

# NH Timberland Owners Association

## **Working Forestlands Economic Valuation Project: An economic comparison of NH public and private land property taxes and timber**

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A **Report** from:

Innovative Natural Resource Solutions, LLC

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## **Introduction**

A primary goal of the New Hampshire Timberland Owners Association's (NHTOA) long-range strategic plan is:

**Foster a legal and regulatory environment that supports and enhances the ability of New Hampshire landowners, foresters, loggers, truckers, and mills to operate and thrive.**

Over the past five years the NHTOA has been working with its members and with Plymouth State University's Center for Rural Partnerships and Innovative Natural Resource Solutions LLC (INRS) to gather data to document the economic benefits New Hampshire's 259 towns, cities, and unincorporated regions glean from sustainable forestry and the forest products industry (foresters, loggers, truckers, mills, etc.). Previously, NHTOA commissioned a series of studies and reports looking at the economic value or impact of various sectors of the forest products industry, including the biomass sector, timber harvesting, and sawmills.

The NHTOA is continuing this series with this new study that looks at the economic value and impact of private forestland in the state, and comparing this value and impact to the economic value of forestlands in public ownership. This study, conducted by INRS, looks at property/timber taxes and timber values. A companion study conducted by Plymouth State University's Dr. Daniel Lee, quantifies the recreational economic activity the State realizes from private timberland vs public land.

**The data sources and a more detailed description of methodology can be found in the Appendix to this report.**

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Innovative Natural Resource Solutions LLC (INRS) was hired by NHTOA to research and write this report.

*INRS believes the information contained in this report to be correct, based upon information sources we deem reliable. The results are a snapshot in time – looking at data from 2018 unless otherwise stated. It does not suggest that these data and results would be the same or similar in the future although that is a likelihood.*

### **Innovative Natural Resource Solutions LLC**

Founded in 1994, Innovative Natural Resource Solutions LLC (INRS) is a full-service consulting firm specializing in forestry, the forest industry, natural resource conservation, and renewable energy. INRS has conducted economic analyses for the public and private sector throughout the U.S.

More information about the company can be found at [www.inrsllc.com](http://www.inrsllc.com)

## Executive Summary

The economic value of public and private forestland in NH from taxes and timber related activities are numerous. They start with taxes, including property taxes (or payments in lieu of property taxes for public lands where they exist) and include timber taxes. Additionally, value is added to timber harvested by the many manufacturing facilities that are found in the Granite State. This report identifies all of those economic values comparing private and public forestland in the State. The table below summarizes the findings:

Economic Value of Forestland in New Hampshire from Taxes and Timber - 2018								
	ACRES	PILT/REVENUE SHARING	PROPERTY TAX	TIMBER TAX	LAND USE CHANGE TAX	TIMBER STUMPAGE	TIMBER MANUFACTURING (direct)	TIMBER MANUFACTURING (direct/indirect/induced)
<b>PUBLIC</b>								
White Mt. National Forest	740,462	\$ 439,843		\$ 136,069		\$ 1,360,693	\$ 32,205,649	\$ 55,522,539
U.S. Fish and Wildlife Service	30,211	\$ 123,566		\$ 10,443		\$ 104,434	\$ 2,471,811	\$ 4,261,401
<b>Total Federal</b>								
U.S. Army Corps of Engineers	20,393							
Forests & Lands and State Parks	169,169			\$ 100,733		\$ 1,007,328	\$ 23,842,018	
NH Fish and Game	60,546							
NH DES	6,491							
<b>Total State &amp; Army Corps</b>								\$ 41,103,639
Town and County	118,694					\$ 298,297	\$ 7,060,268	\$ 12,171,903
<b>TOTAL PUBLIC FOREST</b>	<b>1,145,966</b>	<b>\$ 563,409</b>		<b>\$ 247,245</b>		<b>\$ 2,770,752</b>	<b>\$ 65,579,746</b>	<b>\$ 113,059,482</b>
<b>PRIVATE</b>								
<b>TOTAL PRIVATE FOREST</b>	<b>3,423,706</b>			<b>\$ 3,222,925</b>		<b>\$ 32,229,248</b>	<b>\$ 762,820,254</b>	<b>\$ 1,315,102,118</b>
Current Use Forestland	2,571,552		\$ 4,769,794					
			\$ 46,898,095					
Non-CU private forestland	852,154				\$ 7,784,885			
<b>TOTALS</b>	<b>4,569,672</b>							
Private Forestland with Conservation Easements	516,244							

