Forestry in the Last Frontier:
A Forest Products Industry Perspective in Alaska

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Bureau of Business and Economic Research

- The University of Montana, Missoula
- Research branch within UM School of Business Administration
- Regional economic analysis
- Survey research
- Industry analysis
  - Health care
  - Manufacturing
  - Energy
  - Forest products

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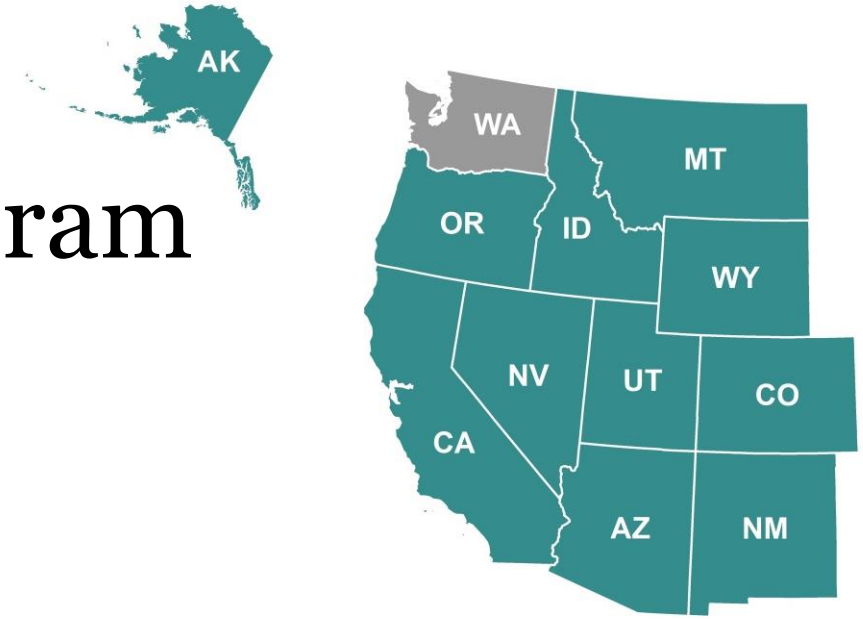
Forest Industry Research Program



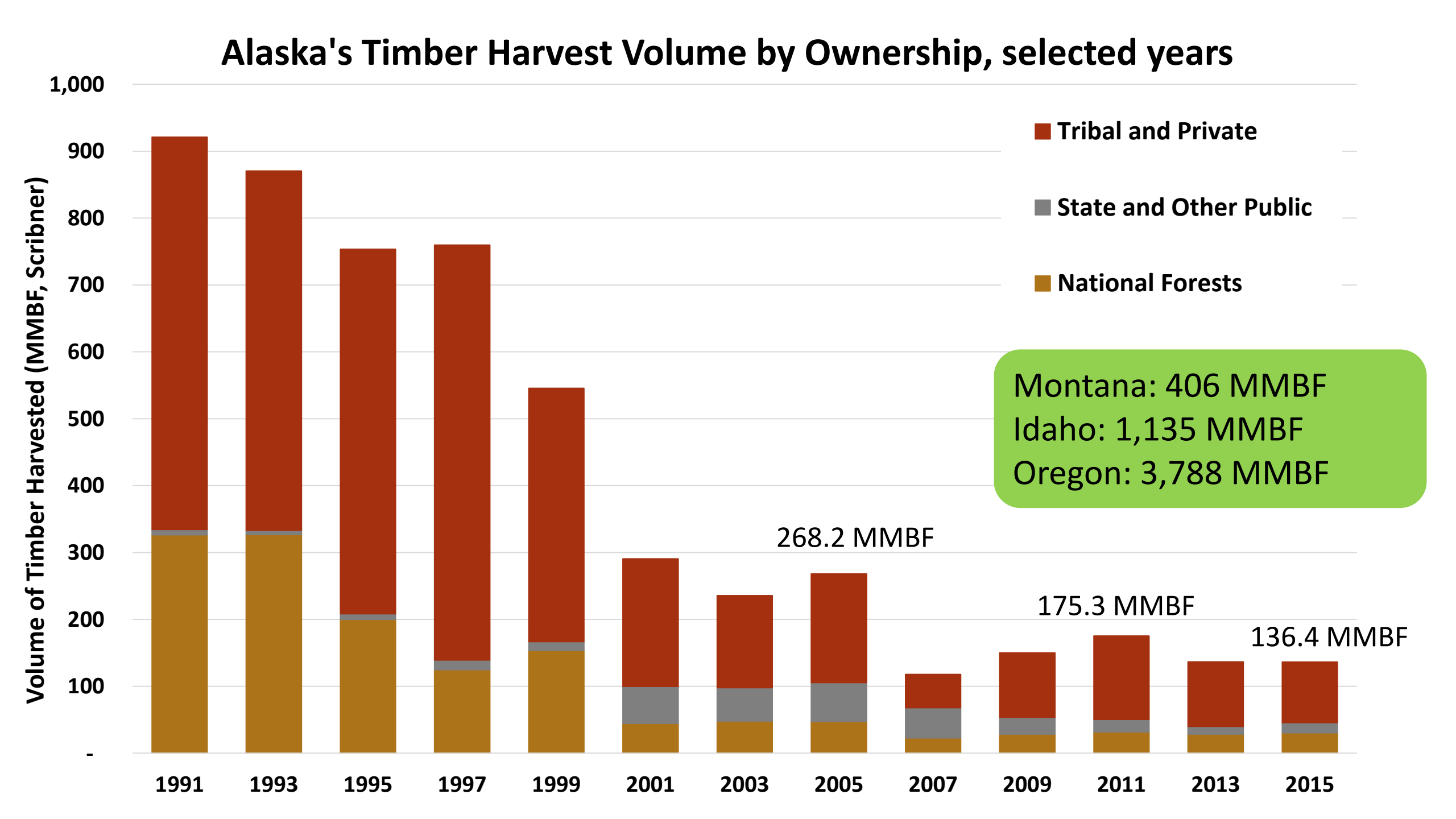
- Rocky Mountain Research Station (RMRS)
- Pacific Northwest Research Station (PNWRS)
- FIA Timber Product Output (TPO) data collection in the west
- Describe industry structure, capacity, condition and changes over time
- Logging utilization studies

State-level Forest Industry Census

- Mill type, location, capacity, equipment, employment
- Timber harvest volume, use, species, size, county and ownership
- Mill residue volume and wood fiber use
- Product volume, sales and market locations

Alaska's Forest Products Industry & Timber Harvest

- BBER time series 2005, 2011, **2015**
- Flow of timber harvested
- Changes in the structure of the industry
- Quantify volumes and uses of wood fiber
- Data received for 51 of the identified 60 active facilities – 80% of harvest volume


Alaska's Timber Harvest Volume by Ownership, selected years
Volume of Timber Harvested (MMBF, Scribner)
1,000
900
800
700
600
500
400
300
200
100
-
Tribal and Private
State and Other Public
National Forests
Montana: 406 MMBF
Idaho: 1,135 MMBF
Oregon: 3,788 MMBF
268.2 MMBF
175.3 MMBF
136.4 MMBF
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015

