The Northern Forest of Maine, New Hampshire, Vermont and New York: A look at the land, economies and communities 1994-2004

DRAFT

North East *State* Foresters Association **August, 2004**

Produced for a 10th Anniversary Review of the work of the Northern Forest Lands Council

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Preamble

At this, the 10th anniversary year of the issuance of *Finding Common Ground: Conserving the Northern Forest*, the final report and recommendations of the Northern Forest Lands Council, the North East *State* Foresters Association[1](NEFA) decided to undertake a careful review and re-analysis of the issues surrounding the Council's report about the future of the 26 million acre Northern Forest region of the northeastern United States. As with the Council process that started in 1991 (that was preceded by the Northern Forest Lands Study and Governors' Task Force on Northern Forest Lands), NEFA intends to facilitate a process of *informed decision-making* in this 10-year re-look. The twenty-four people named to what NEFA is calling the Northern Forest Lands Council 10th Year "Forum" by the administrations of the four states, will be the initial participants in this process.

To that end, this background paper, much like the several thousand page Technical Appendix of the Northern Forest Lands Council process and Northern Forest Lands Study, seeks to provide the critical background information that will allow the Forum members to have reasoned, informed discussion about the future of this heavily forested region.

[1] state foresters of Maine, New Hampshire, Vermont and New York working with the USDA Forest Service, State and Private Forestry

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Introduction

For those involved in forestry, the forest products industry, environmental and land conservation communities, a simple real estate act in 1988 set the northeastern United States region on fire. That year, sales of large blocks of Northern Forest timberland formerly owned by Diamond International Corporation to entities focused on land development, caught the eye of policy makers at the state and federal level. Ultimately, Senator Patrick Leahy of Vermont and then Senator Warren Rudman of New Hampshire initiated the first in a series of events that marked a change in the way people look at the region. Henceforth, the largely forested 26 million acre region from northern Maine, through northern New Hampshire and Vermont and ending in the northwestern area of New York State abutting Lake Erie known as the Tug Hill region, became known as the "Northern Forest".

1.1 The Diamond lands sales - defining a region

The sequence of events that led to the sale of lands formerly owned by Diamond International Corporation and creation of the Northern Forest Lands Council, began in 1982. That year, British financier Sir James Goldsmith acquired all of Diamond International Corporation's timberland and manufacturing holdings in the northeastern U.S. in a hostile takeover. Goldsmith's business centered on purchasing companies and, through carefully timed and measured actions, dismantling the assets through sale of the parts at collective prices valued substantially more than the whole. The timberland holdings of Diamond totaled 976,000 acres: with 790,000 acres in Maine; 67,088 acres in New Hampshire; 96,486 acres in New York; and 22,426 acres in Vermont. Also included were various forest products manufacturing assets. In 1983, James River Corporation purchased most of the paper mill assets in Maine and New Hampshire. In 1988, James River gained partial interest in the Maine timberlands. Most of the remaining assets acquired by Goldsmith were sold to the French utility and telecommunications firm Cie Generale Electricite (CGE) in 1987. CGE had no interest in the lands so, through real estate broker LandVest, CGE began selling the timberlands in 1988. It was this sale that sparked such interest in the future of the timberlands of the region.

The New York lands were sold to Lassiter Properties of Georgia for $17 million. Lassiter was both a developer and manager of timberland. The New Hampshire and Vermont lands were sold to Rancourt Associates for $ 19 million. Rancourt, of Nashua, NH, was chiefly known as the developer of mobile home parks.

The following account from the Northern Forest Lands Council report, highlights the conclusions of those timberland sales:

> "In Maine, the 790,000 acres were not deemed marketable as a single unit and were sold piecemeal. Some of the larger sales included the following: in 1988, 230,000 acres to Fraser Paper Company and 9,400 acres to the Nature Conservancy (later resold to the U.S. Fish and Wildlife Service for a refuge), and; in 1989, 40,000 acres to the State of Maine. Other properties have been sold. In 1993, James River Corporation acquired the remaining interest in the balance of the lands retained by CGE.
>
> Many subsequent re-sales resulted from the public concern over the eventual fate of the lands. In 1988, the State of New York purchased 15,000 acres and a conservation easement on 40,000 acres of the Lassiter ownership for $10.4 million. In late 1988, with the help of the Society for the Protection of NH Forests and The Nature Conservancy, the

State of New Hampshire eventually purchased about 40,000 acres (the so-called Nash Stream tract) from Rancourt. The federal government purchased an additional 5,000 acres of in-holdings within the White Mountain National Forest and a conservation easement on the State of New Hampshire's Nash Stream parcel. The State of Vermont purchased approximately 9,000 acres. The remaining acres were put for auction in September of 1988, with approximately 12,500 acres reportedly sold in many tracts.

It is important to note that both Lassiter Properties and Rancourt Associates went bankrupt after the purchase and re-sale of these lands.

The final disposition of these lands (as of 1992) indicates that approximately 707,000 acres are held by forest industry, 62,000 acres are owned by private investors, 34,000 acres are owned by private individuals, and 160,000 acres are owned by government (with at least partial or less-than-fee interest). The remaining 7,000 acres have been developed to some degree. Some lands owned by private investors and individuals also may have been developed, but only to a very small degree."[2]

1.2 Overview of Northern Forest Lands Council process

And so, the Northern Forest Lands Council process was firmly born out of the change in land ownership and use of these former Diamond lands. In 1988, largely through the efforts of Senator Patrick Leahy of Vermont and then-Senator Warren Rudman of New Hampshire, Congress created the Northern Forest Lands Study, the precursor of the Council, to "…assess the current land ownership situation and historical patterns of ownership, to identify the threats to this ownership situation, and to come up with a series of strategies -- not recommendations -- from which the states and Congress might draw if they decided to move forward on any action to address the threats to these lands."[3] The Study process, led by the USDA Forest Service, worked closely with the governor appointed body from the 4-states, the Governors' Task Force on Northern Forest Lands.

A critical guiding document to the efforts of the Study and Council was a letter, sent in October of 1988, from Senators Leahy and Rudman, to the Chief of the Forest Service which read, in part:

> "The current land ownership and management patterns have served the people and forests of the region well. We are seeking reinforcement rather than replacement of the patterns of ownership and use that have characterized these lands".

Guided by these words, the Forest Service directed Northern Forest Lands Study, with counsel from the Governors' Task Force, issued a report in May of 1990 that listed 28 potential strategies for dealing with the changes to the lands. The Task Force also issued a short report and, because both identified that more work was needed on these issues, recommended that a four-state advisory, non-regulatory/non-acquisition body, the Northern Forest Lands Council (NFLC), to continue the work. The Forestry Title of the 1990 Farm Bill contained language continuing the work through the NFLC, while making an appropriation through the Interior and Related Agencies appropriations bill.

The Governors of the four states each appointed four members to the Council and the Forest Service a seventeenth. They hired staff and met for the first time in June of 1991.

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[2] *Finding Common Ground*, 1994, Appendix D

[3] ibid

The NFLC agreed to a mission:

> "The mission of the Northern Forest Lands Council is to reinforce the traditional patterns of land ownership and uses of large forest areas in the Northern Forest of Maine, New Hampshire, New York and Vermont, which have characterized these lands for decades. The mission is to be achieved by:
> - Enhancing the quality of life for local residents through the promotion of economic stability for the people and communities of the area and through the maintenance of large forest areas;
> - Encouraging the production of a sustainable yield of forest products, and;
> - Protecting recreational, wildlife, scenic and wildland resources."

After working directly with hundreds of people in the region through formal state advisory committees and subject area subcommittees, and thousands more through public meetings and hearings, newsletters and other communications, the Council issued an Interim Status Report in February 1993; Findings and Options in September 1993 and its draft recommendations in March of 1994. The final report, *Finding Common Ground: Conserving the Northern Forest*, was released in September 1994. The Council disbanded at that time.

The Congress appropriated over $ 5 million to this project over the 4 - year lifespan, including nearly $ 2.5 million for a regional GIS resource inventory. Coupled with the Northern Forest Lands Study, well over $ 6 million in public dollars and volunteer time was put towards these efforts.

1.3 Finding Common Ground - 37 recommendations

The Northern Forest Lands Council (NFLC) published *Finding Common Ground: Conserving the Northern Forest* [hereinafter *Finding Common Ground*], is a 178-page report with 37 recommendations in four sections directed at conserving the forests of the four-state Northern Forest. *Finding Common Ground* was the by-product of the Northern Forest Lands Study and four years of Council work that included in-depth research, data assessment, expert consultation, pubic meetings, and collaborative analysis.

The recommendations from *Finding Common Ground*, in abbreviated form, are:

Section I - Fostering Stewardship of Private Land:
Recommendation 1: Fund Forest Legacy
Recommendation 2: Fund state easement programs
Recommendation 3: Fund the Stewardship Incentive Program
Recommendation 4: Encourage green certification programs
Recommendation 5: Strengthen current use tax programs.
Recommendation 6: Consider replacing ad valorem taxation system with current use.
Recommendation 7: Change estate tax policies.
Recommendation 8: Allow inflation adjustment on the original cost of timber.
Recommendation 9: Eliminate rule on 100 hours per year (passive loss – IRS).
Recommendation 10: Educate forest users and public about sound forest management (sustainability).
Recommendation 11: Assess forest practices and programs.

Recommendation 12: Achieve principles of sustainability.

Section II - Protecting Exceptional Resources:

Recommendation 13: Fund public land management agencies.
Recommendation 14: Institute national excise tax on recreation equipment.
Recommendation 15: Refine state land acquisition planning programs (goal-oriented process).
Recommendation 16: Fund L&WCF Program (at least 60%).
Recommendation 17: Fund state land acquisition program.
Recommendation 18: Employ variety of conservation tools to conserve landscapes.
Recommendation 19: Exclude from income tax portion of the gain from conservation sales.
Recommendation 20: Assess water quality trends (by 6/96).
Recommendation 21: Conserve and enhance biodiversity (by 6/96).

Section III - Strengthening Economies of Rural Communities:

Recommendation 22: Increase funding for rural community assistance program (USFS-RD through Forestry).
Recommendation 23: Encourage marketing cooperatives and networks.
Recommendation 24: Direct assistance to natural resource-based business (state agencies).
Recommendation 25: Authorize and fund community financial institutions, or something similar.
Recommendation 26: Promote public policy to provide forest-based recreation (e.g., liability).
Recommendation 27: Improve workplace safety.
Recommendation 28: Reform worker's compensation insurance programs.
Recommendation 29: Review the effectiveness of administrative rules (state agencies).
Recommendation 30: Simplify and stabilize the regulatory process (6/95 state agencies).
Recommendation 31: Review land use planning programs.
Recommendation 32: Establish consistent truck weight regulations (state agencies).

Promoting More Informed Decisions:

Recommendation 33: Support cooperative efforts among four state universities (Universities and USDA FS-SP&F).
Recommendation 34: Track and analyze land conversion trends (state agencies).
Recommendation 35: Conduct and publish decennial surveys in a timely fashion.
Recommendation 36: Use the NFL Inventory.
Recommendation 37: Promote natural resource education for the public (states).

1.4 NEFA's Involvement in Northern Forest issue

When the Northern Forest Lands Council sunsetted in late 1994, no successor entity followed to monitor the implementation of the Council's 37 recommendations or advocate for their implementation. While still with the USDA Forest Service, Joseph Michaels, for a time, followed the accomplishments until about 1997. Following his leave, and since no other regionally-based forest organization tied to the administrations of the four states stepped in (if one exists other than NEFA), the North East *State* Foresters Association decided to play a role in monitoring the progress of implementation.

In 2000, NEFA contracted with the State University of New York, College of Environmental Science and Forestry, Syracuse, to complete a detailed analysis of the implementation progress of the recommendations contained in *Finding Common Ground*. The SUNY report, *The Implementation of the Northern Forest Lands Council's Recommendations: An Analysis Six Years Later*, was published in November of 2000 (see Appendix). This report, and its conclusion that, "The federal government made substantial implementation progress on only three of the NFLC's recommendations…"[4] as well as references that implementation of many other recommendations was not complete prompted NEFA and to design and implement this project. NEFA also wanted to make sure the ten-year anniversary didn't pass without revisiting this important work.

NEFA has spent considerable time and effort assuring that the work of the NFLC, and the substantial investment of time and money, was not neglected. This ten-year anniversary re-look at this work is the culmination of these efforts.

1.5 Overview of NEFA process for NFLC 10th year review

Central to the NFLC 10th year review of the Northern Forest Lands Council work are two ingredients: a diverse group of people involved in, and knowledgeable of, the key issues of the Northern Forest; and, second, updated information to understand the changes that have occurred in the region since 1994 as well as the current status of information on the region.

The administrations in Maine, New Hampshire, Vermont and New York, have named a group of twenty-three people to the "Forum" created by NEFA. As with the NFLC process itself, the USDA Forest Service has named a 24th person to the group. The Forum members include:

Maine
R. Alec Giffen, Director, Maine Forest Service
Karin Tilberg, Deputy Commissioner, ME Department of Conservation
Jerry Bley, Creative Conservation
Roger Milliken Jr., Baskahegan Company (former NFLC member)
Peter Triandafillou, Huber Resources Corp.
Patrick Strauch, Maine Forest Products Council

[4] The Implementation of the Northern Forest Lands Council's Recommendations: An Analysis Six Years Later, SUNY ESF, 2000 pg. 3

New Hampshire
Philip Bryce, Director, NH Division of Forests & Lands
Jane Difley, President/Forester, Society for the Protection of NH Forests
John Harrigan, landowner/farmer (former NFLC member)
James Wagner, NexFor Fraser Papers
State Senator John Gallus
Tom Thomson, Tree Farmer

Vermont
Steve Sinclair, Director of Forests, VT Dept. of Forests, Parks & Recreation
Brendan Whittaker, (former NFLC member)
Jonathan Wood, Commissioner, VT Dept. of Forests, Parks & Recreation
Peter Meyer, Vermont Public Service Board (former NFLC member)
Richard Carbonetti, LandVest (former NFLC member)

New York
Rob Davies, State Forester, Division of Lands & Forests, NY DEC
Sloane Crawford, Division of Lands & Forests, NY DEC
Francis Sheehan, Director of Natural Resource Planning, NY DEC
Robert Stegemann, International Paper (former NFLC member)
Graham Cox, Audubon New York
Terry Martino, Exec. Director, Adirondack North Country Assoc.

USDA Forest Service Liaison:

Karen R. Mollander, Field Representative, USDA Forest Service, State & Private Forestry

The **goal** of the NFLC 10th anniversary process is to **develop a set of new recommendations for policy makers/and private action and encourage others in the region to discuss the issues and information generated by the Forum**. This will be done largely through pre-meeting conference calls and a Forum 2-day workshop by:

- Examining what has been accomplished (relative to the NFLC recommendations);
- Reviewing what has changed in the region in the last ten years; and
- Developing recommendations in three categories-

- NFLC recommendations not completed or fully completed but no longer relevant
- NFLC recommendations not completed or fully completed but still worthy of implementation
- Other recommendations not included in NFLC but relevant given new information.

The second part of the goal, to encourage discussion about these issues, will begin to be accomplished by an open invitation conference to be held on December 10, 2004.

A general overview of the process is as follows:

- ground rules – a draft set will be proposed to the group and agreement will be reached before the summer 2004 conference calls begin.

- Subcommittees – Work prior to the September 14-15 workshop will be accomplished largely through subcommittees:

> *Recommendation area I*: Fostering Stewardship of Private Land: John Harrigan, Tom Thomson, Richard Carbonetti, Peter Meyer, Rob Davies, Karen Mollander, Sloane Crawford, Peter Triandafillou
>
> *Recommendation area II*: Protecting Exceptional Resources: Jerry Bley, Phil Bryce, Jane Difley, Jon Wood, Francis Sheehan, Robert Stegemann, Karin Tilberg, Patrick Strauch
>
> *Recommendation area III:* Strengthening Economies of Rural Communities – Alec Giffen, Roger Milliken, John Gallus, James Wagner, Steve Sinclair, Brendan Whittaker, Graham Cox, Terry Martino

- Findings – before any recommendations are developed, a series of "Findings" will be developed by each of the subcommittees using this NFLC 10th Anniversary background paper as the base source but additional materials can be brought to the subcommittees by members.

- Using the findings as the base, each subcommittee to develop the following as strawman proposals over July-August for presentation to the full group at the September 14-15 meeting:

- NFLC recommendations not completed or fully completed but no longer relevant
- NFLC recommendations not completed or fully completed but still worthy of implementation
- Other recommendations not included in *Finding Common Ground* but relevant given new information from findings.

After September 15 – staff draft results of workshop into report. E-mail and conference call feedback to get agreement on document that can be shared with public by November 15.

Conference – December 10, 2004

An open invitation conference will take place on December 10. The purpose of the conference is:

- to celebrate the 10th year anniversary of the NFLC report; and
- discuss the findings and recommendations of the Forum group; receive feedback and preferences on workshop findings

1.6 A look at the forestland related politics of the Northern Forest – 1994 to 2003 – what has changed and how this affects the future of the region

At the time of the work of the Northern Forest Lands Study and Council from the late 1980s to early 1990s, concern over the fate of the region's forests, economies and communities was strong. Unprecedented *regional* coalitions developed from the environmental community (the Northern Forest Alliance still functions in 2004), forest products industry and property rights groups across

the region. These groups spent a great deal of time working with the Council either formally through having members on the Council itself or on the various Council working committees and state citizen advisory committees. They also worked behind the scenes to influence the outcome of the Council's work. It may be fair to say that some property rights groups worked hard to get rid of the Council altogether. Others worked hard to assure their particular interest was well represented in the final recommendations of the Council.

At the time of the Council's work, Governors Cuomo (NY), Dean (VT), McKernan (ME) and Merrill (NH) clearly all had different views and approaches to the forest-based issues that were the subject of this work. Further, the politics of these issues were, indeed, different state to state.

In Maine, there was reluctance to be part of the work of the Study and Council from the beginning. Fear of loss of control of Maine lands and policies and lack of trust with the federal government all fed this apprehension. In New Hampshire, multi-discussions among the forest products industry, community representatives and the environmental community have occurred for years. There was very little controversy over the work of the Council in that state. In Vermont, tension's between state government and the forest products industry and environmental community and the forest products industry caused for a general mistrust of the Council process though not nearly that of what occurred in Maine. Some of the property rights organizations that had significant concern for the work on the Northern Forest issues during this period were based in Vermont. In New York, the politics of these issues were exacerbated by the fact that a state commission on the future of the Adirondack region (a large portion of the Northern Forest area in New York) had just completed its work amidst much controversy from the property rights community. This sentiment immediately spilled over into the work of the Council, making initial forays very difficult.

The trust developed among the 17 members of the Northern Forest Lands Council helped to soften the edges of the state-by-state issues around the process. But that took years to develop.

Since the disbanding of the Council in 1994, several significant actions, mostly in Maine, served to dissolve some of the trust and good working relationships developed during the period from 1988-1994. Particularly, several citizen referenda in Maine over clearcutting fueled fights between the forest products industry and the environmental community. In Vermont, issues surrounding the disposition of the lands formerly owned by Champion International in the Northeast Kingdom caused significant heartache among diverse interests in the late 1990s and early 2000 period. A splitting of the interests who represent the forest products industry also caused significant turmoil over all issues related to the forests of the state.

In 2004, the governor's administration in New York seems ready to participate in further regional dialogues about these issues in the hope that rural New York issues may receive more attention than they normally receive. In Vermont, the republican Douglas administration took over from a long period of Howard Dean's leadership and the sentiment resulting is a different view from that which was present in 1994 (when Dean was in office in the earlier part of his career in the governor's office). New Hampshire's administration is more conservative in its approaches to all public policy issues than any administration since 1994. It is unclear what, if any effects, this might have on discussions around the issues of the Northern Forest, forestry and the rural economies based on the forests of the region. Governor Baldacci's administration has probably been the most active on these issues than any other in the region over the last ten years. Numerous commissions and task groups are working on issues ranging from forest certification, forest-based economy, timber

liquidation and a host of natural resource-based industry issues stemming from a large conference held on the 5 natural resource-based industries in Maine held in 2003.

One other significant phenomenon experienced in the region (and one directly related to the work of the Northern Forest Lands Council) is the proliferation of large-tract conservation easement sales. In the early 1990s, large companies, industrial or non-industrial, were very reluctant to explore use of the easement tool on their lands though conservation easements had been in wide use in the region since the 1970s. Since 1994, unprecedented use of conservation easements on large-tract lands in the Northern Forest has occurred – to the tune of millions of acres. This tool has allowed some landowners a way to realize real estate development value on their timberlands while continuing the timber management focus of their operations.

Other regional dialogues have begun in recent years on issues surrounding the Northern Forest region, particular to note is the series of meetings and discussion coordinated by the Northern Forest Center, a Concord, NH-based non-profit organization. These discussions have centered more on a range of economic and rural community issues, rather than the focused forest-based work of the Northern Forest Lands Council and the work started by NEFA to re-visit this work. A piece of federal legislation designed to create a four-state commission in the Northern Forest states was also introduced in 2004 by Congressman Michaud of Maine. It seeks to provide federal funding towards many economic development-related issues. No action is expected on this bill by the Congress in 2004.

As with much described in this report, the only thing constant in the region is change itself. That too applies to political landscape surrounding forest-based issues in the Northern Forest.

Sources:

Finding Common Ground: Conserving the Northern Forest, Northern Forest Lands Council, 1994, Appendix D
Northern Forest Lands Study, USDA Forest Service, 1991
Governors' Task Force Report on Northern Forest Lands, 1991
The Implementation of the Northern Forest Lands Council's Recommendations: An Analysis Six Years Later, SUNY ESF, 2000

II. The Land

2.1 Forestland Ownership patterns in the Northern Forest

Concern for potential change in the forestland ownership pattern of large blocks of private forested ownerships and the resulting effects on the forest-based economy, ecology and public benefits in the Northern Forest region prompted the creation of the Northern Forest Lands Study, Governors' Task Force on Northern Forest Lands and Northern Forest Lands Council in the late 1980s and early 1990s. Understanding the state of ownership patterns in 1994, and more importantly, the changes that have occurred since, along with how these changes have affected the economy and public values associated with this land, is essential to any discussion about the future of the region.

2.2 1988 Forestland ownership data - The Northern Forest Lands Council data for the gross acreages in the 26 million acre Northern Forest area from 1987-88 period are highlighted in Appendix A. That table refers exclusively to the land area within the 27 counties that encompass the Northern Forest region[5]. New land ownership tables (and the accompanied maps found in the Appendix of this document) developed for this 2004 revisit of the NFLC process are mostly focused on the same geographic region but, where noted, may include additional data and analysis beyond the borders of the region. In certain cases, discussing information for the region including and additional to the 26 million acre area provides better context for policy analysis.

Relevant data in the 1988 Appendix table is helpful to set the context for a trend analysis of land ownership from that period to present and can be found in Table 2.1. At that time, approximately 9.7 million acres were owned by so-called "industrial" timberland owners[6] across the region. The majority of this, 7.7 million acres, was in Maine alone. Large non-industrial owners combined to own approximately 3.6 million acres across the four-state region.

Table 2.1 Land Ownership in the Northern Forest Region (acres) 1988[7]

Ownership/State	Maine	New Hampshire	New York	Vermont	TOTAL
Private Land					
Industrial	7,700,000	500,000	1,200,000	300,000	**9,700,000**
Large-Non-industrial	3,100,000	50,000	500,000	50,000	**3,600,000**

A more important benchmark measure for land ownership patterns in the region is the state of large ownerships in 1994, the year the NFLC issued its report. The map entitled "1994 – Forest Land

[5] The Northern Forest Lands Study originally identified the 27 county-area as the Northern Forest because the large tracts of privately owned forest that was the subject of the Study and the Northern Forest Lands Council work was largely contained within this geographic region. The work in 2004, while focused on this same region, is intentionally looking beyond the borders of the 27 counties where relevant.

[6] "Industrial timberland owners" refers to owners that have both timberland and forest products manufacturing assets in their ownership structure.

[7] Excerpt from *Finding Common Ground* Appendix J, full table found in Appendix A of this publication.
Definitions of categories: Industrial – private timberland ownership of any size where the owner also owns forest products manufacturing assets (generally over 2,000 acres); Large non-industrial – private timberland ownership where the owner owns no manufacturing assets (generally over 2,000 acres).

Ownerships by Broad Class" in the Appendix shows the large ownerships, using gross acreages in similar categories to the table above. Table 2.2 shows the acreages in that map in tabular form.

Significant to note is that from 1988 to 1994, near 1.3 million acres shifted from the industrial to large-non-industrial categories across the region.

Table 2.2 Land Ownership in the Northern Forest Region (acres) 1994[8]

Ownership/State	Maine	New Hampshire	New York	Vermont	TOTAL
Private Land[9]					
Industrial	6,867,763	402,161	960,916	202,541	**8,433,381**
Large Non-industrial	3,277,152	153,787	203,689	46,579	**3,681,207**
Large NGO	46,092	76,710	103,503	10,259	**236,564**
Public Land[10]					
State	905,567	264,400	2,738,866	389,984	**4,298,817**
Federal	201,945	690,158	5,329	545,598	**1,443,030**

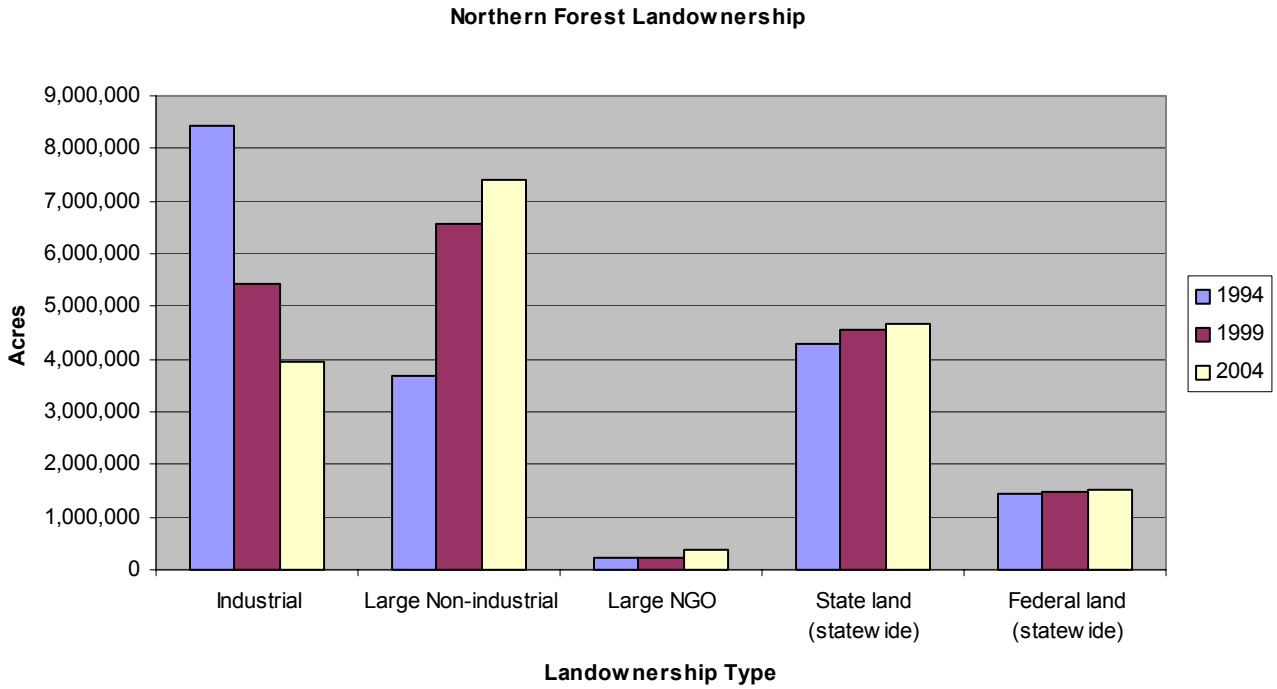
2.3 Ownership changes 1994-2004.

During the period of operations for the Northern Forest Lands Study and Council from 1988 to 1994, it was evident that the region's land ownership was hardly in a static period. More significant is that the data for the period shows forestland ownership changes actually accelerated *following* the issuance of the Northern Forest Lands Council report in late 1994. Several major changes in large forestland ownership patterns had already occurred by 1998 and are demonstrated in comparing Table 2 above with Table 3 below and by reviewing Chart 1. **Particularly, major acreages of large industrial[11] ownerships changed ownership type during the 5-year span**. More specifically, **over 3 million acres formerly owned by industrial timberland owners was sold to other owner types**. The vast majority (nearly 2.9 million acres) went to large private non-industrial landowners while a very small subset went to conservation non-profits, state government or the federal government.

Chart 2.1 shows the trend of a major shift in the industrial ownership type (first column set) to large non-industrial type (second column set) from 1994 to 2004.

[8] *James Sewall Company, 2004* Note: the federal and state lands are statewide statistics while those for all other categories cover only the 27 Northern Forest Country area. See Appendix B for list of Counties in the Northern Forest region.
[9] For this Table and Table 2.3, the private land acreages cover nearly exclusively the area within the 27-county Northern Forest region.
[10] For this Table and Table 2.3, the public land acreages cover the entire area of the individual state, not just the area within the Northern Forest counties.
[11] Industrial ownerships refer to companies that own forestland and forest products manufacturing facilities.

Chart 2.1



So-called Timberland Investment Management Organizations (TIMOs) were the vast majority of new non-industrial private owners of these changed acres. The largest at the time, Hancock Timber Resource Group, went from owning no acreage in the region in 1988 to owning 564,023 in the four states in 1994. Hancock increased their acreage in the region to 622,363 acres in 1999 and then began selling land. By 2004, Hancock owned just 235,847 acres across the four states (see Chart 2.2).