On a per acre basis, these values are distributed between public and private forestland as follows:

Per Acre Economic Value of Public and Private Forestlands Tax and Timber				
	Federal	State	County/Local	Private
Per acre stumpage	\$ 1.90	\$ 3.93	\$ 2.51	\$ 9.41
Per acre timber manufacturing (direct)	\$ 45.00	\$ 92.92	\$ 59.48	\$ 222.81
Per acre timber manufacturing (direct/indirect/induced)	\$ 77.57	\$ 160.19	\$ 102.55	\$ 384.12

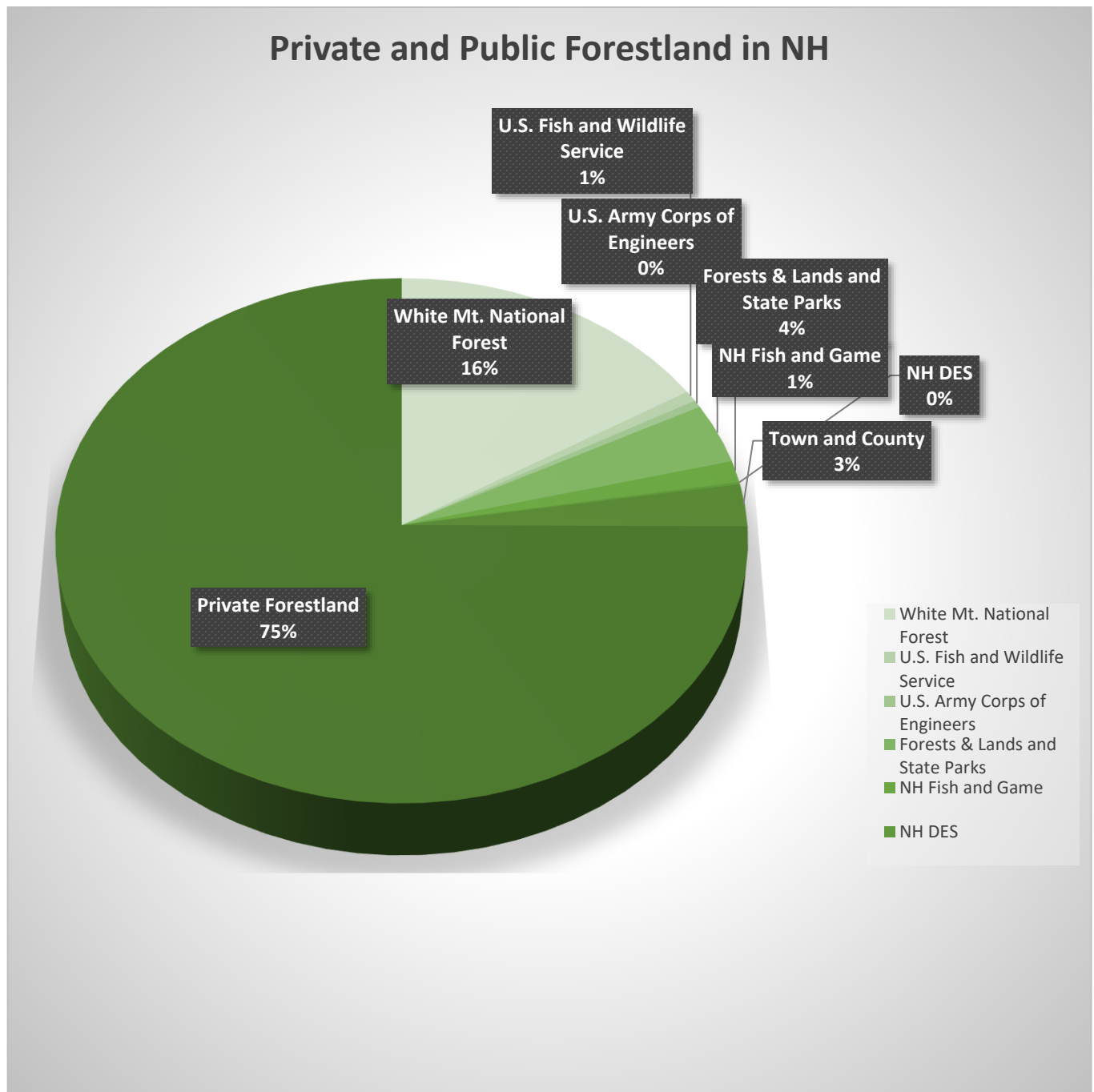
Note: Conservation easement acreage is listed above in the pink table to distinguish from current use land. Current use is a statewide law whereby undeveloped land is assessed at its current use and not as potential for development until and if the land is changed to a developed use. Conservation easement land is restricted in use by permanent deed. Conservation easement land acreage is a subset of current use acreage.

