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

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The Future of Forestry: Meeting Diverse Needs in a Changing World
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

www.bber.umt.edu
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

- 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

- Tribal and Private
- State and Other Public
- National Forests

Montana: 406 MMBF
Idaho: 1,135 MMBF
Oregon: 3,788 MMBF
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

- **Sawmills**
- **Log home**
- **Other**

<table>
<thead>
<tr>
<th>Year</th>
<th>Sawmills</th>
<th>Log home</th>
<th>Other</th>
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</thead>
<tbody>
<tr>
<td>2005</td>
<td>50</td>
<td>20</td>
<td>8</td>
</tr>
<tr>
<td>2011</td>
<td>50</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>2015</td>
<td>39</td>
<td>11</td>
<td>10</td>
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Cello
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.
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

<table>
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<tr>
<th>Size Class</th>
<th>Capacity Utilization</th>
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<tr>
<td>Over 1000 MBF</td>
<td>23.7%</td>
</tr>
<tr>
<td>501 to 1000 MBF</td>
<td>19.1%</td>
</tr>
<tr>
<td>251 to 500 MBF</td>
<td>16.7%</td>
</tr>
<tr>
<td>Under 250 MBF</td>
<td>34.7%</td>
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Log input capacity, measured in MMBF Scribner

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

FIA P-2 plots

TPO mill surveys

Logging utilization studies
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

![Graph showing data analysis]

**Legend:**
- Percent of mill-delivered volume
- Percent of harvested trees
- Residue as a percentage of mill-delivered volume

**Alaska Harvested tree bole**

- Non-growing stock mill delivered: 0.1%
- Growing stock mill delivered: 86.7%
- Growing stock logging residue: 11.1%
- Non-growing stock logging residue: 2.2%

*Excludes branches and forked tops*
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)
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
Special thanks to

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**BBER** Forest Industry Research Program colleagues

Many hospitable Alaskans!
Thank you!

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