Chart 2.2

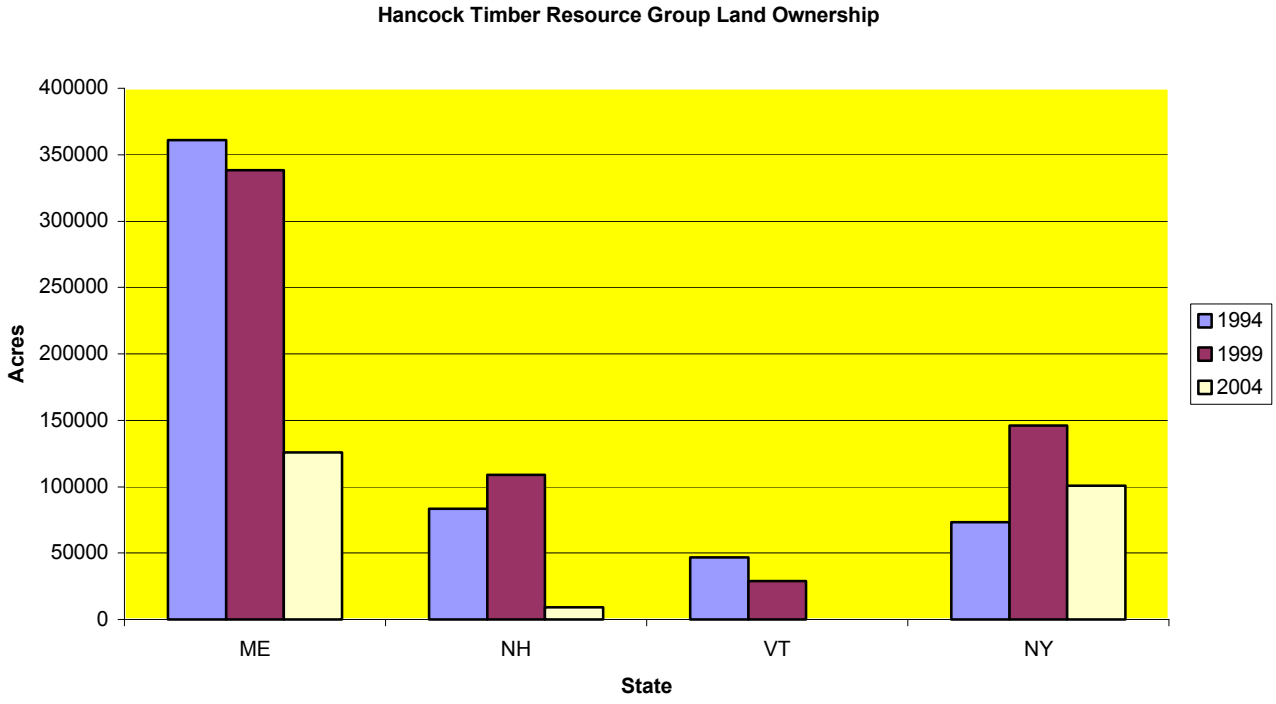


Table 2.3 Land Ownership in the Northern Forest Region (acres) 1999[12]

Ownership/State	Maine	New Hampshire	New York	Vermont	TOTAL
Private Land					
Industrial	4,369,591	311,716	741,668	9,002	**5,431,977**
Large-Non-industrial	5,956,235	210,231	221,241	190,815	**6,578,522**
Large NGO	48,018	21,129	102,299	57,490	**228,936**
Public Land					
State	891,826	261,264	3,012,285	382,632	**4,548,007**
Federal	201,920	695,292	5,329	583,021	**1,485,562**

A final aggregate table (Table 2.4) shows the status of land ownership in 2004. The same major trend that occurred during the 1994 to 1999 period also persisted from 1999 to 2004. Industrial forest ownership dropped from 5,432,977 acres in 1999 to 3,946,928 acres in 2004.

[12] *James Sewall Company, 2004*

Table 2.4 Land Ownership in the Northern Forest Region (acres) 2004[13]

Ownership/State	Maine	New Hampshire	New York	Vermont	TOTAL
Private Land					
Industrial	3,239,156	26,489	671,706	9,577	**3,946,928**
Large-Non-industrial	6,560,412	455,034	208,833	163,266	**7,387,545**
Large NGO	164,246	12,292	155,903	58,781	**391,222**
Public Land					
State	979,513	287,364	3,010,381	394,953	**4,672,211**
Federal	206,965	704,335	5,329	590,455	**1,507,084**

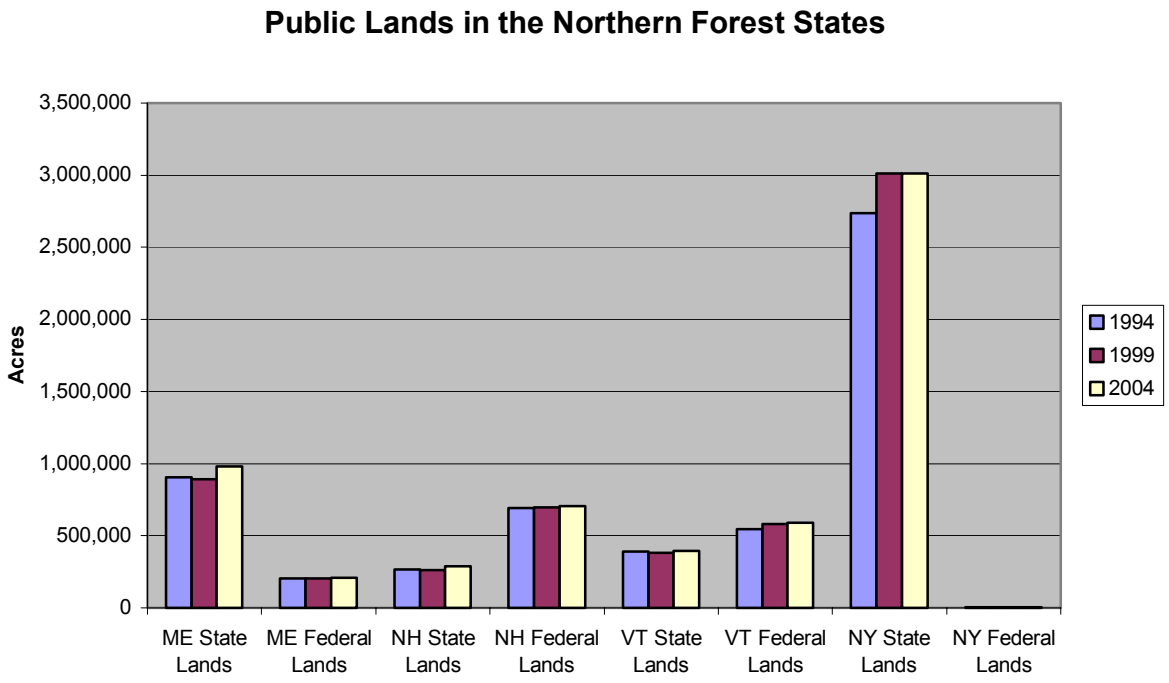
One of the shifts documented during this time period is the purchase of large acreages by "Contractors," a new category of large non-industrial private owner. These are logging entities owned by individuals and companies located almost exclusively in Maine and, to a much lesser extent New Hampshire, who purchase large forestland tracts. Some of these entities quickly set out to liquidate the timber on the tracts. In 2004, Contractors owned over 800,000 acres of the large non-industrial owner total of 6,560,412 acres.

2.4 Public forestland ownership changes

Data included in Tables 2.2, 2.3 and 2.4 also covers public land. As with the other datasets described above, the public land data refers to the lands highlighted in the color maps in Appendix C. The data for public land is *statewide* data, not just covering the Northern Forest region. A helpful graph in Chart 2.3 describes the trend in public forestland ownership in the four-state region.

[13] *James Sewall Company, 2004*

Chart 2.3



During the period from 1994 to 2004, modest changes in publicly owned land occurred. In Maine, for instance, State fee-owned[14] land increased by about 8% from 905,567 acres to 979,513. In New York, State fee-owned lands increased by about 10%, from 2,738,866 acres in 1994 to 3,012,285 acres in 2004.

In New Hampshire, the Northern Forest state with the most federal land (both in percentage and absolute numbers), federal fee-owned land increased by 2%, from 690,158 acres in 1994 to 704,335 acres in 2004.

2.5 Selected Industrial Forest Landowner changes – 1994-2004

While gross acreage totals shown above tell a good part of the story of land ownership trends of large tracts of forested land in the Northern Forest region, an anecdotal look at individual company ownership changes may be more useful. Table 2.5 tells a story of sale and re-sale for four selected companies: Champion International; International Paper; JD Irving & Boise/MeadWestvaco. The conclusion to the tale is one of consolidation. In 2004, only 2 of the 4 companies still remain. Lands not purchased by the remaining two are largely in the hands of TIMOs with a small portion in public ownership.

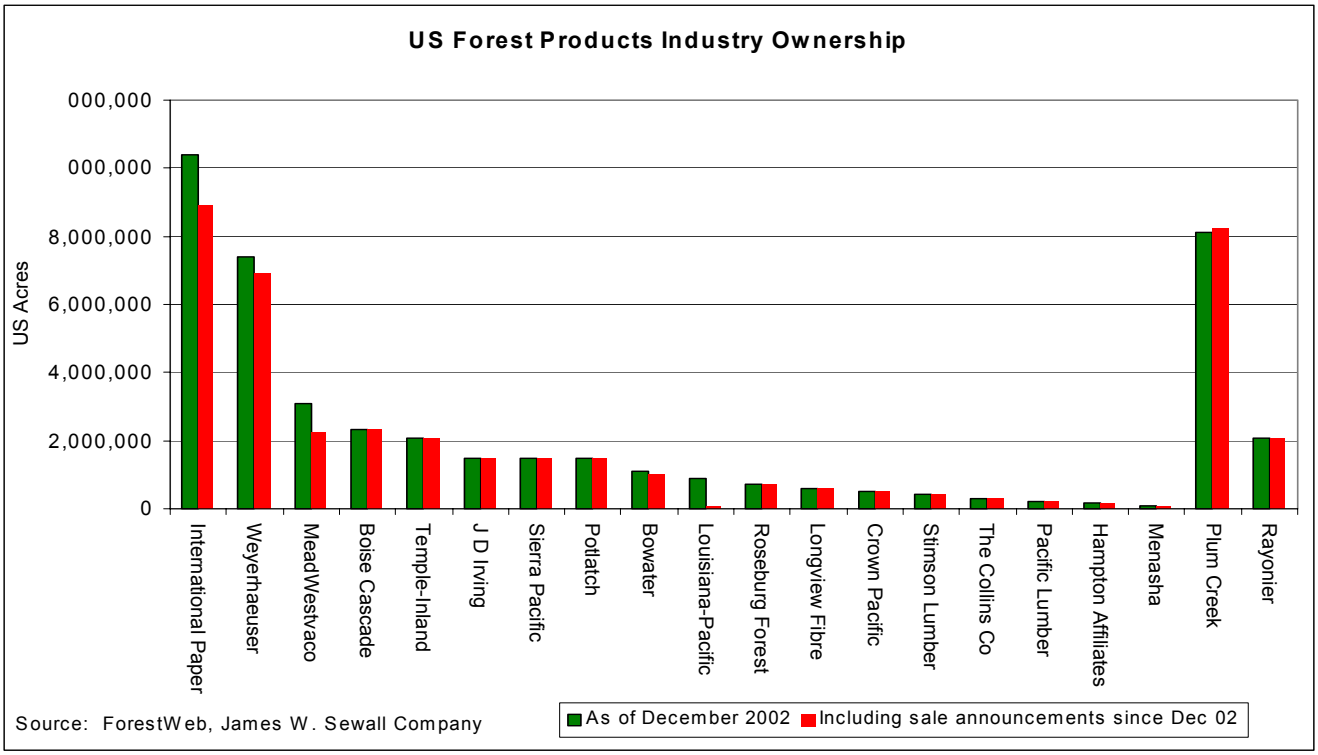
[14] Fee-owned – full ownership.

Table 2.5 Selected Large Private Timberland Owners in the NF 1994-2004

(ACRES)	1994	1999	2004
Champion International			
Maine	895,618	909,758	
New Hampshire	188,416	1,583	1,583
Vermont	133,962		
New York	156,434		
International Paper			
Maine	858,517	497,067	1,269,009
New Hampshire	27,875	194,769	26,489
Vermont	40,345		
New York	508,123	338,720	310,599
JD Irving			
Maine	326,830	1,593,260	1,512,367
New Hampshire			
Vermont			
New York			
Boise/Mead/ Mead Westvaco			
Maine	547,329	547,421	
New Hampshire	114,423	112,893	
Vermont	2,570		
New York			

Putting the 2004 Northern Forest private timberland ownership situation in context requires us to look at the timberland ownership in the U.S. as a whole. Chart 2.4 shows roughly how the major players sit today.

Chart 2.4 Major Timberland Owners in the U.S



2.6 The TIMO factor.

The TIMO phenomenon is worldwide. More favorable tax treatment (than corporations that previously owned these lands) along with the discovery in the late 1980s and early 1990s by investors in other sectors that timberland investments yield steady favorable returns, prompted an influx of capital into this arena during the decade of the 1990s. Today, nationwide, TIMOs have invested $10 billion in timberland (out of approximately $11-13 billion worldwide)[15]. Seven TIMOs (Campbell, FIA, FS, GFP, HTRG, PruTimber, and Wachovia) have $6+ billion in timberland assets in the U.S. These entities own over 5 millions acres. Charts 5 and 6 show why TIMOs continue to invest. Chart 2.5 shows that, since 1987, timberland as an investment in the U.S., was favorable as compared with the S&P 500.

[15] From a PowerPoint presentation, Timberland Markets - Domestic & International, Bret Vicary, Ph.D., MAI, VP, Forestry & Natural Resource Consulting, James W. Sewall Company, Old Town, Maine, 2004

Chart 2.5 Timberland & S&P 500 Appreciation in the U.S.[16]

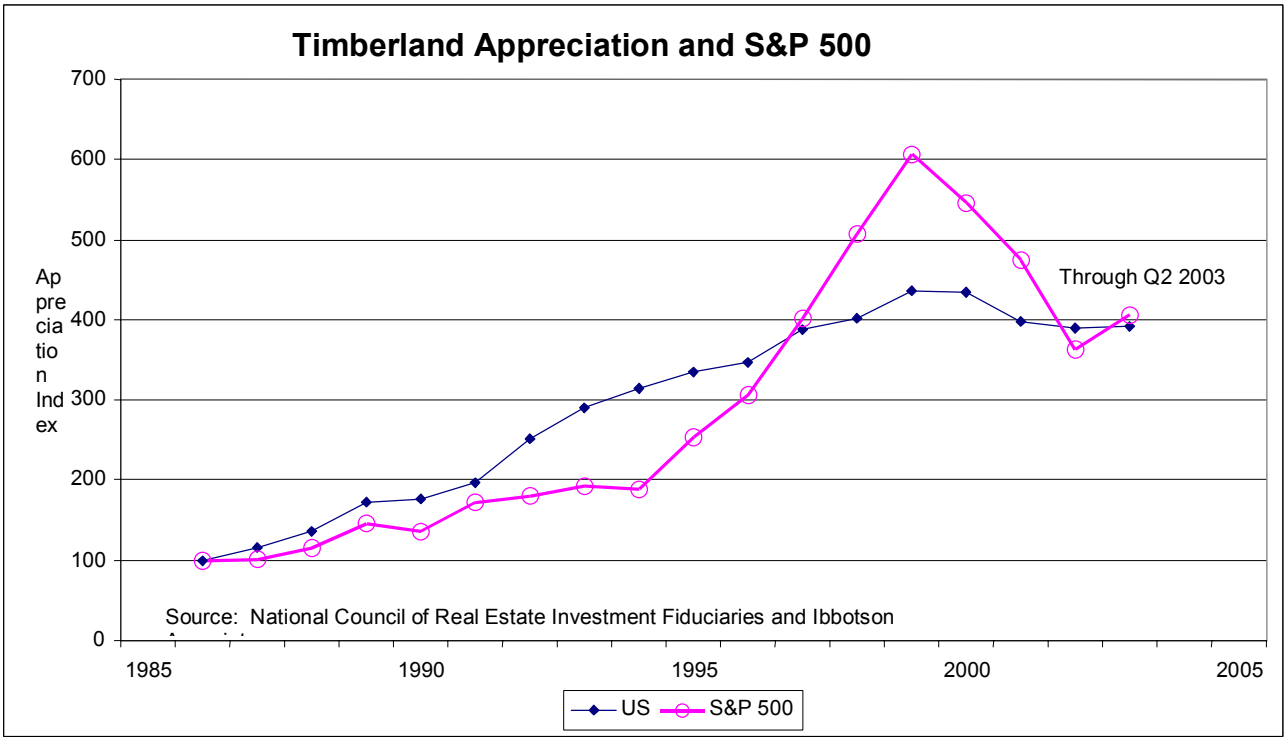
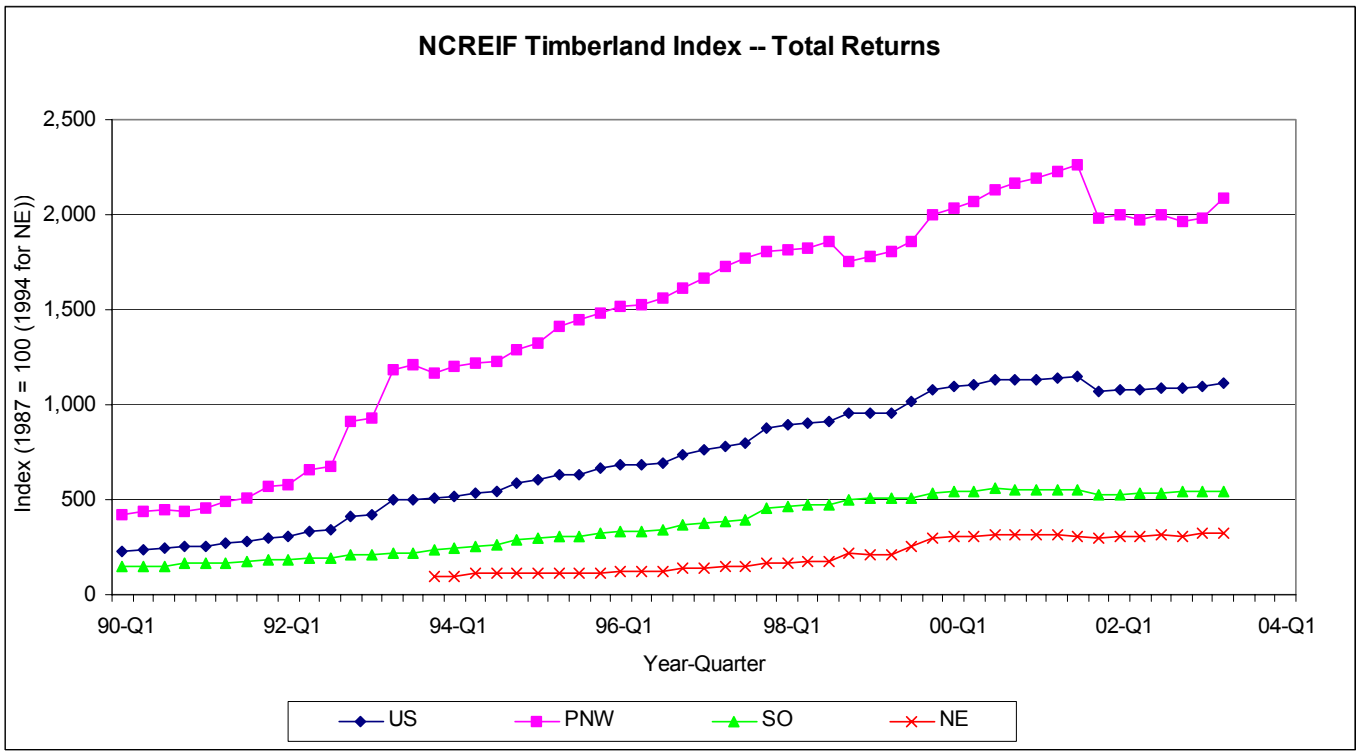


Chart 2.6 shows a comparison of Total Returns for timberland among three regions of the United States since 1990. While returns from northeast timberlands are less than for other regions (and the U.S. average) timberland prices (aka the timberland basis) are much less than in the other two regions. All three regions show steady growth in returns.

[16] ibid

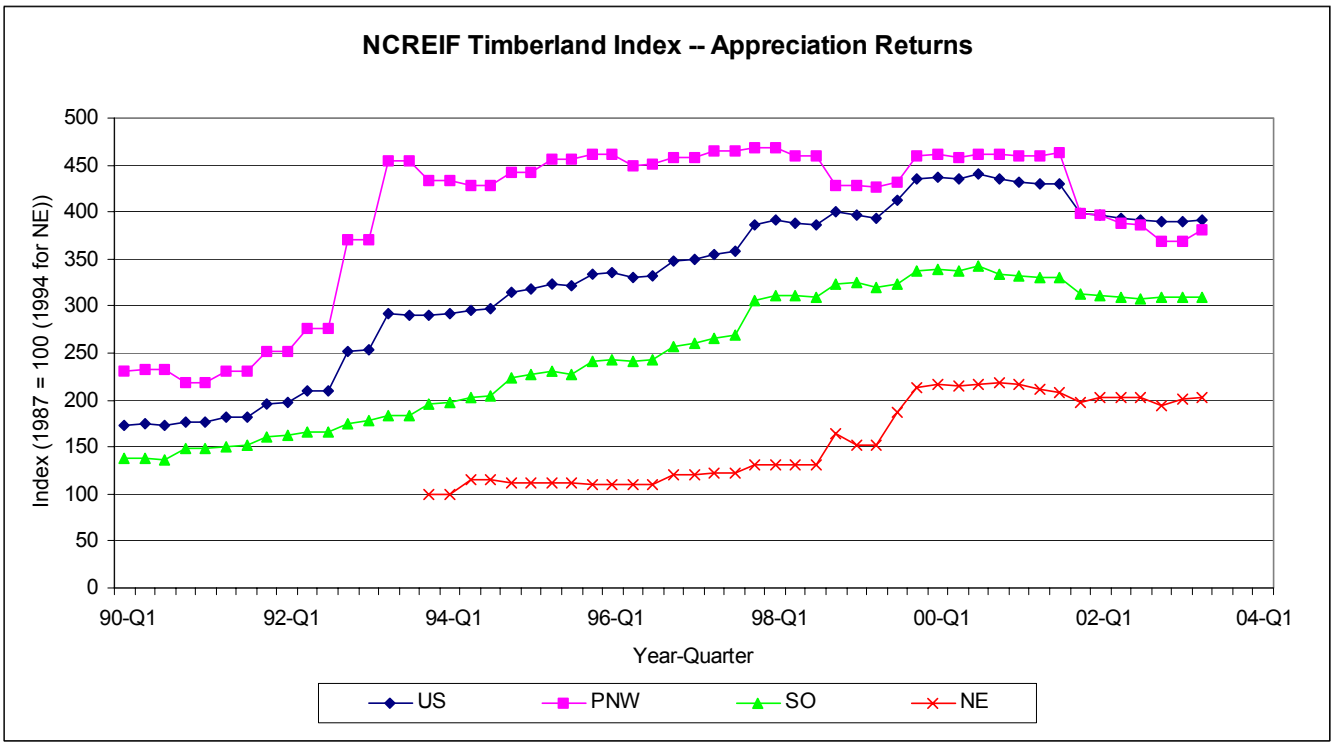
Chart 2.6 Total Returns from Timberland Investments, 3 U.S. Regions



The more important factor with TIMOs, however, (and especially in the northeastern U.S.) is seen on Chart 2.7 below. **About half of the total returns gained by timberland in the northeast result from appreciated value of the real estate, in large part because these lands have development and amenity value well beyond their values as land to grow trees for harvesting income.** This phenomenon is, no doubt, the reason Diamond International originally sold its land in 1988 (or part of the reason it was attractive for the various buyers). Industrial owners are simply not able to take advantage of this situation given that TIMOs are taxed differently and corporate owners realized during the 1980s that they were better off directing the capital tied up in these timberlands to better performing manufacturing assets (not always in the region or in the U.S.).

The business model of the TIMO, however, does not see long-term management as an advantage. They have demonstrated that, while they can show substantial and competitive returns to investors during the timberland holding period, they want to realize those returns in a relative short period of time, say 7-10 years. The result is that lands tend to be managed in these short holding periods for maximum timber returns. Subsequent owners may or may not be interested in long-term investment in timberland. TIMOs have also shown that they are not afraid to realize more of the development potential of the lands by subdividing and selling in smaller parcels to allow for per acre mark-ups in retail sales. They have also taken advantage of the public funding that has become available through Forest Legacy and state funded programs to sell conservation easements, which further adds to the total returns of these lands upon ultimate sale.

Chart 2.7 U.S. Timberland Appreciation Returns – 3 regions



2.7 Conservation easements in the Northern Forest

Reported on more substantially in section IV of this report, one of the most significant changes in landownership in the Northern Forest from 1994 to 2004 is the proliferation of conservation easements[17] on private forestland. Conservation easements have been used in the northeast since the late 1960s, but the acreage in these legal instruments literally exploded from 1994 to 2004 – from thousands of acres under conservation easement at the beginning of the period to millions of acres at the end of the period.

Fueling this change to perpetually extinguish certain rights of land ownership through, largely, sales of conservation easements[18] in the region, has been the shift of millions of acres from industrial forest ownership to non-industrial ownership. Many of these transactions have occurred while accompanied either during, or immediately after the land sale, by a sale of a conservation easement either to state government or to a conservation non-profit organization. As of 2004, over 2.5 million acres are covered by conservation easements in the region[19].

[17] Conservation easements or "conservation restrictions" as they are often called in state law, are perpetual legal deeds that essentially separate out certain rights of landownership and extinguish these rights (primarily development, mining of surface soil, subdivision and other normal rights in full fee ownership). The unique component of conservation easements is that a second party, commonly called the easement holder (or grantee), gains the responsibility to assure, perpetually, that the landowner over whose land a conservation easement has been executed, does not violate the terms of the easement - forever.

[18] Conservation easements can be conveyed via sale or donation.

[19] NEFA, unpublished study, 2004

2.8 Eastern Canadian landownership changes

The Northern Forest Lands Council and the Study that preceded it, largely ignored land ownership and forest-based economies over the border to the north in Canada. Yet this Eastern Canadian region has profound effects on land ownership patterns and forest products economies of the Northern Forest.

Some key Canadian data, collected within the same time-frame as the ownership data displayed in previous sections, can be helpful in understanding and contrasting that which has occurred in the Northern Forest region of the US. See Table 2.5 details.

In New Brunswick, the major change from 1994-2004 was the reduction of industrial forest ownership and increase in federal and provincial ownership. Industrial ownerships were reduced by over 2.1 million acres from 4.7 million acres to 2.6 million acres from 1994-2004. Federal and provincial lands gained 2.9 million acres during that same period. Irving Ltd. reduced its ownership during that period from 3.2 million to 1.2 million acres.

In Quebec, a different trend was seen during this period. Industrial forest ownership increased from just over 300,000 acres in 1994 to just over 600,000 acres during the period. Public land remained relatively static during the period.

Nova Scotia's land ownership trend was similar to Quebec for the 1994-2004 period. Industrial lands increased from 1.6 million acres to 2.6 million acres for the period. Public land in Nova Scotia remained stable during the period.

The Appendix maps demonstrate these trends.

Table 2.5 Eastern Canadian Provinces – Land Ownership (acres)

	1994	2004
New Brunswick		
Industrial	4,711,092	2,563,367
Federal		475,448
Provincial	5,187,243	7,673,939
Quebec		
Industrial	308,870	619,273
Federal		72,407
Provincial	6,810,877	6,810,877
Nova Scotia		
Industrial	1,573,437	2,160,341
Federal	103,185	102,873
Provincial	2,392,565	2,250,815

2.9 Summary of changes, trends, and status of forestland ownership in the Northern Forest region and what the changes in ownership mean relative to changes in management.

While the Northern Forest Lands Council and Study formed when the former Diamond lands were sold, the concerns from policy makers came not from the sheer action of these land sales, but the potential for major shifts in the availability and protection of public and private values associated with these lands. We must keep this context in mind as we try to draw conclusions about the changes in forestland ownership that have occurred since 1994 when the Study and Council process ended.

Make no mistake, however, the decade since 1994 has seen unprecedented large-tract forestland ownership changes both within the Northern Forest region and outside it. In 2003 alone, 5.2 million acres of timberland traded in the U.S. for $ 4 billion. In 1999, over 5.4 million acres traded hands[20]. Over the decade in the Northern Forest states, some of the largest transactions included the following:

1992 Georgia-Pacific (GNP) to Bowater 2,100,000 acres
1993 James River Timber to John Hancock Mutual Life Insurance Co. 238,868 acres
1996 Oxford Paper Company to Mead Oxford Corporation 667,275 acres
1996 J.M. Huber Corporation to John Hancock Mutual Life Insurance Co. 114,811 acres
1997 Diamond Occidental to Champion International 115,540 acres
1998 Sappi Limited to Plum Creek Timber Company, L.P. 905,000 acres
1999 The Timber Company to Wagner Timber Partners LLC 440,000 acres
1999 Bowater Inc. to Great Northwoods LLC , Yankee Forest LLC 655,327 acres
1999 Champion International to The Conservation Fund 296,249 acres
1999 Bowater Inc. to Inexcon 416,877 acres
2003 The Trust for Public Land to State of NH and Lyme Timber 171,000 acres

And there are more. They demonstrate that large tracts of forestland in the Northern Forest region indeed have private value in the open marketplace – a good thing if we believe that significant private ownership of large swaths of these forests should be part of the long-term mix of ownership in the region. Several industrial timberland owners (out of three or four-times more in 1994), namely International Paper and JD Irving, have grown significantly during the past decade. So to suggest that we have lost the industrial timberland owner in the region is not true. What is true, however, is that this ownership class has consolidated. It has also brought with it significant Canadian ownership. And where these owners have seen a way to fit timberland management (and all the public benefits derived from this action) into their business model, many other manufacturing-based forest products businesses, MeadWestvaco as an example, have not.

The investor owners, then, the TIMOs and other TIMO-like entities including Real Estate Investment Trusts (REIT), have become the new large-tract private timberland owners of choice in the region. These owners have very short business model time horizons compared to their cousins from the past. Since this TIMO phenomenon is very new, it is hard to predict what this means for the region's economy and ecology. Early signs of departure of this owner sector are not good, however. Anecdotal review of sales of some lands formally owned by TIMOs in the region to

[20] Vicary, ibid

timber liquidators, subdividers and developers suggest this may be a one-time action (that of TIMO owners). The exception appears to be the huge addition of conservation easements covering millions of timberland acreage in the region – some of these covering former TIMO lands. This technique may be the only action that works to keep large-tract lands in the region in the timber base (and feeding timber to the still-substantial forest products industry in the region); available for public recreation (and the economies surrounding that industry); while placing sidebars to assure, at least in many cases, that long-term forest management techniques will be used to sustain the non-timber forest values on the land as well as the timber values.

An economic model[21] of a theoretical 5,800 acre timberland purchase in the table below shows that without a tax-free situation at the time the land is re-sold, short-term liquidation of timber provides greater returns than long-term (20+ years) sustainable management. This model does not assume a conservation easement sale.

Example:
Hypothetical 5,800 acre woodlot.
Stocking = 15 cds/ac
Total standing timber value = $2,500,000

Assumptions:
Capital appreciation rate (nominal) = 6%, 10%
Discount rate = 6.3%
Tax on gain = 9%
No real timber price appreciation

Purchase price = 70% of standing timber value
Sale price = 70% of terminal standing timber value
Short term ownership = 5 years
Long term ownership = 20 years

$(000)	Short Term	Long Term Taxed	Long Term Tax Free
Purchase Price	$2,500,000	$2,500,000	$2,500,000
6%			
Sale Price	$600,000	$7,300,000	$7,300,000
Harvest Rate (cds/ac/yr)	2.4	0.41	0.41
Nominal return, after tax IRR	8.90%	8.40%	8.90%
IRR with debt (on equity)	12.20%	10.10%	10.60%
10%			
Sale Price	$700,000	$14,800,000	$14,800,000
Nominal retunr, after tax IRR	11.60%	12.20%	12.70%
IRR with debt (on equity)	16.50%	14.70%	15.20%
(IRR - Internal Rate of Return)			

[21] Peter Triandafillou, Huber Resources Corp.

Sources:

An Analysis of Conservation Easements and Forest Management in New York, Vermont, New Hampshire, and Maine, July 2004. Unpublished NEFA report.
Finding Common Ground: Conserving the Northern Forest, Northern Forest Lands Council, 1994
James Sewall Company, 2004
PowerPoint presentation, Timberland Markets - Domestic & International, Bret Vicary, Ph.D., MAI, VP, Forestry & Natural Resource Consulting, James W. Sewall Company, Old Town, Maine, 2004
National Council of Real Estate Investment Fiduciaries and Ibbotson, 2004
Economic Model, Peter Triandafillou, Huber Resources Corp.
ForestWeb: www.forestweb.com

III. Forestland Stewardship in the Northern Forest

3.1 Status of forest management in the region

The USDA Forest Service's National Woodland Owner Survey is an annual survey of individuals and organizations that own over two-thirds of the woodland in the U.S. The first set of tables from their 2002 survey are available on their website (www.fs.fed.us/woodlandowners/results.htm), but they ask that the information not be used or cited because the data is from only a partial sample. (This category of owner has traditionally been referred to as "non-industrial private landowners," or NIPF's. In this report, they will be referred to as "Family Forest" owners, except when citing a study that uses the category NIPF's. Note: the USDA Forest Service still uses this term.)

