



Wood Products Monitoring: Timber Flow in the Pacific West

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Carbon Dynamics for Land & Watershed Managers

September 9, 2019

Portland, OR





Forest Industry Research Program

- **State level harvest & industry analyses**
- **Logging utilization studies**
- **West-wide timber harvest reporting**
- **Annual & quarterly Montana information**
- **Annual logging & hauling costs for FS Northern Region**
- **Other forest economics & timber related projects**

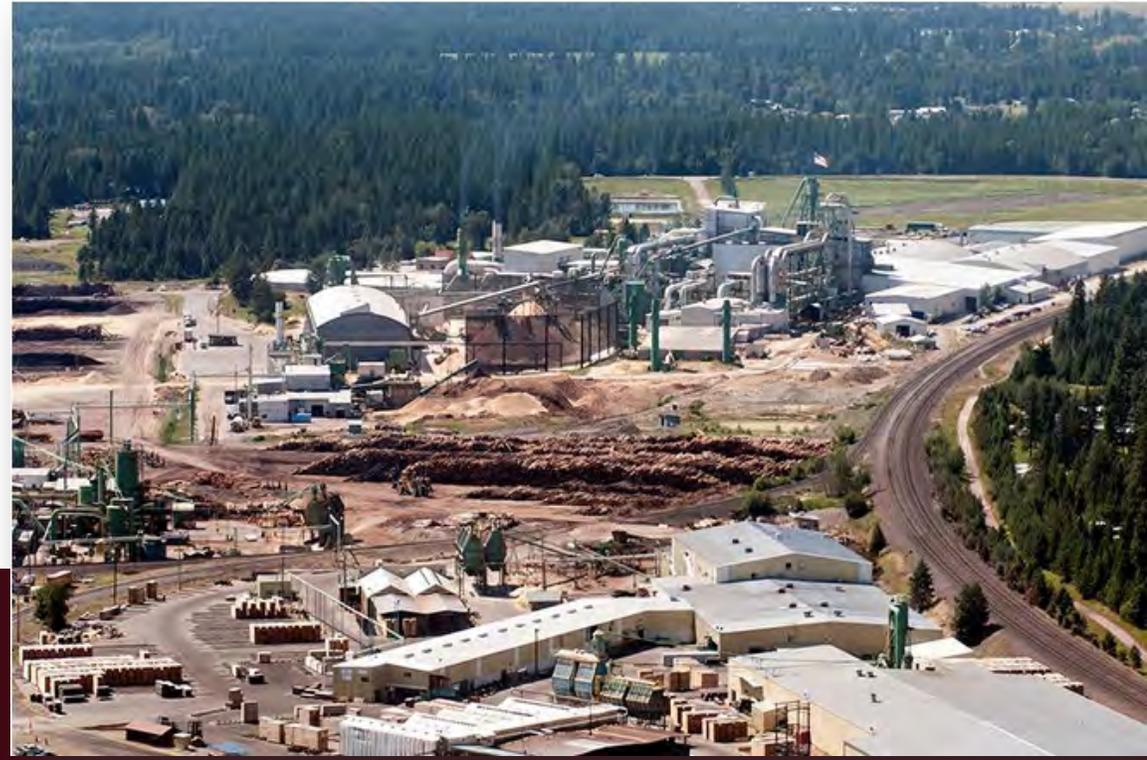




State-level Forest Industry Census



- Mill type, location, capacity, equipment, employment
- Timber received volume, use, species, size, county and ownership
- Mill residue quantities & use
- Product volumes, values and markets



Alaska TPO Activities

Mill Surveys

- 2005, 2011 - published
- **2015 – reports in press**
- 60 small facilities
- >135 MMBF Scribner of timber annually
- >\$110 million in sales (including log exports)

