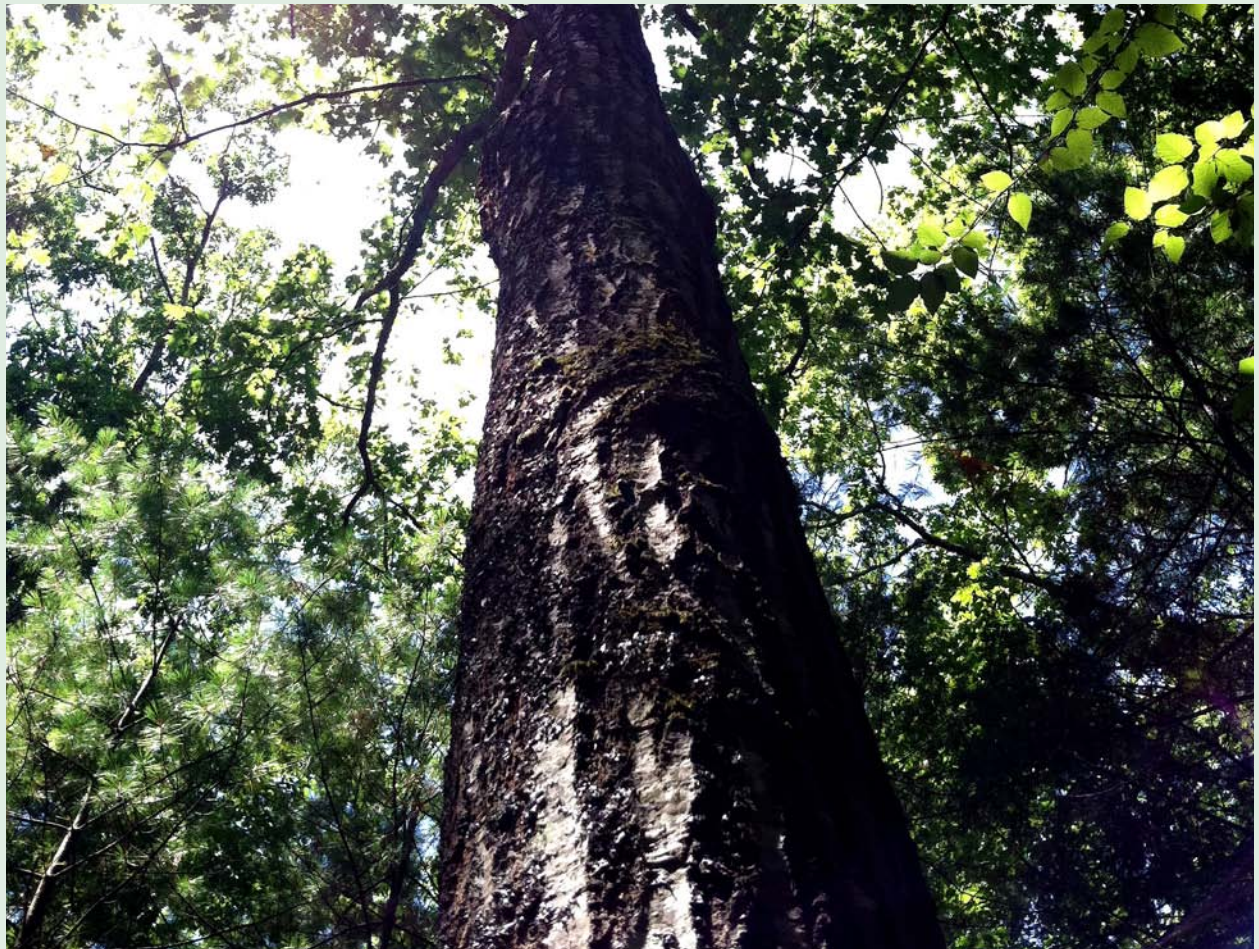




The
**ECONOMIC
IMPORTANCE**
of
**VERMONT'S
FOREST-BASED
ECONOMY 2013**

North East *State* Foresters Association



I. Introduction

The landscape of Vermont has experienced many changes during our history. One of the constants has been a working forest landscape that provides goods and services through stewardship, management, and conservation. Managing forests sustainably involves a recognition of the ecological, social, and economic systems necessary to maintain forest health while providing benefits for this and future generations.

The economic importance of Vermont's working forest has seen considerable attention of late. This recognition has seen a renaissance in the "Buy Local" movement extending from food to forests. From firewood to lumber, biomass to fine furniture, carbon sequestration to clean water, our forests have value. Forest-based manufacturing and forest-related recreation and tourism are significant economic drivers for Vermont, resulting in a substantial contribution to our state's economy.



Steven Sinclair

Vermont has a well-deserved reputation for its agricultural products, so it might come as a surprise that its land base is mostly forest. Vermont's forests cover 4,591,281 acres of land. That's 78% of the State, a level which has stayed steady since the 1980s. The northern hardwood mix of beech, birch, and maple dominates Vermont's forests, accounting for 71% of the forest cover.

Like most eastern states, Vermont has relatively little public land. The Green Mountain National Forest has two large blocks, and the state and municipalities own many parcels of forests and parks. Still, this accounts for only 19% of the forest. Individuals and families own more than 80% of the forest. Unlike other northeastern states with large corporate ownerships, only 1% of Vermont's forest is owned by businesses, including timberland investment management organizations (TIMOs) and Real Estate Investment Trusts (REITs).

Across the state, the volume of trees continues to increase and net growth exceeds the harvest annually, although that ratio is seeing a decline. Current inventories show that Vermont's forests add 2.4 million cords in growth per year while approximately 1.4 million cords of timber is harvested. To put that into perspective, Vermont's standing forest holds 80 million cords of timber, which includes all trees five inches in diameter or larger.

This report "The Economic Importance of Vermont's Forest-Based Economy" provides a brief overview of the value of one of Vermont's greatest assets, and I hope it will add to your understanding of Vermont's forest and its economic contribution to the state.

Thank you,
Steven Sinclair

Acknowledgements: This publication was funded by the U.S. Endowment for Forestry and Communities through the Northern Forest Center and the Vermont Department of Forests, Parks and Recreation, with assistance from the Vermont Agency of Commerce, Vermont Woodlands Association, Vermont Wood Manufacturers Association, The New England Society of American Foresters, and the Plum Creek Foundation.