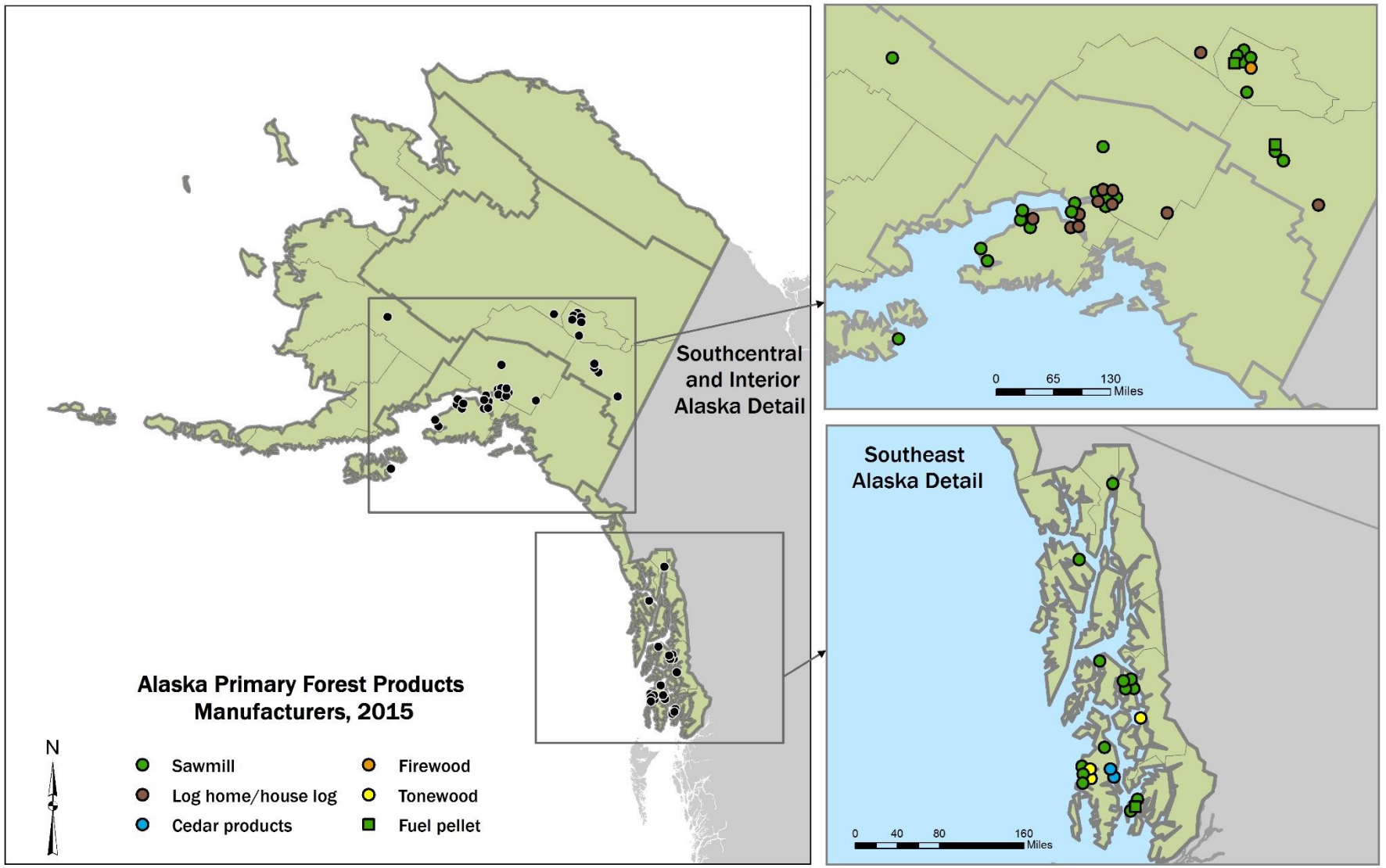
Timber Harvest in Alaska



- Ownership: Private/Native Corp (67%); National Forest (22%); State (11%)
- Species: Sitka spruce (71%); W. hemlock (11%); W. redcedar; (10%); White spruce (6%)
- Geographic Region: Southeast (56%); Southcentral/Western (38%); Interior (6%)
- Product: Sawlogs (94%); houselogs (1%); fuelwood (4%); other (1%)
- BBER survey, USFS Cut & Sold, ANILCA reports, USITC, personal communication

Alaska's Forest Products Industry

- 39 sawmills
- 11 log home manufacturers
- 10 "other" facilities
  - fuelwood/energy products
  - cedar products
  - tonewood



