

Farm Credit East

Economic Trends in the Northeast Forest Industry

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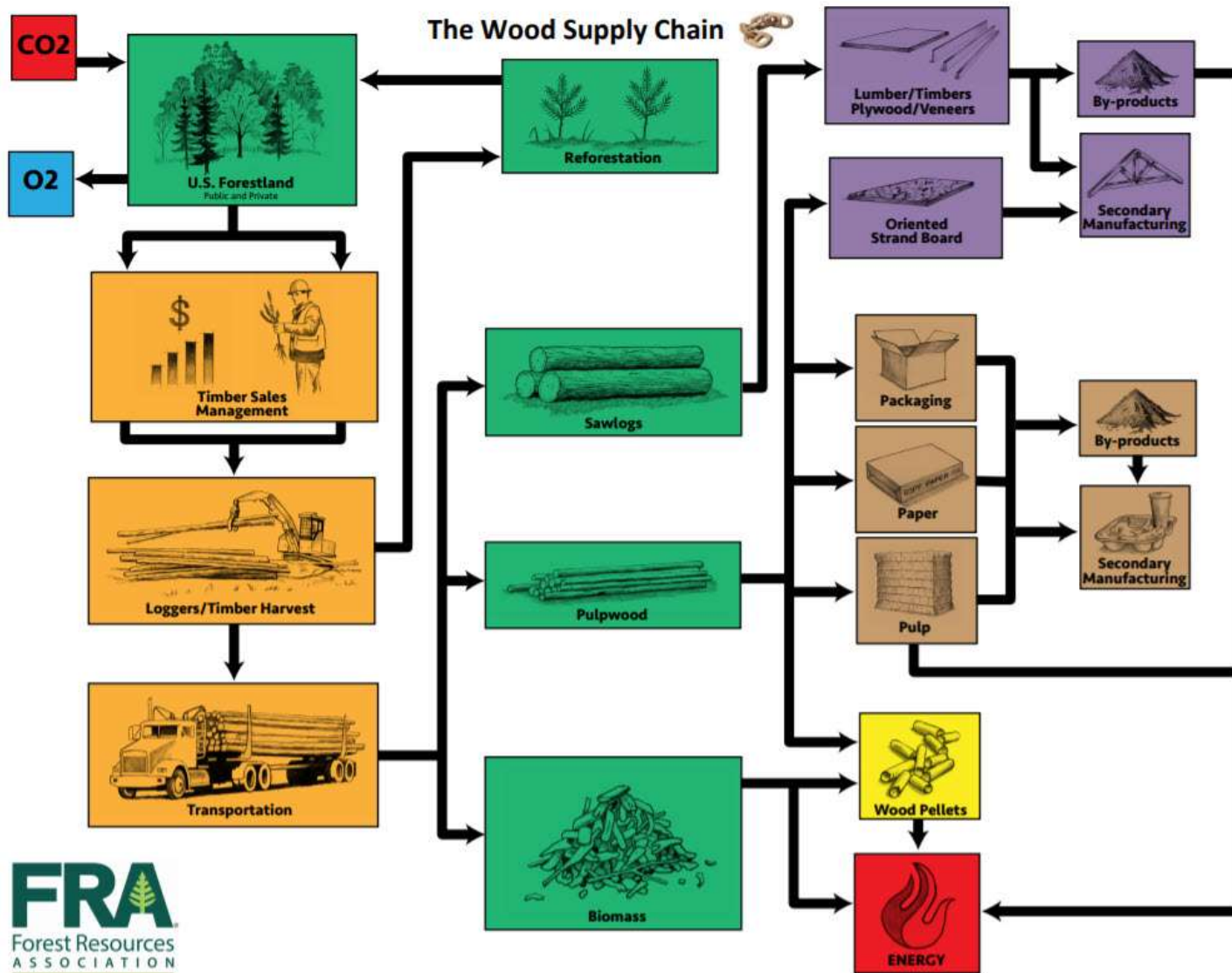
Phone 207-233-9910