Logging Residue

- Data collection (2016-2019) complete
- Private/Native, Tongass NF & State



FOREST INDUSTRY BRIEF NO. 9
ALASKA'S FOREST PRODUCTS INDUSTRY AND TIMBER HARVEST

PART 3: SALES, EMPLOYMENT AND CONTRIBUTION TO THE STATE'S ECONOMY

BY KATE C. MAJICILL, ERIC C. BERGL, TODD A. MORGAN AND GLENN A. CHRISTENSEN



FOREST INDUSTRY BRIEF NO. 8

FOREST INDUSTRY BRIEF NO. 7
ALASKA'S FOREST PRODUCTS INDUSTRY AND TIMBER HARVEST



ALASKA'S FOREST PRODUCTS INDUSTRY AND TIMBER HARVEST

PART 1: TIMBER HARVEST, PRODUCTS AND FLOW

BY KATE C. MAJICILL, ERIC C. BERGL, TODD A. MORGAN AND GLENN A. CHRISTENSEN

INTRODUCTION

This Forest Industry Brief is part of a series of reports presenting findings from a Bureau of Business and Economic Research (BBER) census of Alaska's primary forest products industry. Part 1 of this series presents information on the volume of timber harvested in Alaska during 2015 by product, ownership, species and resource area. It also describes the flow of timber within the state, across state lines and exports to countries outside the United States.

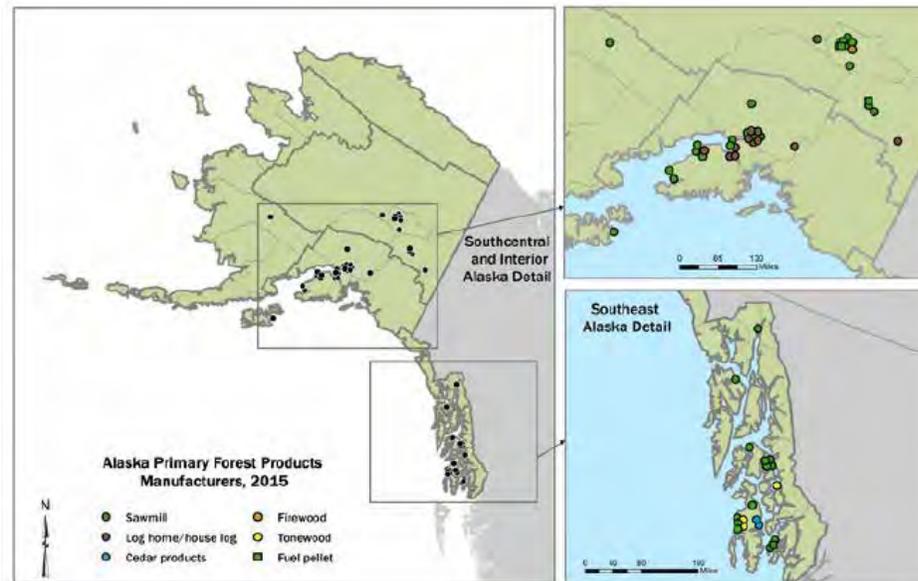
ALASKA'S TIMBER RESOURCE

Coastal Alaska contains approximately 6.2 million acres of timberland, varying in ownership and species composition from north to south (Miles 2017). Nearly 79 percent of Alaska's

account for approximately 1.3 million acres of Alaska's inventoried timberlands. Alaska has the second lowest proportion of forest land area classified as timberland across all 50 states, with publicly held timberland spanning the largest amount of acreage and containing the majority of sawtimber volume (Figure 1) (Miles 2017).

Similarly, 77 percent – approximately 110,893 million board feet (MMBF) Scribner – of sawtimber volume is found on national forest system land (Christensen 2017). Sitka spruce accounts for roughly 25 percent (34,474 MMBF Scribner) of Alaska's sawtimber volume while western hemlock represents the largest proportion of statewide sawtimber volume at 55 percent (79,305 MMBF Scribner) (Christensen 2017). National forests accounted for 25 percent of the total timber harvest in 2015 while private lands contributed the majority

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Alaska Primary Forest Products Manufacturers, 2015

- Sawmill
- Log home/house log
- Cedar products
- Firewood
- Tonewood
- Fuel pellet



