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Comparing the Competitiveness of North America's Forest Industry

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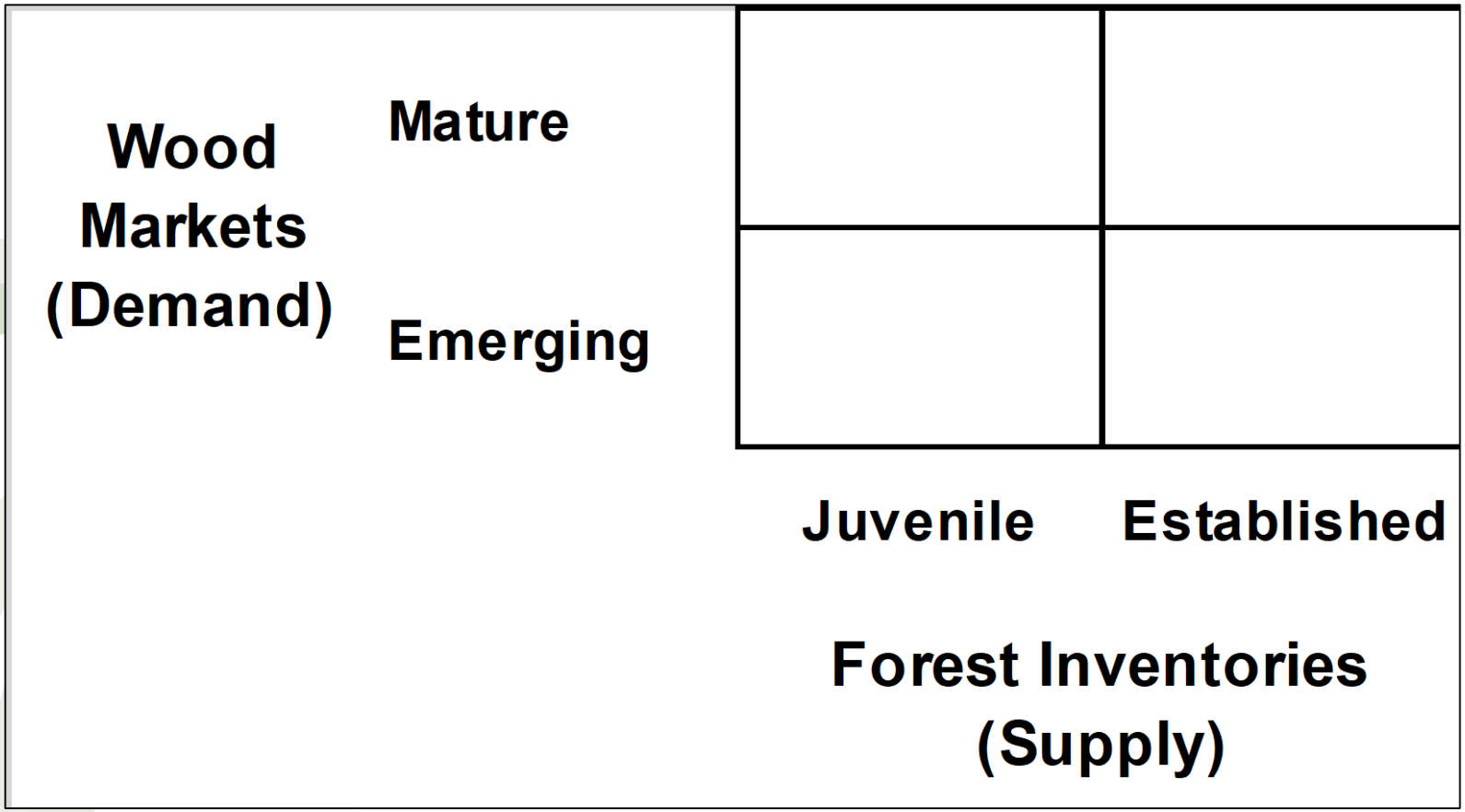
Forest industry investments exploit imbalances between wood markets and forest supplies by region and over time.



Source: Forisk Strategy Note, Q3 2018 Disruptions; available for download under “white papers” at www.forisk.com/resources