Composition of Alaska's Forest Products Industry

Cello

60
50
40
30
20
10
0

50 20 8 50 18 9 39 11 10

2005 2011 2015

Sawmills Log home Other

Timber Receipts & Flow

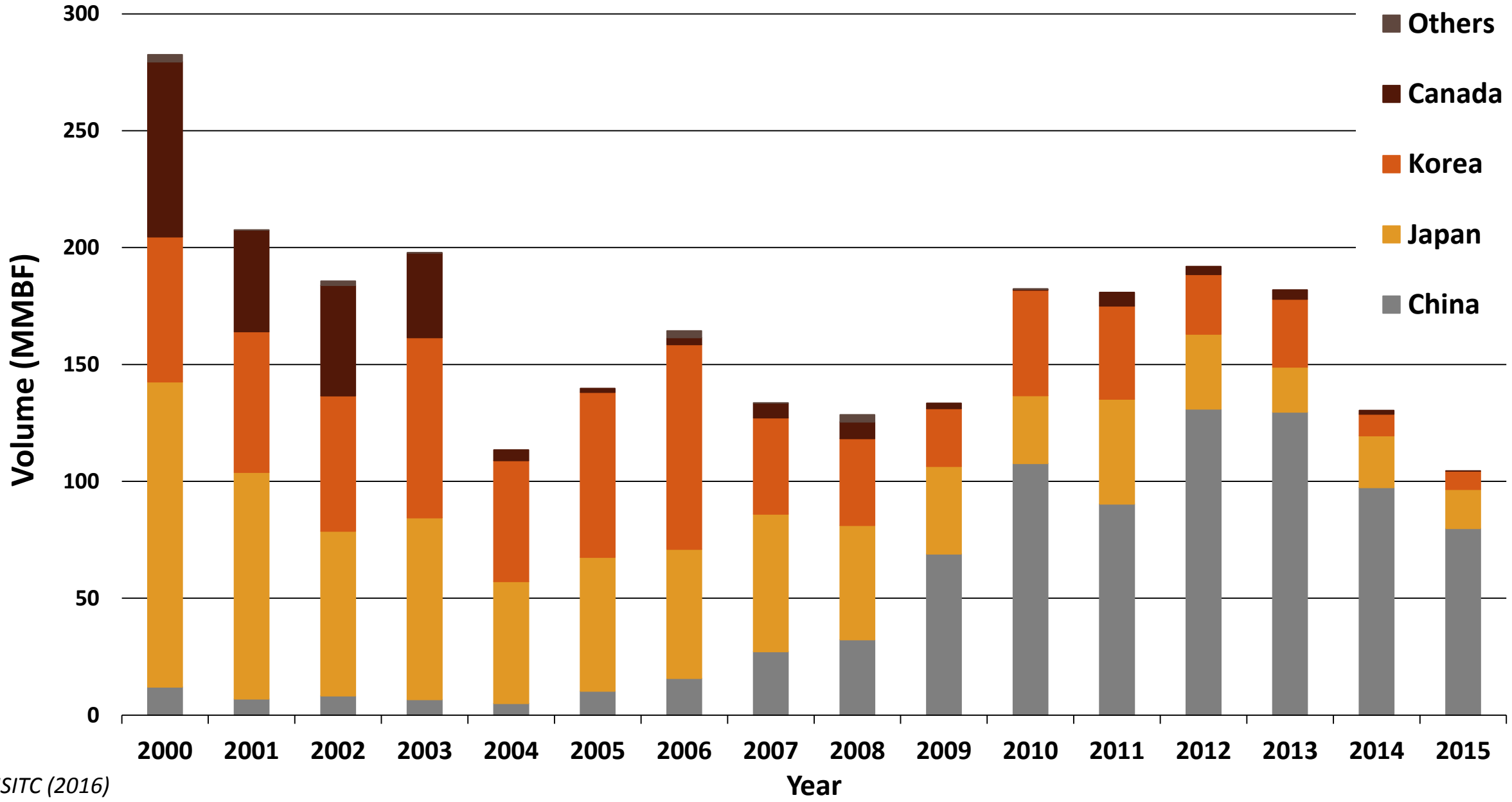


- Alaskan facilities received > 31 MMBF
- All timber originated in Alaska
- 54% came from USFS
- Western redcedar was most common species (35%)
- Nearly 67% of receipts originated in Southeast

136.4 MMBF

Approximately 23% of total harvest was received by processing facilities.

Alaska Log Export Volume (MMBF) by Country



USITC (2016)

Alaskan Sawmills

- Largest forest industry sector

- Received more timber in 2015 than 2011
- Produced > 30 MMBF lumber tally in 2015
- Generated over 38,000 BDTs of residue

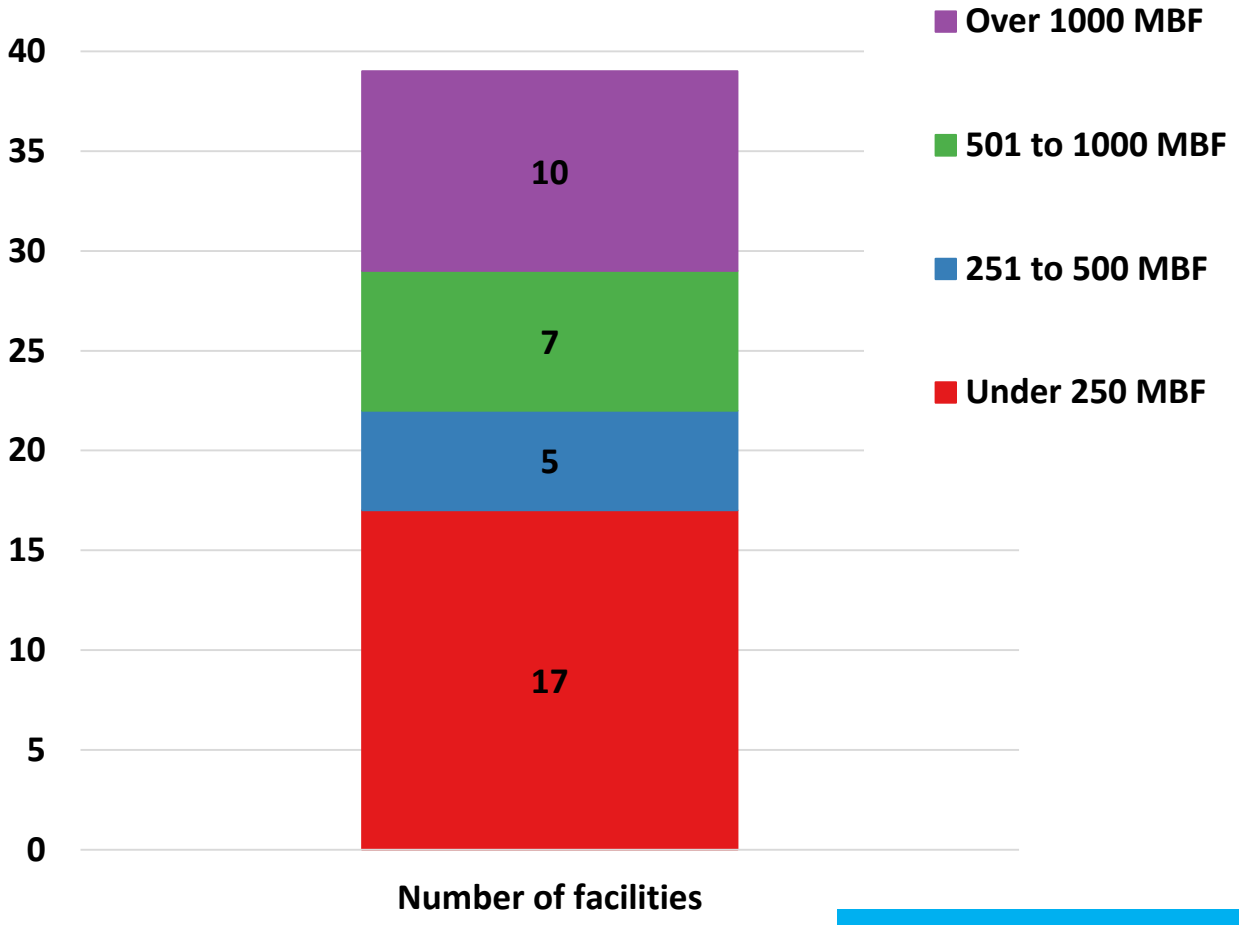
- 39 total sawmills captured, varying sizes and capabilities

