Forest Products Industries' Economic Contributions: Rhode Island, 2023

Prepared For:
Rhode Island Department of department of environmental management
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Foreword

The following report originates through a Cooperative Agreement between the Northeast-Midwest State Foresters Alliance (NMSFA) and the USDA, Forest Service State, Private, and Tribal Forestry titled “Build and Support State Forestry Utilization and Marketing Capacity Through Targeted Investments in State Forestry Utilization and Marketing Programs,” which supported a region-wide and state-by-state analysis of their respective forest product industries’ economic data.

The NMSFA partnered with Michigan State University to coordinate this project and to prepare drafts for both the region and individual states.

The information in this this Rhode Island-centric report is intended to help recognize the local forest products markets and contextualize their state-wide impact to help decision-makers inform their decisions about supporting and growing our forest economy and to offer practical insights that can shape forest landscapes that are both ecologically and economically sustainable.

Thank you,
Tee Jay Boudreau
RI State Forester | Deputy Chief
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Executive Summary

Based on 2023 FIA estimates, Rhode Island contains approximately 377,545 acres of forest land, representing about 55.7 percent of the state's total land area of 677,507 acres. Of this forest base, approximately 356,372 acres (94.4 percent) are classified as timberland, defined as forest land capable of producing commercial volumes of wood. Reserved forestland accounts for 19,430 acres (about 5.1 percent), while other forestland comprises 1,743 acres (approximately 0.5 percent). Non-forest land totals 299,962 acres, or 44.3 percent of the state's total land area. Building on this land-use context, this report summarizes the economic contribution of Rhode Island's forest products industries using IMPLAN 2023 data and examines changes in industry performance over the pre- and post-COVID period, with emphasis on trends observed over the past five yea

Forest Product Industries

This report analyzes the economic contribution of Rhode Island's forest products sector, comprised of 21 individual economic sectors aggregated into seven industry groups: Forestry, Logging, Primary solid wood products, Secondary solid wood products, Wood furniture, Pulp, paper, and paperboard mills, and Secondary paperboard and other paper products. In 2023, these industries directly supported 2,589 jobs and generated $990.4 million in output, $239.5 million in Value-Added, and $184.2 million in Labor Income. When indirect supply-chain linkages and induced household-spending effects are included, the sector's total economic footprint reached 4,936 jobs, $1.48 billion in output, $531.00 million in Value-Added, and $346.83 million in Labor Income. The sector exerts a notable multiplier effect on the broader economy; for every 100 direct jobs in the forest industry, roughly 91 additional jobs are supported elsewhere in the state.

Leading Forest Products Industry Groups (direct contribution)

Among the seven aggregated groups, Secondary Paperboard and Other Paper Products was the largest direct employer in 2023 (1,011 jobs), followed by Wood Furniture (916 jobs) and Secondary Solid Wood Products (474 jobs). In terms of output, Secondary Paperboard and Other Paper Products produced the highest direct output at $526.0 million, serving as the sector's manufacturing engine. Wood Furniture generated $211.3 million, highlighting the state's strength in Value-Added finishing. Forestry, while the smallest contributor in dollar terms ($429 thousand), provided the essential management services supporting the broader value chain.

Leading Individual Forest Products Sectors (direct contribution)

At the disaggregated level (21 sectors), Paperboard container manufacturing remained the top individual employer with 507 jobs. Financial dominance was also concentrated in this sector, which ranked first in Labor Income ($34.8 million), Value-Added ($51.0 million), and Output ($278.9 million). Showcase, partition, shelving, and locker manufacturing was a consistent top-tier performer, ranking second in Employment (394 jobs), while Paper bag and coated and treated paper manufacturing outpaced it in output ($170.1 million) and Value-Added ($45.8 million). Paperboard Mills also emerged as a major driver, ranking fifth in direct output ($50.9 million). These rankings show a downstream-focused economy: specialized packaging and converting dominating over primary processing.

Rhode Island's Forest Products Industries Compared to Other Rhode Island Industries

The Forest Products sector remains a vital component of Rhode Island's natural resource economy. In 2023, it ranked first in both employment and output when compared to Agriculture, Mining, and Commercial Fishing. The forest sector's direct output ($990.4 million) outperformed Mining ($833.1 million), Agriculture ($117.3 million), and Commercial Fishing ($88.5 million). In terms of employment, the 2,589 jobs supported by the forest industry accounted for roughly 40 percent of the state's total natural resources workforce, significantly surpassing Agriculture (1,857 jobs), Commercial Fishing (1,394 jobs), and Mining (691 jobs). Furthermore, within the statewide manufacturing landscape, Forest Products ranked as the eighth largest manufacturer by output ($967.5 million) and the sixth largest employer.

Seven-years Trends in Rhode Island's Forest Products Industries Economic Contribution

From 2017 to 2023, the sector demonstrated a period of structural realignment followed by recent stabilization. Direct employment decreased by 14.7 percent, while direct output declined by 15.0 percent in real terms. Despite this contraction over the full seven-year period, recent trends indicate a recovery in efficiency; between 2022 and 2023, output rebounded significantly despite a tightening labor market. This trend shows a divergence in the state's forest economy, where efficiency gains have allowed the industry to generate steady revenue, stabilizing the sector as a reliable economic anchor during a period of broader post-pandemic fluctuation.

Glossary

Forestry Terms

Average annual harvest removals: The estimated volume of trees that were live at the time of the previous inventory and were either cut and removed by direct human activity related to harvesting or died as a result of silvicultural or land-clearing activity by the time of the current inventory.

Average annual mortality: The volume of trees that were live at the time of the previous inventory and are dead in the current inventory.

Average annual net growth: The change in merchantable bole volume of growing-stock trees (at least five inches diameter at breast height [DBH]) after deducting mortality volume, in cubic feet, on forest land.

Forest land: Land that is at least 10 percent stocked by trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. Forest land includes transition zones, such as areas between heavily forested and non-forested lands that are at least 10 percent stocked with trees and forest areas adjacent to urban and built-up lands, including pinyon-juniper and chaparral areas in the western U.S., and afforested areas. The minimum area for classification of forest land is one acre and 120 feet wide, measured stem-to-stem from the outermost edge. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest land if less than 120 feet wide.

Growing stock: Live trees of commercial species that meet minimum merchantability standards (at least five inches DBH). In general, these trees have at least one solid eight-foot section, are reasonably free of form defect on the merchantable bole, and at least 34 percent or more of the volume is merchantable. Excludes rough or rotten cull trees.

Timberland: A subset of forest land that produces or can produce crops of industrial wood and is not withdrawn from timber utilization by statute or administrative regulation. (Note: Areas qualifying as timberland can produce at least 20 cubic feet per acre per year of industrial wood in natural stands. Currently inaccessible and inoperable areas are included.)

Economic Contribution Terms

Direct effects/contributions: The direct contribution represents the economic activities (output, employment, Labor Income, and Value-Added) that occur within an industry or sector as a result of its existing production to satisfy current (exogenous) final demand. In contribution analysis, the direct effect corresponds to the sector's own production activities that maintain the structure of the regional economy. For example, the direct contribution of the forest products industry reflects its ongoing production and employment required to meet current local and export demand for forest-based goods.

Employment: The number of full- and part-time jobs associated with an industry.

Indirect effects/contributions: The indirect contribution captures the inter-industry linkages created when the industry purchases goods and services from other local industries. These transactions stimulate additional production, employment, and income along the supply chain. For instance, demand for wood products generates additional output in sectors such as transportation, wholesale trade, and equipment manufacturing that supply inputs to the forest industry. The magnitude of indirect contribution reflects the degree of interdependence and strength of local supply-chain relationships.

Induce effects/contributions: The induced contribution measures the additional economic activity generated by household spending of Labor Income earned through direct and indirect effects. When workers employed in the forest products and related supply-chain sectors spend their income on goods and services, such as housing, healthcare, or retail, it further stimulates regional economic activity. This household feedback effect represents the cyclical flow of income and expenditures within the economy.

Labor Income: The dollar total of employee compensation and proprietor income; the latter is associated with self-employed individuals.

Output: The dollar measure of production within an area; it is also viewed as sales.

Social Accounting Matrix (SAM) multipliers: These multipliers are derived by dividing the sum of direct, indirect, and induced effects by the direct effects. The social accounts include payments made between households, households and government, and more. These are available for output, employment, Labor Income, and Value-Added and are used to assess the effects of changes in industry activity (i.e., "ripple effects").

Total effects/contributions: The sum of direct, indirect, and induced effects.

Value-Added (also known as gross state product, or GSP): The sum of Labor Income, other property income (e.g., rents and profits), and indirect business taxes (e.g., excise and sales

taxes). It is the difference between an industry's total output and the cost of its intermediate inputs. The sum of Value-Added for all economic sectors within the region equals the total GSP.

Introduction

Forest products industries are an integral component of Rhode Island's economy. They provide jobs, raw materials, and finished goods that generate additional economic activity throughout the state, region, and nation. Forests in Rhode Island have always supported local and state economies and generated employment and income (Leefers 2014, 2015; Poudel, 2022). These forests form the foundation for a wide array of industries, supporting logging, sawmills, pulp and paper, wood products manufacturing, and furniture production. Collectively, the Forest Products Industry (FPI) contributes directly to the economic development of the region, while also supporting rural livelihoods, providing raw materials for construction and packaging, and generating substantial downstream linkages to other industries (Poudel and Dahal 2025; Lamsal et al. 2025a). The scale and diversity of activities across the FPI underscore its role as a major part of the broader manufacturing economy, contributing to Value-Added and sustaining consumer demand (Lamsal et al. 2025b).

A state report on FPI contributions on Rhode Island was previously published by Leefers et al. (2020) using 2017 IMPLAN data. The present update extends that effort using 2023 data, allowing for a comparison across time. This analysis measures how the performance of forest sector industries in Rhode Island has shifted between 2017 and 2023 in terms of employment, output, Labor Income, and the Gross State Product (GSP), also known as Value-Added[1]. Tracking these changes is essential, as it provides a clear picture of both long-term trends and the more recent disruptions caused by the COVID-19 pandemic. The pandemic had economy-wide effects on supply chains, consumer demand, and labor markets (Poudel and Dahal 2025; Lamsal et al. 2025b), and this report therefore captures the pre- and post-COVID conditions of the FPI within the region.

This trend analysis can be used in multiple ways by related stakeholders. For policymakers, it offers a benchmark for monitoring the health of one of the region's key resource-based industries and helps inform workforce development, investment, and rural economic policies. For industry stakeholders, it provides insight into productivity, competitiveness, and sectoral resilience, supporting strategic planning. For researchers and forest managers, it offers a consistent regional framework that connects forest resources with industrial performance and economic outcomes.

[1] The 2017 results in this report are based on data from the IMPLAN Pro desktop version, whereas the 2018–2023 results are based on the IMPLAN web platform. Because there are minor differences between the Pro and web versions, the 2017 estimates shown here may not exactly match 2017 results reproduced from the web version. To maintain consistency with the original 2017 report and ensure a valid basis for comparison and trend analysis, we use the original 2017 IMPLAN Pro data, and IMPLAN web data for all years from 2018 through 2023.

The data used in this report were derived from the U.S. Forest Service Forest Inventory and Analysis (FIA) database and from Impact Analysis for Planning (IMPLAN). These data and related information are presented in four major sections: (i) Forest Resources of Rhode Island, (ii) Economic Contributions of the Rhode Island FPIs, (iii) Comparing FPIs with other industries and neighbor states, and (iv) Summary. We acknowledge that, due to rounding, some values in the tables and figures may not sum to the exact total indicated.

Forest Resources of Rhode Island state

According to 2023 estimates from the USDA Forest Inventory and Analysis (FIA) program, Rhode Island's total land area totals 677,507 acres. Of this total, 377,545 acres (55.7 percent) meet the FIA definition of forest land, while the remaining 299,962 acres (44.3 percent) are classified as non-forest land. FIA defines forest land as land at least 10 percent stocked by trees of any size, including areas that formerly supported such tree cover and that will be naturally or artificially regenerated. Within Rhode Island's forest land base, timberland accounts for 356,372 acres, or 94.4 percent (Figure 1), representing unreserved forest capable of producing at least 20 cubic feet of wood per acre per year. Reserved forestland comprises 19,430 acres (5.1 percent) and is withdrawn from timber utilization by legal or administrative designation. Other forestland totals 1,743 acres (0.5 percent) and consists of unreserved forests of low productivity. In practical terms, the vast majority of Rhode Island's forest land is both unreserved and biophysically suitable for commercial timber management, with only a small share either reserved or too low in productivity to contribute materially to timber supply.

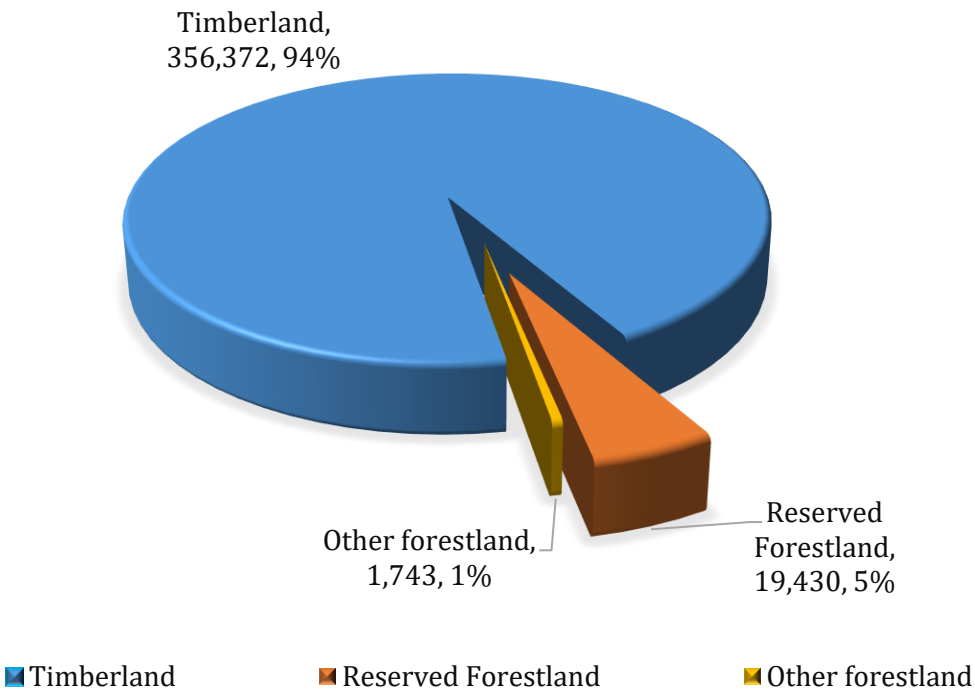

Figure 1: Rhode Island Forest Land area in acres by Land use type, 2023 (US Forest Service).