II. Executive Summary

Timber harvests contribute tremendous value to all of the forest industry sectors in Vermont. Approximately 6,636 workers (full-time equivalents) are employed in the forest products, maple, and Christmas tree sectors, and their efforts generate over \$861 million in annual sales. Those numbers underestimate the true value, and an economic model known as IMPLAN provides multipliers that help take into account the rippling effect this industry has on the other parts of the economy. This model estimates that the forest products industry employs 10,555 people and has \$1.4 billion in economic output.

Most of the wood harvested in Vermont is processed within its borders, but Vermont is part of a larger regional economy within which wood flows freely. Figures from 2011 illustrate this flow. In that year for all products, 914,000 cords of wood were harvested and 860,000 cords were processed in Vermont; 379,000 cords left the state (mostly to Canada) and 324,000 cords were trucked into the state.

It's important to note that the economic output and number of jobs in the forest products sector have been reduced since it reached its peaks in the 1990s and early 2000s. This has mirrored similar trends in other manufacturing sectors in the U.S. as more and more manufacturing has moved to other parts of the world.

Vermont's Use Value Appraisal program reduces the property tax for more than 14,000 landowners of 1.8 million acres of forestland enrolled in the program. The program requires enrolled parcels to be actively managed, which means that approximately 39% of the private forest land base is periodically contributing to the forest-based economy.

One other side of the forest economy – the forest-based recreation economy – also plays an important role, contributing nearly as many jobs and generating even more revenue than the wood-based economy. Recreation provides 10,050 jobs and generates annual revenues of \$1.9 billion.

Table 1.
Gross State Output and GSP of Forest-based Manufacturing & Recreation, Vermont, 2011

Gross Output (direct)	millions of \$	jobs*
Forestry, logging & trucking	\$45	875
Wood products manufacturing	\$239	2,327
Furniture and related product manufacturing	\$171	1,600
Paper manufacturing	\$317	1,000
Wood energy	\$60	300
Christmas trees and maple syrup	\$29	534
Sub-total direct	\$861	6,636
Sub-total with multipliers	\$1,484	10,555
Forest Recreation	\$1,936	10,050
Total	\$3,420	20,605

GSP, Forest Products Manufacturing	\$266
GSP, All Manufacturing, Vermont	\$3,150
GSP, Total for Vermont	\$27,296

*full-time equivalent jobs

GSP – Gross State Product includes value added, which is equal to its gross output minus its intermediate purchases from domestic industries or from foreign sources.

Gross Output – Includes the total value of all products produced and shipped by all producers (essentially sales).

This report is an update of a series of similar reports that have been published for the State of Vermont by the North East State Foresters Association since the early 1990s. The goal is to capture the economic value of the forest-based economy of the State and provide analyses of trends for key economic indicators. The sectors covered in this report include forestry and logging, related trucking, wood products manufacturing, wood furniture and related products manufacturing, pulp and paper manufacturing, wood energy, and the forest-based recreational economy that includes camping, hiking, hunting, downhill skiing, cross-country skiing, snowmobiling, fall foliage viewing, and wildlife viewing. Additional discussions in this report, compared to past reports, include use of economic multipliers to give a truer picture of the forest-based economy, carbon content of the forests of Vermont and the relationship of ecosystem services to the forest-based economy.

Data for this report come from federal, state and private sources. For a full list of sources, please see the end of this report.

We would like to thank the many people who assisted with the development of this report including Steven Sinclair, Ginger Anderson, Robert DeGeus and Paul Frederick of the Vermont Division of Forests at the Department of Forests, Parks and Recreation, and Steve Long.



III. Forest-Based Economy – current status and trends

The forest has provided products to sell for as long as there has been a Vermont. The forest-based economy includes all of the activities that go into harvesting forest products and turning them into usable products. It starts with the foresters, loggers, and truckers who manage, harvest, and transport the raw material from the forest to various markets for processing. Primary products include solid wood products from sawmills, veneer mills, and mills that reconstitute wood chips into oriented strand board or particle board. Secondary manufacturers then use these primary products to make finished goods such as furniture, moldings, and turned wood products. There are no longer any wood pulp mills in Vermont, but several manufacturers make paper from pulp purchased from out of state.

Some of the raw wood is turned into fuel. Many homeowners heat their homes with firewood or wood pellets. Vermont is a leader in heating schools and institutional facilities with wood chips. Wood chips are the fuel for two large wood-fired power plants, as well as a number of smaller commercial and public facilities that use woody biomass to create heat and/or electricity.

For the last century, Vermont's forests have also made it a recreational destination, which has contributed much to the economy. Forest-based recreation has become a large part of the economy that continues to grow. Thousands of people visit Vermont's forests for camping, hiking, hunting, downhill skiing, cross-

country skiing, snowmobiling, wildlife viewing, and fall foliage viewing.

It must be noted that some of the data included in the next sections are from 2012 but most are from 2011. Activity and output in the forest products manufacturing sector has seen a significant upturn in 2013 as the country comes out of the recession. The data below does not show this.



ECONOMIC MULTIPLIERS

The data used for economic output and jobs in this report are for direct jobs and output. All sectors of the economy have connections to other parts of the economy that are not recognized in direct jobs and output numbers. To better represent the effect of a sector on the economy, economists often apply economic multiplier formulas. In the past reports like this from North East State Foresters Association (NEFA), economic multipliers have not been used for the forest products industry. That contrasts with the way the forest recreation jobs and economic value have been reported in the past, by using an industry standard with a multiplier-like approach to quantify the effect that the recreation economy has on Vermont.

The economic multiplier formula known as IMPLAN was created with the forest products industry in mind, so we have used it here. Using IMPLAN, the pre-multiplier annual value to the economy of \$861 million is valued at over \$1.484 billion. Similarly, the 6,636 forest products economy jobs are estimated with multipliers to be 10,555 jobs.



Forestry, logging, and trucking

The forestry, logging, and primary trucking sectors work together to get the raw materials – logs, pulpwood, firewood, or chips – from the forest to the primary manufacturing market. The combined employment for these woods workers is estimated at 875 jobs, which is down from a high of over 900 in 2002 and 2008. Payroll for forestry and logging in Vermont exceeds \$34 million annually (Figure 2) and has trended upward since 2009.

