Forestry & Forest Products: Industry Profile

MAY 2023

State of Maine - DECD

Department of Economic
& Community Development

PROJECT OVERVIEW

Report Purpose

This document provides an in-depth analysis of the Forestry & Forest Products Sector in Maine, including its domestic trade activity.

Industry classification ranges from 2-digit industries (most broad) to 6-digit industries (most specific) under the North American Industry Classification System (NAICS). This report focuses on the 3- to 6-digit industry level to give more detailed analysis of Maine's domestic trade activity in the Forestry & Forest Products Sector. For details about all industries that are included in this analysis, please see the Appendix.

Project Funding

This project is commissioned by the Office of Business Development through the Domestic Trade Pilot Program and is funded in part by the Maine Jobs and Recovery Plan.

Data

The most recent year of data in this report is 2022. Five-year growth rates refer to changes from 2017-2022, and five-year projections refer to 2022-2027, unless otherwise specified. For more information about the data used in this report, see the Appendix – Data Sources.

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KEY FINDINGS

Forestry & Forest Products

Sector Activity

The sector has a strong concentration in Maine, at 2.5 times the concentration than would be expected for the state's size. Forestry & Forest Products is a legacy sector that has played a strong role in the economy throughout the state's history.

Maine ranks high among states for meeting demand for the Forestry & Forest Products sector in-region, and it has room to grow. Some sectors with high demand, like Paperboard Mills, Other Basic Inorganic Chemical Manufacturing, Postharvest Crop Activities, and Corrugated and Solid Fiber Box Manufacturing present opportunities for growth in Maine, as these sectors have 10% or less in-region purchases and rely heavily on imported supplies.

The sector has strong trade activity, with 79% of all sector sales being exported outside of Maine. Some opportunities for domestic trade growth can be found in South Atlantic and Midwest states.

The industry is evolving. From 2016-2021 the sector lost 4% of its jobs, driven by declines in sectors like Logging, Paper Manufacturing, and select Wood Product Manufacturing subsectors. Despite this decline, new investments are being made, some of which are substantial (e.g., $500 million+ per project). Also, there is opportunity for mass timber/cross-laminated timber as well as bioprocessing and manufacturing as a new type of wood-based manufacturing in Maine.

Subsectors included in this report

- **113: Forestry and Logging** – This US industry includes businesses that engage in the growing and harvesting of timber and specialize in different stages of the production cycle. Other subsectors within this NAICS code include Timber Tract Operations (1131), Forest Nurseries and Gathering of Forest Products (1132), and Logging (1133).
- **1153: Support Activities for Forestry** – This US industry comprises businesses engaged in performing support related to timber production, wood technology, forestry economics and marketing, and forest protection.
- **321: Wood Product Manufacturing** – Establishments in this industry manufacture wood products such as lumber, plywood, wood containers, flooring, manufactured homes, and prefab wood buildings. Other subsectors within this NAICS code include Sawmills and Wood Preservation (3211), Veneer, Plywood, and Engineered Wood Product Manufacturing (3212), and Other Wood Product Manufacturing (3219), like millwork, pallet manufacturing, and window and door manufacturing, among others.
- **322: Paper Manufacturing** – Establishments in this industry carry out the activities of making pulp, paper, and/or converted paper products. Subsectors within this industry are Pulp, Paper, and Paperboard Mills (3221) and Converted Paper Product Manufacturing (3222).
- **337110: Wood Kitchen Cabinet and Countertop Manufacturing**
- **337122: Nonupholstered Wood Household Furniture Manufacturing**
- **337211: Wood Office Furniture Manufacturing**
- **337212: Custom Architectural Woodwork and Millwork Manufacturing**
- **423310: Lumber, Plywood, Millwork, and Wood Panel Merchants**
- **4241: Paper and Paper Product Wholesalers** – This industry group comprises establishments primarily engaged in the merchant wholesale distribution of bulk printing and writing paper; stationery and office supplies; and industrial and personal service paper.

NATIONAL TRENDS

KEY TRENDS

- Growth in the new housing construction market and declining nonresidential construction activities have begun to contribute to the industry's broader slowdown.
- Meanwhile, industry consolidation is expected to continue as the number or enterprises and revenue declines.
- International trade significantly influences industry revenue. Industry demand gains made in the five-year period have been offset by strong import competition. At the same time, the trade-weighted index is estimated to decline, indicating a depreciating dollar, leading the value of imports to decline at a faster rate as demand for industry product wanes.
- Major industry operators have had to contend with the rise of digital media and electronic substitutes, which will likely continue to threaten writing and printing papers.
- During the last five years the price of sawmill lumber has doubled, although industry profit margin is forecast to slightly fall from the 2022 level.

RECENT DEVELOPMENTS

- Declining crude oil prices pose opportunity for bioeconomy investments, but signal risk for other aspects of the industry.
- Interest rate hikes cool down construction activity, while lumber prices decline in step with interest rate hikes.
- Significant growth in e-commerce sales affect the packaging landscape, increasing the demand for packaging materials and rapidly driving up the cost of paper packaging.
- Inflation Reduction Act has bolstered manufacturing sector, while the Infrastructure Investment and Jobs Act has supported supply chains and helped to facilitate trade.

Source: IBISWorld

INDUSTRY DRIVERS

- Price of sawmill lumber
- Housing Starts
- Trade-weighted value of the dollar index
- Value of residential & private nonresidential construction
- Print advertising expenditure
- Per capita disposable income
- Price of Paper
- Percentage of business conducted online

SUPPLY CHAIN

SUPPLYING INDUSTRIES

Logging, Sawmills, and Wood Production

Transportation Equipment Wholesaling

Farm Supplies & Equip. Wholesaling

Chemical Mfg.

Electric Power Transmission

Forestry & Forest Products

BUYING INDUSTRIES

Sawmills & Wood Production

Home Mfg. & Construction

Lumber Wholesaling

Home Improvement Stores

Public Administration

Logging

Machinery Manufacturing

DATA NOTE:
This page provides a brief qualitative overview of macro trends facing this sector and structural causes of growth for the sector. A supply chain summary shows key industries upstream and downstream of the sector.

NATIONAL TRENDS

Jobs (2022)
1.6 Million

Job Growth
2017-2022: 4.8%
2022-2027 Projected: -1.9%

Establishments (2022)
137,730

Avg. earnings (2022)
$59,468

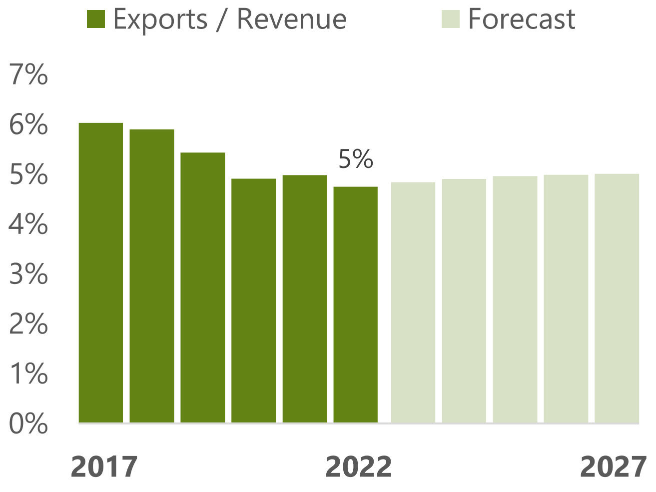
Domestic Demand (2022)
$901.1 Billion

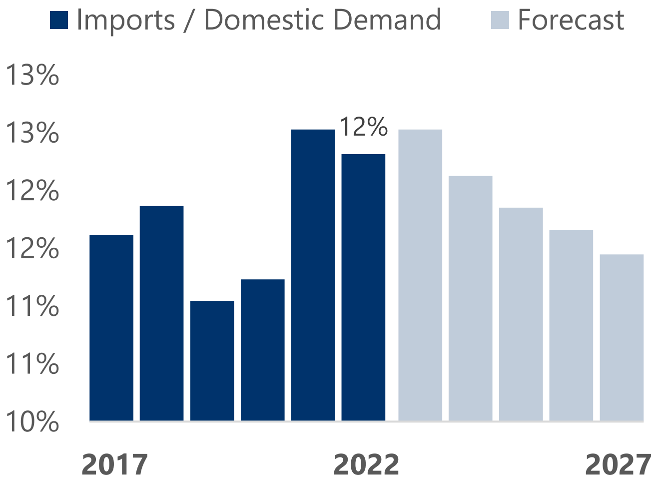
Top Countries (2022)
Imports: Canada, China, Vietnam, Mexico, Brazil
Exports: Canada, Mexico, China, Japan, United Kingdom

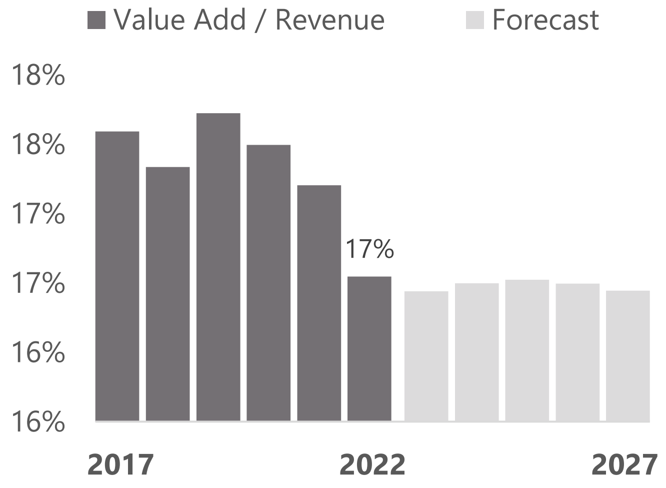
The exports share of revenue was 5% in 2022. This indicator shows the relative importance of exports to the sector's overall revenue strength.

The imports share of domestic demand was 12% in 2022. This demonstrates how much of demand for the sector's products in the US are met by foreign imports.

The value-add-to-revenue ratio was 17% in 2022. This indicator shows how much value the production process adds to products relative to the overall size of the sector.







Source: IBISWorld; Trade Partners from US Census Bureau

SECTOR SUMMARY: MAINE PERFORMANCE

Forestry and Forest Products Summary

Jobs: 14,290
- Data for 2021
- 2.0% of the State's total employment

Job Growth: -592
- Data compares 2016-2021
- Losses in sectors like paper mills, logging,
- newsprint mills and others outweights gains in setors like pulp mills, lumber wholesalers, and engineered wood mfg.