Ownership of Rhode Island's 377,545 acres of forest land is distributed among state and local, and private entities, with private landowners holding the largest share (Figure 2). Private ownership accounts for 258,085 acres, representing 68.4 percent of the state's forest land base. State and local governments manage 119,460 acres (31.6 percent), reflecting a substantial public ownership presence at the subnational level. No federal forest land is reported in Rhode Island; neither National Forest System lands nor other federal ownership are present in the state's forest land base. Overall, Rhode Island's forest land ownership structure is characterized by a predominance of private ownership alongside a comparatively large state and local public land component.

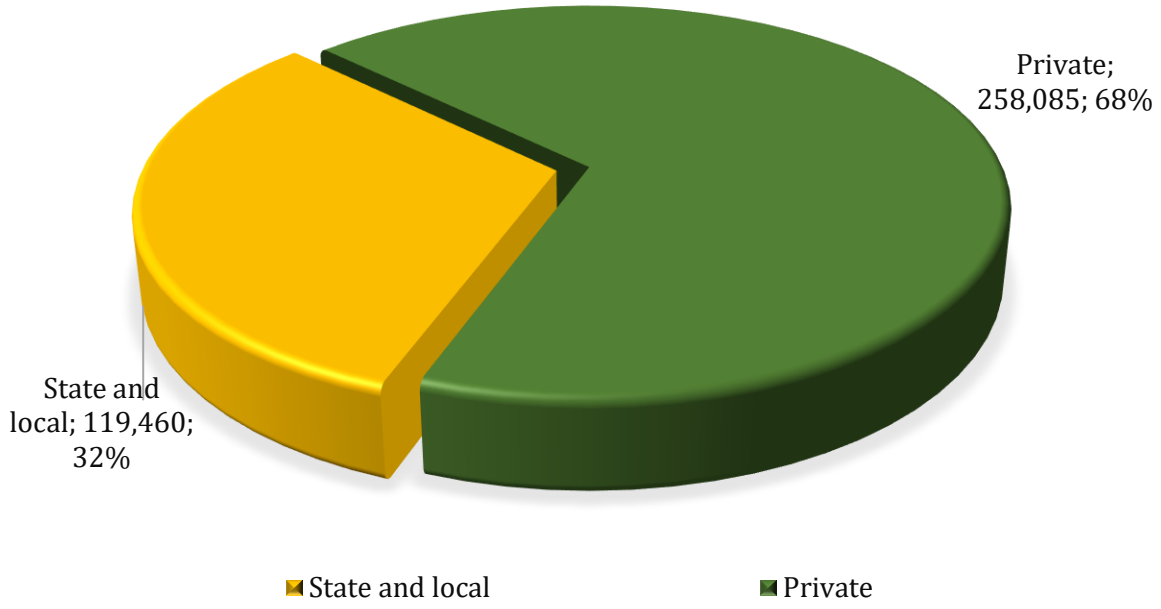

Figure 2: Rhode Island Forest Land area in acres by Ownership group, 2023 (US Forest Service).

Hardwood forest types dominate Rhode Island's 377,545 acres of forest land (Figure 3). The oak/hickory forest-type group is the most extensive, occupying 226,090 acres, or 59.9 percent of the state's forest land base. Softwood and mixed forest types contribute smaller but notable shares, including white/red/jack pine at 41,723 acres (11.1 percent) and mixed oak/pine stands at 27,867 acres (7.4 percent). Additional hardwood-dominated groups include maple/beech/birch at 28,969 acres (7.7 percent) and oak/gum/cypress at 21,987 acres (6 percent). The remaining 30,909 acres (8 percent) are distributed across other forest-type groups. Overall, Rhode Island's forest land base is strongly hardwood-dominated, with oak-associated forest types accounting for a substantial majority of the total forest area.

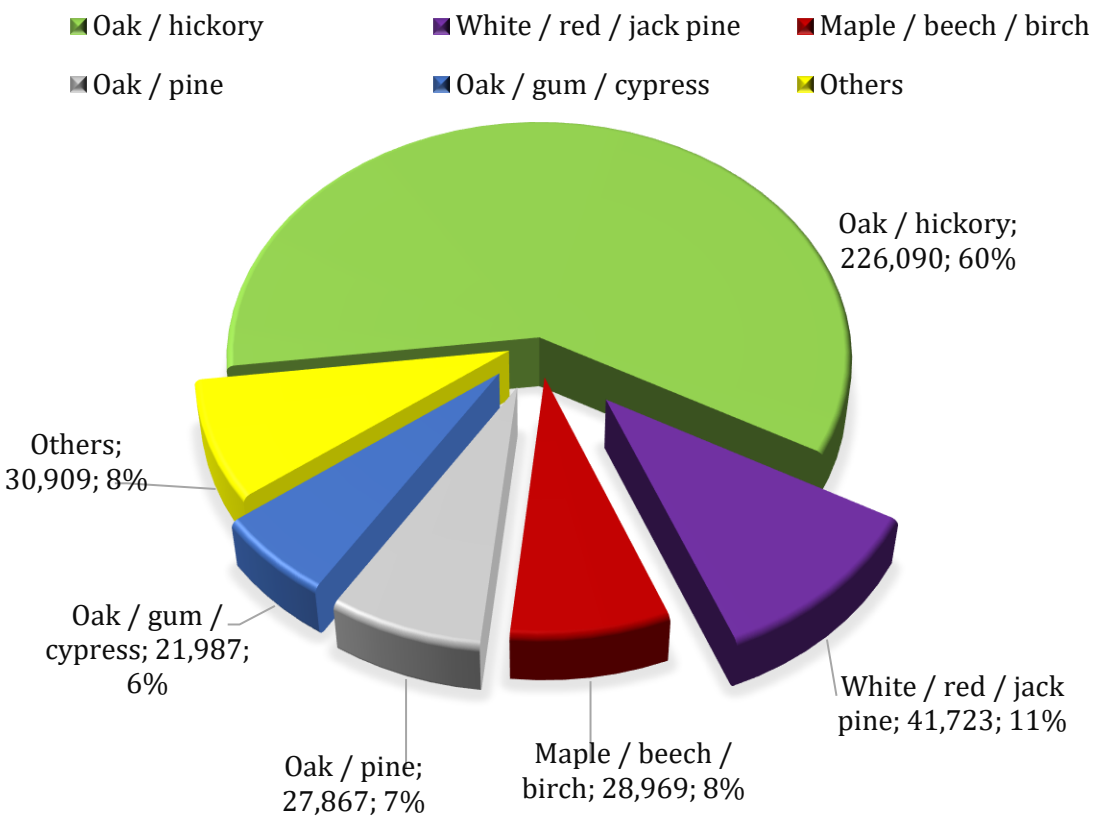

Figure 3*:* Rhode Island Forest Land area in acres by Forest type group, 2023 (US Forest Service).

Rhode Island's timber resource base is relatively small in absolute terms but reflects active biological dynamics across species groups and ownerships. The estimated volume of standing timber suitable for forest products (i.e., growing-stock volume) totals 939.7 million cubic feet statewide (Table 1). Hardwood species account for the majority of the resource, totaling 701.3 million cubic feet (74.6 percent), while softwoods comprise 238.4 million cubic feet (25.4 percent). All reported growing-stock volume is located on private and state and local government lands, with private ownership accounting for 636.8 million cubic feet (67.8 percent) and state and local ownership accounting for 303.0 million cubic feet (32.2 percent).

Average annual net growth of growing stock is 3.3 million cubic feet per year, compared with 4.9 million cubic feet in average annual harvest removals and 14.9 million cubic feet in average annual mortality. On this basis, net growth is below harvest removals, with a growth-to-removals ratio of approximately 0.7 to 1. Because net growth is already net of mortality, the implied net change in growing-stock volume is net growth minus harvest removals, which is negative, indicating a statewide decline in growing-stock volume. In relative terms, annual harvest removals represent approximately 0.5 percent of standing growing-stock volume, while mortality represents about 1.6 percent. Species dynamics differ across flow measures:

softwoods account for the majority of net growth (74.3 percent) and harvest removals (65.1 percent), while hardwoods account for the majority of mortality (81.3 percent).

Table 1: Characteristics of Growing Stock in Rhode Island, 2023. †

Description	Species group	National Forest	Other federal	State and local	Private	Not available	**Total**
Net volume	Hardwood	0	0	203,943	497,378	0	**701,321**
	Softwood	0	0	99,041	139,381	0	**238,422**
	Total	**0**	**0**	**302,984**	**636,759**	**0**	**939,743**
Average annual net growth	Hardwood	0	0	-1,253	1,920	183	**850**
	Softwood	0	0	592	1,873	0	**2,465**
	Total	**0**	**0**	**-661**	**3,793**	**183**	**3,314**
Average annual harvest removals	Hardwood	0	0	310	1,389	0	**1,699**
	Softwood	0	0	2,910	265	0	**3,175**
	Total	**0**	**0**	**3,220**	**1,654**	**0**	**4,874**
Average annual mortality	Hardwood	0	0	4,754	7,378	0	**12,132**
	Softwood	0	0	1,835	964	0	**2,798**
	Total	**0**	**0**	**6,589**	**8,342**	**0**	**14,931**

† All amounts are in thousands of cubic feet.

Note: **Growing stock** is all live trees of commercial species that meet minimum merchantability standards. **Net volume** is net volume in cubic feet of growing stock for timber species, for trees greater than or equal to five inches in diameter, from a one-foot stump to a minimum four-inch top diameter, or to where the central stem breaks into limbs, all of which are less than four inches in diameter. **Net growth** is the average annual net growth of growing stock, in cubic feet, on forest land. **Annual mortality** is the average annual cubic foot mortality of live growing-stock trees (at least four inches DBH), in cubic feet, on forest land. **Harvest removals** are the average annual harvest removals, in cubic feet, of growing stock trees on forest land.

Economic contribution of the Forest Product Industries, 2023

The FPIs in this study are defined as 32 IMPLAN industries (only 21 industries present in Rhode Island) that were aggregated into seven analytic groups for consistent reporting across the state. This report follows the same industry grouping framework used in the 2017 report, which was originally developed through consultation with state forestry agencies and other stakeholders and represent a working consensus on what constitutes the regional FPI (Leefers et al. 2020; Poudel and Dahal 2025). The complete list of industries and groupings are presented in Appendix A.

The FPI encompasses a wide range of activities that begin with forest management and timber harvesting and extend through the conversion of raw materials into high-value finished goods. These activities include timber tract operations, nurseries, logging, sawmills, wood preservation, pulp and paper manufacturing, furniture production, and related downstream sectors (Poudel and Dahal 2025). The FPI is a cornerstone of the Rhode Island economy, not only providing direct employment in logging, milling, and manufacturing but also supporting a much larger network of indirect and induced jobs in transportation, warehousing, wholesale trade, and retail (Leefers et al. 2020). Its health has far-reaching consequences for rural communities, where it is often one of the few sources of year-round employment, and for regional supply chains that depend on steady flows of wood, fiber, and paper products (Lamsal et al. 2025a).

Measuring these contributions requires more than simply counting jobs, mills, or other establishments. Contribution analysis is essentially a descriptive, ex-post accounting framework that traces how industries interact within a regional economy and support the economy (Lamsal et al. 2025b, Watson et al. 2015). It not only measures the direct transactions tied to a sector, but also the indirect effects in supplier industries and the induced effects from household spending that ripple outward. Economic contribution analysis depends on standardized frameworks that can translate government statistics into regional input–output models. The Bureau of Economic Analysis (BEA) provides the foundation through its Benchmark Input-Output Accounts, which map the flow of goods and services across industries and establish the structure of GDP by industry (BEA 2023). The Bureau of Labor Statistics (BLS) complements this with the Quarterly Census of Employment and Wages (QCEW) and occupational data, which provide details on employment and payroll. Further, the U.S. Census Bureau adds extra detail with the Economic Census and County Business Patterns, which track establishments, receipts, and industry-level production. Impact Analysis for Planning (IMPLAN) harmonizes these data sources into a consistent input-output modeling framework for estimating regional economic contributions (IMPLAN 2023). IMPLAN is widely used in forest-sector economic research to

estimate employment, output, labor income, and value-added effects associated with forest-products industries. Several forest-sector studies have also paired IMPLAN with FIA data to link forest resource conditions with regional economic outcomes, including timber-product output in Ohio (Coronado et al. 2014), domestic hardwood substitution for imported trailer decking in New York (Pokharel et al. 2023), and potential mass timber processing facility development in Michigan (Khanal et al. 2024). IMPLAN also provides a bridge table that is important for defining the forest-products sectors included in this report. The bridge table is useful in both directions: it aggregates NAICS industries into IMPLAN sectors for modeling and identifies the NAICS components represented within each IMPLAN sector. Although this does not by itself constitute a formal sector disaggregation within IMPLAN, it provides the basis for constructing partial-sector estimates when external data are available.

