

# Evolving Forest Markets



FOREST2MARKET

A  ResourceWise Company

Better data. Better intelligence. Better decisions.  
[forest2market.com](https://forest2market.com)

North Carolina Forestry Association  
September 28, 2022

# About ResourceWise

ResourceWise was founded in 2021 to unify three companies that have been joined together through investments of Battery Ventures, a technology-focused private equity firm and an experienced leadership team.

The companies in the ResourceWise portfolio focus on forest products, pulp & paper and chemicals — natural-resource-based industries. Our intention is to serve additional industries in the natural resources space in the future.

For more than a decade, our legacy brands have focused on one mission: to help our customers make exponentially better decisions by providing them with the most accurate data and analytics available to our markets, which we supplement with high-value strategic consulting based on both our data and our decades-long experience.

Because the markets we serve are complex, volatile and energy-intensive, we are increasingly being asked to use the data and experience we have spent decades compiling to help our customers navigate the pivot to a lower carbon, more circular economy that is currently underway.

# About Forest2Market

Our mission is to empower participants in the global forest, wood products, paper products, biochemical and bioenergy industries to make exponentially better decisions through the strategic application of industry expertise and unique datasets.

## Third-Party Independence and Neutrality

Forest2Market is a neutral third-party, independent in ownership and structure.

The foundation of all Forest2Market products and services is our unique, current and proprietary database of wood raw material transactions and the underlying extensive data collection infrastructure that enables us to collect millions of market transactions every year.

## SOLUTIONS



- Pricing Data
- Benchmarks
- Product Forecasting
- Advisory Services
- Analytics



### SilvaStat360™

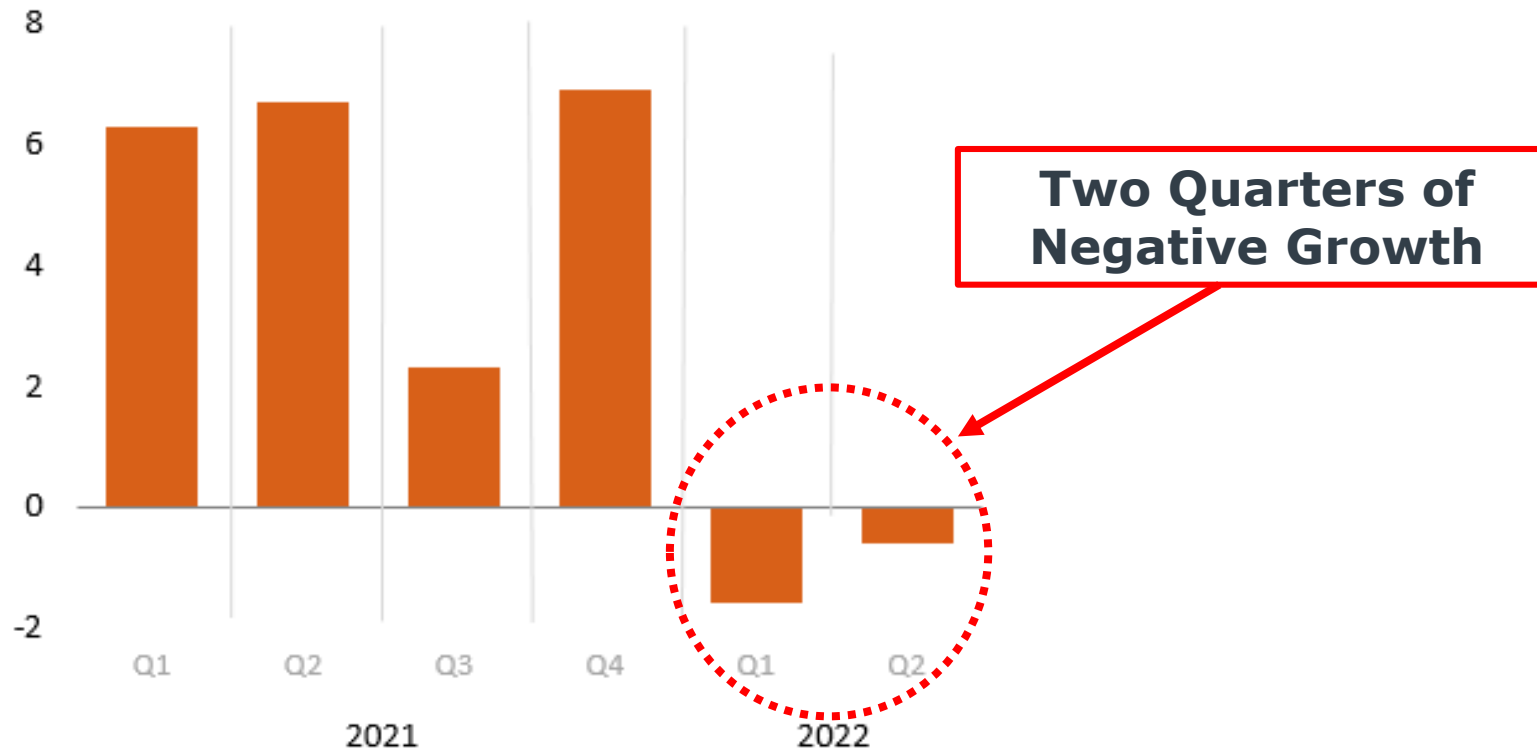
- Price Benchmarks
- The Beck Group's Sawmill TQ
- Timber Supply Analysis
- Global Economic Data



# State of the US Economy & Drivers of Lumber Market

# The US Economy Rebounded Strongly From COVID, However...

Real GDP: Percent change from preceding quarter



U.S. Bureau of Economic Analysis

Seasonally adjusted at annual rates

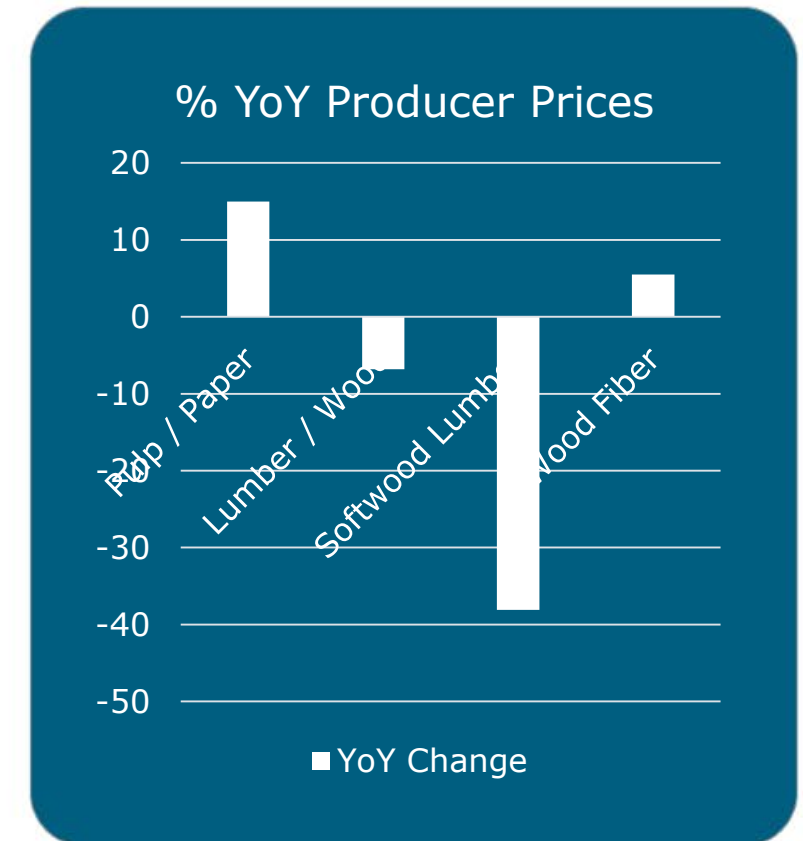
## GDP

- 4Q2021: +6.9%
- 1Q2022: **-1.4%**
- 2Q2022: **-0.6%**

# Prices in the Forest Economy Trended Significantly Higher as COVID Waned, but Some Sectors Reversed Course Sharply in Early 2Q2022

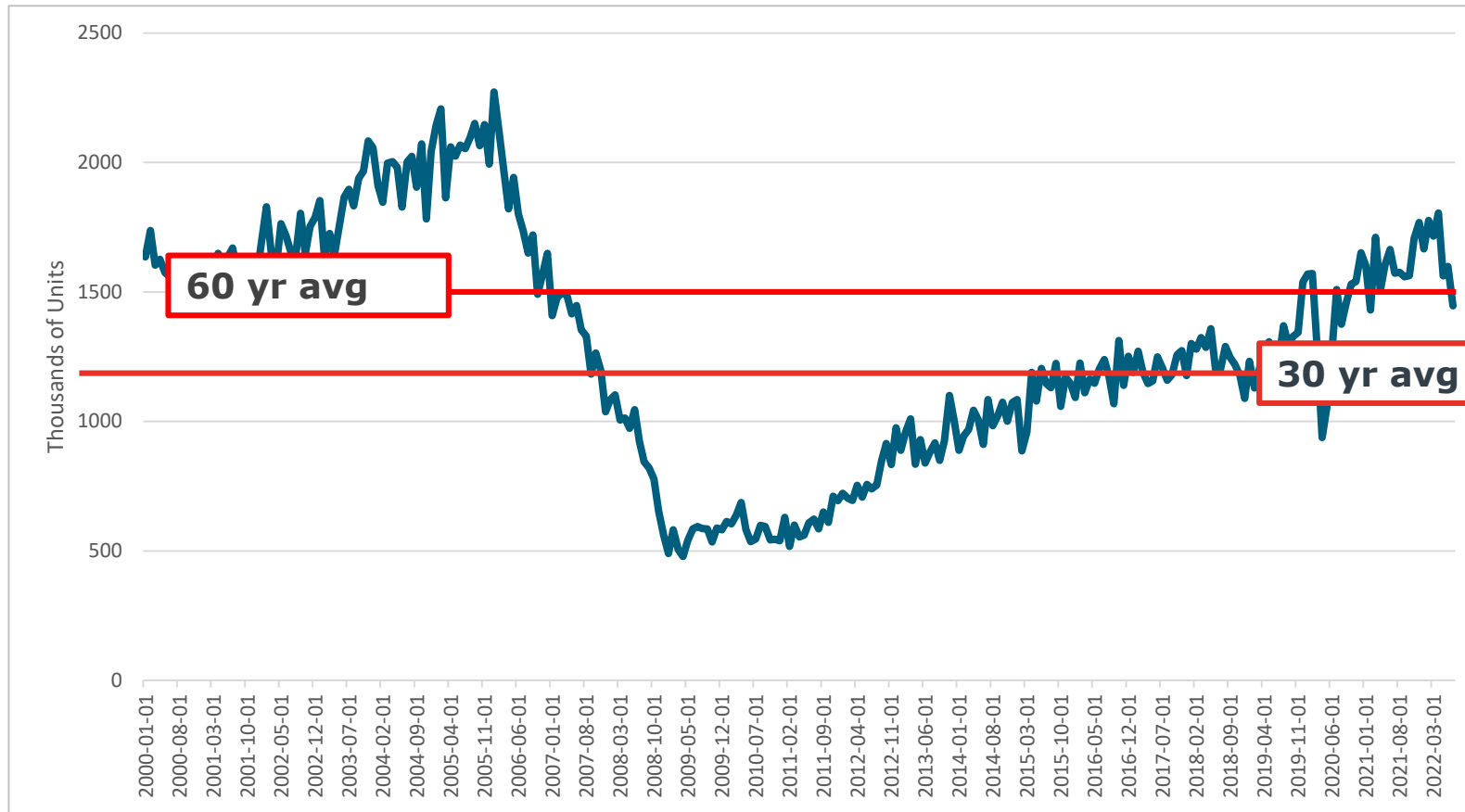
- **July Producer Price Index**

- Pulp, paper & allied products: +1.2% (+15.0% YoY)
- Lumber & wood products: -6.2% (-6.8% YoY)
- Softwood lumber: -24.8% (-38.1% YoY)
- Wood fiber: +0.9% (+5.5% YoY)