Job Growth Rate: -4.0%
- Data compares 2016-2021
- Growth underperforms the United States, which grew by 1% during this period

Concentration: 2.5
- Data for 2021
- Jobs are 2.5 times more concentrated in the sector than would be expected for an economy of Maine's size

Establishments: 845
- Data for 2021
- 16.9 jobs per establishment, lower than the nation (20.6)

Average Earnings: $77,121
- Data for 2021
- Higher than the State's average earnings across all industries ($63,830)
- Higher than the national average for the sector ($75,932)

Competitive Effect: -44
- Data compares 2016-2021
- Local competitive factors contribute fewer jobs than would be expected if Maine were trending with national and industry growth

Gross Regional Product: $2.0 Billion
- Data for 2021
- 2.6% of Maine's total GRP
  Greater share than the US (0.8% of total GRP)

Productivity: $141,723
- Data for 2021
- GRP Per Worker
- Slightly higher than the figure for the United States, $136,279

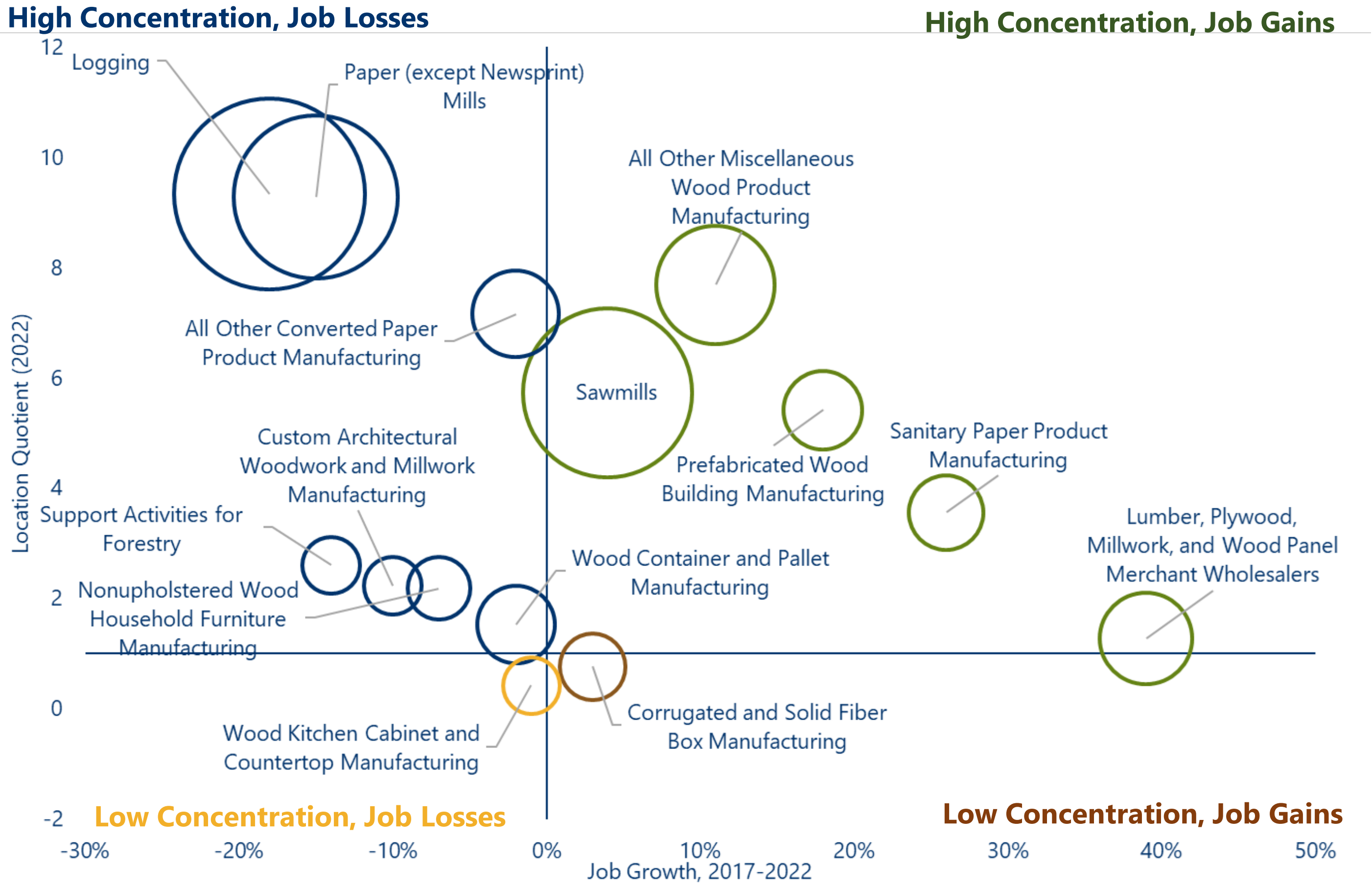
Total Sales: $5.1 Billion
- Data for 2021
- 79% of sales exported out of state
- Accounts for 3.3% of Maine's total sales, outperforming the nation (1.0% of total sales)

Demand: $2.0 Billion
- Data for 2021
- 48% of Maine's Forestry & Forest Products demand is met by out-of-state sources, which is high compared to the US (0.0%)

Leakage: $959 Million
- Data for 2021
- An estimated $959 million could be recaptured by Maine firms.

Source: Lightcast

KEY INDUSTRIES



Bubble size = 2022 jobs

Source: Lightcast, Camoin Associates

Note: Figure includes 6-digit NAICS industries with at least 200 jobs in 2022. For clarity, the following were excluded (Pulp Mills, LQ=26, +18%; Newsprint Mills, LQ=21, -8%)

Industries included:

- Timber Tract Operations
- Forest Nurseries & Gathering of Forest Products
- Logging
- Sawmills and Wood Preservation
- Veneer, Plywood, and Engineered Wood Product Manufacturing
- Other Wood Product Manufacturing
- Pulp, Paper, and Paperboard Mills
- Converted Paper Product Manufacturing
- Wood Furniture, Cabinet, and Countertop Manufacturing
- Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers
- Paper and Paper Product Merchant Wholesalers

Findings:

- Sawmills, Sanitary Paper Products, Prefabricated Wood Buildings, and Other Wood Product Manufacturing are both strong and growing
- Only one industry, Corrugated & Solid Fiber Box Mfg, is emerging – it has a relatively low concentration, but has seen significant job growth over the 5-year period
- Only one industry, Wood Kitchen Cabinet & Countertop Mfg, has both low concentration and job decline
- Two of the three largest industries (Logging & Paper Mills) are highly concentrated but declining, while Sawmills is both strong and growing over the last five years.
- The most highly concentrated sectors are Pulp Mills (LQ=26) and Newsprint Mills (LQ=21)

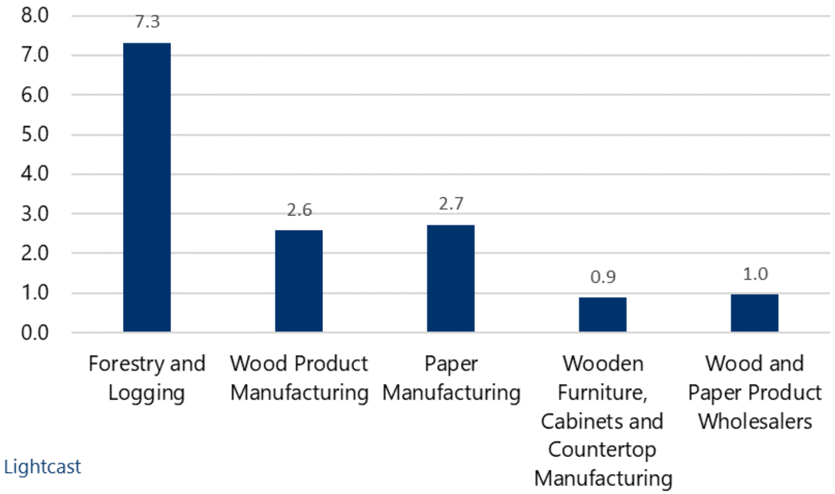
DATA NOTE:
There are three performance measures in the chart above that combine to relate the competitiveness of this activity, (1) bubble size is size of industry by jobs, (2) vertical axis measures industry concentration in Maine, (3) horizontal axis measures recent jobs growth.

SUBSECTOR PERFORMANCE

In 2022, Maine had 13,986 jobs in the Forestry and Forest Products Sector

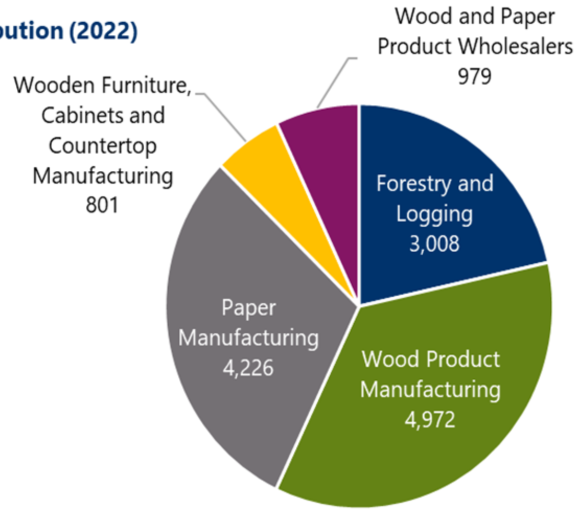
- **Wood Product Manufacturing** makes up the largest key subsector, with almost 5,000 jobs in 2022. It has a Location Quotient of 2.6, meaning it is 2.6 times more specialized than would be expected for an economy of Maine's size. While some subsectors like Engineered Wood Member Manufacturing and Sawmills have grown in the last five years, many subsectors have declined and have negative competitive effect. Wood and Window and Door Manufacturing has declined the fastest, losing 152 jobs over the last five years.
- **Paper Manufacturing** makes up the largest portion of Forestry & Forest Products GRP, at $977.1 million in 2021. A majority of this comes from Paper Mills ($505.5 million), which has an LQ of 8.7 and average annual earnings well above the state average, at $109,652. Paper Manufacturing also has the highest productivity of major subsectors, with $231,802 GRP per worker
- **Wood and Paper Product Wholesalers** is the only major subsector that has seen growth in the last five years, gaining 269 jobs (38%). Although its LQ sits just below 1.0, sub-industries like Lumber, Plywood, Millwork and Wood Panel Wholesalers and Printing and Writing Paper Merchant Wholesalers are more specialized.

Location Quotients - Forestry & Forest Products Subsectors (2022)



Source: Lightcast

Job Distribution (2022)



Source: Lightcast

DATA NOTE:

Location quotient (LQ) is a measure of industry concentration within a region. A LQ of 1.0 means that an industry is as concentrated within the region as it is on a national level. A LQ greater than 1.0 indicates that an industry is more concentrated in a region than at the national level.

The **competitive effect** illustrates how much change in an industry is not explained by national economic or industry trends. A positive competitive effect means that the region has unique characteristics giving it a competitive advantage in that respective industry. However, a negative competitive effect indicates that an industry is either not growing as quickly *or* shrinking faster than national industry trends for the US.

