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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 <http://nefa.conknet.com>.

CONTACT INFORMATION

State Foresters

Philip Bryce, Director
Division of Forests & Lands
New Hampshire Department of
Resources & Economic Development
P.O. Box 1856
Concord NH 03302-1856
(603) 271-2214 Phone
(603) 271-2629 Fax
pbryce@dred.state.nh.us

Thomas Doak, State Forester
Maine Forest Service
Maine Department of Conservation
State House Station 22
Augusta ME 04333
(207) 287-2791 Phone
(207) 287-8422 Fax
tom.doak@state.me.us

Frank Dunstan, Director
Division of Lands & Forests
New York Department of
Environmental Conservation
625 Broadway
Albany NY 12233-4250
(518) 457-2475 Phone
(518) 457-5438 Fax
fmdunsta@gw.dec.state.ny.us

David Stevens, State Forester
Vermont Department of Forests,
Parks & Recreation
103 South Main Street, 10 South
Waterbury VT 05671-0601
(802) 241-3678 Phone
(802) 244-1481 Fax
dstevens@fpr.anr.state.vt.us

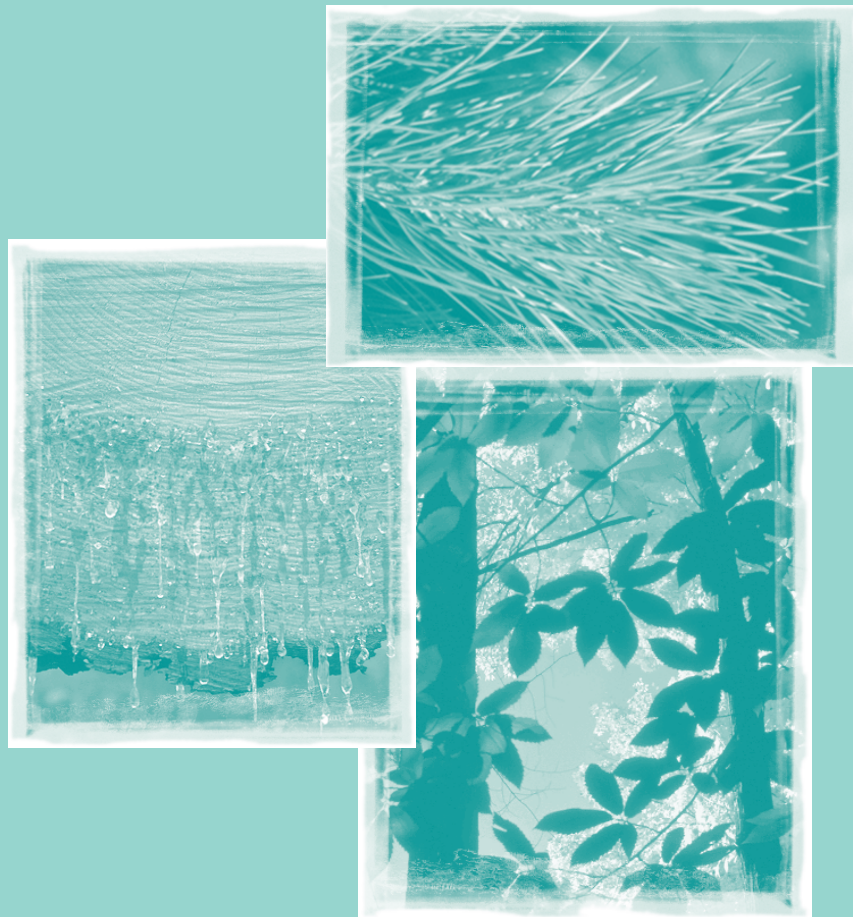
USDA Forest Service

Karen R. Mollander
Field Representative
& Private Forestry
USDA Forest Service
271 Mast Road
Durham NH 03824
(603) 868-7694 Phone
(603) 868-1066 Fax
kmollander@fs.fed.us

North East *State* Foresters Association

Charles A. Levesque
Executive Director
NEFA
P.O. Box 2911
Concord NH 03302-2911
(603) 229-4965 Phone
(603) 226-0499 Fax
nefatrees@aol.com