The latest round of available data indicates that 5% of non-industrial private landowners are developing management plans (Table 3.1). These owners control 29% of private forest land in the Northern Region (these data are available for regions of the United States. The Northern Forest states fall into the Northern Region.) Nearly 18% of the NIPF owners prepare their own management plan. Consultants prepare an estimated 13% of plans (Table 3.2).

Table 3.1 Estimated number and % of private ownership units and acres of forest land owned, by whether a written management plan was prepared, Northern US, 1994.

	Owners		Acres	
	Thousands	%	Millions	%
Owners w/ written MP	206.5	5.2	38.1	29.4
Forest industry	1.0	.5	12.9	33.9
NIPF owners	205.5	99.5	25.2	66.1
Owners w/ no written MP	3,449.5	87.8	86.2	66.4
No answer	275.2	7.0	5.3	4.2
Total	3,931.2			

Table 3.2 Estimated number and percent of private ownership units and acres of forest land owned, by who prepared written management plan for non-industrial private owners, Northern US, 1994.

	Owners		Acres	
	Thousands	%	Millions	%
NIPF owners w/ written plan	205.5	100.0	25.2	100.0
Plan prepared by:				
Owner	37.5	18.3	4.0	15.8
Consultant	27.5	13.4	8.7	34.6
Industrial forester	6.6	3.2	2.0	7.6
State employee	75.4	36.7	6.7	26.5
Extension	6.8	3.3	.6	2.5
NRCS	23.6	11.5	1.7	6.6
Other	28.1	13.6	4.0	15.8
Total	205.5	100.0	27.7	109.6

Maine is the only Northern Forest state that mandates reporting on silvicultural activities. Below are highlights from the 2002 Silvicultural Activities Report:

Harvesting and Land Use Changes

- The total area harvested in 2002 was 562,424 acres, a slight decrease from 565,312 acres in 2001.
- The total area partially harvested in 2002 was 538,909 acres, a slight decrease from 546,386 acres in 2001.

Clearcutting:

- The total area clearcut increased, from 14,391 acres in 2001 to 18,388 in 2002. Clearcutting amounts to less than 5% of total harvested acres.
- Landowners owning more than 100,000 acres in Maine created 92% of all clearcuts (16,888 acres). The highest rate of clearcutting for an individual landowner, in this ownership size, was 0.8% of its total statewide ownership.
- The average size clearcut in 2002 was 22 acres statewide. Landowners owning more than 100,000 acres had an average clearcut size of 24 acres. Landowners owning less than 100,000 acres had an average clearcut size of 12 acres. There was one clearcut created in 2002 that was over 75 acres in size.
- The primary silvicultural reason for clearcutting reported by large landowners was for areas where the retention of the residual overstory trees is not justified for further increase in value, as a source of seed, or for protection of the new stand.

Land Use Changes:

- Harvesting to convert land from forest management to some other primary land use increased 11% from 4,535 acres in 2001 to 5,126 acres in 2002.

Herbicide Use:

- For site preparation increased 298%, from 421 acres in 2001 to 1,674 acres in 2002.
- To release crop trees from competing vegetation increased 38%, from 11,370 acres in 2001 to 16,732 acres in 2002.

Timber Stand Improvement (TSI):

- Precommercial Thinning of young stands with spacing saws decreased 13%, from 21,862 acres in 2001 to 19,071 acres in 2002. Landowners owning more than 100,000 acres did 92% of this activity.

Planting:

- Tree planting decreased 27%, from 10,885 acres in 2001 to 7,926 acres in 2002. 97% of the planting was by landowners owning more than 100,000 acres. The predominant species planted were spruces.

Professional Assistance

- The harvest acres supervised by licensed foresters remained consistent. 76% of all harvest acres in 2002 had a licensed forester involved, compared to 74% of all harvests in 2001.

Wood harvested from the Northern Forest States
Approximately 12.7 million cords of wood were harvested in 2001 from the four-state area (Table 3.3). This total includes sawlogs, pulp, wood chips for energy use, and residential firewood. Ten and one-half million cords of wood was harvested in 2002 for industrial use. Harvest totals for residential fuelwood for 2002 are not currently available, so 2001 totals were used for this report. When the 2001 total for residential fuelwood harvest is added to the industrial harvest, the total harvest of wood from both public and private lands in 2002 is 12,005,000 cords.

The largest timber producing states are Maine and New York. The harvest in Maine exceeds the combined harvest of the three other states in the region. The four states exported more than 3 million cords of wood during 2001. Canada is the destination for 66% of this amount. The remainder is shipped to other states located in the greater NEFA region. Overseas exporting is negligible. Exporting figures for 2002 have not yet been compiled for all four states.

Table 3.3. Wood harvested from public and private lands in ME, NH, NY, and VT, 2001 and 2002 (cords)

	2001	2002
Maine	6,519,000	6,867,000
New Hampshire	2,052,000	1,392,000
New York	3,159,000	2,603,000
Vermont	1,048,000	1,143,000
Total	**12,778,000**	**12,005**

Most of this wood is harvested from private lands. In the White Mountain National Forest, which encompasses nearly 800,000 acres, 5.7 million board feet were harvested in 2002. In the Green Mountain National Forest, which covers 370,000 acres, 820,000 board feet were harvested in 2002. Figures are not readily available for harvesting from municipally or state-owned lands.

Anecdotal observations indicate that the number of timber harvesters is declining in the Northern Forest area. Maine is the only Northern Forest state to keep reliable annual data on numbers of harvesters. In 2001, Maine reported 3,500. Timber harvesters are certified and listed by county in NH, and a current estimate is 1000- 1200. In Vermont, a current estimate is 400 to 500, and this includes everyone engaged in logging, from farmers to logging firms with employees. State forestry employees state with confidence that the number of harvesters has declined over the past 5 years. There is no definite number of loggers known for NY. A rough estimate is taken from the NY State DEC, Division of Lands and Forests Cooperative Timber Harvester List, which indicate 324 loggers, and the Empire State Forest Products Association, NY Logger Training Program, which lists 250. The lists overlap, but state forestry employees estimate there are 1,200 loggers operating in NY.

3.2 Inventory

The federal Forest Inventory and Analysis (FIA) Program is converting to a continuous annual inventory. Data are collected on a rolling cycle, with data collected on all plots within a state in 5–7

years. The reporting cycle of 5 years is staggered across states. New York's first year data are available (on-line) showing statistically sound numbers on forest attributes like total volume, number of trees and acres of forestland and timberland on a statewide basis.

The USDA Forest Service and the Maine Forest Service completed a full forest inventory in 1995, and began an annualized inventory system in 1999 that measures a 20% statewide sample annually. Reports were produced in 2000, 2001, and 2002, and data was compiled for 2003. The four years of data is strong enough to provide the following conclusions:

- Maine remains 90% forested and 97% of the forestlands are classified as productive timberland.
- There are significant increases in the statewide stocking of sapling trees in all the diameter classes and in the species groups of balsam fir, spruces, and red maple. The majority of these increases are located in the Northern Region.
- In 2002, Maine's forests had an estimated inventory of 277 million cords of merchantable wood (pulpwood quality or better). This is a significant increase (+9%) from the 1995 inventory estimate.
- Current pulpwood quality or better volume is estimated at an average of 16.0 cords per acre. This is 1 cord per acre more than the 1995 estimate.
- There were no significant changes in net cubic foot volume of growing-stock trees in any species group in any of the 4 regions, since 1995.
- For the first time, the estimated statewide board foot volume of sawtimber trees of all species posts a significant increase since 1995.
- There have been significant changes in timberland ownership. The Nonindustrial Private Ownership class increased by 1.9 million acres, and there was a corresponding 1.6 million acre decrease in the Forest Industry Ownership class.

A 2002 study published by NEFA titled *A Forest Model for New York, Vermont, New Hampshire, and Maine*, used ATLAS and FLexFIBER models along with an econometric model, Sub-Regional Timber Supply Model, to look at possible futures for the 45 million acres of forest contained in the four-state region. Major findings of that study suggest:

- Current regional timber harvests (then estimated at 12.9 million cords per year) are sustainable.
- A 1% increase each year in harvest levels (56% net increase over 50 years) is not sustainable.
- Net timberland loss (development) is not significant as relates to timber harvest levels and sustainability regionally, but is at the state level. Southern Maine and New Hampshire have a net loss of forestland due to development. New York is still experiencing a net gain in forestland due to continued agricultural land reversion.

3.3 Forest management regulations

Since 1994, Maine and Vermont have passed new regulations that limit cutting of timber. In April 2004, the Maine Legislature authorized the Maine Forest Service to adopt a liquidation harvesting rule to take effect in January 2005. The new rules require landowners who want to buy, cut, and sell parcels within five years to limit harvesting levels, have a harvest plan signed by a licensed forester, and use a logger or forester who has completed a certified training course. At the direction of the

legislature, the Maine Forest Service initiated an evaluation of liquidation harvesting. Field surveys of forest sites associated with land sale activities were conducted in 2003. Results from the study are not yet available.

Vermont adopted the "Heavy Cutting Act" in 1997 to monitor and regulate the amount and approach to heavy cutting/clearcutting being done in the state. If a landowner intends to conduct a heavy cut (below the C-line as outlined in published silvicultural guides for the forest type) of 40 ac or more, or a cut that will result in heavy cutting of 80 acres in a two-mile radius, they must file "Intent to Cut" notification. The law also required an assessment of the impact of the law to sustainability. "Heavy Cut Summary Reports" are available, but these highlight data concerning activity, and do not provide an analysis of the effect of the law. In seven years, there have been 499 applications involving about 85,000 acres, representing 0.2 percent of Vermont's forestland.

All four states have recommended Best Management Practices designed to encourage responsible timber harvesting and minimize environmental impacts of logging as they relate to water quality and soil erosion. Additional forestry laws include ones that address timber trespass, deceptive forestry business practices, slash, and a minimum basal area requirement.

3.4 State and federally-based stewardship incentives

Despite the fact that Congress reduced, then eliminated, funding for the Stewardship Incentive Program (SIP), states have been able to increase the number of acres enrolled in the Stewardship Program (Table 3.4).

The 2002 Farm Bill included funding for USDA programs, including the Forest Land Enhancement Program (FLEP), the Conservation Reserve Program (CRP), Wildlife Habitat Improvement Program (WHIP), Wetlands Reserve Program (WRP), and the Environmental Quality Incentives Program (EQUIP). These programs provide technical, financial or educational assistance to private landowners to facilitate the conservation, protection or enhancement of natural resources. Opportunity is also available through a US Fish and Wildlife Service Landowner Incentive Program to conserve, enhance and protect habitat for wildlife species of concern. Many of these programs continue to be under-funded or are not funded.

Table 3.4. Acres of Non-Industrial Private Forest Lands Enrolled in the Stewardship Incentive Program, 1997 and 2003 (thousands of acres)

	NIPF lands	NIPF lands enrolled in SIP,1997	% of NIPF lands enrolled in SIP, 1997	NIPF lands enrolled in SIP, 2003	% of NIPF lands enrolled in SIP, 2003
Maine	8,353	161	2%	573	7%
New Hampshire	3,370	269	8%	527	16%
New York	13,687	807	6%	1,539	11%
Vermont	3,653	173	5%	293	8%

Individual states have implemented various programs providing financial incentives or technical expertise to private forest landowners. The "Be Woods Wise Program" is part of the Maine Forest Service Forest Stewardship Program. It was begun in 2002 to reach landowners who had not considered managing their land. More than 3,500 management plans covering 428,500 acres were written under this program. This is the program that implements FLEP in Maine. It is also the primary landowner education program for the Maine Forest Service.

The Vermont Backyard Forest Stewardship Program offers free stewardship assistance to private landowners in Chittenden County and Rutland County and surrounding areas with 25 acres or less. The main objectives of the program are increasing the amount of stewardship on smaller parcels and restoring the connectivity of people and land. The program offers individual site visits and educational and technical workshops.

3.5 Forestry Education for Landowners

The state natural resource agencies, Cooperative Extension Service, industry and landowner groups, and non-profit organizations provide these services. Highlighted below are some of the programs offered by states.

Maine

The Maine Cooperative Forestry Research Unit was created in 1975 and is one of the oldest industry /university forest research cooperatives in the United States. There are currently 27 members representing private and public forestland management organizations that guide and support research on key forest management issues facing Maine's forests. Coop activities are funded by financial and in-kind contributions from its members. Over the past three decades, the CFRU has solved a number of key problems facing Maine's forest managers.

Maine Cooperative Extension offers the Yankee Forest program to teach landowners, loggers and land managers about forest ecology and the techniques of managing woodlands for multiple benefits. Piscataquis County Extension offers a website entitled "Taking Care of Your Forest" that provides new forest owners with practical information that will help them get started on good stewardship practices. Maine also runs a Coverts Program.

Small Woodland Owners Association of Maine (SWOAM) offers various educational opportunities for Maine woodlot owners. Certified Logging Professional (CLP) is a training and logger certification program offered for over a decade.

New Hampshire

Since 1925, the University of New Hampshire Cooperative Extension and the New Hampshire Department of Resources and Economic Development, Division of Forests and Lands have worked cooperatively to address issues in natural resources through a joint education program. Landowner education programs that are currently being offered include Biodiversity workshops, the Granite State Woodlot and Wildlife Management Course, and NH Coverts Program.

The Society for the Protection of NH Forests and NH Audubon Society offer field trips and workshops that focus on natural history and land protection. The NH Timberland Owners Association offers various training programs for forest landowners and, through its Professional Loggers Program (PLP), offers a full logger training certification program.

New York
The Department of Environmental Conservation sponsors various forestry workshops and seminars for landowners. Cornell Cooperative Extension offers a forestry outreach website for landowners that includes articles on private forest management topics. The New York Forest Owners Association offers workshops and educational programs. The Empire State Forest Products Association administers a logger training and certification program.

Vermont
University of Vermont Cooperative Extension offers information on estate planning and cultivating Christmas trees. A Coverts program is also offered. County foresters are also available to initially assist forest landowners. Several logger training courses and certifications are also available.

3.6 Specialty Forest Markets

Traditional products from the forest, like wood and paper, provide the bulk of financial benefit to forest landowners. Christmas trees and greens, and maple syrup have also provided profit for landowners in the Northern Forest,but a variety of new products are being explored that come from nonwoody plants, lichens, fungi, algae, and microorganisms. Markets may be available for the transformation of the northern temperate forests' abundant biotic resources into medicinals, botanicals, decoratives, natural foods, and a host of other novel and useful products.

These products are referred to as secondary, specialty, special, or nontimber forest products. The USDA Forest Service has published a "Special Forest Products" section in *The Forest Landowner's Guide to Internet Resources* that cites 95 informational resources available for products that include ginseng, shiitake mushrooms, and nut trees. Agroforestry practices are also considered.

3.7 Forest Certification

Three certification programs have emerged in the Northern Forest. These programs all have a standard by which voluntary certified participants must conform as measured by an outside auditing entity. The programs are intended to be private, market-based efforts to recognize sustainable forestry on the parcel level.

The Sustainable Forestry Initiative (SFI) is built around a set of principles and a detailed standard that call upon participants to meet market demands while using environmentally responsible practices that promote the protection of wildlife, plants, soil, air and water quality. The SFI is governed by an independent non-profit organization, the Sustainable Forestry Board. Certifications in the SFI program across the four-state region (all but just over 200,000 of these acres are in ME) cover 6.6 million acres. Two ME companies are certified under both FSC and SFI (1.4 million acres.)

The Forest Stewardship Council (FSC) is an independent, non-profit membership organization and does not certify forests itself. Instead, they set a threshold for certification programs to meet. Those programs are reviewed and accredited by FSC. Three and one-half million acres of both private and public lands in NY, VT, NH, and ME are certified under the FSC program. Nine forestry companies

and one landowner cooperative have received certification under the "Resource Manager" category. These entities manage a total of 189,664 acres. Fifty-five companies in the Northern Forest states have been certified under FSC's Chain-of-Custody program.

Certification of Tree Farms through the American Tree Farm System (ATFS) recognizes the practice of sustainable and excellent forestry on private forestlands. In recent years, ATFS has established minimum education and experience requirements for certifying foresters and forest technicians and it developed a national standardized training curriculum for its inspectors. There are currently 1.4 million acres on over 5,000 Tree Farms in the four-state region certified under this program. ATFS Group Certification is a third-party auditing process for evaluating groups of landowners and certifying their well managed forests under a single certificate held by the group organization. The Small Woodland Owners Association of Maine (SWOAM) currently holds a group certification (this includes some of the acres summarized above.)

Table 3.5. Acres enrolled in SFI, FSC, and Tree Farm certification programs in ME, NY, NH, and VT, 2003

Certification program	No. acres certified (million acres)
SFI	6.6
FSC	3.5
Tree Farm	1.4
Total	11.5

3.8 Additional Benefits Provided by Private Forestlands

Private Family Forest owners are host to increasing numbers of recreational users, whether they plan for it or not. This includes motorized and non-motorized uses and may lead to an increase in vandalism or damage to the forest resource.

Pressure on private forestlands by users of off-road vehicles is increasing. The use of all-terrain vehicles (ATVs, OHRVs) for recreation and other outdoor activities began about three decades ago and has grown quickly. The US Consumer Product Safety Commission estimates that the estimated number of ATV drivers increased 36 percent from 1997 to 2001, driving hours grew 50 percent and the number of ATVs increased 40 percent. According to a report produced jointly by the Maine Department of Conservation and the Maine Department of Inland Fisheries and Wildlife (1989: 6), "ATVs have been sold or manufactured in the United States since 1971. In 1982, approximately 750,000 were in use; the number tripled to more than 2.5 million four years later. ATVs are sometimes operated for their utility value, especially on farms or woodlots; however, the greatest use by far is recreational."

A literature review on the impacts of ATVs, OHRVs, and snowmobiles on the environment conducted by the University of Vermont for the VT Agency of Natural Resources emphasizes that more studies are needed on all resource areas, but does offer some observations indicating negative effects on air quality, soils, hydrologic patterns, recreational trails, roads, and sediment loads to

streams. ATVs and OHRVs offer access to resource areas that are typically less accessible and more remote.

The ME Snowmobile Association estimates that snowmobiles use a 13,000-mile trail system and that 95% of the trails are on private property. The last economic impact study conducted by the organization covered the 1997-98 season and found snowmobile related sales of $176.3 million and an economic impact of $261 million. They currently estimate the annual impact at $350 million, but do not have data to back it up. Registration of snowmobiles has grown from 71,306 in 1995 to 88,136 in 2004. In 1995, 10,924 miles of trails were used. By 2004, that number had climbed to 13,060.

In New Hampshire over 6,830 miles of trails are used, 86% of which are on private forestlands. A study conducted by the NH Snowmobile Association indicates that in preparation for, and during the December 2002 to April 2003 season; snowmobile travel parties had direct spending within New Hampshire of about $453 million, and direct and indirect spending of approximately $666 million. The total impact on the state's economy (direct, indirect, and induced impacts) of this traveler spending was nearly $1.2 billion. Total direct spending by snowmobile travelers was 1.0 percent of the gross state product and was more than 10 percent of all traveler spending in the state. The Vermont Association of Snow Travelers (VAST) estimates that there are 5,000 miles of snowmobile trails, 80% of which are on private lands.

Hunting is a traditional recreational use of private lands, and is declining slightly (Table 3.6.) The number of licenses issued declined slightly in Maine from 1994- 2003, and declined more significantly in New Hampshire and Vermont during those years. Data from New York that is listed under 2003 is actually from 2002.

Table 3.6. Number of hunting licenses issued in ME, NH, NY and VT, 1994 and 2003.

	1994	2003
ME	218,319	213,368
NH	75,303	59,845
NY	736,472	667,351
VT	105,041	87,909

In addition to the tangible benefits of recreation, wood products, habitat for wildlife, and clean water, Family Forest owners in the Northern Forest region may also provide mitigating effects to climate change. Forests are potentially significant carbon storehouses (sequestration) and the heavily forested New England region could contribute to national efforts to reduce atmospheric CO_2 levels. This is the conclusion offered by the New England Regional Assessment (NERA), one of 16 regional assessments conducted for the U.S. Global Change Research Program (USGCRP), as part of the National Assessment of climate change impacts on the United States. The actual extent to which regional forests are able to act as CO_2 sinks in the future will depend on air quality, soil nutrient status, tree species sensitivity to temperature and moisture regimes, and other factors. Additional research is needed on this issue in order to fully understand the extent to which forests can provide carbon sequestration capabilities.

NERA also looked at the development of forest management practices to maximize carbon sequestration, stating that recent studies have identified the significant role that past land use practices have played in contributing to the present carbon storage capacity of regional forests. They conclude that developing future strategies to maintain or enhance current carbon storage capacity will be important, and will result in economic benefits to the region.

3.9 Sustainability Initiatives

Montreal Process C & I
In 1995, the United States joined 11 other countries in signing a document establishing a set of 7 criteria and 67 indicators to track the conservation and sustainable management of temperate and boreal forests. This set of criteria and indicators is commonly referred to as the Montreal Process C&I. It lists seven criteria: conservation of biological diversity, maintenance of productive capacity of forest ecosystems, maintenance of forest ecosystem health and vitality, conservation and maintenance of soil and water resources, maintenance of forest contribution to global carbon cycles, maintenance and enhancement of long-term multiple socio-economic benefits to meet the needs of societies, and legal, institutional, and economic framework for forest conservation and sustainable management.

The USDA Forest Service, Northeastern Area (NA) and the 20 State forestry agencies in the Northeastern Area Association of State Foresters (NAASF) adopted 18 indicators to use in ongoing monitoring efforts. The "base indicators" address information needs common among State and multi-state sustainability efforts and are organized according to the seven Montreal Process criteria of sustainability. To encourage the use of the seven criteria and base indicators, NA and NAASF have formed subcommittees that are working on database compilation, data gaps and how to address them, and how to do effective outreach to various audiences.

Other Initiatives
Maine: The Forest Resource Assessment Program produces an annual report on clearcutting, and a biennial report on the state of Maine's forests. The Biennial Report was published in 2001. The 2003 report is in draft form. Most of Maine state forestlands have been certified under both the Sustainable Forestry Initiative and the Forest Stewardship Council.

NH: The Forest Sustainability Standards Work Team, a project sponsored by the Society for the Protection of NH Forests, the New Hampshire Timberland Owners Association and the state's Division of Forest Lands and Department of Fish and Game, published a sustainable management publication, *Good Forestry in the Granite State* in 1997. Significant training of professional resource managers and landowners followed its publication. The follow-up to that effort is the work NH is doing on the Base Indicators of Sustainability.

New York: The Forest Stewardship Council has certified more than 700,000 acres of state lands (outside the Adirondack and Catskill Forest Preserves), so methods that New York uses to manage its own lands have been certified as sustainable. New York has recently published a new field guide in Best Management Practices for Soil and Water Quality. DEC has initiated an annual timber harvest survey and reporting system to monitor annual harvest type and level.

Vermont: The Forest Resource Advisory Council examines issues of sustainability.

The Vermont Forest Ecosystem Monitoring Project (VForEM) consists of a network of cooperators from government, academic, and private sectors who gather and pool information on Vermont's forest ecosystem. Using a multi-disciplinary approach to understanding forest ecosystems, over 40 cooperators work together at two sites to integrate monitoring and research programs on forests, air pollution, wildlife, and water quality. The Proctor Maple Research Center and the Regional Forest Sensitivity Mapping Project are additional programs funded by the Cooperative.

The Northern Forest Alliance's, a regional coalition of environmental organizations, has published "Forestry for the Future", a program of action to: establish sustainable forestry benchmarks and voluntary programs; develop a system of economic incentives; create integrated research education programs; permanently protect forests of high ecological value with willing buyer-willing seller programs, and create a safety net of forest practice regulations to protect public values. The publication is sold off their website.

Biodiversity Projects

Maine: The Maine Forest Biodiversity Project (MFBP) completed a statewide assessment of forest biodiversity in 1998 and published *An Ecological Reserves System Inventory: Potential Ecological Reserves on Maine's Existing Public and Private Conservation Lands*. That same year, the Maine State Planning Office published *Biological Diversity in Maine: An Assessment of Status and Trends in the Terrestrial and Freshwater Landscape*. The MFBP report was used by the legislature to enact a statute that enables the director of the Bureau of Parks and Lands to designate ecological reserves on lands under the bureau's jurisdiction. The Land for Maine's Future Program can acquire lands with high biodiversity values in fee, and less-than-fee. Private landowners can reduce property taxes with Maine's "Forever Wild Open Space" law. The Maine Education Department has a teacher re-certification program, which covers the topic of biodiversity, and the state is producing an educational video on the diversity of habitat and wildlife. MFBP produced "Biodiversity in the Forests of Maine: Guidelines for Management."

The Maine Natural Areas Program facilitates informed decision-making in development planning, conservation, and natural resources management. MNAP works with consulting foresters, industry foresters, and government foresters to provide training in how to recognize rare forested natural communities, landscape analysis and field surveys of industrial ownerships, and distributes a handbook, initiated by, then, Champion International, on rare plants and animals in Maine. MNAP also conducts natural resource assessments of ecoregions in Maine. MNAP is a part of an international network of natural heritage programs overseen by NatureServe. This network contributes important information on Maine's native plant and animal species whose ranges extend beyond Maine's borders.

New York: The goal of the forest biodiversity project of National Audubon Society of New York (NASNY) is to determine how forest management practices in New York affect birds, amphibians, and other wildlife. Results from the study, which is in the second field season, will be distributed to private landowners, foresters, and loggers in the form of management recommendations.

New Hampshire: NH Fish and Game Department and the Division of Forests and Lands initiated the NH Ecological Reserve System Project (ERSP) in 1995. The ERSP produced two documents in 1998 that described its findings and recommendations: *An Assessment of Biodiversity of NH with*

Recommendations for Conservation Action and *Protecting NH's Living Legacy: a blueprint for biodiversity conservation.* Since 2000, the project has worked on refining the scientific criteria for identifying potential ecological reserves and initiated a pilot phase to test and evaluate the criteria and project principles.

A conclusion of the pilot phase project was that the team is not ready to prioritize or designate lands for Ecological Reserves without further mapping. Two projects have been initiated in the Piscataquog and Ammonoosuc Watersheds to discover and map the Important Ecological Areas in the watershed. These are areas that support critical wildlife habitat, outstanding examples of natural plant communities, rare plant or animal species, unique geologic features, wildlife corridors, or other features that contribute to the ecological health of the river and its watershed. A grant from the U.S. Forest Service, State and Private Forestry provided this opportunity.

New York: Laws to preserve global and local biodiversity mandated the New York State Biodiversity Research Institute (BRI). The BRI is funded through the Environmental Protection Fund and includes a number of collaborators, including the Department of Environmental Conservation, the Natural Heritage Program and the Office of Parks, Recreation and Historic Preservation. Current projects focus on biodiversity stewardship, biodiversity education and biodiversity research to assess environmental quality and change. One of the program goals is to develop a comprehensive and readily accessible database on the status of biodiversity within New York State.

Vermont: A state lands ecologist was hired in 2001 and has undertaken the mapping of natural communities on state lands These include rare community types, such as fens and alpine meadows, as well as high quality examples of common types, such as northern hardwood forests. A detailed ecological assessment is conducted for every new management plan for a parcel of state land. Natural community maps have been created for 21 state lands parcels, a total of 138,000 acres and more than a third of all the state lands acreage.

Invasive exotics

Exotic pests with no natural enemies in this country are a growing problem. The Asian longhorned beetle, hemlock woolly adelgid, and emerald ash borer are pests that the USDA Forest Service NA, state, and local agencies, and private organizations are working on. Non-native plants that compete aggressively and exclude local native species are also being considered. The need for these activities is likely to increase in the future.

3.10 Federal and state tax policies

State current use taxes

Maine: Maine amended its current use Tree Growth Law in 1995, 1997, and 1999, and 2001. None of these changes substantially affected the law.
New Hampshire: The New Hampshire Current Use Tax was amended in 1995, 1996, and 1998. None of these changes substantially affected the law.
New York: Funds to reimburse localities for tax revenue shifts as a result of Real Property Tax Law §480-a enrollments have been in the State executive budget, but have not been enacted by the legislature.

Vermont: Vermont amended its Current Use Program for Forest Land in 1995, 1997, and 1999. The 1997 amendments changed the public education funding structure and decreased some of the pressure on the program.

Federal estate taxes
The federal exemption for these taxes is $1,000,000 and is scheduled to increase in years following 2003. In a series of amendments made to the federal estate and gift tax law in 2001, changes were to be phased in before January 1, 2010. On January 1, 2010 the amendments provided that the entire Federal Estate Tax law is to be repealed. However, these amendments themselves are set to expire after December 31, 2010. When the amendments expire, the existing law will return and become effective. Since the amendments will expire after 2010, all changes in the old law that would have taken place, will be applicable in 2011 and later years. At present, many people believe that Congress will re-visit these tax laws and make other adjustments to them and extend the period of the Federal Estate Tax repeal beyond December 31, 2010.

Each state has special provisions with regards to estate taxes. NH repealed the estate tax law but this is likely to be revisited since the state is projecting a $ 200-300 million deficit. The New York estate tax law does not recognize the *Qualified Conservation Easement Exclusion* that is provided under the federal estate tax law. Therefore, an estate that takes advantage of this valuation exclusion must adjust the value of the estate and add back the amount deducted in the calculation of federal estate tax.

Federal and state tax benefits associated with conservation easements
Section 2031(c) allows executors to exclude from federal estate tax the value of the land encumbered by a qualified conservation easement. The law also allows beneficiaries to exclude from the taxable estate 40% of the value of the land subject to qualifying conservation easements. Section 2031 also provides that an executor or trustee can elect to "donate" a qualified conservation easement after the death of the decedent thereby reducing the value of the land subject to the estate tax and allow the estate to be eligible for the Section 2031(c) exclusion.

A contribution of a conservation easement may qualify as a charitable contribution under state law. In addition there are some property tax breaks as the result of a qualified conservation easement. New Hampshire, for example, has a law enacted in the early 1990s that recognizes land covered by a federally-recognized conservation easement to be in a separate property tax category for reduced taxes, if the landowner elects the option.

New tax incentives for conservation by private landowners
A new federal bill has been introduced that includes new incentives for the donation of conservation easements. These would cut taxes on the sale of land or a conservation easement to a land trust or government conservation agency and expand the income tax deduction a landowner can take for donating a conservation easement. Versions of both of these passed the US Senate in 2003, with a final decision possible in 2004.

3.11 Forest-based water quality trends

Best Management Practices (BMPs) are recommended practices that are designed to keep sediment out of streams. Maine has conducted a study on the efficacy of their BMPs. The Maine Forest

Service instituted random, statewide monitoring of BMPs on timber harvesting operations in March of 2000. The findings, based on 15 months of data are:

• Forty-three percent of harvest sites examined in the study do not have surface water bodies in the immediate harvest area.
• Appropriate use of BMPs minimizes water quality impacts. Harvest sites in this study with appropriate use of BMPs across the site always prevented major soil movement and sedimentation of water bodies.
• Inadequate BMP use can lead to soil movement and discharge to water bodies. Harvest sites in this study with major soil movement and soil delivery to water bodies always were sites where BMPs were minimally applied or not used.
• BMPs were used appropriately or with a "good attempt" on 62.4% of harvested sites where water bodies were found.
• There are several important areas where effective implementation of BMPs is critical, including skid trails, stream crossings, filter areas, haul roads, and harvesting/residual shade in riparian areas.

