Empire State Forest Products Association

Economic Trends in the Northeast Forest Industry

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Eric Kingsley
Innovative Natural Resource Solutions LLC
kingsley@inrsllc.com
Phone 207-233-9910
Innovative Natural Resource Solutions LLC

• Founded in 1994
• Offices in New Hampshire and Maine
• Focus at the intersection of forest industry, energy and economic development
• Services include:
  - consulting in renewable energy
  - forest industry consulting
  - advocacy
  - forest certification and sustainability
• Clients from the private, non-profit and government sectors
• Conducted work in all regions of North America
• www.inrsllc.com
Thank you to Matt Bumgardner, USFS for some slides
Housing Starts
Annual inflation-adjusted hardwood lumber price index and average, 1990 to 2019

Data source: BLS
# US Hardwood Lumber Production 2015 - 2019

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption (bbf)</td>
<td>8.22</td>
<td>8.22</td>
<td>8.00</td>
<td>8.11</td>
<td>8.13</td>
</tr>
<tr>
<td>Imports</td>
<td>0.48</td>
<td>0.41</td>
<td>0.35</td>
<td>0.40</td>
<td>0.32</td>
</tr>
<tr>
<td>Exports</td>
<td>1.49</td>
<td>1.66</td>
<td>1.89</td>
<td>1.73</td>
<td>1.38</td>
</tr>
<tr>
<td>Apparent Production</td>
<td>9.23</td>
<td>9.47</td>
<td>9.54</td>
<td>9.44</td>
<td>9.18</td>
</tr>
</tbody>
</table>
Where the hardwood lumber volume went, **1999**

- Exports, 8.9%
- Pallets, 30.0%
- Millwork/flooring, 15.5%
- Furniture, 20.2%
- Railway ties, 4.5%

Where the hardwood lumber volume went, **2019**

- Exports, 14.5%
- Pallets, 33.8%
- Millwork/flooring, 16.7%
- Furniture, 8.8%
- Cabinets, 8.2%
- Other, 12.1%

Source: Luppold and Bumgardner
U.S. Hardwood Exports - Volume

Billion board feet

-20% ('18-'19)

Data sources: USDA Foreign Agricultural Service
### Year Over Year Changes
Hardwood Lumber and Log Export

<table>
<thead>
<tr>
<th>2019-2020</th>
<th>HW Lumber</th>
<th>HW Logs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>-4</td>
<td>-2</td>
</tr>
<tr>
<td>Feb</td>
<td>-4</td>
<td>+3</td>
</tr>
<tr>
<td>Mar</td>
<td>-10</td>
<td>-2</td>
</tr>
<tr>
<td>Apr</td>
<td>-15</td>
<td>-9</td>
</tr>
<tr>
<td>May</td>
<td>-14</td>
<td>-11</td>
</tr>
<tr>
<td>June</td>
<td>-13</td>
<td>-11</td>
</tr>
<tr>
<td>July</td>
<td>-12</td>
<td>-12</td>
</tr>
</tbody>
</table>
HW Lumber in the Time of COVID-19

• Things are “OK”, certainly not good
• Export market continues decline
• Housing market looks promising – leading indicator for flooring, furniture, etc.
• Some reasons for optimism on industrial side (crane mats strong, pallets slowly ramping up)
• Some challenges with strong softwood market changing harvest patterns
• Combination of factors to worry about – trade war, slowdown in demand, COVID
Electricity Prices

• Real-Time Electricity Prices at $16.73 per MWh tomorrow evening
• At $25 / ton and 1.6 tons per MWh, fuel is $40 per MWh
• It also costs money to pay staff, operate the facility, etc.
• Renewable Energy Certificates can help for facilities that qualify
What does it take to operate biomass in 2018?

- Assumes:
  - Electricity at average price for the past year ($27.50)
  - RECs at recent broker quote ($22, which may be higher than current market)
  - Biomass fuel at $25 (made up price), 1.6 green tons per MWH
  - O&M at $30 per MWh

- With these assumptions, this is not an attractive business
Modern Wood Heat

- Wood heat projects will be challenged by extremely low oil prices
  - Wood is historically less expensive than oil (on a heating value basis), but that may not be true in the near-term
  - Unlikely to see much near-term growth in this market
  - Issues in NY related to carbon and PM emissions
- Pellet mills operating and producing product
- Reported strong demand for firewood (people are staying home)
Pulp and Paper

• The product mix is critical right now (COVID-19)
  • Decreased demand for printing and writing paper
    • If you don’t have people in schools and offices, you don’t use paper in schools and offices
    • ~50% drop in demand for some grades
    • Coated as well as uncoated products suffering (more than before)
  • Tissue has very high demand
  • Some specialties (anything used for PPE, medical, etc.) very strong
  • Increase in packaging – Amazon, UPS, FedEx all reporting increased business
  • Expect a rough rest of 2020 for markets Northeast is heavily exposed to
Emerging Industries

• A new wood-based insulation plant is under construction in Madison, Maine, and expects to begin commercial production this year. Plant #1 of x.

• Companies have been looking across the Northeast for biofuels, biochemicals, cross-laminated timber, nano-cellulose...

• Efforts in NH-VT-NY to recruit new wood using facilities
  • Absolute need for new markets for low-grade wood
What Concerns Me...

- Age of Logging Workforce
- Markets for Biomass / Residues / Pulpwood
- Federal Rules for RFS Qualification
- Forest Products Trucking Capacity
  - Quit making trucks wait in line
- Speed (or lack thereof) of innovation / technology adoption in the Industry

Age Distribution of Maine Loggers

Data Source: Maine Logger and Log Trucker Employment Availability and Wage Analysis Report, 2019
Some thoughts...

• We are in a recession
  • We were on a 10-year run of a strong economy (some of it on questionable footing), and were due
  • The trigger was unexpected and much bigger than anyone anticipated

• The economy will not bounce back quickly
  • The solution relies upon the confidence of millions of people to go out and lead “normal” lives (whatever that now means)
  • Most of these people are in suburbs and cities – the fact that your rural area is fine is not relevant
  • Orders from above won’t get the economy going, and a “blinking” economy has lots of dangers

• There will be fundamental changes in how we behave – and identifying those has enormous opportunity for the forest industry (and everyone else)
Things I keep hearing...

• Very real concern about markets for low-grade wood
  • Nothing new, but becoming urgent
• There is a lot of inventory of logs and finished product
  • Across almost all markets and sectors
  • Will mean a delayed rebound, a rough fall in some areas
• We need to make sure to maintain logging infrastructure – none of this matters if there aren’t professionals to cut wood
The Northeast is Going to Be Fine...

• For better or worse, the forest industry is **accustomed to boom-and-bust cycles**, and has experience handling them.

• We have **markets**, and are incredibly well positioned compared to other parts of the country.

• We have the **forest resource and supply infrastructure** (landowners, loggers, entire forest industry ecosystem) that would make other regions jealous.

• We live in close proximity to (and are part of) the **greatest collection of consumers** in the history of the world.
The Markets
I would like to add you to my email lists

Send an email to kingsley@inrsllc.com to be placed on our monthly email list, which provides information on markets and developments of interest to the region’s forestry community. I will also add you to my FRA email list, and you will receive invitations to monthly dinner forums and other regional information.
Eric Kingsley
Innovative Natural Resource Solutions LLC

Phone 207-233-9910
Email kingsley@inrsllc.com