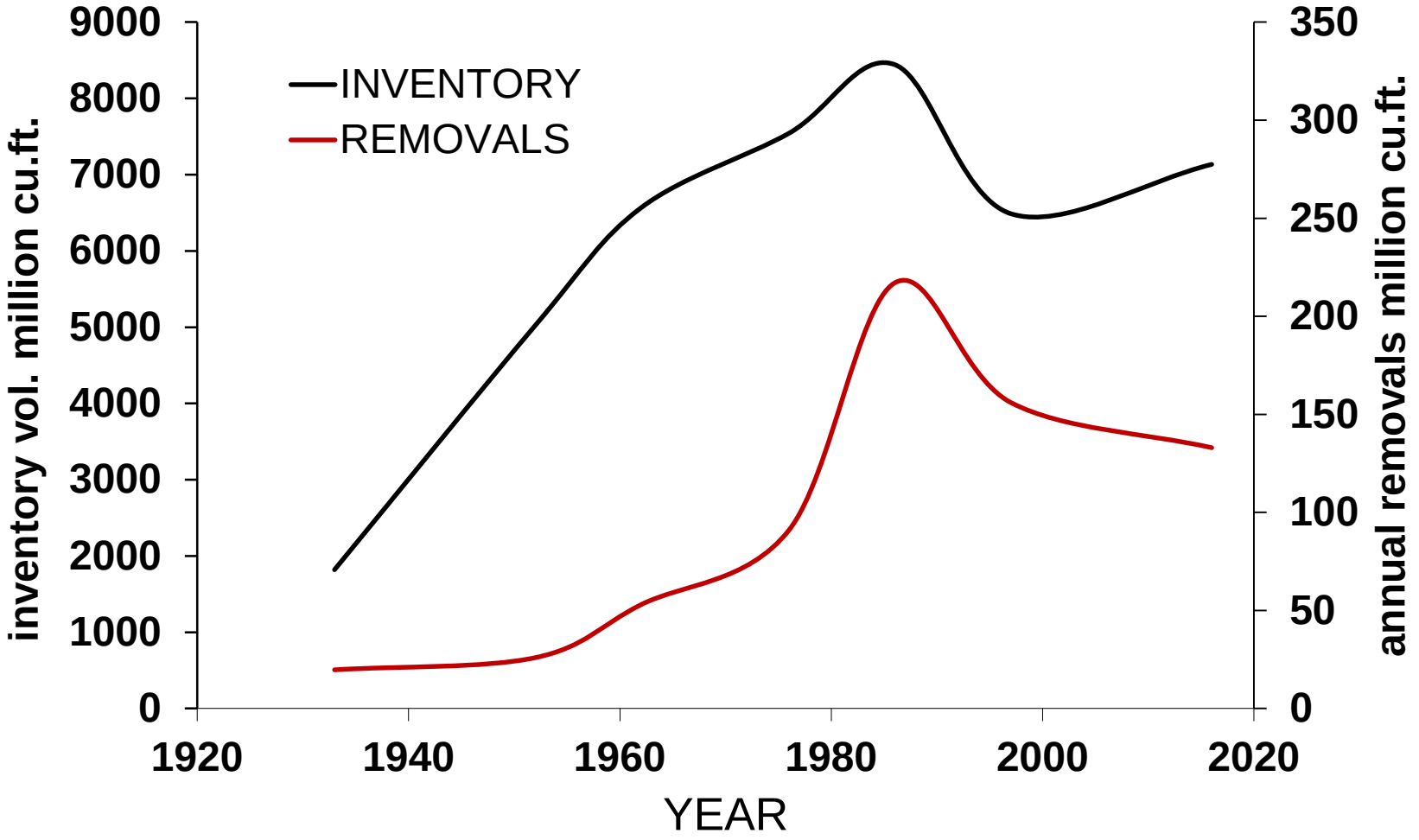
Rogers et al. 2013 Western Washington Hardwood Assessment