## I. Forestland Area of Public and Private Land in NH

In order to understand the economic valuation of activities on public and private forestland in New Hampshire, it is imperative to research accurate data on the geographic area of the State covered by public and private forests.

Figure 1 below provides a breakdown of acres of ownership in these two categories.

**Figure 1 Private and Public Forestland Acreage in NH**



Sources: NH GRANIT, USDA FIA, Public landowner data

Over 75% of New Hampshire's forest is held in private hands, by both individuals and families as well as non-profits and businesses. The largest public owner is, of course, the White Mountain National Forest, which covers 740,462 acres in New Hampshire and a small amount of additional acreage in western Maine.

A full breakdown of forested acreage in New Hampshire is found in Table 1 below. There are 3,423,706 acres of privately owned forests in New Hampshire and 1,145,966 acres of publically owned forest. 516,244 acres of the private forestlands have conservation easements held by public or private entities.

**Table 1 Public and Private Forestland Acreage in New Hampshire**

<b>Forestland Acreage in New Hampshire</b>		
<b>PUBLIC</b>		
White Mt. National Forest		740,462
U.S. Fish and Wildlife Service		30,211
U.S. Army Corps of Engineers		20,393
Forests & Lands and State Parks		169,169
NH Fish and Game		60,546
NH DES		6,491
Town and County		118,694
TOTAL PUBLIC FOREST		1,145,966
<b>PRIVATE</b>		
TOTAL PRIVATE FOREST		3,423,706
	Current Use Forestland	2,571,552
	Non-CU private forestland	852,154
<b>TOTALS</b>		<b>4,569,672</b>
Private Forestland with Conservation Easements		516,244

Conservation easement acreage is listed above in the pink table to distinguish from current use land. Current use is a statewide law whereby undeveloped land is assessed at its current use and not as potential for development until and if the land is changed to a developed use. Conservation easement land is restricted in use by permanent deed. Conservation easement acreage is a subset of Current Use Forestland.

## II. Property and Timber Taxes on Private Forest and PILT, Revenue Sharing and Timber Taxes on Public Land in NH

For the purposes of this study, we attributed economic activity and value as taxes to the forestland ownership sub-grouping listed in the previous section into the following categories:

- Property taxes generated by private forestlands;
- Payment-in-lieu-of-taxes (PILT) and Revenue Sharing generated for public lands;
- Timber taxes on both public and private forestland.

The NH Department of Revenue Administration gathers and retains exhaustive data on property taxes and timber taxes for each town in the State and the State as a whole. We relied on this data source to calculate property and timber taxes attributed to public and private land in the State. For payments in lieu of taxes on public lands, we obtained data directly from the public agencies.