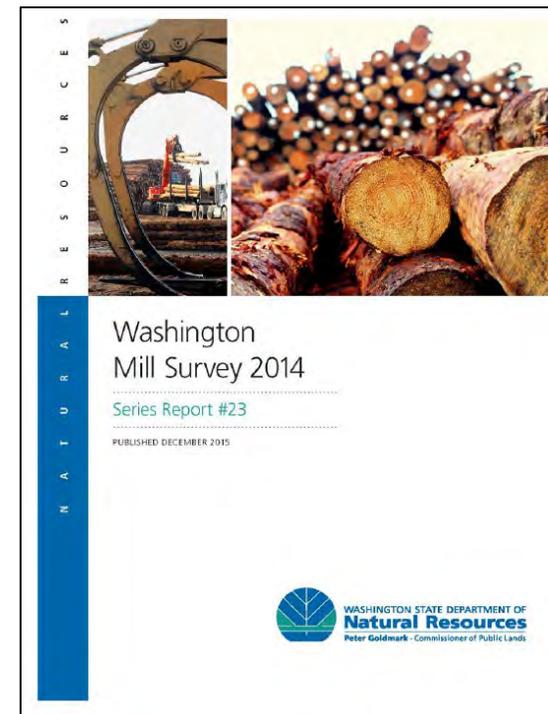
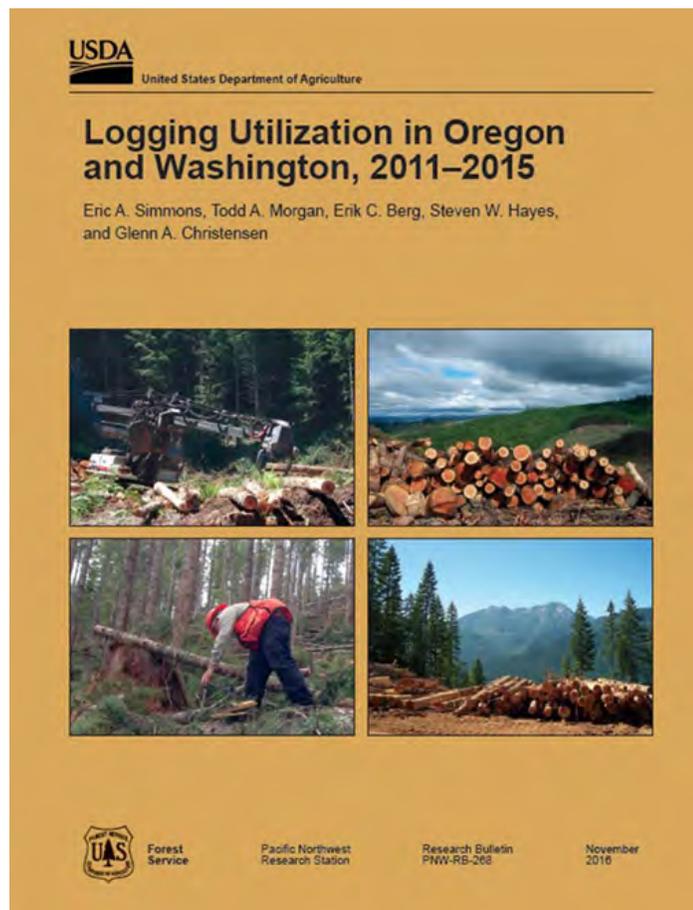
Washington TPO Activities

Mill Surveys

- Conducted by **Washington DNR**
- Even-numbered years
- **Growing partnership: DNR, FIA & BBER**
- ~100 facilities surveyed
- >3.5 BBF Scribner of timber annually
- 4 to 5 BBF of lumber

Logging Residue

- 2011-2015 report published
- 64 WA & OR logging sites
- >1,500 felled trees measured