This distinction is particularly important for forest sector analysis because several IMPLAN sectors contain both forestry and non-forestry components (Poudel and Dahal 2025). In this study, the IMPLAN bridge table was used to identify the relevant NAICS-defined activities embedded within broader IMPLAN sectors, and external data were then used to approximate the forest-related share of selected mixed sectors. For example, IMPLAN Sector 10 (All Other Crop Farming) includes a wide variety of agricultural activities such as alfalfa, peanut, and hemp farming, also in addition to maple syrup production. Using USDA maple syrup production data, only the maple syrup portion of Sector 10 was included in the FPI.. Similarly, IMPLAN Sector 19 (Support Activities for Agriculture and Forestry) encompasses a broad spectrum of NAICS industries, including soil preparation, crop harvesting, farm labor contracting, and specialized support services for forestry. To avoid overstating the sector, only Support Activities for Forestry were retained in the FPI totals, using BLS employment and establishment data. Thus, the partial-sector estimates reported here reflect analyst-defined allocations based on the IMPLAN bridge table and supplementary data, rather than an automatic sector split performed within IMPLAN. In the 2017 report, several additional sectors were treated as partial sectors, IMPLAN 40 (Electric Power Generation, Biomass), IMPLAN 352 (Institutional Furniture Manufacturing), and IMPLAN 356 (Showcase, Partition, Shelving, and Locker Manufacturing), but in 2023, following stakeholder consensus and due to limited data to isolate wood-based components, these are treated as full sectors; consequently, the 2023 economic contribution estimates for these specific sectors appear higher and are not directly comparable to the 2017 figures. Any comparison between years should therefore be interpreted with caution.

Further, the 2023 analysis implemented the mixed endogenous-exogenous closure using the Output- and Employment -based multipliers formulation approach (Miller and Blair 2022; Lamsal et al. 2025a), whereas the 2017 report used the equivalent matrix-inversion approach. Since these approaches are alternative computational expressions of the same input–output

framework and, under the same closure assumptions, these formulations are theoretically equivalent and yield the same multipliers and results.

Note on Data Consistency (2017 vs. 2018–2023): *Readers should interpret the sharp variance between 2017 and 2018 data with caution. The 2017 figures presented in this report are retained from previous studies that used the desktop-based IMPLAN Pro software. Data for 2018 through 2023 were generated using the modernized IMPLAN Cloud (Web) platform, which utilizes updated accounting frameworks and regional purchase coefficients. Although both sets of estimates are based on the same underlying input–output/SAM framework, they are not fully comparable in construction. IMPLAN revised its industry classification structure over time, moving from the 536-industry scheme used for 2013–2017 data years to the 546-industry scheme used for 2018–2022, and later to the 528-industry scheme beginning in 2023. IMPLAN also documents differences in trade-flow and regional purchase coefficient estimation between legacy Pro-era workflows and the current cloud environment. In addition, this report applies updated aggregation and sector-inclusion rules for selected forest-related industries. Accordingly, differences between 2017 and later years may reflect methodological discontinuity in addition to underlying economic change. Comparisons spanning 2017 to 2018 should therefore be interpreted with caution.*

Economic Performance Trends of Forest Product Industry (2017-2023)

From 2017 to 2023, Rhode Island's forest sector contracted in both employment and output (Figure 4). Total jobs declined from 3,035 in 2017 to 2,589 in 2023, a decrease of 14.7 percent, while output fell from $1,165.0 million to $990.4 million, a decrease of 15.0 percent. Output peaked in 2018 at $1,244.4 million and then trended downward, with the largest single-year decline occurring from 2019 to 2020 when jobs fell 12.4 percent and output fell 14.5 percent. Output reached a low of $970.0 million in 2022 before increasing modestly to $990.4 million in 2023, an increase of 2.1 percent, even as employment declined by an additional 1.2 percent. As a result, output per job rose to approximately $383,000 per job in 2023, about 3.3 percent higher than in 2022, which shows slightly higher production value per worker despite a smaller workforce.

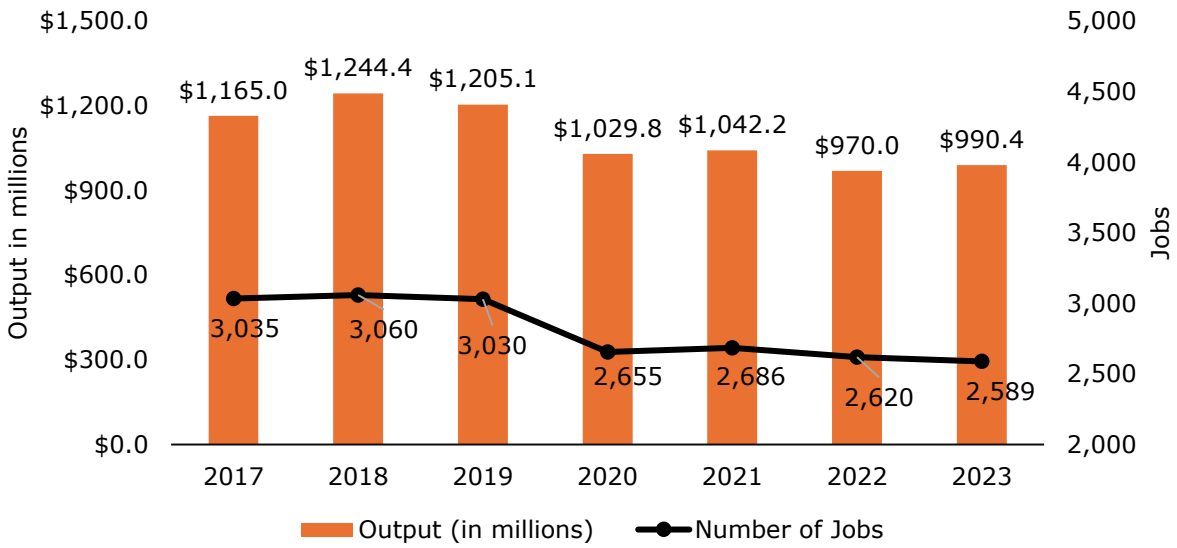

Figure 4: Direct output and employment, 2017–2023, Rhode Island state forest products industries.

Figure 5 shows that Value-Added and Labor Income both trended downward over the 2017–2023 period, consistent with the sector's overall contraction. In 2023, Value-Added totaled $240 million and Labor Income totaled $184 million, both below 2017 levels ($281 million in Value-Added and $221 million in Labor Income). The most recent year shows a notable divergence: from 2022 to 2023, Value-Added increased by $20 million (about nine percent), while Labor Income decreased by $2 million (about one percent). As a result, the sector generated more Value-Added per dollar of Labor Income in 2023 than in 2022, showing higher Value-Added intensity. This pattern is consistent with a shift toward higher-margin production, greater capital intensity, or other efficiency gains rather than growth driven primarily by income expansion.

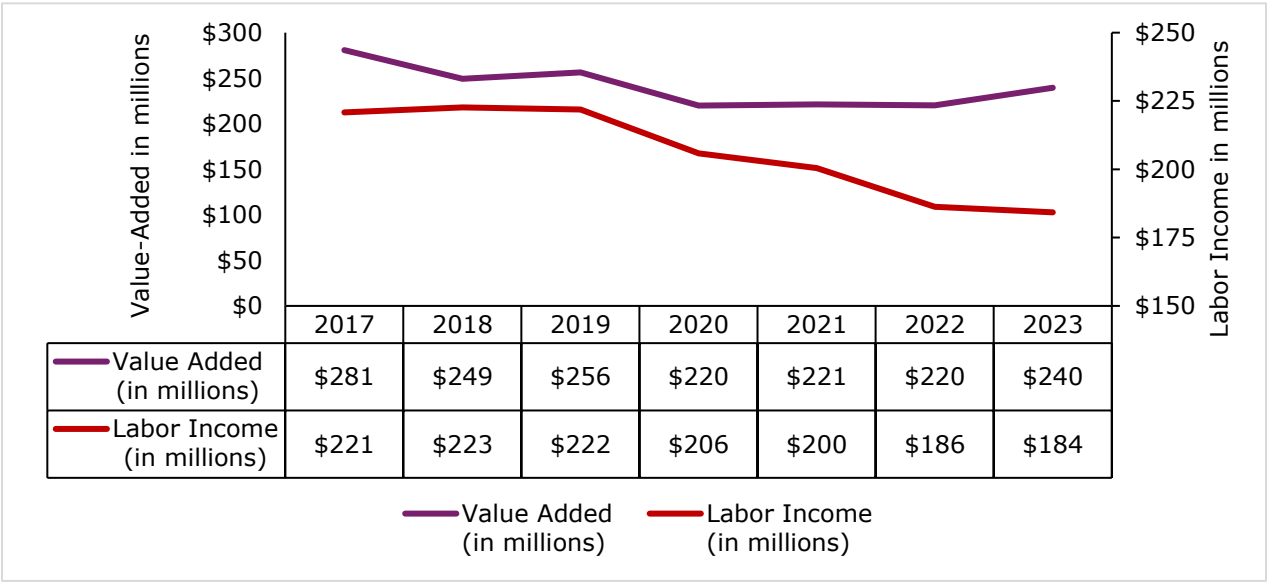

Figure 5: Direct Value-Added and Labor Income, 2017–2023, Rhode Island state, forest products industries.

Direct and Total Contributions by Forest Product Industry Groups

In 2023, Rhode Island's forest products industries directly employed 2,589 individuals, generated $990.4 million in output, and contributed $239.5 million in Value-Added to the state economy. When accounting for indirect supply-chain transactions and induced household spending, the total economic contribution of the forest sector reached 4,936 jobs and approximately $1.48 billion in total output.

Comparing 2023 results to 2017 indicates a contraction across all major indicators, with total employment decreasing by 22.5% and total output by 19.1%. Despite this decline, the calculated multipliers demonstrate the sector's continued economic integration. The employment multiplier of 1.91 indicates that for every 100 direct jobs in the forest industry, an additional 91 jobs are supported in other sectors. Similarly, the Value-Added multiplier of 2.22 suggests that every dollar of wealth created directly by the industry generates an additional $1.22 elsewhere in the state economy.

Table 2*:* Statewide Economic Contribution of Forest Products Industries, 2023. †

	Employment	Labor Income	Value-Added	Output
Direct in 2023	2,589	$184,246	$239,513	$990,357
Compared to 2017	-14.7%	-16.6%	-14.7%	-15.0%
Total in 2023	4,936	$346,831	$530,996	$1,482,414
Compared to 2017	-22.5%	-24.4%	-20.8%	-19.1%
Multipliers in 2023	1.91	1.88	2.22	1.50

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

Table 3 reports the direct economic contributions of the seven industry groups, while Table 4 expands this view to include total contributions with multiplier effects. In 2023, Rhode Island's forest sector structure is characterized by a distinct polarization between minimal raw extraction and robust downstream manufacturing. Unlike heavily forested states where logging dominates the workforce, Rhode Island's industry is overwhelmingly concentrated in Value-Added processing. The Secondary Paperboard and Other Paper Products sector is the undisputed economic driver, directly employing 1,011 individuals, more than 26 times the combined workforce of the Forestry and Logging sectors (38 jobs). This suggests an industrial

ecosystem where the primary value proposition is not the harvesting of local timber, but the conversion of imported or recycled fiber into finished consumer goods.

A key divergence in operational efficiency is evident when comparing the state's top manufacturing sectors. While Wood Furniture requires a substantial labor force (916 jobs) to generate $211.3 million in output, the Secondary Paperboard and Other Paper Products sector generates more than double that output ($526 million) with a roughly similar workforce size (1,011 jobs). This indicates that the paperboard sector benefits from higher capital intensity and automation, resulting in significantly higher output per worker compared to the more labor-intensive furniture manufacturing processes.

Table 3: Direct Economic Contributions in Rhode Island state, Industry Groups, 2023. †

Industries	Employment	Labor Income	Value-Added	Output
1.Forestry	4	$382	$394	$429
2.Logging	34	$3,408	$22,238	$22,462
3.Primary Solid Wood Products	90	$4,504	$3,675	$55,109
4.Secondary Solid Wood Products	474	$24,369	$23,258	$124,117
5.Wood Furniture	916	$72,036	$66,779	$211,336
6.Pulp, Paper, and Paperboard mills	61	$5,135	$9,665	$50,916
7.Secondary Paperboard and other Paper Products	1,011	$74,412	$113,506	$525,988

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

When supply-chain and induced effects are integrated (Table 4), the Secondary Paperboard and Other Paper Products sector remains the primary engine of the state's forest economy, supporting 2,156 total jobs and nearly $770 million in total economic output. However, the most notable economic leverage is found in the Pulp, Paper, and Paperboard Mills sector. Despite directly employing only 61 workers, this sector supports a total of 196 jobs throughout the economy, yielding a robust employment multiplier of approximately 3.2. This reflects deep backward linkages; because these mills require consistent energy, transportation, and specialized maintenance services, their operation sustains a disproportionately large network of support industries relative to their immediate payroll.

Note: *In Table 4, readers may observe that the sum of the economic contributions for the individual industries exceeds the reported total contribution for the Forest Sector as a whole as presented in Table 2. This difference is intentional and results from the "mixed-model" approach used to ensure accuracy.*

In Input-Output (I-O) analysis, simply adding the total contributions of individual sectors results in double-counting. This occurs because the output of one forest industry often serves as an input for another. For example, logs harvested by the Logging sector are inputs for the Furniture sector. If modeled individually and summed, the model counts both the direct value of the logs and the associated supply-chain ripples (indirect effects) twice: once as a production requirement for the Furniture, and again as a direct output of the Logging sector. To provide the most accurate estimate, the aggregated total is calculated by treating the forest industries as a single economic unit. This method mathematically nets out all inter-industry transactions within the sector, ensuring that the final results reflect only the new economic value generated for the state economy.