SUBSECTOR PERFORMANCE

Key Industry Groups: Summary

Description	2017 Jobs	2022 Jobs	2017 - 2022 Change	2017 - 2022 % Change	Avg. Earnings Per Job (2022)	2022 Location Quotient	Competitive Effect (2017-2022)	2022 Payrolled Business Locations
Forestry and Logging	3614	3,008	(606)	(16.8%)	$76,613	7.3	(422)	446
Wood Product Manufacturing	4962	4,972	10	(0.2%)	$64,661	2.6	(217)	173
Paper Manufacturing	4441	4,226	(214)	(4.8%)	$102,072	2.7	216	19
Wooden Furniture, Cabinets and Countertop Manufacturing	855	801	(55)	(6.4%)	$61,363	0.9	(79)	83
Wood and Paper Product Wholesalers	750	979	228	(30.4%)	$84,164	1.0	211	120
Total for Maine	**14622**	**13,986**	**(636)**	**(4.3%)**	**$79,712**	**2.4**	**(291)**	**840**
Total for United States	**1327124**	**1,349,136**	**22,012**	**(1.7%)**	**$78,059**		**--**	**65,079**

Source: Lightcast

Key Industry Groups: Summary

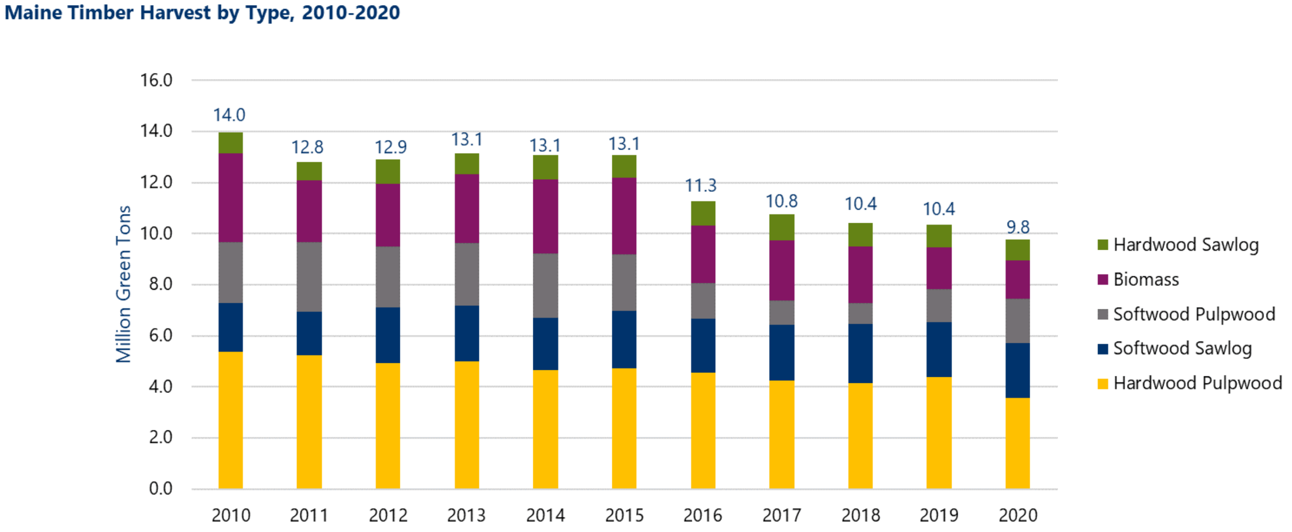
Description	2022 Total Demand	2022 Demand met by Imports	2022 Total Sales	2022 GRP	2022 GRP per worker
Forestry and Logging	$ 292,362,630	$ 25,772,944	$ 748,492,134	$ 314,256,420	$ 104,457
Wood Product Manufacturing	$ 901,254,251	$ 358,291,372	$ 1,674,577,760	$ 680,673,661	$ 136,904
Paper Manufacturing	$ 652,261,119	$ 478,559,474	$ 2,775,774,158	$ 995,328,228	$ 235,517
Wooden Furniture, Cabinets and Countertop Manufacturing	$ 137,529,738	$ 106,863,361	$ 148,530,122	$ 63,900,025	$ 79,824
Wood and Paper Product Wholesalers	$ 290,434,674	$ 106,249,987	$ 314,743,941	$ 181,019,059	$ 184,987
Total for Maine	**$2.3 Billion**	**$1.1 Billion**	**$5.7 Billion**	**$2.2 Billion**	**$159,815**
Total For United States	**$456.4 Billion**	**NA**	**$497.4 Billion**	**$208.3 Billion**	**$154,379**

Source: Lightcast

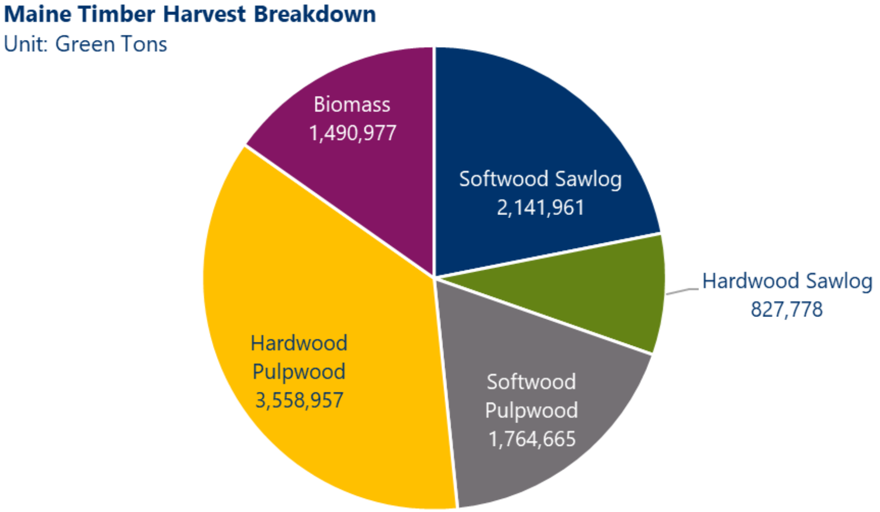
The sector is 2.4 times more concentrated in Maine than in the nation.

- **Forestry and Logging** has the highest location quotient, with its employment being 7.3 times as concentrated in Maine than in the nation. This industry group accounted for about 3,000 jobs in 2022 but declined by 16.8% from 2017-2022. Logging is the largest sub-industry, accounting for 88.1% of all Forestry and Logging jobs in 2022.
- **Maine's Forestry & Forest Products sector is more productive than the nation's overall**, with GRP per worker of $159,815. The sector contributed $2.2 billion to the state's GRP in 2022. Maine's workers in this sector are also higher-paid than the national average, with average earnings of $79,712, making it a high-wage sector (Maine's average for all sectors was $66,730 in 2022).
- **Wooden Furniture, Cabinets, and Countertop Manufacturing** is the smallest key industry group in the Forestry & Forest Products sector, with 801 jobs in 2022. This industry group also had the lowest average earnings ($61,363) and lowest GRP per worker ($79,824) within the Forestry & Forest Products Sector in 2022.

MAINE TIMBER HARVEST



Source: Maine Wood Processor Reports; Maine Forest Service; Department of Agriculture, Conservation and Forestry



Source: Maine Wood Processor Reports; Maine Forest Service; Department of Agriculture, Conservation, and Forestry

In 2020, 10.8 million green tons of timber were harvested in Maine. This includes harvests of Hardwood Pulpwood, Softwood Sawlog, Softwood pulpwood, Biomass, and Hardwood Sawlog.

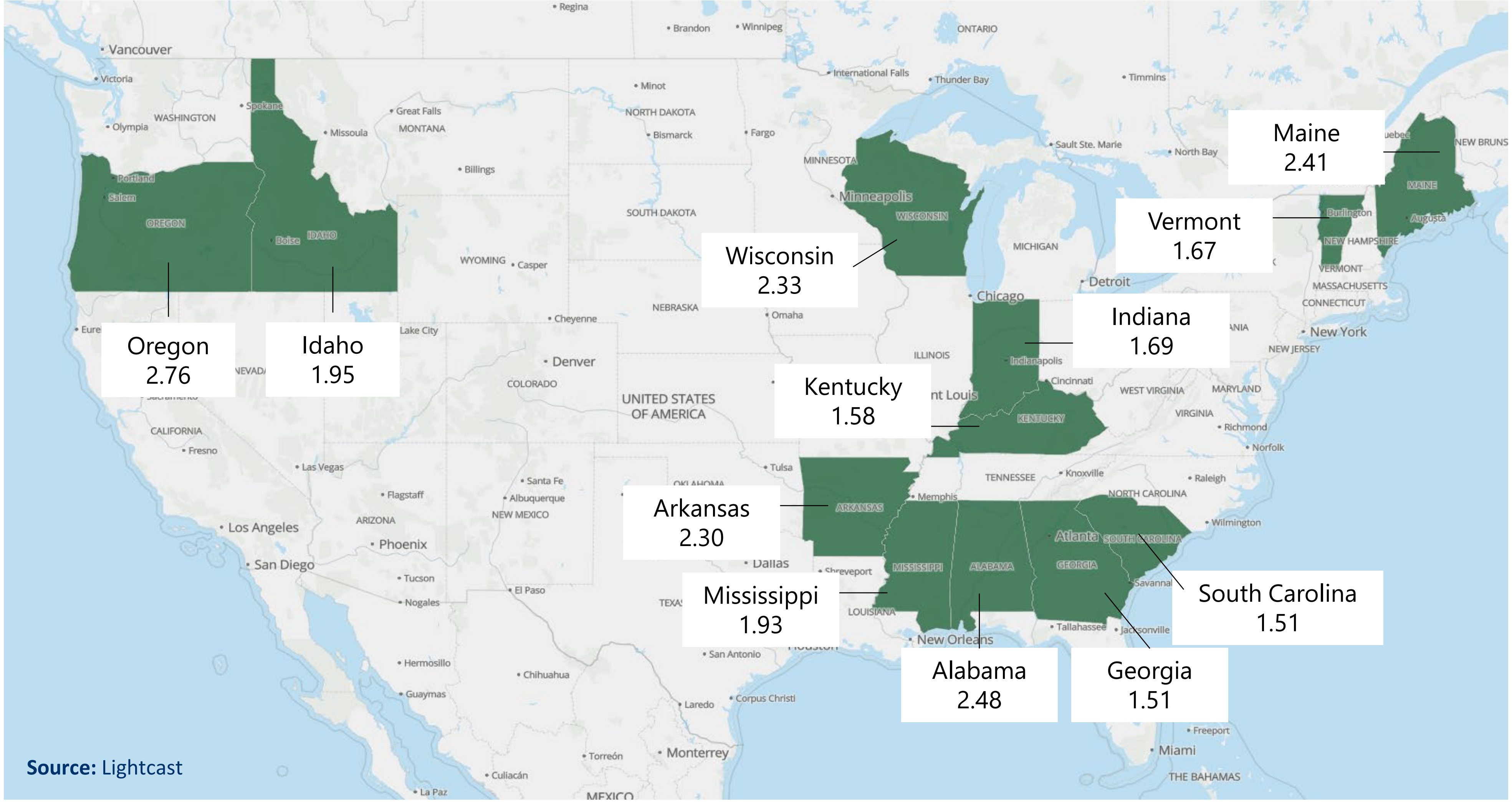
Maine's timber harvests have been on a steady decline in the last decade, dropping from 14.0 million green tons in 2010 to 9.8 million green tons in 2020. While most softwood pulpwood, hardwood pulpwood, and biomass harvests have declined, hardwood sawlog (+1.2%) and softwood sawlog (+11.5%) have seen growth from 2010-2020

Hardwood pulpwood is the largest type of timber harvested, at over 3.5 million green tons in 2020. This is followed by softwood sawlog, of which over 2.1 million green tons were harvested in 2020.