The Economic Importance of New York's Forests

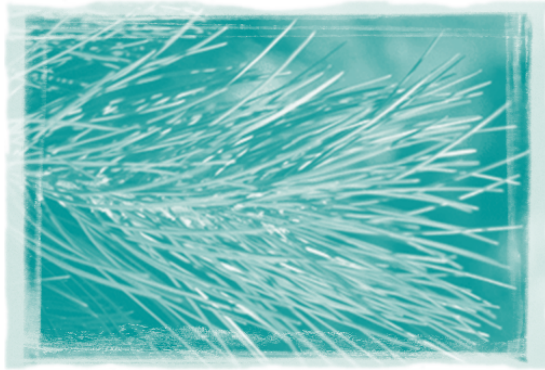


North East *State* Foresters Association
March 2001

The economic importance of New York's forests

T*his booklet is part of a series on the importance of forest-based manufacturing and forest-related recreation and tourism to the economy of the four states in the NEFA region — New York, Vermont, New Hampshire, and Maine. A regional report is also available. Each report includes 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 do not include indirect or induced multipliers, so all data provided represent direct contributions to the economy.*

The reports update a similar series produced by NEFA in 1995. 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.



HIGHLIGHTS

- The contribution of forest-based manufacturing and forest-related tourism and recreation to the New York economy is over **\$9 billion** (table1).
- Forest-based manufacturing provided **\$7.7 billion in value of shipments** to New York's economy in 1997. This is 5.2% of the statewide value for manufacturing.
- Forest-based recreation and tourism expenditures contribute **\$1.3 billion** annually to New York's economy.
- The forest-based manufacturing economy provides employment for over **50,000** people and generates payrolls of over **\$1.5 billion**. Forest-related recreation and tourism provides employment for **10,115** and generates payrolls of **\$161 million**.
- New York landowners received estimated stumpage revenue of **\$230 million** in 1997.
- Revenues from sales of biomass chips totaled **\$4.9 million** in 1997. Sales from cordwood are valued at **\$100 million**.
- The sale of associated forest products, such as Christmas trees, wreaths, maple syrup, and ginseng contribute **\$27.7 million**.
- Each 1,000 acres of forest land in New York supports 2.8 forest-based manufacturing jobs and 0.5 forest-related tourism and recreation jobs.

Table 1. REVENUES FROM NEW YORK'S FORESTS

	<i>millions of \$</i>	<i>\$ per acre</i>
Forest-based manufacturing value of shipments	7,700	414
Forest-related tourism and recreation expenditures	1,300	70
Associated forest products	28	2
Totals	9,028	486

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

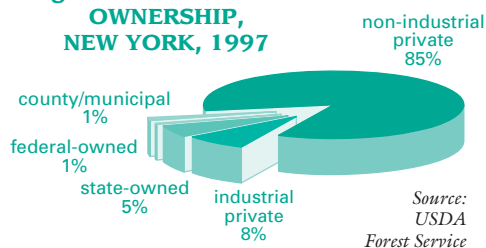
New York covers 30.2 million acres. Sixty-two percent, or 18.6 million acres, is forested. Of these forested acres, 15.4 million acres are classified as timberland by the USDA Forest Service, or land that is fertile and accessible enough to produce wood as a crop and is not withdrawn from timber harvesting by statute or regulation (table 2.)

Table 2. TOTAL LAND AREA, FOREST LAND ACRES, AND TIMBERLAND ACRES, NEW YORK, 1997

total land area	forest land	timberland
30,200,000	18,600,000	15,400,000

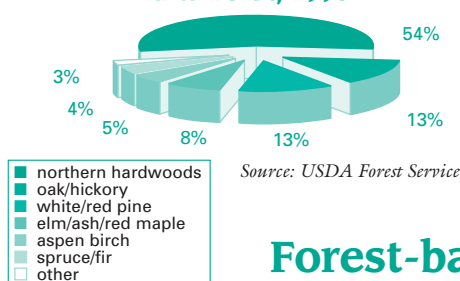
Source: USDA Forest Service

Figure 1. TIMBERLAND OWNERSHIP, NEW YORK, 1997



The majority of timberland in New York (14.2 million acres or 93%) is privately owned by industrial and non-industrial owners. State and federal government own 1.1 million acres, or 7% of timberland (figure 1).

Figure 2. FOREST TYPES, NEW YORK, 1993



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 8.4 million acres (54%), followed by the oak/hickory, white/red pine, elm/ash/red maple, aspen/birch, and spruce/fir types (figure 2).

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 the trees down and market the logs, some of which go out of state for processing. Primary manufacturers convert raw material into lumber, veneer, pulp, and paper. Some of the lumber is shipped out-of-state for further processing. Secondary wood-based manufacturing firms convert the raw material into finished products, but may purchase lumber from a broker, who supplies wood from outside New York. Pulpwood is imported and exported.