Table 4: Total Economic Contributions in Rhode Island state, Industry Groups, 2023. †

Industries	Employment	Labor Income	Value- Added	Output
1.Forestry	5	$478	$570	$700
2.Logging	48	$4,235	$23,780	$24,851
3.Primary Solid Wood Products	242	$15,371	$24,593	$89,874
4.Secondary Solid Wood Products	800	$46,954	$65,362	$195,750
5.Wood Furniture	1,541	$113,631	$140,754	$336,620
6.Pulp, Paper, and Paperboard mills	196	$15,001	$28,889	$84,139
7.Secondary Paperboard and other Paper Products	2,156	$154,737	$262,490	$769,893

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars.

Forestry

Economic Contribution of Forestry

Table 5 presents the economic contribution of the Forestry sector. For Rhode Island, this group is narrowly defined due to the non-disclosure or absence of data for Maple Syrup Production and Support Activities for Forestry. Consequently, the figures in this section reflect exclusively the economic activity of Timber Tract Operations.

Table 5: Direct, Indirect, and Induced Economic Contributions of the Forestry Industry in Rhode Island, 2023. †

	Employment	Labor Income	Value-Added	Output
Direct	4	$382	$394	$429
Indirect	0.3	$8	$9	$10
Induced	1	$88	$167	$260
Total	**5**	**$478**	**$570**	**$700**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars.

In 2023, the sector directly provided 4 jobs and generated $429 thousand in output. The financial structure is heavily weighted toward labor compensation rather than material inputs. Approximately 89% of direct output was allocated to Labor Income ($382 thousand), reflecting the service-based nature of forest management.

The multiplier analysis indicates that secondary economic impacts are driven primarily by household spending (induced effects) rather than supply chain purchasing (indirect effects).

- **Indirect Effect:** The sector generated negligible supply chain activity, supporting 0.3 jobs and $10 thousand in output. This indicates minimal intermediate purchasing of goods or services by timber tract operators.
- **Induced Effect:** In contrast, the induced effect generated $260 thousand in output and supported 1 job. This activity results from the re-spending of Labor Income by the workforce within the local economy.

In total, the Forestry sector contributed 5 jobs, $700 thousand in output, and $570 thousand in Value-Added to the Rhode Island economy in 2023. The output multiplier of 1.63 implies that every $100 of direct output generates an additional $63 of economic activity statewide.

Trend Analysis: Forestry (2017–2023)

Figure 6 shows that direct employment in Rhode Island's forestry industry is very small and declined early in the period, falling from 8 jobs in 2017 to 3 jobs in 2018 and stabilizing at 4 jobs from 2019 through 2023. Output did not follow the same pattern. Output increased from $315.0 thousand in 2017 to $424.8 thousand in 2018 and remained above the 2017 level throughout the period, reaching a high of $463.5 thousand in 2020. After moderating in 2021 and 2022, output increased again to $429.4 thousand in 2023, which is about 36 percent higher than in 2017. With employment holding at 4 jobs in recent years, these results imply higher output per job relative to 2017, although the small employment base means year-to-year changes should be interpreted cautiously.

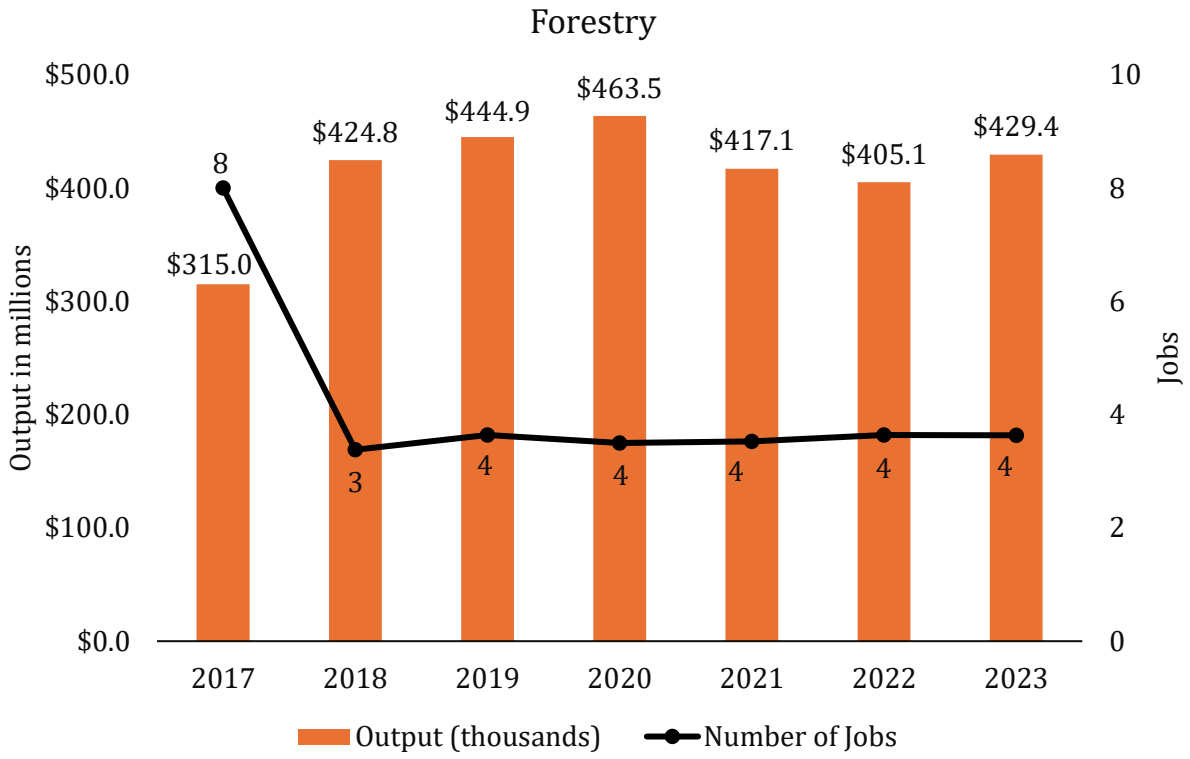

Figure 6: Trend in direct employment and output for the Forestry industry in Rhode Island, 2017–2023.

Logging

Economic Contribution of Logging

Table 6 outlines the economic contributions of the Logging sector, which comprises establishments primarily engaged in cutting timber, transporting logs, and producing wood chips. In 2023, the sector directly employed 34 individuals and generated $22.5 million in direct output. Despite the small workforce, the sector contributed significantly to the GSP, generating $22.2 million in Value-Added.

A technical analysis of the financial structure indicates exceptional labor productivity, with output per worker reaching approximately $660 thousand. The sector exhibits a high Value-Added to Output ratio (99%), while Labor Income ($3.4 million) accounts for only 15% of direct output. This suggests that the economic value is primarily driven by the resource value and capital returns rather than labor-intensive operations.

The multiplier analysis reflects limited integration with the local supply chain, resulting in an Output Multiplier of 1.11.

- **Indirect Effect:** Supply chain linkages were minimal, generating only $75 thousand in indirect output and supporting 1 job. This indicates that necessary intermediate inputs, such as heavy machinery or fuel, are likely purchased out-of-state or represent a small fraction of the total value relative to the timber itself.
- **Induced Effect:** Household spending generated $2.3 million in output and supported 13 jobs. This secondary activity is driven by the consumption spending of the logging workforce within the local service economy.

In total, the Logging sector contributed 48 jobs, $24.9 million in output, and $23.8 million in Value-Added to the Rhode Island economy in 2023.

Table 6: Direct, Indirect, and Induced Economic Contributions of the Logging Industry in Rhode Island, 2023. †

	Employment	Labor Income	Value-Added	Output
Direct	34	$3,408	$22,238	$22,462
Indirect	1	$40	$53	$75
Induced	13	$788	$1,489	$2,314
Total	**48**	**$4,235**	**$23,780**	**$24,851**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars.

Trend Analysis: Logging (2017–2023)

Figure 7 shows a sustained contraction in Rhode Island's logging industry over most of the 2017–2023 period. Direct employment declined from 92 jobs in 2017 to 34 jobs in 2023, a decrease of about 63 percent. Output also fell from $9.4 million in 2017 to a range of roughly $4.4 million to $6.2 million during 2018–2022, consistent with a smaller operating base. In 2023, however, output increased sharply to $22.5 million while employment declined further, which raises output per job from about $141 thousand in 2022 to about $660 thousand in 2023.

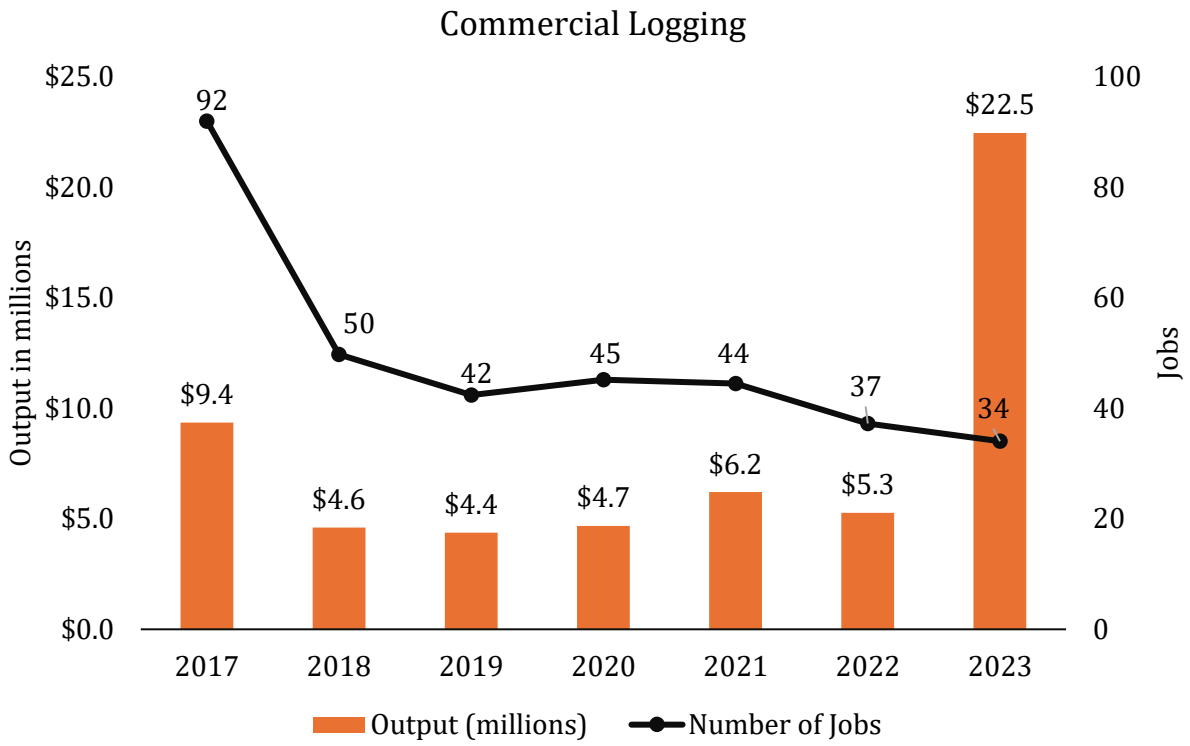

Figure 7: Trend in direct employment and output for the Logging industry in Rhode Island, 2017–2023.

Primary Solid Wood Products

Economic Contribution of Primary Solid Wood Products

Table 7 details the economic contributions of the Primary Solid Wood Products industry. In Rhode Island, this sector consists primarily of sawmills and wood preservation establishments, as data for Biomass, Veneer manufacturing, and Reconstituted wood product manufacturing is undisclosed or these sectors do not exist in a state.

In 2023, the sector directly provided 90 jobs and generated $55.1 million in output. The data indicates a capital-intensive structure with a high output-to-worker ratio of approximately $613 thousand. However, the Direct Value-Added is relatively low ($3.7 million) compared to gross output. This signifies a cost structure driven by high expenditures on intermediate inputs, such as raw timber, preservatives, and energy, rather than direct labor or internal margin retention. This reliance on external inputs results in significant supply chain impacts. The Indirect Employment effect (105 jobs) exceeds the Direct Employment (90 jobs), resulting in an employment multiplier of 2.69. This inversion indicates that the sector's operational requirements sustain a larger workforce in the supporting supply chain (logistics, maintenance, and raw material supply) than within the manufacturing facilities themselves.

When fully aggregated, the Primary Solid Wood Products industry contributed a total of 242 jobs, $90.0 million in output, and $24.6 million in Value-Added to the Rhode Island economy in 2023. The sector exhibits a high Value-Added multiplier of 6.70, reflecting that significant wealth generation occurs through supply chain transactions rather than direct value capture.

Table 7: Direct, Indirect, and Induced Economic Contributions of the Primary Solid Wood Products Industry in Rhode Island, 2023. †

	Employment	Labor Income	Value-Added	Output
Direct	90	$4,504	$3,675	$55,109
Indirect	105	$8,033	$15,556	$26,445
Induced	47	$2,862	$5,412	$8,408
Total	**242**	**$15,399**	**$24,643**	**$89,962**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars.

Trend Analysis: Primary Solid Wood Products (2017–2023)

Figure 8 illustrates the volatility and recent resurgence of the Primary Solid Wood Products industry in Rhode Island. The sector experienced a prolonged contractionary phase from 2017 through 2021, where output declined by nearly 43% from its peak of $69.9 million to a low of $39.7 million. This downturn was accompanied by a structural reduction in the workforce, which stabilized at around 80 jobs during the height of the pandemic and its aftermath (2020–2022). However, the 2023 data signals a recovery. In a significant reversal of the previous trend, Real Industry Output surged by over 32% in a single year, climbing from $41.7 million in 2022 to $55.1 million in 2023. This financial rebound was supported by a simultaneous expansion in the labor market, with employment growing by 11% to reach 90 jobs.