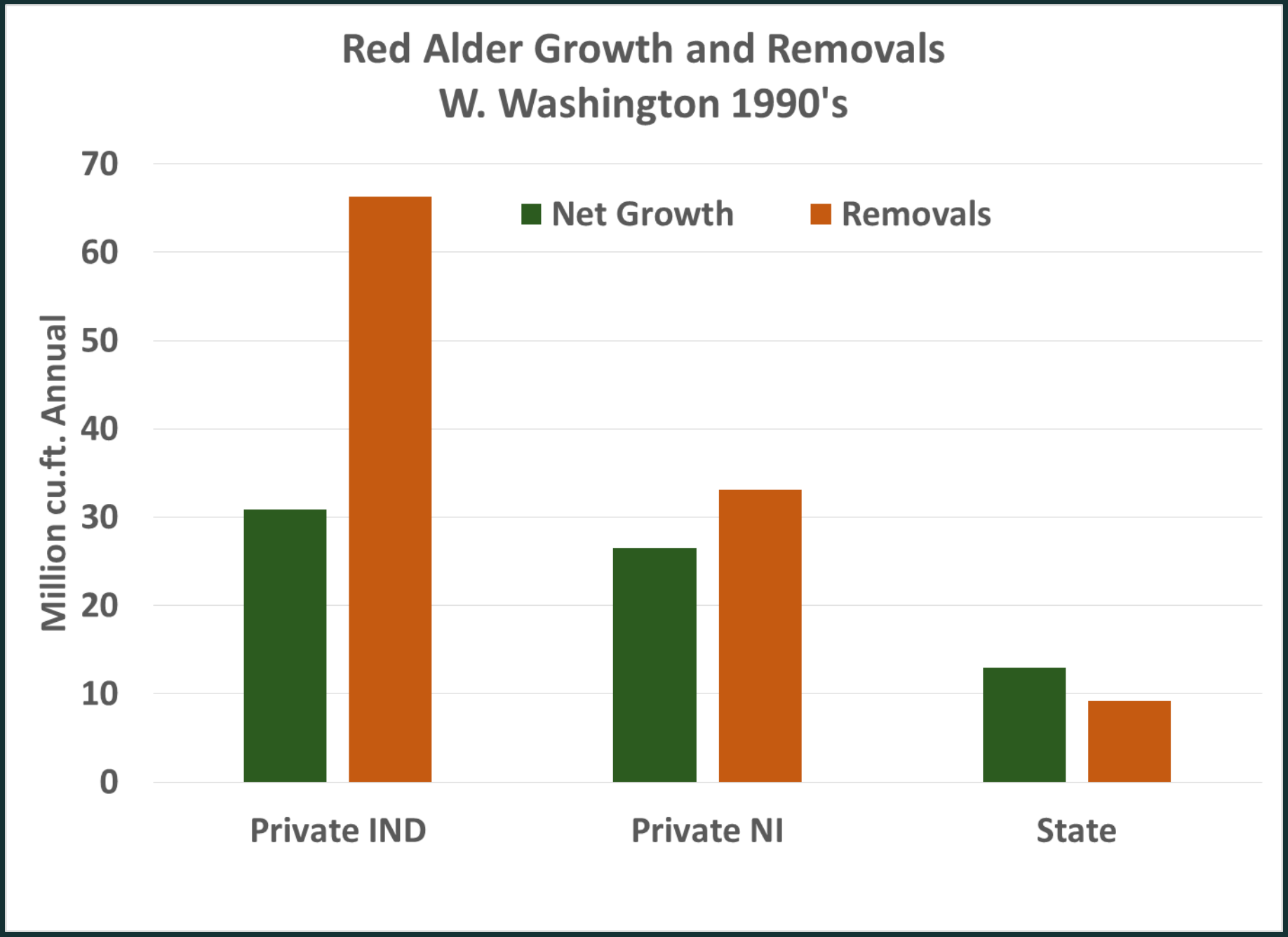
Red Alder Timber Harvest-Removals by Ownership 2010's W. Washington & W. Oregon