The US Bureau of the Census collects and analyzes data on the economy. Most data used for this series of publications is the Bureau of Census NAICS (North American Industrial Classification Series), Census of Manufacturing. Prior to September 2000, these data were available under SIC codes (Standard Industrial Classification). Comparison of SIC and NAICS is difficult because of several changes. Logging is now under a separate sector. Also, the SIC category for Furniture and Fixtures previously included non-wood materials. The NAICS system separates wood from metal and other materials, so the data are more reliable, but the totals are inevitably lower.

The *Census of Manufacturing* typically undercounts the activity in each sector, especially in regards to smaller firms, which are abundant in forest-based manufacturing industries. Federal data should be treated as minimums, with the understanding that actual values are likely to be higher.

Primary manufacturing

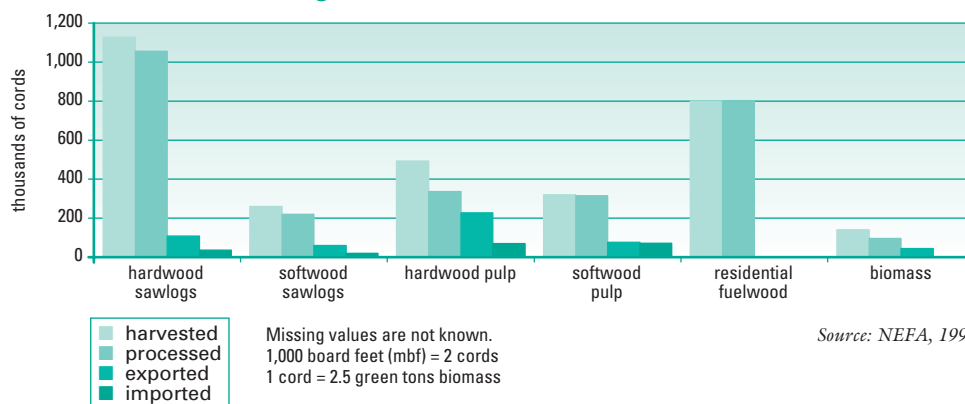
The conversion of roundwood, or parts of trees, into lumber, veneer, pulp, and paper starts with the primary manufacturing sectors. In New York, lumber and related solid wood products made in sawmills and paper produced in woodpulp and paper mills are the major primary processing activities.

Timber harvesting

Timber harvesting includes tree felling, skidding timber to a roadside landing, processing timber into logs or bolts, and transporting the materials over roads to

a primary manufacturing facility. Figure 3 provides data on the harvesting, processing, importing, and exporting of wood products in New York for the year 1997. During that year, 564 million board feet of hardwood sawlogs and 130 million board feet of softwood sawlogs were harvested from New

Figure 3. WOOD FLOW, NEW YORK, 1997

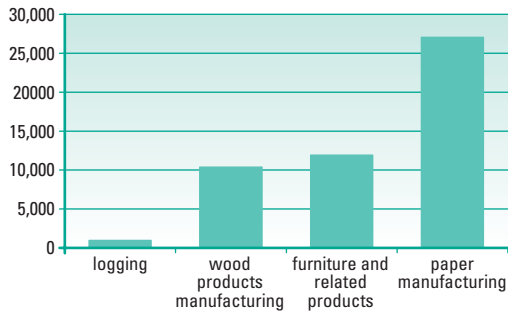


Source: NEFA, 1999

York's forests, totaling 694 million board feet. New York's pulpwood harvest was 813,000 cords. Almost 350,000 green tons of whole tree chips were harvested.

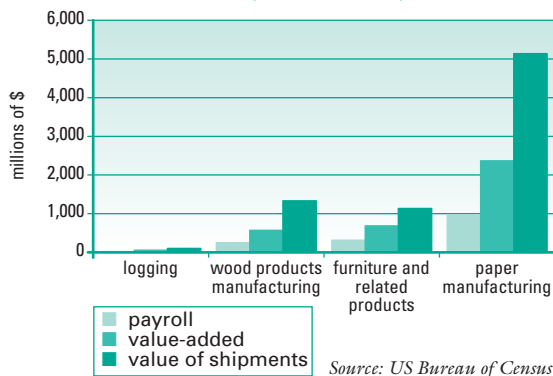
"Stumpage" is the money earned by forest landowners for the sale of standing timber. The Department of Environmental Conservation estimates total sales of stumpage earned by New York landowners annually is \$230 million.

Figure 4. EMPLOYMENT IN FOREST-BASED MANUFACTURING INDUSTRIES, NEW YORK, 1997



Source: US Bureau of Census

Figure 5. PAYROLL, VALUE-ADDED, AND VALUE OF SHIPMENTS FOR FOREST-BASED INDUSTRIES, NEW YORK, 1997



Source: US Bureau of Census

A report on the forest industry generated within the state estimates that 3,000 people are employed in the logging and log trucking industry. Census data in this category (NAICS 113310) estimates that 962 individuals are employed in this sector (figure 4), with a payroll of \$19.1 million. The total value added for logging in 1997 was \$56.7 million and value of shipments was \$100.8 million (figure 5).