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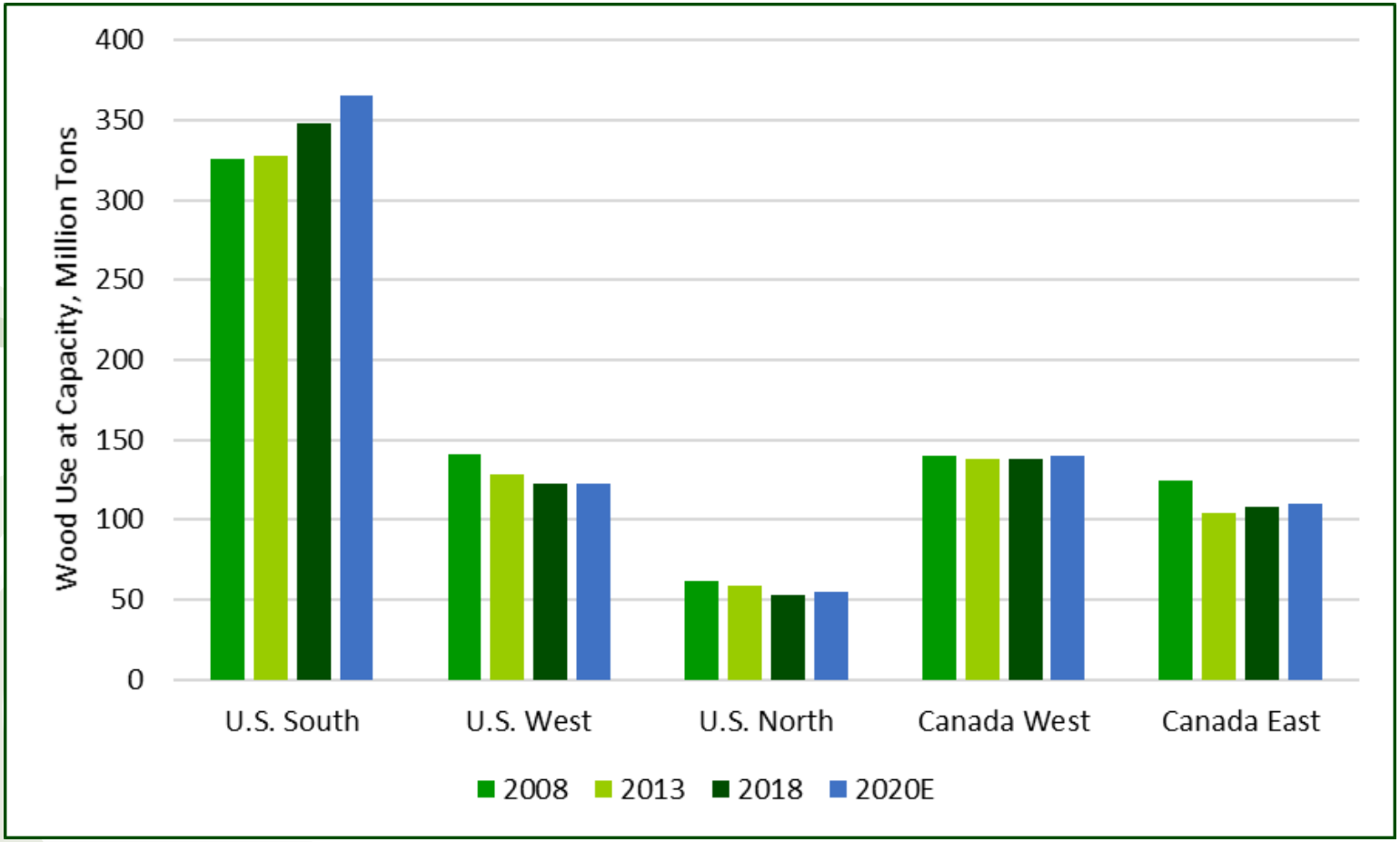
History and Future of North American Forest Industry Capacity by Region



Source: Forisk 2018 Multi-Client Study: North American Forest Industry Capacity

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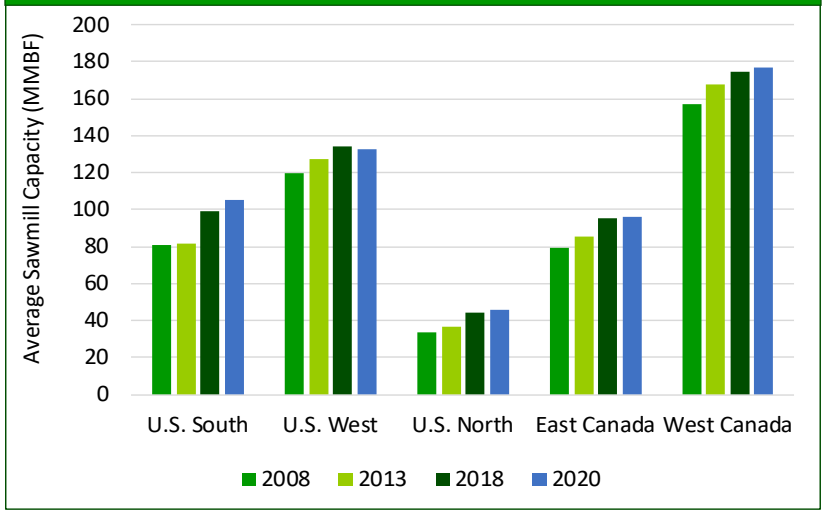
The softwood sawmill sector in the U.S. South has consolidated; the top ten producers account for 66% of capacity.