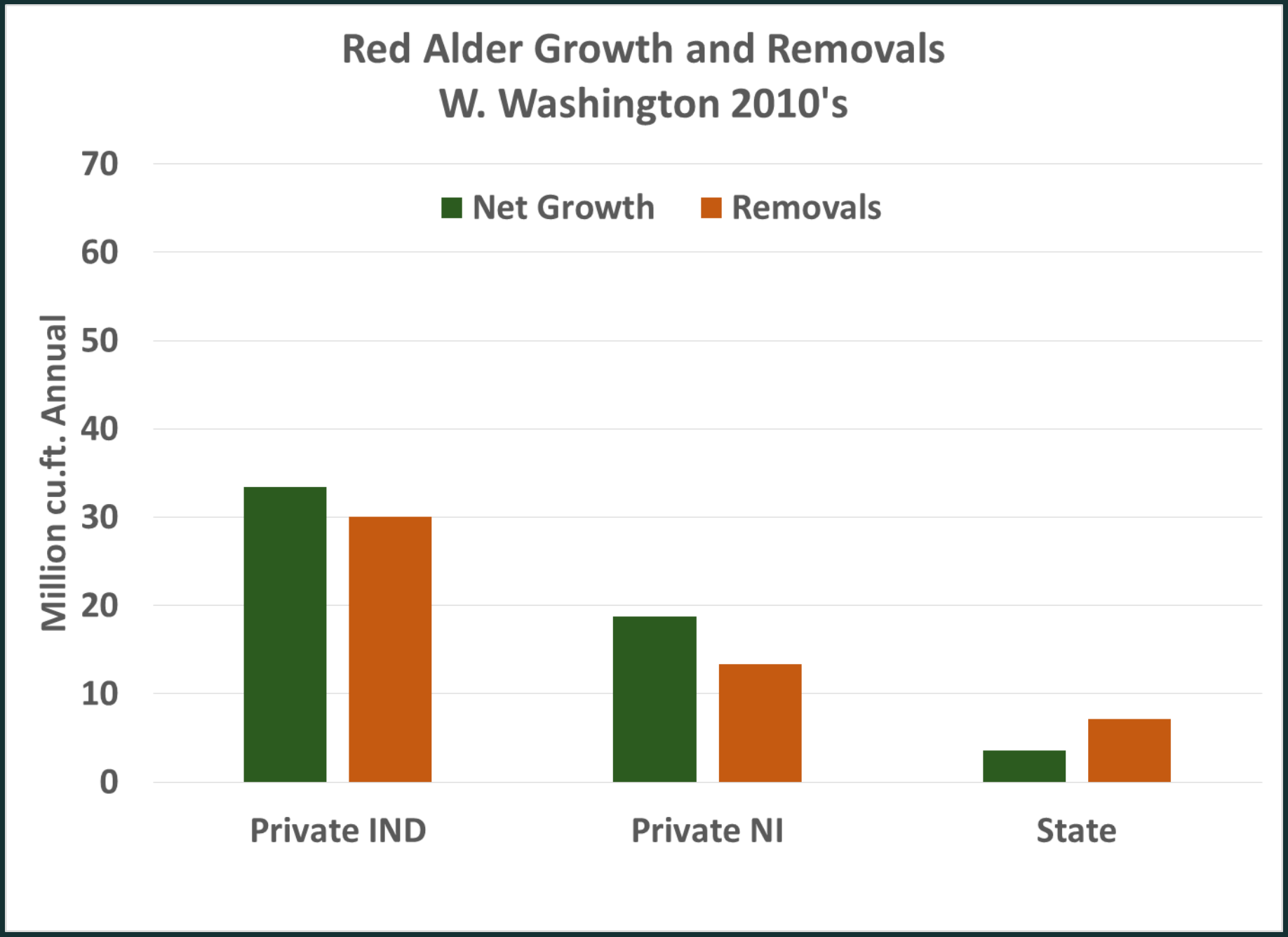


Sources: USFS FIA “Data Mart”.

Hardwood Inventory and Removals
Private lands - W. OR & W. WA




Red Alder Growth and Removals
W. Washington 1990's
Million cu.ft. Annual
70
60
50
40
30
20
10
0
Net Growth
Removals
Private IND
Private NI
State