Production of lumber and related solid wood products

Although the number of sawmills in New York has decreased from 1,500 to about 1,000, these mills have a production output almost as large as four decades ago, due to improved machinery and greater yield from each log. In 1997, sawmills in New York processed 528 million board feet of hardwood sawlogs and 110 million board feet of softwood sawlogs into lumber. Total pulpwood processed was 649,000 cords (figure 3). Biomass chips processed in New York in 1997 totaled 239,000 tons.

The production of wooden pallets is a major industry in New York, providing a market for low quality wood. The production of hardwood dimension lumber is a growing industry. This wood is purchased from a sawmill and re-sawn, surfaced, sometimes shaped, and often glued into panels or special-size stock. New York's hardwood dimension lumber is shipped worldwide and also used for New York's furniture industry.

Census data in this category (NAICS 321 — Wood product manufacturing) for New York includes: Sawmills & wood preservation; Veneer, plywood, & engineered wood products manufacturing; Millwork; Wood container & pallet manufacturing; Prefabricated wood buildings; and Other. In New York in 1997, there were 10,375 individuals employed in this sector (figure 4), with a payroll of \$250.2 million. The total value added for Wood Products Manufacturing was \$571.2 and value of shipments was \$1.3 billion (figure 5).

Wood energy

The firewood market has declined significantly since a peak in the early 1980's, but recent increases in home heating fuel prices is contributing to renewed interest in wood as residential fuel, with accompanying increases in demand and price. In 1997, 800,000 cords of firewood were harvested and processed in New York, contributing \$100 million to the economy.



According to the National Association of Home Builders, the average American home of 2,200 square feet uses 17,000 board feet in lumber. Using this figure, New York's 1997 sawlog harvest of 638 million board feet could build 37,529 homes.

Wood using industries have long relied on bark, chips, and other residues to produce steam for power and for electrical power production. The paper industry uses tremendous amounts of energy in production and in recent years the industry has increased its use of wood. There are currently 26 facilities in New York with wood burning processes. Collectively, these facilities burn 880,000 tons of wood waste and chips; 350,000 tons were harvested from New York's forests (in 1997). Revenues from sales of biomass chips totaled \$4.9 million in 1997.

Direct generation of electrical power from wood has not developed in New York to the extent it has in northern New England, but several businesses and public buildings use wood fuel for heating.

Secondary manufacturing

Secondary manufacturing refers to the drying, planing, cutting, and assembly of lumber into parts or finished products. New York's secondary forest-based manufacturing industry is diverse both in products and geography. Most businesses are located in the New York metropolitan area, with the remainder located upstate in small cities. Secondary wood products made in New York include baseball bats, log homes, wine racks, cable and wire spools, and piano sounding boards.

Furniture and related products

New York is one of the top five producers of wood furniture in the United States, both for residential and office use. Census data in this category (NAICS 337) for New York includes Wood kitchen cabinet & countertop manufacturing; Non-upholstered wood household furniture manufacturing; Wood television, radio, & sewing machine cabinet manufacturing; Wood office furniture manufacturing; and Custom architectural woodwork and millwork manufacturing. In New York, in 1997, there were 11,906 individuals employed in this sector (figure 4), with a payroll of \$ 315.2 million. The total value added for Furniture & related products was \$683.6 million and value of shipments was \$1.1 billion (figure 5).

Pulp and paper manufacturing

New York is a leader in paper manufacturing, currently ranking sixth in the nation in value of shipments of paper production. The paper industry is concentrated in the northern part of the state and produces primarily bond and fine writing papers. Many of the establishments use wood pulp produced elsewhere or purchase paper from paper mills and recut, process, and package the paper for direct consumer use. New York has five pulp and paper mills that use roundwood and provide a major market for pulpwood produced in Vermont.

Census data in this category (NAICS 322) includes Pulp, paper, & paperboard mills and Converted paper product manufacturing. In New York, in 1997, there were 27,055 individuals employed in this sector (figure 4), with a payroll of \$972.1 million.

The total value added for Paper manufacturing was \$2.3 billion and value of shipments was \$5.1 billion.