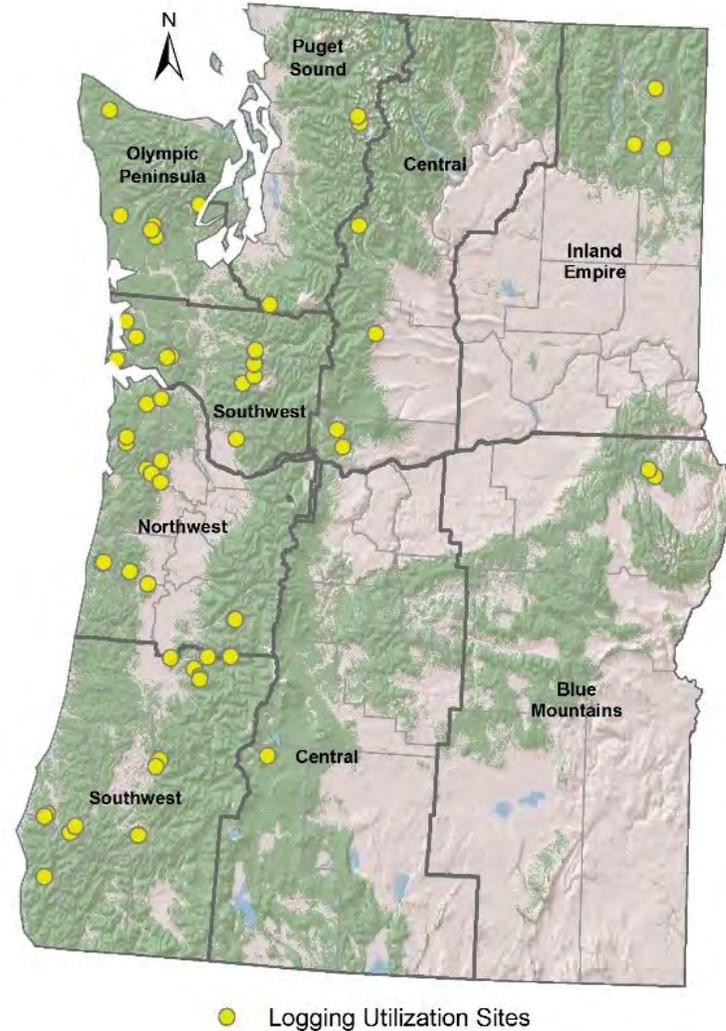
Oregon TPO Activities

Mill Surveys

- 2003, 2008, 2013 - published
- **2017 – out for review soon**
- **Working with ODF**
- >180 facilities
- ~ 4 BBF Scribner of timber annually
- >\$7 Billion in sales
- >5 BBF of lumber (#1 in US)

Logging Residue

- 2011-2015 report published
- 64 OR & WA logging sites
- >1,500 felled trees measured



Oregon's Forest Products Industry and Timber Harvest 2013 With Trends Through 2014

Eric A. Simmons, Micah G. Scudder, Todd A. Morgan, Erik C. Berg, and Glenn A. Christensen



Forest Service

Pacific Northwest Research Station

General Technical Report PNW-GTR-942

November 2016



California TPO Activities

Mill Surveys

- 2000, 2006, 2012 - published
- **2016 – out for review**
- >1.4 BBF Scribner of timber annually
- >70 facilities
- >\$1.4 Billion in sales
- ~1.9 BBF of lumber



California Logging Utilization: 2004

Todd A. Morgan and Timothy P. Spoelma

ABSTRACT

A study of logging activities conducted during 2004 provided utilization data and information on timber harvesting operations in California. A nested and stratified sampling scheme was used to produce a sample of felled trees with distributions of geographic area, ownership class, tree species, and tree size representative of California's recent sawlog and veneer log harvest. Results of the study indicated that about 50% of the harvested trees were less than 16.5-in.dbh, but these trees produced just 15% of the volume. About 50% of the harvested volume came from trees less than 24.5-in. dbh, and about two-thirds of the volume was from trees less than 30-in. dbh. Removals factors, quantifying impacts on growing stock, revealed that 1,051.4 ft³ of growing-stock volume was removed for every thousand cubic feet delivered to mills, with just 61.5 ft³ left in the forest as logging residue. Periodic reevaluations of logging utilization in California would make it possible to evaluate impacts of technology, market conditions, and policy changes on logging operations and utilization factors in the state.

Keywords: growing-stock removals, logging residue, removals factors, timber harvest

Logging Residue

- 2004 study published in WJAF
- Ongoing 2018-2021
- Dead tree analysis for CalFire

USDA
United States Department of Agriculture

California's Forest Products Industry and Timber Harvest, 2012

Chelsea P. McIver, Joshua P. Meek, Micah G. Scudder, Colin B. Sorenson, Todd A. Morgan, and Glenn A. Christensen

Forest Service
Pacific Northwest Research Station
General Technical Report
PNW-GTR-908
October 2015