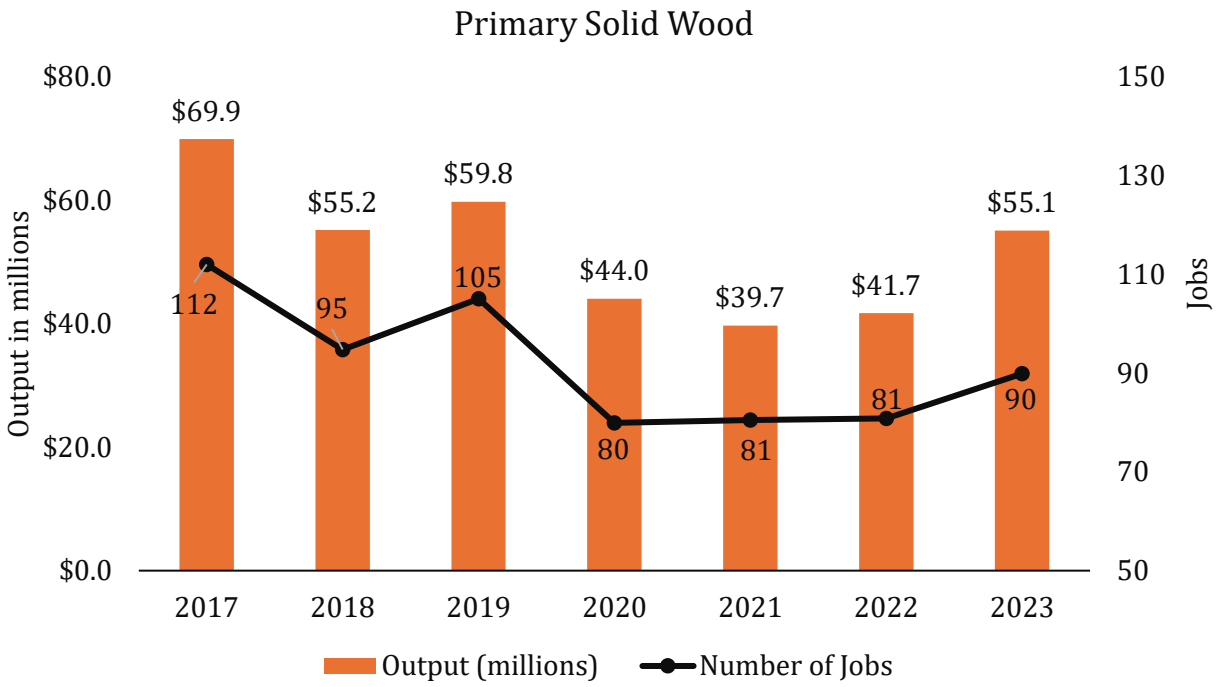

Figure 8: Trend in direct employment and output for the Primary Solid Wood Products industry in *Rhode Island*, 2017–2023.

Secondary Solid Wood Products

Economic Contribution of Secondary Solid Wood Products

Table 8 details the economic contribution of the Secondary Solid Wood Products industry. This diverse Value-Added sector encompasses industries such as engineered wood member and truss manufacturing, cut stock and resawing, millwork and flooring, wood container and pallet manufacturing, and prefabricated wood building manufacturing. It is important to note that Wood windows and door manufacturing is not disclosed or present in the Rhode Island dataset for 2023.

Despite these exclusions, this sector stands as a significant pivot point in the state's forest economy, marking the transition from raw material processing to finished goods. In 2023, it directly provided 474 jobs, more than five times the workforce of the Primary Solid Wood sector, and generated $124.1 million in direct output.

The sector exhibits a moderate Employment Multiplier of 1.69, indicating that for every 100 jobs created in secondary manufacturing, around 69 additional jobs are supported elsewhere in the Rhode Island economy. This is notably lower than the multiplier observed in the Primary Solid Wood sector (2.69). This technical distinction reflects upstream supply chain dynamics: whereas Primary manufacturers rely on labor-intensive logging operations or in-state services, Secondary manufacturers often purchase processed lumber and components. However, the

sector excels in wealth multiplier effects. The sector boasts a high Value-Added multiplier of 2.81, generating an additional $1.81 in state wealth for every dollar of Value-Added created by the manufacturers themselves.

When fully aggregated, the sector supports a total of 800 jobs and contributes nearly $195.8 million in total economic output. By converting rough lumber into specialized construction components and packaging, this industry effectively anchors a supply chain that balances import reliance with significant local labor contributions.

Table 8: Direct, Indirect, and Induced Economic Contributions of the Secondary Solid Wood Products Industry in Rhode Island, 2023. †

	Employment	Labor Income	Value-Added	Output
Direct	474	$24,369	$23,258	$124,117
Indirect	184	$13,966	$25,802	$46,310
Induced	141	$8,619	$16,302	$25,323
Total	**800**	**$46,954**	**$65,362**	**$195,750**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars.

Trend Analysis: Secondary Solid Wood Products (2017–2023)

Figure 9 highlights the remarkable stability and resilience of Rhode Island's Secondary Solid Wood Products industry. Unlike upstream sectors that faced sharp contractions, this Value-Added manufacturing group maintained a consistent workforce throughout the seven-year period. Employment fluctuated within a narrow band, starting at 455 jobs in 2017 and ending at 474 jobs in 2023, actually peaking during the challenging economic years of 2020 and 2022.

The output trend, however, reveals a "dip and recovery" pattern that speaks to supply chain dynamics. Between 2019 and 2022, Real Industry Output softened, dropping to a low of $104.1 million in 2021 despite high employment levels. However, 2023 marks a full recovery; output surged by nearly 18% year-over-year to reach a period high of $124.1 million. The fact that this output spike occurred with a flat workforce (474 jobs) indicates that the sector is now increasing the productivity of its established labor force.

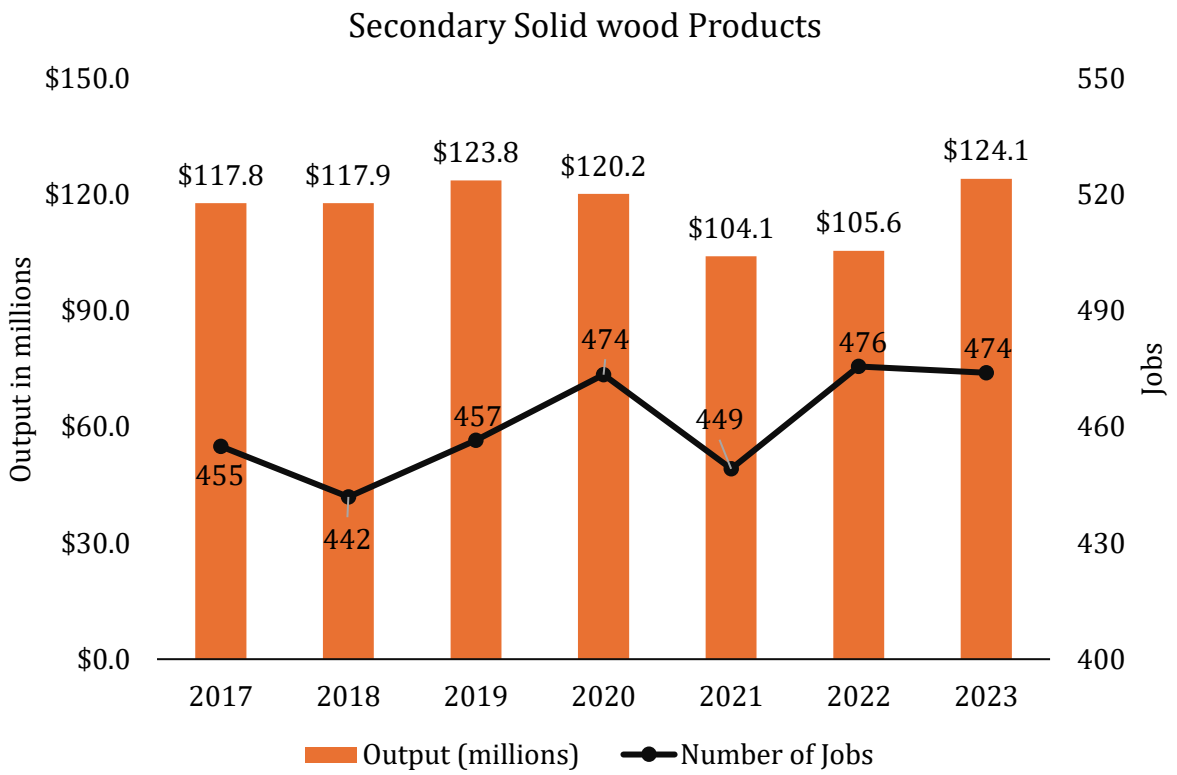

Figure 9: Trend in direct employment and output for the Secondary Solid Wood Products industry in Rhode Island, 2017–2023.

Wood Furniture

Economic Contribution of Wood Furniture

Table 9 details the economic contributions of the Wood Furniture industry. This group encompasses a range of Value-Added manufacturers, including those producing wood kitchen cabinets and countertops, upholstered and non-upholstered household furniture, and custom architectural woodwork. It is important to note that institutional wood furniture and wood office furniture manufacturing are not disclosed or present in the Rhode Island forest economy, narrowing the sector's focus primarily to residential and custom commercial finishing.

In 2023, this sector directly provided 916 jobs and generated $211.3 million in direct output. The financial data highlights that Wood Furniture manufacturing operates with a distinct economic structure compared to upstream processing. While it is a manufacturing industry, it retains a high labor intensity relative to its capital output. Approximately 34% of its direct gross output flows to workers as Labor Income ($72.0 million out of $211.3 million).

This operational structure drives significant economic ripples. The Employment Multiplier is 1.68, meaning that every 100 direct jobs support an additional 68 jobs elsewhere in the state. Analyzing the multiplier components reveals a balanced economic influence. The Induced Effect

(346 jobs) slightly exceeds the Indirect Effect (279 jobs), indicating that the sector's impact is driven as much by the spending power of its workforce as it is by supply chain purchasing.

When fully aggregated, the Wood Furniture industry contributed a total of 1,541 jobs, $336.6 million in output, and $140.8 million in Value-Added to the Rhode Island economy in 2023. With a Value-Added multiplier of 2.11, the sector effectively acts as a wealth multiplier, transforming raw materials into high-value consumer goods while stimulating activity in both the local service economy and the industrial supply chain.

Table 9: Direct, Indirect, and Induced Economic Contributions of the Wood Furniture Industry in Rhode Island, 2023. †

	Employment	Labor Income	Value-Added	Output
Direct	916	$72,036	$66,779	$211,336
Indirect	279	$20,509	$34,103	$63,337
Induced	346	$21,085	$39,873	$61,946
Total	**1,541**	**$113,631**	**$140,754**	**$336,620**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars.

Trend Analysis: Wood Furniture Industry (2017–2023)

Figure 10 shows that Rhode Island's wood furniture industry fluctuated over the 2017–2023 period, with growth through 2018 followed by a decline and partial recovery. Employment and output peaked in 2018 at 1,134 jobs and $266.6 million in output. The sector then contracted, reaching 951 jobs and $202.9 million in 2020, before rebounding in 2021 to 1,036 jobs and $238.5 million in output. A second decline occurred in 2022, when employment fell to 894 jobs and output declined to $206.1 million. In 2023, the industry showed modest improvement, increasing to 916 jobs and $211.3 million in output. Over the full period, output per job remained relatively stable, generally in the range of about $213 thousand to $230 thousand per job, indicating that changes in total output largely tracked changes in employment and that the industry remains labor-intensive.

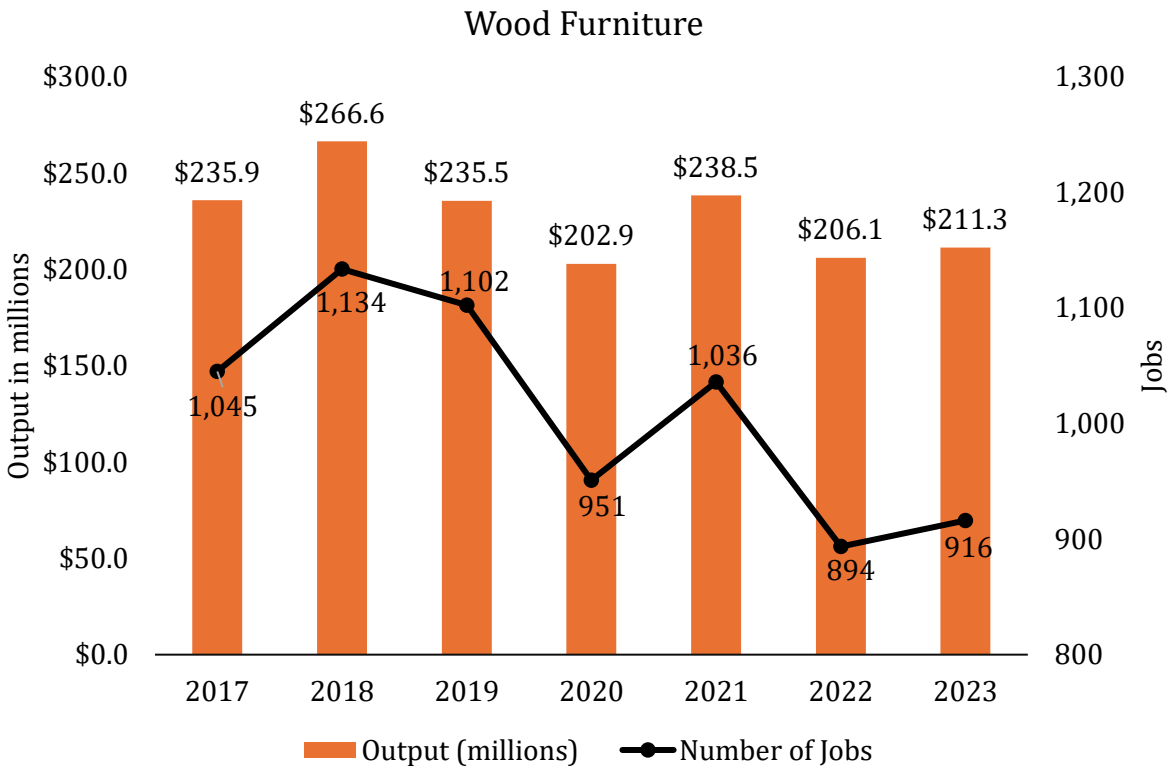

Figure 10: Trend in direct employment and output for the Wood Furniture industry in Rhode Island, 2017–2023.