For **property taxes** for 2018, we have broken down the data into two categories for private forests: forestland in current use<sup>1</sup> and forestland not in current use. From Table 2, annual property taxes for the 3,423,706 acres of private forestland in NH are \$52,667,889 while for the 1,145,966 acres of public land, property tax equivalents<sup>2</sup> are \$563,409.

For **timber yield taxes**<sup>3</sup> for 2018, revenue from private forestland was \$3,121,446 while for public forestland \$ 348,724<sup>4</sup>.

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<sup>1</sup> Current Use refers to the NH law (RSA 79-A) that provides for another land assessment program statewide that allows for assessment of land value at its use for growing trees or agricultural crops rather than at its potential to be developed.

<sup>2</sup> Public lands managers do not pay property taxes. Some federal lands pay in lieu of taxes and others have revenue sharing programs.

<sup>3</sup> In NH when timber is harvested, a 10% tax based on gross timber value, is paid to the local municipality.

<sup>4</sup> Note: the public and private land timber tax were estimated from the actual total timber tax received by municipalities in a year and the actual timber volumes harvested on public and private land.



**Table 2 Property tax on Private Forestland and PILT/Revenue Sharing on Public Land in NH**

<b>New Hampshire tax and equivalent data: Public and Private land</b>				
	2018	2018	2018	2017
	PILT/Revenue sharing (year)	Property tax	Timber tax	Land Use Change Tax
White Mt. National Forest	\$ 439,843		\$ 136,069	
U.S. Fish and Wildlife Service	\$ 123,566		\$ 10,443	
<b>Sub-Total</b>	\$ 563,409		\$ 146,513	
U.S. Army Corps of Engineers	0			
Forests & Lands and State Parks	0			
NH Fish and Game	0			
NH DES	0			
Total State and Army Corps	\$ -		\$ 100,733	
<b>Sub-Total</b>	0		\$ 100,733	
Town and County	0		0	
<b>Sub-Total</b>	0		0	
<b>TOTAL PUBLIC FOREST</b>	\$ 563,409		\$ 247,245	
<b>PRIVATE FOREST</b>			\$ 3,222,925	
Current Use Forest		\$ 4,769,794		
Non-Current Use Forest		\$ 46,898,095		\$ 7,784,885
<b>TOTALS</b>	\$ 563,409	\$ 51,667,889	\$ 3,500,000	\$ 7,784,885
<b>SUMMARY (2018)</b>				
Federal Land Tax Revenue	\$ 709,922			
State & Army Corps Tax Revenue	\$ 100,733			
Town and County Tax Revenue	\$ -			
<b>Total Public Land Tax Revenue</b>	\$ 810,654			
<b>Total Private Land Tax Revenue</b>	\$ 62,675,698			

*Note: This table does not include non-property/timber tax revenue that the State of NH or other jurisdiction may derive from businesses that own private forestland.*

To better understand the difference in tax and tax equivalents for public and private lands in NH, a per acre revenue per year was generated. Per acre property tax/equivalents and timber tax annual revenue are:

	Federal	State	County/Local	Private
<b>Per acre tax/PILT revenue</b>	\$ 0.92	0.39	\$ -	\$ 18.31

### III. Timber Value on Public vs. Private Lands in NH

Beyond property and timber tax value that can be attributed to public and private forestland in NH, more substantial economic impact is derived from the timber that is harvested and the value added that follows during manufacturing of wood products and energy.

Timber harvest volumes on public and private NH forestland (and percentages) based on the actual volume of timber harvested in 2017<sup>5</sup> in New Hampshire were:

**Public forestland timber harvest – 7.9 % of all timber harvested or 92,885 cords**

**Private forestland timber harvest – 92.1 % of all timber harvested or 1,089,441 cords**

We used these percentages to develop the following data on timber and timber manufacturing value associated with public and private forestland in New Hampshire.