# US Homebuilding Has Been on a 10-Year Bull Run, But...

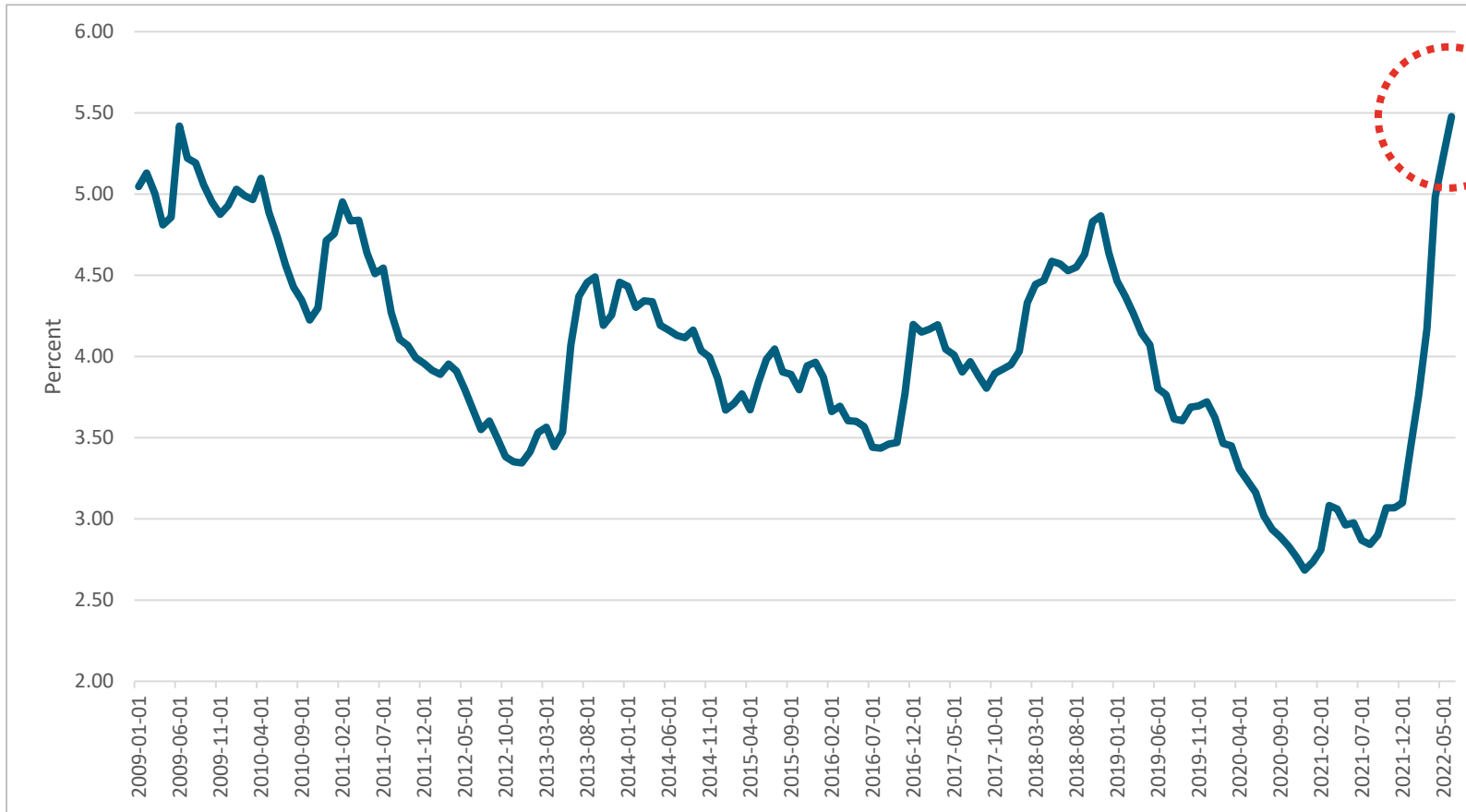
## Monthly Housing Starts (000 units, annualized)



- Despite headwinds in 2020, housing starts increased 16% YoY in 2021. Wood demand remains very strong.
- COVID-fueled migration driving more people to regions with lower population density = new housing demand.

# Will Rising Interest Rates Threaten Homebuilding?

## US 30 Year Mortgage Rates

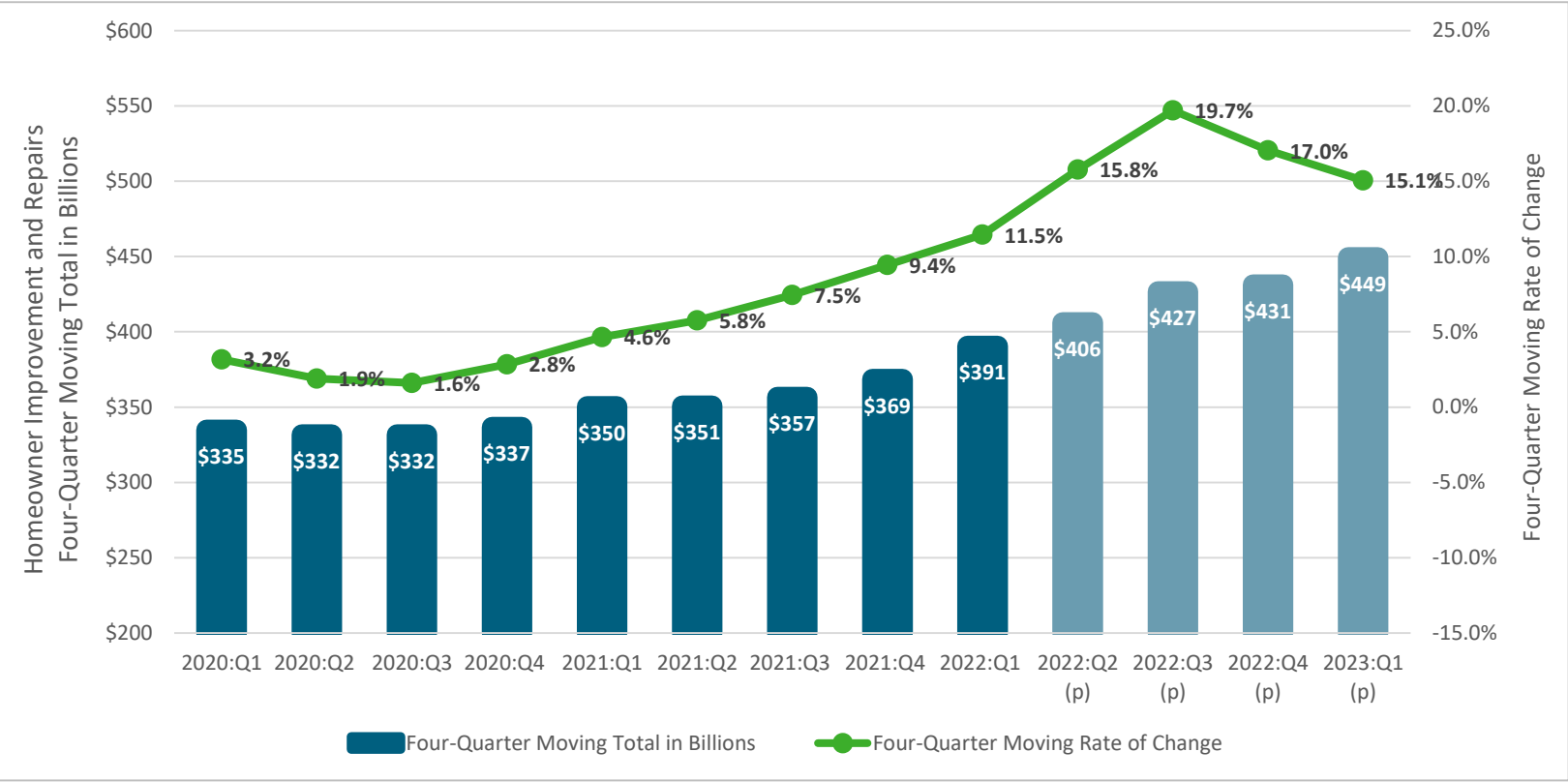


- Higher interest rates lead to lower housing starts in the long run.
- Rates are expected to move higher as the FED attempts to combat inflation.



# US Remodeling Activity is Projected to Wane as Well

## Leading Indicator of Remodeling Activity

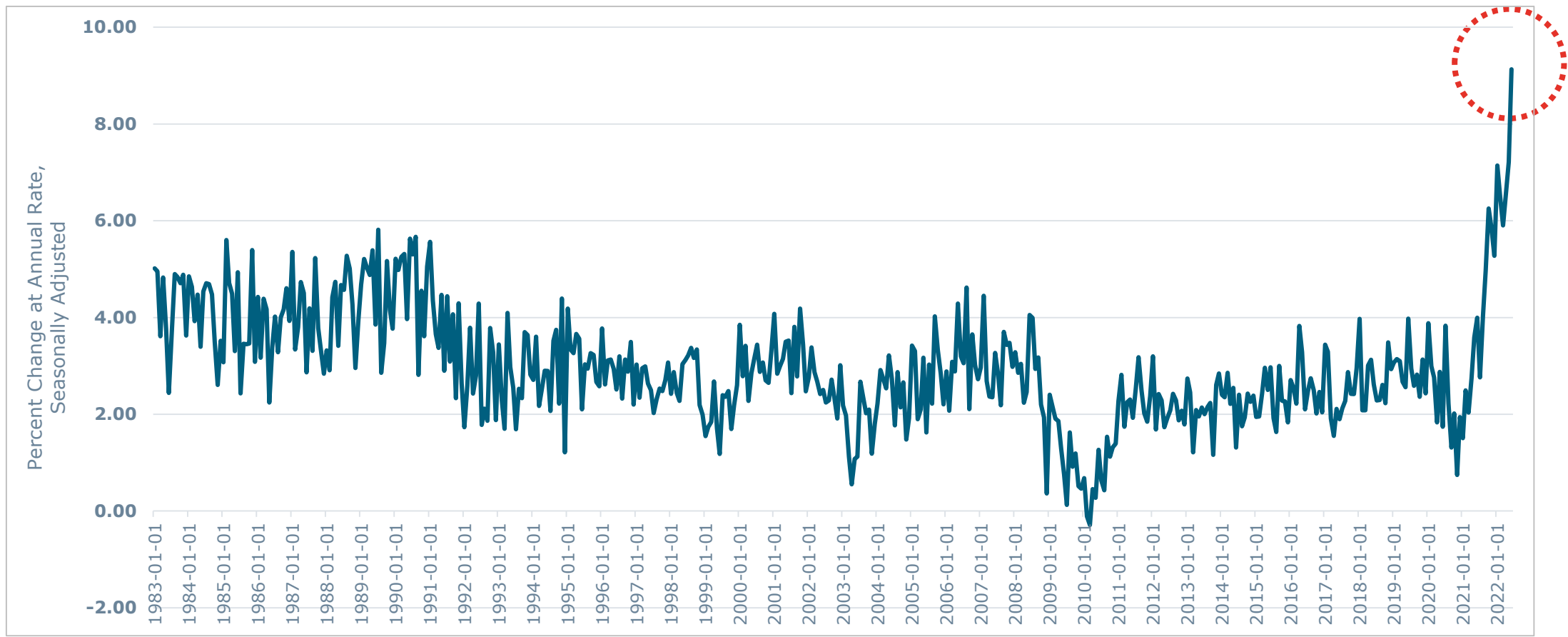


- The LIRA projects YoY increases in residential renovation and maintenance spending will peak at 19.7% in 3Q before sliding downward to 15.1% in 1Q2023.

Source: Harvard Joint Center for Housing Studies

# Inflation is Now at a 40 Year High

**Median Consumer Price Index**



# Costs are Impacting Supply Chains: Diesel Prices as an Example

## US Diesel Sale Price - \$/Gallon



- Energy prices continue to rise.
- War in Ukraine and resulting sanctions on Russia.
- Geopolitical turmoil driving global uncertainty.

# Summary: US Wood Market Demand Forecast

---

- Barring a significant shock, the housing market should remain strong for several more months.
  - We forecast total starts to fluctuate between SAARs of 1.416 and 1.820 million units (MU), with 2022 averaging 1.612 MU (+0.5% relative to 2021); 2023: 1.552 MU (-3.7% from 2022).
- **But**, the **BIG** question is how high the FED will hike rates to combat inflation.
  - Most believe they have “painted themselves in a corner” by waiting too long.
  - 1980’s taught us that inflation often ends in recession.
- **Historical Perspective:** The very drastic action in the 1980’s cooled the housing market for 5-7 years.
  - 2–3-year outlook much better if FED achieves its “softish” landing goal