Red Alder Growth and Removals
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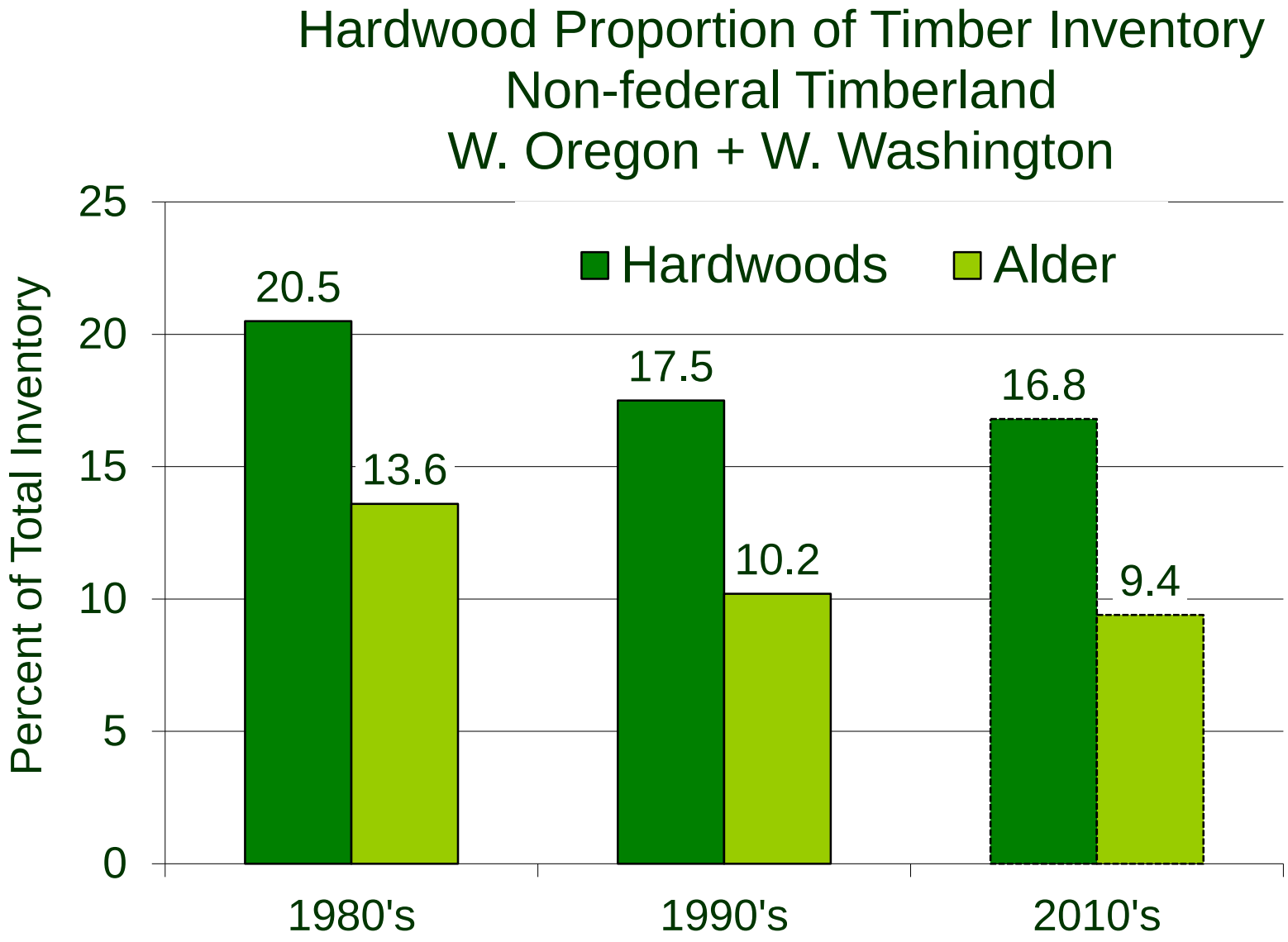