Table 3 shows the economic value of both public and private forestland timber harvesting. First, the **raw stumpage value** – which is the value received by landowners from timber harvesting. **Annually stumpage value is \$2,770,752 for public lands and \$32,229,248 from private forestlands.**

Much more value is added to timber harvested in manufacturing. The end of the supply chain economic value for timber and timber harvesting is the manufacturing level product output value. For this analysis, we have chosen to measure value after the timber has been processed at its first, or primary stage in: logging and trucking, sawmills, pulp and paper mills, and as energy in chip, pellet and firewood forms.

**Primary processed timber value is: \$65,579,746 annually for public lands and \$762,820,254 for private forestlands in NH.**

Per acre value is perhaps better for comparison:

- **Public lands yield \$2.42 per acre of stumpage and \$57.23 per acre for primary processed timber;**
- **Private lands yield \$9.41 per acre for stumpage and \$222.81 for primary processed timber.**

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<sup>5</sup> Timber harvest volumes from Report of Cut data, NH Dept. of Revenue Administration

**Table 3 Timber manufacturing value in NH from public and private forestland**

NH Timber and timber manufacturing value: public and private forestland				
	2018	2017	2017	
	Timber Stumpage Value	Manufactured Timber Value (direct)	Manufactured Timber Value (direct/indirect/induced)	*
White Mt. National Forest	\$ 1,360,693	\$ 32,205,649	\$ 55,522,539	
U.S. Fish and Wildlife Service	\$ 104,434	\$ 2,471,811	\$ 4,261,401	
U.S. Army Corps of Engineers Forests & Lands and State Parks NH Fish and Game NH DES				
<b>Total State and Army Corps</b>	\$ 1,007,328	\$ 23,842,018	\$ 41,103,639	
Town and County	\$ 298,297	\$ 7,060,268	\$ 12,171,903	
<b>TOTAL PUBLIC FOREST</b>	\$ 2,770,752	\$ 65,579,746	\$ 113,059,482	
<b>TOTAL PRIVATE FOREST</b>	\$ 32,229,248	\$ 762,820,254	\$ 1,315,102,118	

*\*Note on direct/indirect/induced timber value - an IMPLAN run was beyond the scope of this project. This is an estimate of value from a previous IMPLAN run for these economic categories for NH.*

	Federal	State	County/Local	Private
Per acre stumpage	\$ 1.90	\$ 3.93	\$ 2.51	\$ 9.41
Per acre timber manufacturing (direct)	\$ 45.00	\$ 92.92	\$ 59.48	\$ 222.81
Per acre timber manufacturing (direct/indirect/induced)	\$ 77.57	\$ 160.19	\$ 102.55	\$ 384.12

Sources: NH DRA, U.S. Dept. of Commerce, NHTOA/Plymouth State University and INRS LLC

Notes; Manufactured Timber Value includes primary processing: logging/trucking, sawmills, pulp and paper & energy

## Conclusion

Comparing the economic value that NH public and private forestlands provide in taxes and timber value provides a useful tool for comparing forests in the Granite State. The analyses conducted for this report revealed that private lands provide much more economic value from property taxes and timber than does public land. The per acre table below tells the story.

**Table 4 Per acre Economic Value of Public vs. Private Forestlands in NH**

	Federal	State	County/Local	Private
Per acre stumpage	\$ 1.90	\$ 3.93	\$ 2.51	\$ 9.41
Per acre timber manufacturing (direct)	\$ 45.00	\$ 92.92	\$ 59.48	\$ 222.81
Per acre timber manufacturing (direct/indirect/induced)	\$ 77.57	\$ 160.19	\$ 102.55	\$ 384.12

**References:**

Army Corps of Engineers

NH Department of Environmental Services

NH Department of Natural and Cultural Resources

NH Department of Revenue Administration

NH Timberland Owners Association

Plymouth State University

U.S. Department of Commerce, Bureau of Economic Analysis

U.S. Fish and Wildlife Service

White Mt. National Forest

## **Appendix - Data and Analysis Methodology**

The data and methodology used to develop the data and information in this report are described more fully here.