The annual economic activity for forestry trucking, calculated in terms of annual sales or value of shipments, exceeds \$45 million (Figure 3).

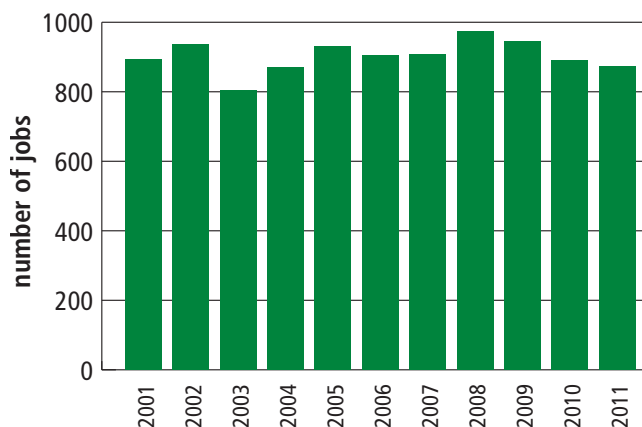
Vermont's logging infrastructure is changing. A study completed by the University of Maine in 2012¹ covering the Northern Forest states had sobering findings. The survey of logging business owners in Maine, New Hampshire, Vermont and New York determined that:

- 58% of the owners of logging businesses in Vermont are over 50 years old. Of those, 23% are older than 60.
- 53% of those surveyed have been in the business for longer than 30 years.
- 60% of Vermont logging businesses are owner operated with no employees. Less than 10% of Vermont logging businesses have more than 5 employees.
- Only 17% of Vermont logging businesses are incorporated. 68% are structured as owner operated or sole proprietorships.
- 71% of the logging companies operate conventional tree-length systems with chainsaws and skidders. At the same time, 66% of the harvesting volume is produced by mechanized companies using cut-to-length or whole-tree-harvesting (with chipping) systems.

This study points to a logging business sector that is old and getting older. In terms of output and employment, it is dominated by a small but growing number of businesses using the latest and most expensive harvesting equipment in order to have the highest production possible.

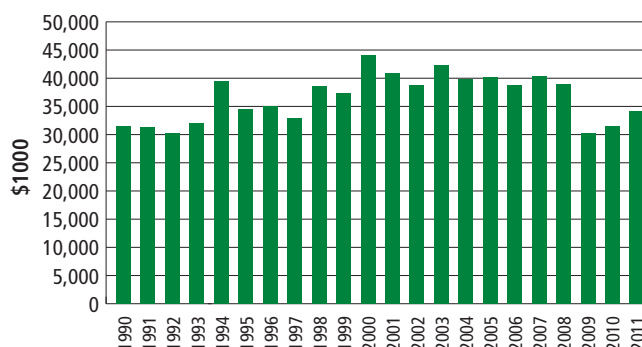
1. A Survey of Business Attributes, Harvest Capacity and Equipment Infrastructure of Logging Businesses in the Northern Forest, Jeffrey G. Benjamin & Bennet H. Leon, University of Maine, 2012

Figure 1
Vermont forestry, logging & trucking jobs



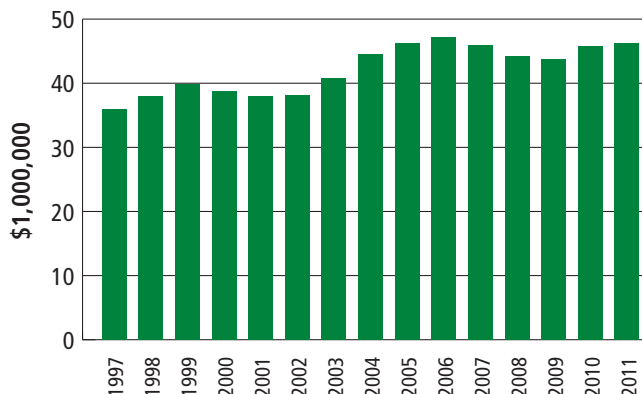
Source: U.S. Census Bureau – Census of Manufactures 2013 & industry estimates

Figure 2
Vermont forestry and logging payroll



Source: U.S. Census Bureau – Census of Manufactures 2013

Figure 3
Forest products truck transport annual sales in Vermont



Source: U.S. Census Bureau – Census of Manufactures 2013 and trucking industry non-published data

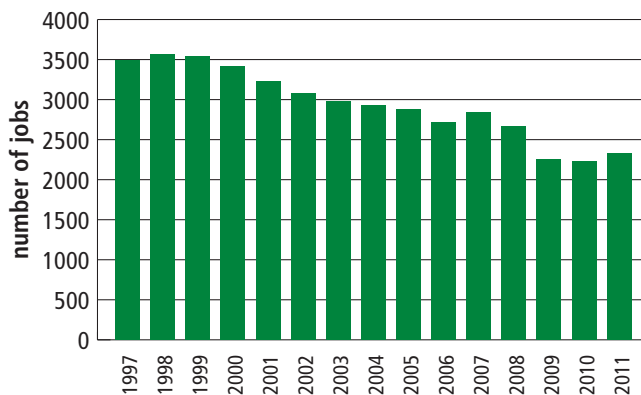


Primary manufacturing

The raw wood products with the highest value are sawlogs and veneer logs, which are manufactured into lumber and veneer. These primary manufacturers employ 2,327 workers. Employment has decreased from a high of approximately 3,500 in the year 1999, but data show that worker productivity has increased. In 2011, it took about 80% of the number of workers to produce the same value of wood products as in 1997². Payroll in the wood products sector is approximately \$67 million annually. It peaked in 2000 at \$91 million, and after a sharp drop in 2009, it has been increasing again.

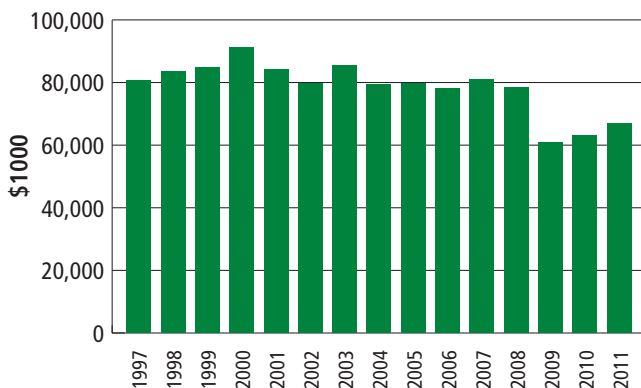
The peak of annual economic output, in terms of annual sales or value of shipments, was \$426 million in 2005. Today it stands at \$239 million but is holding steady.