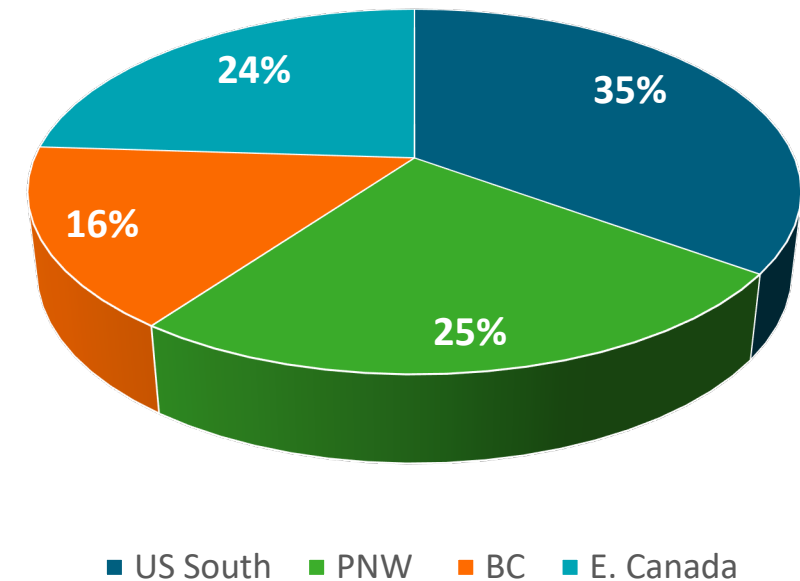


# North American Lumber and Log Markets

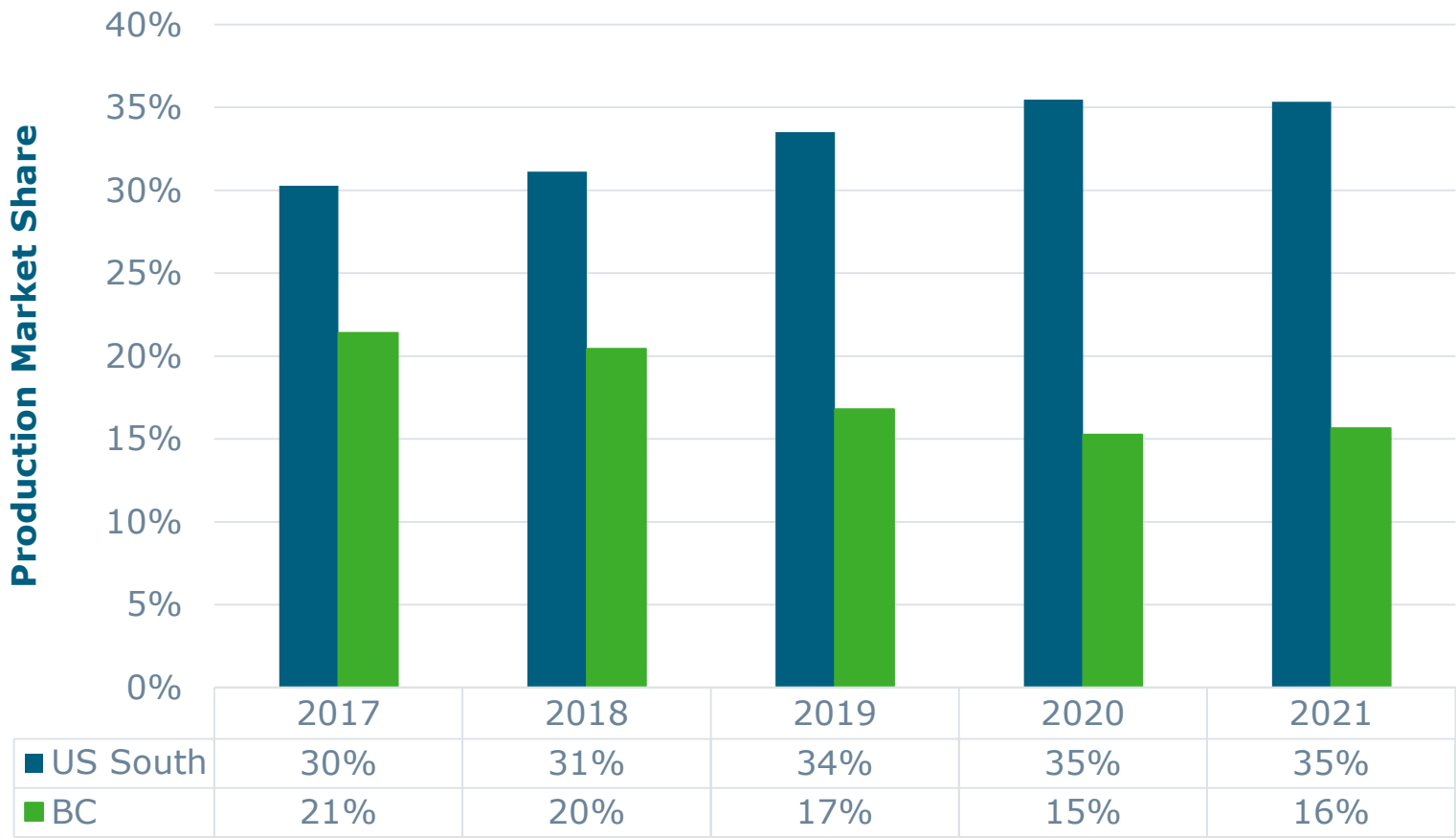
# State of the Market: NA Softwood Lumber Production Market Share

- Total NA production was 61 BBF in 2021.
- US South now produces 21 BBF - 36% more than the US PNW.
- Sawmill investment has been significant across the South over the last five years. Roughly 3 BBF of additional capacity will come online in the region by 2023.
  - Around 15% of current capacity

**NA Lumber Production Share 2021**  
**61 BBF Total**

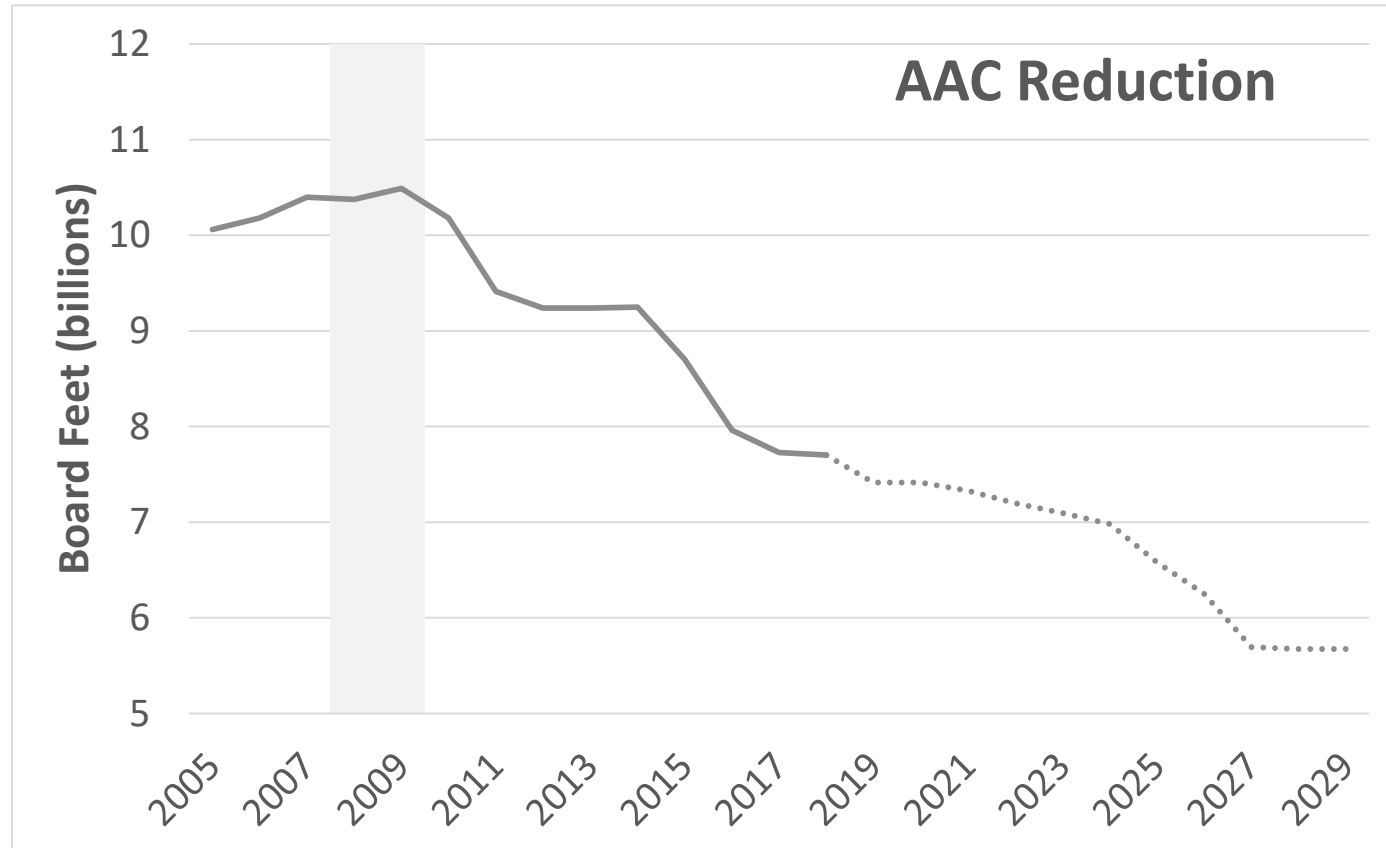


# State of the Industry: NA Softwood Lumber Production Migration to the US South



- The trend of migrating production from British Columbia to the US South continues.

# British Columbia Annual Allowable Cut



- BC log supply is going to severely decrease by 2030.
- With the beetle kill and fires that BC has experienced, the government has reduced its Annual Allowable Cut by over 2 BBF over the last decade and more reductions are coming.

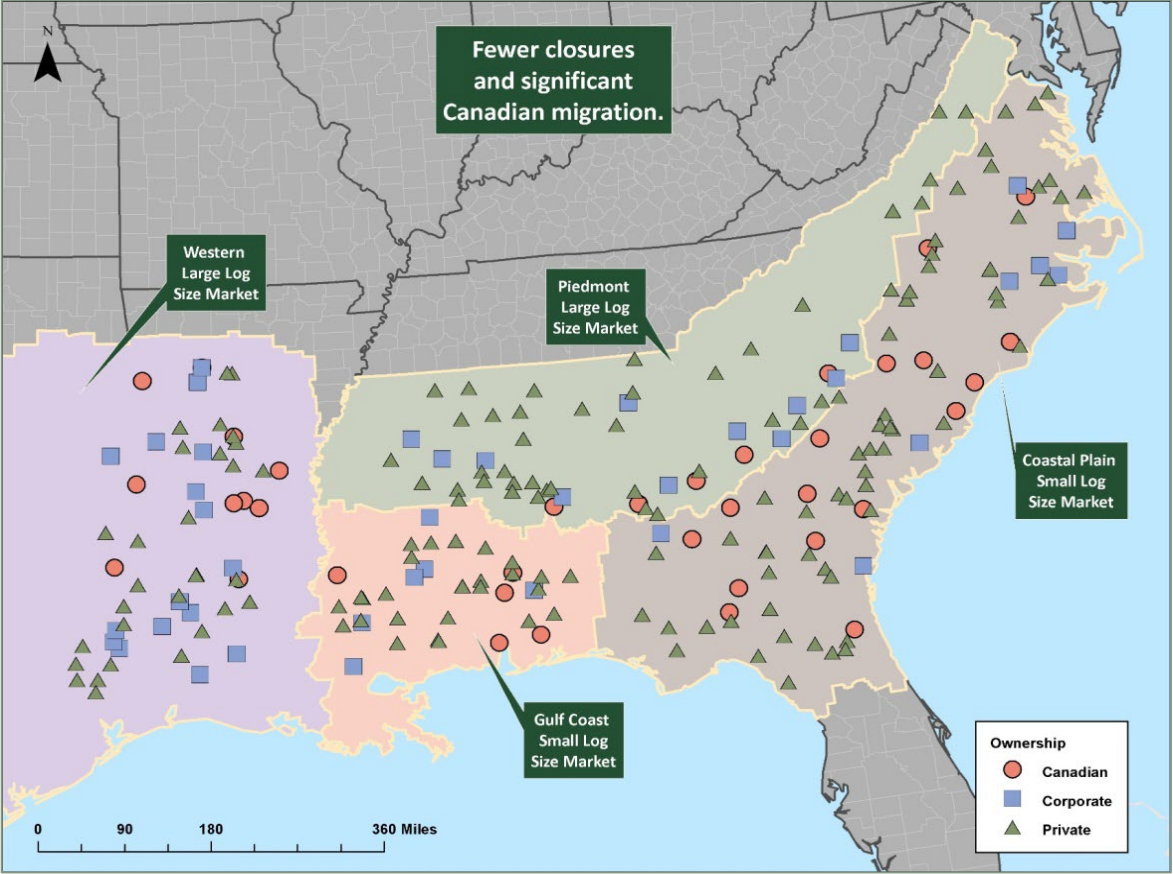
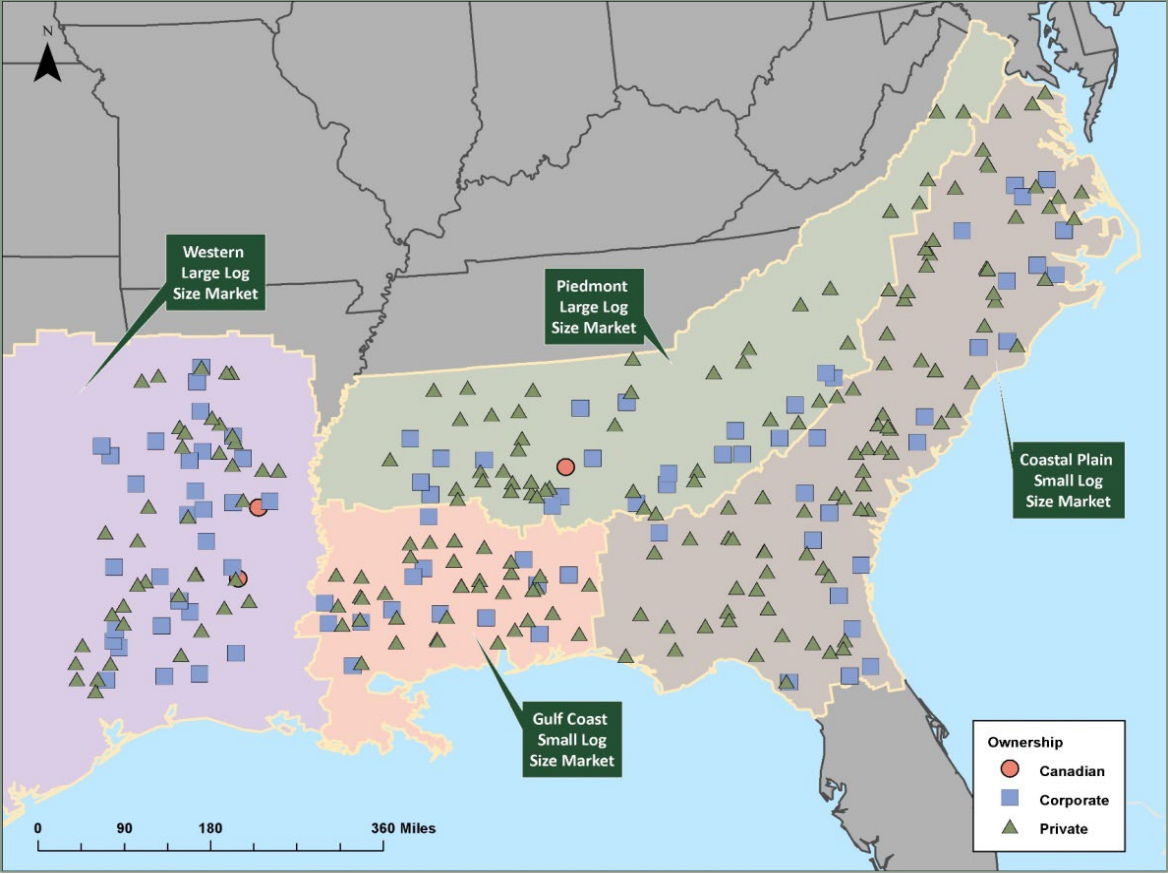


# Canadian Softwood Lumber Duties

- On August 4, the U.S. Department of Commerce announced that it would be cutting the tariff on most Canadian softwood lumber imports from **17.91% to 8.59%.**
- US Trade Representative Katherine Tai recently testified saying the Biden Administration was “open and interested” in negotiating a new Softwood Lumber Agreement to replace the previous agreement which expired in 2015.