### I. Forestland Area of Private and Public Land in NH

Raw data on public and private forestland area in New Hampshire were obtained from both the USDA Forest Service Forest Inventory and Analysis and through GRANIT, NH's Geographic Information System. Additionally for public lands, except for local public forestland owned by counties and municipalities, the agencies were contacted directly via telephone and/or email to review the estimates from GRANIT. These contacts yielded more refined acreages for public lands as these agencies have surveyed acreage data. For county and town owned land, GRANIT acreage figures were used.

Current Use acreage came directly from tables published by town by the NH Dept. of Revenue Administration.

Conservation easement acreage was derived directly from data maintained by the UNH GRANIT system.

### II. Property and Timber Taxes on Private Forest and PILT, Revenue Sharing and Timber Taxes on Public Land in NH

Payment in Lieu of Taxes (PILT) and federal revenue sharing to NH communities from the USDA Forest Service and the US Fish and Wildlife Service were obtained directly from the agency through annual reports of this data published by the agencies.

Property tax revenue data is available by town every year from the NH Dept. of Revenue Administration (DRA). Property tax revenue received by community from lands enrolled in the current use program were obtained directly from the Agency reports on current use.

For the non-current use forestland in the State, there is no direct database that provides the taxes paid on those lands. To determine a value, first, the per acre value was derived through the average value of land that has been levied the Land Use Change Tax since these are supposed to be full market value. From all the land that came out of current use by town from a list provided by the NH DRA, it was determined that the average market value per acre was \$2,578. From that, the town tax rate was applied to determine the likely property tax paid on the non-current use forestland.

The Land Use Change Tax, 10% of full market value of the land as developed land, is paid to individual towns and cities when land enrolled in current use is removed from the program because a change in use has occurred (such as forestland being developed for a house or business). The tax collected is documented in a report from the NH DRA from data provided by each town and/or city.

The data for timber tax, the 10% tax on the timber value paid to towns and cities when timber is cut and sold commercially, is reported to the NH DRA and that agency annually reports on the tax collected by town and/or city. Also collected in that data exchange by the towns to NH DRA is the actual volumes of timber, by species and product, harvested each year by town and/or city. Timber tax is paid by and due from the logger when the timber is harvested on public lands. On private lands the landowner is responsible to pay the tax. In order to estimate the tax paid on private vs. public land, first it was determined through direct communication with federal and state landowner agencies the amount of timber harvested for the target year of 2018. Secondly, this amount of timber was subtracted from the total harvested in the State to determine how much timber was harvested on private lands. From these numbers a percentage of total timber harvested by public and private land could be determined. Once this percentage was derived, the total timber tax collected for the state was multiplied by the percentage to determine the amount of tax paid by the various categories of public land and private forestland.

### III. Timber Value on Private vs. Public Lands in NH

Using the timber percentages determined for timber tax and described above, the value of the timber harvested was determined by multiplying the timber tax paid by 10 (since the tax is levied as a 10% tax on the full market value of the timber stumpage paid to the landowner). The result is then seen by ownership type.

Manufactured Timber Value, as seen in Table 3, is derived by first obtaining the Gross State Product value – essentially the sales of products – for four classes of timber processing from the datasets developed and maintained by the U.S. Department of Commerce's Bureau of Economic Analysis (BEA) (except for energy – see below). The four classes used were:

- Forestry, Logging and Trucking
- Wood Manufacturing (solid wood primary processing – essentially sawmills)
- Pulp and Paper manufacturing
- Energy

Energy data is actually developed from another source of data developed by Plymouth State University in a report on the sector's 6 historic biomass electricity

plants. Additionally, firewood value is added to that from the timber tax reporting on the product.

The sum total of annual Gross State Product value for NH in these categories is \$828,400,000. This value was distributed across the land ownership types based on the percentage of timber harvested from the annual harvest from these ownership types.

In Table 4, a summary table shows relative economic value on a per acre basis for public and private lands. This was calculated based on dividing the economic value (taxes, stumpage and timber manufacturing) by the acreage within each ownership category.