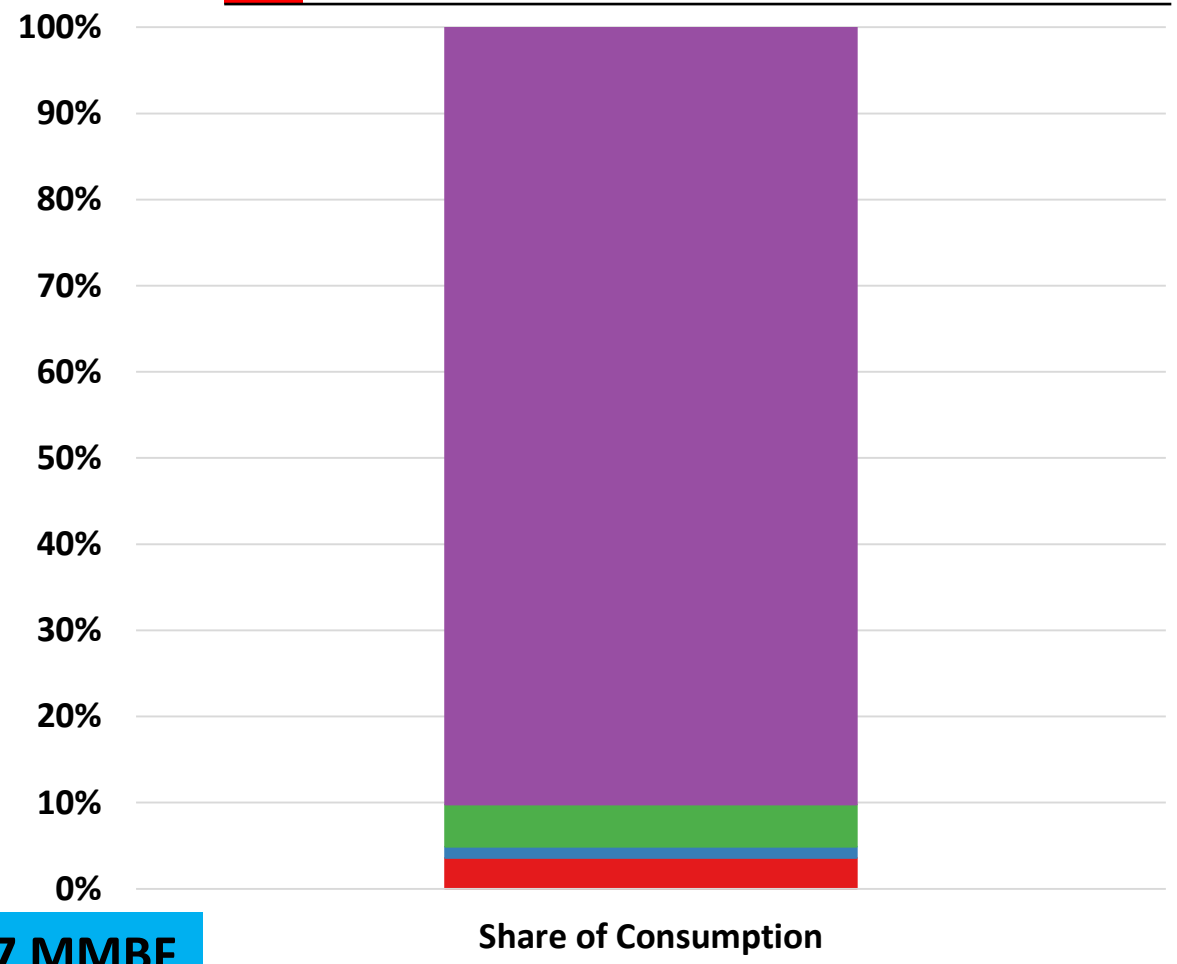
Sawmill timber-processing capacity

= reported production capacity/calculated recovery

Log input capacity, measured in MMBF Scribner

Size Class	Capacity Utilization
Over 1000 MBF	23.7%
501 to 1000 MBF	19.1%
251 to 500 MBF	16.7%
Under 250 MBF	34.7%