Figure 4
Vermont wood products manufacturing jobs



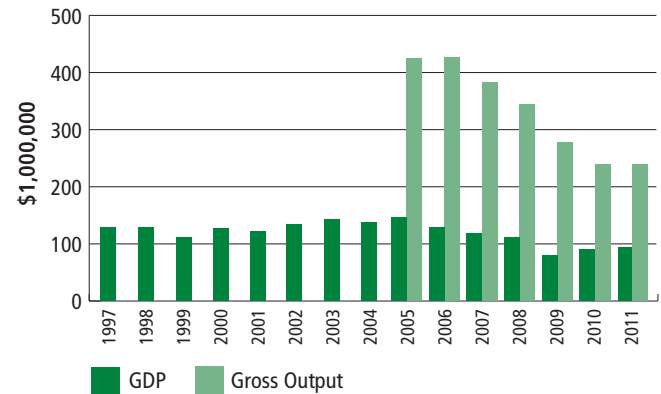
U.S. Dept. of Commerce - Bureau of Economic Analysis

Figure 5
Vermont wood products manufacturing payroll



U.S. Dept. of Commerce - Bureau of Economic Analysis

Figure 6
Vermont wood products manufacturing output

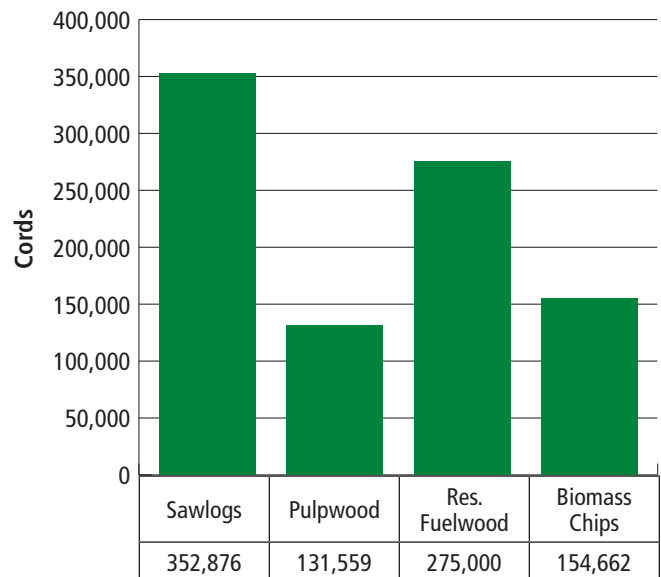


U.S. Dept. of Commerce - Bureau of Economic Analysis & Census of Manufactures

GDP - Gross Domestic Product includes value added, which is equal to its gross output minus its intermediate purchases from domestic industries or from foreign sources.

Gross Output - Includes the total value of all products produced and shipped by all producers (essentially sales).

Figure 7
Vermont timber harvest 2011



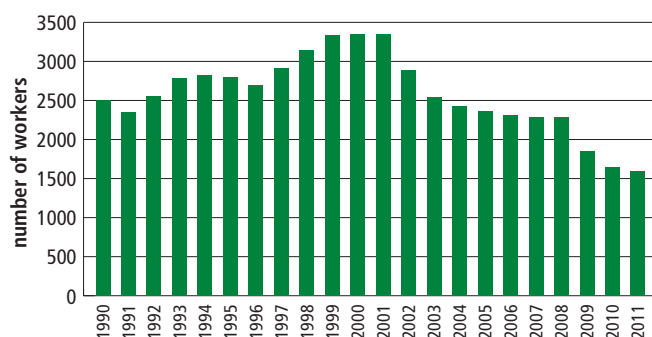
². Worker productivity analysis based on value of product rather than volume is complicated by the fact that prices per unit of product tend to rise with inflation over time.



Secondary manufacturing (furniture and related)

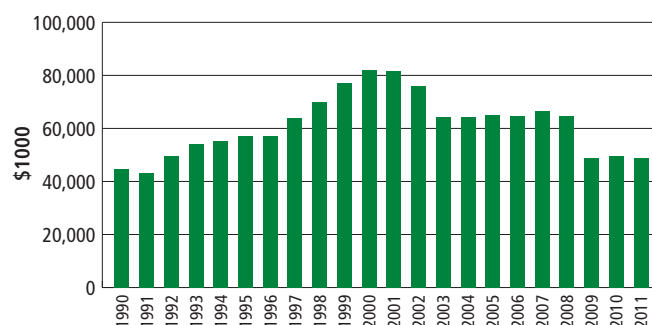
Secondary manufacturers transform lumber and other primary solid products into finished consumer products or parts for them. The making of furniture, moldings, turnings, and similar products employs nearly 1,600 Vermont workers, which is down from a high of approximately 3,350 in 2000. As in other sectors, worker productivity has increased rapidly over the last 20 years. In 2011, it required only 75% of the workers to produce a unit of value as it did in 1990. The payroll in this sector is approximately \$49 million annually. It has decreased from a high of \$82 million in 2000 but has been steady in the last several years. Annual economic output, in the form of sales or value of shipments for the secondary wood products sector, is approximately \$143 million in Vermont.

