



The Economic Importance of New York's Forests

**North East State
Foresters Association
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This booklet is part of a series on the economic impact of forest-based manufacturing and forest-related recreation and tourism on the four states in the NEFA region, which include New York, Vermont, New Hampshire, and Maine. A regional report, and the individual state reports, are also available online at nefainfo.org. The reports include an overview of the land base in each state and a summary of federal and state data that provide a picture of the forest-based manufacturing and forest-related recreation and tourism sectors of the economy.

The reports update a similar series produced by NEFA in 1995 and 2001. Different data sources and methods to calculate values were used at that time, so values from the current reports cannot be compared to the previous ones. The economic benefits associated with forest values such as clean water, soil stabilization, and regional green space are not included in this report, so the final values are conservative.

* Published December 2004, using 2001-2004 data.

HIGHLIGHTS

- The annual contribution of forest-based manufacturing and forest-related recreation and tourism to the New York economy is over **\$9 billion**.
- Forest-based manufacturing provided **\$7.4 billion** in value of shipments to New York's economy in 2001. This is 5.2% of the statewide value for manufacturing.
- Forest-based recreation and tourism expenditures contribute **\$1.6 billion** annually to New York's economy.
- The forest-based manufacturing economy provides employment for over **49,000 people** and generates payrolls of over **\$1.5 billion**. Forest-related recreation and tourism provides employment for **14,500** and generates payrolls of **\$260 million**.
- New York landowners received estimated stumpage revenue of **\$250 million** in 2002
- Revenues from sales of biomass chips totaled **\$6.7 million** in 2002. Sales from cordwood are valued at **\$100 million**.
- The sale of Christmas trees, wreaths, maple syrup, and ginseng contribute approximately **\$24 million**.
- Each 1,000 acres of forestland in New York supports 2.6 forest-based manufacturing jobs with a payroll of \$83,000, and .78 forest-related recreation and tourism jobs with a payroll of \$14,485.

TABLE 1. ANNUAL REVENUES FROM NEW YORK'S FORESTLAND
Total values and per acre basis

	Millions of \$	\$ per acre
Forest-based manufacturing value of shipments	7,400.0	401.0
Forest-related recreation and tourism	1,660.0	90.0
Associated forest products	24.0	1.5
Totals	9,084.0	492.5

The Forest Resource in New York

New York's forested ecosystem provides the basis for biological diversity, natural communities, wildlife habitats, scenic landscapes, and recreational opportunities. The forests of New York also provide an important economic base for employment, tourism, and recreation, and support a diverse forest products industry.

Land Area

New York covers 30.2 million acres. Sixty-one percent, or 18.5 million acres, is forested. Of these forested acres, 15.8 million acres are classified as timberland by the USDA Forest Service, or land that

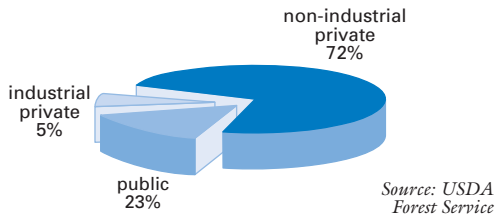
is productive and accessible enough to produce wood as a crop and is not withdrawn from timber harvesting by statute or regulation (table 2).

Table 2. TOTAL LAND AREA, FOREST LAND ACRES, AND TIMBERLAND ACRES, NEW YORK, 2004

Total land area	Forest land	Timberland
30,200,000	18,461,200	15,781,600

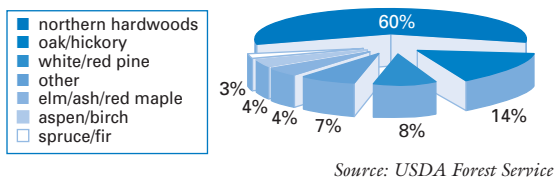
The majority of forestland in New York (14.2 million acres or 77%) is privately owned by industrial and non-industrial owners. State and federal government own 42 million acres, or 23% of forestland (figure 1).

FIGURE 1. FORESTLAND OWNERSHIP, NEW YORK, 2004



Certain tree species in the forest grow in association with one another due to similar growing requirements and are referred to as forest types. The northern hardwood forest type is the most common in New York and covers 11 million acres (60%), followed by the oak/hickory, white/red pine, elm/ash/red maple, aspen/birch, and spruce/fir types (figure 2).