Pulp, Paper, and Paperboard Mills

Economic Contribution of Pulp, Paper, and Paperboard Mills

Table 10 presents the economic contribution of the Pulp, Paper, and Paperboard Mills industry. It is important to contextualize this data within Rhode Island's specific industrial landscape: as Pulp Mills and Paper Mills are not present or undisclosed in the state dataset, this sector's activity is driven primarily by Paperboard Mills.

This sub-sector represents the most capital-intensive component of the state's forest economy, exhibiting a highly "inverted" employment profile where operational output is disproportionately high relative to the direct workforce. In 2023, while directly providing only 61 jobs, the sector generated nearly $51 million in Direct Output. This divergence, yielding approximately $835 thousand in output per worker, is the hallmark of continuous process manufacturing, where value is generated through advanced machinery and high-volume throughput rather than manual labor.

A defining characteristic of this industry is its function as a supply chain anchor. The data reveals a structural dynamic where the workforce supporting the mills exceeds the workforce inside the mills. Specifically, the Indirect Employment (87 jobs) is roughly 1.4 times larger than the Direct

Employment (61 jobs). This indicates that the paperboard sector's operational requirements, spanning logistics, recycled fiber collection, industrial maintenance, and energy utilities, sustain a larger external workforce than is employed at the facility itself. Consequently, the sector exhibits a robust Employment Multiplier of 3.22. This is the highest employment multiplier in the entire forest economy, indicating that every 100 direct mill jobs support an additional 222 jobs elsewhere in the state. When fully aggregated, the sector supports a total of 196 jobs and generates $84.1 million in total economic output.

Table 10: Direct, Indirect, and Induced Economic Contributions of the Pulp, Paper, and Paperboard Mills Industry in Rhode Island, 2023. †

	Employment	Labor Income	Value-Added	Output
Direct	61	$5,135	$9,665	$50,916
Indirect	87	$6,961	$13,729	$24,687
Induced	48	$2,905	$5,496	$8,537
Total	196	$15,001	$28,889	$84,139

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars.

Trend Analysis: Pulp, Paper, and Paperboard Mills (2017–2023)

Figure 11 indicates a sustained contraction in Rhode Island's pulp, paper, and paperboard mills industry over the 2017–2023 period. The sector expanded early in the period, peaking in 2018 with 206 jobs and $195.0 million in output. Since then, both employment and output declined, with a pronounced drop between 2020 and 2021 when jobs fell from 197 to 101 and output decreased from $164.6 million to $97.1 million. The decline continued through 2023, reaching 61 jobs and $50.9 million in output, about one-quarter of the 2018 output level. Because employment and output fell together, the trend is consistent with a reduction in overall production activity or capacity rather than a shift toward higher output per worker.

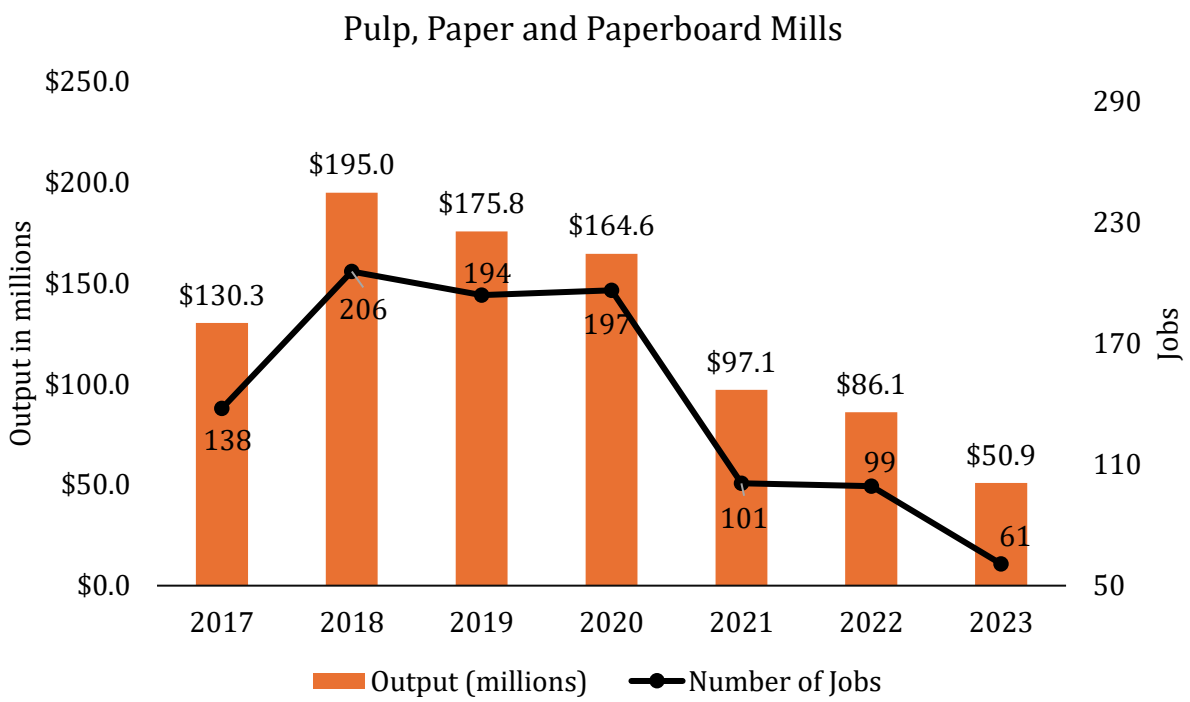

Figure 11: Trend in direct employment and output for the Pulp, Paper, and Paperboard Mills industry in Rhode Island, 2017–2023.

Secondary Paperboard and Other Paper Products

Economic Contribution of Secondary Paperboard and Other Paper Products

Table 11 outlines the economic contribution of the Secondary Paperboard and Other Paper Products industry. This group is composed of "converters" that manufacture finished goods from purchased paper, paperboard, or recycled materials. In Rhode Island, due to the non-disclosure of stationery manufacturing data, this sector is defined primarily by the production of paperboard containers, paper bags, sanitary paper products, and other converted goods. In 2023, this sector stood as the undisputed economic engine of the state's forest economy, directly providing 1,011 jobs and generating nearly $526 million in direct output.

The sector exhibits a robust Employment Multiplier of 2.13, meaning that for every 100 direct jobs in paper converting, roughly 113 additional jobs are supported throughout the state economy. A technical analysis of the multiplier components reveals strong supply chain integration: the Indirect Employment effect (671 jobs) indicates that for every three jobs inside a converting facility, two additional jobs are sustained in the supporting logistics, wholesaling, and industrial service sectors. This demonstrates that while the manufacturing base is the primary employer, it relies heavily on a consistent inflow of intermediate materials and services to maintain production schedules. Furthermore, the Induced Employment effect supports an additional 474 jobs, driven by the household spending the workforce. This balance between

industrial purchasing (Indirect) and household spending (Induced) creates a stable dual-leverage effect on the local economy.

In terms of total contribution, the Secondary Paperboard and Other Paper Products industry supports a total of 2,156 jobs and contributes nearly $770 million in total economic output. By generating nearly $262.5 million in total Value-Added, this converting sector serves a vital function as the "commercial interface" of the forest economy, transforming raw industrial paperboard into the essential packaging and consumer goods required by the state's broader retail, food service, and logistics sectors.

Table 11: Direct, Indirect, and Induced Economic Contributions of the Secondary Paperboard and Other Paper Products Industry in Rhode Island, 2023. †

	Employment	Labor Income	Value-Added	Output
Direct	1,011	$74,412	$113,506	$525,988
Indirect	671	$51,454	$88,893	$159,100
Induced	474	$28,871	$60,091	$84,805
Total	**2,156**	**$154,737**	**$262,490**	**$769,893**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars.

Trend Analysis: Secondary Paperboard and Other Paper Products (2017–2023)

Figure 12 illustrates the resilience and subsequent stabilization of the Secondary Paperboard and Other Paper Products industry, which serves as the largest employment engine within Rhode Island's forest economy. The sector entered the study period with remarkable consistency; between 2017 and 2019, output remained essentially flat at approximately $605 million, while the workforce hovered near 1,150 employees. This indicates a mature, optimized industry meeting steady market demand prior to the pandemic. The post-2020 trajectory, however, points to a structural reset rather than a full return to baseline. Following the sharp pandemic-induced contraction in 2020 (where output fell to $492.9 million), the sector staged a partial recovery in 2021. In contrast to upstream volatility, the period from 2022 to 2023 appears relatively stable. Output has stabilized at approximately $525 million, roughly 13% below the pre-pandemic peak, while employment has settled near 1,011 jobs.

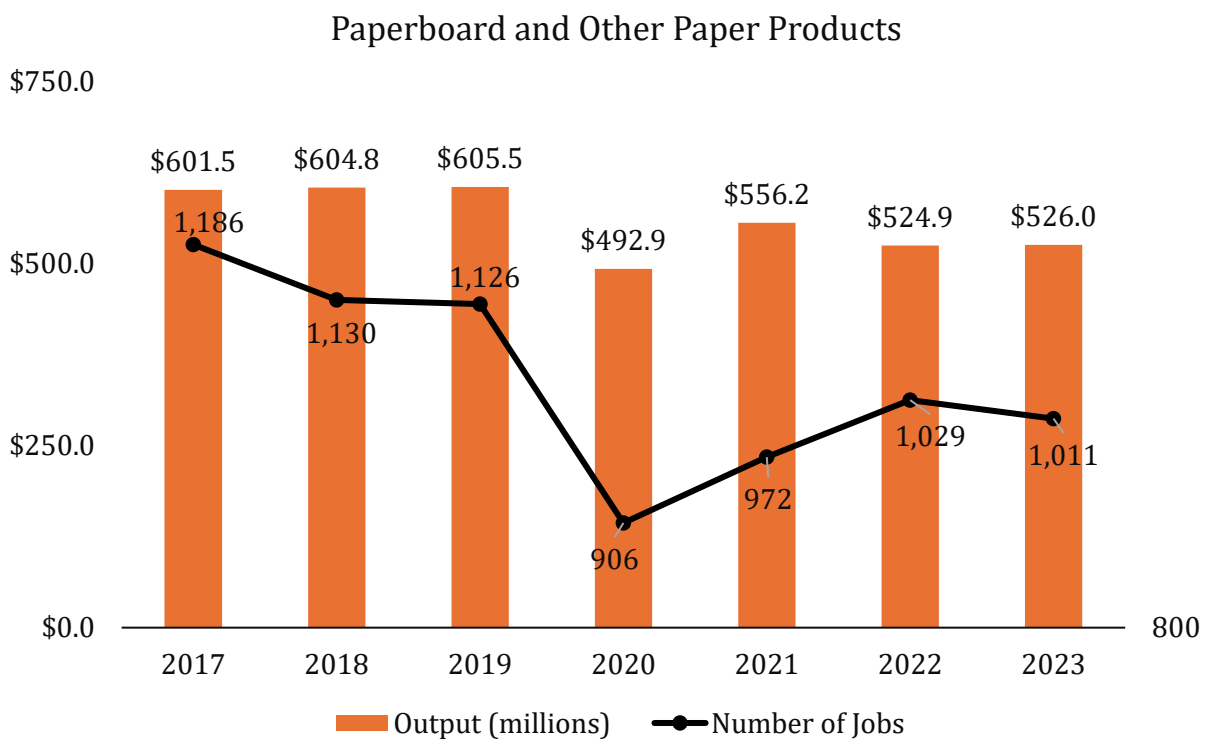

Figure 12: Trend in direct employment and output for the Secondary Paperboard and Other Paper Products industry in Rhode Island, 2017–2023.

Top Forest Product Sectors

Table 12 presents the top five industries within Rhode Island's forest-products sector based on direct economic contributions. While the broader analysis considers 32 IMPLAN industries, Rhode Island's specific industrial mix contains only 21 active forest product industries. Paperboard container manufacturing ranks first across all four economic indicators, employing 507 individuals and generating $278.9 million in output. This establishes packaging manufacturing as the primary economic driver within the state's forest sector.

Table 12: Top five industries in terms of direct Economic Contributions in Rhode Island, 2023. †

Rank	Employment	Labor Income	Value-Added	Output
1	Paperboard container manufacturing (507)	Paperboard container manufacturing ($34,766)	Paperboard container manufacturing ($50,994)	Paperboard container manufacturing ($278,883)
2	Showcase, partition, shelving, and locker manufacturing (394)	Showcase, partition, shelving, and locker manufacturing ($31,440)	Paper bag and coated and treated paper manufacturing ($45,812)	Paper bag and coated and treated paper manufacturing ($170,058)
3	Paper bag and coated and treated paper manufacturing (362)	Paper bag and coated and treated paper manufacturing ($30,773)	Showcase, partition, shelving, and locker manufacturing ($38,969)	Showcase, partition, shelving, and locker manufacturing ($109,829)
4	Custom architectural woodwork and millwork (286)	Custom architectural woodwork and millwork ($27,382)	Commercial logging ($22,238)	Custom architectural woodwork and millwork ($57,427)
5	Wood container and pallet manufacturing (184)	Other millwork, including flooring ($8,239)	Custom architectural woodwork and millwork ($12,552)	Paperboard mills ($50,916)

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

The employment rankings reflect a mix of paper converting and finished wood product manufacturing. Following Paperboard container manufacturing, the largest employers are Showcase, partition, shelving, and locker manufacturing (394 jobs) and Paper bag and coated and treated paper manufacturing (362 jobs). Custom architectural woodwork and millwork also ranks fourth with 286 jobs. Wood container and pallet manufacturing ranks fifth in employment (184 jobs) but does not appear in the top five for output or Value-Added, indicating lower financial contributions relative to its workforce size.