• **So, if you're a BC lumber producer – what are you going to do? Move production to areas where there is more certainty, an embedded supply chain, and cheaper logs: the US South.**

# Canadian Migration: 2005 vs. 2020



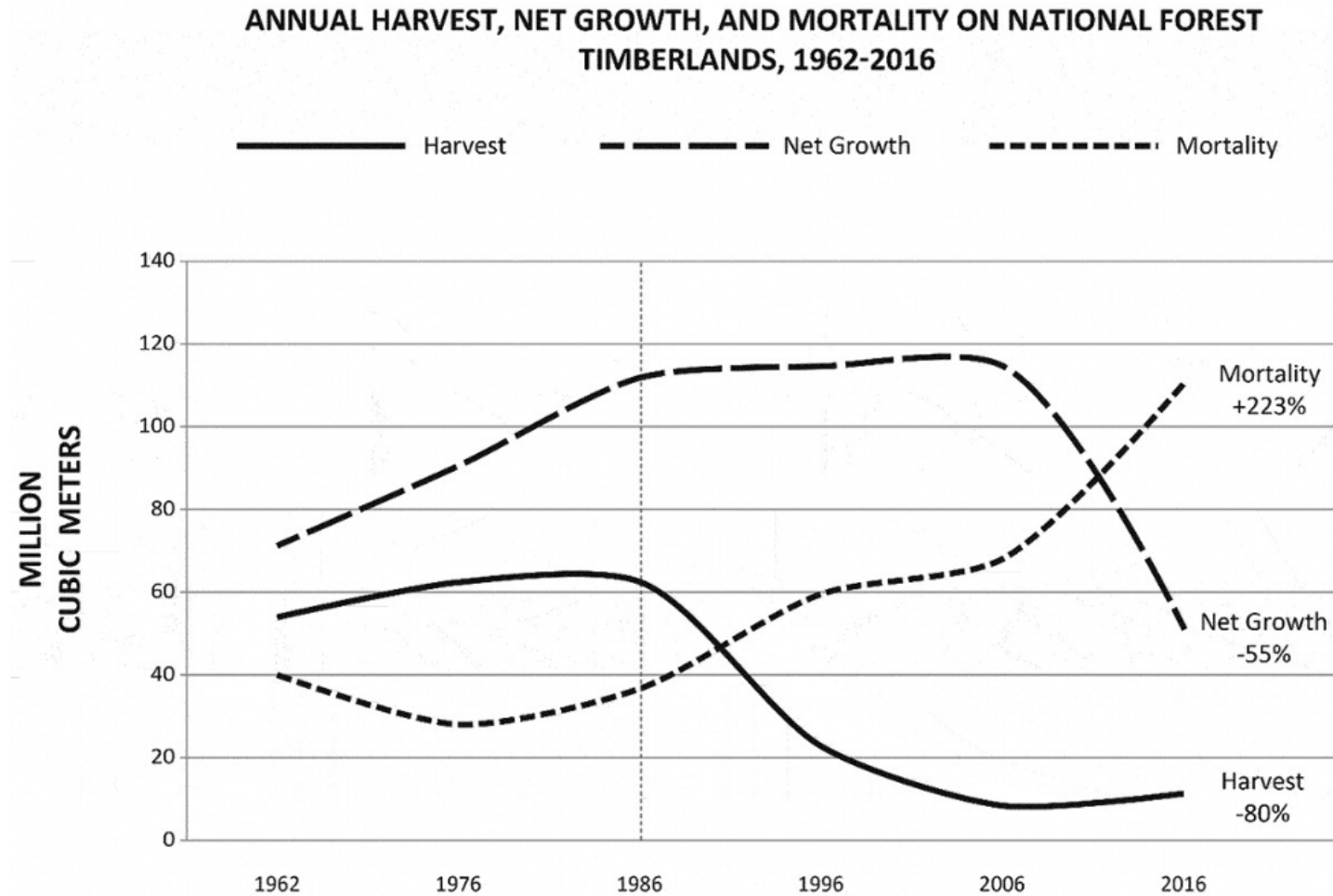
# PNW Access to Timber Has Hobbled Regional Industry

- Past policy initiatives and years of fire suppression have prohibited the active management of western forests, which has resulted in an accumulation of fuel on the forest floor. **California alone has more than 130 million standing dead trees in its forests. With such a fuel load, fires are now hotter, larger, and more destructive than they would otherwise be.**
- Millions of acres of timberland now burn needlessly every year in western states, which also releases millions of tons of contaminants – as well as stored carbon – into the atmosphere.



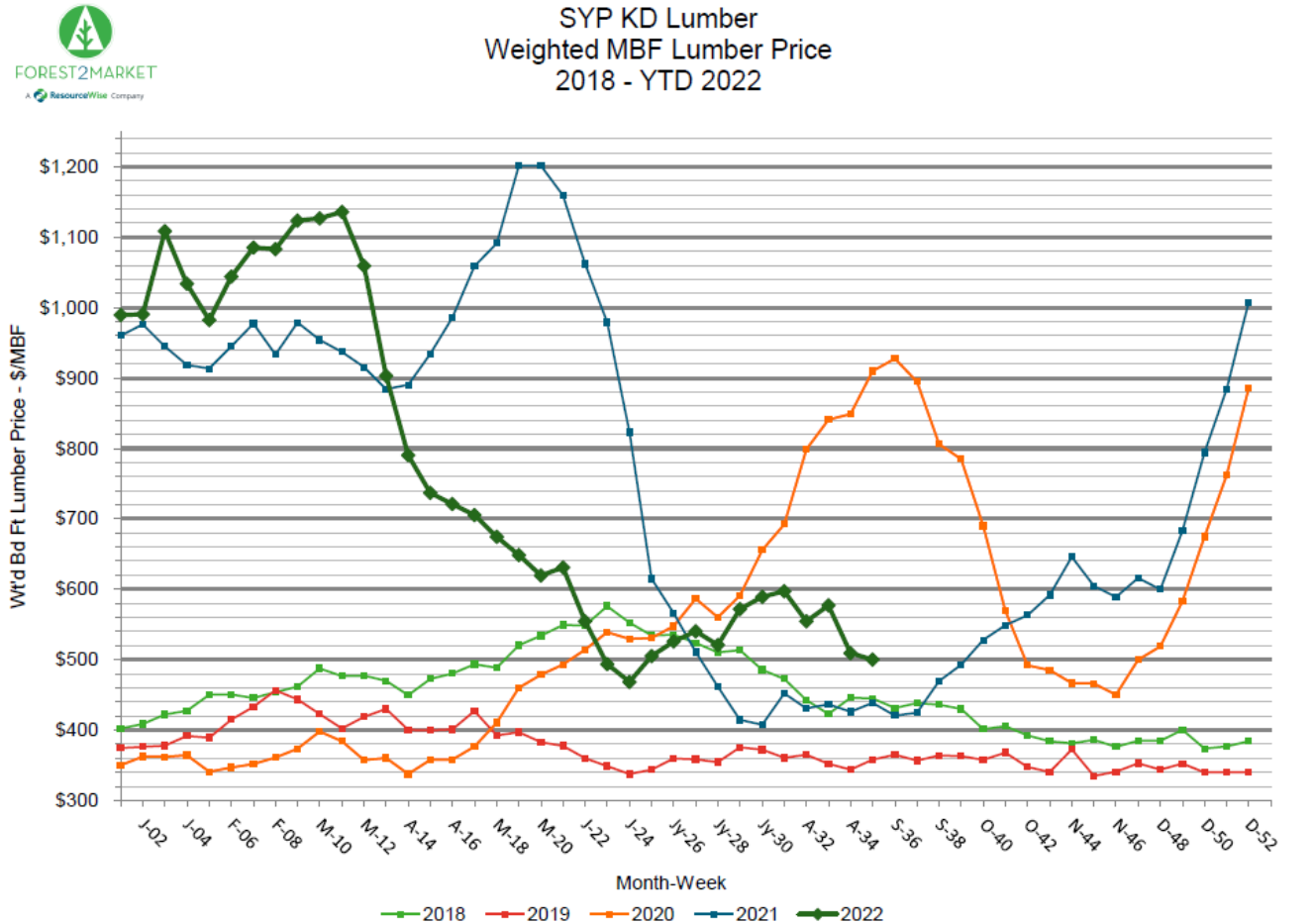


# Impacts of Disastrous Policy in Western US



- Policy change in 1986 created a disastrous situation in the PNW.
- The result? Decreased timber sales/salvage caused dangerous overstocked conditions.
- Unhealthy stands of dead trees = tinderbox for wildfire.

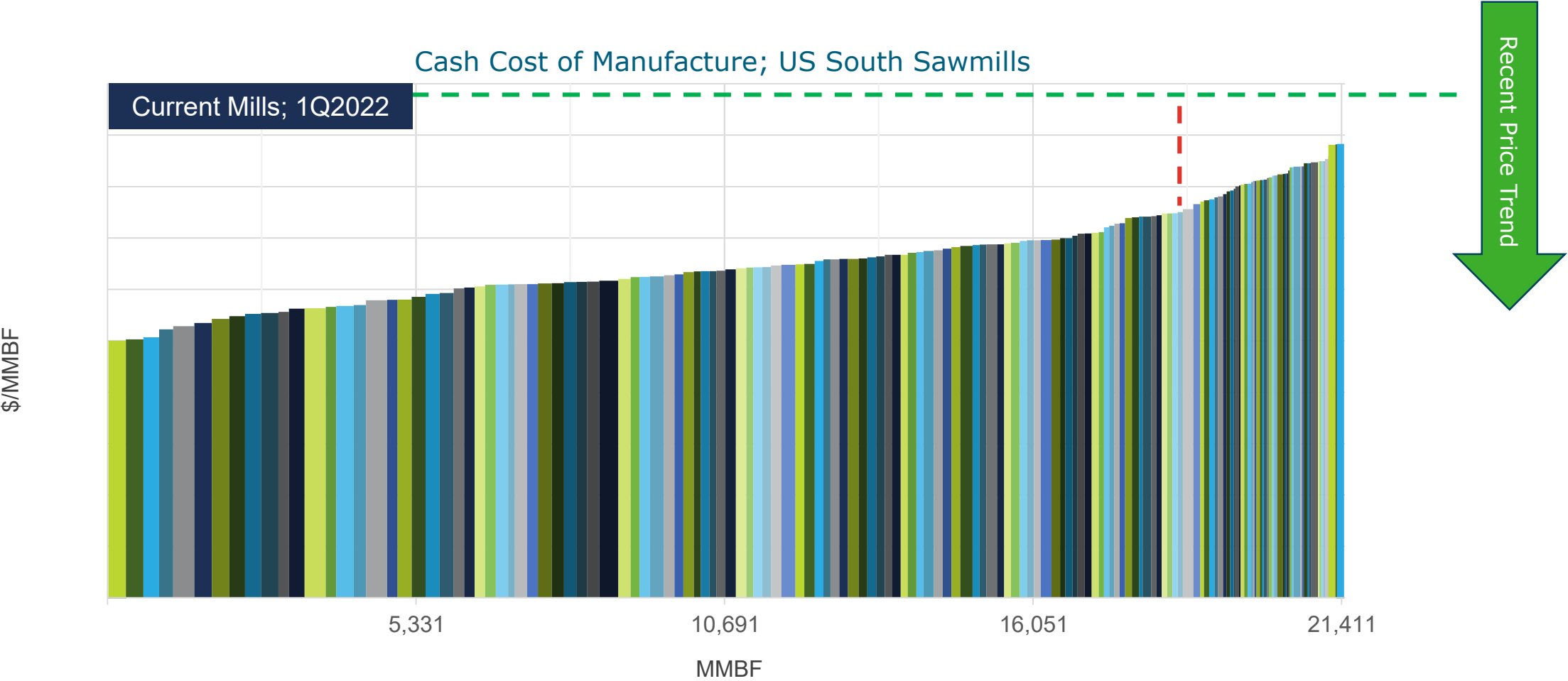
# The Last Two Years Have Been Unprecedented in Softwood Lumber Markets