Figure 2. FORESTLAND TYPES, NEW YORK, 2004



Forest-based Manufacturing

The forest-based manufacturing system consists of timber harvesting, primary manufacturing, and secondary manufacturing. The chain of relationships among different parts of the system varies. Timber harvesters cut trees down and market logs and other timber products, some of which may go out of state for processing. Primary manufacturers convert raw material into lumber, veneer, pulp and paper, and various other products. Some of these products are shipped out-of-state for further processing. Secondary wood-based manufacturing firms convert the products produced by primary manufacturers into semi-finished or finished products, but may purchase lumber and other parts and components from a broker who supplies wood from outside New York. Pulpwood is imported and exported. New York is a net exporter of timber products. Canada is the chief importer of New York wood, importing mostly sawlogs, veneer logs, pulpwood, and pulp chips. Additionally, New York timber products are utilized by many states and are exported worldwide.

The US Bureau of the Census collects and analyzes data on all aspects of the economy. The Census Bureau's Annual Survey of Manufacturers (2001) is the source of most of the federal economic data for this publication. The Census Bureau typically undercounts activity in each manufacturing sector, especially in regards to smaller firms, which are abundant in forest-based industries. The Census data given should be treated as minimums, with the understanding that actual values are likely to be higher.

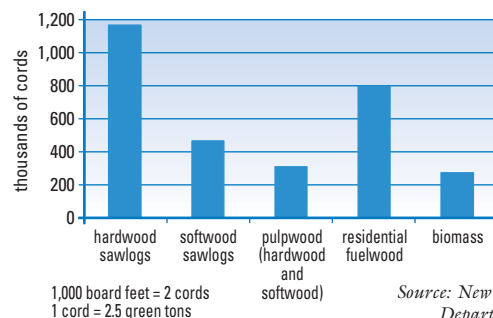
Primary Manufacturing

The conversion of timber products into lumber, veneer, pulp, and paper starts with the primary manufacturing sectors. In New York, lumber and related solid wood products made in sawmills and paper produced in pulp and paper mills are the major primary processing activities.

Timber Harvesting

Timber harvesting includes tree felling, skidding timber to a roadside landing, processing timber into various products, and transporting the materials over roads to a primary manufacturing facility. Figure 3 provides data on the harvesting of wood products in New York for the year 2002. During that year, 578 million board feet of hardwood logs and 220 million board feet of softwood logs were harvested from New York's forests, totaling 798 million board feet, or 1,595,400 cords. New York's pulpwood and chip product harvest was 578,000 cords or 1.33 million green tons. Fifty-four percent of the pulpwood/chip harvest, or 312,100 cords, was harvested as roundwood. The remaining volume of 46%, or 265,900 cords, was harvested as whole tree chips used for paper, industrial fuel, and panel board products.

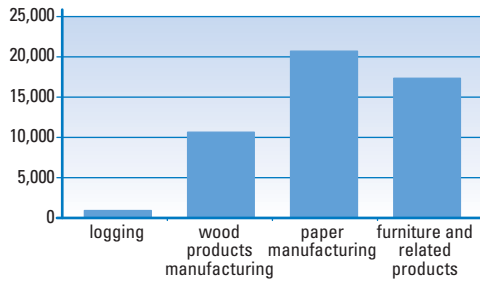
Figure 3. WOOD HARVEST IN NEW YORK, 2002



Source: New York Department of Environmental Conservation

The Department of Environmental Conservation estimates that total earnings by New York landowners for the sale of standing timber is \$250 million annually.

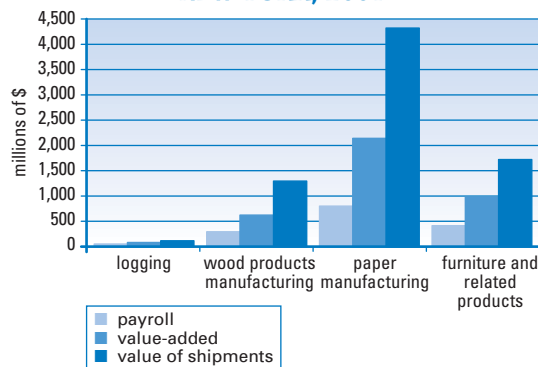
Figure 4. EMPLOYMENT IN FOREST-BASED MANUFACTURING INDUSTRIES, NEW YORK, 2001



Sources: US Bureau of the Census, 1997 Economic Census (logging); US Bureau of the Census, Annual Survey of Manufacturers, 2001 (other)

Statistics regarding the number of loggers operating in New York vary. The New York Logger Training Program reports that 2,868 individuals are enrolled in their program. Census data in this category (NAICS 113310 — Logging) includes cutting and transporting timber and has not been updated. According to the 1997 Economic Census, there were 962 individuals employed in this sector (figure 4) with a payroll of \$19.1 million. This number is low because Census data does not count sole proprietors. The total value added for logging in 1997 was \$56.7 million and value of shipments was \$100.8 million (figure 5).