Hardwood sawlog makes the smallest share of harvested timber but has seen growth since 2010 of about 10,000 green tons.

KEY NATIONAL PLAYERS

States with >1.5 Location Quotient for the Forestry & Forest Products Sector (2022)



Source: Lightcast

Location quotient (LQ) is a measure of industry concentration within a region. An LQ of 1.0 means that an industry is as concentrated within the region as it is on a national level. An LQ greater than 1.0 indicates that an industry is more concentrated in a region than at the national level.

Industry Demand and Purchases

Where is Maine's Forest Products sector buying from?

PURCHASING INDUSTRIES Industries Maine Forest Products Purchases From

Top 25 Industries the Forestry Sector Purchases From (2022)

NAICS	Industry	In-Region Purchases	% In-Region Purchases	Imported Purchases	% Imported Purchases	Total Purchases
321113	**Sawmills**	$247,760,854	91.9%	$21,835,957	8.1%	$269,596,811
113310	**Logging**	$229,026,436	95.4%	$11,113,707	4.6%	$240,140,144
493110	General Warehousing and Storage	$28,646,784	28.2%	$73,087,138	71.8%	$101,733,922
115115	Farm Labor Contractors and Crew Leaders	$14,954,976	19.3%	$62,561,135	80.7%	$77,516,111
551114	Corporate, Subsidiary, and Regional Managing Offices	$42,840,027	57.9%	$31,130,267	42.1%	$73,970,293
322130	**Paperboard Mills**	$0	0.0%	$57,880,379	100.0%	$57,880,379
482110	Rail transportation	$31,255,836	67.3%	$15,162,661	32.7%	$46,418,497
484121	General Freight Trucking, Long-Distance, Truckload	$27,759,416	65.2%	$14,815,984	34.8%	$42,575,400
325180	Other Basic Inorganic Chemical Manufacturing	$3,626,530	9.5%	$34,595,644	90.5%	$38,222,174
115114	Postharvest Crop Activities (except Cotton Ginning)	$1,016,919	2.7%	$36,158,830	97.3%	$37,175,749
321114	**Wood Preservation**	$8,426,219	24.1%	$26,602,337	75.9%	$35,028,556
324110	Petroleum Refineries	$0	0.0%	$34,451,865	100.0%	$34,451,865
423510	Metal Service Centers and Other Metal Merchant Wholesalers	$8,198,998	25.4%	$24,092,618	74.6%	$32,291,616
423990	Other Miscellaneous Durable Goods Merchant Wholesalers	$10,252,454	34.5%	$19,439,185	65.5%	$29,691,639
115210	Support Activities for Animal Production	$4,160,666	15.0%	$23,523,270	85.0%	$27,683,936
111000	Crop Production	$14,447,566	53.5%	$12,577,664	46.5%	$27,025,230
221122	Electric Power Distribution	$24,186,754	89.6%	$2,796,752	10.4%	$26,983,506
423310	**Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers**	$14,999,569	55.9%	$11,853,018	44.1%	$26,852,587
325199	All Other Basic Organic Chemical Manufacturing	$235,001	0.9%	$26,614,092	99.1%	$26,849,093
423720	Plumbing and Heating Equipment and Supplies (Hydronics) Merchant	$7,538,248	28.2%	$19,152,831	71.8%	$26,691,079
332710	Machine Shops	$6,662,521	25.2%	$19,821,109	74.8%	$26,483,630
321911	**Wood Window and Door Manufacturing**	$3,627,318	14.7%	$21,039,548	85.3%	$24,666,866
322211	**Corrugated and Solid Fiber Box Manufacturing**	$2,434,710	9.9%	$22,154,860	90.1%	$24,589,570
322110	**Pulp Mills**	$16,675,930	70.8%	$6,889,392	29.2%	$23,565,322
311221	Wet Corn Milling	$4,234,695	19.2%	$17,800,409	80.8%	$22,035,104

Source: Lightcast

Note: Industries that are **bolded** indicate that they are included in the overall Aerospace Sector.

- **The Sawmills industry is the largest supplier of the Forestry & Forest products sector**, accounting for $247.8 million of in-region industry purchases in 2022. Only 8.1% of these purchases are met by out-of-state sources, indicating that Maine is excelling at meeting the sector's supply chain needs.
- **Logging, the second-largest supplier to the sector, has the strongest share of in-region purchases**, with 95.4% of supply coming from within Maine.
- **Paperboard Mills, Other Basic Inorganic Chemical Manufacturing, Postharvest Crop Activities, and Corrugated and Solid Fiber Box Manufacturing present opportunities for growth in Maine**, as these industries have 10% or less in-region purchases and rely heavily on imported supplies. For example, this might include businesses that manufacture chemicals that are used for paper manufacturing, or businesses that clean logs or prepare them for further production into wood products.
- Additionally, **General Warehousing and Storage presents another opportunity in Maine** – it is the third-largest supplier to the Forestry & Forest Products sector in Maine, but less than one-third of the sector's purchases from this industry are met in-state. Leakages to out-of-state sources of this industry represent over $73 million that Maine could recapture by expanding warehousing capabilities. Maine's warehousing capabilities will be further studied in a subsequent industry report.
- The top 25 purchasing industries make up 62% of total purchases, **indicating that purchases of the sector's products are spread moderately throughout the economy.**

DATA NOTE:
This table gives greater insight into supply chain gaps within the sector. Industries that have low shares of in-region purchases indicate opportunities where Maine relies heavily on imported supply, but where Maine businesses could potentially expand to recapture transactions.

DEMAND COMPARISON

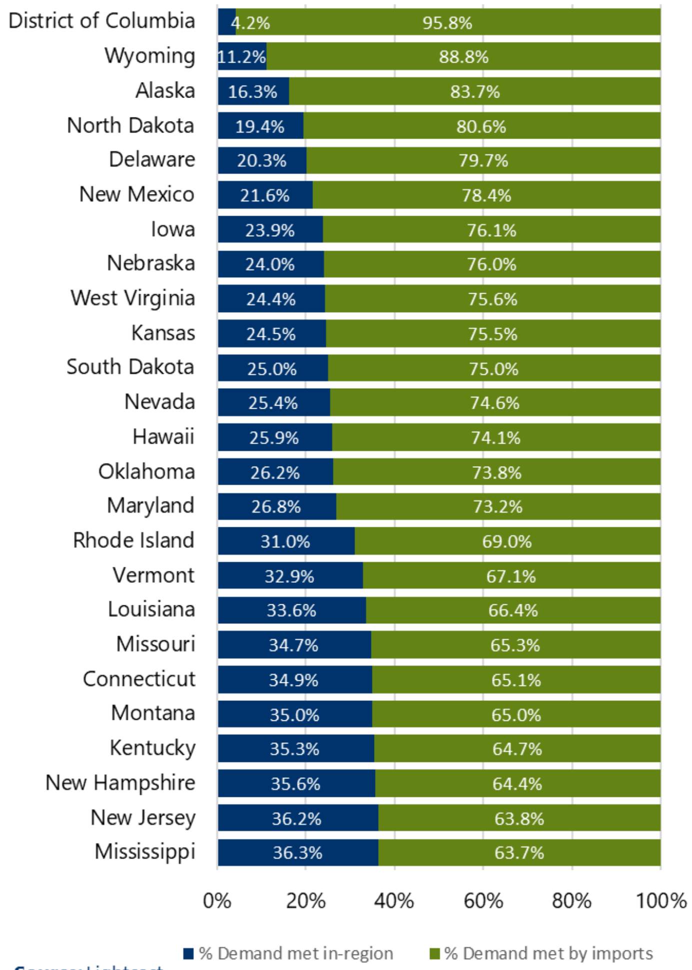
Top 10 States by Total Demand for Forestry & Forest Products Sector (2022)

	Payrolled Business Locations	Demand met in-region	% Demand met in-region	Demand met by imports	% Demand met by imports	Total Demand
California	5,266	$28,262,340,534	53.5%	$24,524,271,001.00	46.5%	$52,786,611,535
Texas	3,599	$18,838,829,453	52.2%	$17,267,433,227.70	47.8%	$36,106,262,681
New York	2,711	$9,568,249,182	36.5%	$16,614,827,762.70	63.5%	$26,183,076,945
Florida	3,690	$10,792,577,685	47.3%	$12,017,121,513.00	52.7%	$22,809,699,198
Pennsylvania	2,583	$8,854,095,405	48.1%	$9,546,540,858.42	51.9%	$18,400,636,263
Illinois	2,105	$7,396,143,058	40.3%	$10,934,579,030.90	59.7%	$18,330,722,089
Ohio	2,480	$7,855,402,473	44.3%	$9,871,512,311.05	55.7%	$17,726,914,784
Georgia	2,659	$9,695,011,253	58.0%	$7,015,468,483.95	42.0%	$16,710,479,737
North Carolina	2,615	$8,062,648,737	53.0%	$7,159,335,582.17	47.0%	$15,221,984,320
Michigan	1,963	$5,791,077,124	39.5%	$8,875,472,238.07	60.5%	$14,666,549,362

Source: Lightcast

- **Maine ranks 38th among all states for total demand**, at nearly $2.3 billion in 2022
- The states with the highest overall demand for the sector's products tend to be those with the largest economies in the nation. The top eight states for total demand of the forest products sector are all part of the top 10 states by total GRP, almost exactly in order. These states also meet high shares of their demand in-state.
- **The largest importer of the Forestry & Forest Products sector is the District of Columbia**, with almost 96% of total demand being met by imports in 2021.
- **Maine ranks 46th overall for percent of demand met by imports**, having a comparatively high share met within Maine
- **The South Atlantic** (D.C., Delaware, West Virginia) **and West North Central region** (North Dakota, South Dakota, Nebraska, Iowa, and Kansas) **make up the bulk of states with the highest shares of demand met by imports**
- **The states with the largest share of demand met by imports have relatively small demand for the sector overall**. The top 10 states by percent demand met by imports all rank in the bottom half, and seven rank 40th or lower for total demand for Forestry & Forest Products.