HWP Carbon Storage

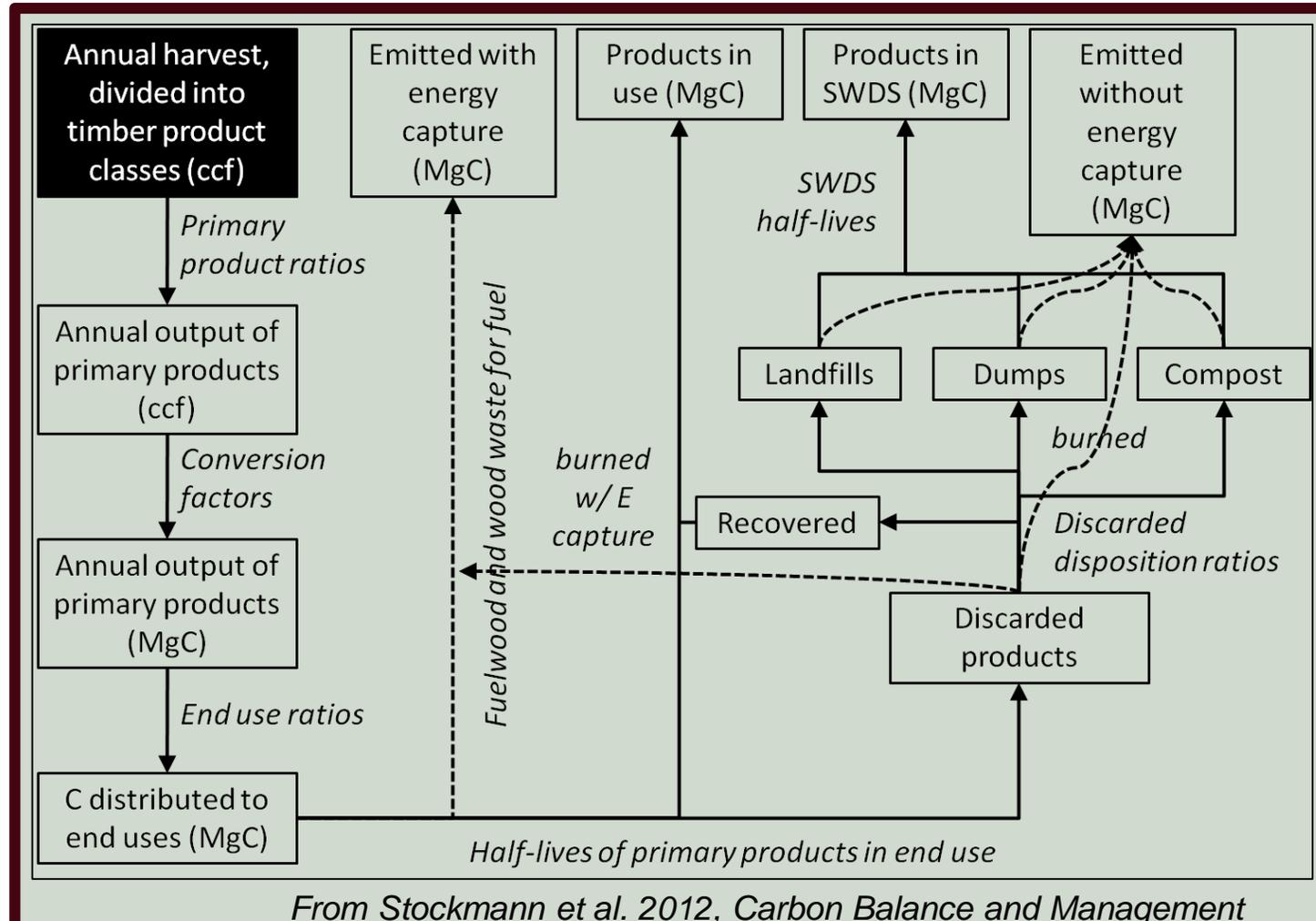
- Carbon storage estimates for HWP from California forests



- Use IPCC production accounting approach to quantify carbon storage

- 1) timber harvest time series 2) timber products info 3) primary products info

- Oregon and Washington, and ...



From Stockmann et al. 2012, Carbon Balance and Management 7:1.

HWP in the context of forest carbon

IPCC Approaches

1. Stock Change Approach
2. Production Approach
3. Atmospheric Flow Approach



IPCC HWP

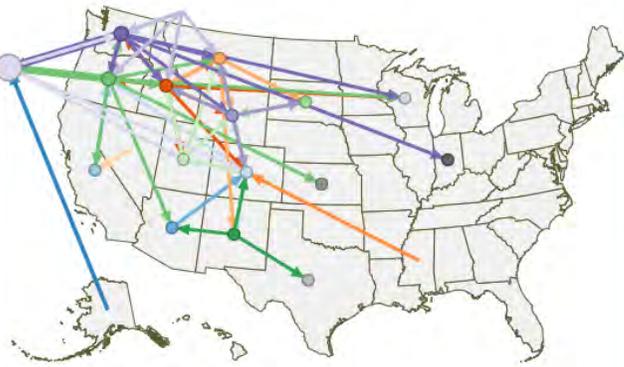
- **Production Approach focuses on the timber produced (harvested) in the area (state) of interest.**
- **So, timber (logs) flowing into the area is not considered.**
- **But logs flowing out of state “count.”**
- **Knowing where the logs went & (more importantly) what products they were used for is important.**