Figure 5. PAYROLL, VALUE-ADDED, AND VALUE OF SHIPMENTS FOR FOREST-BASED MANUFACTURING INDUSTRIES, NEW YORK, 2001



Sources: US Bureau of the Census, 1997 Economic Census (logging); US Bureau of the Census, Annual Survey of Manufacturers, 2001 (other)

Production of Lumber and Related Solid Wood Products

The Department of Environmental Conservation estimates that 240 fixed, traditional sawmills operated during 2002, and processed 504 million board feet of logs, of which 94% was harvested in New York. The agency also estimates that another 1,500 portable and various other sawmills operate and these mills processed another 60 million board feet. In addition, other primary processing facilities in New York processed about 350,807 cords of pulpwood and chip products from New York's forests.

Census data in this category (NAICS 321 — Wood products manufacturing) for New York includes sawmills, veneer, plywood, engineered wood products manufacturing, millwork, wood container and pallet manufacturing, and prefabricated wood buildings. In New York in 2001, there were 10,468 individuals employed in this sector (figure 4), with a payroll of \$276 million. The total value added for this sector was \$593 million and the value of shipments was \$1.3 billion (figure 5).

Pulp and Paper Manufacturing

New York has two pulp and paper mills in northern New York that use wood as raw material. These facilities provide a market for pulpwood and chips produced in New York, and to a much lesser extent, Vermont. New York's non-pulp producing paper and paperboard sub-sector uses wood pulp produced mostly outside of New York or purchases paper from other paper mills to recut, process, and package the paper for direct consumer use.

Census data in this category (NAICS 322 — Paper manufacturing) includes pulp, paper and paperboard mills, and converted paper product manufacturing. In New York, in 2001, there were 20,772 individuals employed in this sector (figure 4), with a payroll of \$807 million. The total value added for this sector was \$2.1 billion and the value of shipments was \$4.3 billion (figure 5).

Wood Energy

Based on the most recent data from 1995, 800,000 cords of firewood for residential use are harvested and processed in New York, contributing \$100 million to the economy. Anecdotal evidence suggests consumption remains level, or has increased slightly.

There are two 20 mega-watt (approximate) electric generating facilities in New York that utilize strictly biomass (whole tree chips, sawmill residues, and other wood fiber such as pallets and urban tree material) for fuel, and approximately 100 other facilities with wood burning processes. In 2002, 373,118 green tons of whole tree fuel chips were harvested from New York's forests. This volume was utilized by biomass energy facilities in New York and Vermont, with minor volumes of these chips consumed by pulp mills as boiler feedstock. Because prices paid for these products can vary, it is difficult to estimate revenues from sales, but an average figure of \$18.00/ton may be reasonable. Using that figure, the value of biomass fuel chips sold by logging contractors for industrial energy needs in 2002 was \$6.7 million.

Secondary Manufacturing

Secondary manufacturing refers to a variety of processes applied to lumber and other products in order to produce semi-finished or finished products. New York's secondary forest-based manufacturing industry is diverse both in products and geography. Besides furniture, examples of the many hundreds of wood products made in New York include baseball bats, log homes, wine racks, cable and wire spools, and pallets.

Furniture and Related Products

Census data in this category (NAICS 337 — Furniture and related product manufacturing) for New York includes wood kitchen cabinet and household and institutional furniture manufacturing, as well as non-wood furniture-related items, such as

mattresses, window dressings, and metal furniture. Discounting non-wood products from this category of products, in 2001 there were approximately 17,000 individuals employed in this sector in New York (figure 4), with a payroll of around \$460 million. The approximate total value added for this sector was \$1.0 billion and the value of shipments was \$1.7 billion (figure 5).

Many wood products besides furniture and related products are produced by New York's secondary wood manufacturing sector. However, due to the method of categorization the US Bureau of the Census uses to report statistics, the economic contribution of these products is reported under NAICS 321, Wood product manufacturing, which is reported above under the Primary Manufacturing heading of this report.