Top 25 States by Share of Demand Met by Imports (2022)

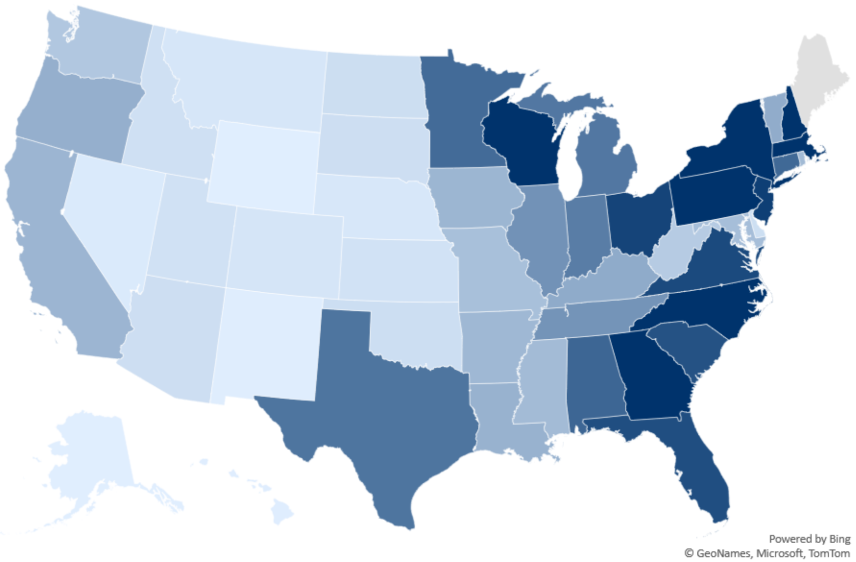


Source: Lightcast

DATA NOTE:
Metrics for sector demand by state indicate the states that have the largest local markets for this type of activity. States whose local demand is met by imports at a high rate are using imports instead of local firms and could be a good target for Maine exports.

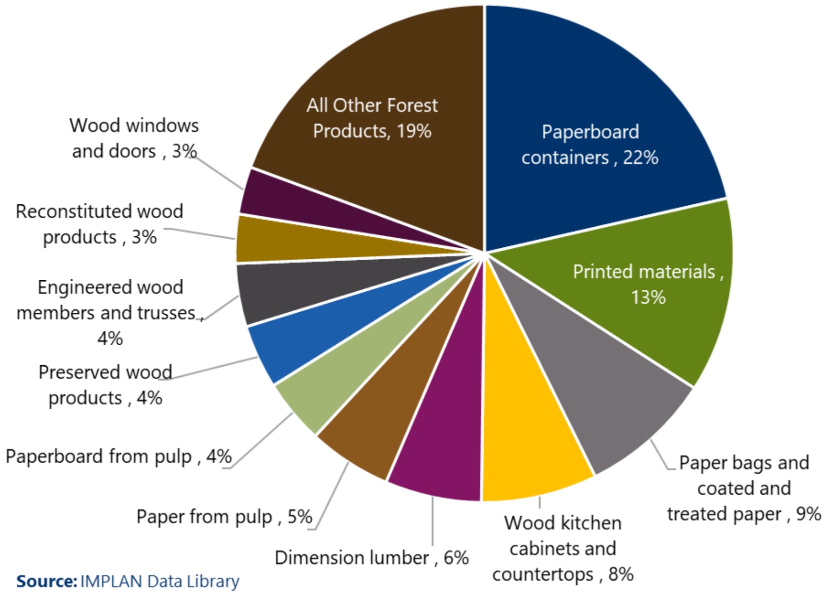
DOMESTIC IMPORTS – FOREST PRODUCTS

Top Out-of-State Suppliers of Maine Forest Products



Source: IMPLAN Data Library

Import Summary for Forest Product Commodities, 2021



Source: IMPLAN Data Library

All states supplied Maine with forest products in 2021

- **Massachusetts, New York, and Pennsylvania** were the largest domestic suppliers of forest products to Maine in 2021.
- **Paperboard Containers** was the largest import, representing 22% of domestic imports of forest products. Massachusetts was the largest supplier of Paperboard Containers in 2021, followed by New York, Pennsylvania, and New Jersey.
- Overall, the **South Atlantic** and **New England** regions are the largest suppliers of forest products to Maine, with both regions being major suppliers of Paperboard Containers.
- Overall, the real import value of forest products has declined at an annual rate of 0.4% from 2011-2021. Some commodities saw significant declines, including Paper from Pulp and Wood Pulp. These declines were partially offset by growing imports of other commodities, such as Engineered Wood, Paperboard Containers, Wood Kitchen Cabinets & Countertops, and others.

DATA NOTE: Figures on this page are from IMPLAN's Data Library and may not match other data in this report. IMPLAN domestic trade flows data covers commodities, or the products and services that are produced by a sector. This differs from other data in this report, which covers NAICS industries. Industries often produce more than one commodity.

DEMAND & IMPORTS

TOTAL DEMAND (2022)
Maine: $2.3 Billion
United States: $456.4 Billion

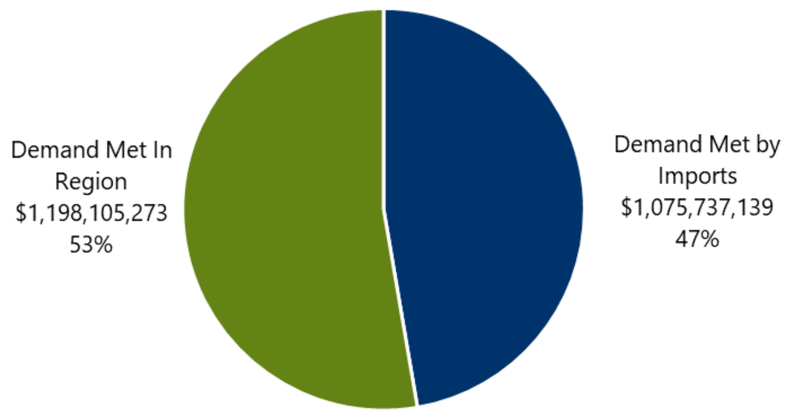
MET BY IMPORTS (2022)
Maine: $1.1 Million
United States: NA

FOREIGN IMPORTS (2022)
Maine: $902.1 Million
United States: $118.1 Billion

Source: Lightcast, US Census Bureau

- The Forestry & Forest Products Sector had a total demand of $2.3 billion in 2022, of which 47.3% ($1.1 million) is met out of state.
- According to US Census data, the foreign import value of the sector is $902.1 million.
- Foreign imports account for 39.7% of total demand in the State of Maine, compared to 25.8% in the United States
- Pulp, Paper, & Paperboard Mill Products makes up both the top import and export, with nearly $449 million imported into Maine in 2022. This accounts for 10.1% of total sector imports.
- Forestry & Forest Product imports account for 11.1% of all foreign imports into the State of Maine.

Total Forestry & Forest Products Demand in Maine



Source: Lightcast

Top Foreign Imports by Value for Maine Forestry & Forest Products, 2022

Commodity	Customs Value (Gen) ($US)	Foreign Imports Percent of Total Sector Imports	Foreign Import Percent of Total Imports in All Sectors
3221 Pulp, Paper & Paperboard Mill Products	$448,891,047	41.7%	5.5%
3211 Sawmill & Wood Products	$243,007,592	22.6%	3.0%
3222 Converted Paper Products	$65,194,091	6.1%	0.8%
3219 Other Wood Products	$56,483,729	5.3%	0.7%
3212 Veneer, Plywood & Engineered Wood Products	$55,552,337	5.2%	0.7%
3371 Household & Institutional Furn & Kitchen Cabinets	$19,579,885	1.8%	0.2%
3372 Office Furniture (including Fixtures)	$5,763,213	0.5%	0.1%
1133 Timber & Logs	$3,909,322	0.4%	0.0%
1132 Forestry Products	$3,693,853	0.3%	0.0%
Total	**$902,075,069**	**83.9%**	**11.1%**

Source: US Census Bureau

DATA NOTE:
Maine's demand for this sector's products shows the size of the local market. The share of that market supplied in-region versus imports (either from other states in the U.S. or other countries) relates the success of local firms or the competitiveness of domestic and international import goods.

Industry Sales and Exports

Where is Maine's Forest Products sector selling to?

SALES INDUSTRIES

Industries Maine Forest Product Manufacturing Sells To

Top 25 Industries the Forestry & Forest Products Industry Sells To, 2022

NAICS	Sales to	Total In-Region Sales
321113	Sawmills	$212,077,490
322121	Paper (except Newsprint) Mills	$126,500,842
322110	Pulp Mills	$108,144,372
321999	All Other Miscellaneous Wood Product Manufacturing	$22,626,364
321219	Reconstituted Wood Product Manufacturing	$20,940,497
322122	Newsprint Mills	$20,098,371
238910	Site Preparation Contractors	$17,520,212
238220	Plumbing, Heating, and Air-Conditioning Contractors	$16,874,617
321214	Truss Manufacturing	$14,367,996
113310	Logging	$14,204,667
238210	Electrical Contractors and Other Wiring Installation Contractors	$12,996,486
902999	State Government, Excluding Education and Hospitals	$11,640,675
321211	Hardwood Veneer and Plywood Manufacturing	$10,804,796
321920	Wood Container and Pallet Manufacturing	$10,742,732
321213	Engineered Wood Member (except Truss) Manufacturing	$10,505,566
321992	Prefabricated Wood Building Manufacturing	$10,202,617
236115	New Single-Family Housing Construction (except For-Sale Builders)	$10,194,228
236118	Residential Remodelers	$9,265,517
236220	Commercial and Institutional Building Construction	$8,629,223
622110	General Medical and Surgical Hospitals	$8,600,603
111000	Crop Production	$8,334,646
322211	Corrugated and Solid Fiber Box Manufacturing	$8,049,198
237310	Highway, Street, and Bridge Construction	$7,505,304
312112	Bottled Water Manufacturing	$6,775,944
322291	Sanitary Paper Product Manufacturing	$6,618,762

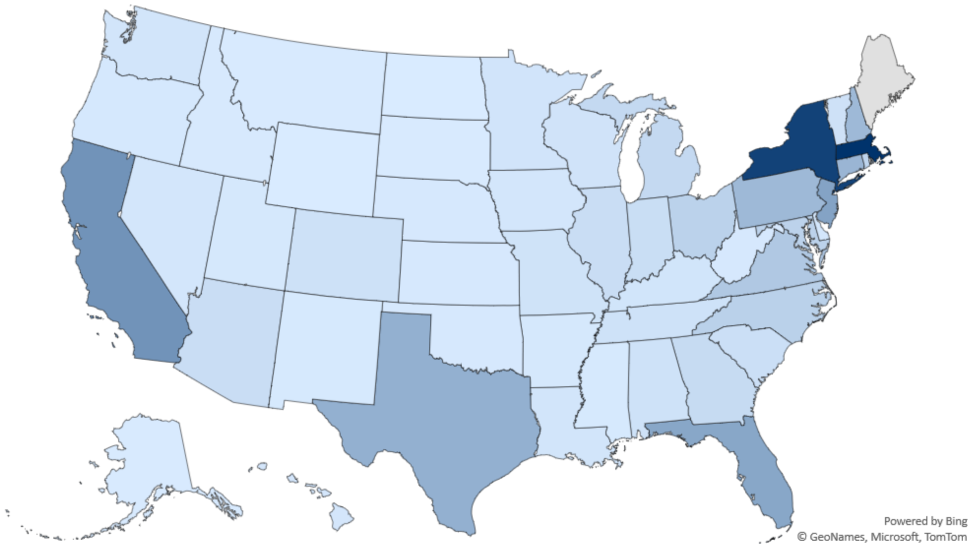
Source: Lightcast

- **Sawmills is the largest in-region buyer of the Forestry & Forest Product sector's products**, at over $212 in sales in 2022 and accounting for over 15% of all in-region sales for the sector.
- **Paper (except Newsprint) Mills and Pulp Mills** also make up a significant portion of in-region sales, at 10.5% and 9.0% of total sector in-region sales, respectively
- Overall, the **top six industries that the sector sells to fall within the Forestry & Forest Product sector**, indicating the strength of the sector's B2B environment and the extent to which the sector is highly interconnected. Sanitary Paper Product Manufacturing, another industry in this top 25, is one of the Forestry & Forest Product sector's growing industries.
- The top 25 sales industries make up 51% of total in-region sales, **indicating that sales of the sector's products are spread moderately throughout the economy.**

DATA NOTE:
The sales in this table do not add up to total in-region sales because it only captures sales to other industries, and not other entities like consumers. The Percent of Total In-Region Sector Sales shows the portion of sales to a given industry as it relates to total sales to *all industries*, not total in-region sales including sales to consumers.