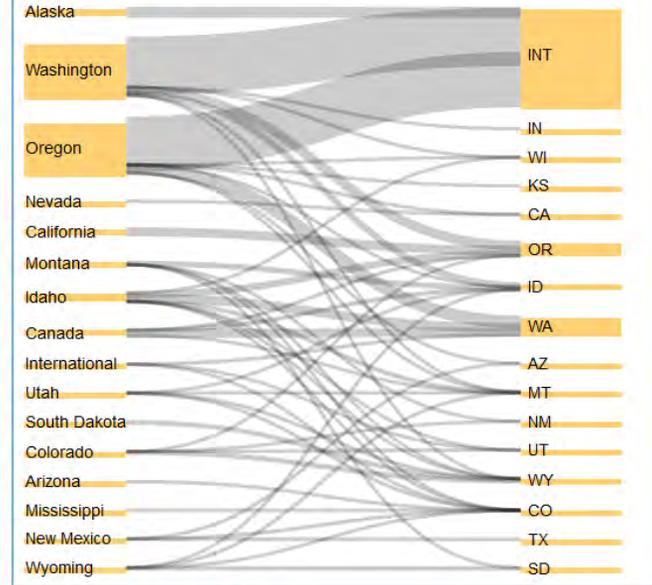
Timber flowing out of the states



Timber flowing into the states

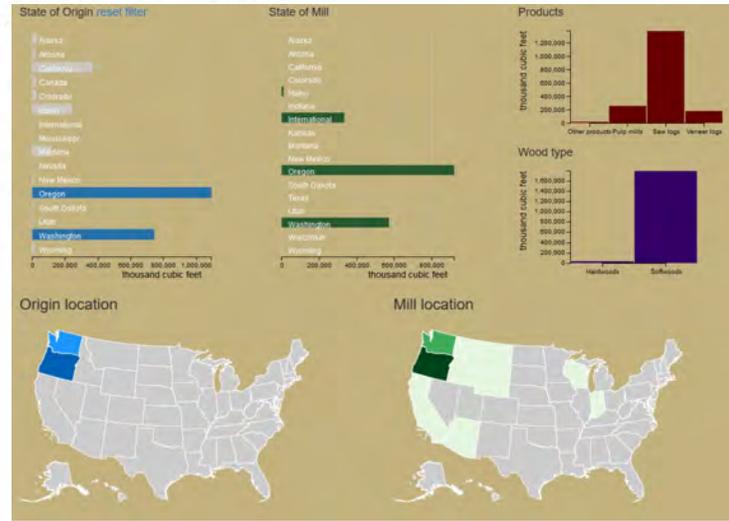


Sankey diagram



Timber (log) Flow

- County of origin & destination
- Product type
- Species
- Ownership class



Timber (log) Flow

- Various years of data for states
- Think of % ranges
- Total volumes differ by state

State	Processed in-state	Processed in-region	Processed out of region	Total
AK	22%	<1%	78%	30 MMCF
WA*	72%	3%	25%	750 MMCF
OR	82%	3%	15%	1,100 MMCF
CA	92%	5%	3%	375 MMCF

*Out of state mills not included in WA mill surveys.



International Log Exports from PNW

Log exports as % of harvest

- USITC data don't include origin of timber (state where harvested)
- Units of measure (cubic meters vs. Scribner) & conversions present challenges .



MMBF Scribner	BC	AK	WA	OR	CA
Log export	1,126	105	960	370	55
Total harvest	16,997	136	3,032	3,918	1,572
% Exported	7%	77%	32%	9%	3%



PNW Primary Wood Product Sales*

Sales values in millions of USD (not adjusted)

State	Sales in-state	Sales in-region	Sales out of region	Total
AK (2015)	15	5	94	114
WA (2016)	No sales value data in mill study reports.			
OR (2017)	2,476	3,324	1,983	7,783
CA (2016)	1,135	113	276	1,524

* Includes mill residue & international log exports.