Associated Forest Products

In 2001, sales of maple products in New York totaled \$2.9 million. Sales of Christmas trees and wreaths totaled \$15 million. A small cottage industry dedicated to the harvesting of other greens exists, but there are no data available to quantify the effort. The harvesting of ginseng has become important. In 1999, approximately \$6.5 million of ginseng was reported as harvested in New York and exported.

Forest-related Recreation and Tourism

Most recreation and tourism activities in New York are linked to the forest. It is difficult to quantify the contribution made by the forest environment towards recreation and tourism expenditures. The recreation activities selected for this report take place primarily in a forest environment in the four states. Attributing 100% of the economic contribution of these activities to forests is an overstatement, but 50% is an understatement. The authors assumed three-quarters (75%) of each activity would not take place if there were no forests. That percentage was raised to 100% for fall foliage viewing.

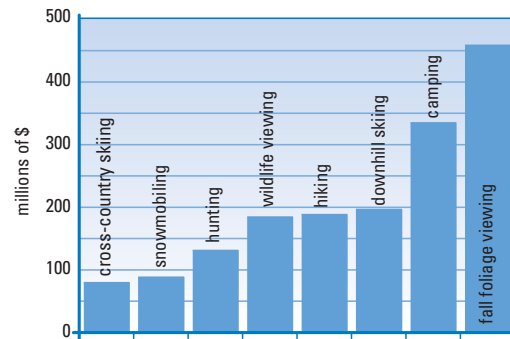
Estimates of number of visitor, or participant, days engaged in for each selected recreation activity were drawn from the National Survey on Recreation and the Environment (NSRE), and by updating data from the 2001 NEFA reports (these reports used 1997 data, which was the most current available). For camping and hiking the average number of visitor days per visit for the North region in the NSRE were used. For downhill skiing, cross-country skiing, sightseeing (fall foliage viewing), and snowmobiling, the 1997 numbers were updated using trend increases contained in the NSRE. Statewide Comprehensive Outdoor Recreation Plans (SCORP) for each state was used for the 2001 NEFA reports, but these are no longer available. Expenditure data per participant-day were updated using the Consumer Price Index. (The factor for converting 1997 prices to 2001 prices is 1.10.) There were no direct number of visitor-days developed for hunting and wildlife viewing. Instead, direct estimates of expenditures were taken from the National Survey of Fishing, Hunting, and Wildlife-Related Activities.

Estimates of impacts on employment and payroll were developed from ratios of employment or payroll to sales based on data for these in the 1997 Economic Census of the US Bureau of the Census, since more recent economic censuses were not available. Present (2001) employment was calculated by first taking estimated 2001 sales and deflating it back to the 1997 datum, then applying the calculated ratio of sales to employment. For payroll, the estimate of sales to payroll was applied directly to the 2001 sales results.

The recreation activities included in this report contribute \$2.19 billion in sales to the New York economy. The portion attributed to the forest resource is \$1.66 billion. These are distributed among purchases at food and beverage stores, automobile gasoline service stations, accommodations (lodging places), eating and drinking establishments, and a host of other retail

trade or service sectors. Fall foliage viewing contributes about one quarter of the total sales with camping second with about 20% of the total (figure 6). About 14,500 people are directly employed with payrolls of \$260 million due to forest-related recreation and tourism in New York.

Figure 6. SALES IN OUTDOOR RECREATION ACTIVITIES ATTRIBUTED TO FORESTS, NEW YORK, 2001



Source: NEFA, 2004

Conclusion

The economic importance of New York's forests is significant. The forest provides important jobs and payroll for thousands of people in rural parts of the state, and a significant source of income for forest landowners. The sale of forest products adds over \$7.4 billion to the state's economy. Additionally, the forest attracts millions of visitors to the state for recreation and tourism activities, contributing \$1.6 billion. Altogether, the contribution of forest-based manufacturing and forest-related tourism and recreation to the New York economy is over \$9 billion.

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NEFA'S MISSION

To encourage sound decisions about the management and use of forest resources in the NEFA region by identifying significant regional trends, broadening awareness of forest health and sustainability issues, providing a regional context for state and local decisions about forest resources, and analyzing the environmental, social, and economic impacts of forest land use.

This series of reports, as well as other NEFA publications, and additional information about NEFA can be found at www.nefainfo.org

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