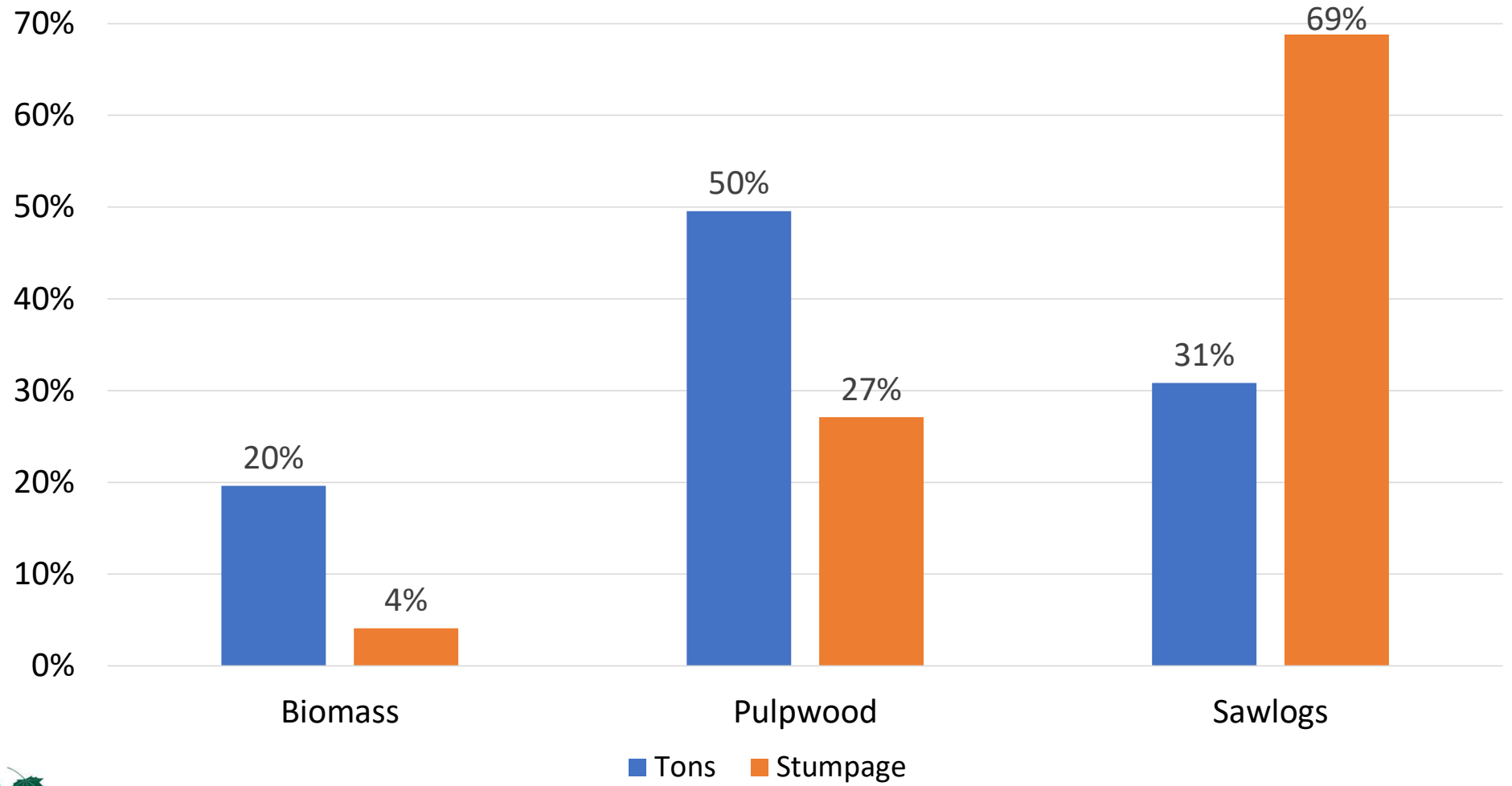


Innovative Natural Resource Solutions LLC



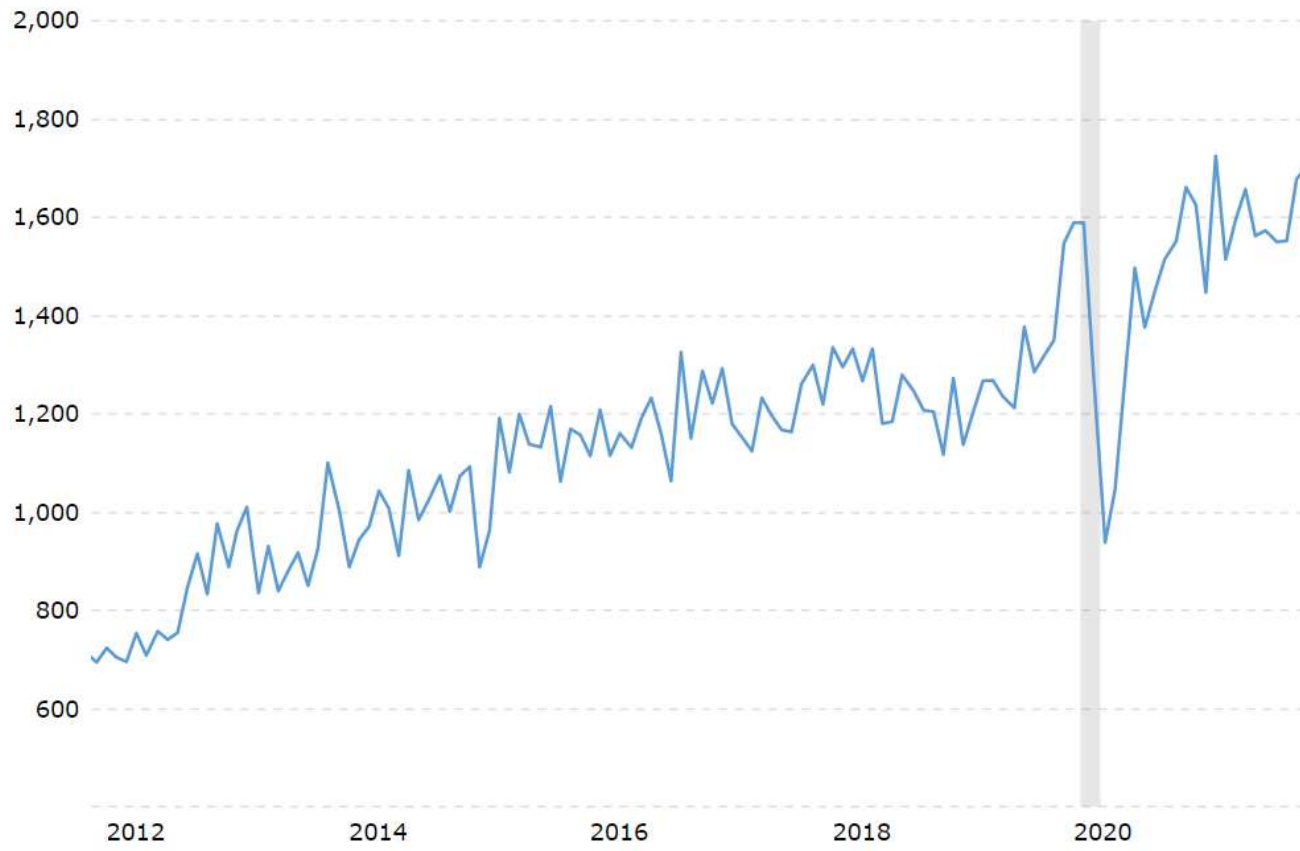
- Founded in 1994
- Offices in New Hampshire and Maine
- Focus at the intersection of forest industry, energy and economic development
- Services include:
 - consulting in renewable energy
 - forest industry consulting
 - advocacy
 - forest certification and sustainability
- Clients from the private, non-profit and government sectors
- Conducted work in all regions of North America
- www.inrsllc.com