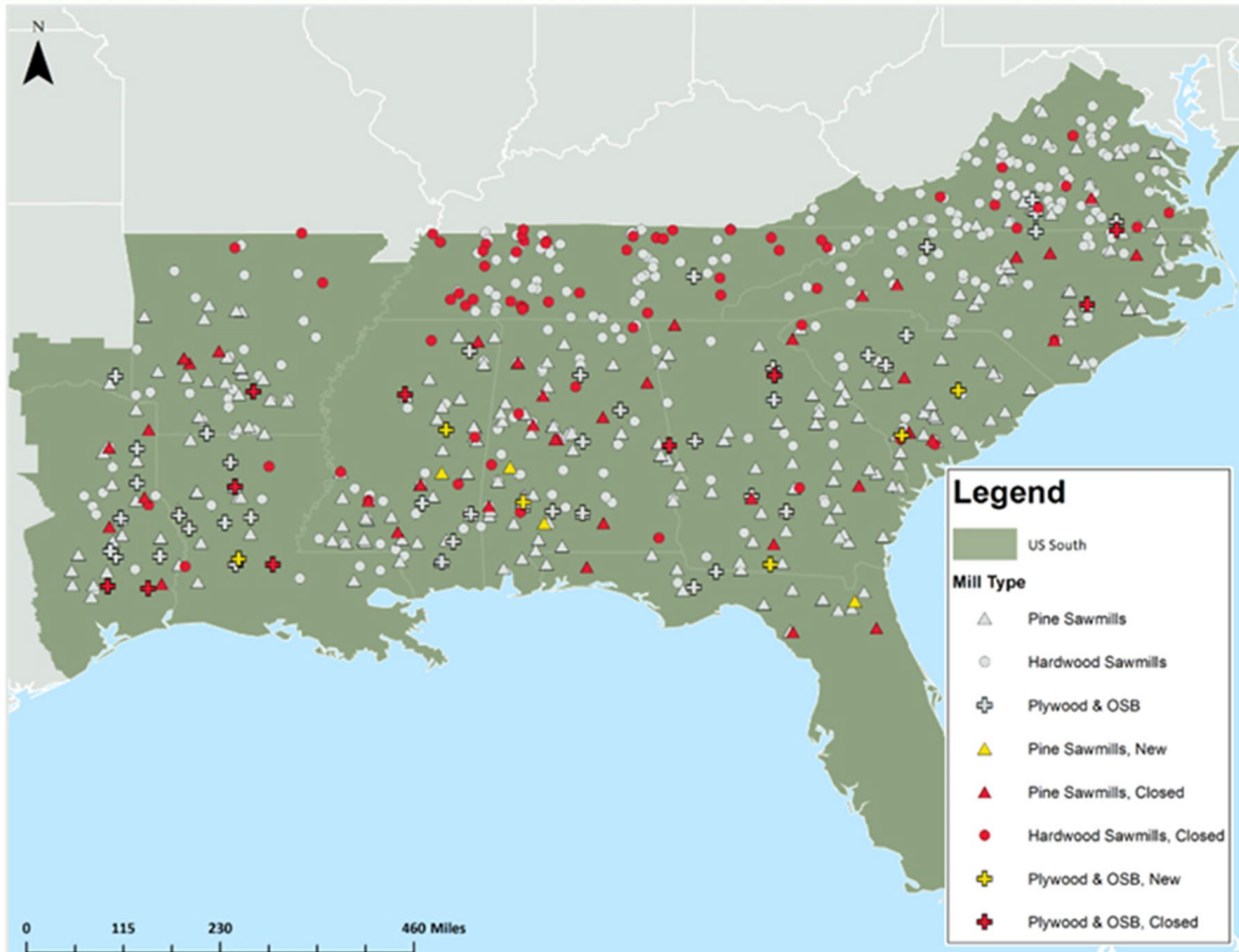
©2022 Forest2Market, Inc., a ResourceWise Company

- US softwood lumber production in 2021 was up about 1% YoY; Canadian production was up 3%.
- US softwood lumber consumption in 2021 was up 1% YoY; Canadian consumption was up 4%.
- Volatility is now the norm!

# As Demand Falls and New Supply Comes Online, Prices May Fall and Higher Cost Mills Could Come Under Pressure in the Next 2-3 Years



# The Great Recession Dramatically Reduced Demand, Causing the Closure of Many Uncompetitive Sawmills in the U.S. South



- In the wake of the Great Recession, the southern forest industry was hit hard. From 2007-2017, the region saw the permanent closure of three pulp and paper mills, three particleboard plants, 36 pine sawmills and 66 hardwood sawmills.
- While many of these shuttered pine sawmills were smaller in scale, the closures represented a loss of roughly 2.0 billion board feet (BBF) of annual lumber capacity.



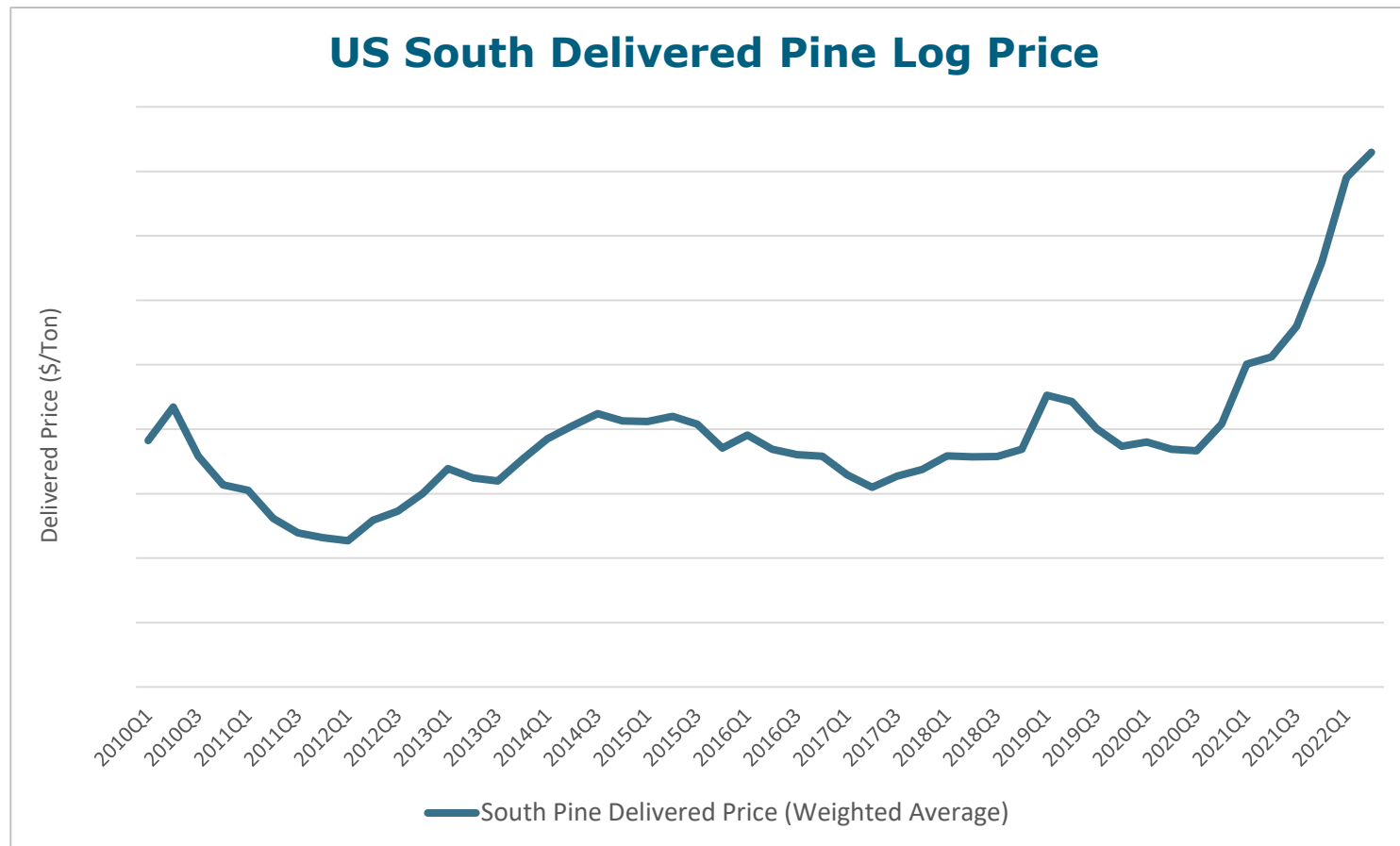
# Although We Do Not Anticipate Market Declines Seen in 2007 / 2008, a Coming Downturn Could Change the Landscape... Again



- Just like it did in 2007, the next downturn will drive high-cost production out of the market.
- Once again, this will open opportunities for low-cost players looking to reinvest and expand capacity in the South.



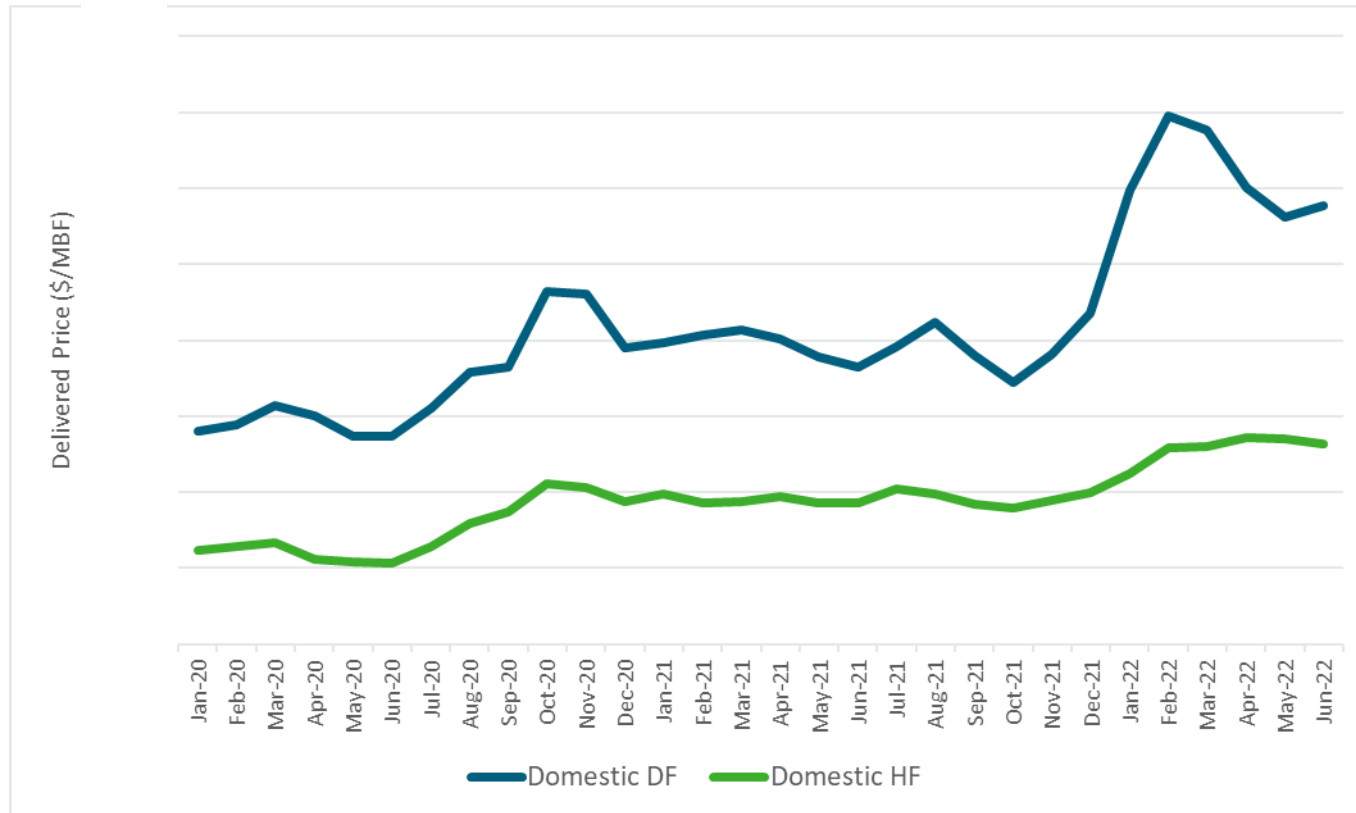
# And Delivered Sawlog Prices are Moving Up in the South



- Delivered southern sawlog prices have increased but they are still the envy of the world.
- Cheap log costs, deep labor pools and reliable transportation make the South the most competitive wood basket in the world.