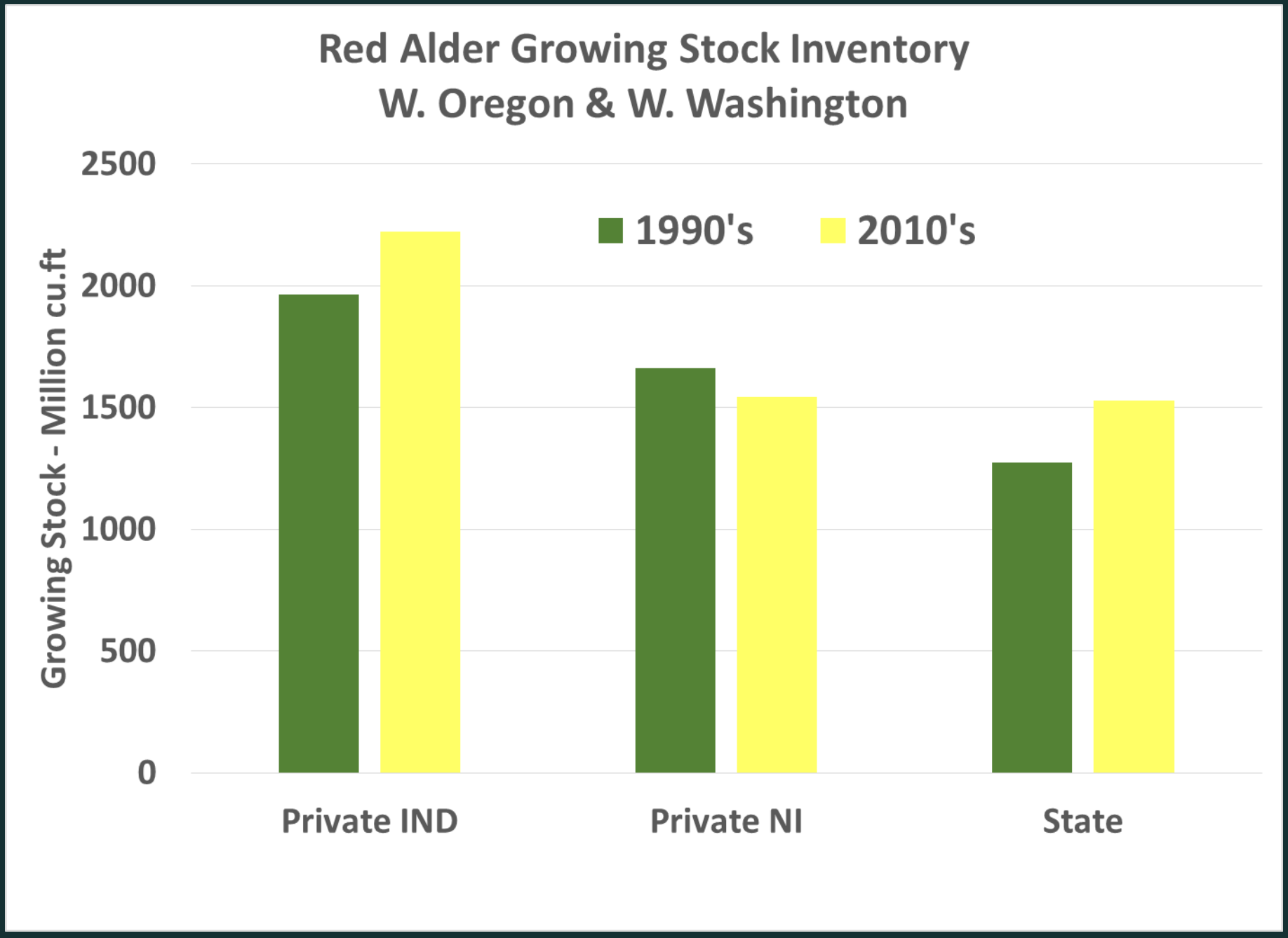
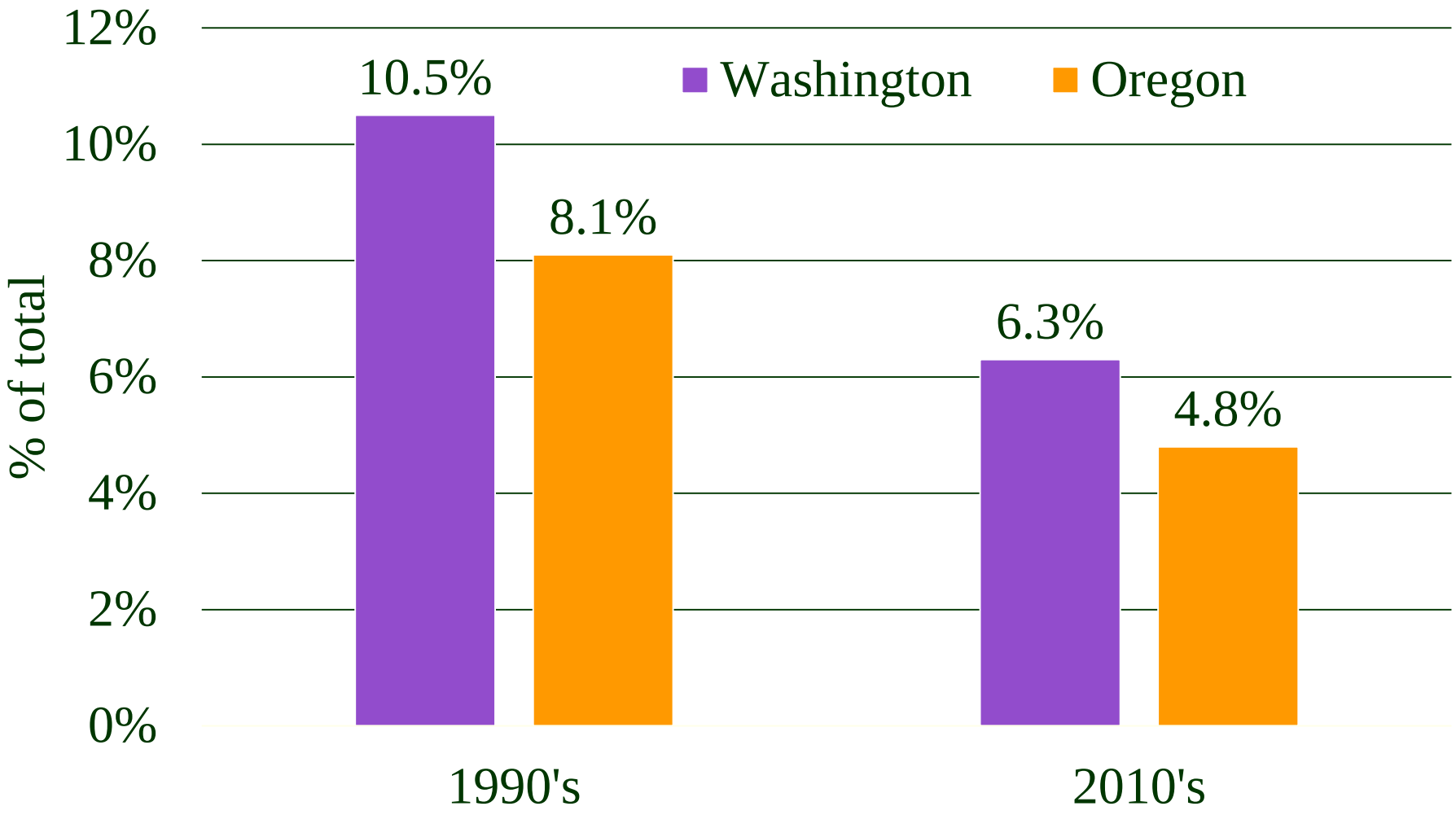