Figure 8
Number of workers in secondary wood products manufacturing jobs in Vermont



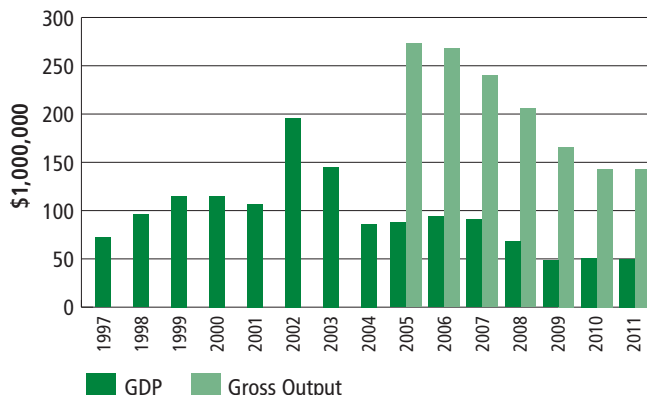
U.S. Dept. of Commerce - Bureau of Economic Analysis

Figure 9
Secondary wood products manufacturing payroll in Vermont



U.S. Dept. of Commerce - Bureau of Economic Analysis & Vermont Department of Labor

Figure 10
Vermont secondary wood products manufacturing output

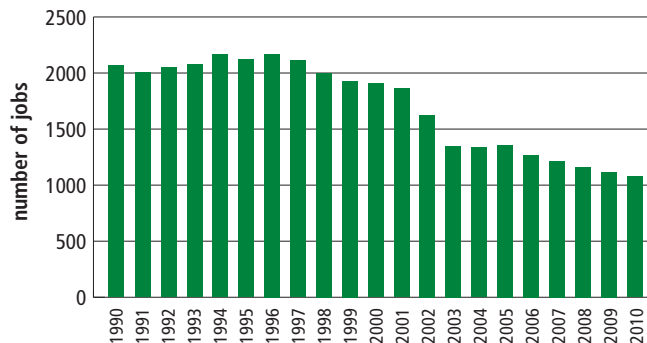


U.S. Dept. of Commerce - Bureau of Economic Analysis & Census of Manufactures

Pulp and paper

The pulp and paper industry has two separate components. Pulp manufacturers produce pulp from wood fiber, and paper makers process that pulp into paper. Traditionally, these two activities take place in the same facility. That's no longer true in Vermont, where there are no pulp mills operating. Two large and several smaller specialty paper manufacturers remain in Vermont³. These facilities employ over 1,000 workers, down from approximately 2,200 in 1996. Worker productivity in paper manufacturing has also increased over the last 20 years though not quite as much as in the wood products sector. Payroll in the paper sector is approximately \$63 million annually, down from its high of \$76 million in 2000. The annual economic output, in the form of sales or value of shipments for the pulp and paper sector, is approximately \$317 million in Vermont.

Figure 11
Vermont paper manufacturing jobs

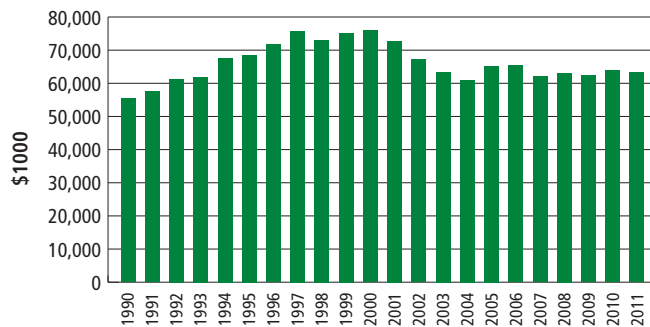


U.S. Dept. of Commerce - Bureau of Economic Analysis

3. While there are no pulp mills in Vermont, the logging infrastructure annually still harvests nearly 150,000 cords of pulpwood for pulp mills in New York and Maine.

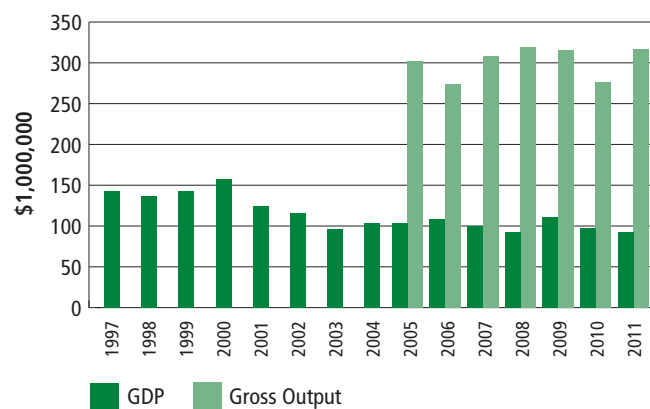


Figure 12
Vermont paper manufacturing payroll



U.S. Dept. of Commerce - Bureau of Economic Analysis & Vermont Department of Labor

Figure 13
Vermont paper manufacturing output



U.S. Dept. of Commerce - Bureau of Economic Analysis & Census of Manufactures



Wood energy

While the last decade has seen increased national attention to wood energy, Vermont has a long history of using wood for heating and for electric energy generation. Many Vermont homes use cordwood as a primary or supplemental form of heating. Thousands of others heat with wood pellets. More than 75 commercial facilities use wood chips or pellets for heating, and the number is increasing rapidly. Wood-chip boilers heating schools and municipal buildings have become common. The state's two largest purchasers of energy wood are utility-scale biomass plants generating electricity.

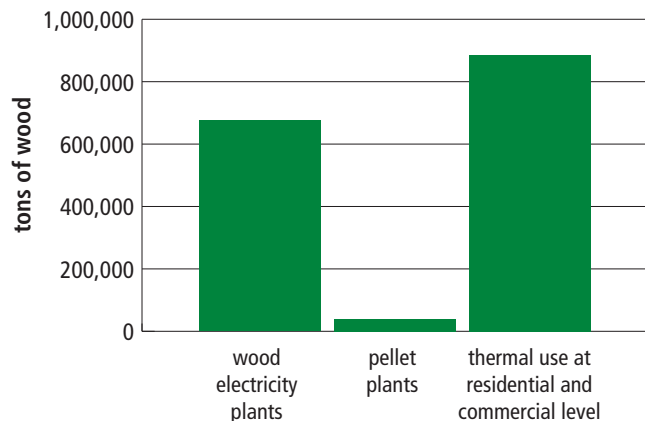
Combined, these uses require approximately 1.8 million green tons of wood annually. The majority of this comes as part of normal timber harvesting operations that are also removing trees destined for other markets. That's because wood for energy (biomass) is worth much less than sawlogs, making it unattractive for landowners to harvest only biomass. A typical forest owner in the northeastern U.S. receives only \$.50 to \$2 per ton for biomass chips, and loggers typically cannot survive on harvesting biomass chips alone. A logging company most often harvests a full suite of products – sawlogs, pulpwood, firewood, and biomass chips – allowing them to cover their costs and make a profit on the overall harvest.