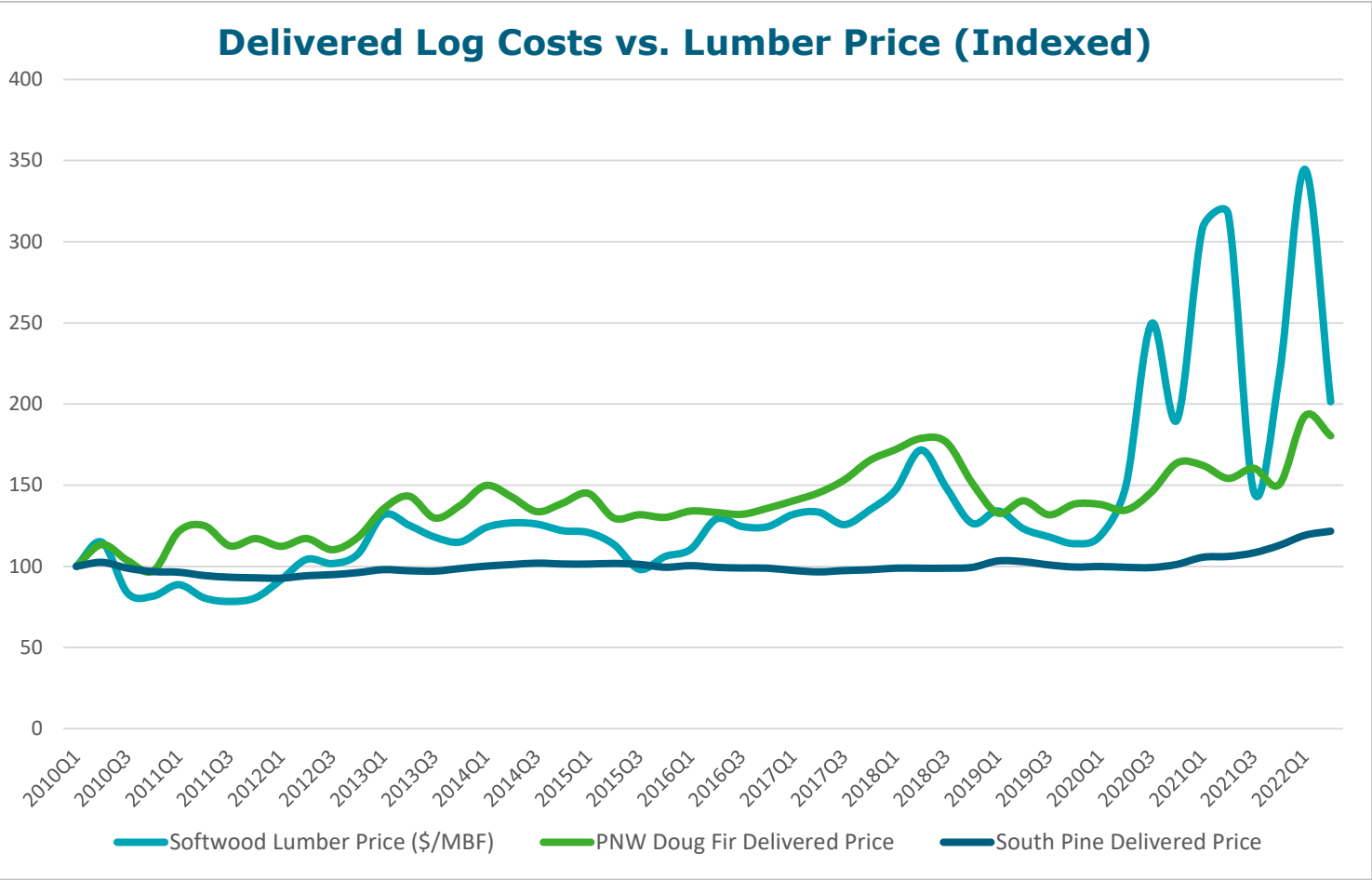
# Delivered Log Prices: PNW Domestic

## PNW Delivered Pine Log Price



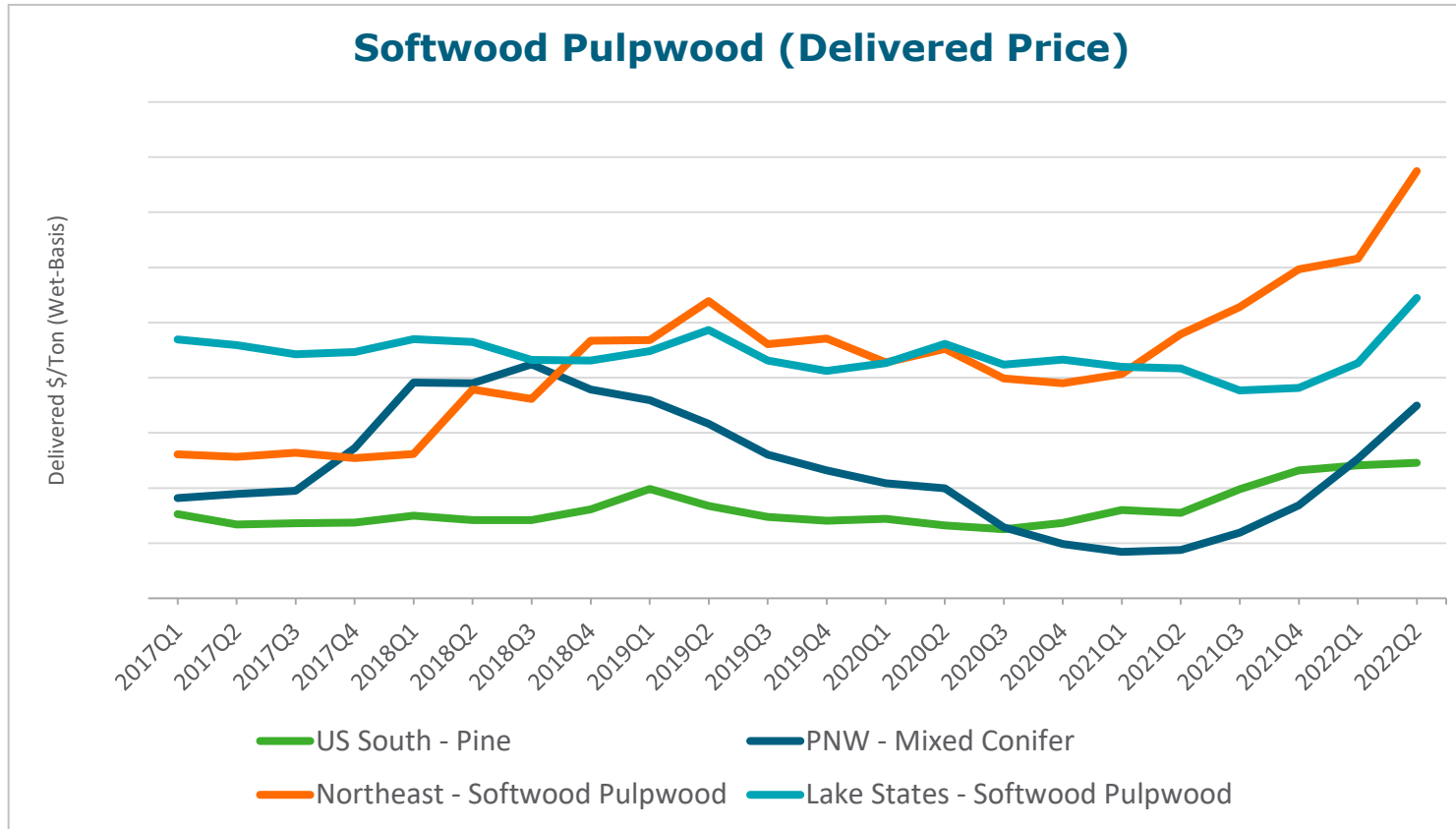
- Timber supplies are stressed due to limited harvesting on federal lands, and the region experienced devastating effects from seasonal wildfires in 2020.
- Based on pinched availability and strong demand, the western sawlog market has soared in recent months. With the lumber market remaining strong, this will continue to apply upward pressure on log prices.

# Market Comparison: PNW vs. US South Delivered Sawlogs



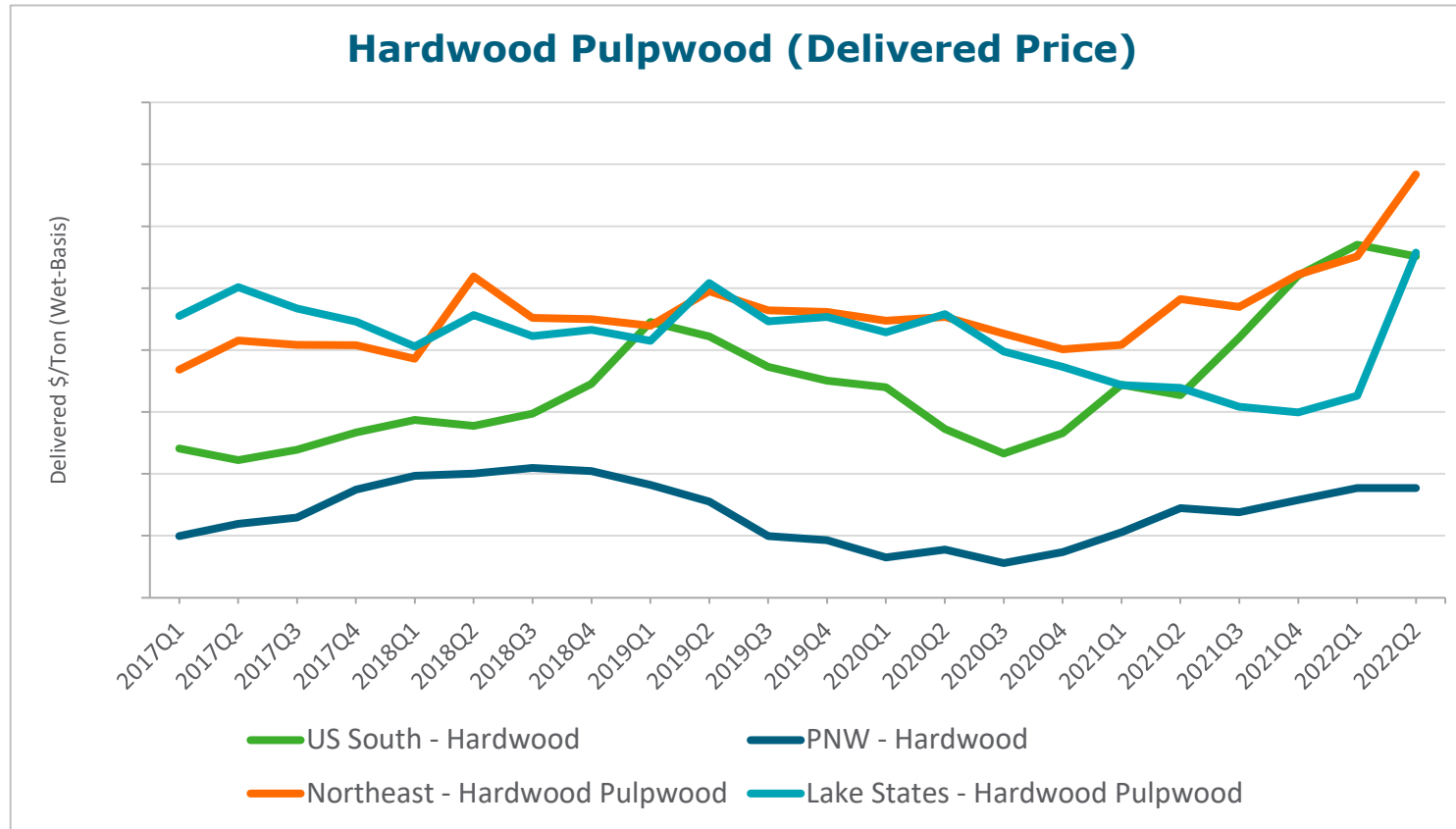
- Delivered log costs in the PNW have demonstrated much more volatility.

# Delivered Pulpwood Prices: Softwood



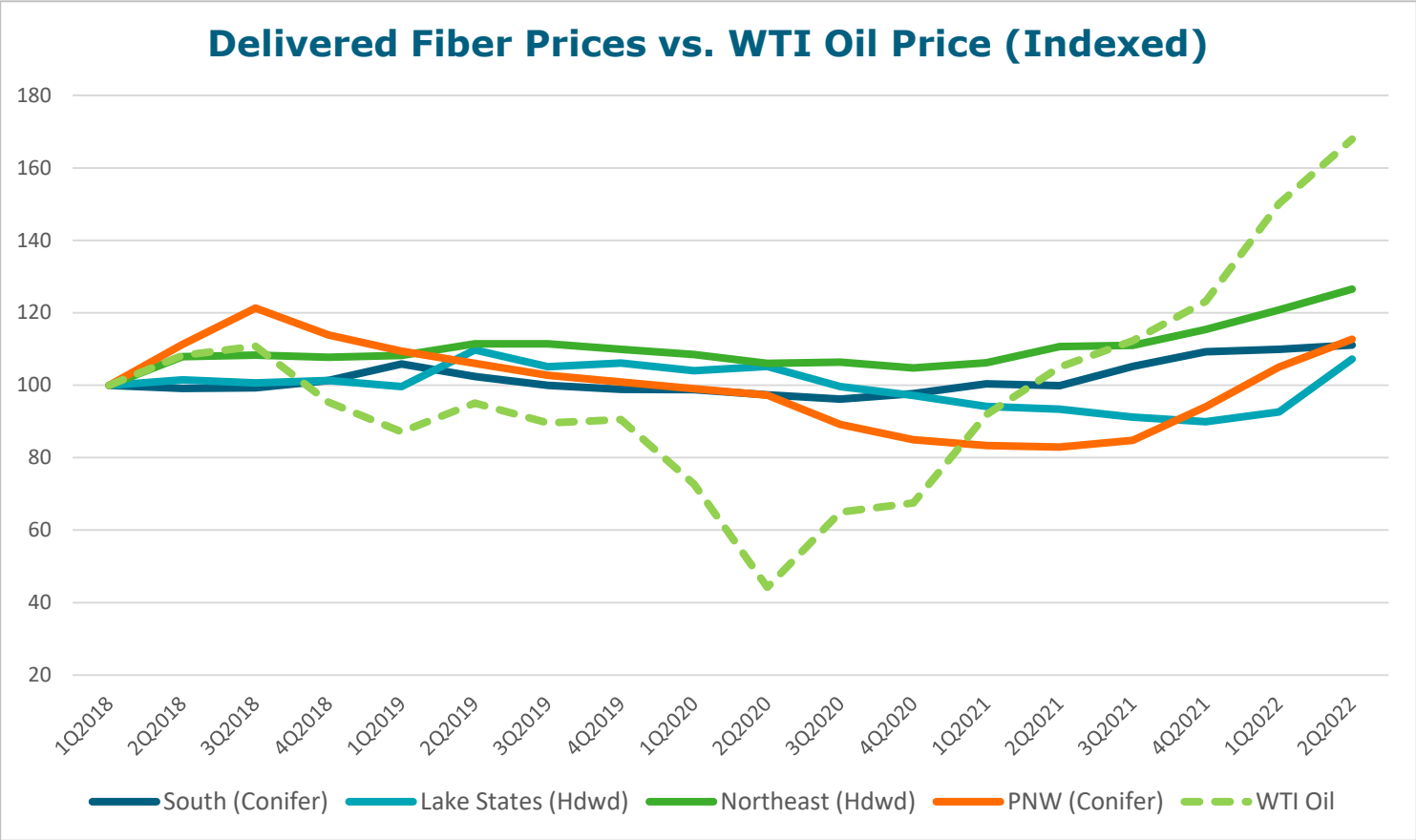
- The NE/LS regions normally experiences an increase in total delivered price in April/May as woodyards are emptied and a secondary freight charge is realized on deliveries.
- PNW chip demand is so strong that the sharp price spike has also bled into the pulpwood market; prices for conifer pulpwood are now up 45% YoY.
- Freight/harvesting/operations costs continue to apply upward pressure on delivered costs.