Sources: USFS FIA “Data Mart”.


Red Alder Growing Stock Inventory
W. Oregon & W. Washington
Growing Stock - Million cu.ft
2500
2000
1500
1000
500
0
1990's
2010's
Private IND
Private NI
State

Red Alder Harvest-Removals
Percent of Total Growing Stock Removals



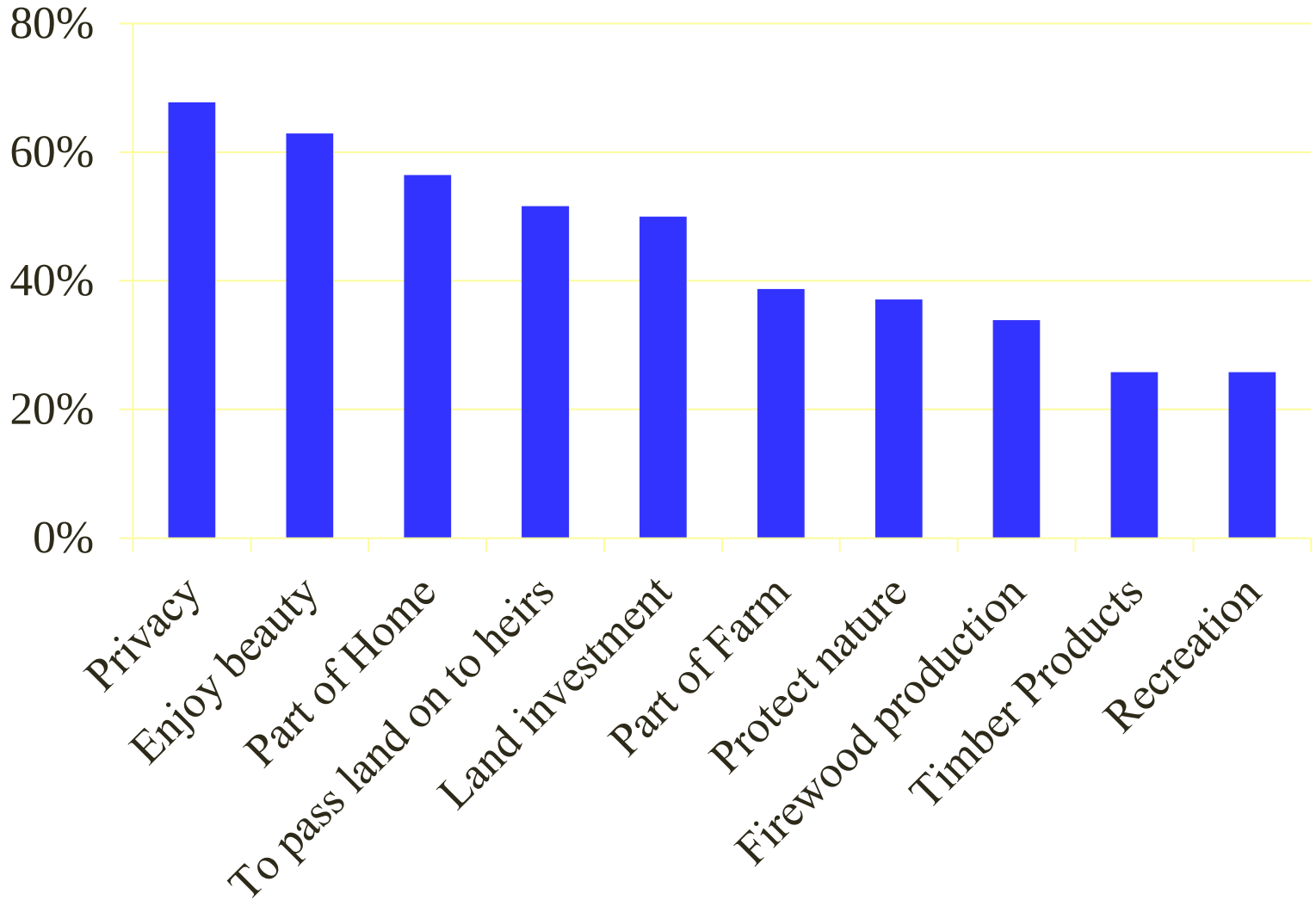
Sources: USFS FIA - PNW-RB-237, PNW-RB-246, FIA Data Mart.