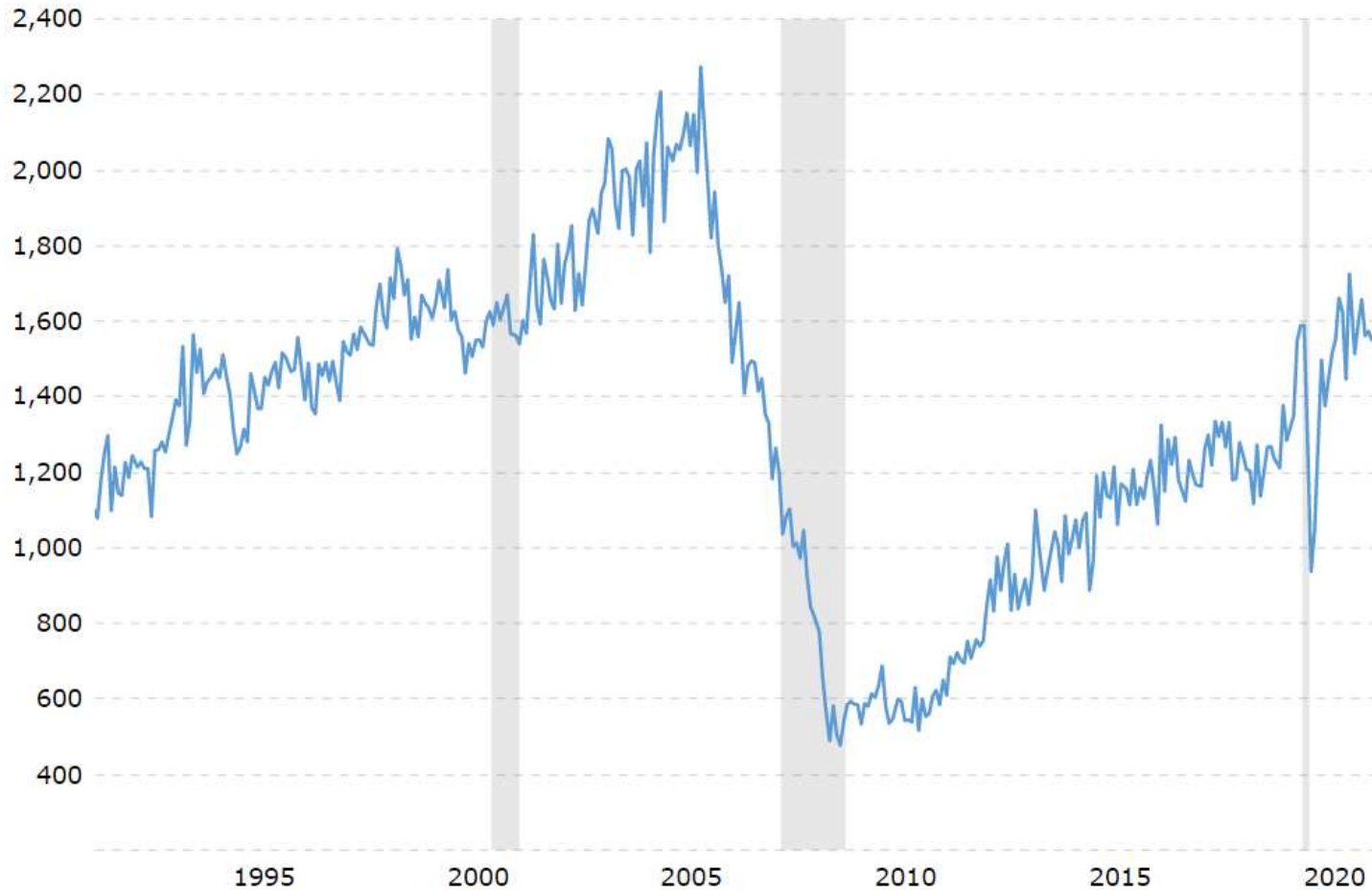




Housing Starts



Housing Starts



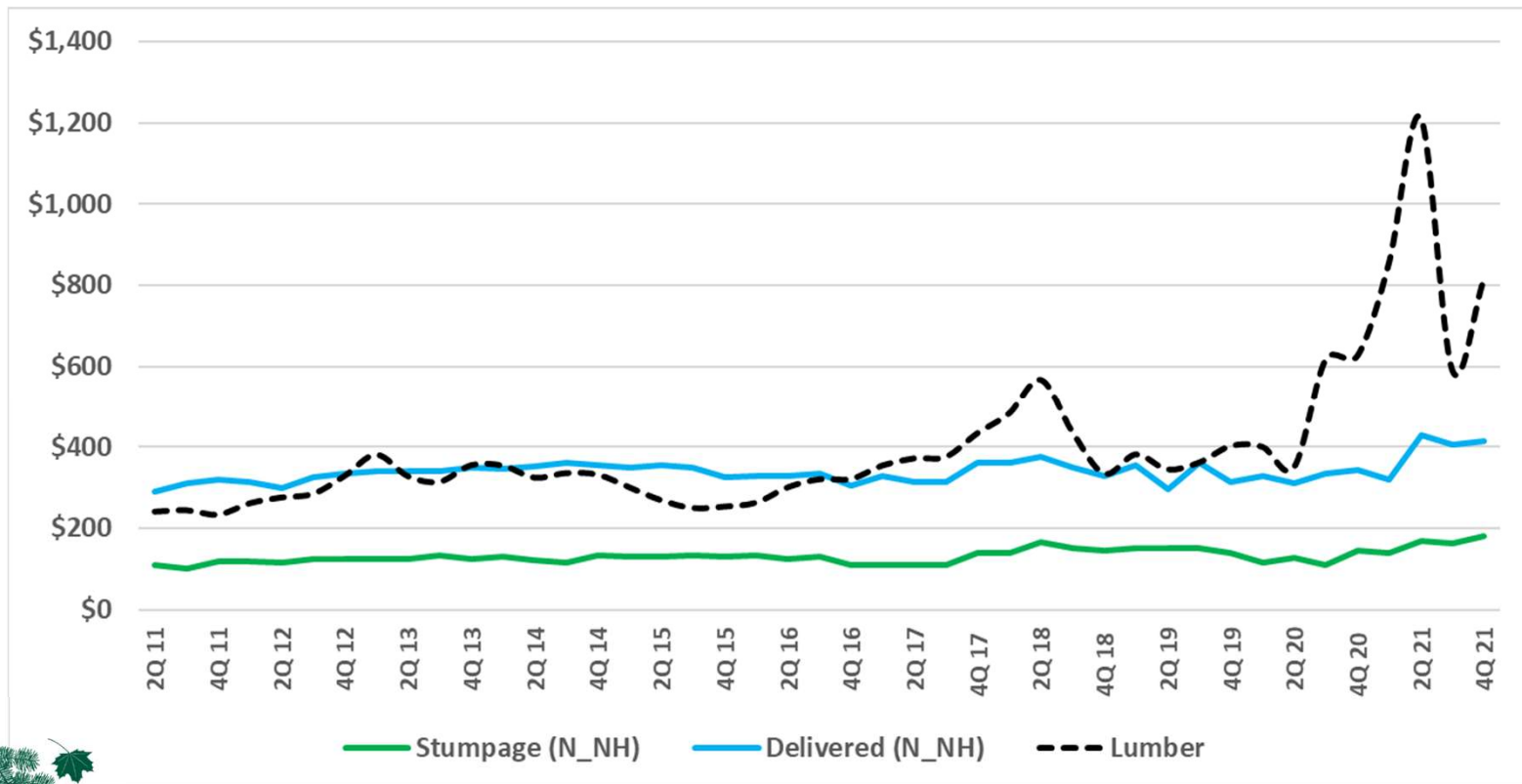
Softwood Lumber Prices

Highly volatile, and just...high



High Lumber Prices Haven't Really Trickled Down...

(a little bit, but don't expect much more)



4Q 2021 vs.
average

Lumber

- ↑ 109%

Delivered

- ↑ 22%

Stumpage

- ↑ 37%



Lumber in the Time of COVID-19

- Building (and re-modelling, particularly outdoor) allowed in most states
 - Housing starts dropped then rebounded
 - **Home repair / re-modelling is way up**
 - Suddenly everyone needs an office in their home
- Are we seeing a fundamental shift toward suburban and rural living – and away from urban centers?
- Constraints on supply from British Columbia, shift of industry to Southeast, room for new mills in Northeast
- Some of the same dynamics seen in panel market