USDA Forest Service's S&PF NA's Watershed Forestry Program has initiated several projects in the four-state region, including:

- the Nashua River Watershed Stewardship Demonstration Projects in NH and Massachusetts,
- restoration of 10 miles of streamside forests and improved forest management on 10,000 acres in five upstate counties in the New York City Watershed,
- a cooperative project with nonprofit partners in Maine to inventory and restore forests in critical Atlantic salmon habitat
- working with teachers from ten Vermont schools on how to build a volunteer monitoring program in the White River Watershed.

The New York City Watershed Agricultural Council administers a comprehensive local program providing technical and financial assistance to forest landowners in the New York City Watershed area of southeastern New York, to implement forestry practices strongly emphasizing water quality protection.

3.12 Status of key wildlife species and habitat trends

The loss of upland openings to development and maturing forests has affected several wildlife species, including the Eastern Cottontail rabbit and the Golden-winged Warbler. Twenty percent of the wildlife species found in New England today require habitats of upland shrub, grass openings, or non-forested wetland. Additionally, these habitats are seasonally important to another 70 percent of the region's wildlife species[22].

Non-commercial activities such as mechanical clearing, mowing, and prescribed burns and are used to create this habitat. Early successional species that initially colonize upland openings also provide habitat for American Woodcock, Rufus Sided Towhees, bobcats, and others. The Ruffed Grouse Society works cooperatively with the NH Division of Forests and Lands and the Fish and Game Department to provide these habitats. Partnerships with other sportsmen's groups and the USDA

[22] NH Fish and Game Department website

Natural Resources Conservation Service have supplemented state funding for non-commercial work.

In fall 2001, federal legislation established a new "State Wildlife Grants (SWG)" program that provides funds to state wildlife agencies for conservation of fish and wildlife species in greatest need. The four Northern Forest states have received funds to conduct a Mark-Recapture Study of Indiana Bats, compile New York's 2nd Breeding Bird Atlas, and conduct Spruce Grouse Surveys, among other projects.

Maine Dept. of Inland Fisheries and Wildlife (DIFW) has mapped, or is mapping, Deer Wintering Areas (DWA), Essential Habitats, and other Endangered, Threatened, or special concern species locations, and inland Waterfowl and Wading Bird Habitats (WWH) in northern Maine. A number of areas are being managed cooperatively based on agreements with forest landowners. Department biologists are currently working on a landscape approach to protection of habitat and are working with other interested parties, including landowners, to develop a landscape approach based on cooperation.

The Wildlife Resource Assessment Section of the Maine DIFW has been conducting species assessments describe the current status of a species (or group of species) and its habitat, and makes predictions as to where the species' population is expected to be in 15 years.

In FY 2001, the Gulf of Maine Coastal Program was awarded $184,000 from the US Fish and Wildlife Service's Private Landowner Incentive Program to assist individuals with restoration projects on Maine's Atlantic salmon rivers. In FY 2002, the Gulf of Maine Coastal Program provided funds from the FY 2001 grant to 11 small and large private landowners for restoration projects (fencing, in-channel stream restoration, dam removal, road closures, tree plantings, fencing, elimination of non-point source pollution, and erosion control) on eight of Maine's Atlantic salmon rivers. All projects are protected by 10 - 20 year cooperative conservation agreement.

UMaine Cooperative Extension and Maine Chapter of The Wildlife Society published "A Forester's Guide to Managing Wildlife Habitats in Maine."

The New York Department of Environmental Conservation, Bureau of Wildlife, runs several programs geared at protecting non-game wildlife, including the Adirondack Cooperative Loon Program, the Herpetofaunal Atlas Survey, the management and status of moose, and a Species Checklist of Vertebrate wildlife species and their protective status.

The Vermont Fish & Wildlife Department is coordinating a bald eagle restoration effort in the Lake Champlain basin. The Department has also been working on documenting Natural Communities in the state.

Sources:

American Tree Farm System website and personal communication: www.treefarmsystem.org.
Audubon New York: ny.audubon.org:
Cornell Cooperative Extension: www.cce.cornell.edu.
Forest Stewardship Council, United States: www.fscus.org.
Hunting license information: Bill Swan, Department of Inland Fisheries and Wildlife, Maine;

Janet Finn, Fish and Wildlife Department, Vermont; Fish & Game Department, Wildlife Division, New Hampshire
Land Trust Alliance: www.lta.org.
Maine Department of Inland Fisheries and Wildlife: www.state.me.us/ifw
Maine Forest Biodiversity Project:
www.publicconversations.org/pcp/resources/resource_detail.asp?ref_id=104
Maine Forest Service, Wood Processor Report (2002): Available at:
www.state.me.us/doc/mfs/pubs/annpubs.htm
Maine Forest Service: www.state.me.us/doc/mfs/mfshome.htm
Maine Natural Areas Program: www.state.me.us/doc/nrimc/mnap/home.htm
ME Snowmobile Association: www.mesnow.com.
National Timber Tax Website (NTTW): www.timbertax.org.
New England Regional Assessment (NERA), U.S. Global Change Research Program (USGCRP), March 2002. Available at: http://www.necci.sr.unh.edu/2001-NERA-Foundation-Doc.html
New Hampshire 2002 Report of Cut
New Hampshire Division of Forests and Lands: www.nhdfl.org.
New Hampshire Fish and Game Department: www.wildlife.state.nh.us
New Hampshire Snowmobile Association: www.nhsa.com.
New York State Biodiversity Research Institute: www.nysm.nysed.gov/bri
New York Department of Environmental Conservation, Bureau of Wildlife:
www.dec.state.ny.us/website/dfwmr/wildlife
New York Snowmobile Association: www.nyssnowassoc.org
New York State Industrial Roundwood Production and Consumption Report- 2002, NY Department of Environmental Conservation, Division of Lands and Forests.
North East *State* Foresters Association, 2001 NEFA Region Wood Flow Report: Available at www.nefainfo.org.
North East *State* Foresters Association, *A Forest Model for New York, Vermont, New Hampshire, and Maine*, 2002: Available at www.nefainfo.org.
Northern Forest Alliance: www.nothernforestalliance.org
Stokowski, P.A., and C. B. LaPointe. 2000. Environmental and Social Effects of ATVs and ORVs: An Annotated Bibliography and Research Assessment. Project Report for Vermont Agency of Natural Resources. Available at: http://www.anr.state.vt.us/anr/atv_nov20_final.pdf
Number of logger estimates obtained from: UNH Cooperative Extension: 603-862-1520, Maine Forest Service, State of the Forest Report 2001 (available at www.state.me.us/doc/mfs/pubs.htm);
Robert De Geus, Wood Utilization/Forest Inventory Forester, ANR, VT; Sloane Crawford, NYDEC; and Empire State Forest Products Association:
www.nyloggertraining.org/search/loggers.asp]
Sustainable Forestry Initiative: www.aboutsfi.org/core.asp
The Northern Logger and Timber Processor, June 2004, *Environmentalists' Dilemma: How Federal Timber Policy Damages the Third World Environment.*
Univ. of Maine Cooperative Forestry Research Unit: www.umaine.edu/cfru
Univ. of Maine Cooperative Extension: www.umext.maine.eduUniv. of New Hampshire Cooperative Extension: ceinfo.unh.edu
University of Vermont Cooperative Extension, Environment and Natural Resources:
www.uvm.edu/~uvmext/environment
US Consumer Product Safety Commission. All-Terrain Vehicle Safety Alert. Document No. 540. Available at: http://www.cpsc.gov/cpscpub/pubs/atvpubs.html

US Fish & Wildlife Service: www.fws.gov.
USDA Forest Service, Sustainable Resource Management website and personal communication: www.fs.fed.us/sustained/msie4.html.
USDA Forest Service State & Private Forestry, Northeastern Area (NA): www.na.fs.fed.us
Vermont Agency of Natural Resources, Department of Forests, Parks, and Recreation: www.anr.state.vt.us
Vermont Fish & Wildlife Department. www.vtfishandwildlife.com.
Vermont Forest Ecosystem Monitoring Cooperative: vmc.snr.uvm.edu
Vermont Forest Resource Harvest Summary, 2002. Vermont Agency of Natural Resources, Department of Forests, Parks, and Recreation: Available at: www.state.vt.us/anr/fpr/forestry/har02.pdf.
Vermont Association of Snow Travelers: www.vtvast.org.

IV. Land Protection

4.1 Status of protected land in the region

Following a proliferation of easements since the 1980s, some 2,500 properties covering over two million acres of forest are now under easements in northern New York, Vermont, New Hampshire, and Maine (Table 4.1). There are over a dozen easements in the region exceeding 10,000 acres. Several existing or proposed easements are over 100,000 acres.

Table 4.1. Status of conservation easements in Northern Forests states, 2003

State	Total # of easements	Total acres in easements	Total # of easements > 25 ac.	Total acres in easements > 25 ac.	# orgs/landowners w/easements >25 ac
ME	783	1,415,500	Not available	Not available	76
NH	1,877	218,000	833	201,000	128 (SPNHF has 276)
NY	Not available	Not available	461	358,000	30
VT	2,896	389,430	1,009	336,828	43 (VT Land Trust has 778)

Total ac in easements > 25ac. (inc. ME): 2,311,328

4.2 The Forest Legacy Program

From April 1993 to April 2004, Forest Legacy Program provided more than $58 million to Northern Forest states. This money conserved 663,364 acres of the Northern Forest (Table 4.2). Most of these projects were funded with money appropriated after the NFLC's recommendations were issued. After declining for most of the early and middle 1990s, contributions to easement purchases in the Northern Forest states from the Forest Legacy program doubled from $21.7 million to $45.4 million between 2002 and 2003.

Table 4.2 . Summary of Legacy Projects in NEFA area as of April 2004

State	Projects	Acres	Total Value	FLP Payment
Maine	14	416,131	$55,217,000	$31,188,000
New Hampshire	21	194,059	$29,101,000	$19,182,000
New York	6	1,555	$4,773,000	$2,403,000
Vermont	12	51,619	$9,381,000	$6,010,000
Total NF States	53	663,364	$98,472,000	$58,783,000
Total NA[23]	126	716,835	$157,324,000	$82,541,000

[23] Northeastern Area, USDA Forest Service

4.3 Funding for public land management agencies

The NFLC recommended that Congress and the states should provide sufficient funds to public land management agencies to manage and maintain existing public land holdings and recreation facilities for increased public use; to protect fragile areas; and to enhance public health and safety at existing facilities. Congress and the states should also provide sufficient funding to meet the costs of administering conservation easements held by public agencies.

Information is available from the Northeastern Area, State and Private Forestry, regarding federal investments in the state's Cooperative Programs, including Forest Health Management, Cooperative Fire Protection, and Cooperative Forestry(Table 4.3.)

Table 4.3. Federal investment in state's Cooperative Programs, FY 2002-2004.

	FY 2002 ($)	FY 2003 ($)	FY 2004 ($)
Maine	2,000,922	1,690,719	1,748,166
New Hampshire	919,159	932,940	970,216
New York	3,920,446	3,340,484	3,491,593
Vermont	1,445,522	1,251,649	1,309,107

Source: Forest Resource Fact Sheets, FY 2003, S&PF

4.4 Priority setting for land protection in the region

The NFLC recommended that the states develop priority-setting processes to assure that land acquisitions in the states by public entities do not occur in a pure opportunistic fashion. Each state has established some mechanism for priority setting relative to public land acquisition, however, there does not appear to be a regional plan for land acquisition.

Maine: Maine's Land Acquisition Priorities Advisory Committee has developed a set of priorities for acquisition efforts in the northern forest, stating that:

- Efforts should focus on lands that possess a high concentration of wildlife, recreation, and scenic values and are most threatened with fragmentation and development,
- Planning efforts coordinated by Land for Maine's Future Board and Program (LMFB) should seek to identify these priorities and to develop successful acquisition strategies that could then be utilized in these areas and elsewhere,
- If large northern forest tracts come on to the market, LMFB should evaluate both the threat and opportunity presented by the land sale, and respond accordingly,
- The conservation goal for Northern Forest Conservation Lands should be to maintain their natural character, preserve public recreation opportunities, and protect important habitat,
- To acquire, even conservation easements, over large tracts of northern forestland will likely require federal funding assistance. The Forest Legacy program is well suited to Maine's working forest landscape and allows for state control over acquisition projects. This program, and other appropriate federal funding opportunities, should be actively pursued to achieve the state's northern forest goals.

New Hampshire: In 1998, the NH legislature created the New Hampshire Land and Community Heritage Commission (LCHC). The LCHC's report, issued in 1999, served as the basis for the creation of the New Hampshire Land and Community Heritage Investment Program (LCHIP), which the legislature enacted in 2000. LCHIP's land acquisition program scores eligible projects using a set of selection criteria in order to invest its money in priority projects.

New York: New York's Open Space Plan, completed in 1992 and updated every three years, requires Regional Advisory Committees to review the plan every two years. This process incorporates and implements the NFLC recommendation. The 1998 plan builds upon its predecessors and guides the use of New York's Clean Water / Clean Bond Act and Environmental Protection Fund spending.

Vermont: In 1999, the Vermont Agency of Natural Resources completed a "Lands Conservation Plan" (LCP) to guide the agency's land acquisition and other land conservation measures.

4.5 Funding sources for the purchase of conservation easements

Funding for land protection projects is usually accomplished through a consortium of various federal, state, and local conservation funds. The U.S. Government provides funding through the Land and Water Conservation Fund, Forest Legacy Program, Coastal Programs, Transportation Enhancements, Cooperative Endangered Species Enhancement Fund. Large land protection projects in the region usually combine federal funding with state funding along with private fundraising to raise the capital needed to complete the project. In recent years, these projects often involve multiple public and private agencies in addition to the willing seller.

4.6 Other tools for maintaining large ownerships of forestland in the region

The reserve/working forest conservation easement
Dividing former industrial timberlands into reserves and working forests is a tool that has been developed for maintaining large ownerships of land in the Northern Forest region is emerging as a model of choice for land conservation projects in this region. In three notable cases since 1998, consortia of state, industry, and environmental interests pooled financing to acquire expansive forest properties (or acquire conservation easements in these properties) put on the market by large forestry companies. Through the process, the parties negotiated what areas to protect as reserves and what lands to retain as working forests.

A key example of lands conserved under the reserve/working forest model, over 320,000 acres, stem from former Champion International and International Paper (IP) timberland holdings in northern Vermont and New Hampshire: the so-called Champion lands in the Northeast Kingdom of Vermont (132,000 acres), and the Connecticut Lakes Headwaters (171,500 acres) and Bunnell Forest (18,500 acres) tracts in Coos County, New Hampshire. Former Champion and IP holdings were acquired by The Conservation Fund and the Trust for Public Land, respectively, and divested to a handful of government, NGO, and corporate landowners under conservation restrictions. Another example is the The Nature Conservancy's Katahdin Forest Project in Maine, which is a partnership between the Conservancy and Great Northern Paper. Under the terms of the deal, the Conservancy purchased $50 million of existing loans to Great Northern Paper, retiring $14 million of it and refinancing the balance at less than half of the previous interest rate. In exchange, Great Northern

Paper placed a conservation easement on 200,000 acres of forestland around Baxter State Park, which will guarantee public access, traditional recreational uses, sustainable forestry, and no future development. In addition, the company transferred 41,000 acres in the region to the Conservancy for the establishment of an ecological reserve.

The trend establishes ecological reserves around the highest value (from a biological standpoint) lands and embeds them within larger sustainably managed working forests and protects both with a conservation easement. West Mountain WMA consists of 22,000 acres of state-owned land that was part of the former Champion lands in the Northeast Kingdom of VT. This land was given to Vermonters in a complex land transaction after Champion sold its Vermont holdings in 1999. The draft management plan continues the tradition of hunting, fishing, trapping, and snowmobiling, and also calls for creating a 12,500-acre ecological reserve in the West Mountain WMA.

The Vermont Legislature directed that an easement be used to protect sustainable forestry and public use on an 84,000-acre piece that was ultimately resold to a private timber investor, the Essex Timber Company. For the smaller tract that was to become the West Mountain WMA, the legislature called for an easement to protect natural resources and public use. The best timber land was sold to a private investor, and the most ecologically significant land was slated for public ownership. West Mountain's management plan calls for about 9,500 acres to be intensively managed for game species and it also defines a 12,500-acre reserve for a host of ecological features (TNC).

The New Hampshire Connecticut Lakes Headwaters project resulted in 146,500 acres of the original 171,000 acres owned by International Paper being sold to a private investor (Lyme Timber) with a conservation easement covering the land. The remaining 25,100 acres was purchased by the State of New Hampshire, 15,000 acres of which is a no-harvesting reserve while the remaining 10,000 acres is managed for wildlife habitat purposes.

Although several environmental NGO's and state agencies have designated areas under Ecological Reserves, there are no acreage totals available in the Northern Forest states.

Sources:

An Analysis of Conservation Easements and Forest Management in New York, Vermont, New Hampshire, and Maine, July 2004. Unpublished NEFA report.
Forest Resource Fact Sheets, FY 2003, USDA Forest Service S&PF.
Land for Maine's Future Program (Board and website): www.state.me.us/spo/lmf
Land Trust Alliance: www.lta.org.
New Hampshire Land and Community Heritage Investment Program: www.lchip.org.
The Implementation of the Northern Forest Lands Council's Recommendations: An Analysis Six Years Later, 2001.Available at nefainfo.org.
The Nature Conservancy: www.tnc.org.
Trust for Public Lands: www.tpl.org.
USDA Forest Service S&PF, NA website
Valerie Leary's TIMO Project - Timberland Investment Vehicles, NC State University: www4.ncsu.edu:8030/~vlholt/timos.html.
Vermont Agency of Natural Resources: www.anr.state.vt.us.

V. The Health of the Forest Products Industry and future prospects

5.1 Overview of Status and Trends in the Forest Products Industry 1994-2004

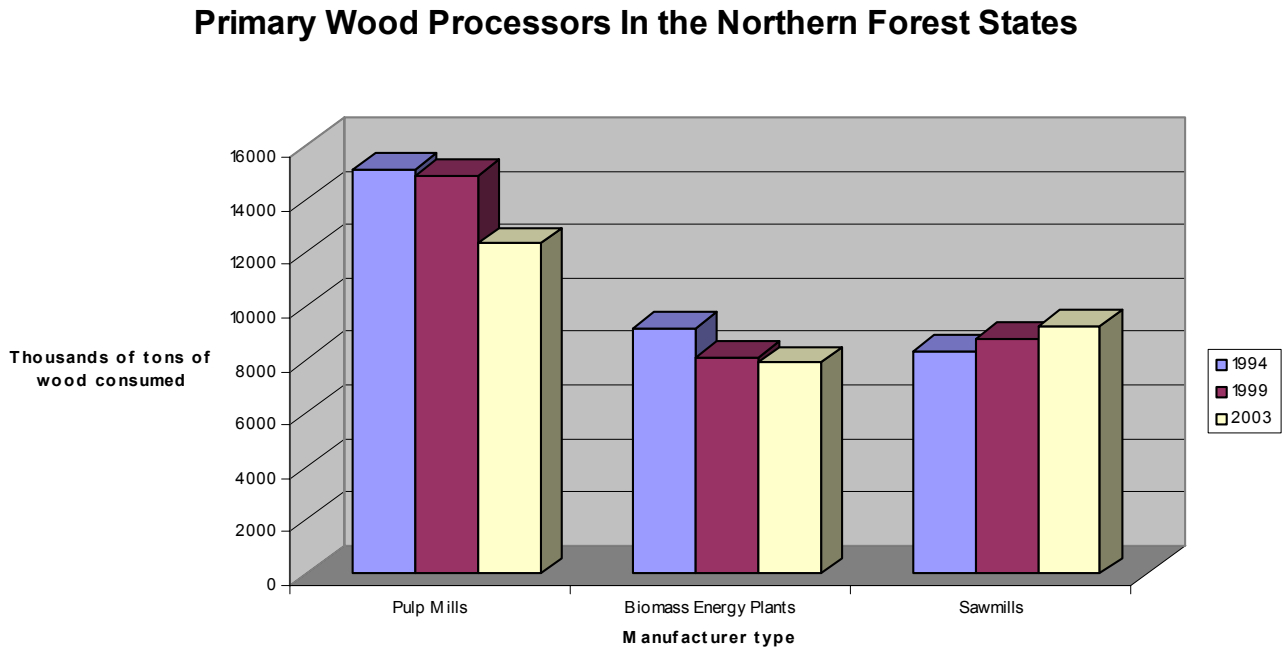
The forest products industry in the Northern Forest region has undergone significant change in the last decade. This time period has seen a number of very high profile paper mill closings – some of which re-opened, while others have been dismantled and are permanently gone. On the lumber side, the last decade has seen two opposing trends – a number of mill closings, coupled with level or increasing production region-wide, despite the closings. This signifies that a number of mills have made investments in efficiency or added shifts to better utilize existing equipment and infrastructure. Forest products manufacturers are facing unprecedented competition from offshore, a trend only likely to increase. How mills make capital investments and position themselves in an increasingly global marketplace will go a long way toward determining the future of forest industries in the region.

Chart 5.1 below shows that during the 1994-2003 period, the three major primary wood processing industries saw changes in their wood consumption and production levels. Pulp mill wood consumption **fell** by 18% (virtually all in the period from 1999 to 2004); biomass wood energy plant consumption **fell** by 14%; but sawmill consumption **increased** by 12%.

Data from the late 1990s shows that this industry, including secondary manufacturing not specifically cited in the charts and tables in this section, was valued at $27.6 billion in 1997 and $25.5 billion in 2001[24]. The forest-related recreation and tourism activities totaled an additional $ 2.9 billion annually[25].

[24] In value of shipments, U.S. Census Annual Survey of Manufactures, 1997 and 2001
[25] The Economic Importance of the Northeast's Forests, North East *State* Foresters Association, 2001

Chart 5.1



5.2 Paper:

Pulp and paper mills have been in the headlines over the last decade, all too often noting mill closings. Some of the mill closings in the past decade have include Lyons Falls (NY), Corinth (NY), Deferiet (NY), Berlin / Gorham (NH), Lincoln (ME), Brewer (ME), and Millinocket / East Millinocket (ME). Fortunately, some of these closing have been temporary, with Berlin / Gorham (NH), Lincoln (ME) and Millinocket / East Millinocket all coming back on-line with some or all capacity. At the same time, some companies have made significant investments in existing facilities, including investment at Jay (ME), Berlin / Gorham (NH), Rumford (ME), and currently underway at Old Town (ME).

Table 5.1 shows trends of pulp mill production (based on wood consumption) in the region since 1994.

Table 5.1

PULP MILL PRODUCTION	(THOUSANDS OF TONS OF WOOD/YEAR)		1994	1999	2003
Maine			12,098	11,898	9,973
New Hampshire			1,055	1,056	1,060
Vermont					
New York			1,935	1,935	1,310
GRAND TOTALS			**15,088**	**14,889**	**12,343**

Source: James W. Sewall Co.

It has become increasingly clear that the Northeast has older and smaller (as measured by width) paper machines, and competition from new, high capacity overseas mills is only expected to increase in coming years. Facilities that are currently making investments in their plants are well positioned in the global marketplace, and if the states desire to keep this industry in a competitive position, state and federal policy should encourage investment in these facilities in order to retain capacity, markets and the industrial base for the Northern Forest region.

Paper analysts see strong near-term demand growth for printing and writing grades, the type of paper production most dominant in the Northern Forest region. This demand, coupled with a weak dollar that encourages exports and discourages imports, provides paper industries in the Northern Forest region a window in which to capture profits and invest in future efficiencies. Recognizing the temporary nature of this window, state and federal agencies should work with pulp and paper mills to speed the permitting process as much as possible for mill investments, while assuring that important public health and welfare considerations are addressed.

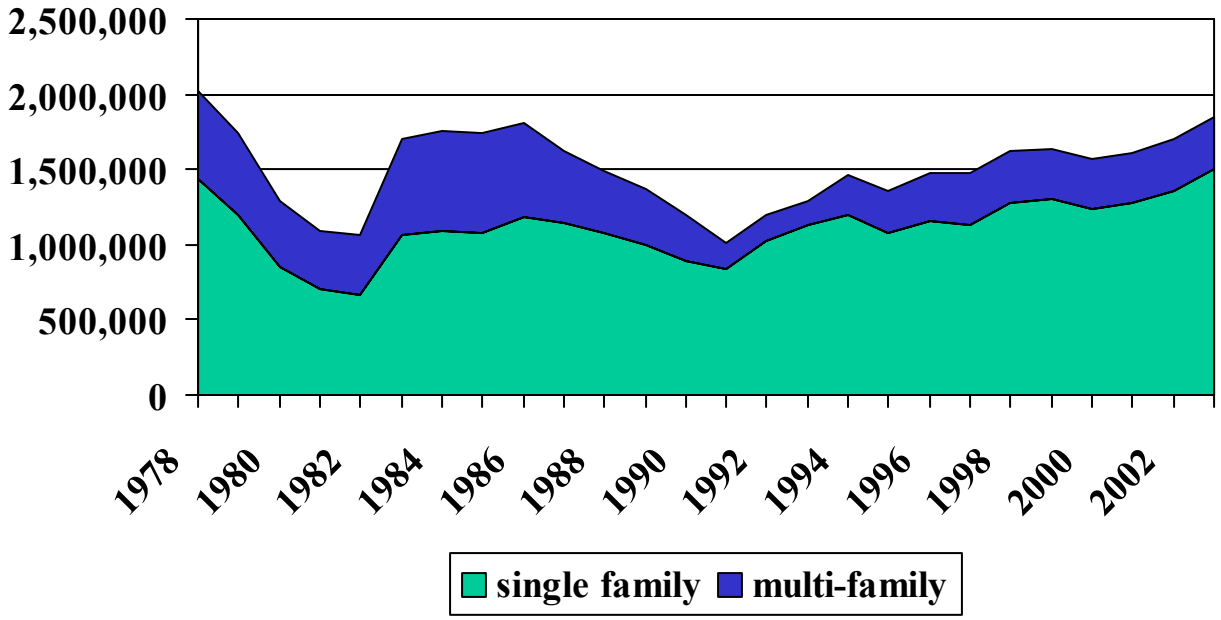
5.3a Softwood Lumber – Spruce/Fir:

The past decade has seen a sustained period of strong housing starts, the most important economic indicator for dimension lumber[26] (see Chart 5.2). Spruce/fir mills in the region have witnessed a slight decline in output across the Northern Forest region, with the closing of a few large mills impacting overall production. At the same time, plans are underway to re-open at least one large spruce-fir mill in the northern Forest region, and an investor group is considering construction of a new 200 MMBF[27] dimensional lumber mill in Northern Maine.

[26] Dimension lumber is a term describing the 2x4, 2x6 etc framing wood used in so much construction in the world. Typically this framing material is made from either spruce or fir because these species have a high strength to weight/dimension ratio.

[27] 200 million board feet per year production – the largest sawmill in the region produces approximately 180 MM bf per year while the next largest produces approximately 120 MMbf.

Chart 5.2 U.S. Housing Starts



5.3b Softwood Lumber: White (and Red) Pine

White pine production has increased in the four-state region over the last decade, in large part to a number of mills investing in added capacity or efficiency. While some white pine mills have closed, many others have increased production, providing for an overall increase in pine output. While white pine grows throughout the four-state region, it grows most heavily (and major volumes for sawmills are sourced here) in the southern parts of the region. Of concern to many pine mills is that much of the pine currently coming to mills is a "final harvest", with land that has long grown white or red pine being converted to non-forest uses. In some part of the four-state region, urban sprawl has begun to be a real concern for pine mills, and it is this loss of land base that is the greatest threat to some mills (particularly those in the southern portions of Maine and New Hampshire) over the next decade to twenty years.

5.4 Hardwood Lumber:

Hardwood mills have seen modest growth over the past decade, with overall growth of around 15% (when output measured by MBF) from 1994 to 2004. This stands in stark contrast to the perception of many that the hardwood industry has largely left the region – the hardwood industry is in fact enjoying modest growth, and a number of mills have made and continue to make significant investments in efficiency. Some hardwood mills have closed, a trend likely to continue for smaller mills with outdated equipment, but these closing are more than offset by increased capacity in other facilities. Based on recent policy work in the region, states in the Northern Forest region can encourage mill investment by helping address business climate issues, expediting permitting, and providing tax climates that favor capital investment.

Table 5.2 shows the production trends for the sawmill industry in the four-state region over the ten-year study period.

Table 5.2 Sawmill Production in the Northern Forest states – all types

SAWMILLS			
	PRODUCTION MMBF/Yr.		
	1994	**1999**	**2004**
Maine	952	1,011	1,032
New Hampshire	216	222	207
New York	355	386	475
Vermont	137	137	137
Regional Totals	1,660	1,756[28]	1,851

Source: James W. Sewall Co. & U.S. Census

5.5 Biomass for Energy:

Two sectors are included when discussing biomass (wood) energy plants in the region. First are existing mills, primarily pulp and sawmills, that have added biomass burning boilers to allow them to produce both electricity and process steam for other manufacturing processes. The second category is stand-alone wood energy plants. The latter category of plants saw rapid expansion during the 1980s when, out of concern that the U.S. was too dependent on foreign oil and other foreign energy sources, federal and state policies were instituted to encourage the production of energy using domestic fuel sources.

This proliferation of wood-sourced energy plants and the long-term contracts the regulated electricity utility companies developed with the wood plant owners, were based on projections of steady increases in oil prices globally. When these projections proved inaccurate (real oil prices actually declined in the 15-20 years after the wood plants were built in the 1980s, state energy regulators and policy makers started to cry foul, and in the 1990s, the wood energy plants were deemed bad for consumers because the cost of this power through the long-term contracts approved in the 1980s was higher than the going market rates for alternative fuels, especially natural gas.

As a result, more than a half-dozen of these plants have been shut down (some are still capable of re-start if the markets or policies change) in the region. Hence the overall production (and wood consumption) at these facilities, as seen in Table 5.3 has decreased by about 14% from 1994 to 2004. Most of the wood energy plants tied to other manufacturing facilities (i.e. not tied to power sale to utilities via the electricity grid) have continued to operate.

Language in the 2004 energy bill before Congress, coupled with Renewable Portfolio Standards as part of public policy in Connecticut, Massachusetts and now Rhode Island, that requires a portion of energy produced or accounted for in each state to come from renewable sources (wood is included

[28] The U.S. Census Lumber Production and Mill Stocks data from 2000 puts Northern Forest states lumber production at over 2.2 billion board feet annually so it is likely that production in 2004 is even higher than this though a downturn did occur in 2001 and 2002.

if a certain combustion technique is used) could change all of this for the better, making wood energy plants in the region desirable once again.