# Delivered Pulpwood Prices: Hardwood



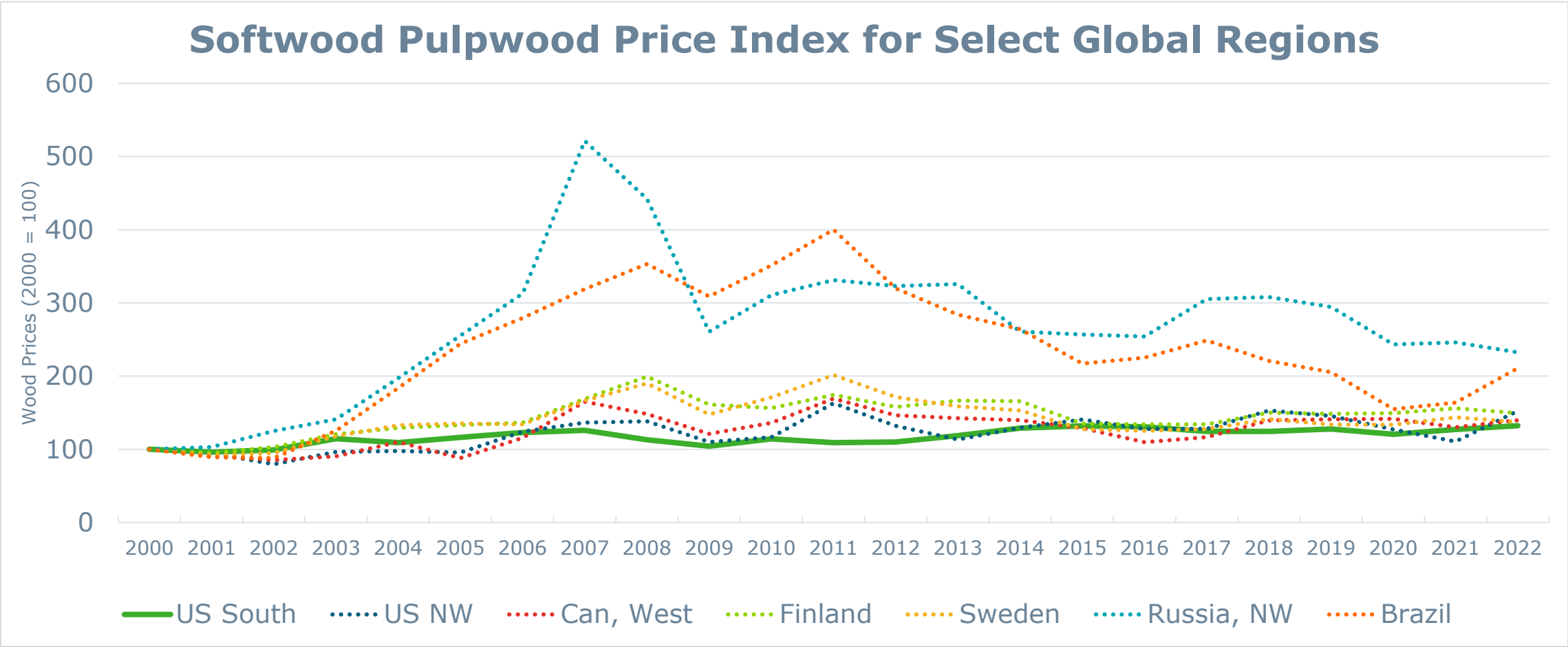
- When analyzing days of inventory and price in the NE/LS over the last several months, a trend is developing that is similar to what occurred in 2014: market onsite days of inventory have been in the low 30s or below since 3Q2021. Market offsite days of inventory have been equally thin.
- We're seeing a price increase in combination with low inventory levels, which is a situation that is only exacerbated by rising supply chain costs in all regions.

# Delivered Fiber Prices: US Forest Regions vs. WTI (Indexed)



- How have delivered wood costs moved with WTI oil price since 2018?

# US South Softwood Markets are STILL the Least Volatile in the World



A large, stylized graphic of a leaf or petal shape, composed of several overlapping circular segments in various shades of teal and blue, located on the left side of the slide.

# Global Log & Lumber Markets

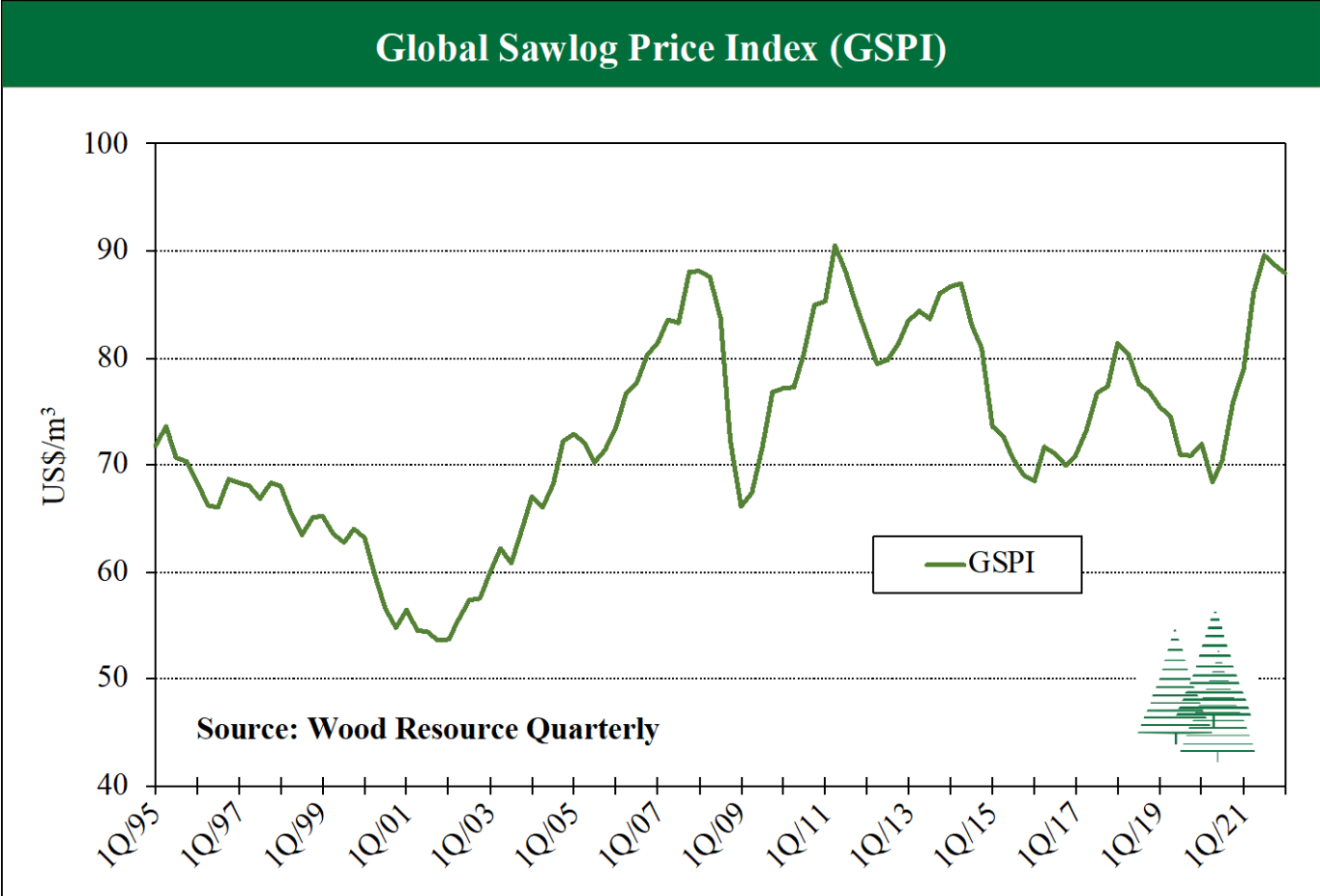


# Global Sawlog Markets

- Global trade of softwood logs slowed substantially in early 2022 due to reduced home construction and remodeling activities in Europe, North America, and Asia. As a result, worldwide trade fell over 20% YoY, with the most significant declines occurring in imports to **China (-42%), India (-32%), South Korea (-14%), and Austria (-14%)**.
- Exporting countries that reduced shipments the most during 1Q22 were Russia, New Zealand, Germany, and the Czech Republic. **Practically no softwood logs were exported from Russia in 1Q2022.** This marks a sharp deviation from former quarterly shipments, ranging between 1-2 million m3 during the past few years.
- Exports from New Zealand, the world's largest log exporter, fell to 4.6 million m3 in 1Q22, the lowest level in two years.



# Inflation Has Hit Global Sawlog Prices Too, Though Prices are Now Turning Downward from Their Peak



- While the price changes from 4Q21 to 1Q22 have been modest, current price levels are much higher than they were a year ago. Prices from 1Q21 to 1Q22 surged the most in British Columbia (+58%), Central Europe (+33%), and the Baltic States (+20%).



# Forest Resources, Carbon & the Developing Bioeconomy

# It's a Matter of "When," Not "if" Carbon Costs Will Hit Manufacturers' Bottom Lines: What Role Will the Forest Economy Play?

- President Biden wrote one of the first climate bills in the US Senate.
- He has promised an "enforcement mechanism" to limit carbon emissions.
- He has promised to cut US Greenhouse emissions in half by 2030.
- Janet Yellen favors market-based mechanisms.
- The administration has said that a system targeting sector-specific standards is preferred (Similar to California ETS).



# ESG Expectations & Metrics Are Accelerating

71%

## Following The Money

*Of global fund managers representing \$12.9 trillion in assets believe COVID-19 will lead to increase in actions designed to tackle climate change and biodiversity losses*

## Major Brands with Significant Zero Carbon Initiatives (and Year of Target)



2030



2040



2039



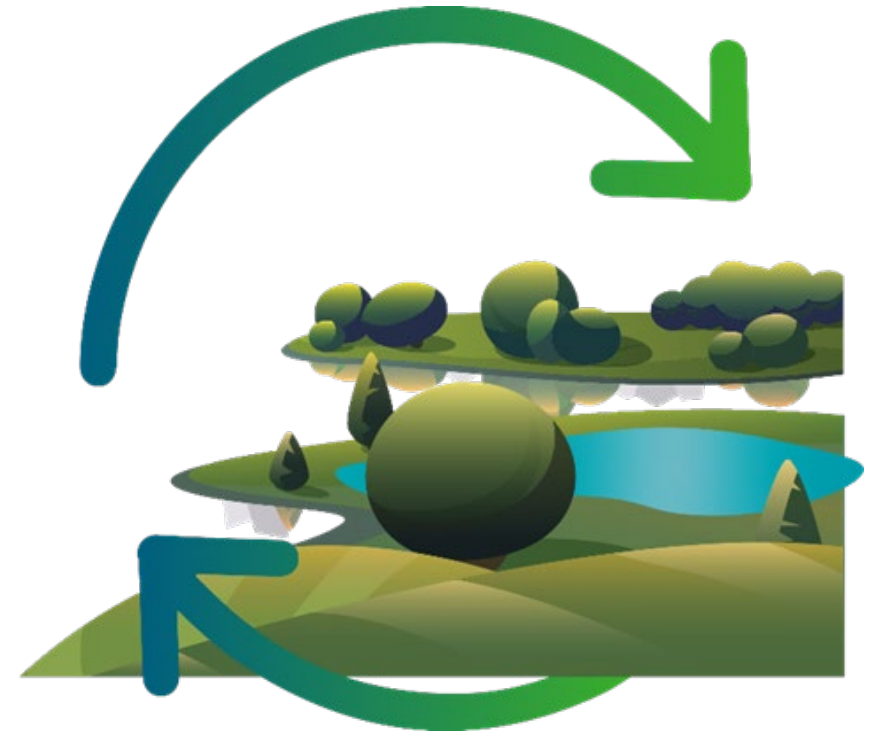
2050



2050

# Carbon is the Lightning Rod

- Moving forward, corporations will be expected to articulate their ESG strategies as part of a social license to operate. Those that do it well will participate in a virtuous feedback loop with their communities, customers and shareholders, and those that don't will destroy value – a breach of their primary fiduciary duty.
- **We believe carbon is the lightning rod, as it will likely be the key to any environmental scorecard moving forward.**