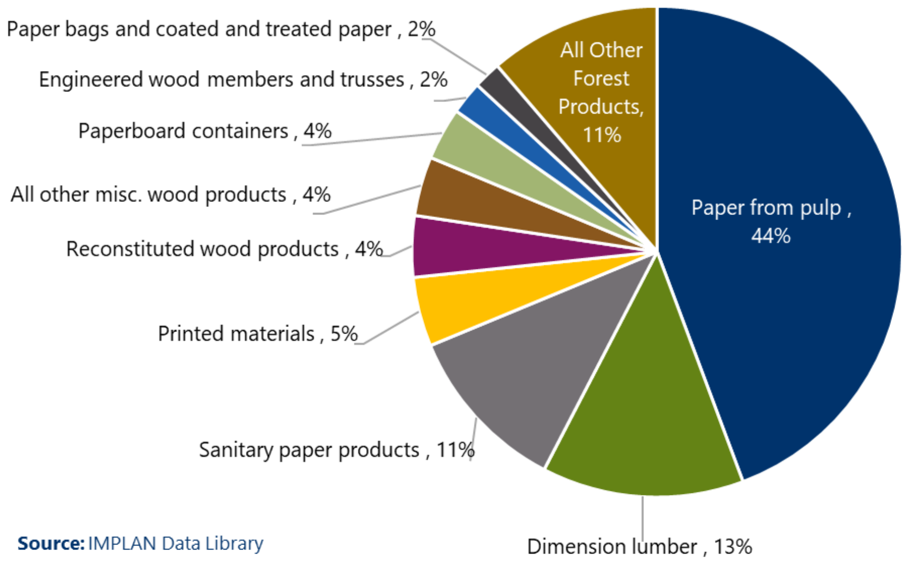
DOMESTIC EXPORTS – FOREST PRODUCTS

Top Out-of-State Buyers of Maine Forest Products (2021)



Source: IMPLAN Data Library

Export Summary for Maine Forest Products, 2021



Source: IMPLAN Data Library

Maine's Forest Products are far-reaching, with significant levels of domestic exports to all 50 states & D.C.

- **Massachusetts, New York, California, New Jersey, and Florida** are the largest buyers of Maine's forest products, each accounting for over $200 million of exports in 2021. These five states accounted for a combined 49% of Maine's domestic exports of Forest Products.
- **Paper from Pulp** was Maine's most-exported forest product in 2021, and it alone accounted for 44% of all domestic exports. This is followed by Dimension Lumber and Sanitary Paper Products
- Overall, the real export value of forest products has decreased at a compound annual rate of -1.5% from 2011-2021. Domestic exports were increasing in value until 2015 but decreased from 2015-2018. Domestic exports of forest products have increased since 2018. Over the 10-year period, Paper from Pulp and Wood Pulp have seen the steepest declines in domestic exports. These declines were partially offset by gains in other commodities, such as Dimension Lumber, Sanitary Paper Products, Reconstituted Wood Products, Paperboard Containers, and others.

DATA NOTE: Figures on this page are from IMPLAN's Data Library and may not match other data in this report. IMPLAN domestic trade flows data covers commodities, or the products and services that are produced by a sector. This differs from other data in this report, which covers NAICS industries. Industries often produce more than one commodity.

SALES & EXPORTS

TOTAL SALES (2022)
Maine: $5.7 Billion
United States: $479.4 Billion

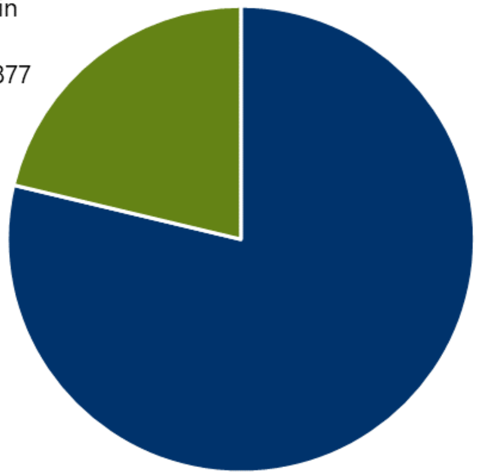
EXPORTED SALES (2022)
Maine: $4.5 Billion
United States: N/A

FOREIGN EXPORTS (2022)
Maine: $573.0 Million
United States: $45.6 Billion

Source: Lightcast, US Census Bureau

- Forestry & Forest Products in Maine had total sales of $5.7 billion in 2022, of which 79% are exported out of state ($4.5 billion).
- Foreign exports were valued at $573.0 Million in 2022 based on US Census data, leading to an export value of 10.1% of total sales. Within the United States, foreign exports are 9.2% of total sales.
- Top exports in Maine's Forestry & Forest Products sector are displayed in the table below. The top foreign export is Pulp, Paper, and Paperboard Mill Products at $287.7 million in 2022, accounting for 6.5% of total exports for the sector and approximately half of total foreign exports for the sector.

Total Forestry & Forest Product Sales



Source: Lightcast

Top Foreign Exports by Value for Maine Forestry & Forest Products, 2022

Commodity	Total Exports Value ($US)	Foreign Export Percent of Total Sector Exports	Foreign Export Percent of Total Foreign Exports in All Sectors
3221 Pulp, Paper & Paperboard Mill Products	$287,721,921	6.5%	8.4%
1133 Timber & Logs	$114,568,052	2.6%	3.3%
3222 Converted Paper Products	$89,264,092	2.0%	2.6%
3211 Sawmill & Wood Products	$55,389,513	1.2%	1.6%
3219 Other Wood Products	$10,624,334	0.2%	0.3%
3212 Veneer, Plywood & Engineered Wood Products	$7,227,399	0.2%	0.2%
3371 Household & Institutional Furn & Kitchen Cabinets	$5,807,763	0.1%	0.2%
3372 Office Furniture (including Fixtures)	$1,222,653	0.0%	0.0%
1132 Forestry Products	$1,136,906	0.0%	0.0%
Total	**$572,962,633**	**12.9%**	**16.8%**

Source: US Census Bureau

DATA NOTE:
Maine sales and exports for this sector indicate the scale of the industry activity and the share of that activity that is sold locally either as an intermediate good or to end consumers. Exports include sales to domestic (U.S.) markets as well as international exports.

EMERGING TRENDS

Emerging Industries

Biofuels A number of companies have announced plans to build biorefineries in Maine, converting wood into liquid fuels for home heating, transportation, and aviation. At this point no facilities have begun construction, and federal law restricts what Maine wood can be used as feedstocks for any projects that participate in the Renewable Fuel Standard.

- Announcements of Maine biorefinery projects have been made by **Biofine** (Lincoln), **DG Fuels** (Limestone) and **Ensyn** (East Millinocket)
- **Highland Carbon Solutions** has proposed a large-scale wood pellet mill to be located at the former paper mill site in Millinocket

Mass Timber is a new category of wood product, comprised of multiple solid wood panels nailed or glued together, which provide exceptional strength and stability. It's a strong, low-carbon alternative to concrete and steel. Mass timber include cross-laminated timber (CLT), nail-laminated timber, glulam, mass plywood panels, dowel-laminated timber, and laminated veneer lumber. It can be used in a range of construction, including mid-rise construction that is common in so many New England cities. Structural Round Timber (SRT) is mass timer that utilize minimally processed whole trees for the construction market

- **Original Mass Timber Maine** has recently completed a market and financial feasibility analysis for a possible SRT facility in Ashland Maine or other locations in the state.

Biochar is a way to convert low value wood, as well as other organic material, into a concentrated and carbon-storing form through pyrolysis. Biochar has a number of applications in agriculture, construction, environmental remediation, and carbon storage. There is a biochar facility under construction in Enfield, Maine, as well as proposed facilities in Greenville (**Clean Maine Carbon**) and Livermore Falls (**ReEnergy Biomass Maine**).

Biomass Combined Heat and Power In an effort to support the efficient use of biomass for energy production, the Maine Public Utilities Commission is soliciting proposals for the use of woody biomass to generate heat and electricity at forest products manufacturing facilities and other locations with access to forest residues.

Current Challenges

- Maine does not have sufficient **logging and trucking capacity** to harvest timber and transport it to Maine mills. As a result, many Maine mills are currently facing supply constraints or increased wood prices. Maine is not unique in this challenge, and a number of efforts – from both the public and private sector – are underway to address this challenge.

- Like many industries, Maine forest industry faces a **workforce** challenge, with almost all sectors needing to find and retain employees.

- Decreased periods of frozen ground have limited the time and productivity of loggers in the woods. **Climate change** has led to more days when heavy equipment cannot operate efficiently in forested areas, thus constraining timber supply.

RECENT INVESTMENTS

Recent Investments

- **Timber HP** is commissioning a factory that will make wood-fiber based insulation at the site of a former paper mill in Madison, Maine.

- **Pleasant River Lumber** built a new sawmill in Enfield, Maine, the first greenfield mill in the state since 2014. This spruce/fir mill, which began operations in 2020, is currently adding production capacity. When complete, this will be the largest sawmill in Maine.

- **LP Building Solutions** In February 2021, LP Building Solutions announced it would invest **$150 million** into its facility in New Limerick to expand into manufacturing SmartSide, an advanced engineered wood strand siding

- **Sappi Skowhegan** In November 2022, Sappi North America announced it would invest **$418 million** to rebuild a paper machine at its Skowhegan mill in order to increase capacity of packaging and specialty papers, a sustainable alternative to plastic packaging

- **ND Paper** purchased the formerly idle pulp mill in Old Town, Maine, and restated operations in 2019. This facility uses softwood from across the state.

- **Standard Biocarbon** is constructing the state's first biochar manufacturing facility, co-located at the Pleasant River Lumber sawmill in Enfield. This facility expects to be operational in 2023.

- **Maine Technology Institute (MTI) Forest Recovery Initiative (FRI) Phase 2** As a part of the American Rescue Plan Act (ARPA) of 2021, $20 million was allocated in Maine to mitigate damage to the Forestry industry caused by the pandemic. The first phase of FRI funding deployed approximately $6 million in early 2022, focusing on immediate relief to small businesses. The remaining **$14 million** will be deployed in Phase 2 and will be targeted toward applicants from companies developing new technologies, new markets, and other innovative solutions for the industry.