Table 5.3 Biomass Energy Plants wood consumption, NF States

BIOMASS ENERGY PLANTS				
		FUEL USEAGE - M tons/yr		
		1994	**1999**	**2004**
Maine		6,144	5,104	4,939
New Hampshire		1,649	1,566	1,559
New York		430	430	430
Vermont		965	965	965
Grand Totals		**9,188**	**8,065**	**7,893**

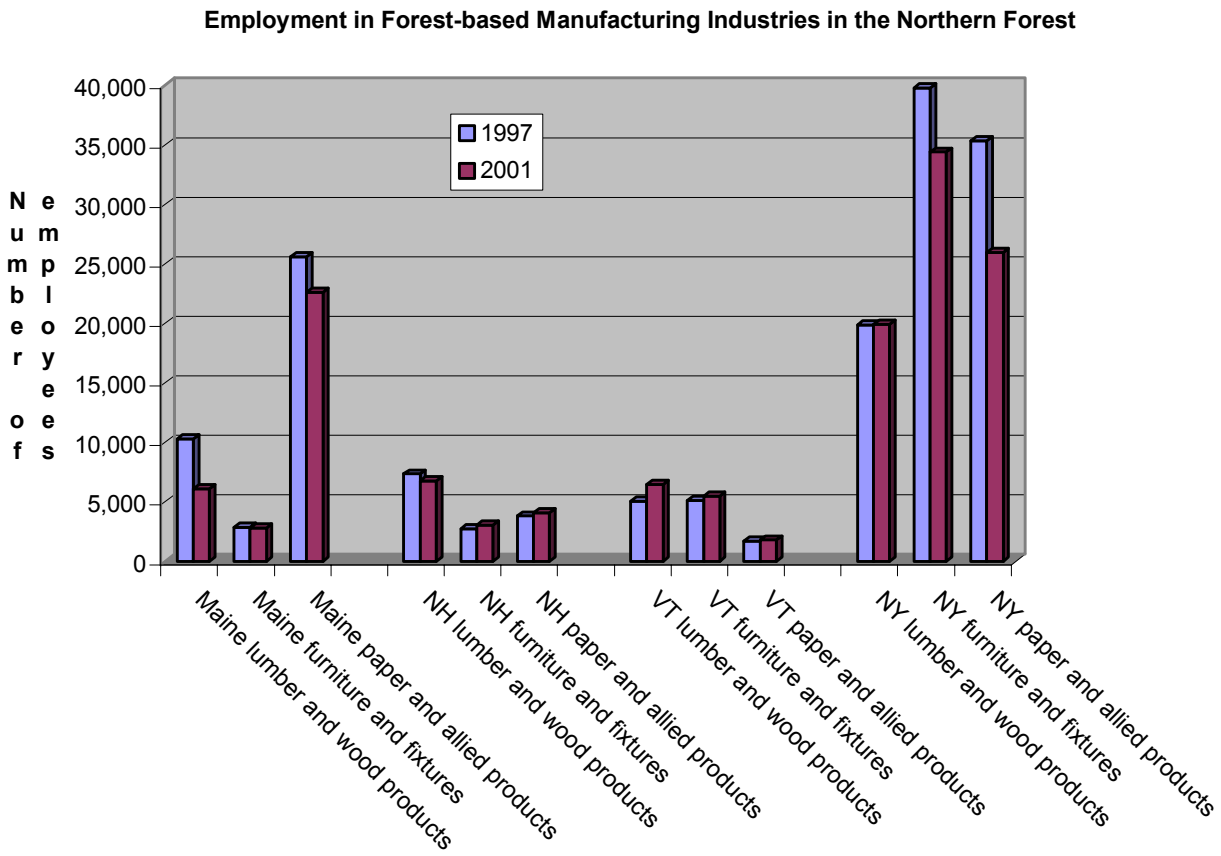
Source: James W. Sewall Co.

5.6 Labor in the Northern Forest wood products industries

Data from the 2001 U.S. Census industry categories of lumber and related wood products, furniture and fixtures and paper and allied products manufacturing for the Northern Forest states show nearly 138,000 employees[29]. Similar data from 1997 showed 164,000 employees for these same industry categories. A more refined breakdown of labor in these forest products manufacturing industries is found in Chart 5.3.

[29] U.S. Census, Annual Survey of Manufactures

Chart 5.3 NF States Forestry Industries Employment



Just as wood consumption fell across the region for pulp and paper from 1994 to 2004 (18% total loss for the period though NH increased during the period), employment in this industry was reduced by 18% (1997-2001). Solid wood manufacturing, however, was up by 12% for consumption/production from 1994 to 2004 and yet employment (1997-2001) was down 14%. Clearly major capital investments in new technology have been made in the solid wood manufacturing sectors further increasing efficiencies.

Please note that data for New York may be misleading, because components of "furniture and fixtures" and "paper and allied products" include manufacturers that do not utilize wood products (e.g., mattresses) and/or roundwood (many of the "paper" plants in NY are paper processing/conversion plants.) NY DEC forestry personnel estimate that traditional wood furniture and fixture employment is about double that of NH and VT and that the two pulp and paper mills in NY employ approximately 3,000. While these data phenomenon also apply to the other three states, the do so much more substantially in New York State.

Sources:

Hardwood Lumber Manufacturer's Association: www.natlhardwood.org.

James W. Sewall Co.
U.S. Census, Survey of Manufactures, 1997, 2001
U.S. Census Lumber Production and Mill Stocks
The Economic Importance of the Northeast's Forests, North East *State* Foresters Association, 2001

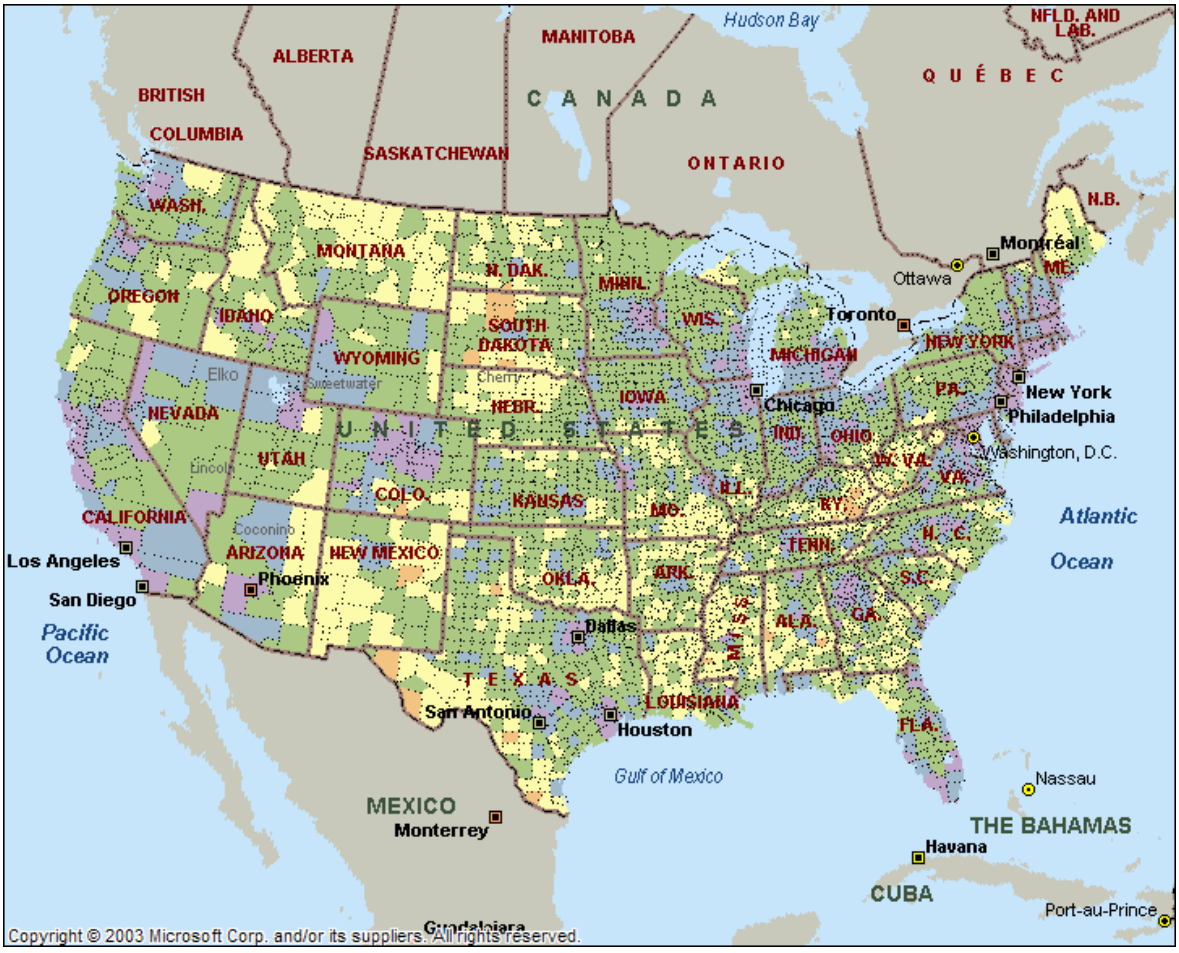
VI. Economies of the Rural Communities in the Northern Forest

6.1 Economic health of the communities and individuals in the Northern Forest Region

The economic health of communities and individuals in the Northern Forest region is generally assumed to be poor. A look at other heavily forested and rural communities in the United States (Figure 6.1) shows comparable income levels to those in the Northern Forest. While it would be more meaningful to look at this information using a Standard of Living index, it is useful to see that income levels in the Northern Forest are comparable to other rural areas.

This map does illustrate the wide difference in income levels between the southern regions of the Northern Forest states and the Northern Forest. Recognizing that rural communities in the United States are generally judged from an urban perspective, The Northern Forest Center compiled "The Northern Forest Wealth Index," which examines more than income levels and other economic issues in order to "explore a deeper meaning of regional wealth." The study examines voter participation, number of and budgets of public libraries, suicide rates, preventable deaths, and a myriad of other indicators. The study does not draw conclusions from the data presented. The Wealth Index is seen as a first step towards understanding and building on regional assets.

Figure 6.1 Average Household Income (2002) by County (orange and yellow are lowest; green is mid; blue and purple are highest)



6.2 Dependence of rural communities on the forests of the region

Primary and secondary forest industries, recreation, and tourism are an integral part of the economy of the Northern Forest and are dependent on the forests of the region. Secondary manufacturing jobs have historically provided consistently high wages. Maine is the largest wood producer in the Northern Forest region, accounting for roughly half of the production. The payroll of Maine forest-based manufacturing industries grew consistently between 1992 and 1997, with all sectors showing an increased payroll of 14%. Lumber and wood products payroll grew by 26% over this time period, equal to the growth in this sector nationally. As an example state, data from US Bureau of Census and other sources for 2000 reveal the following for Maine:

- The contribution of forest-based manufacturing and forest-related tourism and recreation to the Maine economy is over $6.5 billion.
- Forest-based manufacturing is the largest manufacturing industry in Maine, contributing $5.6 billion in value of shipments to the economy in 1998, or 40.5% of Maine's total manufacturing sales.
- The forest-based manufacturing industry provides employment for 30,000 people and generates wages and salaries of $1 billion, the largest payroll in Maine's manufacturing sector. Forest-based recreation and tourism provides employment for over 7,000 and generates payrolls of $51 million.
- In 1998, forest-based manufacturing contributed $2.2 billion in Gross State Product (GSP) to the state economy, or 7% of the GSP.
- Forest-related recreation and tourism expenditures contribute $900 million annually to Maine's economy.
- Maine landowners received estimated stumpage revenue in 1999 of $236 million.
- Total delivered value of these roundwood products is estimated at $528 million.
- The sale of Christmas trees, wreaths, and maple syrup contributed $12.8 million in 1998.
- Revenues from the sales of biomass chips in 1999 totaled $13 million. In 1998, 470,000 cords of firewood were harvested and processed in Maine, contributing $44 million to the economy.
- Each 1,000 acres of forest land in Maine supports 1.7 forest-based manufacturing jobs and 0.4 forest-related tourism and recreation jobs.

Important Economic Benefits of Wilderness is a new study released by The Wilderness Society, which claims that wilderness leads to regional economic diversification, with people and businesses locating where the quality of life is considered good, based in part on a clean, natural environment and high-quality recreational opportunities. Retirees and "footloose" businesses, in particularly, bring dollars and opportunities to areas with high-quality amenities. The report cites numerous studies to verify this. Some of these are:

• In a survey of 11 fast-growing counties across the country, researchers found that 45 percent of long-time residents and 60 percent of recent migrants to counties containing designated wilderness areas on federal lands indicate wilderness is an important reason for living in those counties.

• One study found that entrepreneurs cite quality-of-life factors over business-climate factors (cheap labor, low taxes, lax environmental standards) as reasons for locating and keeping their businesses near protected public lands (though not necessarily wilderness).
• Researchers found that conservation lands in the northern forest region stretching from Maine to Minnesota are associated with higher net migration that, in turn, engenders growth in employment. People seek (or stay in) areas with wildland amenities, and jobs follow people.
• Researchers estimate the value of all ecosystem services on temperate forests like Vermont's at $122 per acre per year. Less than a tenth of this sum stems from the production of raw material such as timber, while about a third is from all direct use values, including recreation.

6.3 Energy Issues affecting forest-based businesses in the region

Energy Users
Forest industries are a major consumer of electricity, and the price of electricity is a major input cost to sawmills, paper mills, wood product manufacturers, and other forest-based business in the Northern Forest region. Since 1994, Maine, New Hampshire and New York have restructured their electricity markets. In these states, electricity consumers are free to choose a supplier based on cost or other factors; forest industries are ideal entities to take advantage of these new competitive markets. However, electric industry restructuring has not led to dramatic price declines; many of the "stranded costs" associated with previous decisions remain a charge paid by all customers, though these costs have been declining and are expected to continue to decline.

Electricity rates in the Northern Forest vary by state, and often vary significantly within states by service territory, or electric distribution company. In general terms, industrial electricity rates are higher in the Northern Forest states than the national average, and are higher than other forest industry regions of the United States, such as the Southeast, Pacific Northwest, or Lake states.

Some forest industries, especially large users of electricity such as pulp and paper mills, generate their own electricity using biomass boilers and hydroelectric dams. Smaller facilities, like sawmills, use diesel generators to generate electricity. While generating electricity is a source of potential savings, it also ties up capital in ways that don't contribute to increased production or efficiency, and often requires a commitment of significant resources to unfamiliar regulatory processes.

Biomass Energy Producers
Biomass energy, or producing electricity with wood, remains a significant market for low-grade wood. Biomass energy has undergone significant changes in the past decade, and these changes are likely to increase. In the past ten years, some of the blame for high power costs in the region on above-market fixed-rate electricity purchase contracts with biomass power plants. In some states, this has led to "buy-outs", or mutually consensual terminations of these contracts. Some facilities have not been bought out and, they will have to operate in the competitive electricity marketplace or cease operations contracts when their contracts expire.

Generally, facilities that have been bought out can compete in the region's competitive electricity market while generating electricity for the wholesale market. The small size, high per-output-unit operations and maintenance costs, and high comparative fuel costs, make it difficult for biomass facilities to compete directly against larger coal, natural gas, and nuclear plants. Some states have

passed "renewable portfolio standards" (RPS), that require electricity consumers in the state to purchase a fixed amount of electricity from renewable producers. Each state has different regulations regarding how facilities qualify as " renewable" and how much renewable electricity each consumer is required to purchase. In general, an RPS allows biomass facilities to compete against other renewables, such as wind, landfill gas, hydroelectric, and solar, instead of large fossil fuel and nuclear facilities.

Maine and New York have adopted RPS legislation, and Vermont is formally exploring adoption of an RPS. Connecticut, Massachusetts, and Rhode Island have established RPS that biomass facilities in some or all Northern Forest states can participate in. RPS can support existing facilities and encourage construction of new facilities. The current premium for biomass electricity from new facilities in the NEPOOL electricity region (NH, VT, CT, MA, RI and most of Maine) is currently between $35 and $45 per MWH, which has encouraged at least five facilities in the NEPOOL electricity region to consider construction of new biomass facilities.

At the federal level, Congress is considering a production tax credit, which would provide biomass facilities a tax credit of under $0.02 for each kWh generated. The final passage of this tax credit is part of the energy bill, and it is not known if the final legislation will contain provisions for biomass power.

The resolution of the production tax credit, coupled with the implementation of RPS at the state and regional level, will have significant influence on the economic viability biomass energy in the Northern Forest region.

6.4 Federal, state, and NGO assistance to forest-based businesses of the region

The USDA Forest Service Northeastern Area State & Private Forestry Economic Action Program (EAP) supports conservation and the sustainable use of forests and related natural resources. Working cooperatively with state forestry agencies and other partners, programs help rural and urban residents generate diverse, sustainable economic opportunities in their communities. The EAP includes the Rural Development Through Forestry program, which has supported the following initiatives in the Northern Forest states:

- In Vermont, a furniture factory in Island Pond closed, leaving 125 people jobless. Planning and marketing assistance from State forestry staff and other specialists helped a group of employees start a new business, which now does contract manufacturing and produces its own furniture line.
- In New York, the community of Tupper Lake is establishing the Natural History Center of the Adirondacks, a focal point for future nature-based tourism in the north-central Adirondacks. The New York Department of Environmental Conservation is assisting with the project.
- In New Hampshire, the Berlin Economic Development Council and other cooperators developed the Northern Forest Heritage Park in Berlin as an economic diversification project focusing on preserving, interpreting, and promoting the story of the working forest heritage of the region.

Each of the Northern Forest states has a Forest Products Marketing and Utilization Program, which provides assistance to forest-based businesses in various ways. Most produce yearly reports of wood that is harvested and processed in the state and gather data on stumpage prices that are published routinely.

Businesses for the Northern Forest (BNF) is a program of the Northern Forest Alliance and the Appalachian Mountain Club, and is involved in:
Heritage groups: coalitions of businesses and organizations to preserve the creation, education and sales of traditional and contemporary handcrafts and arts, through developing marketing tools and facilitating entrepreneur development.
Woodnets: associations of small-scale woodworkers forwarding sustainable wood use and education - like green certification and 'character' wood use - and small business development.
Gateway Community groups: a collaborative of businesses and citizens who live in communities adjacent to conservation or public land in the response to dramatic change in local landscapes or economies through community-wide "visioning," planning and projects.
Friends groups: groups of business on direct advocacy for conservation of local landscapes and recreation amenities, through land deals and non-motorized trail networks.

BNF also coordinates regional information sharing, outreach and correspondence to strengthen Northern Forest regional identify and sense of place, increase cross-state connections and market locally made products. Examples include:
Federal Legislative Initiatives: BNF supports the conservation and economic needs of the Northern Forest by advocating for federal funding programs like the Land and Water Conservation Fund and Forest Legacy for land protection initiatives and Rural Development through Forestry and Economic Action Programs to support regional sustainable economic and community development work.
Northern Forest Communications: BNF publishes reports and newsletters and hosts a web site featuring programs, highlighting businesses or communities and sharing current events. BNF also maintains a database and facilitates regional media outreach on projects.
Regional Brand Marketing: BNF supports work to research a brand identity for the Northern Forest through projects, listening sessions and market research.

The Adirondack North Country Association (ANCA) works with the region's forest industry and provides technical assistance and site visits, development of supply networks, and identification of opportunities to establish new facilities. The objective is value-added manufacturing between harvesters, sawmills, and secondary processors so that more jobs and manufacturing stay in the region. In 1991 ANCA released a strategic blueprint, A Wood Products Development Strategy for Northern New York that focused on the potential for increased value-added secondary processing in the six northern counties of Essex, Lewis, Jefferson, Clinton, St. Lawrence and Franklin. In 1997 ANCA released *Working With Wood: An Eight County Wood Products Development Strategy*, which provided a blueprint for action in Oswego, Herkimer, Fulton, Washington, Warren, Oneida, Saratoga, and Hamilton counties.

ANCA has also worked with communities to establish nature-based tourism in numerous activities, such as wildlife observation, birding, and guided and self-guided nature walks and wilderness outings.

The National Community Forestry Center, Northern Forest Region, was run through Yellow Wood Associates, St. Albans, VT, from 2000-2004. It was supported by a USDA grant. Along with other projects, the Center accomplished the following:

- Members of northern New Hampshire and Vermont Timber Harvesting Communities studied how recent changes in forest land ownership are impacting forest management, timber harvesting, and rural economies.
- The Town of Richford, Vermont gathered information to assist in developing forest-based economic development strategies.
- The Lincoln, Vermont Conservation Commission is led an effort to involve as many local residents as possible in gathering information to plan for their municipal forestland.
- The Middle Ground Collaborative developed an interactive exhibit to tour the state in an attempt to generate dialogue about the history and future of Maine's forest resources. The Center developed methods to effectively engage those who view the exhibit, and create a running record of their responses.

All four communities have received training in participatory research methods and assistance in developing a work plan to complete their research.

An initiative of The Wilderness Society, Maine WoodNet helps support small local forest-based manufacturing, encourages wood use efficiency and supports improved forest stewardship. By working together, members maximize the efficiency of wood use to ensure that our forests will be enjoyed for generations to come.

Vermont WoodNet Inc. is a non-profit organization composed of a coalition of small-scale woodworkers and wood products business whose mission is to strengthen business opportunities for Vermont wood product businesses based upon a commitment to the sustainability of the forest resource. Vermont WoodNet was established in 2000 to address the needs of small-scale woodworkers and crafters in Vermont by creating opportunities for joint manufacturing, joint marketing and increasing access to materials and services.

Recreational and nature-based tourism activities that are dependent on the surrounding forests have grown since 1994. The following is a sample of regional and community based opportunities and projects in New York that have been initiated since 1994:

- Mountain Bicycling in the Adirondack Park Wild Forest Lands: www.bikeadirondacks.org.
- Northern Forest Canoe Trail: mapping and interpretive work has begun with the Adirondack North Country Association, the Central Adirondack Association, and the Northern Forest Canoe Center on this 740 mile route beginning in Old Forge, New York and extending to Port Kent Maine: www.northernforestcanoetrail.org.
- Northville Placid Hiking Trail: Adirondack Park hiking trail from Lake Placid to Northville, New York. www.adk.org
- JackRabbit Ski Trail: regional cross country ski-touring network of 33 miles of public and private lands affiliated with the Adirondack Ski Touring Council x-cski@lakeplacid.com.

6.5 Business-related regulations affecting forest businesses

At a recent gathering of forest industry leaders in New Hampshire, the regulatory climate, and costs associated with regulatory compliance, were noted areas of significant concern. Similar discussions have ensued in formal and informal gatherings in the region.

Transportation
Finding Common Ground recommended that states coordinate truck weight limits to allow efficient flow of forest products across state lines. This has not occurred, and truck weight limits remain a source of contention in several areas of the Northern Forest region. Some people advocate the construction of an East-West highway across some or all of the Northern Forest region would allow forest products industries to move both raw materials and finished products more efficiently. Such a highway remains in the most preliminary planning stages due to concerns about costs, actual use, environmental impacts, and other issues.

Anecdotal evidence at the local level suggests that posting of roads during mud season has grown as a concern in the last decade. As communities look to protect their investments in public roads, it has become more common for roads to be posted during spring (and sometimes fall) mud season. This has often made it more difficult for some forest industries to get wood during certain periods of the year, and there are stories of loggers with equipment "trapped" for weeks on lots due to road restrictions.

Insurance
Following the terrorist attacks of September 11, 2001, insurance premiums rose significantly and, despite the rural nature of their businesses, industries in the Northern Forest were not immune from this. Forest industries have taken concrete steps to address the high cost of insurance.

Reacting in part to the high cost of worker's compensation, all four Northern Forest states have developed successful logger training programs, and many logging contractors have developed safety programs. Maine has established a separate rate for loggers who have completed a rigorous certification program, providing financial incentive for participation. The continued move of the logging industry toward mechanized harvesting has put more people in a protected cab and lower rates for mechanized logging reflect the safer nature of this equipment.

In some states, individual sawmills have banded together to form self-insurance groups, offering lower cost insurance to participants. Interest in establishing more of these groups remains high. The successful implementation of self-insurance groups often requires sustained commitment by participants, and many groups have faltered before getting off the ground due to the time involved in start-up.

Regulation of industry is still a significant issue in the Northern Forest region. Collaboration among government, industry, and environmental organizations in the development of regulations has increased, but significant work remains on this front. Over the past decade, many forest industries have taken voluntary steps to exceed regulatory requirements, proving significant public benefit without the rigid nature of statutory and administrative regulations. Forest certification is one such area.

Sources:

Adirondack North Country Association: personal communication and www.adirondack.org.
Businesses for the Northern Forest: www.businessnorthernforest.org
Maine WoodNet: www.mainewoodnet.org
Northern Forest Wealth Index: Exploring a Deeper Meaning of Wealth, Northern Forest Center, 2000.
The Economic Importance of Maine's Forests, 2001. NEFA publication. Available at www.nefainfo,org
The Wilderness Society: www.wilderness.org
USDA Forest Service S&PF NA website
Vermont WoodNet: www.vtwoodnet.org
Yellow Wood associates: www.yellowwod@yellowwod.org

VII. NFLC Recommendations - What worked and what didn't? An analysis of where we have achieved, partially or wholly, the objectives laid out in the NFLC report, or where we have not.

In 1999, the North East *State* Foresters Association initiated a study to determine the implementation status of the 37 recommendations contained in the Northern Forest Lands Council report, *Finding Common Ground*. The College of Environmental Science and Forestry at the State University of New York in Syracuse, New York, was contracted to complete this work. While some of the recommendations have seen increased action since the SUNY report was released in 2000 (where noted) most of that work remains accurate. Key findings from the study are included in Table 7.1 below.

Table 7.2 : Implementation of NFLC Recommendations 1994-2000

Recommendations	Fed	ME	NH	NY	VT
Fostering Stewardship of Private Land Recommendations					
1. Fund Forest Legacy*	PI	–	–	–	–
2. Fund state easement programs*	–	I	PI	I	I
3. Fund the Stewardship Incentive Program*	NI	–	–	–	–
4. Encourage green certification programs	–	I/E	I/E	I/E	I/E
5. Strengthen current use tax programs	–	PI	I	NI	PI
6. Consider replacing the *ad valorem* taxation system	–	NI	NI	NI	NI
7. Change estate tax policies	PI	PI	PI	PI	PI
8. Allow inflation adjustment on the original cost of timber	NI	NI	NI	NI	NI
9. Eliminate the 100 hours per year rule	NI	–	–	–	–
10. Educate forest users and the public about sound forest management	–	I	I	I	I
11. Assess forest practices and programs	–	I	PI	PI	I
12. Achieve principles of sustainability	–	I/E	I/E	I/E	I/E
Protecting Exceptional Resources Recommendations					
13. Fund public land management agencies	NI	I	I	I	I
14. Institute a national excise tax on recreation equipment	NI	–	–	–	–
15. Refine state land acquisition planning programs	–	I	I	I	I
16. Fund the Land and Water Conservation program	NI	–	–	–	–
17. Fund state land acquisition programs	–	I	I	I	I
18. Employ a variety of conservation tools	–	I	I	I	I

19. Exclude from income tax a portion of the gain from conservation sales	NI	NI	NI	NI	NI
20. Assess water quality trends	–	I/E	I/E	I/E	I/E
21. Conserve and enhance biodiversity	–	PI	PI	PI	PI
Strengthening Economies of Rural Communities Recommendations					
22. Increase funding for Rural Community Assistance programs	I	–	–	–	–
23. Encourage marketing cooperatives and networks	PI	PI/E	NI	PI	PI
24. Direct assistance to natural resource-based businesses	–	PI	PI	PI	PI
25. Authorize and fund Community Development Financial Institutions or a similar program	I	–	–	–	–
26. Promote public policy to provide forest-based recreation	I	I	I	I	I
27. Improve workplace safety	PI	I	I	I	I
28. Reform workers' compensation insurance programs	–	I	PI	I	PI
29. Review the effectiveness of administrative rules	–	PI/E	PI/E	PI/E	PI/E
30. Simplify and stabilize the regulatory process	–	PI	PI	PI	PI
31. Review land use planning programs	–	I	PI	PI	I
32. Establish consistent truck-weight regulations	–	NI	NI	NI	NI
Promoting More Informed Decisions Recommendations					
33. Support cooperative efforts among four state universities	NI	NI	NI	NI	NI
34. Track and analyze land trends	–	NI	I/E	NI	NI
35. Conduct and publish decennial surveys in a timely fashion	I/E	–	–	–	–
36. Use the Northern Forest Resource Inventory	–	PI	PI	PI	PI
37. Promote natural resource education for the public	–	PI	PI	PI	PI

KEY

I = Implementation begun and substantial progress made

PI = Implementation begun and partial progress made

*** Further implementation accomplished since 2000.**

I/E = Implementation begun and substantial progress made, but not as the NFLC envisioned
PI/E = Implementation begun and partial progress made, but not as the NFLC envisioned
NI = Not Implemented
– = Implementation was not the responsibility of this government or entity

The entire SUNY report can be found in Appendix D.

Appendix A

Land Ownership in the Northern Forest Region (acres) 1988

Ownership/State	Maine	New Hampshire	New York	Vermont	TOTAL
Private Land					
Industrial	7,700,000	500,000	1,200,000	300,000	**9,700,000**
Large-Non-industrial	3,100,000	50,000	500,000	50,000	**3,600,000**
Other Private	3,400,000	350,000	3,100,000	1,550,000	**8,400,000**
Total Private	**14,200,000**	**900,000**	**4,800,000**	**1,900,000**	**21,800,000**
Public Land					
State	700,000	50,000	2,800,000	90,000	**3,640,000**
Federal	80,000	200,000	0	6,000	**286,000**
Total Public	**780,000**	**250,000**	**2,800,000**	**96,000**	**3,926,000**
Total Area	**14,980,000**	**1,150,000**	**7,600,000**	**2,000,000**	**25,726,000**

Source: *Finding Common Ground*, Appendix J

Appendix B

Counties within the 26 million acre "Northern Forest" region of Maine, New Hampshire, Vermont and New York as identified in the Northern Forest Lands Study and Northern Forest Lands Council – 1988-1994.

Maine	**New Hampshire**	**New York**	**Vermont**
Aroostook		Clinton	Caledonia
Franklin	Coos	Essex	Essex
Hancock		Franklin	Franklin
Oxford		Fulton	Lamoille
Penobscot		Hamilton	Orleans
Piscataquis		Herkimer	Washington
Somerset		Jefferson	
Washington		Lewis	
		Oneida	
		Oswego	
		St. Lawrence	
		Warren	

Appendix C

Land Ownership and Mill location Maps of the Northern Forest

Appendix D

The Implementation of the Northern Forest Lands Council's Recommendations: An Analysis Six Years Later

A Report by

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The State University of New York
College of Environmental Science and Forestry
Syracuse, New York

for

The North East *State* Foresters Association
Concord, New Hampshire

November 7, 2000

Acknowledgments

This report was made possible by the scores of people who took the time to provide my research aides and myself with information on the implementation of the Northern Forest Lands Council's recommendations. While I hesitate to mention names, because each person's input helped make this a more comprehensive report, I want to thank the following "key state contacts" and former NFLC members (or their designated agent) who participated in one-half to one hour telephone interviews with my research aides:

- James Beil, New York State Department of Environmental Conservation;
- Jerry Bley, Creative Conservation, Maine;
- Susan Francher, New Hampshire, Department of Resources and Economic Development;
- John Harrigan, Landowner, New Hampshire;
- Donald Mansius, Maine Department of Conservation;
- Janice McAllister, Retired Selectwoman, Maine;
- Peter Meyer, E.B. Hyde Corporation;
- Conrad Motyka, Vermont Department of Forests, Parks and Recreation;
- Richard Ober, Society for the Protection of New Hampshire Forests;
- Steven Sinclair, Vermont Department of Forests, Parks and Recreation;
- Robert Stegemann, International Paper Corporation, New York; and
- Barbara Sweet, New York Blue Line Council, New York.