# Bio Projects: Expanding Markets for Southern Forest Resources

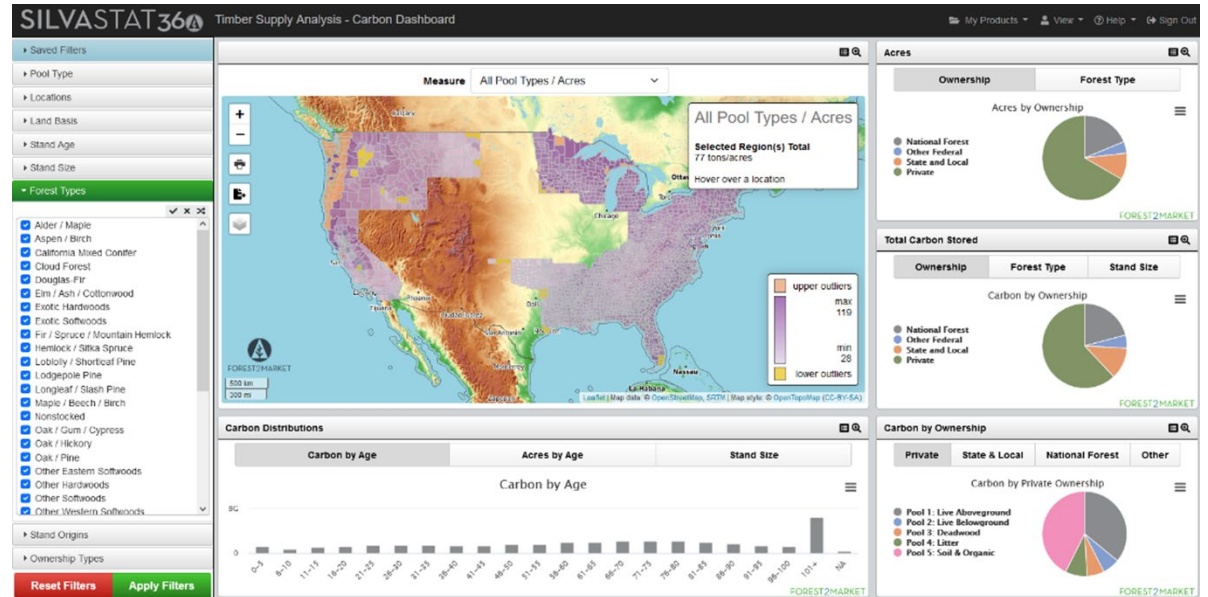
- USA BioEnergy recently announced the development of an \$1.7B advanced biorefinery that will convert 1M green tons of wood waste into 34M gallons annually of clean burning transportation fuel.
- Origin Materials recently announced that Geismar, Louisiana will be the location of its first world-scale manufacturing facility that will produce chloromethylfurfural (CMF) and hydrothermal carbon (HTC) using wood residues.
- ResourceWise, through our Consulting Practice, analyzed resource availability and cost for these projects.



# Visualizing Forest Carbon Data: Carbon Analysis 360

Our Carbon Analysis 360 tool was specifically designed with two important goals in mind:

1. To bring a new level of transparency to an increasingly important environmental metric that is redefining global policy, capital markets, and corporate reporting.
2. To help participants across the forest value chain better understand the important ways in which they can impact climate concerns, inform decision-making, and identify new opportunities in developing markets.







# What Does the Future Hold? Drivers of Forest Industry Capital Investment

# Drivers of Forest Industry Capital Investment

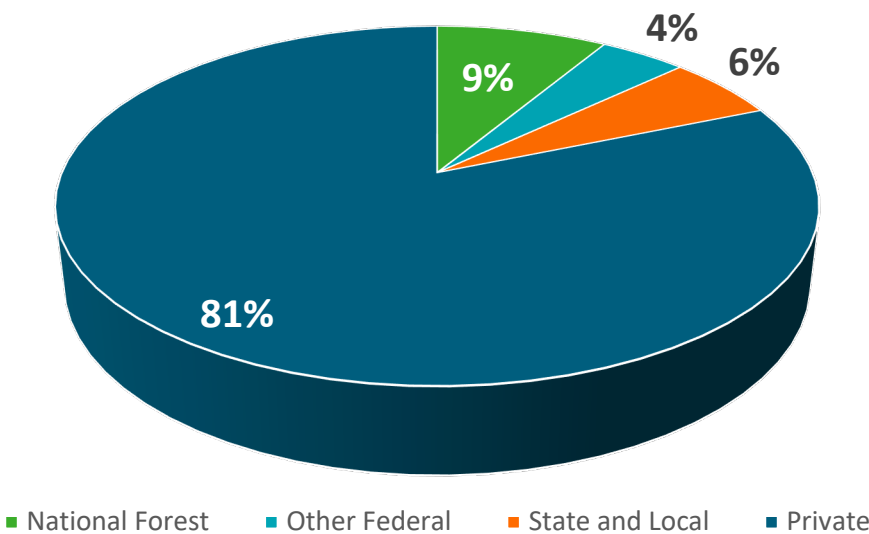
- Wood Fiber and Log Demand
  - Current
  - Forecasted
- Raw Material Availability
  - Ownership
  - Growth vs. Removals
  - Infrastructure (logging force)
- Raw Material Price
- Supply Chain Costs
- Data Driven Transparent Marketplace
  - ResourceWise and Forest2Market
  - SilvaStat360



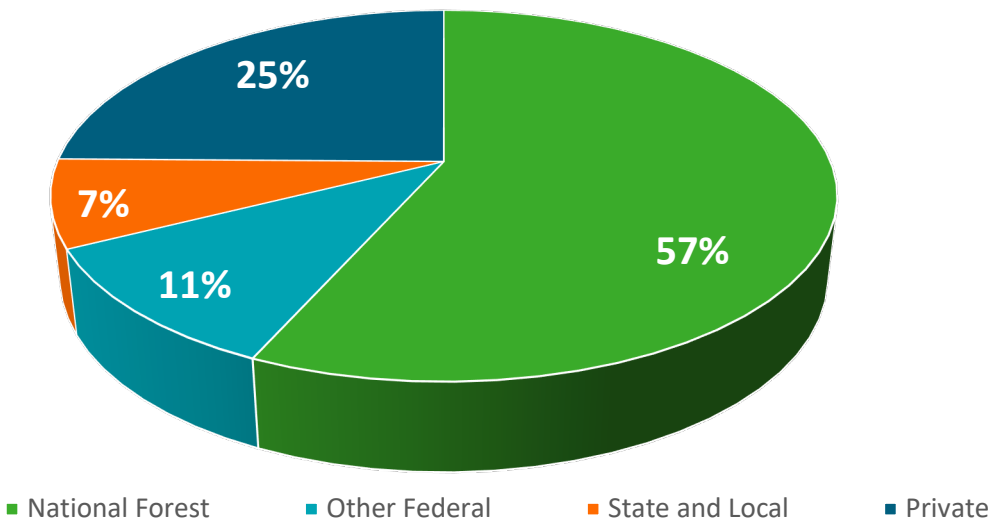
# Drivers of Forest Industry Capital Investment

**Timberland is an economic asset! Profitable markets for wood fiber drive active timberland management plans.**

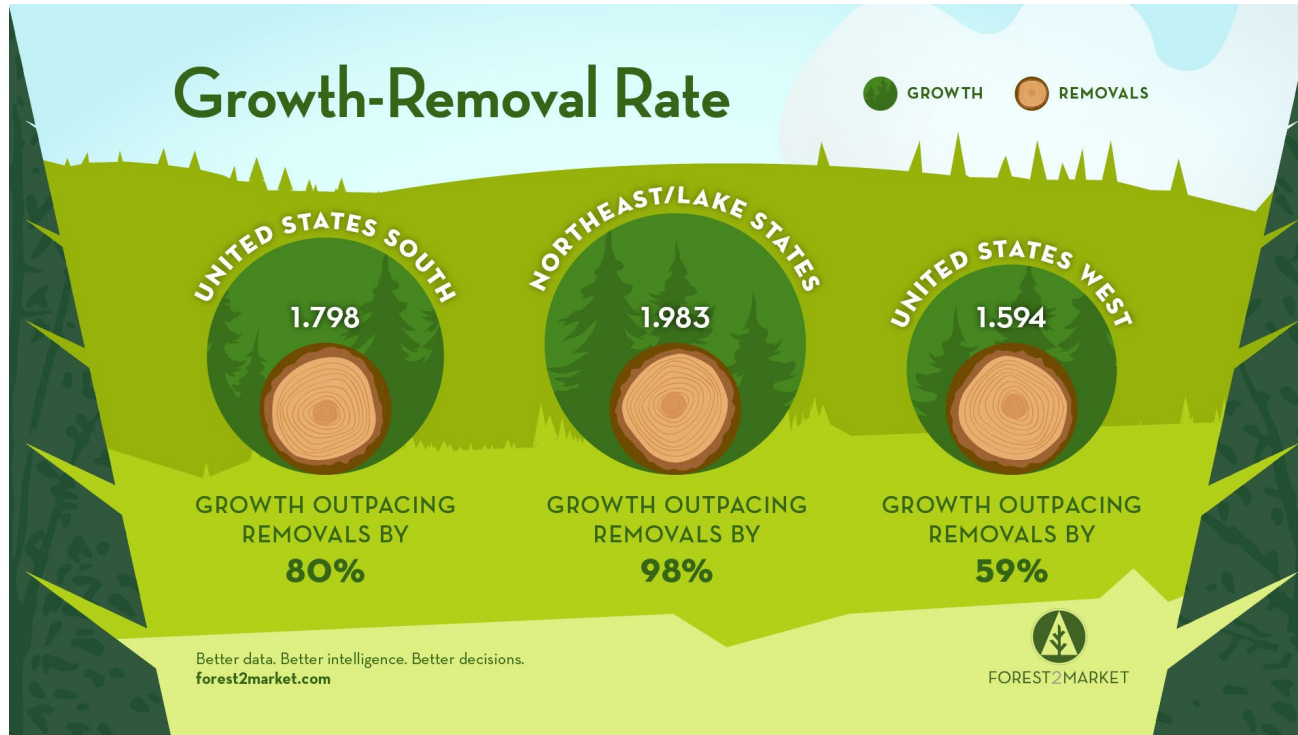
US South Timberland Ownership



PNW Timberland Ownership



# Growth & Removals: Measuring Sustainability

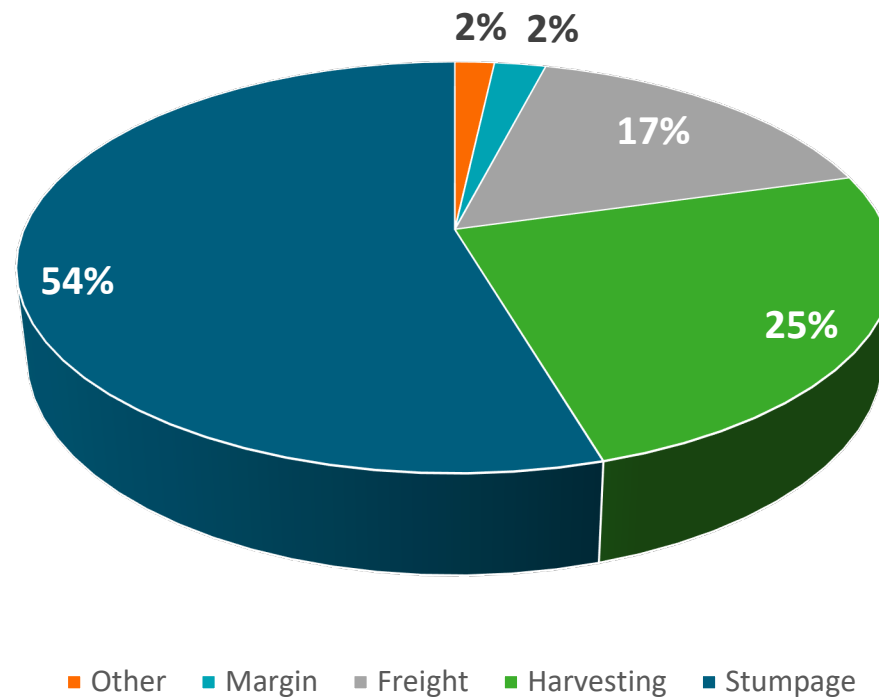


**GRR in NC: 1.78**

- A value of 1.0 suggests growth and removals are in balance; a value greater than 1.0 means forest inventory growth is outpacing removals (greater sustainability), and a value lower than 1.0 means removals are outpacing growth (lower sustainability).

# Advantage NC: Cost Competitiveness

**NC/VA Delivered Price Components**



- Maximizing resource utilization drives new infrastructure and supply chain efficiencies.
- Very efficient supply chain and shorter haul distances than other forested regions.

# Forest Industry Talking Points

---

- While still robust, North American lumber markets are slowing – coming off the unprecedented volatility due to COVID-19
  - Robust lumber markets in 2020 / 21 have led to capital flows into the US South = +15%
- Housing starts – the driver of the North American lumber market – will fall moderately in the coming years; we don't expect a 2007/2008 type of downturn.
- Expect continued migration of capacity to the US South
- Future is bright for US Forest products and North Carolina:
  - Low-cost wood and a very efficient supply chain
  - Stability in markets that were previously declining, like pulp and paper
  - New opportunities to use wood-based carbons for chemicals and fuels





FOREST2MARKET

A  ResourceWise Company

Better data. Better intelligence. Better decisions.  
[forest2market.com](http://forest2market.com)

# Contact Us

15720 Brixham Hill Avenue  
Suite 550  
Charlotte, NC 28277

Phone:  
+1.704.540.1440  
Fax:  
+1.704.540.6301

**[forest2market.com](http://forest2market.com)**