Financial data indicates differing capital intensities between the paper and wood sub-sectors. While Showcase, partition, shelving, and locker manufacturing is the second largest employer, it ranks third in Output ($109.8 million) and Value-Added ($39.0 million). Conversely, Paper bag manufacturing, with fewer employees, ranks second in both Output ($170.1 million) and Value-Added ($45.8 million). Additionally, Paperboard mills ranks fifth in Output ($50.9 million) despite not appearing in the top five for employment. This data suggests that the paper-based industries operate with higher output per worker compared to the more labor-intensive wood manufacturing and millwork sectors. Finally, Commercial logging ranks fourth in Value-Added ($22.2 million), indicating a high Value-Added ratio relative to its direct labor inputs.

Top Non-Forest Industries supported by the Forest Sector in 2023

Excluding the forest-products industries themselves, Rhode Island's economy comprised 371 distinct IMPLAN sectors in 2023. The forest sector's economic reach is specific and concentrated, impacting at least one job in 135 of these industries and supporting at least ten jobs in 62 of them. Beyond the 2,589 direct jobs, the sector supported an additional 2,347 indirect and induced jobs across the state's economy. Table 13 highlights the top ten non-forest industries most heavily impacted by this activity. Together, these ten sectors account for 821 jobs, representing approximately 35 percent of all indirect and induced employment generated by the forest economy.

Table 13: Top Ten Industries Impacted by Rhode Island state's Forest Products Industries in terms of number of jobs in 2023.

Industries	Number of Jobs
Other real estate	132
Wholesale - Other durable goods merchant wholesalers	103
Couriers and messengers	100
Full-service restaurants	80
Warehousing and storage	80
Management of companies and enterprises	72
Truck transportation	70
Hospitals	66
Wholesale - Other nondurable goods merchant wholesalers	63
Employment services	55
Total	**821**

The composition of these top sectors reveals the specific mechanisms through which the forest sector stimulates the wider Rhode Island economy:

- **Logistics and Wholesale Trade:** The most significant impact is concentrated in the movement and distribution of goods. Five of the top ten sectors are related to logistics and trade: Wholesale - Other durable goods (103 jobs), Couriers and messengers (100 jobs), Warehousing and storage (80 jobs), Truck transportation (70 jobs), and Wholesale - Other nondurable goods (63 jobs). The presence of both durable and nondurable wholesale sectors aligns with the forest sector's mix of solid wood products and paper/packaging products. The high ranking of Couriers and Warehousing is consistent

with the state's specialized strength in paperboard container manufacturing, which generates demand for shipping and storage services to distribute finished packaging materials..

- **Induced Household Spending and Real Estate:** The ranking of Other real estate as the single largest impacted sector (132 jobs) underscores the "induced" power of the forest workforce. Unlike states where impact is driven primarily by industrial supply chains, a significant portion of Rhode Island's economic ripple comes from the income of forest-sector employees being spent in their communities. The influence of household spending is further evidenced by the presence of Full-service restaurants (80 jobs) and Hospitals (66 jobs), which rely on the disposable income and healthcare needs of the forest sector's workforce.
- **Corporate and Business Support:** Notably, Management of companies and enterprises (72 jobs) and Employment services (55 jobs) appear in the top ten. This shows that Rhode Island's forest product firms are significant consumers of corporate support services, relying on external firms for administrative oversight, and organizational management to maintain their operations.

In terms of economic output, the forest sector's influence shifts toward high-volume trade, corporate services, and household wealth generation. As detailed in Table 14, the top ten non-forest industries supported by forest-sector activity generated a combined $202.4 million in 2023.

The dominant category involves the wholesale distribution of goods, reflecting the forest industry's reliance on commercial trade infrastructure. Wholesale - Other durable goods merchant wholesalers ranks as the single largest supported sector, generating over $37.0 million in output. When combined with Wholesale - Other nondurable goods merchant wholesalers ($27.8 million), the wholesale trade sector alone accounts for nearly $65 million in economic activity. The output rankings also highlight the significant "induced" impact of the sector on household wealth. Other real estate ranks as the third-largest supported sector ($25.8 million), and Owner-occupied housing ranks fourth ($25.2 million). In economic modeling, these sectors reflect the imputed value of homeownership and property leasing.

Finally, the data reveals a strong linkage to corporate and financial services. Management of companies and enterprises ($19.1 million) and Monetary authorities and depository credit intermediation ($15.6 million) both appear in the top six. This number suggests that the state’s forest product firms are deeply integrated into the local business ecosystem, driving significant demand for banking, credit, and corporate administration services alongside their physical infrastructure needs in Truck transportation ($14.7 million) and Electric power transmission ($14.0 million).

Table 14: Top Ten Industries impacted by Rhode Island State's Forest Products Industries in terms of output production in 2023. †

Industries	Output
Wholesale - Other durable goods merchant wholesalers	$37,022
Wholesale - Other nondurable goods merchant wholesalers	$27,839
Other real estate	$25,778
Owner-occupied housing	$25,159
Management of companies and enterprises	$19,131
Monetary authorities and depository credit intermediation	$15,605
Truck transportation	$14,673
Electric power transmission and distribution	$13,985
Hospitals	$13,417
Insurance agencies, brokerages, and related activities	$9,839
Total	**$202,448**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

Importance of the Forest Products Industries in Context

Natural Resources and Agricultural Industries

Table 15 contextualizes the economic importance of the forest economy by comparing the direct contributions of Rhode Island's four primary natural resource sectors: Forest Products, Agriculture, Mining, and Commercial Fishing & Hunting. Forest Products stands as the dominant industrial employer and output leader among Rhode Island's natural resource industries.

In terms of employment generation, the Forest Products sector ranks first, supporting 2,589 jobs. This workforce is larger than that of Agriculture (1,857 jobs), which experienced a severe contraction of 40.3% over the study period. Furthermore, the forest economy employs nearly double the workforce of the Commercial Fishing & Hunting sector (1,394 jobs) and nearly four times that of the Mining sector (691 jobs). However, a comparison of Value-Added (GSP) reveals a distinct competitive dynamic driven by capital intensity. While the Forest Products sector generated the highest gross output ($990.4 million), the Mining, Oil, and Gas sector emerged as the leader in wealth creation, contributing $476.8 million to the state GSP compared to $239.5 million from Forest Products. This occurred despite Mining providing only 691 jobs. This discrepancy highlights the extreme capital intensity of the Mining sector, likely driven by high-value quarrying and aggregate operations, where immense physical capital investments drive exceptional Value-Added per worker ($690 thousand per job) compared to the more labor-diversified forest products manufacturing industry.

The comparative trend analysis highlights a divergence in economic trajectories. The study period was characterized by extreme volatility in the non-forest sectors. The Mining sector experienced explosive growth, with Output surging by over 600 percent and Value-Added increasing by nearly 800% since 2017. Conversely, the Agriculture sector faced a steep decline, with output falling by nearly half (-49.6 percent) and employment shrinking by 40 percent. Amidst these extremes, the Forest Products sector, despite its own contraction (-15 percent output), exhibited relative structural stability compared to the crash in Agriculture.

Table 15: Natural Resources and Agricultural Production Industries in Rhode Island state, 2023. †

Industry	Employment	Δ2017††	Labor Income	Δ2017††	Value-Added	Δ 2017††	Output	Δ 2017††
1. Forest Products	2,589	-14.7%	$184,246	-16.6%	$239,513	-14.7%	$990,357	-15.0%
2. Commercial fishing, hunting & trapping	1,394	12.0%	$47,329	-53.4%	$87,952	-16.2%	$88,466	-18.8%
3. Mining, and oil & gas production	691	19.4%	$70,574	364.1%	$476,827	794.9%	$833,065	607.1%
4. Agriculture production (plant crops and animals)	1,857	-40.3%	$38,400	-71.5%	$82,299	-45.9%	$117,329	-49.6%
Total	**6,531**	**-18.1%**	**$340,549**	**-27.9%**	**$886,592**	**50.0%**	**$2,029,217**	**24.9%**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.
†† All percentage differences are calculated in real terms using 2023 constant dollars.

Manufacturing Industries

To assess the relative standing of the forest sector within Rhode Island's industrial base, Table 16 compares "Forest Products Manufacturing" against the state's other major manufacturing groups. Note that in this context, "Forest Products" refers specifically to the manufacturing sub-sectors (Groups 3 through 7), excluding the extraction activities of forestry and logging and other non-manufacturing sectors (IMPLAN codes 10, 15, 16, 19, and 40 see Appendix A). Forest products manufacturing accounts for 99% of total forest-sector employment, 98% of Labor Income, 91% of Value-Added, and 98% of total forest-sector output. The data reveals that while the forest sector is not the dominant volume leader, it remains a vital, mid-sized industrial component within a highly diversified advanced manufacturing economy.

In terms of scale, the manufacturing landscape is defined by the high-tech Transportation Equipment sector, which is the largest employer (7,382 jobs) and the highest output generator ($2.58 billion). This is followed closely by Food Manufacturing and Miscellaneous Manufacturing, generating 4,874 and 4,499 jobs respectively. By comparison, Forest Products Manufacturing ranks sixth in terms of direct employment, supporting 2,551 jobs. This means the forest sector accounts for a sizable 6.1% of Rhode Island's total manufacturing workforce (41,494 jobs). In terms of financial contribution, the sector again remains a mid-tier sector. The sector generates $967.5 million in direct output, ranking eighth among all manufacturing categories. In terms of Value-Added, it contributes $216.9 million to the state's GSP, ranking tenth.

The data also highlights the diverse competitive productivity across Rhode Island's industrial base. The Forest Products Manufacturing sector generates approximately $379 thousand in output per worker. This efficiency metric is robust and notably exceeds that of other labor-heavy sectors like Fabricated Metal ($281 thousand per job) and Transportation equipment manufacturing ($343 thousand per job). However, it is surpassed by highly capital-intensive sectors, such as Chemical Manufacturing ($1.0 million per job), Primary Metal Manufacturing ($1.38 million per job), and Petroleum and Coal manufacturing (2.2 million per job) which utilize advanced automation and heavy industrial processing. These results indicate that the forest sector operates at a mid-tier level of productivity, with value generation broadly proportional to its employment scale.

Table 16: Manufacturing Industries in Rhode Island state, 2023. †

Manufacturing Industries	Employment	Labor Income	Value-Added	Output
Transportation Equipment	7,382	$694,024	$1,113,460	$2,580,580
Food	4,874	$311,759	$406,875	$2,018,041
Miscellaneous	4,499	$391,753	$701,665	$1,541,789
Fabricated Metal	4,350	$338,189	$397,649	$1,220,708
Computer and Electronic Product	3,448	$382,739	$274,131	$1,411,129
Forest Products	2,551	$180,455	$216,882	$967,465
Chemical	2,394	$349,199	$672,183	$2,409,315
Textiles and Apparel	2,281	$146,625	$139,218	$605,901
Plastics and Rubber Products	2,087	$179,476	$235,800	$894,686
Machinery	1,919	$167,883	$276,036	$757,789
Printing	1,808	$105,359	$152,247	$335,545
Primary Metal	1,314	$121,695	$361,158	$1,816,482
Electrical Equipment	963	$109,925	$155,632	$447,333
Nonmetallic Mineral Product	874	$59,700	$111,010	$347,369
Beverage and Tobacco Product	712	$45,383	$26,069	$310,525
Petroleum and Coal	38	$12,089	$49,871	$83,140
Total	**41,494**	**$3,596,253**	**$5,289,887**	**$17,747,798**
Compared to 2017	**-1.9%**	**-2.6%**	**-4.4%**	**-1.7%**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

Summary

The 2023 economic contribution report shows that the Forest Products sector remains a cornerstone of Rhode Island's industrial base and a vital engine for its diverse manufacturing economy. In 2023, the Forest Products sector directly provided 2,589 jobs and generated $990.4 million in direct economic output. The sector's influence extends deeply into the broader regional economy; when accounting for indirect supply chain purchases and induced household spending, the total contribution reached 4,936 jobs and $1.48 billion in total output. This indicates a robust employment multiplier of 1.91. Essentially, for every 100 direct jobs in the forest sector, an additional 91 jobs are supported elsewhere in the Rhode Island economy, which reflects the deep integration of forest industries with local logistics, packaging supply chains, and service sectors.

The industry exhibits a distinct structural emphasis on Value-Added manufacturing and converting rather than raw extraction. The Secondary Paperboard and Other Paper Products group stands as the primary employment driver, supporting 1,011 jobs. Further, despite employing fewer workers than the manufacturing sectors, the Pulp, Paper, and Paperboard Mills sector remains a capital-intensive powerhouse. It generated about $51 million in direct output with only 61 workers, highlighting the high automation and value-generation capacity of the state's remaining mills. When analyzing the specific, unaggregated industries, Paperboard container manufacturing emerges as the most significant subsector, ranking first in all four measures. Showcase, partition, shelving, and locker manufacturing ranks second in direct employment and Labor Income, while Paper bag and coated and treated paper manufacturing ranks second in Value-Added and output.

In the broader context of the state economy, Forest Products functions as the primary anchor of the natural resource and agricultural production base. It is the largest employer among the listed sectors, supporting 2,589 jobs (approximately 39.6% of total employment across these industries) and generating $990.4 million in output. Forest Products also leads the group in Labor Income ($184.2 million) and Value-Added ($239.5 million), indicating a larger direct economic footprint than the other peer sectors. Within the broader manufacturing sector, forest products manufacturing occupies a mid-tier position, ranking as the sixth-largest manufacturing employer with 2,551 jobs and the eighth-largest producer by output, generating $967.5 million. Ultimately, by converting raw materials into high-value packaging, construction components, and consumer goods, the sector not only sustains the state's industrial supply chain but also supports significant household wealth. This solidifies its role as an enduring and important engine of Rhode Island's economic identity.