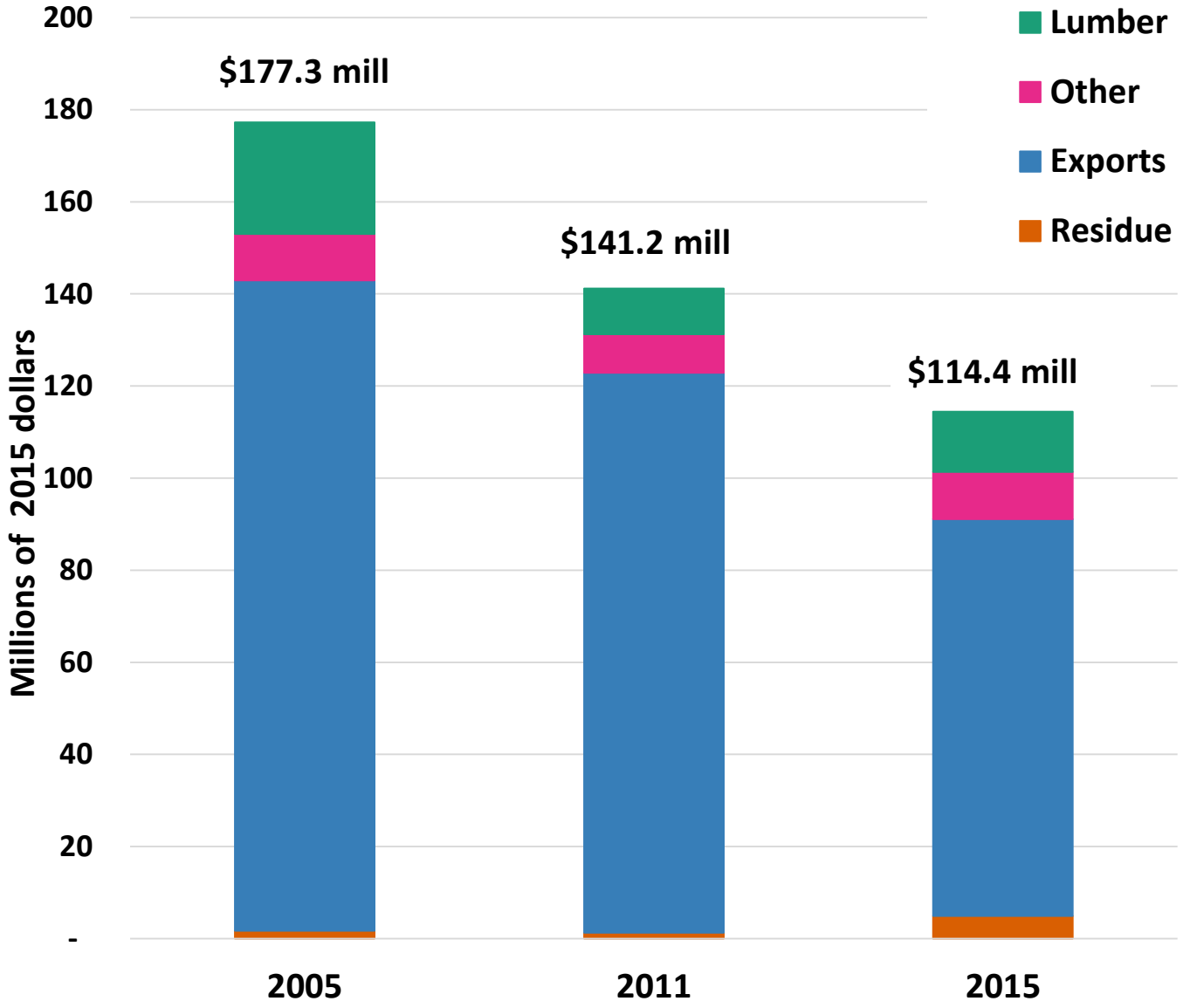




Total capacity : 97.7 MMBF

Sales Value

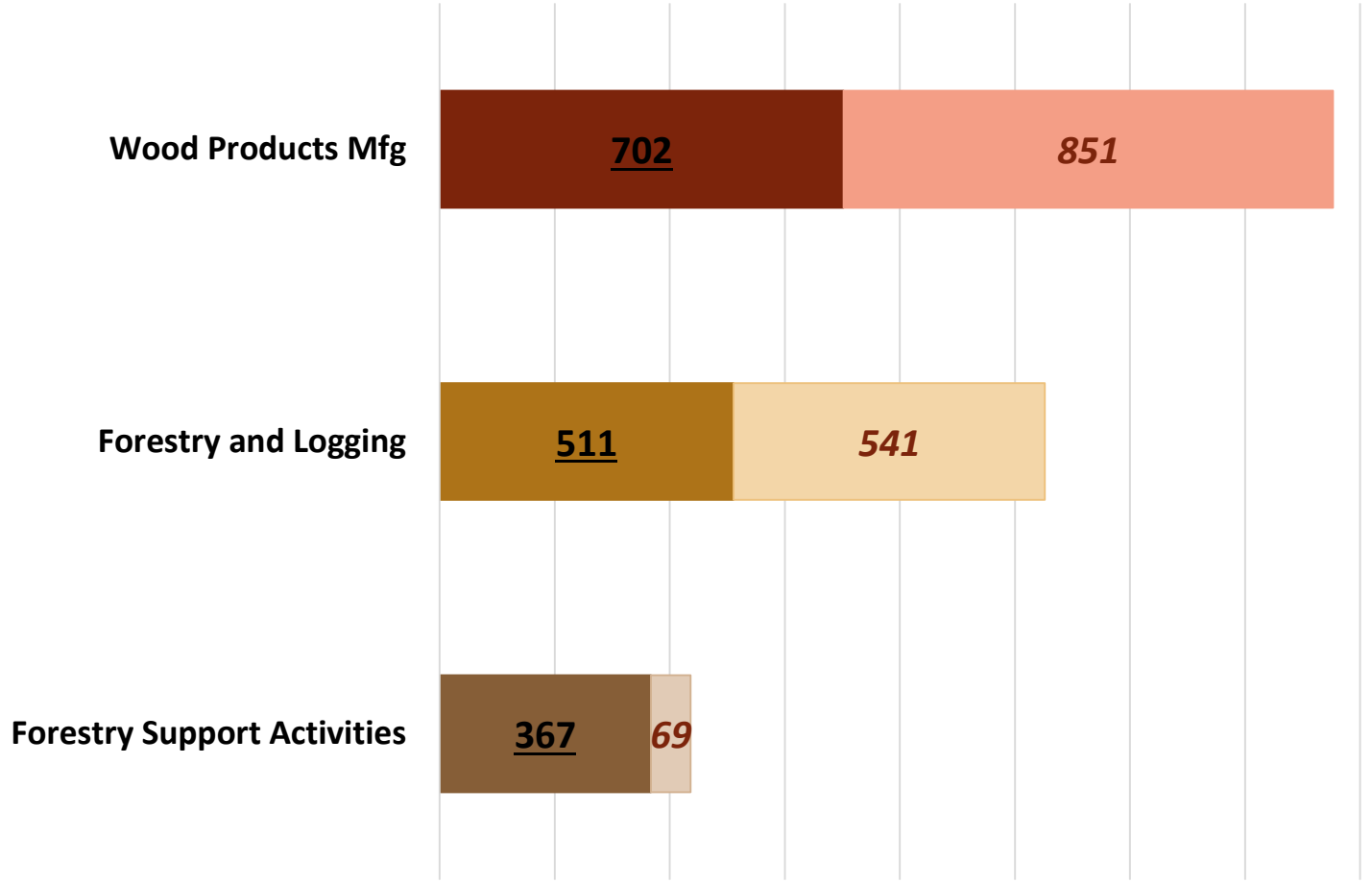
- Sales value of primary products, residue and export logs has declined
- Residues consisting of a larger proportion of sales in 2015
- Log export volume/value decreased by nearly 30%
- Primary product sales increased (28%) as well as residue sales



Employment & Labor Income

- 2015 total industry employment estimated at **1,213** full- and part-time workers
- Wood products manufacturing (58%)
- Total direct earnings of $111 million
- Wood products manufacturing earned $42 million and generated an additional $76 million across other sectors

Forest industry employment in Alaska stimulates ***additional economic activity and opportunities*** through generated employment and wages spent throughout the state economy



Removals from Forest Inventory

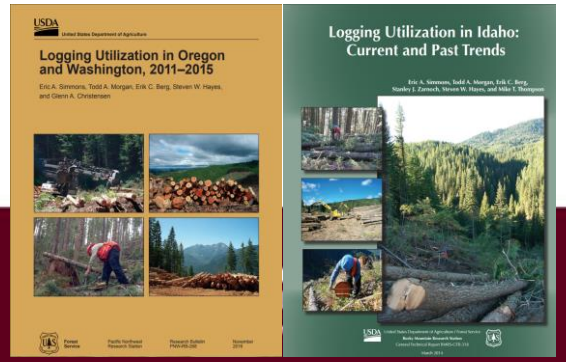
Logging Utilization Studies

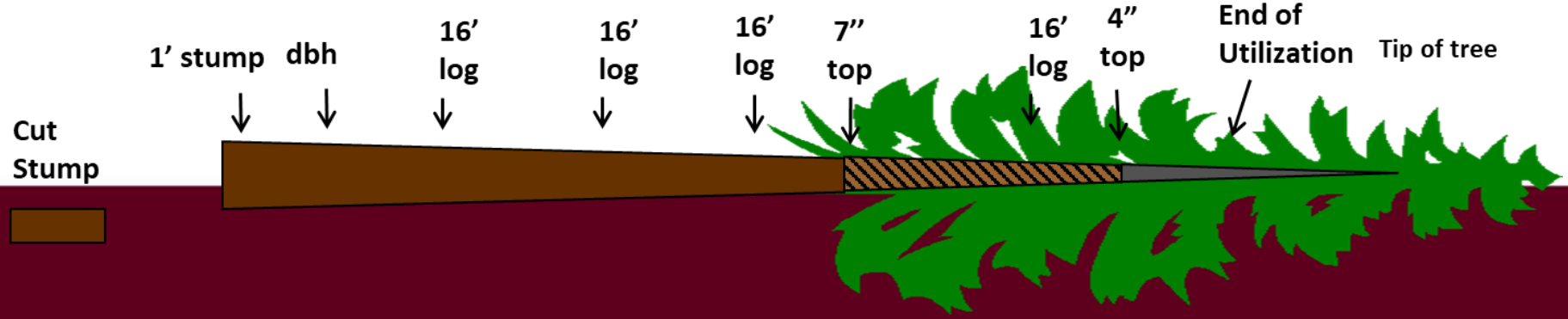
- State-by-state
- Sample 20-30 active logging sites
- Site information from loggers & foresters
- Measure approx. 25 felled trees per site
- Focus on growing-stock & use

Logging Utilization Methods

Felled tree measurements:

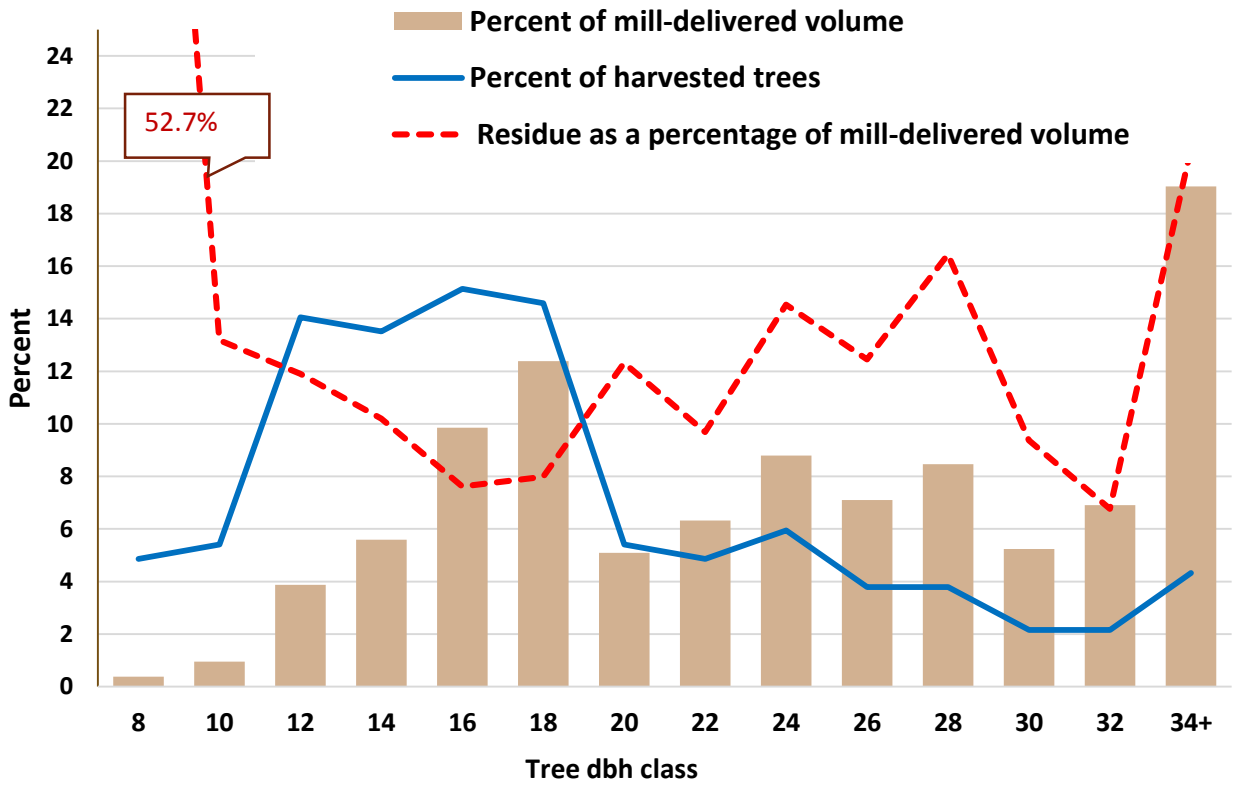
- Record species & cut stump height
- Measure diameters along bole at key points & sections ≤ 16’ from ground to tip of main stem
- Identify each bole section as used (product) or not used (residue)
- Biomass measures: 1st order branch, bark thickness

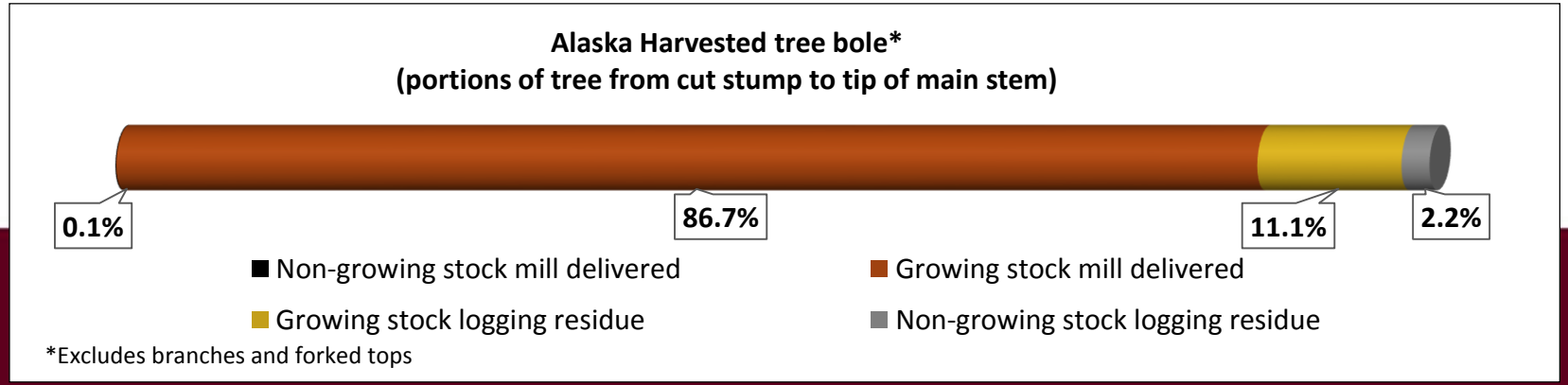




Alaska Logging Utilization

- Data collection 2016-2019
- 10 sites in Southeast and Interior; 185 trees
- Private/Native Corporation, Tongass & State
- Next round of measurements Spring 2018
- Preliminary results indicate high logging residue factors





Timber Product Output (TPO)

FIA data characterizing removals & wood use

- timber harvest for products
- associated harvest/logging residue
- mill residue

National data

- county level
- periodic updates (*annual*)

Research Challenges and Limitations

Survey response rates
- dependent upon participation
- data accuracy
- relationship-building