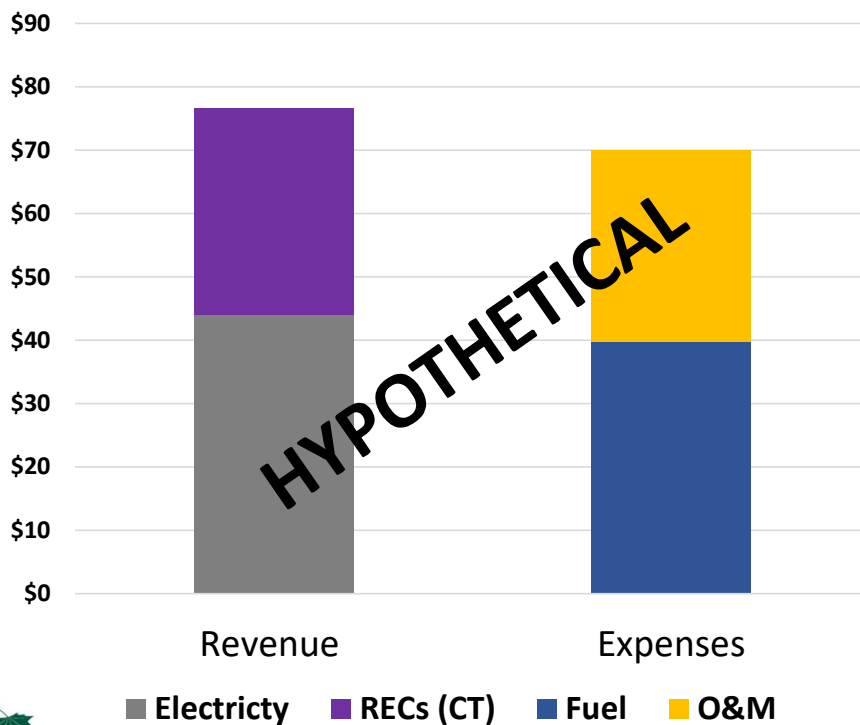
HW Lumber in the Time of COVID-19

- Export market continues to be challenged
- Housing market looks promising – leading indicator for flooring, furniture, etc.
- Some reasons for optimism on industrial side (crane mats strong, pallets slowly ramping up)





What does it take to operate biomass in 2022?



- Assumes:

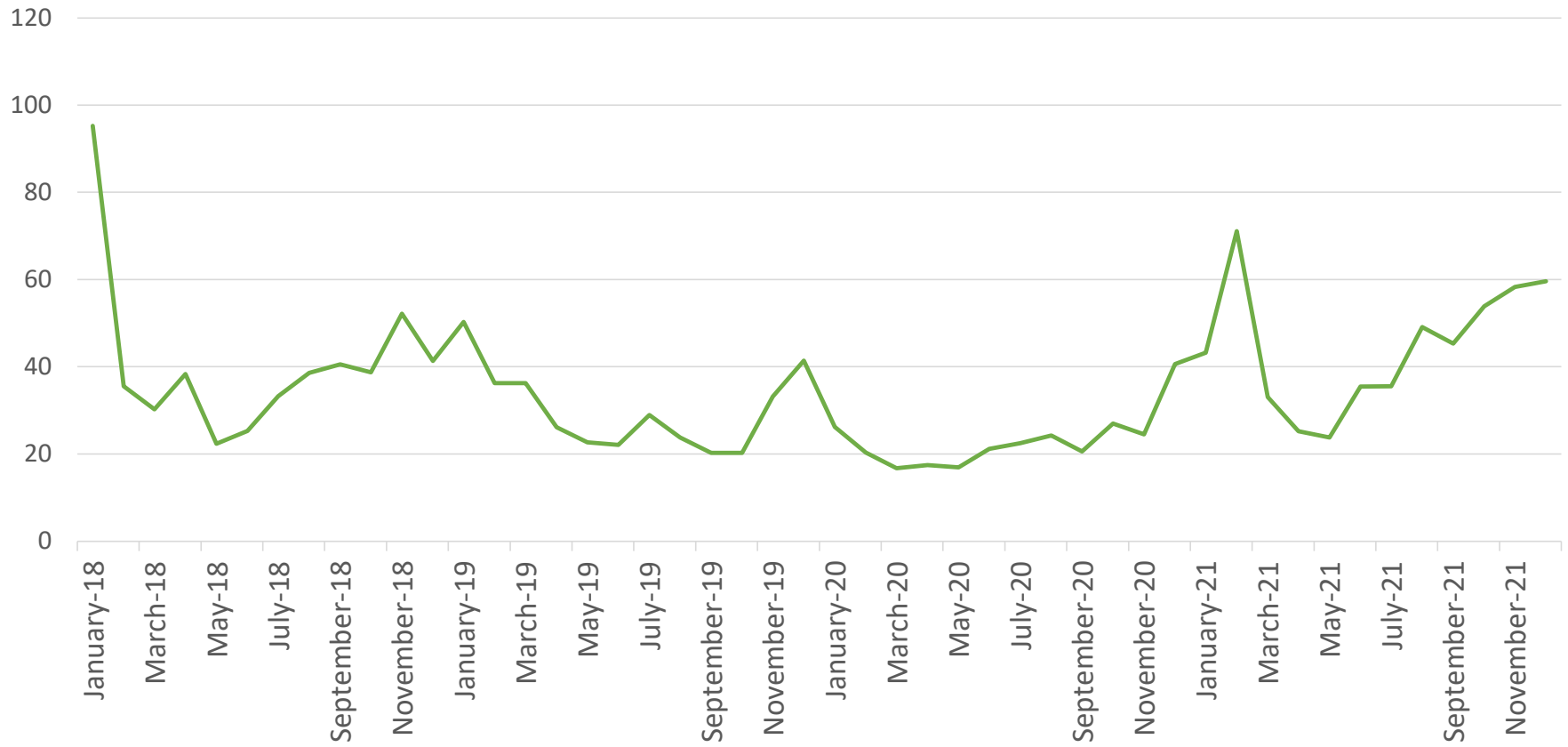
- Electricity at average price for the past year (\$44.50)
- RECs at recent broker quote (\$32)
- Biomass fuel at \$25 (made up price), 1.6 green tons per MWh
- O&M at \$30 per MWh

- **With these assumptions, this is a viable but not attractive business**



Wholesale Electricity Pricing, \$ per MWh

Maine, all-hours average



Biomass Plant Status

- Across Northeast, a number of facilities are idled
 - Notably plants in New Hampshire – recently purchased by Stored Solar and restarts underway
 - Two plants in Aroostook County have been closed and demolished in the last couple years
- Maine has awarded a long-term contract to ReEnergy – Livermore Falls
 - Helps make this an attractive site for co-location
 - Other facilities looking at a similar model
- Two “new” smaller facilities at Robbins Lumber and Maine Woods Pellets
 - Part of a unique program, not currently an option for other facilities
 - At least one sawmill looking at CHP opportunities
 - Effort underway to expand this program