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Appendix A: Forest Products Industries Groupings and IMPLAN Sectors

A1: Forestry Industry Grouping and IMPLAN Sectors

Industry Code	Industry name
10	All other crop farming***
15	Forestry, forest products, and timber tract production
19	Support activities for agriculture and forestry-*

Note: Sectors with an "*" indicate that only a portion of the sector is included in the forest products industries.
Sectors denoted by "***" indicate that the corresponding FPI is not present in Rhode Island.

A2: Logging Industry Grouping and IMPLAN Sector

Industry Code	Industry name
16	Commercial logging

A3: Primary Solid Wood Products Industry Grouping and IMPLAN Sectors

Industry Code	Industry name
40	Electric power generation – Biomass***
124	Sawmills
125	Wood preservation
126	Veneer and plywood manufacturing***
128	Reconstituted wood product manufacturing***

Sectors denoted by "***" indicate that the corresponding FPI is not present in Rhode Island.

A4: Secondary Solid Wood Products Industry Grouping and IMPLAN Sectors.

Industry Code	Industry name
127	Engineered wood member and truss manufacturing
129	Wood windows and door manufacturing***
130	Cut stock, resawing lumber, and planning
131	Other millwork, including flooring
132	Wood container and pallet manufacturing
133	Manufactured home (mobile home) manufacturing
134	Prefabricated wood building manufacturing
135	All other miscellaneous wood product manufacturing

Sectors denoted by "***" indicate that the corresponding FPI is not present in Rhode Island.

A5: Wood Furniture Industry Grouping and IMPLAN Sectors.

Industry Code	Industry name
348	Wood kitchen cabinet and countertop manufacturing
349	Upholstered household furniture manufacturing
350	Non-upholstered wood household furniture manufacturing
352	Institutional furniture manufacturing***
353	Wood office furniture manufacturing***
354	Custom architectural woodwork and millwork
356	Showcase, partition, shelving, and locker manufacturing**

Note: Sectors with "**" indicate that it is treated as **full sector** in 2023; however in 2017 it was treated as a **partial (wood component only)** so the numbers are not strictly comparable.
Sectors denoted by "***" indicate that the corresponding FPI is not present in Rhode Island.

A6: Pulp, Paper, and Paperboard Mills Industry Grouping and IMPLAN Sectors.

Industry Code	Industry name
136	Pulp mills***
137	Paper mills***
138	Paperboard mills

Sectors denoted by "***" indicate that the corresponding FPI is not present in Rhode Island.

A7: Secondary Paperboard and Other Paper Products Industry Grouping and IMPLAN Sectors.

Industry Code	Industry name
139	Paperboard container manufacturing
140	Paper bag and coated and treated paper manufacturing
141	Stationery product manufacturing***
142	Sanitary paper product manufacturing
143	All other converted paper product manufacturing

Sectors denoted by "***" indicate that the corresponding FPI is not present in Rhode Island.

Appendix B. Detailed Economic Contribution Results of 2023

B1: Direct Economic Contribution by IMPLAN Sector, 2023

B1.1: Direct Economic Contributions, Forestry Sector Details, 2023. †

Industries	Employment	Labor Income	Value-Added	Output
All other crop farming	0	$0	$0	$0
Forestry, forest products, and timber tract production	4	$382	$394	$429
Support activities for agriculture and forestry	0	$0	$0	$0
Total	**4**	**$382**	**$394**	**$429**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B1.2: Direct Economic Contributions, Logging Sector Details (2023, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Commercial logging	34	$3,408	$22,238	$22,462
Total	**34**	**$3,408**	**$22,238**	**$22,462**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B1.3: Direct Economic Contributions, Primary Solid Wood Products Sector Details (2023, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Electric power generation - Biomass	0	$0	$0	$0
Sawmills	27	$1,296	$1,195	$11,522
Wood preservation	63	$3,209	$2,480	$43,587
Veneer and plywood manufacturing	0	$0	$0	$0
Reconstituted wood product manufacturing	0	$0	$0	$0
Total	**90**	**$4,504**	**$3,675**	**$55,109**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B1.4: Direct Economic Contributions, Secondary Solid Wood Products Sector Details (2023, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Engineered wood member and truss manufacturing	52	$2,847	$2,718	$18,196
Wood windows and door manufacturing	0	$0	$0	$0
Cut stock, resawing lumber, and planing	51	$2,525	$2,191	$16,201
Other millwork, including flooring	143	$8,239	$7,782	$38,628
Wood container and pallet manufacturing	184	$8,059	$7,969	$39,838
Manufactured home (mobile home) manufacturing	7	$383	$384	$1,953
Prefabricated wood building manufacturing	7	$379	$362	$2,055
All other miscellaneous wood product manufacturing	29	$1,936	$1,853	$7,246
Total	**474**	**$24,369**	**$23,258**	**$124,117**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B1.5: Direct Economic Contributions, Wood Furniture Sector Details (2023, 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Wood kitchen cabinet and countertop manufacturing	132	$7,964	$9,229	$24,559
Upholstered household furniture manufacturing	34	$1,700	$1,998	$7,037
Non-upholstered wood household furniture manufacturing	71	$3,550	$4,032	$12,484
Institutional furniture manufacturing	0	$0	$0	$0
Wood office furniture manufacturing	0	$0	$0	$0
Custom architectural woodwork and millwork	286	$27,382	$12,552	$57,427
Showcase, partition, shelving, and locker manufacturing	394	$31,440	$38,969	$109,829
Total	**916**	**$72,036**	**$66,779**	**$211,336**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B1.6: Direct Economic Contributions, Pulp, Paper, and Paperboard Mills Sector Details (2023, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Pulp mills	0	$0	$0	$0
Paper mills	0	$0	$0	$0
Paperboard mills	61	$5,135	$9,665	$50,916
Total	**61**	**$5,135**	**$9,665**	**$50,916**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B1.7: Direct Economic Contributions, Secondary Paperboard and Other Paper Products Sector Details (2023, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Paperboard container manufacturing	507	$34,766	$50,994	$278,883
Paper bag and coated and treated paper manufacturing	362	$30,773	$45,812	$170,058
Stationery product manufacturing	0	$0	$0	$0
Sanitary paper product manufacturing	55	$3,874	$8,520	$43,554
All other converted paper product manufacturing	87	$4,999	$8,180	$33,493
Total	**1,011**	**$74,412**	**$113,506**	**$525,988**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B2: Direct Economic Contribution by IMPLAN Sector, 2017 (2017 USD)

B2.1: Direct Economic Contributions, Forestry Sector Details (2017, in Nominal 2017 USD). †

Industries	Employment	Labor Income	Value-Added	Output
All other crop farming	0	$0	$0	$0
Forestry, forest products, and timber tract production	8	$224	$221	$251
Support activities for agriculture and forestry	0	$0	$0	$0
Total	**8**	**$224**	**$221**	**$251**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B2.2: Direct Economic Contributions, Logging Sector Details (2017, in Nominal 2017 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Commercial logging	92	$5,397	$5,455	$7,468
Total	**92**	**$5,397**	**$5,455**	**$7,468**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2017 dollars value.

B2.3: Direct Economic Contributions, Primary Solid Wood Products Sector Details (2017, in Nominal 2017 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Electric power generation - Biomass	0	$0	$0	$0
Sawmills	35	$1,068	$1,373	$9,140
Wood preservation	76	$4,228	$10,168	$46,640
Veneer and plywood manufacturing	0	$0	$0	$0
Reconstituted wood product manufacturing	0	$0	$0	$0
Total	**112**	**$5,296**	**$11,541**	**$55,779**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2017 dollars value.

B2.4: Direct Economic Contributions, Secondary Solid Wood Products Sector Details (2017, in Nominal 2017 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Engineered wood member and truss manufacturing	22	$923	$1,177	$4,786
Wood windows and door manufacturing	12	$258	$390	$2,274
Cut stock, resawing lumber, and planing	5	$58	$117	$880
Other millwork, including flooring	211	$15,368	$22,987	$52,428
Wood container and pallet manufacturing	167	$6,770	$8,581	$25,587
Manufactured home (mobile home) manufacturing	14	$716	$1,248	$3,558
Prefabricated wood building manufacturing	0	$0	$0	$0
All other miscellaneous wood product manufacturing	24	$1,109	$1,552	$4,493
Total	**455**	**$25,201**	**$36,051**	**$94,006**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2017 dollars value.

B2.5: Direct Economic Contributions, Wood Furniture Sector Details (2017, in Nominal 2017 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Wood kitchen cabinet and countertop manufacturing	174	$8,914	$9,221	$24,947
Upholstered household furniture manufacturing	89	$4,184	$4,305	$16,740
Non-upholstered wood household furniture manufacturing	64	$2,683	$2,812	$7,639
Institutional furniture manufacturing	0	$0	$0	$0
Wood office furniture manufacturing	0	$0	$0	$0
Custom architectural woodwork and millwork	252	$16,347	$16,960	$40,949
Showcase, partition, shelving, and locker manufacturing	466	$33,335	$34,585	$97,929
Total	**1,045**	**$65,463**	**$67,883**	**$188,204**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2017 dollars value.

B2.6: Direct Economic Contributions, Pulp, Paper, and Paperboard Mills Sector Details (2017, in Nominal 2017 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Pulp mills	0	$0	$0	$0
Paper mills	0	$0	$0	$0
Paperboard mills	138	$10,050	$16,093	$103,953
Total	**138**	**$10,050**	**$16,093**	**$103,953**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2017 dollars value.

B2.7: Direct Economic Contributions, Secondary Paperboard and Other Paper Products Sector Details (2017, in Nominal 2017 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Paperboard container manufacturing	579	$28,451	$38,668	$248,362
Paper bag and coated and treated paper manufacturing	382	$26,780	$37,018	$163,477
Stationery product manufacturing	26	$1,367	$1,865	$8,925
Sanitary paper product manufacturing	0	$0	$0	$0
All other converted paper product manufacturing	198	$12,388	$14,871	$59,131
Total	**1,186**	**$68,986**	**$92,422**	**$479,895**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2017 dollars value.

B3: Direct Economic Contribution by IMPLAN Sector, 2017 (2023 USD)

B3.1: Direct Economic Contributions, Forestry Sector Details (2017, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
All other crop farming	0	$0	$0	$0
Forestry, forest products, and timber tract production	8	$274	$270	$315
Support activities for agriculture and forestry	0	$0	$0	$0
Total	**8**	**$274**	**$270**	**$315**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B3.2: Direct Economic Contributions, Logging Sector Details (2017, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Commercial logging	92	$6,599	$6,670	$9,360
Total	**92**	**$6,599**	**$6,670**	**$9,360**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B3.3: Direct Economic Contributions, Primary Solid Wood Products Sector Details (2017, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Electric power generation - Biomass	0	$0	$0	$0
Sawmills	35	$1,306	$1,679	$11,455
Wood preservation	76	$5,170	$12,432	$58,454
Veneer and plywood manufacturing	0	$0	$0	$0
Reconstituted wood product manufacturing	0	$0	$0	$0
Total	**112**	**$6,476**	**$14,111**	**$69,909**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B3.4: Direct Economic Contributions, Secondary Solid Wood Products Sector Details (2017, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Engineered wood member and truss manufacturing	22	$1,128	$1,439	$5,998
Wood windows and door manufacturing	12	$315	$477	$2,850
Cut stock, resawing lumber, and planing	5	$71	$143	$1,103
Other millwork, including flooring	211	$18,791	$28,107	$65,709
Wood container and pallet manufacturing	167	$8,278	$10,492	$32,068
Manufactured home (mobile home) manufacturing	14	$875	$1,526	$4,460
Prefabricated wood building manufacturing	0	$0	$0	$0
All other miscellaneous wood product manufacturing	24	$1,356	$1,897	$5,632
Total	**455**	**$30,814**	**$44,081**	**$117,820**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B3.5: Direct Economic Contributions, Wood Furniture Sector Details (2017, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Wood kitchen cabinet and countertop manufacturing	174	$10,899	$11,275	$31,267
Upholstered household furniture manufacturing	89	$5,115	$5,264	$20,980
Non-upholstered wood household furniture manufacturing	64	$3,281	$3,439	$9,574
Institutional furniture manufacturing	0	$0	$0	$0
Wood office furniture manufacturing	0	$0	$0	$0
Custom architectural woodwork and millwork	252	$19,988	$20,738	$51,323
Showcase, partition, shelving, and locker manufacturing	466	$40,760	$42,288	$122,736
Total	**1,045**	**$80,043**	**$83,003**	**$235,880**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B3.6: Direct Economic Contributions, Pulp, Paper, and Paperboard Mills Sector Details (2017, in 2023 USD). †

Industries	Employment	Labor Income	Value-Added	Output
Pulp mills	0	$0	$0	$0
Paper mills	0	$0	$0	$0
Paperboard mills	138	$12,288	$19,677	$130,286
Total	**138**	**$12,288**	**$19,677**	**$130,286**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.

B3.7: Direct Economic Contributions, Secondary Paperboard and Other Paper Products Sector Details (2017, in real 2023 Dollars). †

Industries	Employment	Labor Income	Value-Added	Output
Paperboard container manufacturing	579	$34,787	$47,281	$311,278
Paper bag and coated and treated paper manufacturing	382	$32,745	$45,263	$204,889
Stationery product manufacturing	26	$1,671	$2,281	$11,185
Sanitary paper product manufacturing	0	$0	$0	$0
All other converted paper product manufacturing	198	$15,147	$18,183	$74,110
Total	**1,186**	**$84,351**	**$113,007**	**$601,462**

† All monetary values (Labor Income, Value-Added, and Output) are in thousands of U.S. dollars, adjusted to 2023 dollars value.