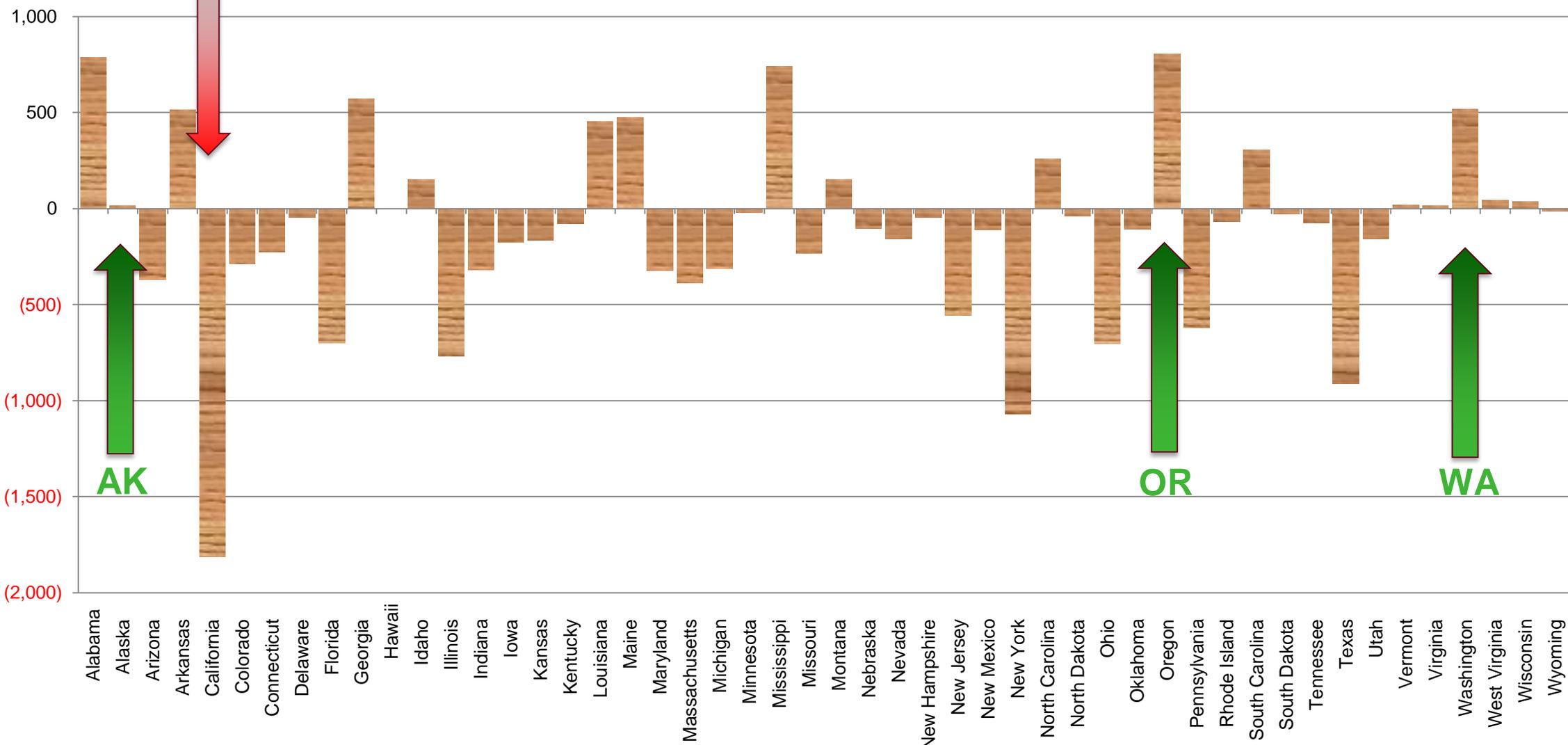


States as net producers vs. consumers of wood

Millions of cubic feet of wood

net production

net consumption



Thoughts

- **U.S. needs to get on the Metric System!**
- **Conversions among units are important – especially Scribner to M3.**
- **Consistency of measurements & methods (across space & time) is important for comparability & aggregating.**
- **Changes in product & residue recovery and use are relevant.**



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Thank you!

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