Modern Wood Heat

- Wood heat projects are the likely growth opportunity
 - Wood is historically less expensive than oil (on a heating value basis)
- Pellet mills operating and producing product
- Reported strong demand for firewood (people are staying home)
- State policy favoring electricification (heat pumps)
- Maine has a new incentive for wood heat – **Thermal Renewable Energy Certificates**
 - Modelled on successful initiative in New Hampshire
- This market will grow in very small increments, but distributed geographically and by user type
- Real opportunities for industrial co-location, institutions
- Issues with seasonality





Pulp & Paper

- Explosion at the Androscoggin Mill impact on markets
- Long-term feels OK – many mills making real investments in operations
- New softwood market in Old Town an enormous plus
- Real need for softwood pulpwood market
- Some permanent market shifts – for example, ND Paper announcement that Rumford is moving toward more linerboard, less printing & writing (resulting in permanent loss of aspen groundwood market at the facility)

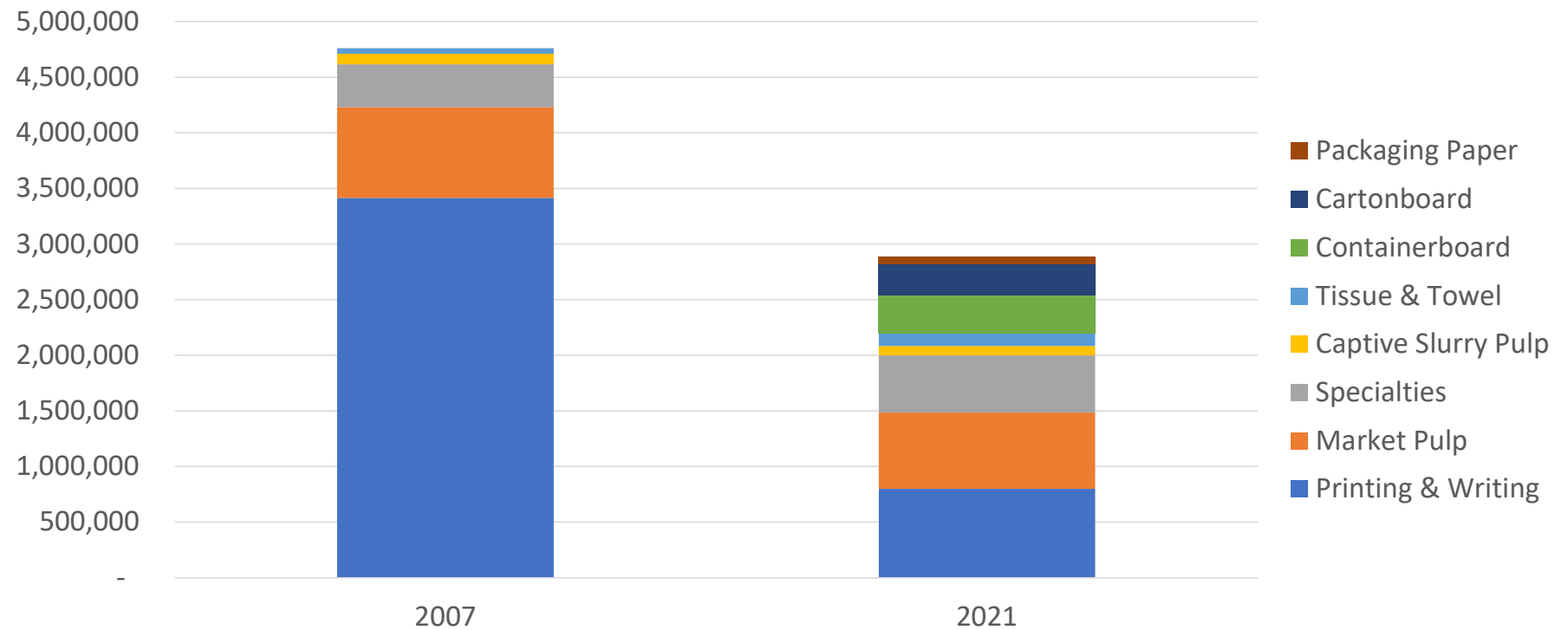


Pulp and Paper

- The product mix is critical right now
 - 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
 - Earlier in pandemic ~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



Maine Pulp & Paper Capacity (tons)



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.
- Biochar manufacturer announced for Maine, operation in 2Q 2022
- Companies have been looking across the Northeast for biofuels, biochemicals, cross-laminated timber, nano-cellulose...
 - There will be some announcements in 1Q 2022
- Efforts across the Northeast to recruit new wood using facilities
 - Absolute need for new markets for low-grade wood
- Exports – Chips? Pellets? Really?