Despite its low market value, the harvest of biomass has broader benefits. Cutting poorer-quality trees gives landowners and land managers options and opportunities for practicing good forestry. Unlike oil, propane, and natural gas, biomass comes from local sources and benefits the local economy through jobs in the harvesting, processing, and use of wood. It is a cost-competitive fuel, and homeowners who make the investment to switch from fuel oil to wood pellets can save considerably on their annual heating fuel bill. There are an estimated 300 direct jobs in the wood energy sector beyond the timber harvesting and trucking sectors that are counted in another section of this report.

Most of the energy wood harvested in Vermont stays in Vermont or in the immediate region. Its low value makes it cost prohibitive to ship very far from where it is harvested. Some wood pellet mills in the southern U.S. are exporting pellets to Europe, but Vermont's mill is not. The local demand for Vermont-produced wood pellets continues to be strong, and Vermont's one wood pellet manufacturing plant consumes an estimated 40,000 green tons of feedstock raw material.

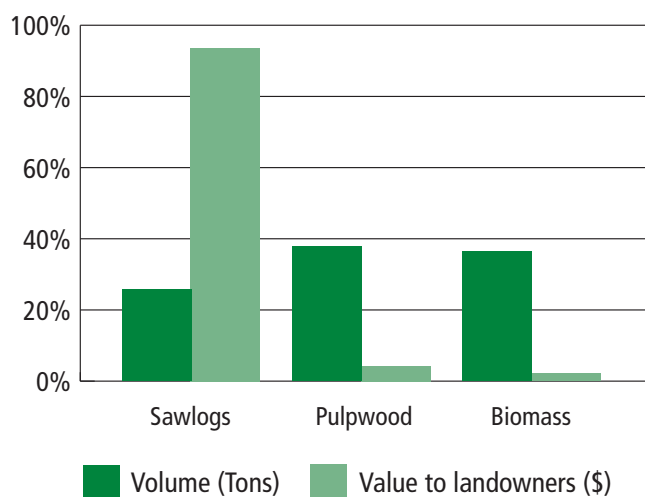


Figure 14
Annual wood energy use by sector in Vermont

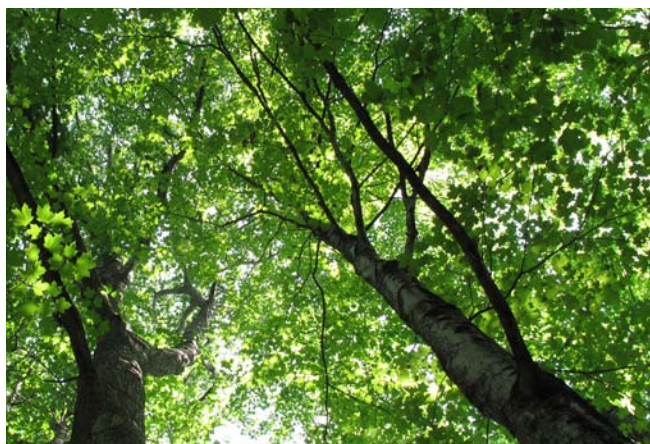


Source: Vermont Department of Forests, Parks and Recreation and Innovative Natural Resource Solutions LLC

Figure 15
Typical volume vs. value of timber harvested in the Northern Forest region



Source: From typical harvest volumes and values in Maine, New Hampshire, Vermont and New York – state data

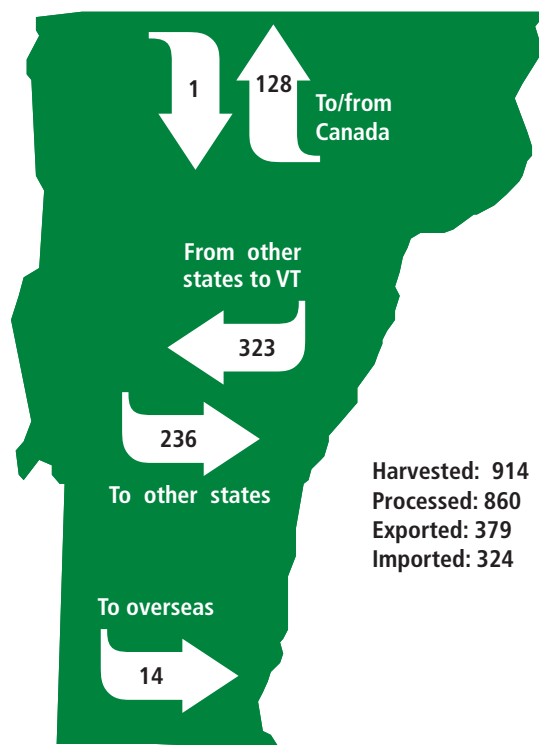


Wood flows and harvest trends

Not all the timber harvested in Vermont stays here to be processed in Vermont. Likewise, not all of the wood processed in the state is harvested in Vermont. Wood flows freely in the regional economy. Under the interstate commerce laws, states cannot regulate the flow of wood products among states or to and from Canada. Logs routinely travel across state lines and the international border according to proximity to markets, business relationships, and logistics of trucking routes. Figure 16 shows the flows of wood in and out of Vermont.

This report's forest products trend data clearly shows a smaller, more efficient forest products industry compared to 15 or 20 years ago. Other manufacturing sectors in the U.S. economy have undergone similar changes during this period. The volume of timber harvested from Vermont's forest has dropped from 1.4 million cords in 1997 to just under 1 million cords in 2011. The latter year was the tail end of the recession period, and the harvest is expected to continue its gradual rebound. (Figure 18). Despite the long-term contraction, the harvesting of wood products continues to play a significant role in the state's economy.