Top Ten Softwood Lumber Producers in the U.S. South; 2008, 2018, 2020*

Company	2008 Capacity (MMBF)	Company	Present Capacity (MMBF)	Company	2020 Capacity* (MMBF)
Weyerhaeuser	2,700	West Fraser	3,160	West Fraser	3,490
Georgia-Pacific	2,090	Weyerhaeuser	2,520	Georgia-Pacific	2,930
West Fraser	2,070	Georgia-Pacific	2,435	Weyerhaeuser	2,680
Temple Inland	1,055	Canfor	1,700	Canfor	2,080
Gilman Companies	612	Interfor	1,400	Interfor	1,550
Canfor	565	Rex Lumber	560	Rex Lumber	800
Jordan Lumber	385	Hood Industries	555	Hood Industries	555
Rayonier	375	Conifex	550	Conifex	550
Tolleson Lumber	365	PotlatchDeltic	525	PotlatchDeltic	525
Potlatch	364	Jordan Lumber	500	Jordan Lumber	500
Top 10 Total	10,581	Top 10 Total	13,905	Top 10 Total	15,660
South Total	19,471	South Total	20,910	South Total	23,520
Top 10, % of Total	54%	Top 10, % of Total	66%	Top 10, % of Total	67%

Data Source: Forisk Consulting
*Based on announced capacity increases

Average North American Sawmill Capacity by Region, 2008-2020



Data Source: Forisk Consulting
Note: Sawmills with less than 5 MMBF capacity are not considered in the average.

Source: Forisk 2018 Multi-Client Study: North American Forest Industry Capacity

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Regional Softwood Sawmill Metrics