Multi-product producers
- diverse business interests
- year-to-year variability

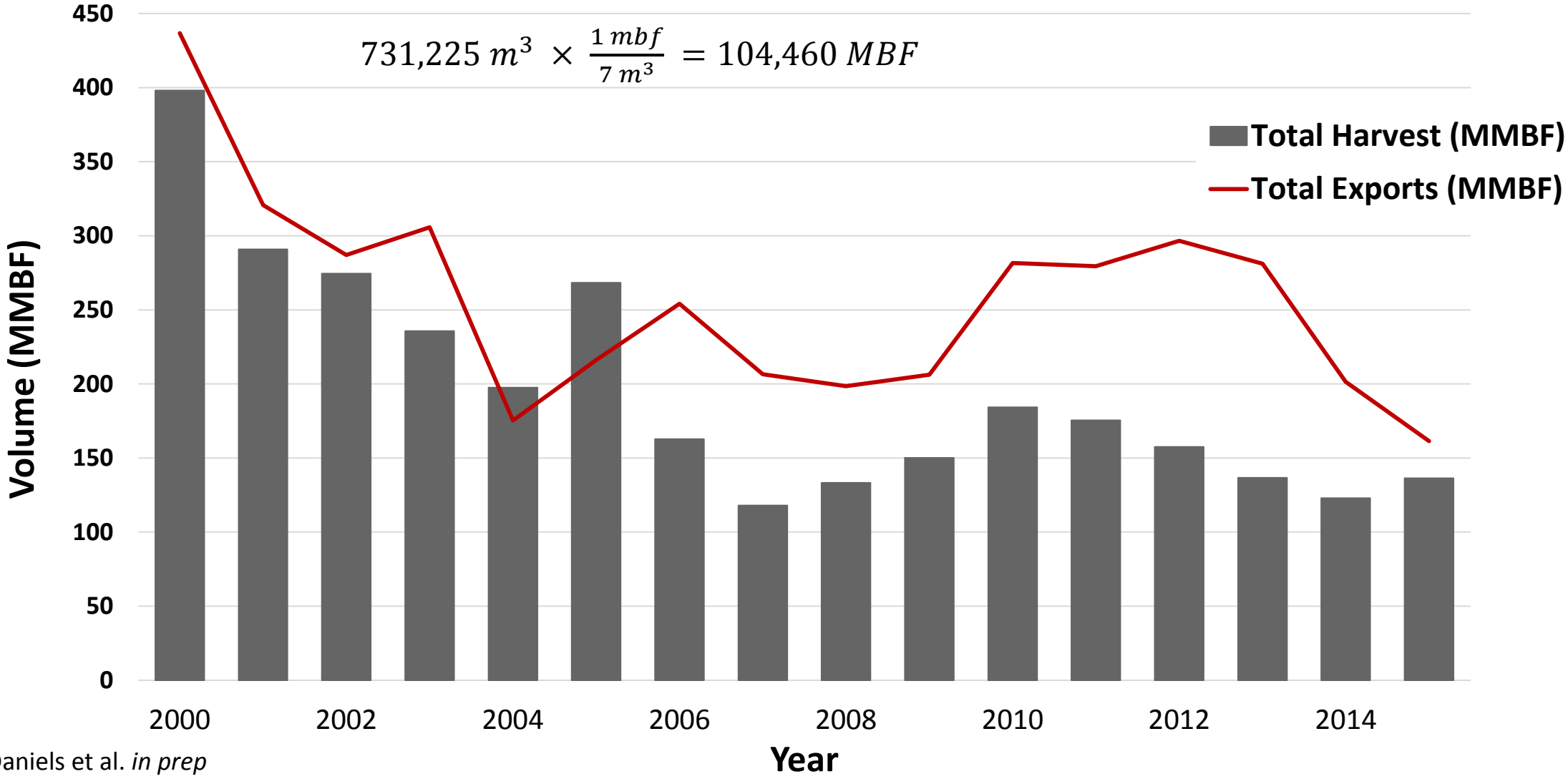
Harvest data uncertainty
- USDA Forest Service Cut and Sold
- U.S. International Trade Commission (USITC)

Log Exports & Conversion Factors

$4.53\ m^3\ per\ mbf$
$5.67\ m^3\ per\ mbf$
$7.00\ m^3\ per\ mbf$

$$731{,}225\ m^3 \times \frac{1\ mbf}{4.53\ m^3} = 161{,}418\ MBF$$

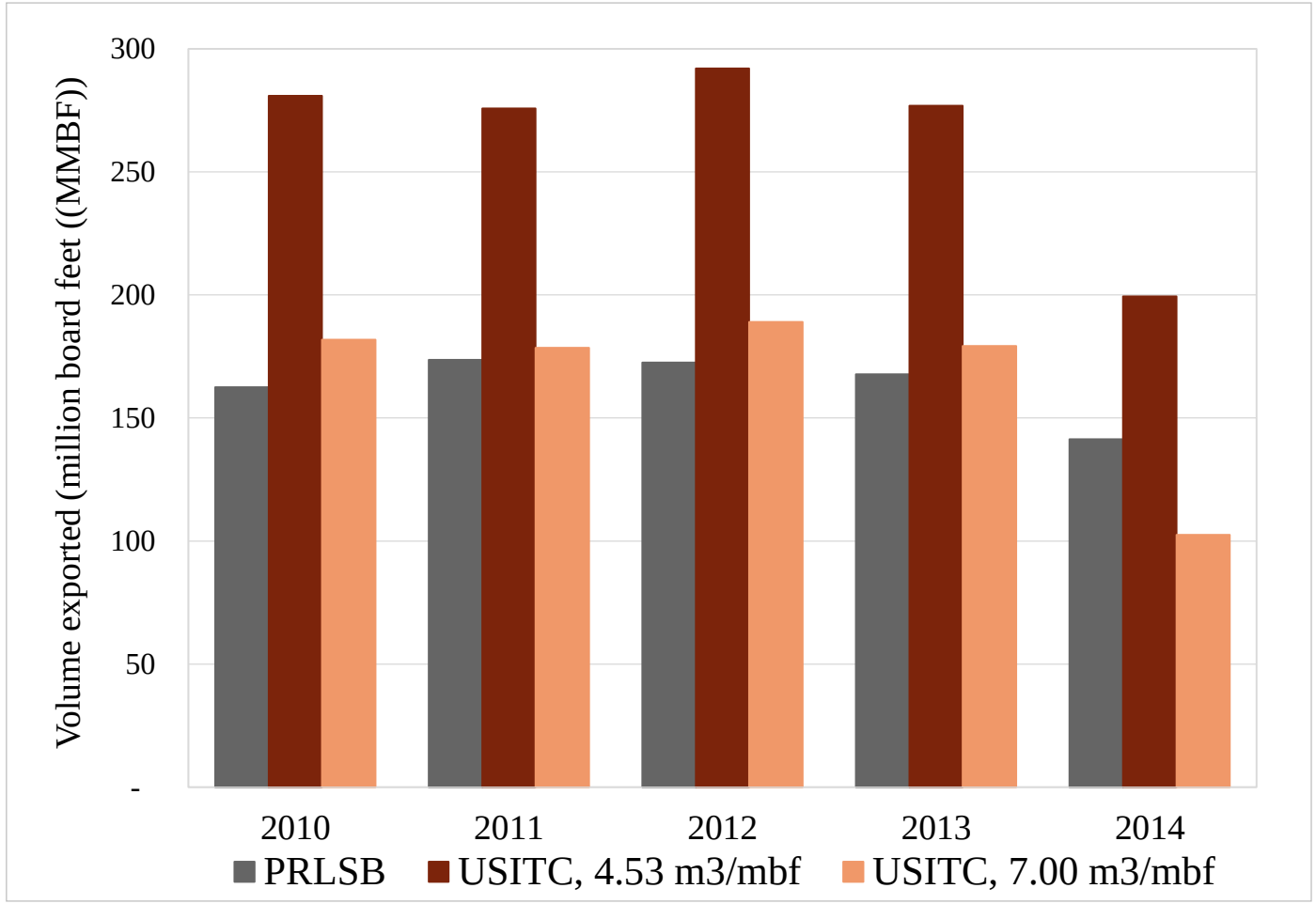
$$731{,}225\ m^3 \times \frac{1\ mbf}{7\ m^3} = 104{,}460\ MBF$$