Resource Trends and Management
Summary

- Inventory and harvest volume of “legacy alder” peaked in late 1980’s/early 1990’s.
- 1990’s - alder declined - harvesting in excess of annual growth, predominance of management for conifers.
- 2001-2016 - inventory of red alder has not declined significantly.
- 2001-2016 - harvest volumes of red alder declined to less than half of peak harvest levels; **reduced availability of inventory.**

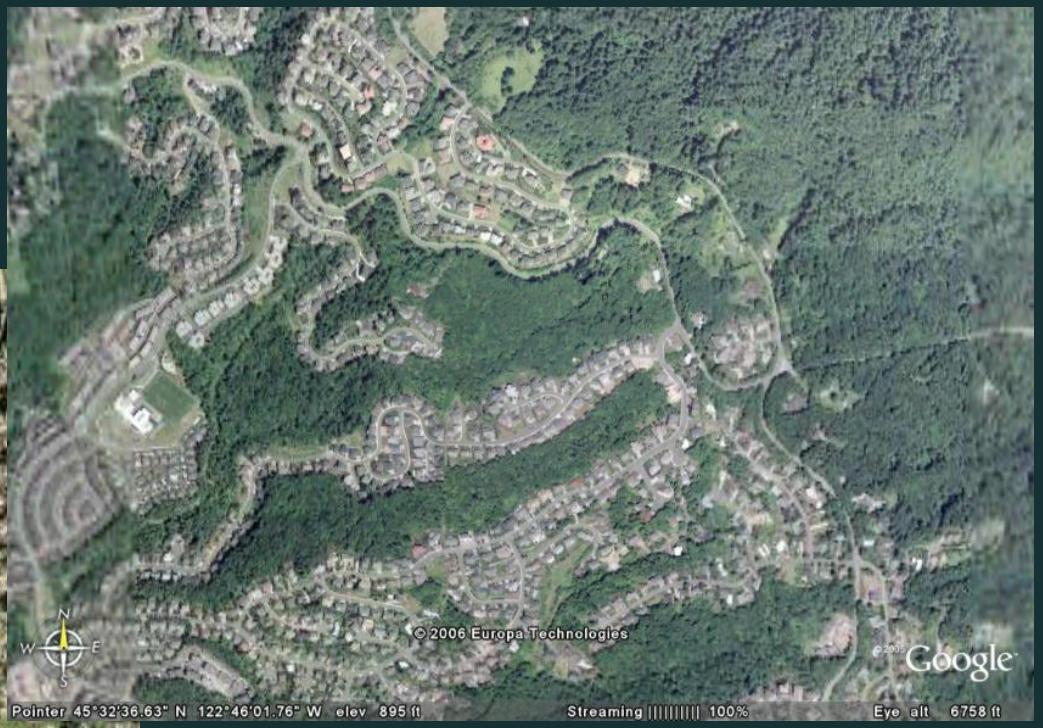
Non-industrial private forest owners – diverse goals, changing demographics, decreasing timber management.

Oregon - Top 10 Reasons for Owning Woodlands



National Woodland Owner Survey http://www.fia.fs.fed.us/nwos/

Conversion to non-forest use continues - especially in Washington.



Protection of riparian areas and steep slopes with abundant alder ~1/3 of the alder resource in WA.

Most upland alder is in mixed stands, managed primarily for conifer.