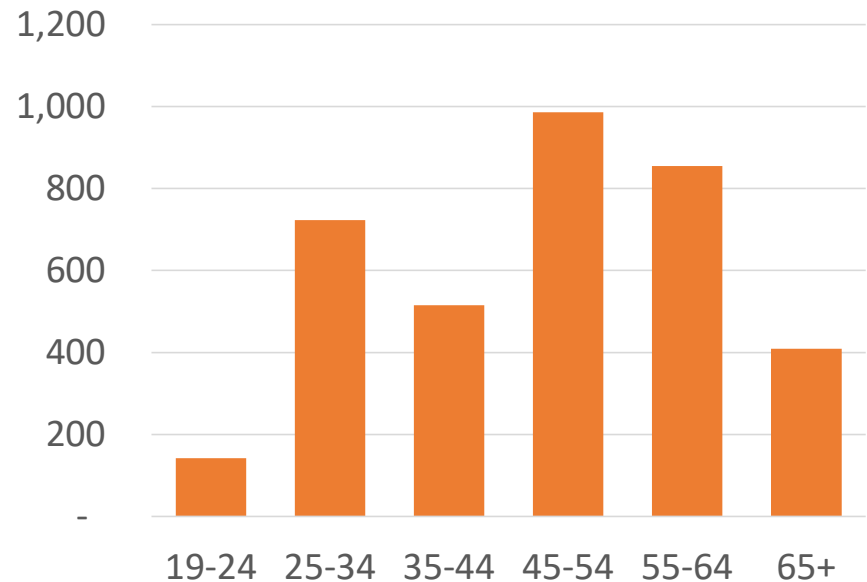


What Concerns Me...

- Age of Logging Workforce
- Markets for Biomass / Residues / SW 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

Things I keep hearing...

- Very real concern about markets for low-grade wood
 - Nothing new, but becoming urgent
- We need to make sure to maintain logging infrastructure – none of this matters if there aren't professionals to cut wood
- Supply chain and labor issues hampering loggers – sector operating below capacity



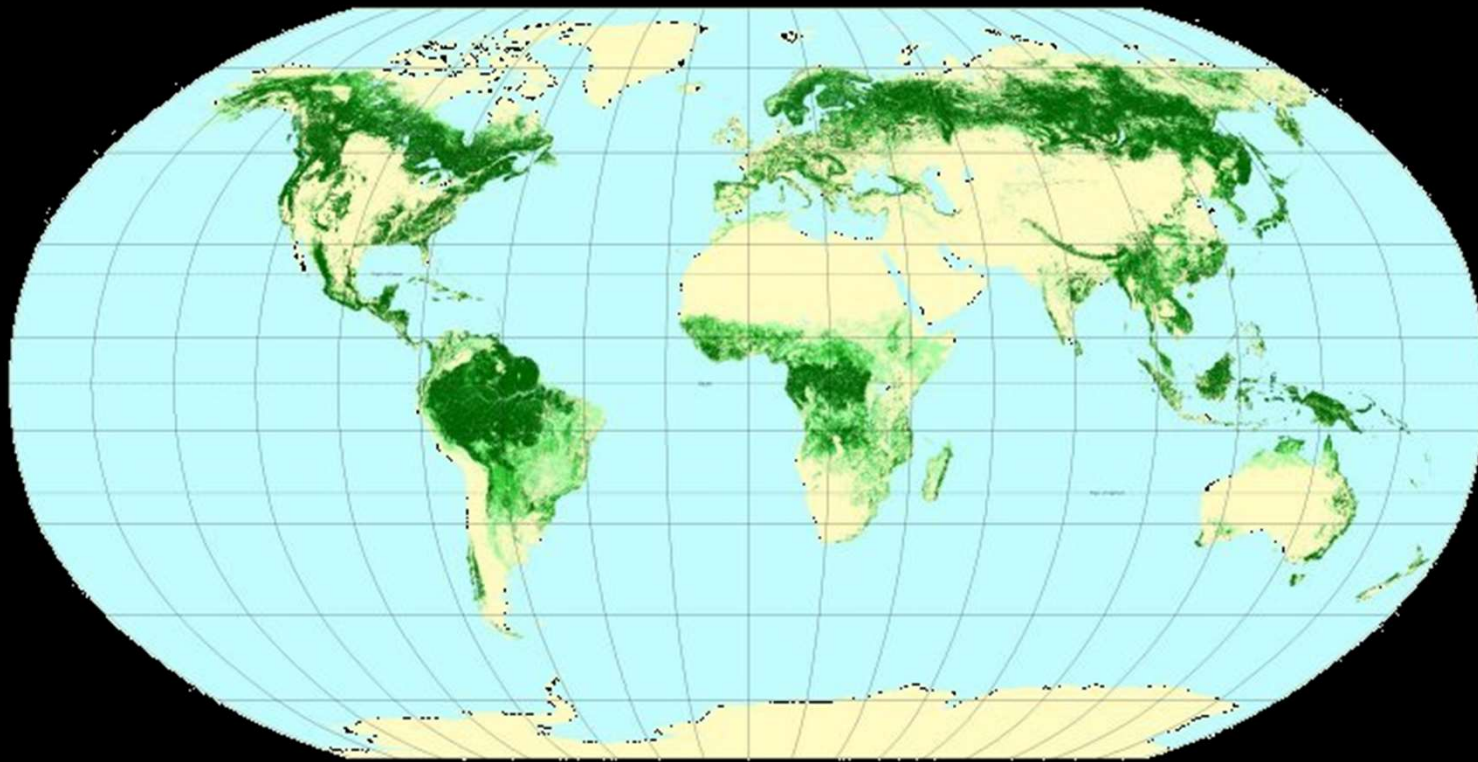
The Northeast is Going to Be Fine...