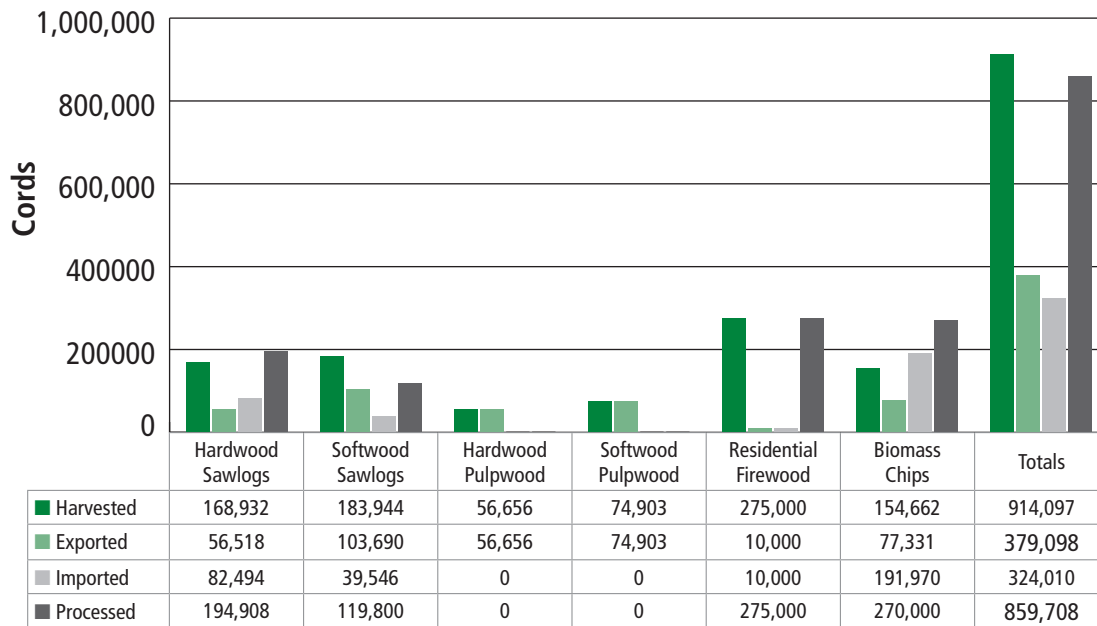
Figure 16
Wood Flows to and from Vermont – in 1000 cords



Source: Vermont Department of Forests, Parks and Recreation 2011, Innovative Natural Resource Solutions LLC

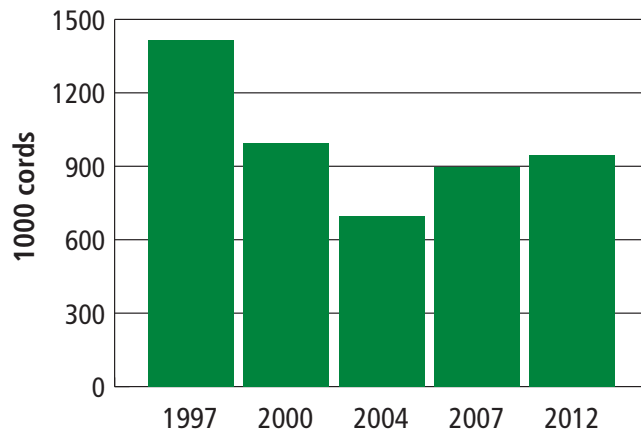


Figure 17
Wood Flows in Vermont, 2011



Source: Vermont Department of Forests, Parks and Recreation, Innovative Natural Resource Solutions LLC

Figure 18
Vermont timber harvest levels



Christmas trees and maple syrup

The Christmas tree and maple syrup industries do not have the complex multi-layered infrastructures of the wood products sector, but their importance to the local economy should not be underestimated. Vermont is the leading producer of maple syrup in the U.S. In 2012, the wholesale and retail sale of maple syrup and related products totaled over \$26 million while Christmas tree sales were \$2.8 million. There are more than 500 full-time equivalent jobs in the maple and Christmas tree sectors in Vermont. These are considered more of an agricultural crop, and you can find more information on them at the Vermont Agency of Agriculture, Food and Markets.

Forest-based recreation/tourism

As we noted earlier, forests dominate Vermont's landscape, so a large percentage of recreation and tourism activities are vitally linked to the forest. The extent of that link and the specific contribution by the forest environment to recreation and tourism expenditures can be difficult to quantify. Some activities take place primarily in the forest environment, including camping, hiking, hunting, downhill skiing, cross-country skiing, snowmobiling, and wildlife viewing. In our analysis, we assume that 75% of the value of these activities is directly attributable to the forests of Vermont. For fall foliage viewing, we assume a percentage of 100%. The approach used to assign values⁴ to forest recreation is similar to the multipliers we have used above in reporting the forest industry values. In this way, in making comparisons between the forest products sector and the forest recreation sectors, we are comparing analogous data.

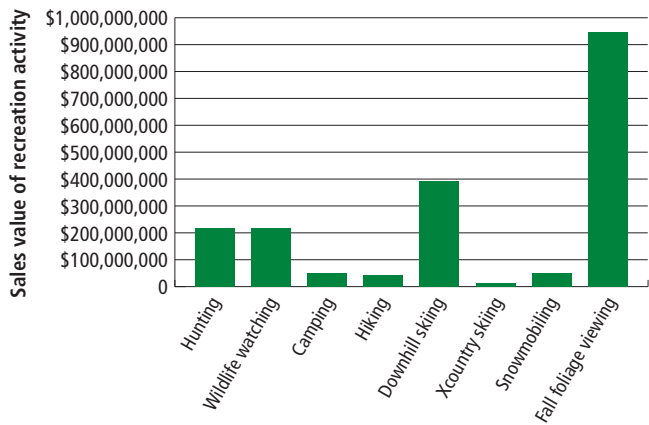
4. The key data source for the economic value of forest recreation in past NEFA publications like this one has been National Survey on Recreation and the Environment from the USDA Forest Service. While this source is used again, additionally we have used results from the new National Survey of Fishing, Hunting, and Wildlife-Associated Recreation conducted most recently in 2011 by the U.S. Fish and Wildlife Service of the federal Department of Interior. Because of this new data source, numbers in this report are not directly comparable to past reports for recreation and so trend data is not shown.



The forest-based recreational activities listed above contribute \$1.9 billion in sales annually to the Vermont economy. These include purchases at food and beverage stores, service stations, lodging places, eating and drinking establishments, and a host of other retail trade or service sectors. Fall foliage viewing is the largest contributor with 48% of the total sales, and is followed (in order) by downhill skiing, hunting, wildlife watching, camping, snowmobiling, hiking and cross-country skiing.