I would like to thank the North East *State* Foresters Association (NEFA) for the grant that supported this research and report. I would also like to thank NEFA's executive director, Charles Levesque, for his assistance with this project. NEFA is an organization representing the State Foresters of Maine, New Hampshire, New York and Vermont and the USDA Forest Service's State & Private Forestry Bureau. NEFA's mission is to encourage sound decisions about the management and use of forest resources in the NEFA's 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.

NEFA seeks to accomplish this mission through the development of high quality information about the region's forests and acting as a forum for presentation and discussion of these issues.

The Faculties of Forestry and Environmental Studies and the Office of Research Programs at the State University of New York College of Environmental Science and Forestry (SUNY ESF) provided direct and indirect support for this research. My research assistants, Wyatt Hundrup, Jennon Lewis, Lucas Lorenz, and Genifer Tarkowski, mailed questionnaires and compiled results, conducted the initial telephone interviews, and provided numerous suggestions that made this report more comprehensive than it would have been without their support. Drs. Donald W. Floyd and William R. Bentley provided guidance throughout the research, and reviewed and commented on draft versions of the report. Their assistance was invaluable to this report, yet any omissions or mistakes are mine, and should be attributed only to myself.

Robert W. Malmsheimer
SUNY ESF
Syracuse, NY
November 7, 2000

EXECUTIVE SUMMARY

In September 1994, the Northern Forest Lands Council (NFLC) published *Finding Common Ground: Conserving the Northern Forest* [hereinafter *Finding Common Ground*], a 178-page report with 37 recommendations directed at conserving the forests of the four-state region known as the Northern Forest (NFLC 1994a). *Finding Common Ground* was the by-product of one previous study and four years of in-depth research, data assessment, expert consultation, pubic meetings, and collaborative analysis. This effort was dedicated to maintaining the "traditional patterns of land ownership and use in the Northern Forest," which consists of the 26 million acres of contiguous forest land in Maine, New Hampshire, Vermont, and New York.

This report provides an assessment of federal and state progress in implementing the NFLC's 37 recommendations in the entire four state area. We collected implementation data for each recommendation from telephone interviews, mail questionnaires, and legislative records, and verified this information with independent documentary data. This data was analyzed to determine if each recommendation was implemented; implemented, but not as the NFLC envisioned; partially implemented; partially implemented, but not as the NFLC envisioned; or not implemented.

Overall, states made substantial progress on implementing, or partially implementing, nearly the same number of recommendations. States made substantial implementation progress on recommendations: 10 (Educate forest users and the public about sound forest management), 13 (Fund public land management agencies), 15 (Refine state land acquisition planning programs), 17 (Fund state land acquisition programs), 18 (Employ a variety of conservation tools), 26 (Promote public policy to provide forest-based recreation), and 27 (Improve workplace safety). No state implemented recommendations: 8 (Allow inflation adjustment on the original cost of timber), 19 (Exclude from income tax a portion of the gain from conservation sales), 32 (Establish consistent truck-weight regulations), or 33 (Support cooperative efforts among four state universities).

The federal government made substantial implementation progress on only three of the NFLC's recommendations: 22 (Increase funding for Rural Community Assistance programs), 25 (Authorize and fund Community Development Financial Institutions), and 26 (Promote public policy to provide forest-based recreation). The federal government failed to implement recommendations: 3 (Fund the Stewardship Incentive Program), 8 (Allow inflation adjustment on the original cost of timber), 9 (Eliminate the 100 hours per year rule), 13 (Fund public land management agencies), 14 (Institute a national excise tax on recreation equipment), 16 (Fund the Land and Water Conservation program), 19 (Exclude from income tax a portion of the gain from conservation sales), and 33 (Support cooperative efforts among four state universities).

Three recommendations were implemented, but not as the NFLC envisioned. These were recommendations: 4 (Encourage green certification programs), 12 (Achieve principles of sustainability), and 20 (Assess water quality trends).

This report documents many accomplishments. Considerable change has occurred in the Northern Forest since the NFLC's recommendations. Green certification, easements and other

non-fee ownership mechanisms, improved workplace safety, and increased forest-based recreation are important examples. Many recommendations, however, have been only partially implemented or not implemented at all. This is especially true of recommendations directed toward Congress. Action by the Congress will require using the federal budget surplus to fund the actions or reduce tax impacts on private owners. To date, this only has occurred in the shotgun fashion commonly known as the pork barrel.

To paraphrase one of our interviewees, "the NFLC and its recommendations got people's attention and got them talking." We hope that this report rekindles interest in the NFLC's recommendations both within the states and in Washington, D.C. and empowers them to implement many of the remaining recommendations.

Table 7.2 : Implementation of NFLC Recommendations 1994-2000

Recommendations	Fed	ME	NH	NY	VT
Fostering Stewardship of Private Land Recommendations					
1. Fund Forest Legacy	PI	–	–	–	–
2. Fund state easement programs	–	I	PI	I	I
3. Fund the Stewardship Incentive Program	NI	–	–	–	–
4. Encourage green certification programs	–	I/E	I/E	I/E	I/E
5. Strengthen current use tax programs	–	PI	I	NI	PI
6. Consider replacing the *ad valorem* taxation system	–	NI	NI	NI	NI
7. Change estate tax policies	PI	PI	PI	PI	PI
8. Allow inflation adjustment on the original cost of timber	NI	NI	NI	NI	NI
9. Eliminate the 100 hours per year rule	NI	–	–	–	–
10. Educate forest users and the public about sound forest management	–	I	I	I	I
11. Assess forest practices and programs	–	I	PI	PI	I
12. Achieve principles of sustainability	–	I/E	I/E	I/E	I/E
Protecting Exceptional Resources Recommendations					
13. Fund public land management agencies	NI	I	I	I	I
14. Institute a national excise tax on recreation equipment	NI	–	–	–	–
15. Refine state land acquisition planning programs	–	I	I	I	I
16. Fund the Land and Water Conservation program	NI	–	–	–	–
17. Fund state land acquisition programs	–	I	I	I	I
18. Employ a variety of conservation tools	–	I	I	I	I

19. Exclude from income tax a portion of the gain from conservation sales	NI	NI	NI	NI	NI
20. Assess water quality trends	–	I/E	I/E	I/E	I/E
21. Conserve and enhance biodiversity	–	PI	PI	PI	PI
Strengthening Economies of Rural Communities Recommendations					
22. Increase funding for Rural Community Assistance programs	I	–	–	–	–
23. Encourage marketing cooperatives and networks	PI	PI/E	NI	PI	PI
24. Direct assistance to natural resource-based businesses	–	PI	PI	PI	PI
25. Authorize and fund Community Development Financial Institutions or a similar program	I	–	–	–	–
26. Promote public policy to provide forest-based recreation	I	I	I	I	I
27. Improve workplace safety	PI	I	I	I	I
28. Reform workers' compensation insurance programs	–	I	PI	I	PI
29. Review the effectiveness of administrative rules	–	PI/E	PI/E	PI/E	PI/E
30. Simplify and stabilize the regulatory process	–	PI	PI	PI	PI
31. Review land use planning programs	–	I	PI	PI	I
32. Establish consistent truck-weight regulations	–	NI	NI	NI	NI
Promoting More Informed Decisions Recommendations					
33. Support cooperative efforts among four state universities	NI	NI	NI	NI	NI
34. Track and analyze land trends	–	NI	I/E	NI	NI
35. Conduct and publish decennial surveys in a timely fashion	I/E	–	–	–	–
36. Use the Northern Forest Resource Inventory	–	PI	PI	PI	PI
37. Promote natural resource education for the public	–	PI	PI	PI	PI

KEY

I = Implementation begun and substantial progress made

PI = Implementation begun and partial progress made

I/E = Implementation begun and substantial progress made, but not as the NFLC envisioned
PI/E = Implementation begun and partial progress made, but not as the NFLC envisioned
NI = Not Implemented
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TABLE OF CONTENTS

INTRODUCTION

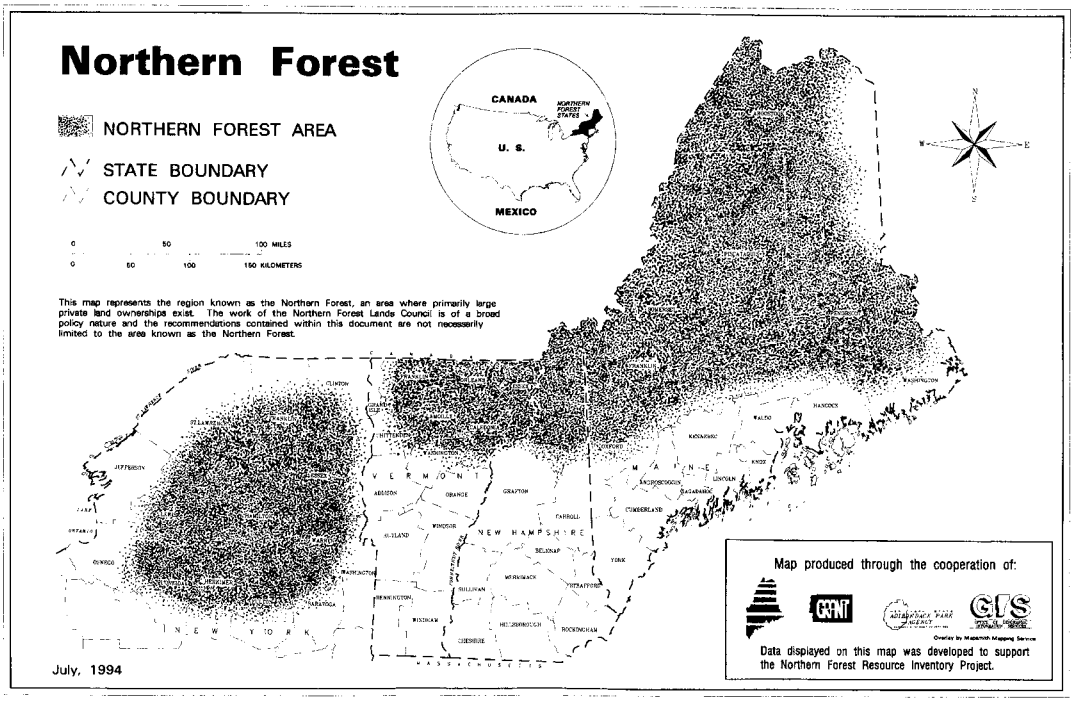
In September 1994, the Northern Forest Lands Council (NFLC) published *Finding Common Ground: Conserving the Northern Forest* [hereinafter *Finding Common Ground*], a 178-page report with 37 recommendations directed at conserving the forests of the four-state region known as the Northern Forest (NFLC 1994a). *Finding Common Ground* was the by-product of one previous study and four years of in-depth research, data assessment, expert consultation, pubic meetings, and collaborative analysis. The NFLC also published a several thousand page Technical Appendix of all its research. This effort was dedicated to maintaining the "traditional patterns of land ownership and use in the Northern Forest," which consists of the 26 million acres of contiguous forest land in Maine, New Hampshire, Vermont, and New York (NFLC 1994a, 1).

This report provides an objective, up-to-date assessment of federal and state progress in implementing the NFLC's 37 recommendations. Since the NFLC's recommendations were intended to apply to the entire four state area, not just the Northern Forest's 25 counties and more than 370 communities, we assessed their implementation in all the forests of Maine, New Hampshire, New York, and Vermont. We also assessed which conditions have changed since *Finding Common Ground* was published that have affected the implementation of the NFLC's recommendations.

After reviewing the NFLC's history, this section describes how we collected and analyzed the data in this report. The next section evaluates whether the NFLC's 37 recommendations have been implemented individually. We then present our conclusions.

History

The Northern Forest stretches from eastern Maine through New Hampshire and Vermont across northern New York almost to Lake Ontario. The recommendations of the NFLC have their roots in 1988, when Diamond International Corporation marketed approximately one million acres of forest land. While the large blocks of forest land had been sold for centuries in the Northern Forest, this sale was different because some of these lands were marketed for their development, rather than timberland, value. The Diamond International sale sparked public and legislative attention.


Northern Forest
NORTHERN FOREST AREA
STATE BOUNDARY
COUNTY BOUNDARY
0 50 100 MILES
0 50 100 150 KILOMETERS
This map represents the region known as the Northern Forest, an area where primarily large private land ownerships exist. The work of the Northern Forest Lands Council is of a broad policy nature and the recommendations contained within this document are not necessarily limited to the area known as the Northern Forest.
CANADA
NORTHERN FOREST STATES
U. S.
MEXICO
VERMONT
NEW HAMPSHIRE
MAINE
NEW YORK
July, 1994
Map produced through the cooperation of:
Data displayed on this map was developed to support the Northern Forest Resource Inventory Project.

Vermont Senator Patrick Leahy and New Hampshire's then-Senator Warren Rudman prompted Congress to initiate the Northern Forest Lands Study, which was undertaken by the USDA Forest Service. The Northern Forest Lands Study Report was released in 1990 (Harper 1990; see also US House 1989; US Senate 1991). A four-state Governors' Task Force on Northern Forest Lands worked with the Study and provided the state's perspectives and wrote its own report to the four governors, making specific recommendations for action (Governor's Task Force 1990). One of those recommendations was to establish the NFLC.

Congress created the NFLC in 1990 to continue the Northern Forest Lands Study and the Governors' Task Force on the Northern Forest. The NFLC was designed to examine the issues and develop specific recommendations to Congress, state governors, and state and local elected officials. The Council consisted of four governor appointments from each of the four states and one USDA Forest Service representative. Each state appointee represented one of four constituencies: forest landowners, environmental interests, state conservation agencies, and local communities. During its four years, the Council and its staff:

- created Citizen Advisory Committees in each state, representing landowners, property rights interests, environmental interests, timber industry, academia, recreation and tourism businesses, and communities;
- created work groups to serve as advisors to the Council's seven subcommittees studying specific issues;
- held regular public meetings and forums throughout the region;
- conducted issue-specific public forums on land conversion, local forest-based economies, biological resource diversity, and state and federal taxes;
- published a comprehensive *Technical Appendix* of all its research and forum proceedings (NFLC 1994c);
- released *Listening Log of Public Comments on the Findings and Options*, which summarized more than 1,000 pages of written public comments (NFLC 1993);
- released its report of draft recommendations in March 1994 (NFLC 1994b); and
- heard from and collected comments on the draft recommendations from thousands of people.

In November 1994, the NFLC released its final report, *Finding Common Ground* (NFLC 1994a). The report contained the NFLC's 37 recommendations to the Northern Forest states and Congress of how "traditional patterns of land ownership and use" could be maintained in the Northern Forest (NFLC 1994a, 1).

This report is the second to assess the states' and Congress's progress in implementing those recommendations. In 1997, Joseph Michaels, the NFLC federal liaison from the USDA Forest Service, conducted an implementation analysis that was distributed to the NFL State Coordinators, the four states' Foresters, NFLC members, and others. Mr. Michaels' analysis is included in the Appendix of this report, and can be compared with this report to analyze recommendation implementation progress during the past four years.

This year the NEFA developed a Request for Proposals to locate an organization to provide an objective assessment of the implementation progress since *Finding Common Ground* was

published. SUNY ESF was awarded this contract and has collected and analyzed data in accordance with an agreement between the two parties.

Data Collection

We used multiple research methods to evaluate the implementation of NFLC's recommendations. This enabled us to collect data from a variety of sources and cross-check the accuracy of implementation information. We collected data in two stages.

Stage One: Planning and Initial Data Collection

Using the NFLC's analysis in *Finding Common Ground*, we categorized the organizations responsible for recommendation implementation into five categories: Congress, federal government agencies, state legislatures, state government agencies, and other organizations. For each category of organization, we initially used one or two data collection methods.

- *Congress* – Review of enacted legislation and telephone interviews with national stakeholder organization staff.
- *Federal Government Agencies* – Telephone interviews with federal agency personnel and telephone interviews with national stakeholder organization staff.
- *State Legislatures* – Review of enacted legislation and telephone interviews with identified experts.
- *State Government Agencies* – Telephone interviews with identified experts.
- *Other Organizations* – Telephone interviews with identified experts.

Specifically, these data collection methods consisted of:

- *Review of enacted legislation:* We reviewed federal and state legislative records for statutes that implemented the NFLC's recommendations.
- *Telephone interviews with national stakeholder organization staff:* We conducted telephone interviews with the staff of the following national organizations to determine whether NFLC's recommendations were implemented:
  - American Forest & Paper Association,
  - National Association of State Foresters,
  - The Nature Conservancy,
  - The Northern Forest Alliance, and
  - Society of American Foresters.

  We attempted to interview the staff of the following organizations, but were unable to do so: National Audubon Society, The Sierra Club, The Trust for Public Lands, and The Wilderness Society.
- *Telephone interviews with federal agency personnel:* We conducted telephone interviews with the staff of the federal agencies to determine whether NFLC's recommendations were implemented.
- *Telephone interviews with identified experts:* To determine experts for specific recommendations, we sent a questionnaire to each member of the NFLC's citizen advisory committee and subcommittee work group members. The questionnaire listed the NFLC's twenty-nine recommendations for state government or state organizations to implement and asked the respondent to identify one or two of the experts in his or her home state on that recommendation. To assist respondents, the survey contained a list of the NFLC's citizen advisory committee and subcommittee work group members for the respondent's home state. Appendix B contains a copy of the questionnaire. One week

after mailing the questionnaire, we sent a follow-up letter. Three weeks after the questionnaire was mailed, we attempted to conducted telephone interviews with the two most often-named individuals for each recommendation in each state to discuss the implementation of that specific recommendation.

The questionnaire we sent the NFLC's citizen advisory committee and subcommittee work group members contained two other sections. The first asked respondents to assess whether the NFLC's six objectives had been achieved and if the following conditions had improved in the Northern Forest, by government:

- supporting property owners to hold and manage land for forest products and other benefits;
- helping communities strengthen their natural resource-based economies;
- protecting biological diversity through management based on sound scientific principles;
- acquiring lands for public ownership based on clear public priorities, demonstrated need, and fairness to landowners;
- providing public recreation on public and private land as an important part of the region's economy and way of life; and
- recognizing that for the very long term, the use of conservation easements to protect lands from development will be needed to ensure sustainability of the forest resource in areas with significant development pressures (NFLC 1994a, 12-13).

The questionnaire contained a second section that enabled respondents to provide us with information on the implementation of specific NFLC recommendations.

In addition to these methods for specific NFLC recommendations, we contacted the four "key state contacts" previously identified by NEFA and the seventeen members of the NFLC. We conducted in-depth interviews with each of the key state contacts and all of the NFLC members that agreed to be interviewed, or their designee.

Stage Two: Data Verification

When we began this project, we anticipated that we would write our report based on the data we collected in Stage One. However, as we collected data, we encountered an unexpected problem. Our interviewees were unable to provide us with specific information about the implementation of most of the NFLC recommendations. This was due to the sheer magnitude of the NFLC's recommendations. While there are 37 recommendations, 16 of these required federal action and 29 of these required state action. **Interviewees were only able to provide us with general information about the implementation of most recommendations, rather than the specific information we needed to analyze whether the recommendations were implemented.**

To address this problem, we collected supplemental independent documentary data, including internal government and independent third-party reports and evaluations, on recommendation implementation. We also conducted supplemental interviews with additional government and non-government personnel on recommendation implementation We attempted to verify all our interview data with this supplemental data. This information prevented us from relying too heavily on interviewee opinion and improved the report's reliability.

While we collected small missing pieces of data, and data that we needed to make a complete analysis of recommendation implementation until the end of October 2000, we used a September 15, 2000 deadline for recommendation implementation. We should note that this deadline caused

us to evaluate some recommendations when legislation was pending that could implement the recommendation. This was particularly true for those recommendations that depended on the enactment of the Conservation and Redevelopment Act (CARA) in the Congress, since some versions of CARA would completely or partially implement a number of recommendations.

Data Analysis

For each recommendation, we analyzed all available data and made a determination whether the recommendation was:

- Implemented;
- Implemented, but not as the NFLC envisioned;
- Partially implemented;
- Partially implemented, but not as the NFLC envisioned; or
- Not implemented.

Our implementation assessment was based simply on whether the NFLC's recommendation was implemented. Our decision rules for this assessment were broad. If all or the vast majority of the recommendation was implemented, we assessed the recommendation as implemented. If some of the recommendation was implemented or some progress had been made on implementation, we assessed the recommendation as partially implemented. If little or no progress had been made on the recommendation, we assessed it as not implemented. In a few instances, the recommendation was implemented or partially implemented, but in a different manner than the NFLC had recommended. For example, the NFLC recommended that state forestry and economic development agencies encourage and cooperate with green certification programs (Recommendation 4). While green certification programs have been implemented, this has generally occurred without government involvement. Thus, we assessed this recommendation as "implemented, but not as the NFLC envisioned."

Many of our interviewees were concerned that we would interpret their comments on recommendation implementation as proof that the work of the NFLC had caused a recommendation to be implemented. We did not. Determining whether the NFLC's recommendation triggered recommendation implementation was beyond the scope of our research and is not included in our report. Our task was to ascertain whether the recommendation was implemented, not why it was implemented.

Finally, implementation assessments are only as effective as the data used in their analysis. This report evaluated the implementation of 132 recommendations by five different governments (i.e., 16 recommendations for the federal government, and 29 recommendations for each state government). We were able to locate vast amounts of implementation information for some of these recommendations. For other recommendations, it was difficult to locate any information or multiple sources of information. This report is based on the best information we were able to secure. If we omitted implementation information or incorrectly analyzed it, we take full responsibility. Such omissions or flawed analysis was not the responsibility of NEFA or any of the experts we interviewed.

THE IMPLEMENTATION OF THE NORTHERN FOREST LANDS COUNCIL RECOMMENDATIONS

Introduction

The state of Maine substantially implemented (as the NFLC envisioned or differently) more than 48% of the NFLC's recommendations, one more than any other state. Vermont substantially implemented 45% of the NFLC recommendations, while New Hampshire and New York substantially implemented 41% of the recommendations (Table 2). Overall, states implemented or partially implemented nearly the same number of recommendations, the difference being whether the recommendations were implemented completely or partially. The federal government implemented, or partially implemented, less than half of the NFLC's recommendations.

Table 2: Summary of Recommendation Implementation Results

Assessment	Federal Government (n=16)	Maine (n=29)	New Hampshire (n=29)	New York (n=29)	Vermont (n=29)
Implementation begun and substantial progress made	3 (19%)	11 (38%)	8 (28%)	9 (31%)	10 (34%)
Implementation begun and substantial progress made, but not as the NFLC envisioned	1 (6%)	3 (10%)	4 (14%)	3 (10%)	3 (10%)
Implementation begun and partial progress made	4 (25%)	7 (24%)	10 (34%)	9 (31%)	9 (31%)
Implementation begun and partial progress made, but not as the NFLC envisioned	0	2 (7%)	1 (3%)	1 (3%)	1 (3%)
Not implemented	8 (50%)	6 (21%)	6 (21%)	7 (24%)	6 (21%)

An analysis of NFLC citizen advisory committee and subcommittee work group members' 52 responses (response rate equaled 32.5%) to our six statements designed to determine whether conditions had improved in the Northern Forest determined that questionnaire respondents thought that conditions had improved in two areas, remained the same for three areas, and deteriorated in one area since the NFLC issued its findings. Respondents agreed recreation opportunities and conservation easement use had improved since 1994. They thought that: property owners' ability to hold and mange their lands for forest products; biological diversity protection based on scientific principles; and public lands acquisition based on clear priorities, demonstrated need and fairness to landowners, had remained the same. Respondents did not believe that communities had been able to strengthen their natural resource-based economies. Appendix B contains a list of our questions.

These results generally conform to the implementation of corresponding recommendations. States implemented conservation easement recommendations, such as recommendations 2 (Fund state easement programs), 17 (Fund state land acquisition programs), and 18 (Employ a variety

of conservation tools). States and the federal government also implemented recommendation 26, which involved promoting public policy to provide forest-based recreation. Other successfully implemented recommendations include recommendations: 10 (Educate forest users and the public about sound forest management), 11 (Fund state public land management agencies, 15 (Refine state land acquisition planning programs), 20 (Assess water quality trends), 22 (Increase funding for Rural Community Assistance programs), 25 (Authorize and fund Community Development Financial Institutions), and 27 (Improve workplace safety).

The federal government failed to implement five recommendations: 3 (Fund the Stewardship Incentive Program), 9 (Eliminate the 100 hours per year rule), 13 (Fund public land management agencies), 14 (Institute a national excise tax on recreation equipment), and 16 (Fund the Land and Water Conservation program). The federal government and the states failed to implement three recommendations: 8 (Allow inflation adjustment on the original cost of timber), 19 (Exclude from income tax a portion of the gain from conservation sales), and 33 (Support cooperative efforts among four state universities). The states generally failed to implement four recommendations: 5 (Strengthen current use tax programs), 6 (Consider replacing the *ad valorem* taxation system), 33 (Support cooperative efforts among four state universities), and 34 (Track and analyze land trends).

Other recommendations were partially implemented. Table 1 (page 4) contains a summary of recommendation implementation.

The remainder of this section assesses each recommendation individually, under their headings in *Finding Common Ground*. After presenting the recommendation, we provide an assessment of its implementation and the prospects for future implementation. We have also included a list of related recommendations.

Fostering Stewardship of Private Lands

Stewardship Incentives

Recommendation 1: Fund Forest Legacy.
Congress should fund Forest Legacy consistently and adequately to make it a more effective tool for protecting working landscapes. The Council recommends a Forest Legacy appropriation of $25 million per year for the Northern Forest states. The effectiveness of the Forest Legacy Program should be enhanced by changing the existing legislation to include:

(a) the option for state ownership of easements;
(b) the option for direct grants to the states;
(c) payments in lieu of taxes to communities for easements, where appropriate;
(d) amendments to the "purpose" section of the law to include timber management as a use that Forest Legacy seeks to protect; and
(e) funds for states to monitor easement compliance.

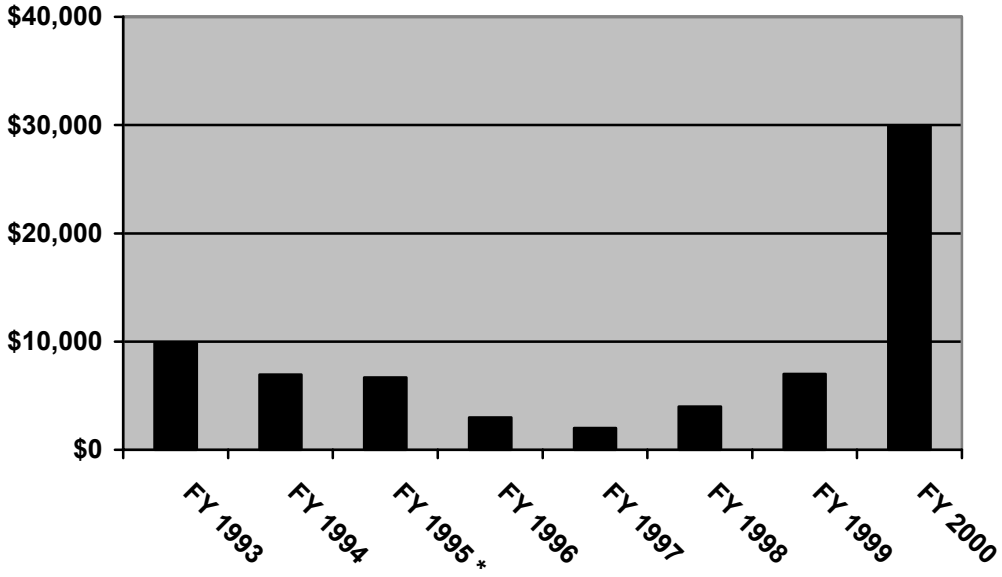
Assessment of Implementation: Implementation begun and partial progress made

From April 1993 to April 2000, Forest Legacy Program provided more than $13 million to Northern Forest states. This money conserved 93,420 acres of the Northern Forest (Table 3). Some of these projects were funded with money appropriated after the NFLC's recommendations were issued. After declining for most of the early and middle 1990s, Forest Legacy funding increased the past three years (Figure 1).

Table 3: Completed Forest Legacy Acquisition Projects (April 1993 to April 2000)

State	Acres	Forest Legacy Payment	Total Project Value
Maine	31,398	$5,793,000	$6,393,000
New Hampshire	12,797	$1,804,000	$5,112,000
New York	638	$337,000	$337,000
Vermont	48,587	$5,336,000	$7,550,000
TOTALS	93,420	$13,270,000	$19,392,000

■ **Figure 1: Forest Legacy Appropriations (in thousands of dollars)**



* Congress rescinded $7,800,000 of unspent funds in FY 1995, including all the FY 1995 funds, plus $1,112,000 of prior year funds. This amount represents the original appropriations before the rescission.

While Forest Legacy funding has increased recently, Congress failed to follow the NFLC's recommendation and allocate $25 million specifically for the Northern Forest. Interviewees asserted two reasons for this lack of implementation: regional politics (other regions of the country oppose Northern Forest-specific funding) and the lack of a coordinated regional commitment (i.e., Northern Forest states have made individual efforts to secure Forest Legacy funds, but have failed to do so as a cohesive unit).

In addition to the funding recommendation, the NFLC recommended five amendments to the Forest Legacy program. Two of these, the option for state ownership of easements and direct grants to states were implemented. The other three amendments have not been enacted.

Prospects for Future Implementation: Forest Legacy funding should increase in the future. For example, the President's FY 2001 budget recommended a $60 million budget, and versions of the Conservation and Reinvestment Act (CARA) included more than $50 million of appropriations for the program. Legislative and public support for CARA and the programs increase the likelihood of future implementation, as does the federal budget surplus.

Related Recommendations: 2 (Fund state easement programs), 17 (Fund state land acquisition programs), 18 (Employ a variety of conservation tools), and 19 (Exclude from income tax a portion of the gain from conservation sales).

Recommendation 2: Fund state easement programs.
States should continue to support and fund their conservation easement programs. In addition to employing traditional conservation easements to protect productive forest land from changes in use, the programs should explore emerging voluntary conservation measures such as:

(a) acquisition and resale of development rights by the public on private lands;
(b) term easements (easements of specified duration);
(c) rolling easements (term easements in which the easement can be renewed at specified intervals); and
(d) voluntary agreements.

Assessment of Implementation: Implementation begun and substantial progress made in Maine, New York, and Vermont. Implementation begun and partial progress made in New Hampshire.

Conservation easements are one of a number of mechanisms, including land acquisition, that state conservation programs use to protect the Northern Forest. Funding for these programs comes from federal and state sources. Each of the Northern Forest states have or may use cost sharing programs, such as the Forest Legacy program (see Recommendation 1), to leverage funds for their conservation easement programs. State funding sources and conservation programs are discussed below.

State conservation programs encourage multiple land conservation mechanisms, such as fee acquisition and conservation easements. They also conserve non-Northern Forest resources, such as historical structures and ocean coastal areas. Thus, funding levels for Northern Forest conservation is less than the amount listed below.

These programs do not require states to utilize the "emerging voluntary conservation measures" recommended by the NFLC. However, the programs' flexibility generally enables their use in the appropriate situation.

Maine: The Land for Maine's Future Fund is the state's primary land conservation funding mechanism. The Fund was revitalized in 1999 when voters approved a $50 million bond to finance a land conservation program. The Bond Act, and recent changes to the Fund program by the legislature, reflected 1997 recommendations by Maine's Land Acquisition Priorities Advisory Committee. The program's new guidelines continue the policy of voluntary agreements. The primary use must be for other than timberland use.