TRADE SHOWS & MEETINGS

Trade shows and resources included in this report have been vetted by industry professionals and trade show specialists.

ASSOCIATION OF WOODWORKING & FURNISHING SUPPLIERS FAIR – Las Vegas, NV
The AWFS (Association of Woodworking & Furnishing Suppliers) in Las Vegas, USA is the largest exhibition of woodworking hardware and machinery, board and panel products, upholstery material, wood components, supplies, services, and new technologies in North America.

EAST COAST SAWMILL AND LOGGING EQUIPMENT EXPOSITION – Richmond, VA
Held every two years, America's leading trade show for the forest products industry. Be a part of the largest collection of sawmilling, kiln drying, pallet manufacturing/recycling, harvesting, biomass, trucking, optimization/scanning, material handling, firewood production and related equipment, supplies and services.

FASTMARKETS FOREST PRODUCTS NORTH AMERICA CONFERENCE – Boston, MA
Fastmarkets Forest Products North American Conference (formerly known as RISI North America) is the only regional event that covers all the key forest product grades, including pulp, paper, packaging, tissue, wood products and biomass.

FOREST PRODUCTS MACHINERY & EQUIPMENT EXPO – Nashville, TN
The SFPA Forest Products Machinery & Equipment Exposition (EXPO) is the nation's premier wood products manufacturing trade event. Featuring products and services for hardwood and softwood log processing, remanufacturing and pallet industries, bioenergy, engineered wood products and pressure-treating. EXPO connects lumber industry decision-makers looking for technical expertise, new products, and manufacturing solutions.

FOREST RESOURCES ASSOCIATION MONTHLY FOREST FORUM
This monthly dinner meeting, hosted by the Forest Resources Association, brings together landowners, foresters, loggers, mills and others in the forest industry for networking and educational opportunities.

INTERNATIONAL MASS TIMBER CONFERENCE – Portland, OR
Held annually in the spring in Portland, Oregon, the International Mass Timber Conference is the largest gathering of mass timber experts in the world, focusing on the entire industry supply chain – including manufacturers, builders, designers, and others in this emerging space.

INTERNATIONAL WOODWORKING FAIR – Atlanta, GA
Held every two years, IWF Atlanta is the #1 woodworking show in North America, a global convention and expo for the woodworking industry. IWF delivers the latest solutions in architectural woodwork, cabinetry, flooring, furniture manufacturing, engineered products, doors, windows, machinery, tools, metals, plastics and more.

TRADE SHOWS & MEETINGS (continued)

LIGNA HANNOVER – Germany
More than 90,000 professional visitors from the woodworking and wood processing sectors come to LIGNA, the world's leading trade fair for woodworking and wood processing plant, machinery and tools, from all over the world to discover innovative machinery, plant and technology from across the entire wood industry. The displays document the complete production cycle - from the harvesting and processing of timber to the industrial production of wood-based end products and innovative surface treatment technologies. The World Fair for the Forestry and Wood Industries LIGNA HANNOVER is the most international trade show of its kind worldwide. More than half of the exhibiting companies come from outside Germany.

TIMBER PROCESSING & ENERGY EXPO - Oregon
Held every other year for professionals in the lumber, panel and engineered wood products and wood-based energy and biomass industries.

MAINE PAPER DAYS – Maine
The Annual Paper Days event brings students, donors, pulp and paper industry leaders and employers, UMaine faculty and Foundation staff together for two days of networking and special events.

OTHER RESOURCES

Forest Opportunity Roadmap/Maine (FOR/Maine) (formaine.org)
Forest Opportunity Roadmap / Maine (FOR/Maine) is a unique cross-sector collaboration between industry, communities, government, education, and non-profits, which have come together to ensure that Maine strategically adapts and capitalizes on changing markets to maintain our leading role in the global forest economy and support prosperity in our state. The coalition was created with support from the U.S. Economic Development Administration and the U.S. Dept. of Agriculture.

Local Wood Works (localwoodworks.org)
Local Wood Works is an organization dedicated to connecting consumers and local producers of forest products. The organization seeks to support responsible forest management and increased land conservation through the development and support of markets for local forest products.

Maine Forest Products Council (maineforest.org)
Since 1961, the Maine Forest Products Council has been the voice of Maine's forest economy. The MFPC represents the diverse needs of Maine's forest products community. Members include landowners, loggers, truckers, paper mills, tree farmers, foresters and lumber processors, as well as bankers, lawyers and insurance executives.

Maine Woodland Owners (mainewoodlandowners.org)
Maine Woodland Owners is a statewide, member-supported organization that advances stewardship of Maine's small woodland resources through the encouragement of good forest management and the advocating for and supporting of Maine's small woodland owners.

The Northern Forest Center (northernforest.org)
The Northern Forest Center fosters innovation and investment into the Northern Forest region, stretching across Northern Maine, New Hampshire, Vermont, and New York. It aims to create a thriving and welcoming Northern Forest region sustained by innovation and environmental stewardship.

Professional Logging Contractors of Maine (maineloggers.com)
This trade organization represents loggers, providing them a voice in the changing forest products industry.

OTHER RESOURCES

UNIVERSITY OF MAINE RESOURCES:

University of Maine Pulp & Paper Foundation (umaineppf.org)
The University of Maine Pulp and Paper Foundation recruits, financially supports and prepares talented engineering students to become the next great leaders in the pulp and paper industry, while also helping to meet the workforce needs of the industry. The oldest pulp and paper foundation in America and a pioneer of the first program in the country to study pulp and paper engineering, UMPPF awards more than 100 full or partial tuition scholarships annually and is represented by the most alumni in the industry. UMPPF is the bridge between academia, students and employers.

University of Maine Advanced Structures & Composites Center (composites.umaine.edu)
The ASCC is a world-leading, interdisciplinary center for research, education, and economic development encompassing material sciences, advanced manufacturing, and engineering composites and structures.

> *University of Maine Mass Timber Commercialization Center (composites.umaine.edu/woodcompsites/mmtcc)*
> Within the ASCC, the Mass Timber Commercialization Center brings together industrial partners, trade organization, construction firms, architects, and other stakeholders in the region to revitalize and diversify Maine's forest-based economy by bringing innovative mass timber manufacturing to the State of Maine.

University of Maine Forest Bioproducts Research Institute (forestbioproducts.umaine.edu)
The FBRI represents researchers from across the University of Maine who are dedicated to advancing sustainable forest bioproducts in three major categories: fuel, chemicals, and advanced materials. It operates state-of-the-art facilities dedicated to testing and commercialization of new technologies that offer valuable R&D support for companies and government partners as well as research & learning opportunities for students.

University of Maine Process Development Center (umaine.edu/pdc)
The Process Development Center is one of the top suppliers of cellulose nanomaterials in the world, providing nanomaterials to researchers and application developers at hundreds of businesses, laboratories, and educational institutions in over forty countries. It offers a broad range of technical services and resources for clients, both in traditional pulp and paper and in emerging process technologies and materials science.

> *University of Maine Nanomaterial Pilot Plant (umaine.edu/pdc/nanocellulose/umaine-nanomaterial-pilot-plant)*
> Within the PDC, the Nanomaterial Pilot Plant provides samples of nanomaterials for application development. It contains state-of-the-art equipment that enables the plant to produce cellulose nanofibrils at the fastest rate in the United States.

APPENDIX

Sectors included in the Forestry & Forest Products Sector

NAICS	Description
Forestry and Logging	
113110	Timber Tract Operations
113210	Forest Nurseries and Gathering of Forest Products
113310	Logging
115310	Support Activities for Forestry
Wood Product Manufacturing	
321113	Sawmills
321114	Wood Preservation
321211	Hardwood Veneer and Plywood Manufacturing
321212	Softwood Veneer and Plywood Manufacturing
321213	Engineered Wood Member (except Truss) Manufacturing
321214	Truss Manufacturing
321219	Reconstituted Wood Product Manufacturing
321911	Wood Window and Door Manufacturing
321912	Cut Stock, Resawing Lumber, and Planing
321918	Other Millwork (including Flooring)
321920	Wood Container and Pallet Manufacturing
321991	Manufactured Home (Mobile Home) Manufacturing
321992	Prefabricated Wood Building Manufacturing
321999	All Other Miscellaneous Wood Product Manufacturing
Paper Manufacturing	
322110	Pulp Mills
322121	Paper (except Newsprint) Mills
322122	Newsprint Mills
322130	Paperboard Mills
322211	Corrugated and Solid Fiber Box Manufacturing
322212	Folding Paperboard Box Manufacturing
322219	Other Paperboard Container Manufacturing
322220	Paper Bag and Coated and Treated Paper Manufacturing
322230	Stationery Product Manufacturing
322291	Sanitary Paper Product Manufacturing
322299	All Other Converted Paper Product Manufacturing
Wooden Furniture, Cabinets and Countertop Manufacturing	
337110	Wood Kitchen Cabinet and Countertop Manufacturing
337122	Nonupholstered Wood Household Furniture Manufacturing
337211	Wood Office Furniture Manufacturing
337212	Custom Architectural Woodwork and Millwork Manufacturing
Wood and Paper Product Wholesalers	
423310	Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers
424110	Printing and Writing Paper Merchant Wholesalers
424120	Stationery and Office Supplies Merchant Wholesalers
424130	Industrial and Personal Service Paper Merchant Wholesalers