Associated forest products

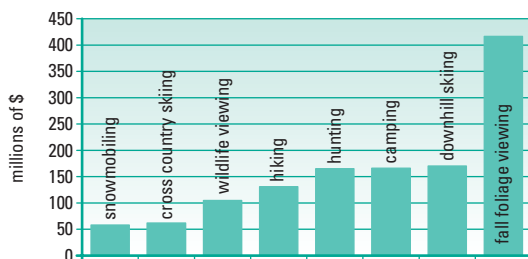
New York's forests provide other commodities besides timber and pulp. In 1998 sales of maple products totaled \$5.9 million. Sales of Christmas trees and wreaths totaled \$15.3 million. A small cottage industry dedicated to the harvesting of other greens exists, but there are no data available to quantify 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

Many recreation and tourism activities in New York are linked to the forest, but it is difficult to estimate 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 and include camping, hiking, hunting, downhill skiing, cross-country skiing, snowmobiling, fall foliage viewing, and wildlife viewing. Attributing 100% of the economic contribution of these activities to forests is an overstatement, but 50% is an understatement. The author 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.

Participation data in these recreational activities were obtained from various state and federal sources. State total estimates of employment and sales in retail trade and service sectors of the economy were taken from the 1997 Economic Census of the U.S. Bureau of the Census. These were divided into Food and Beverage Stores, Gas Stations, Accommodations, Eating and Drinking Establishments, Other Retail. Number of activity days were applied to expenditure per activity day per participant by category (food and beverage, gas, etc.) to get the final values for expenditures, payroll, and employment.

Figure 6. FOREST-RELATED RECREATION AND TOURISM EXPENDITURES, NEW YORK, 1997



Source: NEFA, 2000

The outdoor recreation activities included in this report directly contribute \$1.6 billion dollars in sales to the state's economy. The contribution of the forests of New York to recreation expenditures is estimated at \$1.3 billion. Accommodations and the Other category accounted for the largest share of expenditures. Of the eight activities, fall foliage viewing and downhill skiing make the largest contribution, followed by camping and hunting (figure 6).

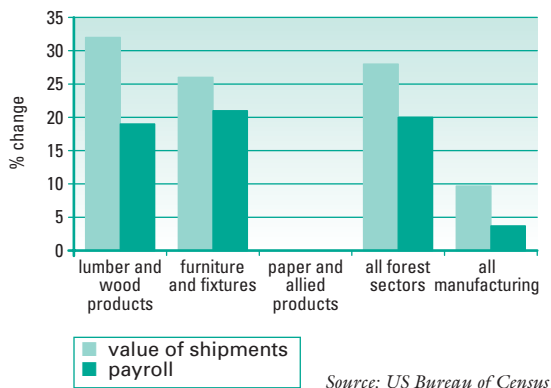
Forest-related recreation and tourism provide employment for over 10,000 and a payroll of \$161 million. Statewide, the direct impact is about 1% of all sales or employment in the selected sectors, but is almost 7% of sales and employment

in accommodations. These jobs are important to many rural areas, where there are few alternative employment opportunities.

Industry Trends

Employment in forest-based manufacturing accounts for 6% of all manufacturing employment in New York. The largest single manufacturing sector is apparel manufacturing, which accounts for 12% of all manufacturing employment. Forest-based manufacturing ranks sixth in employment behind miscellaneous manufacturing and above food manufacturing.

Figure 7. PERCENT CHANGE IN VALUE OF SHIPMENTS AND PAYROLL, FOREST-BASED MANUFACTURING INDUSTRIES, NEW YORK, 1992-1997



Between 1992 and 1997, all sectors of New York's forest industry saw significant increases in the value of shipments (figure 7). For businesses classified under the SIC codes as Lumber and Wood Products, primarily sawmills, shipments increased by 32% during this time period, slightly above the national average of 30% growth in this sector. The value of shipments by businesses engaged in manufacturing Furniture and Fixtures (which includes some businesses that do not use wood) increased by 26% during this time period. Comparative statistics for Paper and Allied Products are not available for this time period. The value of shipments by all New York forest-based industries, a combination of Lumber and Furniture, increased by 28% from 1992–1997.

The payroll of New York forest-based manufacturing industries grew consistently between 1992 and 1997, with all sectors showing an increased payroll of 20% (figure 7). Lumber and Wood Products payroll grew by 19% over this time period. Payroll for Furniture and Fixture manufacturers grew by 21%. Comparative figures for payroll in Paper and Allied Products are not available.

Conclusion

The economic importance of New York's forests is significant. The forest provides important jobs and payroll for 60,000 individuals, many of whom live in rural parts of the state, and a significant source of income for forest landowners. The sale of forest products adds over \$ 7.7 billion to the state's economy. Additionally, the forest attracts millions of visitors to the state for recreation and tourism activities, contributing \$1.3 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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