New Hampshire: This year, New Hampshire enacted its first state-funded land conservation program since the New Hampshire Land Conservation Investment Program ended in 1993. The New Hampshire Land and Community Heritage Investment Program (LCHIP) Act was modeled on many of the recommendations in the New Hampshire Land and Community Heritage Commission's November 1999 report. LCHIP provides $3 million in funding from an initial appropriation, $9 million less than the Commission recommended, for land and conservation easement acquisition by municipalities and publicly-supported nonprofit corporations. Full funding will be debated in the New Hampshire Legislature in 2001. The program requires these entities to provide at least 50% of the acquisition resources.

New York: Since 1994, the New York State Environmental Protection Fund has provided almost $200 million for state land acquisitions and millions more for municipal open space programs. In addition, the Clean Water/Clean Air Bond Act has provided $150 million for land and conservation easement acquisition since 1996. In 1996-1997, $16.5 million of the Bond Act was appropriated for open space. Appropriations increased the first three years and are now declining: 1997-1998: $20 million; 1998-1999: $40 million; 1999-2000: $40 million; and 2000-2001: $30 million. Bond Act projects focus on voluntary acquisitions. The individualized nature of project funding provides flexibility so that Bond Act funds can be used to facilitate specific NFLC recommendations. In 1999, the state purchased the largest conservation easement in its history, an 110,000 acre conservation easement covering the former Champion lands in the Adirondack Park.

Vermont: Land Conservation is primarily funded through the Vermont Housing and Conservation Trust Fund. For the past three years, state funds have averaged $1 million per year, not including a 1999 special legislative appropriation of $4.5 million for the Champion Lands project. The Vermont Agency of Natural Resources' Land Acquisition Review Committee (LARC) reviews and issues recommendations on all land offers. The Agency's Secretary considers the LARC's recommendation and makes the final determination. In 1999, the Vermont Agency of Natural Resources completed a "Lands Conservation Plan" to guide the agency's land acquisition and other land conservation measures, including conservation easements. The plan encourages the use of the NFLC's land exchanges and voluntary agreements recommendations.

Prospects for Future Implementation: All four Northern Forest states have funds allocated for conservation easements. While these programs do not require the use of the NFLC's "emerging voluntary conservation measures," the programs' flexibility allows their use. The prospects for future implementation depend upon the mechanisms states have used to allocate funds. Long-term bond acts provide stable sources of income over the bond act's term. However, bond acts have limited terms. Funding based on future allocations from legislatures require continued public and legislative support for state easement programs. Future state budget surpluses would increase future implementation prospects. Continued public and legislative support for voluntary conservation measures appears likely.

Related Recommendations: 1 (Fund Forest Legacy), 17 (Fund state land acquisition programs), 18 (Employ a variety of conservation tools), and 19 (Exclude from income tax a portion of the gain from conservation sales).

Recommendation 3: Fund the Stewardship Incentive Program.

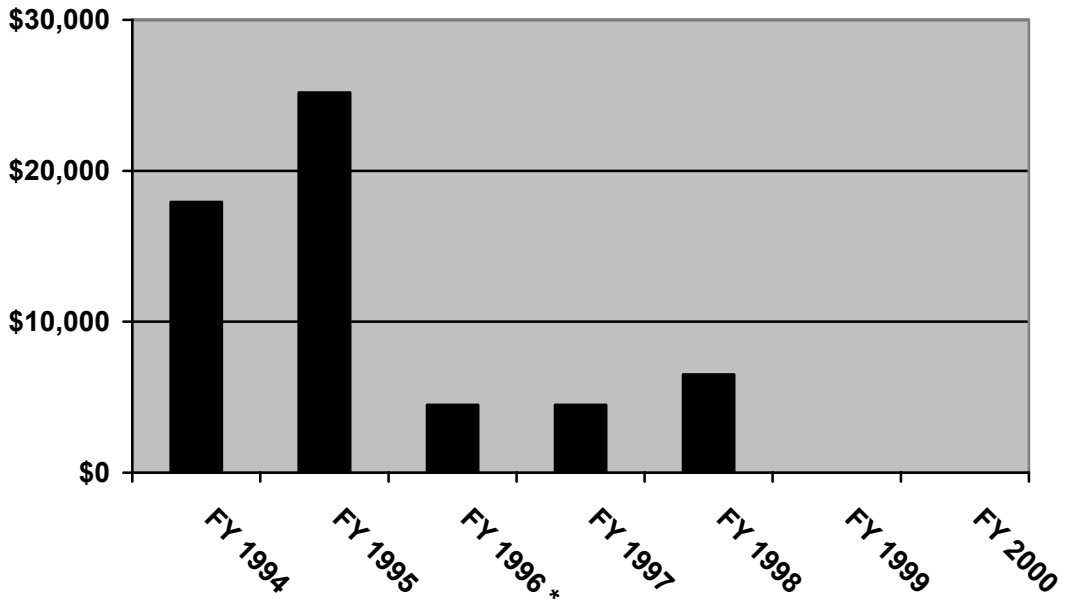
Congress should fund the Stewardship Incentive Program (SIP) at the fully authorized level. There is a waiting list of landowners who have requested SIP funds. Adequate funding for SIP will encourage sound forest management by more landowners. Practices currently eligible for cost-sharing under SIP include riparian and wetland protection and improvement, fisheries habitat enhancement, and wildlife habitat enhancement, in addition to timber management. Cost-share priority for fisheries and wildlife habitat enhancement is for activities that enhance the habitats of threatened and endangered species and species of special concern. The effectiveness of the program should be enhanced by:

(a) eliminating the constraint that only 25% of the funds in each state can be used each year for forest management plans,
(b) raising the 1,000 acre maximum eligibility requirement to 5,000 acres,
(c) allowing states to provide cost-share funds for expenses related to voluntary land protection, such as appraisals and surveys, and
(d) requiring landowners to reimburse the granting agency if conversion to non-forest use occurs within ten years of receiving the cost-share funds.

Assessment of Implementation: Not Implemented

Rather than fund the Stewardship Incentive Program (SIP) at authorized levels, Congress reduced, then eliminated, funding for the program. (Figure 2). Congress has not amended the SIP to include the NFLC's recommendations.

Figure 2: Stewardship Incentive Program Appropriations (thousands of dollars)



Prospects for Future Implementation: While the President included a $3.25 million appropriation in his proposed budget, interviewees indicated that the program lacks Congressional support. At the state and local level, there is general if not consistent understanding that private forest owners produce benefits and they will produce more if society pays. However, Congress associates its experience with agricultural subsidies with forest subsidies and is reluctant to fund the programs unless they have extremely broad public support, which SIP does not. If political will develops, federal surpluses increase prospects for future implementation. A number of organizations, including the National Association of State Foresters, are working on a new cost share program that many hope will be part of the next Farm Bill. This would replace the Stewardship Incentive Program and the Forestry Incentives Program.

Related Recommendations: 10 (Educate forest users and the public about sound forest management), 11 (Assess forest practices and programs), 12 (Achieve principles of sustainability), and 21 (Conserve biological diversity).

Recommendation 4: Encourage green certification programs. State forestry and economic development agencies should encourage and cooperate with emerging private green certification programs that recognize landowners who practice sustainable forest management. They should also work with state forest roundtables, as appropriate. The most successful and effective programs will meet the following requirements.

(a) Programs will be market-driven; that is, individual landowners and firms will seek certification based upon their assessment of the potential positive returns on their investment in certification, either through increased market share, increased product price, or other benefits.

(b) Certification criteria will be based on consistent definitions, and on quantitative and objective standards that are easily understandable by and available to the consuming public. Private sector firms would be the best to carry out standardization and compliance; however, marketing claims should adhere to current and future Federal Trade Commission guidelines.

(c) Certification will be financially feasible and practical for most sizes of land ownerships and firms. Smaller landowners need cost-effective ways to allow their participation in certification programs, such as certification of consulting foresters serving them, the Tree Farm program, and landowner cooperatives.

Assessment of Implementation: Implementation begun and substantial progress made, but not as the NFLC envisioned.

Green certification programs have flourished since the NFLC made this recommendation. Currently there are five certification programs:

- The American Forest Foundation's Tree Farm Program,
- The American Forest & Paper Association's (AF&PA) Sustainable Forestry Initiative,
- The Forest Stewardship Council's (FSC) Certification and Labeling Program,
- The International Standards Organization's (ISO) 14001 Environmental Management Systems, and
- The National Forestry Association's (NFA) Green Tag Forestry Program.

The AF&PA and FSC programs have been most active in the Northern Forest, certifying millions of acres including state owned lands (Table 4). The state-by-state analysis highlights green certification successes.

However, green certification programs have developed differently than the NFLC envisioned and have not necessarily met all of the criteria the NFLC listed for a "successful and effective program." For example, green certification has not increased market values and has been expensive to achieve. In addition, green certification has not been widely utilized by small landowners.

Table 4: Acres Certified in Each State (thousands of acres)

State	SFI Certification	FSC Certification
Maine	4,062	1,568
New Hampshire	230	27
New York	504	822
Vermont	0	8
TOTAL	4796	2425

Maine: Large landowners have embraced certification, while certification costs have prevented moderate and small landowners from participating in the program. Approximately, 42% of the state's forest acres have been certified. Eighty percent of large landowners have secured SFI or FSC certification. More than five million acres will begin the FSC certification process next year. Six forest products companies have secured FSC "chain-of-custody" certification, which requires businesses to establish systems that create a paper trail demonstrating certified materials are kept separate from non-certified materials.

New Hampshire: Two large landowners have secured certification. Certification costs have prevented moderate and small landowners from participating in the program. Eight New Hampshire businesses have secured FSC chain-of-custody certification. More than 27,000 acres have been NFA certified.

New York: Several large landowners have embraced some form of certification. Certification costs have prevented moderate and small landowners from participating in the program. More than 700,000 acres of state owned forest land and 105,000 acres of Domtar industrial lands have been FSC certified, and four forest products companies have FSC "chain-of-custody" certification. International Paper Company's more than one million acres (some of which are in New York) and 169,000 acres of Finch Pruyn & Co. lands have been certified by SFI. International Paper Company's certification also includes ISO. More than 1,200 acres have been NFA certified.

Vermont: In a model of how to overcome certification costs, small landowners organized Vermont Family Forests. In 1998, FSC certified 6,586 acres owned by the program's 31 landowners. Six businesses have secured FSC "chain-of-custody" certification.

Prospects for Future Implementation: Large landowners will continue to implement the NFLC's certification recommendation, albeit differently than NFLC envisioned. Future implementation by small to moderate sized landowners is unlikely, unless certification costs can be reduced or landowners realize positive returns on certification investments. Tree Farm's recent reciprocating agreement with SFI now allows Tree Farmers to meet the Principles and Objectives of SFI. However, the program currently does not enable Tree Farms to be certified though independent audits. Major green certification programs are only a few years old and program sponsors are still refining their programs. Additional green certification ideas and

methods may merge in the coming decade and create a variety of technical and institutional improvements that may make certification less expensive, more effective, and utilized by all ownership classes.

Related Recommendations: 10 (Educate forest users and the public about sound forest management) and 37 (Promote natural resource education for the public).

Federal and State Tax Policies

Recommendation 5: Strengthen current use tax programs.
State legislatures should review existing current use tax programs and adopt the following range of changes.

(a) In states where reimbursement does not exist, institute, if appropriate, a stable, reliable, and dedicated funding mechanism for reimbursement to localities. Where it does exist, provide consistent and adequate reimbursement.
(b) Keep current use tax programs simple, easy to administer, stable over time, and attractive to potential enrollees. Complex programs are costly and difficult to administer, and they deter landowners from participating.
(c) Base the current use assessment on the potential revenue from the land.
(d) Encourage sound forest management of private forest lands in current use tax programs by having specific management requirements. However, such requirements should balance management costs with benefits to both landowners and society. Further, the provisions should not be so excessive as to discourage landowners from participating.
(e) Set penalties for conversion of enrolled land at levels that discourage conversion yet do not discourage participation. States should review their existing penalties in this light.
(f) Include additional incentives for landowners who voluntarily allow access for public recreation, or who develop and implement forest stewardship plans that go beyond statutory requirements and are not reimbursed by existing cost-sharing programs. However, such practices *must not* be required for participation in current use taxation programs. Incentives could be a percent reduction from the usual assessment, an actual tax abatement, or some other mechanism. New Hampshire's current use program provides an example of a first step.

Assessment of Implementation: Implementation begun and substantial progress made in New Hampshire. Implementation begun and partial progress made in Maine and Vermont. Not implemented in New York. However, it is important to note that Maine, New Hampshire, and Vermont had current use tax programs before *Finding Common Ground* was published.

Maine: Maine amended its current use Tree Growth Law in 1995, 1997, and 1999. However, these were minor changes that did not implement any NFLC recommendations. The biggest problem in Maine has been program instability. Since *Finding Common Ground* was published, Maine has had a reasonably stable program.

New Hampshire: The New Hampshire Current Use Tax was amended in 1995, 1996, and 1998.

New York: Funds to reimburse localities for tax revenue shifts as a result of Real Property Tax Law §480-a enrollments have been in the State executive budget, but have not been enacted by the legislature.

Vermont: Vermont amended its Current Use Program for Forest Land in 1995, 1997, and 1999. The 1997 amendments changed the public education funding structure and decreased some of the pressure on the program.

Prospects for Future Implementation: Legislative support is a barrier to implementation of this recommendation. However, a fall 2000 ballot initiative in Maine is increasing the issue's visibility. Increased public support for the recommended changes would increase the prospects for implementation.

Related Recommendations: 6 (Consider replacing the *ad valorem* taxation system), 10 (Educate forest users and the public about sound forest management), 11 (Assess forest practices and programs), 12 (Achieve principles of sustainability), 14 (Institute a national excise tax on recreation equipment), 26 (Promote public policy to provide forest-based recreation), and 29 (Review the effectiveness of administrative rules).

Recommendation 6: Consider replacing the *ad valorem* taxation system.
State legislatures should consider replacing the *ad valorem* system with one based on current use for all property. Under the proposed system, all real property would be assessed at its current value in its current use.

Assessment of Implementation: Not implemented.

While the issue is raised by advocates and bills have been introduced in most of the Northern Forest state's legislatures (at some time during the past six years), none of these bills (except a 1995 bill in Maine) received serious consideration.

Prospects for Future Implementation: *Ad valorem* taxation is a major source of local government funding, especially in areas under development pressure. State legislatures are unlikely to seriously consider the system's replacement without a major change in their constituent's opinion of the issue. Land taxes are likely to become a major political issue in the coming decade. Local and national concerns will increase with urban and suburban sprawl, with the need for suburban open space, and forest deforestation, fragmentation, and parcelization. One solution is tax rates based on low assessments to reflect low-intensity land uses. State and/or federal governments must cover local costs. Local property taxation supports key services, especially schools, and is one of the only places where the public votes directly on tax rates. Tax relief systems that shift the burden to other local taxpayers undercuts support for these programs. The NFLC's recommendation is unlikely to be implemented without public support for these programs, which requires the public be educated about how market-based assessments drive forest land toward development. Results from Cost of Community Services studies, that show forest land generates more in taxes than it requires in government services, may provide information for taxpayers to make these decisions.

Related Recommendations: 5 (Strengthen current use tax programs), 10 (Educate forest users and the public about sound forest management), 11 (Assess forest practices and programs), 12 (Achieve principles of sustainability), 14 (Institute a national excise tax on recreation equipment), 26 (Promote public policy to provide forest-based recreation), and 29 (Review the effectiveness of administrative rules).

Recommendation 7: Change estate tax policies.
Congress and the state legislatures should change estate tax policies to reduce the pressure on heirs to sell, convert, or otherwise change the character of family forest ownerships. This should be done by:

(a) allowing heirs to make post-mortem donations of conservation easements on undeveloped estate land; and
(b) allowing the valuation of undeveloped land at current use value for estate tax purposes if the owner(s) or heir(s) agrees to maintain the land in its current use for a generation (25 years). This change must include a recapture provision to make future owners liable for taxes if they do not abide by the commitment.

Assessment of Implementation: Implementation begun and partial progress made.

Potential implementation of this recommendation has included legislation that would eliminate all estate tax burdens, and legislation that addresses the NFLC's specific recommendations (i.e., sections (a) and (b) of the recommendation).

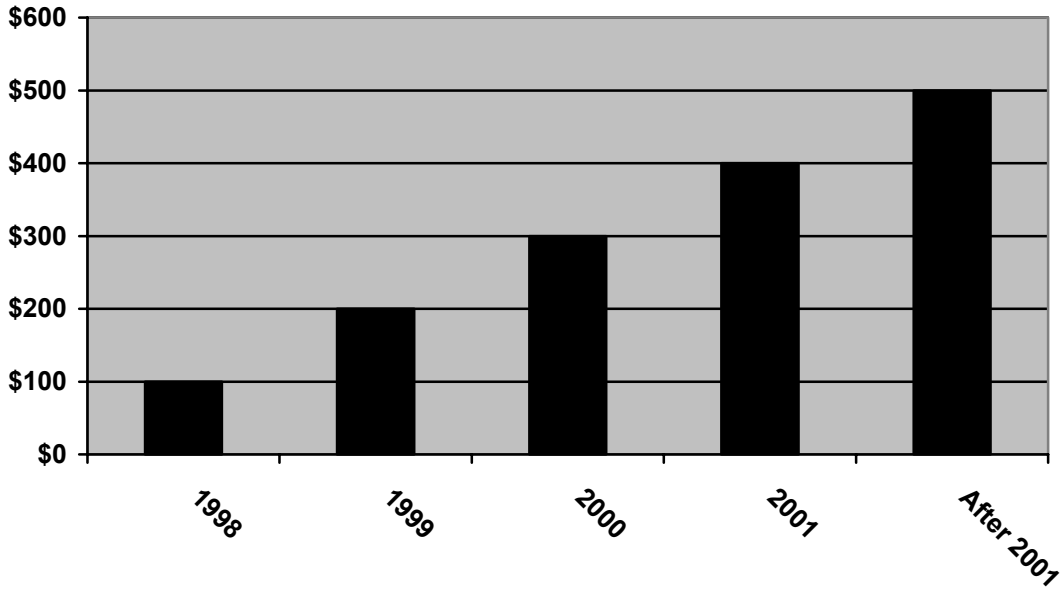
Federal Government: This year Congress failed to override a Presidential veto on legislation that would have eliminated the federal estate tax more than eleven years and broadly implemented this recommendation. In 1997, Congress enacted legislation that gradually increases the amount of the taxable estate not subject to federal taxation (Table 5). This legislation also amended section 2031 of the Internal Revenue Code to exclude certain amounts from the decedent's gross estates and implemented section (a) of this recommendation. While this amendment encouraged the donation of conservation easements by reducing a decedent's gross estate by a maximum amount (Figure 2), and allowing post-mortem donations of easements, the amendment limited these benefits to estates located:

1. In or within 25 miles of a metropolitan area,
2. In or within 25 miles of a National Park or designated Wilderness Area, or
3. In or with 10 miles of an Urban National Forest.

Table 5: Taxable Estates Not Subject to Federal Taxation, based on 26 U.S.C. §2010(c) Credit

	1998	1999	2000 & 2001	2002 & 2003	2004	2005	After 2005
Taxable Estate	$625,000	$650,000	$675,000	$700,000	$850,000	$950,000	$1 million

Figure 3: Maximum Excluion from Decedant's Gross Estate for Conservation Easement Donation (thousands of dollars)



In 1998, Congress enacted legislation that reduced the estate tax burden for qualified "family-owned businesses." This legislation will reduce the estate tax burden for some decedents owning Northern Forest lands.

Congress has not implemented section (b) of this recommendation.

Maine, New Hampshire and Vermont: These states have estate "sponge taxes" – estate taxes equal to the amount by which the maximum credit for state death taxes is determined under section 2011 of the Internal Revenue Code. When Congress increased the size of taxable estates subject to federal estate taxes, these states indirectly implemented the NFLC's recommendation by reducing their estate tax burden. However, none of these states have implemented the NFLC's specific recommendations, although New Hampshire almost passed legislation in 2000 to eliminate the state estate tax completely.

New York: In 1997, New York enacted legislation that gradually eliminated New York's estate tax system, which was modeled after the federal estate tax system. The state replaced the existing system with an estate "sponge tax," identical to the other NF states' estate tax system. The legislation reduced the New York estate tax burden for decedents that died between October 1, 1998 and February 1, 2000, and imposed a "sponge tax" for decedents that die after February 2000. In 1998, New York enacted legislation that implemented section (a) of this recommendation. The legislation mirrored section 2011 of the Internal Revenue Code, and allowed decedents who died between January 1, 1998 and February 1, 2000, and their estates, the same conservation easement estate tax advantages discussed in the federal government section of this recommendation. In 1998, the legislature also enacted legislation that reduced the estate tax burden for decedents who owe the IRS defined "family-owned businesses." Both the

conservation easement legislation and the "family-owned business" legislation expired on February 1, 2000 because New York's new "sponge tax" system eliminated the need for these estate tax reduction mechanisms.

Prospects for Future Implementation: President's Clinton's veto, and Congress's failure to override the veto, prevented the gradual elimination of the federal estate tax, and consequentially the Northern Forest states' estate taxes. This legislation's broad political support demonstrates the issue's public and legislative support. Federal surpluses increase prospects for future implementation.

Related Recommendations: 2 (Fund state easement programs), 5 (Strengthen current use tax programs), and 6 (Consider replacing the *ad valorem* taxation system).

Recommendation 8: Allow inflation adjustment on the original cost of timber.
Congress and state legislatures should change income tax policies to allow adjustments for inflation on the basis (original cost) of timber owned by forest landowners. This would tax landowners on the real gain (not inflationary gain) from selling timber, thereby recognizing the long-term nature of forest land investments. This recommendation refers to timber revenue only, not timber land revenue.

Assessment of Implementation: Not Implemented.

Neither Congress nor the states have implemented this recommendation. Legislation has been introduced in Congress to implement this recommendation, and has received some support. However, it has not been enacted. This recommendation has not been implemented by the states.

Prospects for Future Implementation: For this recommendation to be implemented, public and legislative visibility and support for Congress is needed. For example, the Forest Landowners Tax Council does not list this issue as one of their top tax policy issues. Our experts suggested that unless Congress enacts such legislation, states are unlike to do so. If political support increases, federal budget surpluses increase the prospects for future implementation.

Related Recommendations: 9 (Eliminate the 100 hours per year rule)

Recommendation 9: Eliminate the 100 hours per year rule.
Congress should eliminate the requirement that landowners generally must work 100 hours per year in forest management on their forest properties to be allowed to deduct normal management expenses from timber activities against non-passive income, instead of being required to capitalize these losses until timber is harvested. The IRS code should also allow various family configurations to qualify for this loss allowance since many lands in the region are family-owned.

Assessment of Implementation: Not Implemented.

While legislation has been introduced to implement this recommendation, Congress has not enacted it.

Prospects for Future Implementation: The lack of legislative and broad constitute support prevents Congress from enacting legislation that implements this recommendation. If political support develops, federal budget surpluses increase the prospects for future implementation.

Related Recommendations: 3 (Fund the Stewardship Incentive Program) and 8 (Allow inflation adjustment on the original cost of timber).

Sustainable Forest Management

Recommendation 10: Educate forest users and the public about sound forest management. States should strengthen and expand current programs to inform loggers, foresters, landowners, and the general public about sound forest management practices, and the Principles of Sustainability. These programs should include continuing education for foresters and loggers. Examples include:

(a) State-based logger membership associations should initiate or expand certified professional logger programs to better inform loggers about sound forest management practices, biological resources' conservation, and existing laws; and to increase the number of certified loggers.

(b) State forester licensing bodies (where they exist) and professional forestry groups should require education about forest management techniques that are compatible with maintenance of biological diversity and ecosystem management.

(c) States and private groups should initiate landowner training in sound forest management techniques and awareness of licensing and certification programs.

(d) State and private groups should initiate public education programs about sound forest management to increase awareness of the benefits of forestry and the implications of management on the resource.

(e) Agencies should provide advice and technical assistance to landowners and land managers regarding compliance with regulations to insure that forest operations are designed to protect the resource.

Assessment of Implementation: Implementation begun, substantial progress made.

Since the NFLC issued this recommendation, courses and programs have integrated sustainable forestry principles into their curriculum. Forestry professionals, landowners, and the public now receive information and instruction on the principle without attending courses and programs designed to specifically address sustainable forestry.

This recommendation has been implemented through national programs. The Society of American Foresters' (SAF) Certified Forester program requires 60 hours of continuing education credits (CE) every three years. The Association of Consulting Foresters of America requires its members to complete 20 hours of CE credits every two years. The CE requirements of both these programs do not mandate courses that satisfy the section (b) recommendation, but provide members with the option of using such courses to fulfill CE requirements.

Maine: Approximately 3,800 loggers have completed Maine's stringent Certified Logging Professional (CLP) program. The two-year CLP certification requires reinspection every year and implements the section (a) recommendation. Maine's State Board of Licensure for Professional Foresters requires twelve CE credits every two years and implements the section (b) recommendation. The Society of American Foresters provides much of the training opportunities to fulfill these obligations for foresters. Various landowner, industry and professional organizations, the University of Maine's Forestry Cooperative Extension Office, and the Maine Forest Service implement sections (c), (d), and (e) of the recommendation.

New Hampshire: More than 650 loggers have completed the New Hampshire Timber Harvesting Council's Professional Loggers Program. Initial certification requires courses that implement the section (a) recommendation. Certifications must be renewed after four years and recertification requires loggers to complete 32 CE credits. The Section (b) recommendation is implemented by the New Hampshire Board of Licensure for Foresters, which requires 20 continuing education units during a 24 month period. Various landowner, industry and professional organizations, the Society for the Protection of New Hampshire Forests (SPNHF), the University of New Hampshire's Forestry and Wildlife Resources Cooperative Extension Office, and the New Hampshire Department of Resources and Economic Development's Division of Forest Lands implement section (c), (d), and (e) recommendation. The Society of American Foresters provides much of the training opportunities for foresters. Specifically, the Forest Sustainability Standards Work Team (FSSWT), a project sponsored by the SPNHF, the New Hampshire Timberland Owners Association and the state's Division of Forest Lands and Department of Fish and Game, published a sustainable management publication, *Good Forestry in the Granite State* in 1997. Significant training of professional resource managers and landowners followed its publication. Part of the FSSWT team is currently working on a follow-up project.

New York: More than 500 loggers have completed New York Logger Training's Trained Logger Certification (TLC) program. Initial TLC certification is for three years, and recertification requires loggers to secure three CE credits (one credit equals a four to eight hour class). Both initial certification and recertification implement the section (a) recommendation. New York does not require foresters to be licensed or certified. New York has no mechanism that ensures the implementation of section (b) of the recommendation, but a strong SAF state chapter exists and ongoing training is a central part of its mission. However, after the issuance of the NFLC's recommendations, SUNY ESF's Faculty of Forestry reinvigorated its forester continuing education program and has offered numerous programs that educate foresters on section (b) topics. New York's cooperating forester program also requires continuing education for participants. Various landowner, industry and professional organizations, Cornell University's Cooperative Extension Office, SUNY ESF and the Department of Conservation's Division of Lands and Forests implement section (c), (d), and (e) recommendations.

Vermont: Vermont has two logger certification programs that implement section (a) of the recommendation. Approximately 300 loggers have completed the University of Vermont Cooperative Extension Office's Logger Education to Advance Professionalism (LEAP) program. Loggers must complete 59 credit hours to fulfill the LEAP program requirements, including some courses that implement section (a) of the recommendation. Loggers complete LEAP once. It is not a certification and does not require continuing education credits. Approximately 375

loggers have completed the Vermont Forestry Foundation's Professional Logger Program (PLP). This four-year certification requires loggers to complete courses that implement section (a) of the recommendation. Recertification requires 32 CE credits, including courses that fulfill section (a). Vermont does not require foresters to be licensed or certified, so Vermont has no mechanism that ensures the implementation of section (b) of the recommendation, but a strong SAF state chapter exists and ongoing training is a central part of its mission. Various landowner, industry and professional organizations, the University of Vermont Cooperative Extension Office, and the Vermont Agency of Natural Resources' Department of Forests, Parks and Recreation implement section (c), (d), and (e) recommendations.

Prospects for Future Implementation: The major challenge in sustainable forest management is the application of current knowledge over more and more forest land. As science understands more about our forests, sustainable forestry principles will be become even more integrated into forestry professionals', landowners', and the public's knowledge. Increased scientific knowledge and public awareness of sustainable forestry principles increases the prospect for future implementation.

Related Recommendations: 3 (Fund the Stewardship Incentive Program), 5 (Strengthen current use tax programs), 11 (Assess forest practices and programs), 12 (Achieve principles of sustainability), 20 (Assess water quality trends), 21 (Conserve and enhance biodiversity), 27 (Improve workplace safety), 33 (Support cooperative efforts among four state universities), and 37 (Promote natural resource education for the public).

Recommendation 11: Assess forest practices and programs.
States should conduct, by June 1996, and periodically thereafter, scientifically-based assessments of the impact of existing forest practices, programs, and regulations, to evaluate their adequacy in achieving the Principles of Sustainability listed in Recommendation 10. If changes are necessary to address inadequacies in protection and programs, the states need to act to improve forest practice statutes, and properly fund and support forest management programs, regulations, and enforcement.

Assessment of Implementation: Implementation begun and substantial progress made in Maine and Vermont. Implementation begun and partial progress made in New Hampshire and New York.

Maine: In 1997, the legislature established the Forest Resource Assessment Program to implement this recommendation. The program requires the Director of the Bureau of Forestry to establish a process to assess forest sustainability, produce an annual report on clearcutting, and a biennial report on the state of Maine's forests.

New Hampshire: When New Hampshire recodified its forest laws in 1995, it evaluated their existing forest laws. However, New Hampshire has not conducted a comprehensive review of how its forest practices, programs, and regulations achieve sustainability. A pilot research project is being conducted by the Division of Forests and Lands that includes an analysis of sustainable practices being conducted through on-the-ground data gathering of recent harvest sites.

New York: New York has not implemented this recommendation. However, the Forest Stewardship Council has certified more than 700,000 acres of state lands (outside the Adirondack and Catskill Forest Preserves), so methods that New York uses to manage its own lands have been certified as sustainable. New York DEC is pursuing collaboration with the New York SFI State Implementation Committee to address, in part, assessment of forest practices on private forest lands.

Vermont: In 1995, Vermont established the Forest Resource Advisory Council to implement this recommendation. Two years later, the legislature enacted the "Heavy Cutting Act," which requires an assessment of the impact the "Heavy Cutting Act" to principles of sustainability.

Prospects for Future Implementation: The forestry community's focus on sustainable forests requires the assessment recommended by the NFLC. However, public and legislative financial support for these assessments needs to increase for New Hampshire and New York to implement this recommendation.

Related Recommendations: 3 (Fund the Stewardship Incentive Program), 5 (Strengthen current use tax programs), 10 (Educate forest users and the public about sound forest management), 12 (Achieve principles of sustainability), 20 (Assess water quality trends), 21 (Conserve and enhance biodiversity), 33 (Support cooperative efforts among four state universities), and 37 (Promote natural resource education for the public).