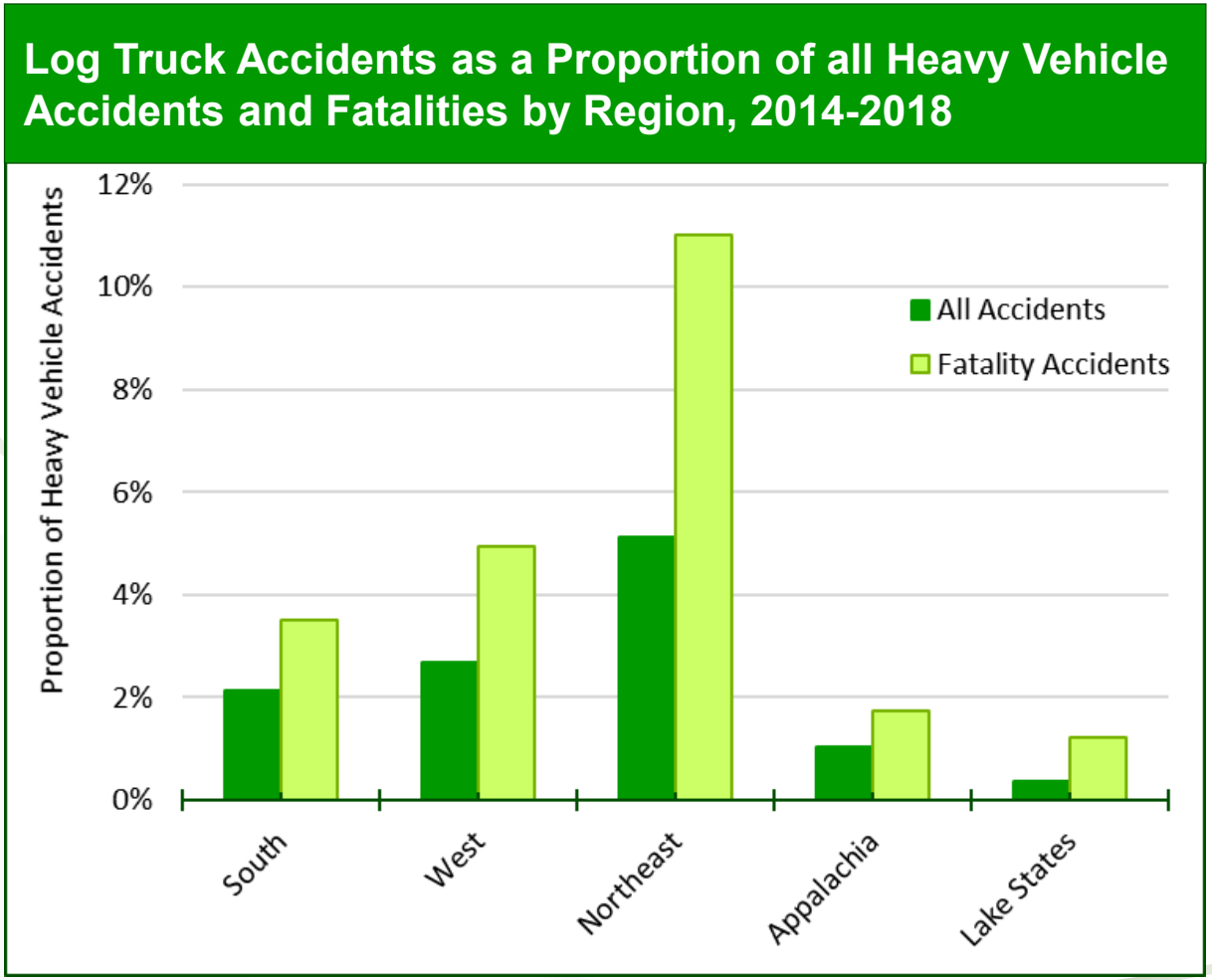
Change from 1998 to 2018, South vs PNW

	Southern Yellow Pine	Western Hemlock
Lumber Yield	33.5%	3.1%
Manufacturing Costs	35.2%	34.7%
Total Operating Costs*	-18.1%	27.9%

Source: Forisk

*Manufacturing costs plus roundwood costs net of chips

Accident rates for log trucks are roughly in-line with other heavy vehicles, but fatality rates are twice as high.



Source: FMCSA

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Western Silviculture Practices & Costs

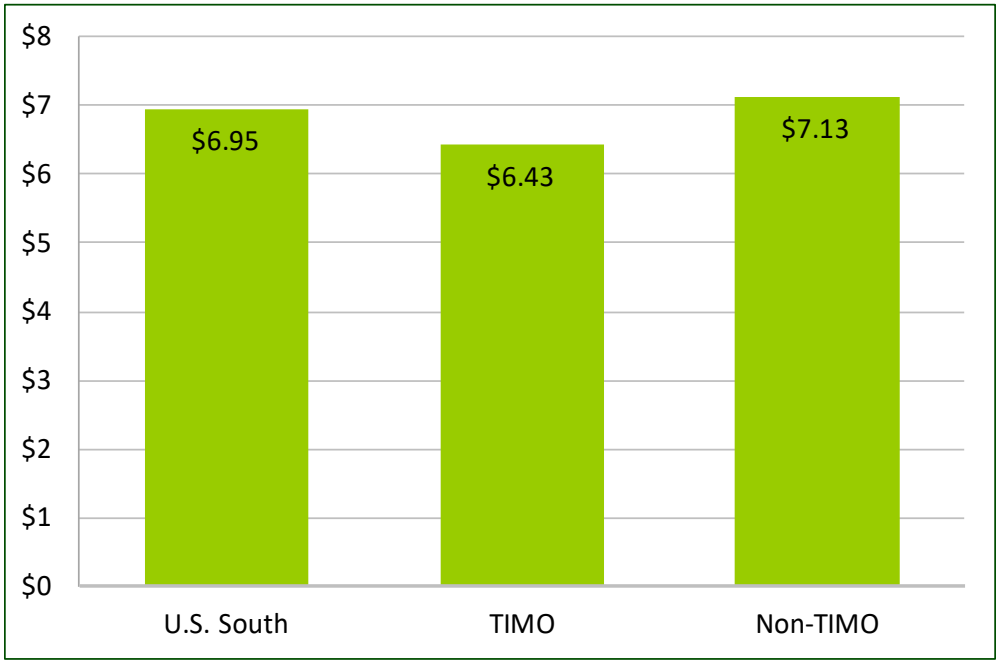
- While not as intensive, Western landowners also employ diverse practices.
- Fertilization and commercial thinning are becoming more prevalent.
- Mechanical site prep remains uncommon.
- Longer rotations and higher timber prices yield substantial premiums per acre at final harvest in the West.

	U.S. South	U.S. West
Chemical Site Preparation	94%	85%
Mechanical Site Preparation	61%	35%
Herbaceous Comp. Control	90%	80%
Woody Competition Control	82%	85%
Fertilization	63%	40%
Pre-commercial Thinning	29%	95%
Commercial Thinning	87%	65%

	U.S. South	U.S. West
Site Preparation	$116	$82
Seedling Cost	$52	$160
Avg. Trees per Acre	541	364
Planting Cost	$60	$122
Woody Comp. Control	$45	$71
Avg. Clearcut Age	29	57
Avg. Clearcut Revenue	$1,560	$7,100

Total Silviculture Expenditures: U.S. South

- Across all acres, respondents spent nearly $7 per acre on silviculture in 2017.
- TIMO's averaged $0.70 per acre less than non-TIMO's, but also had 10% fewer acres in the Lower CP.
- Site preparation and fertilization are the greatest costs.



Forisk will be initiating it's 2019 Survey for the Pacific Northwest in February.