More than 10,000 people are employed in forest-based recreation and tourism sectors and payrolls reach \$158 million annually. We aren't reporting trend data here because we are using new data sources that are not directly comparable to past reports. We can say that the recreation economy in Vermont has not changed significantly since 2007 despite the ups and downs of the overall economy.

Figure 19
Economic value of Forest-based Recreation in Vermont, 2011



Sources: Multiple sources including National Survey on Recreation and the Environment from the USDA Forest Service and National Survey of Fishing, Hunting, and Wildlife-Associated Recreation

Figure 20
Jobs and Annual Payroll – Vermont forest recreation economy

Jobs	Payroll
10,050	\$157,755,557



Value of ecosystem services

In a publication designed to show the value of the forest-related economy, the data includes only those aspects that can be measured and assigned a monetary value. Other goods and services from Vermont's forests are not so readily quantified, especially the natural assets called ecosystem services. The forest is an ecological life-support system that provides a full suite of services that are vital to human health and livelihood. Forests provide wildlife habitat and biological diversity, clean air, clean water, scenic landscapes, and carbon storage. These all have tremendous value to society, but carbon storage is the only service that people are currently placing a monetary value on.

Carbon in forests (specifically a tree's ability to sequester carbon from carbon dioxide in the air through photosynthesis) is now generating income for some forest owners through the California greenhouse gas regulatory process. Prices in this infant market can fluctuate wildly but in 2013 they ranged from \$10 to \$12 per ton of carbon sequestered. How much carbon can an acre of forest store? A rough average is between 0.5 ton and 1.5 tons of carbon per acre per year, depending on factors including the age, forest type, and stocking of the forest. This modest payment may be the start of converting valuable ecosystem services to an economic form humans understand best – money in a marketplace. Regardless, ecosystem services not yet monetized should be considered a valuable part of the forest-based economy in Vermont.

VERMONT DIVISION OF FORESTS

The Vermont Division of Forests within the Department of Forests, Parks and Recreation has the following mission:

“The Forestry Division will lead the state in fostering a land ethic that recognizes our responsibility to manage for and promote healthy forests and is founded upon the principles of respect for the land, sustainable use and exemplary management. This ethic is the foundation which guides all of our decisions and actions.”

You can reach the Vermont Division of Forests at 802-828-1531 or at www.vtfpr.org/htm/forestry.cfm



Position of forest-based economy in the overall economy

The forest-based economy continues to play a significant role in the overall economy of Vermont. The annual value of the forest-based economy including forest recreation is \$3.42 billion.

Many landowners participate directly in that economy by harvesting wood from their land. A significant portion of those landowners have been introduced to forest stewardship through Vermont’s Use Value Appraisal program. This program reduces the property tax for more than 14,000 landowners of 1.8 million acres of forestland enrolled in the program. The program requires enrolled parcels to be actively managed, which means that approximately 39% of the private forest land base is periodically contributing to the forest-based economy.

Gross State Product (the state’s version of Gross Domestic Product) for all of Vermont’s Forest Products Manufacturing is \$266 million while the GSP of all Manufacturing is \$3.15 billion, so the forest sector represents 8% of the state’s manufacturing value.

Table 1.
Gross State Output and GSP of Forest-based Manufacturing & Recreation, Vermont, 2011

Gross Output (direct)	millions of \$	jobs*
Forestry, logging & trucking	\$45	875
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GSP, Forest Products Manufacturing	\$266
GSP, All Manufacturing, Vermont	\$3,150
GSP, Total for Vermont	\$27,296

*full-time equivalent jobs

GSP – Gross State Product includes value added, which is equal to its gross output minus its intermediate purchases from domestic industries or from foreign sources.

Gross Output – Includes the total value of all products produced and shipped by all producers (essentially sales).



Issues with potential to affect Vermont's future forest economy

- **Land removed from active management** – If significant acreages of forestland are removed from the working forest, those acres may still provide the backdrop for the forest recreation/tourism part of the economy but will no longer also provide the raw material for the forest products manufacturing sectors of the economy.
- **Climate change** – In the short-term, given all other things being equal, slightly longer growing seasons resulting from shortened winters and slightly warmer temperatures may increase the growth of Vermont's trees. Slightly longer warm weather periods each year may increase recreation in the woods, but shortened winters may have negative effects on that portion of the recreation economy. Should climate change also result in increased forest pest problems and reduce overall annual rainfall (or result in other harmful changes), any perceived benefits could be offset. Over the long term, any positive effects from climate change could disappear if temperature increases and climate changes do not modify over time.
- **Loss of markets** – For the forest products sector from the woods to the mill, robust market opportunities are extremely important. The trend data in this report depicts a smaller overall forest products manufacturing industry than 20 years ago and suggests continued contraction. A positive sign is that the industry is producing more per worker than ever before.
- **Reduced federal and state support for forestry assistance programs** – Certain forest activities have been subsidized by the federal government in the form of cost-share payments. It is expected, in these times of reducing federal budgets in discretionary spending, that cost-share opportunities will dwindle, resulting in less forest improvement work on the ground for that subset of the forest owner population that has taken advantage of the cost-share opportunities.
- **Federal and state tax and other policies** – Business owners in the forest products and forest recreation sectors in Vermont have long said that stable public policies are important for business. However well-meaning, changing policies affecting property taxes, environmental regulations, fuel, inheritance tax, and workers comp, for instance, make for a challenging business environment.
- **Cost of travel** – A large portion of the forest-based recreation economy in Vermont is based on individuals traveling from other locations to visit Vermont and enjoy its beauty. The price of transportation fuels influences whether tourists decide to travel to Vermont. As fuel costs increase, fewer out of state tourists will visit the forests of Vermont. On the other hand, an upward trend in fuel costs can also result in more Vermonters choosing to stay for local recreation.



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North East *State* Foresters Association (NEFA)

NEFA'S Mission

The North East *State* Foresters Association (NEFA) is the State Foresters of Vermont, New Hampshire, Vermont, and New York cooperating with the US Forest Service State & Private Forestry on issues of common interest (see www.nefainfo.org).

This booklet is part of a series on the economic importance and value of forest-based manufacturing and forest-related recreation and tourism of the four states in the NEFA region. Past reports can be viewed at www.nefainfo.org.

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