Daniels et al. *in prep*

Log Exports & Conversion Factors

- Dissimilar conversion factors may inflate MBF log export volumes
- Exports exceed harvest volume by an average of 55% from 2006-2011
- Increased difficulty for tracking AK timber harvest
- Difficult to estimate size and extent of timber markets
- Challenging for policy formulation & economic development

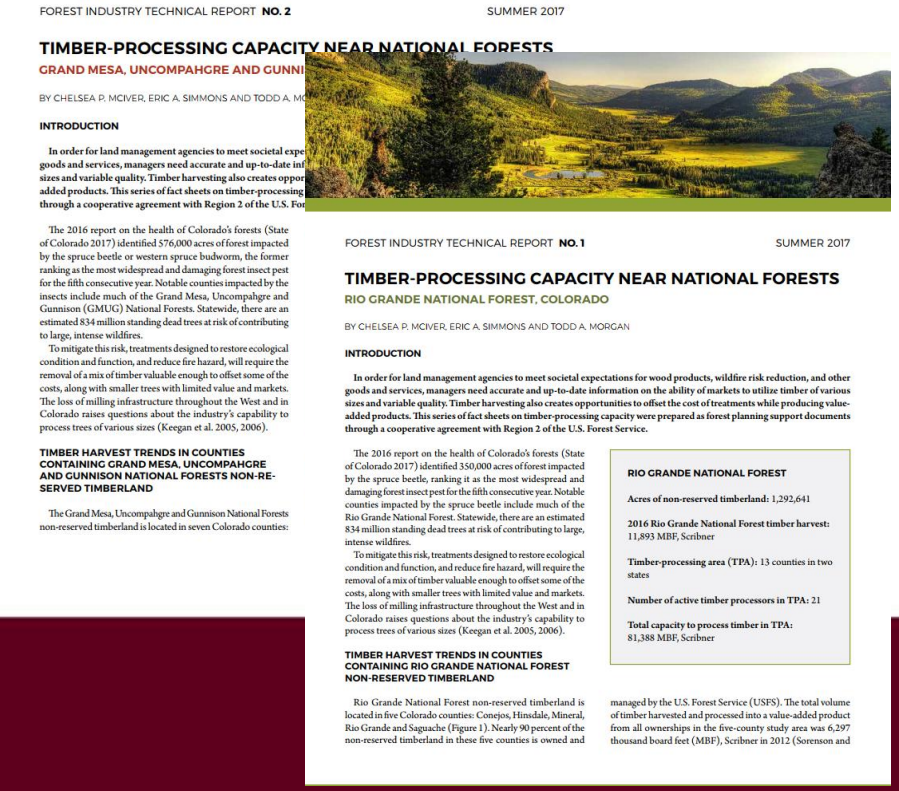


Future of Forestry in the Last Frontier

- Increased understanding/exposure to operations in Alaska
- Timber availability
- Transition to young growth timber
- Data uncertainties and policy implications
- Ongoing logging utilization study

BBER Census of AK Forest Products Industry

- Detailed, objective and accurate operational data – be counted!
- Provide information and perspective by 3rd party
- Inform research entities/industry associations
- Inform policy makers and land managers
- Data for economic analyses and future scenarios



FOREST INDUSTRY TECHNICAL REPORT **NO. 2** SUMMER 2017

TIMBER-PROCESSING CAPACITY NEAR NATIONAL FORESTS

GRAND MESA, UNCOMPAHGRE AND GUNNI

BY CHELSEA P. MCIVER, ERIC A. SIMMONS AND TODD A. MC

INTRODUCTION

In order for land management agencies to meet societal expe goods and services, managers need accurate and up-to-date inf sizes and variable quality. Timber harvesting also creates oppor added products. This series of fact sheets on timber-processing through a cooperative agreement with Region 2 of the U.S. For

The 2016 report on the health of Colorado's forests (State of Colorado 2017) identified 576,000 acres of forest impacted by the spruce beetle or western spruce budworm, the former ranking as the most widespread and damaging forest insect pest for the fifth consecutive year. Notable counties impacted by the insects include much of the Grand Mesa, Uncompahgre and Gunnison (GMUG) National Forests. Statewide, there are an estimated 834 million standing dead trees at risk of contributing to large, intense wildfires.

To mitigate this risk, treatments designed to restore ecological condition and function, and reduce fire hazard, will require the removal of a mix of timber valuable enough to offset some of the costs, along with smaller trees with limited value and markets. The loss of milling infrastructure throughout the West and in Colorado raises questions about the industry's capability to process trees of various sizes (Keegan et al. 2005, 2006).

TIMBER HARVEST TRENDS IN COUNTIES CONTAINING GRAND MESA, UNCOMPAHGRE AND GUNNISON NATIONAL FORESTS NON-RESERVED TIMBERLAND

The Grand Mesa, Uncompahgre and Gunnison National Forests non-reserved timberland is located in seven Colorado counties:

FOREST INDUSTRY TECHNICAL REPORT **NO. 1** SUMMER 2017

TIMBER-PROCESSING CAPACITY NEAR NATIONAL FORESTS

RIO GRANDE NATIONAL FOREST, COLORADO

BY CHELSEA P. MCIVER, ERIC A. SIMMONS AND TODD A. MORGAN

INTRODUCTION

In order for land management agencies to meet societal expectations for wood products, wildfire risk reduction, and other goods and services, managers need accurate and up-to-date information on the ability of markets to utilize timber of various sizes and variable quality. Timber harvesting also creates opportunities to offset the cost of treatments while producing value-added products. This series of fact sheets on timber-processing capacity were prepared as forest planning support documents through a cooperative agreement with Region 2 of the U.S. Forest Service.

The 2016 report on the health of Colorado's forests (State of Colorado 2017) identified 350,000 acres of forest impacted by the spruce beetle, ranking it as the most widespread and damaging forest insect pest for the fifth consecutive year. Notable counties impacted by the spruce beetle include much of the Rio Grande National Forest. Statewide, there are an estimated 834 million standing dead trees at risk of contributing to large, intense wildfires.

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RIO GRANDE NATIONAL FOREST

Acres of non-reserved timberland: 1,292,641

2016 Rio Grande National Forest timber harvest: 11,893 MBF, Scribner

Timber-processing area (TPA): 13 counties in two states

Number of active timber processors in TPA: 21

Total capacity to process timber in TPA: 81,388 MBF, Scribner

TIMBER HARVEST TRENDS IN COUNTIES CONTAINING RIO GRANDE NATIONAL FOREST NON-RESERVED TIMBERLAND

Rio Grande National Forest non-reserved timberland is located in five Colorado counties: Conejos, Hinsdale, Mineral, Rio Grande and Saguache (Figure 1). Nearly 90 percent of the non-reserved timberland in these five counties is owned and managed by the U.S. Forest Service (USFS). The total volume of timber harvested and processed into a value-added product from all ownerships in the five-county study area was 6,297 thousand board feet (MBF), Scribner in 2012 (Sorenson and

Special thanks to

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BBER Forest Industry Research Program colleagues

Many hospitable Alaskans!

Thank you!

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