Reduced Management and Availability of Alder for Timber

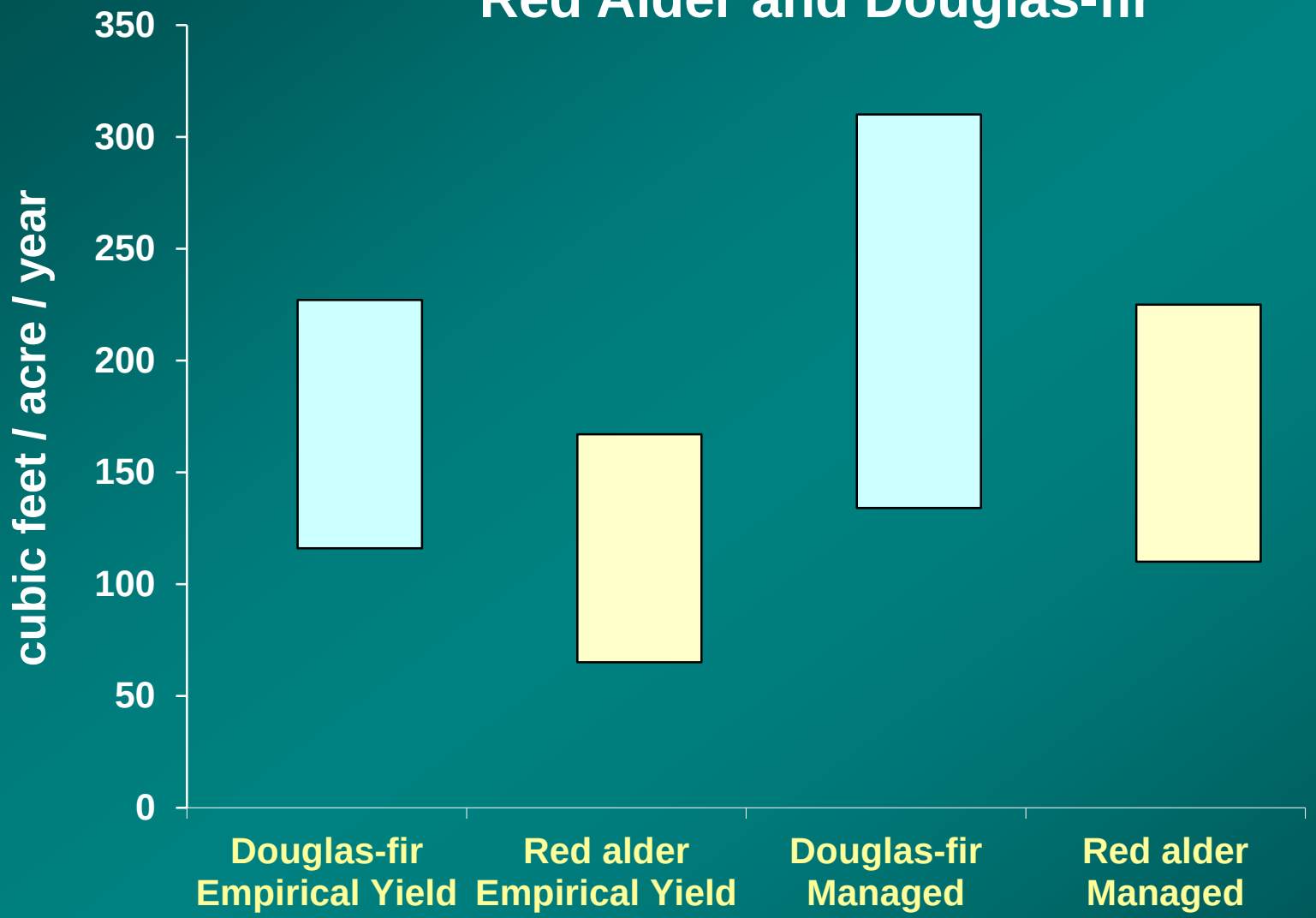
- Protection of riparian areas and steep slopes with abundant alder ~1/3 of the alder resource.
- Conversion to non-forest use, especially in Washington.
- Non-industrial private forest owners – diverse goals, changing demographics, decreasing timber management.
- Most upland alder is in mixed stands, managed primarily for conifer.
- Owners who manage timber intensively still favor Douglas-fir and other conifers on uplands

Management of red alder on “working forest” uplands is key to sustaining alder timber production

Alder management on uplands
Issues and obstacles

- Alder plantation establishment is expensive - seedling costs, high planting density (500-600 tpa) and pre-commercial thinning costs.
- Lack of seedling availability - inconsistent supply of high-quality seedlings.
- Landowners' and managers' unfamiliarity with management of red alder.
- Economic analysis shows competitive returns from alder under certain conditions...

Range of Wood Production Rates for Red Alder and Douglas-fir



Empirical Yield – WA DNR and BC Ministry of Forests. **Managed** – Red Alder: State of Knowledge Symposium 2005, Douglas-fir – Talbert and Marshall 2005 .

Example

Comparison Red Alder vs. Douglas-fir

Difference in Present Net Value (Alder – Doug-fir)

Log Price

Site Productivity

	High DF High RA	High DF Med RA	Med DF High RA
High DF High RA	-$378	-$1,234	$248
High DF Med RA	-$920	-$1,496	-$294
Med DF Med RA	-$312	-$888	$131
Med DF High RA	$230	-$626	$673

Assumptions for example comparisons

	red alder	Douglas-fir
Rotation Age (years)	30	45
High Price/mbf	$700	$700
Med Price/mbf	$550	$550
Low Price/mbf	$450	$450
High Prod Site Index SI (ft)	80 (SI 20yr)	150 (SI 50yr)
Med Prod SI (ft)	65 (SI 20yr)	120 (SI 50yr)
MBF/acre High Prod	17.4	43.1
MBF/acre Med Prod	10.7	29.8
Plantation establishment cost/acre	$505	$460
Logging cost/mbf	$150	$150
Hauling cost/mbf	$80	$80
Interest rate for PNV	8%	8%
Planting density	520 tpa	350 tpa
Thinning regime	PCT to 250 tpa age 7	none

Alder plantation management -

Summary – Future of Alder Management

- The future of the red alder resource depends on private forest management.
- Managing alder on “working forest” uplands is key – WA DNR plays an important role supporting and demonstrating this.
- Need to increase professional knowledge and skills and demonstrate success - improve the alder management toolkit.

For more information on Alder Management

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