Source: Camoin Associates

APPENDIX

Key Forestry and Forest Products Subsectors

NAICS	Description	2017 Jobs	2022 Jobs	2017 - 2022 Change	2017 - 2022 % Change	Avg. Earnings Per Job (2022)	2022 Location Quotient	Competitive Effect (2017-2022)	2022 Payrolled Business Locations	2022 Total Demand	2022 Demand met by Imports	2022 Total Sales	2022 GRP	2022 GRP per worker
Forestry and Logging		**3614**	**3,008**	**(606)**	**(17%)**	**$76,613**	**7.32**	**(422)**	**446**	**$292,362,630**	**$25,772,944**	**$748,492,134**	**$314,256,420**	**$104,457**
113110	Timber Tract Operations	67	71	5	7%	$76,837	3.94	1	13	$13,877,441	$5,024,474	$14,673,936	$7,435,246	$104,234
113210	Forest Nurseries and Gathering of Forest Products	10	36	25	244%	$65,024	2.78	26	7	$6,833,615	$3,228,102	$5,317,791	$2,693,097	$75,492
113310	Logging	3246	2,652	(594)	(18%)	$76,696	9.34	(328)	390	$248,496,786	$11,481,614	$699,947,485	$279,705,679	$105,485
115310	Support Activities for Forestry	292	250	(42)	(14%)	$77,324	2.60	(121)	37	$23,154,788	$6,038,754	$28,552,923	$24,422,397	$97,741
Wood Product Manufacturing		**4962**	**4,972**	**10**	**0%**	**$64,661**	**2.58**	**(217)**	**173**	**$901,254,251**	**$358,291,372**	**$1,674,577,760**	**$680,673,661**	**$136,904**
321113	Sawmills	2022	2,094	72	4%	$70,936	5.72	114	64	$332,102,820	$24,043,445	$858,364,777	$309,576,261	$147,872
321114	Wood Preservation	68	40	(28)	(41%)	$68,293	0.86	(32)	2	$43,199,744	$32,340,423	$16,512,876	$5,894,410	$147,868
321211	Hardwood Veneer and Plywood Manufacturing	148	130	(18)	(12%)	$74,948	2.26	(7)	2	$25,282,139	$13,670,176	$53,323,405	$22,802,042	$175,666
321212	Softwood Veneer and Plywood Manufacturing	0	0	0		$0	0.00	0	0	$28,982,990	$28,982,990	$0	$0	
321213	Engineered Wood Member (except Truss) Manufacturing	0	126	126		$73,191	3.98	126	1	$13,922,660	$5,407,555	$50,192,665	$21,213,099	$168,186
321214	Truss Manufacturing	181	180	(1)	(0%)	$74,185	1.21	(32)	3	$62,761,579	$36,184,569	$72,170,029	$30,830,771	$171,521
321219	Reconstituted Wood Product Manufacturing	313	191	(121)	(39%)	$92,169	3.05	(131)	2	$31,780,535	$12,834,046	$102,809,572	$43,955,617	$229,700
321911	Wood Window and Door Manufacturing	255	104	(152)	(59%)	$70,883	0.42	(182)	3	$93,879,571	$68,215,332	$36,029,646	$15,332,039	$147,479
321912	Cut Stock, Resawing Lumber, and Planing	106	57	(49)	(46%)	$47,033	0.95	(50)	3	$20,850,978	$14,559,280	$12,962,108	$5,474,132	$95,645
321918	Other Millwork (including Flooring)	80	80	0	1%	$47,713	0.46	3	10	$56,339,159	$36,723,364	$22,570,111	$9,609,812	$119,512
321920	Wood Container and Pallet Manufacturing	463	454	(9)	(2%)	$55,397	1.52	(30)	15	$78,976,498	$34,772,077	$106,036,855	$51,055,176	$112,396
321991	Manufactured Home (Mobile Home) Manufacturing	0	16	16		$61,159	0.11	16	2	$46,183,118	$42,280,743	$4,255,878	$2,041,432	$123,889
321992	Prefabricated Wood Building Manufacturing	393	465	72	18%	$53,803	5.42	(28)	20	$24,811,952	$4,594,883	$105,174,994	$50,385,390	$108,309
321999	All Other Miscellaneous Wood Product Manufacturing	934	1,034	100	11%	$53,413	7.69	16	47	$42,180,507	$3,682,488	$234,174,846	$112,503,479	$108,810
Paper Manufacturing		**4441**	**4,226**	**(214)**	**(5%)**	**$102,072**	**2.73**	**216**	**19**	**$652,261,119**	**$478,559,474**	**$2,775,774,158**	**$995,328,228**	**$235,517**
322110	Pulp Mills	517	609	92	18%	$102,069	26.47	100	2	$24,292,044	$7,108,103	$618,109,818	$176,725,570	$290,029
322121	Paper (except Newsprint) Mills	2295	1,953	(341)	(15%)	$109,267	9.28	1	5	$100,438,928	$29,423,156	$1,354,895,090	$515,497,566	$263,899
322122	Newsprint Mills	297	274	(23)	(8%)	$114,190	20.67	96	1	$6,347,142	$622,642	$201,541,712	$76,411,789	$278,827
322130	Paperboard Mills	0	0	0		$0	0.00	0	0	$109,262,531	$109,262,531	$0	$0	
322211	Corrugated and Solid Fiber Box Manufacturing	322	331	9	3%	$96,944	0.76	(10)	4	$169,057,976	$138,799,846	$166,146,007	$47,080,678	$142,165
322212	Folding Paperboard Box Manufacturing	0	0	0		$0	0.00	0	0	$43,710,050	$43,710,050	$0	$0	
322219	Other Paperboard Container Manufacturing	4	14	10	227%	$70,369	0.13	10	1	$36,699,298	$35,486,231	$5,140,621	$1,454,371	$103,663
322220	Paper Bag and Coated and Treated Paper Manufacturing	103	69	(35)	(34%)	$70,377	0.29	(31)	2	$71,139,137	$66,442,156	$22,624,481	$8,372,164	$122,156
322230	Stationery Product Manufacturing	0	0	0		$0	0.00	0	0	$17,700,892	$17,700,892	$0	$0	
322291	Sanitary Paper Product Manufacturing	331	418	86	26%	$95,938	3.56	93	3	$45,211,650	$21,467,305	$185,553,300	$83,714,338	$200,396
322299	All Other Converted Paper Product Manufacturing	570	558	(12)	(2%)	$83,255	7.16	(43)	1	$28,401,471	$8,536,562	$221,763,129	$86,071,752	$154,282
Wooden Furniture, Cabinets and Countertop Manufacturing		**855**	**801**	**(55)**	**(6%)**	**$61,363**	**0.88**	**(79)**	**83**	**137,529,738**	**106,863,361**	**148,530,122**	**63,900,025**	**$79,824**
337110	Wood Kitchen Cabinet and Countertop Manufacturing	251	247	(3)	(1%)	$59,091	0.42	(15)	35	$69,440,900	$59,890,310	$34,203,855	$16,588,663	$67,030
337122	Nonupholstered Wood Household Furniture Manufacturing	318	296	(23)	(7%)	$56,676	2.18	4	33	$16,883,345	$9,176,668	$41,741,678	$19,205,805	$64,975
337211	Wood Office Furniture Manufacturing	2	2	1	39%	$85,542	0.03	1	1	$18,753,537	$18,484,265	$816,704	$314,262	$135,556
337212	Custom Architectural Woodwork and Millwork Manufacturing	284	255	(29)	(10%)	$68,777	2.23	(68)	14	$32,451,956	$19,312,118	$71,767,884	$27,791,295	$108,932
Wood and Paper Product Wholesalers		**750**	**979**	**228**	**30%**	**$84,164**	**0.97**	**211**	**120**	**$290,434,674**	**$106,249,987**	**$314,743,941**	**$181,019,059**	**$184,987**
423310	Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers	456	632	176	39%	$86,188	1.27	147	71	$130,564,261	$31,100,419	$186,570,899	$104,041,135	$164,566
424110	Printing and Writing Paper Merchant Wholesalers	26	52	26	98%	$50,822	1.06	26	10	$19,918,414	$11,045,090	$13,126,921	$7,829,292	$149,366
424120	Stationery and Office Supplies Merchant Wholesalers	127	131	5	4%	$60,249	0.71	29	14	$41,539,022	$14,410,001	$36,996,289	$22,210,655	$169,332
424130	Industrial and Personal Service Paper Merchant Wholesalers	141	163	22	15%	$106,315	0.58	10	25	$98,412,977	$49,694,477	$78,049,831	$46,937,977	$288,405
	Total for Maine	**14622**	**13,986**	**(636)**	**(4%)**	**$79,712**	**2.41**	**(291.4)**	**840**	**$2,273,842,412**	**$1,075,737,139**	**$5,662,118,115**	**$2,235,177,392**	**$159,815**
	Total for United States	**1327124**	**1,349,136**	**22,012**	**2%**	**$78,059**		**--**	**65,079**	**$456,433,967,269**	**$0**	**$497,405,102,047**	**$208,277,929,812**	**$154,379**

Source: Lightcast

APPENDIX

Top 10 States by % Forestry & Forest Products Demand Met By Imports (2022)

	Payrolled Business Locations	Demand met in-region	% Demand met in-region	Demand met by imports	% Demand met by imports	Total Demand
District of Columbia	25	$50,116,371.13	4.2%	$1,155,763,983.76	95.8%	$1,205,880,355
Wyoming	126	$79,563,728.65	11.2%	$630,473,853.89	88.8%	$710,037,583
Alaska	101	$122,217,421.29	16.3%	$627,074,820.55	83.7%	$749,292,242
North Dakota	148	$247,165,739.38	19.4%	$1,025,176,873.38	80.6%	$1,272,342,613
Delaware	142	$246,137,710.89	20.3%	$969,122,951.76	79.7%	$1,215,260,663
New Mexico	269	$374,318,742.80	21.6%	$1,362,429,790.38	78.4%	$1,736,748,533
Iowa	583	$1,453,544,966.93	23.9%	$4,625,071,503.09	76.1%	$6,078,616,470
Nebraska	328	$753,841,716.87	24.0%	$2,387,115,423.44	76.0%	$3,140,957,140
West Virginia	560	$463,506,766.95	24.4%	$1,436,374,133.98	75.6%	$1,899,880,901
Kansas	421	$920,065,515.00	24.5%	$2,834,492,990.61	75.5%	$3,754,558,506

Source: Lightcast

GLOSSARY

Competitive Effect: Competitive effect indicates how much of the job change within a given region is the result of some unique competitive advantage of the region. This is because the competitive effect, by definition, measures the job change that occurs within a regional industry that cannot be explained by broader trends (i.e. the National Growth Effect and the Industrial Mix Effect). It's important to note that this effect can be positive even if regional employment is declining. This would indicate that regional employment is declining *less* than national employment.

Gross Regional Product (GRP): Gross Regional Product (GRP) is simply GDP for the region of study. More commonly, GRP is GDP for any region smaller than the United States, such as a state or metro. GRP measures the final market value of all goods and services produced in the region of study. GRP is the sum of total industry earnings, taxes on production & imports, and profits, less subsidies

Housing Starts: The number of new housing units that have begun construction during a given period of time.

Location quotient: Location quotient (LQ) is a way of quantifying how concentrated a particular industry, cluster, occupation, or demographic group is in a region as compared to the nation. It can reveal what makes a particular region "unique." For example, if the leather products manufacturing industry accounts for 10% of jobs in your area but 1% of jobs nationally, then the area's leather-producing industry has a LQ of 10. So, in your area, leather manufacturing accounts for a larger than average "share" of total jobs—the share is ten times larger than normal.

Trade-Weighted Index: This index measures the strength of the US Dollar relative to the currencies of the nation's trading partners, weighted based on the share of trade conducted with each country. This index is produced by the Federal Reserve.

Source: Lightcast Knowledge Base

DATA SOURCES

Lightcast (formerly Emsi Burning Glass) is a global leader in labor market analytics, offering a data platform that gives a comprehensive, nuanced, and up-to-date picture of labor markets at all scales from national to local. Key components of the platform include traditional labor market information, job postings analytics, talent profile data, compensation data, and skills analytics. Lightcast integrates government data with information from online job postings, talent profiles, and resumes to produce timely intelligence on the state of the labor market. Job and compensation data is available by industry, occupation, educational program, and skill type. Click to learn more.

TradeStats Express (TSE) National and State Dashboards present data on US exports and imports by trade partner and product for 2009 forward. Data are presented using two classification systems: the Harmonized System (HS) and the North American Industrial Classification System (NAICS). National trade statistics in TSE cover the physical movement of merchandise between the United States and foreign regions. State trade statistics cover the physical movement of merchandise between a given state and foreign regions. Click to learn more.

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