- 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 Wood



Scale
0 100 200 300 400 500
Kilometers
0 100 200 300 400 500
Miles

GLOBAL FOREST RESOURCES ASSESSMENT 2000

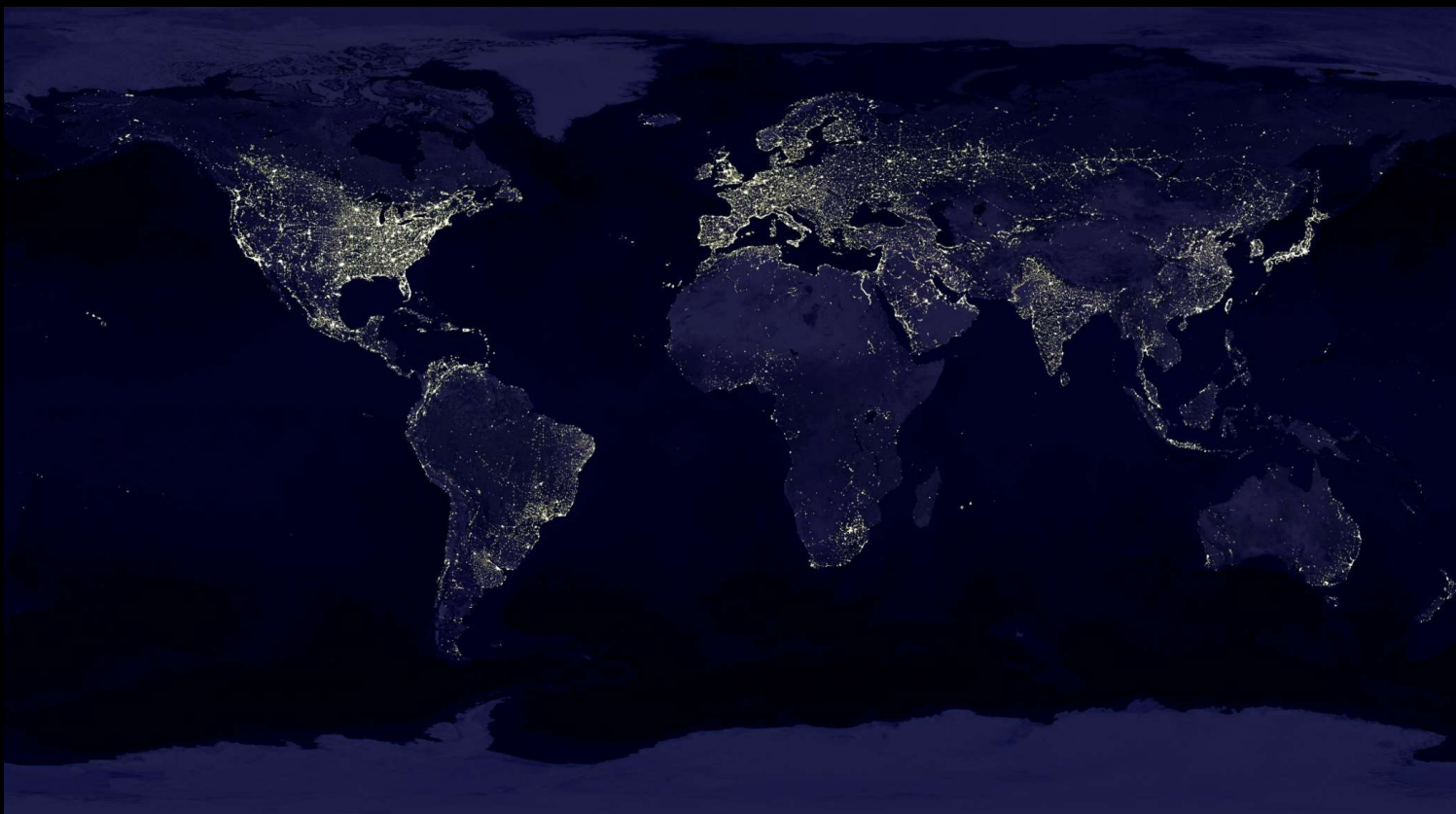
UNEP, FAO, and the International Geosphere-Biosphere Programme (IGBP) have jointly produced this map, which is a synthesis of data from 20 years. The map is based on the Global Forest Resources Assessment 2000 (FRA 2000) which provides the most up-to-date information on the state of the world's forests. The map is based on the Global Forest Resources Assessment 2000 (FRA 2000) which provides the most up-to-date information on the state of the world's forests. The map is based on the Global Forest Resources Assessment 2000 (FRA 2000) which provides the most up-to-date information on the state of the world's forests.

Legend

<ul style="list-style-type: none"> Forest cover Forest cover > 100% Forest cover 75-100% Forest cover 50-75% Forest cover 25-50% Forest cover < 25% Non-forest cover Water Ice/snow Urban areas Barren land Barren land > 100% Barren land 75-100% Barren land 50-75% Barren land 25-50% Barren land < 25% 	<ul style="list-style-type: none"> Forest cover > 100% Forest cover 75-100% Forest cover 50-75% Forest cover 25-50% Forest cover < 25% Non-forest cover Water Ice/snow Urban areas Barren land Barren land > 100% Barren land 75-100% Barren land 50-75% Barren land 25-50% Barren land < 25%
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This map was produced by the United Nations Environment Programme (UNEP) and the United States Geological Survey (USGS) in cooperation with the International Geosphere-Biosphere Programme (IGBP). The map is based on the Global Forest Resources Assessment 2000 (FRA 2000) which provides the most up-to-date information on the state of the world's forests. The map is based on the Global Forest Resources Assessment 2000 (FRA 2000) which provides the most up-to-date information on the state of the world's forests.

The Markets



I would like to add you to my email lists



Send an email to kingsley@inrslc.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.

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