Recommendation 12: Achieve Principles of Sustainability.
State forest roundtables, or something of a similar nature, should implement action to achieve the Principles of Sustainability. They should create a process to define credible benchmarks of sustainability for a variety of forest types to achieve the Principles of Sustainability. These benchmarks, in the form of practical, on-the-ground techniques, should be defined by June 1996. Forest managers, both public and private, should then compare their own management to such benchmarks and be willing to commit to producing a sustainable flow of wood and other amenities from their lands. Public agencies and private organizations should also collaborate with the roundtables to publicize the benchmarks, explain their application, distribute them to forest landowners, and work to educate the public that timber harvesting is a responsible forest use as long as the forests' long-term ability to continue producing timber and other benefits are maintained.

Assessment of Implementation: Implementation begun and substantial progress made, but not as the NFLC envisioned. Implementation begun and substantial progress made nationally through green certification standards. Implementation begun and substantial progress made in Maine and Vermont. Implementation begun and partial progress made in New Hampshire and New York.

Instead of forest roundtables implementing action on sustainability, green certification organizations and state agencies (in response to legislative mandates) have implemented this

recommendation. Our analysis of Recommendation 4 details green certification. This analysis focuses on other organizations.

Maine: In 1996, the Maine Council on Sustainable Forest Management issued its report addressing sustainability standards. A year later, the legislature established the Forest Resource Assessment Program to implement this recommendation. The program requires the Director of the Bureau of Forestry to develop standards to assess the implementation of sustainability principles in seven areas.

New Hampshire: The Forest Sustainability Standards Work Team (FSSWT), a project sponsored by the SPNHF, the New Hampshire Timberland Owners Association and the state's Division of Forest Lands and Department of Fish and Game, published a sustainable management publication, *Good Forestry in the Granite State* and *On the Ground Forest Practices Guide Book* in 1997. Part of the FSSWT team is currently working on a follow-up project that will assess the current condition and capability of New Hampshire forests and then attempt to set structure and composition goals for each ecological unit.

New York: New York has relied on green certification organizations' standards to assess sustainability.

Vermont: The Vermont Forest Resource Advisory Council implements this recommendation. The legislature charged the council with developing sustainability benchmarks in nine areas.

Prospects for Future Implementation: Sustainable standards are in their infancy. Currently state agencies and numerous green certification organizations are developing standards. As these standards are publicized, compared, and criticized, they will continually be refined and this recommendation will likely continue to be implemented.

Related Recommendations: 3 (Fund the Stewardship Incentive Program), 4 (Encourage green certification programs), 5 (Strengthen current use tax programs), 10 (Educate forest users and the public about sound forest management), 11 (Assess forest practices and programs), 12 (Achieve principles of sustainability), 20 (Assess water quality trends), 21 (Conserve and enhance biodiversity), 33 (Support cooperative efforts among four state universities), and 37 (Promote natural resource education for the public).

Protecting Exceptional Resources

Public Land Management and Acquisition

Recommendation 13: Fund public land management agencies.
Congress and the states should provide sufficient funds to public land management agencies to manage and maintain existing public land holdings and recreation facilities for increased public use; to protect fragile areas; and to enhance public health and safety at existing facilities.

Congress and the states should also provide sufficient funding to meet the costs of administering conservation easements held by public agencies.

Assessment of Implementation: Implementation begun and substantial progress made in Maine, New Hampshire, New York and Vermont. Not implemented by Congress.

The USDA Forest Service budget has not increased, and the White Mountain and Green Mountain National Forests budgets are less today than they were in 1995. The budgets of Maine's, New Hampshire's, New York's and Vermont's public land management agencies have increased since the NFLC made this recommendation.

Prospects for Future Implementation: Future budget surpluses and continued economic prosperity increase the probability of continued future implementation. However, in New Hampshire, where education funding is in crisis due to a State Supreme Court decisions, prospects are poor. The New Hampshire Division of Forests and Lands lost 3% of its budget during 1999-2000.

Related Recommendations: 14 (Institute a national excise tax on recreation equipment), 15 (Refine state land acquisition planning programs), 16 (Fund the Land and Water Conservation program), 17 (Fund state land acquisition programs), and 18 (Employ a variety of conservation tools).

Recommendation 14: Institute a national excise tax on recreation equipment.
Congress should institute a national excise tax on outdoor specialty recreation equipment (e.g., climbing gear, hiking boots) to support wildlife and recreation management on public lands, and to support recreation opportunities on private lands through assistance and compensation to the landowners. The International Association of Fish and Wildlife Agencies' *Wildlife Diversity Initiative* is an example of a potential framework for this program, although, unlike the Council recommendation, it does not address public use of private lands for recreation. The tax collection and distribution system should be modeled after the Pitman-Robertson, Dingell-Johnson, and Wallop-Breaux programs of the US Fish and Wildlife Service. Revenues should be distributed to all 50 states according to a specific formula developed in close collaboration with the states.

Assessment of Implementation: Not Implemented.

Numerous attempts to enact a national excise tax on recreation equipment to support the objectives listed in the recommendation have failed.

Prospects for Future Implementation: The proposed Conservation and Reinvestment Act, which would fund the objectives in the recommendation through funds from outer continental shelf oil exploration, has broad public and legislative support. The support for these objectives, as well as national surpluses, increases the probability that NFLC's objectives will be implemented. The implementation of a national excise tax, as the NFLC envisioned, would subsidize a defined program. Congress often fails to support such programs because it usurps Congress's control over program appropriations and management.

Related Recommendations: 13 (Fund public land management agencies) and 26 (Promote public policy to provide forest-based recreation).

Recommendation 15: Refine state land acquisition planning programs.
By June 1996, states, in consultation with local governments, should refine their existing state land acquisition programs to follow a goal-orientated, public planning process that:

(a) identifies and sets priorities for acquisition of fee or less-than-fee interests in exceptional and important
  (1) lands. The criteria for such lands include:
  (2) places offering outstanding recreational opportunities including locations for hunting, fishing, trapping, hiking, camping, and other forms of back-country recreation;
  (3) recreational access to river and lake shorelines;
  (4) land supporting vital ecological functions and values;
  (5) habitats for rare, threatened, or endangered natural communities, plants, or wildlife;
  (6) areas of outstanding scenic value and significant geological features; and
  (7) working private forest lands that are of such significance or so threatened by conversion that conservation easements should be purchased.

(b) acquires land or interest in land only from willing sellers.

(c) involves local governments and landowners in the planning process in a meaningful way that acknowledges their concerns about public land acquisition.

(d) recognizes that zoning, while an important land use mechanism, is not an appropriate substitute for acquisition.

(e) ensures that unilateral eminent domain will only be used with the consent of the landowner to clear title and/or establish purchase price (i.e., "friendly" condemnation).

(f) efficiently uses public dollars by purchasing only the rights necessary to best protect identified, exceptional values.

(g) weighs the potential impacts and benefits of land and easement acquisition on local and regional economies.

(h) considers the necessity for including costs of future public land management in the assessment of overall costs of acquisition.

(i) minimizes adverse tax consequences to municipalities by making funds available to continue to pay property taxes based at least on current use valuation of parcels acquired, payments in lieu of taxes, user fee revenues, or other benefits where appropriate.

(j) identifies the potential for exchanging currently owned public land for privately held land of greater public value.

(k) provides that lands purchased are used and managed for their intended purposes.

Assessment of Implementation: Implementation begun and substantial progress made. Note: States implemented this recommendation later than the NFLC recommended.

States have implemented programs that refine their land acquisition programs. These refinements directly or indirectly addressed most, if not all, of the section (a) to (k) recommendations.

Maine: In 1997, Maine's Land Acquisition Priorities Advisory Committee examined the state's land acquisition program and recommended changes. These amendments, including changes that implemented the NFLC recommendation, were incorporated into the Land for Maine's Future (LMF) Fund guidelines, which is administrated and coordinated by Maine's State Planning Office.

New Hampshire: In 1998, the legislature created the New Hampshire Land and Community Heritage Commission (LCHC). The LCHC's report, issued in 1999, served as the basis for the New Hampshire Land and Community Heritage Investment Program (LCHIP), which the legislature enacted in 2000. LCHIP's land acquisition program incorporates and implements the NFLC recommendation.

New York: The state's Open Space Plan, completed in 1992 and updated every three years, requires Regional Advisory Committees to review the plan every two years. This process incorporates and implements the NFLC recommendation. The 1998 plan builds upon its predecessors and guides the use of New York's Clean Water / Clean Bond Act and Environmental Protection Fund spending.

Vermont: In 1999, the Vermont Agency of Natural Resources completed a "Lands Conservation Plan" (LCP) to guide the agency's land acquisition and other land conservation measures. The plan incorporated and implemented the NFLC recommendations. The LCP directs the use of the Vermont Housing and Conservation Trust Fund.

Prospects for Future Implementation: Although states have implemented this recommendation, the inherent cyclical nature of planning will require states to reevaluate their land acquisition plans. Even with legislative directives, such as in New York, states need to allocate resources for the continued implementation of this recommendation.

Related Recommendations: 2 (Fund state easement programs), 16 (Fund the Land and Water Conservation program), 17 (Fund state land acquisition programs), 18 (Employ a variety of conservation tools), 19 (Exclude from income tax a portion of the gain from conservation sales), and 21 (Conserve and enhance biodiversity).

Recommendation 16: Fund the Land and Water Conservation program.
Congress should fund the overall Land and Water Conservation Program (LWCF) at the currently authorized level, with at least 60% of the funds going to the states. Along with adequate funding, Congress should revise the law to provide greater flexibility to the states allowing increased efficiency in expenditure of LWCF monies. The states should use broad based planning processes to allocate LWCF monies within their boundaries.

Assessment of Implementation: Not Implemented.

Congress has not funded the Land and Water Conservation Fund at its authorized level ($900 million) (Table 7). Nor has Congress allocated at least 60% of the fund to the states. Except for a

1996 amendment that relieved some state reporting requirements, Congress has not provided for increased state efficiency of fund resources.

Table 7: Land and Water Conservation Fund Appropriations (millions of dollars)

	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000
State Grants	$0.0	$0.0	$0.0	$0.0	$1.0	$0.5	$41.0
Federal Agency Grants	$161.1	$233.1	$138.2	$149.4	$271.4	$328.6	$420.1
TOTAL	$161.1	$233.1	$138.2	$149.4	$272.4	$329.1	$461.1

Prospects for Future Implementation: Congress may partially, or completely, implement this recommendation this year. The proposed Conservation and Reinvestment Act (CARA) includes funding for this program. CARA has broad public and legislative support. Support for these objectives, as well as national surpluses, increases the probability that this recommendation will be implemented.

Related Recommendation: 2 (Fund state easement programs), 13 (Fund public land management agencies), 14 (Institute a national excise tax on recreation equipment), 15 (Refine state land acquisition planning programs), 17 (Fund state land acquisition programs), 18 (Employ a variety of conservation tools), and 19 (Exclude form income tax a portion of the gain from conservation sales).

Recommendation 17: Fund state land acquisition programs.
States should continue their history of providing funding for land acquisition through land purchase bonds, dedicated funds, private contributions, and legislative appropriations to purchase fee or less-than-fee interest in lands in conformance with the land acquisition process described in Recommendation 18.

Assessment of Implementation: Implementation begun and substantial progress made.

Maine: The Land for Maine's Future (LMF) Fund is the state's primary land conservation funding mechanism. The Fund was revitalized in 1999 when voters approved a $50 million bond to finance a land conservation program. "Affinity credit card's" proceeds also fund the LMF Fund. The Maine Outdoor Heritage Fund is supported by the state lottery.

New Hampshire: The New Hampshire Land and Community Heritage Investment Program (LCHIP) Act, enacted in 2000, is funded through a legislative appropriation. The program requires municipalities and publicly-supported nonprofit organizations to provide at least 50% of land acquisition resources. State agencies are not eligible to use funds and there is only one year of funding available.

New York: The state's land acquisition program is funded by the Environmental Protection Fund, as mentioned earlier, and the 1996 $1.75 billion Clean Water/Clean Air Bond Act. The Act allocated $150 million for open space conservation projects, including land and conservation easement acquisition. The bulk of the funding comes from a real estate transfer tax.

Vermont: The Vermont Housing and Conservation Trust Fund is supported by legislative appropriation, including special appropriations for specific projects.

Prospects for Future Implementation: Budget surpluses in all states, but New Hampshire, and creative funding mechanisms should ensure continued implementation of this recommendation, although continuing development pressures may require states to develop supplemental funding mechanisms. However, funding mechanisms tend to be directed at land acquisition, rather than land management. States need to ensure that state land management agencies are funded at levels to manage fee and less-than-fee interest lands, otherwise, public support for land acquisition funding may lessen.

Related Recommendations: 2 (Fund state easement programs), 13 (Fund public land management agencies), 14 (Institute a national excise tax on recreation equipment), 15 (Refine state land acquisition planning programs), 16 (Fund the Land and Water Conservation program), 18 (Employ a variety of conservation tools), and 19 (Exclude form income tax a portion of the gain from conservation sales).

Recommendation 18: Employ a variety of conservation tools.
States should employ a variety of tools in addition to fee acquisition to conserve working landscapes and public values, including:

(a) exchanges of land and less-than-fee interests, such as perpetual conservation easements.
(b) short and long term cooperative agreements with landowners for the protection of plant and animal species, scenic overlooks, and trailheads.
(c) public purchase of specific public recreation rights (independent of other property interests) such as fishing and boating access, snowmobile, cross country skiing and hiking trails.
(d) partnerships with private land trusts to acquire land in situations where emergency actions and bridge loans are needed, or where complex approaches, such as partial development or land exchanges, are appropriate.

Assessment of Implementation: Implementation begun, substantial progress made.

All Northern Forest states have employed the techniques specified by the NFLC in this recommendation to conserve working landscapes and public values. Conservation easements are used more often than the other techniques because funding mechanisms directly support conservation easements. Groups such as the Nature Conservancy and the Trust for Public Land have been particularly effective in assisting states in accordance with section (d) of the recommendation.

Prospects for Future Implementation: State emphasis on conservation easements, because of this mechanism's flexibility and funding preference should continue. Public support for creative

open space protection techniques, including those specified by the NFLC, should also increase in the future.

Related Recommendations: 2 (Fund state easement programs), 13 (Fund public land management agencies), 14 (Institute a national excise tax on recreation equipment), 15 (Refine state land acquisition planning programs), 16 (Fund the Land and Water Conservation program), 17 (Fund state land acquisition programs), and 19 (Exclude form income tax a portion of the gain from conservation sales).

Conservation Transactions

Recommendation 19: Exclude from income tax a portion of the gain from conservation sales. Congress and the state legislatures should change their income tax codes to exclude from income tax a portion of the gain received from sale of "qualified forest lands" and conservation easements (see below) to public conservation agencies (or third party organizations if lands are reconveyed to a public agency within two years).

(a) For sale of a conservation easement, the exclusion from income tax should be 100% of the gain.
(b) For sale of fee title, the exclusion from income tax should be 35% of the gain, up to a maximum of $100,000 in taxes payable.
(c) For sale of fee title to third party entities (such as nonprofit land trusts), the exclusion should be allowed only if lands are reconveyed to a public agency within two years.

Assessment of Implementation: Not Implemented.

Congress and the state legislatures have not changed their tax codes to implement this recommendation. Most experts agreed that this is a national issue not a state issue (i.e., if Congress enacts this recommendation, the states will adopt the federal rules).

Prospects for Future Implementation: Legislative support is a barrier to implementation of this recommendation. Our experts suggested that the specialized nature and lack of public interest in the recommendation, make this proposal "unlikely to pass on its own." Thus, the best prospect for the future implementation of this recommendation will be for it to be included in a larger tax revision aimed at promoting conservation sales.

Related Recommendations: 1 (Fund Forest Legacy), 2 (Fund state easement programs),15 (Refine state land acquisition planning programs), 16 (Fund the Land and Water Conservation program), 17 (Fund state land acquisition programs), and 18 (Employ a variety of conservation tools).

Water Quality

Recommendation 20: Assess water quality trends.

By June 1996, states should assess water quality trends within the Northern Forest from data, report on suspected or confirmed causes of identified deterioration, and propose revisions to state water pollution laws to stem that deterioration. Recommendations should include identifying, where needed, additional sources of funding for enforcement and administration of water pollution control programs and for assistance to local governments, property owners, and lake and watershed associations to improve water quality.

Assessment of Implementation: Implementation begun and substantial progress made, but not as the NFLC envisioned. Note: This recommendation was also implemented later than the NFLC recommended.

Section 305(b) of The Clean Water Act requires states to assess their water quality, and they have been doing so for more than 20 years. In 1998, litigation forced the US Environmental Protection Agency (EPA) to expand data collection and require the states to submit a list of all waterbodies that did not meet water quality standards. These lists, which all Northern Forest states submitted to the EPA and were accepted by the agency, identify sources of noncompliance. While the data collection, analysis and reporting required by the EPA implement this recommendation, commentators (including the US General Accounting Office) have been critical of the assessment's methodology and data. The focus on this effort has been for developing areas, not rural areas where forestry activities occur.

Regional efforts to assess water quality trends have been fostered by federal funds made available to the Northern Forest states after the 1998 Ice Storm. A portion of the funds were allocated to assess the storm's impact on water quality.

In addition to national and regional efforts, states have implemented this recommendation. In 1995, Maine assessed how compliance with forestry best management practices affected water quality. Vermont's Forest Resource Advisory Council analyzed how forest resources conserve and protect watershed values. In New Hampshire, a limited assessment has been conducted in urbanizing areas but not for forestry.

Prospects for Future Implementation: Recent attention to water quality is not likely to wane. The importance of water quality to cities, suburbs and rural communities will increase as septic and water system failures cause public health crises. The Clean Water Act's initial focus on technology-based mechanisms to improve water quality did not adequately address water quality problems. Whether solutions are voluntary or compulsory, states will need to continue to implement this recommendation and assess their water quality.

Related Recommendations: 33 (Support cooperative efforts among the four state universities) and 34 (Track and analyze land trends).

Biological Diversity

Recommendation 21: Conserve and enhance biodiversity.

By June 1996, states should develop a process to conserve and enhance biodiversity across the landscape.

(a) First, assess the status of biodiversity in each state and determine the current level of protection on public lands and on private conservation lands by voluntary landowner agreement. Then, if needed, state conservation agencies and private landowners should consult and agree upon ground rules for assessing biodiversity on private lands. Written permission is essential for entry onto private lands during new biodiversity surveys.

(b) Provide landowners with information about how to conserve biodiversity on their land through both forest management practices and establishment of ecological reserves. State conservation agencies should collect and distribute this information.

(c) Provide financial incentives to landowners for measures taken to conserve and enhance biodiversity, including strengthened Stewardship Incentive Program practices and reduced property tax valuations and/or exemptions.

(d) Using scientific assessment and analysis, create ecological reserves as one component of state public land acquisition and management programs. Given current scientific knowledge, and economic, social, and political constraints, the Council envisions that such a system will be limited and should be reassessed for scope as the science develops. The following criteria should be followed:

(1) Areas selected should meet the definition of an ecological reserve;

(2) Selection must be according to the state's open space planning and acquisition plans; and

(3) Before new ecological reserves are established, the extent of ecological values already protected on public lands and private conservation lands must be assessed.

Assessment of Implementation: Implementation begun partial progress made in Maine, New Hampshire, New York and Vermont.

Maine: Maine's Natural Areas Program inventories land that support: rare and endangered plants and animals, rare natural communities, and outstanding examples of representative natural communities. The Maine Forest Biodiversity Project (MFBP) completed a statewide assessment of forest biodiversity in 1998 and published *An Ecological Reserves System Inventory: Potential Ecological Reserves on Maine's Existing Public and Private Conservation Lands*. That same year, the Maine State Planning Office published *Biological Diversity in Maine: An Assessment of Status and Trends in the Terrestrial and Freshwater Landscape*. The MFBP report was used by the legislature to enact a statute that enables the director of the Bureau of Parks and Lands to designate ecological reserves on lands under the bureau's jurisdiction. The Land for Maine's Future program resources can acquire in fee, and less-than-fee, lands with high biodiversity values. Maine's "Forever Wild Open Space" law can be used by private land owners to reduce their property taxes. The Maine Education Department has a teacher recertification program which covers the topic of biodiversity and the state is producing an educational video on the diversity of habitat and wildlife.

New Hampshire: New Hampshire Natural Heritage Program collects and analyzes data on the status, location, and distribution of rare or sensitive plants and animals and exemplary communities. The state published *New Hampshire's Living Legacy: The Biodiversity of the Granite State* (1996) and *Protecting New Hampshire's Living Legacy: A Blueprint for*

Biodiversity Conservation in the Granite State (1998) which include recommendations for action. The state's Ecological Reserve Steering Committee has completed approximately 75% of a framework for instituting an ecological reserve system, which manages for specific ecological goals. The Committee's work has been conducted in accordance with the NFLC's recommendation, such as inclusive public participation. The Committee was founded by New Hampshire's Division of Forests and Lands and Fish and Game Department, and is now a cooperative venture between those organizations, the Society for the Protection of New Hampshire's Forests, the Nature Conservancy, and the Audubon Society. The Land and Community Heritage Investment Program has incorporated biodiversity into its scoring approach to projects involving land resources.

New York: The New York Natural Heritage Program is a systematic, scientific inventory designed to compile and maintain computer-assisted data on rare plants and animals and significant ecological communities. The New York State Biological Survey develops and maintains an inventory of state biological resources. The Biodiversity Research Institute coordinates state and private efforts to identify, understand and explain the state's plants, animals and environments. The state's Biodiversity Stewardship and Research Fund identifies lands of ecological significance for the governor and legislature, and develops and implements stewardship activities to conserve rare species and ecological communities. Constitutional restrictions on the use of the Adirondack and Catskill Forest Preserves conserve biodiversity. In addition, the Preserve's Unit Management Plan Initiative assesses biodiversity. The Department of Environmental Conservation's Saratoga Tree Nursery has been restructured to address biodiversity issues by reducing production of non-native species. The state can use the Environmental Protection Fund or Clean Water/Clean Air Bond Act funds to acquire in fee, or less than fee, lands with high biodiversity values.

Vermont: The Vermont Nongame and Natural Heritage Program's mission is to inventory, protect and enhance nongame wildlife, native plants, and significant natural communities and to help people better appreciate these resources. The Vermont Biodiversity Project was established to design and map a system of priority conservation areas and to complete a statewide inventory of natural communities. The Vermont Agency of Natural Resources' 1999 Land Conservation Plan recommends the state use a limited ecological reserve program (the natural reserve system) to protect areas that contain viable, high-quality examples of native species and natural communities. The Agency is implementing the system. The state Land Acquisition Review Committee which reviews and issues recommendations on all fee, and less-than-fee acquisitions funded by the Vermont Housing and Conservation Trust Fund was directed by the legislature to conserve a full range of native flora and fauna and protect unique or fragile areas.

Prospects for Future Implementation: Implementation of this recommendation in Maine, New Hampshire, New York, and Vermont will require that state and other organizations continue to education the public about the importance of biological diversity. Inventories of biological resources are a critical funding need. Without education, public support for resources to support these programs will not grow. The lack of public support for the USDA Forest Service's Stewardship Incentive Program, which was designed to fund the NFLC's vision for the recommendation on private lands provides a case-in-point. As scientific knowledge of biodiversity increases, biodiversity conservation mechanisms will likely reflect this

understanding through refined legal strategies that address biodiversity goals through less intrusive mechanisms.

Related Recommendations: 2 (Fund state easement programs), 3 (Fund the Stewardship Incentive Program), 10 (Educate forest users and the public about sound forest management), 11 (Assess forest practices and programs), 12 (Achieve principles of sustainability), 13 (Fund public land management agencies), 15 (Refine state land acquisition planning programs), 16 (Fund the Land and Water Conservation program), and 33 (support cooperative efforts among the four state universities).

Strengthening Economies of Rural Communities

Community Development

Recommendation 22: Increase funding for Rural Community Assistance programs.
Congress should increase funding for the USDA Forest Service's Rural Community Assistance programs in the Northeast. These programs encourage local communities to strengthen and diversify their natural resource-based economies.

Assessment of Implementation: Implementation begun and substantial progress made.

USDA Forest Service has recently increased Rural Community Assistance funding to the Northern Forest states. However, the program's funding levels have been highly variable since the NFLC recommendations were issued.

Prospects for Future Implementation: Federal budget surpluses and Congressional support increase the likelihood that this recommendation will continue to be implemented.

Related Recommendations: 23 (Encourage marketing cooperatives and networks), 24 (Direct assistance to natural resource-based businesses), and 33 (Support cooperative efforts among the four state universities).

Recommendation 23: Encourage marketing cooperatives and networks.
State and federal forestry and economic development agencies should encourage and support primary and secondary wood products firms by fostering establishment of marketing cooperatives or networks. Such actions would:

(a) nurture formal and informal dialogue on new business ideas,
(b) connect buyers and suppliers of wood products to promote joint purchasing and manufacturing, and
(c) develop flexible manufacturing networks to enable many small producers to work together, filling larger orders than they could individually.

Assessment of Implementation: Implementation begun and partial progress made in New York and Vermont, and by the federal government. Implementation begun and partial progress made, but not as the NFLC envisioned in Maine. Not implemented in New Hampshire.

When we discussed this recommendation with our experts, they suggested that cooperatives and networks tend to grow during tight economic conditions and that the past six years' economic conditions were less than ideal for fostering these organizations (i.e., in good economic conditions, businesses do not need to cooperate to survive and prosper; in bad economies, they do). This may be one reason why this recommendation has been partially implemented.

The USDA has sponsored some programs to implement this recommendation. The National Network of Forest Practitioners, thorough a USDA grant, sponsors the National Community Forestry Center (NCFC) project. Yellow Wood Associates of Vermont administers the NCFC's Northern Forest Regional Center in the Northeast which is designed primarily to serve Northern Forest land's communities. The program indirectly fosters this recommendation's networking objectives by: developing partnerships with existing organizations that share its community forestry goals, conducting targeted research to address region-wide issues and opportunities responding to requests for information and technical assistance on community forestry, and establishing mechanisms to facilitate information sharing and networking.

Maine: The state has not implemented this recommendation. Maine's nonprofit sector has encouraged marketing cooperatives and networks, but these programs have had limited success implementing this recommendation's concept. Experts informed us that improved economic conditions caused many cooperatives begun in the 1970s to disband. The Maine Wood Products Association has continued to work on these issues.

New Hampshire: The state has not implemented this recommendation.

New York: The state has used funds from the USDA Forest Service's Economic Action Program to develop a directory of primary and secondary wood products industries. The directory fosters a network among these organizations. Some private organizations have recently begun to develop Web-based cooperative and networking programs. Our experts suggested that the state's Empire State Development agency, which traditionally has focused on large industries who employ their own marketing personnel, could attract several small wood products industries if it facilitated cooperatives and networks. New York has also used USDA Forest Service Rural Development Through Forestry grants to support forest-based recreation and tourism projects in the Adirondack and Tug Hill region.

Vermont: The state's Agency of Natural Resources, Department of Forest, Parks, and Recreation's Forests Products Marketing, Utilization and Development revised its Vermont Wood Product Manufacturers and Crafters in 2000 and previously published a Directory of Sawmill and Veneer Mills in Vermont. The directory includes information that fosters cooperative efforts. The Vermont Wood Manufacturers Association is developing strategies that would implement this recommendation. The Vermont Family Forests is a landowner cooperative that has secured green certification for their lands.

Prospects for Future Implementation: If our experts' observations are true that poor economic conditions facilitate cooperatives and networks, it is not possible to evaluate the prospects for the future implementation of this recommendation. However, the World Wide Web enables businesses to communicate in new ways. In other industries, the Web has enabled business-to-business and business-to-consumer communications that have fostered marketing cooperatives and networks, and improves the prospects for this recommendation's future implementation. The cooperatives, modeled on organizations such as Vermont Family Forests, may lessen the financial burden of green certification for small and moderate sized landowners (see Recommendation 4).

Related Recommendations: 4 (Encourage green certification programs), 22 (Increase funding for Rural Community Assistance programs), 24 (Direct assistance to natural resource-based businesses), and 25 (Authorize and fund Community Development Financial Institutions or a similar program).

Recommendation 24: Direct assistance to natural resource-based businesses.
State economic development agencies should work with state natural resource agencies to direct financial, technical, and marketing assistance to natural resource-based business concerns. Such assistance should recognize the importance of forest products manufacturing, recreation, tourism, and other economic activities, and enhance states' competitive advantages in the natural resource sector. These agencies should cooperate with natural resource management agencies and employ rural development specialists to accomplish the following functions related to natural resource-based businesses:

(a) assistance in complying with state regulatory processes;
(b) identification of barriers to general rural business expansion and of ways to overcome them;
(c) marketing assistance;
(d) promotion of incentive programs for development and expansion;
(e) provision of information to financial institutions on the value of such businesses; and
(f) fostering public policy to promote value-added opportunities in the region.

Assessment of Implementation: Implementation begun and partial progress made.

Regionally: Congress provided the USDA Forest Service with business recovery funding after the 1998 Ice Storm. The Forest Service allocated this money among the Northern Forest states.

Maine: The state Department of Economic and Community development offers loans and technical assistance to resource businesses, but it does not appear that these services have improved substantially since the NFLC made its recommendations. The state's rural development through forestry program has typically received only small grants. The state has programs that assist business compliance with state regulations and promote Maine products.

New Hampshire: New Hampshire is uniquely qualified to implement this recommendation since its resources and economic development agencies are in the same department. One resource-based person spends one day a week in the Economic Development office to help this office

understand natural resources. The 1997 Governor's Forest Industry Task Force recommended that the best thing that could be done is to make sure people in the Economic Development Division had good working relationships with people from the forest industry. The Task Force's report was not implemented. The state uses USDA Forest Service Economic Action Program funds to assist natural resource-based businesses. The state has currently undertaken a feasibility study for a low grade wood using manufacturing facility.

New York: The state provides economic assistance to saw mills, including training funds and capital. The legislature funds the Adirondack North Country Association, a regional economic development association designed to create and retain jobs, increase goods and services, and market agricultural products, natural resources, crafts, and other items made in the region. The Department of Environmental Conservation's (DEC) Forest Products Utilization and Marketing Program continues to assist forest-based businesses. Four or five staff personnel work on natural resource-based business issues: two are stationed in Albany, the remainder are in the field. Two staff personnel work on Northern Forest issues. These people receive some financial support from the USDA Forest Service Economic Action Program. The DEC conducted two strand board plant assessments, which provided information about operation and natural resource availability. The state's Empire State Development (ESD) agency assisted the DEC's demonstration of the quality of the state's resources and its capacity to support the strand board industry. However, ESD, with its focus on large industrial operations, has not concentrated on the forest products industry, because the industry in New York consists mainly of small firms. Our experts suggested that if ESD assessed the cumulative impact of several small wood products industries, and employed a rural development specialist, it could further implement this recommendation.

Vermont: The state's Department of Forest, Parks, and Recreation's Forests Products Marketing, Utilization and Development continues to provide planning and technical assistance to the forest products industry and prospective developers, assist wood producers in product marketing (including exports), and work with the Agency of Commerce and Community Affairs on wood product development activities. The state annually recognizes businesses that use sustainable practices.

Prospects for Future Implementation: Although states have partially implemented this recommendation, our experts suggested that, except for tourism, states do not recognize the value or potential of natural resource-based business and have failed to provide the funds necessary to implement this recommendation. Legislators appear to reap greater rewards from supporting technology-based businesses than from supporting non-tourism, natural resource-based business. Without increased public support, the prospects for implementing this recommendation are limited.

Related Recommendations: 22 (Increase funding for Rural Community Assistance programs), 23 (Encourage marketing cooperatives and networks), and 25 (Authorize and fund Community Development Financial Institution or a similar program).

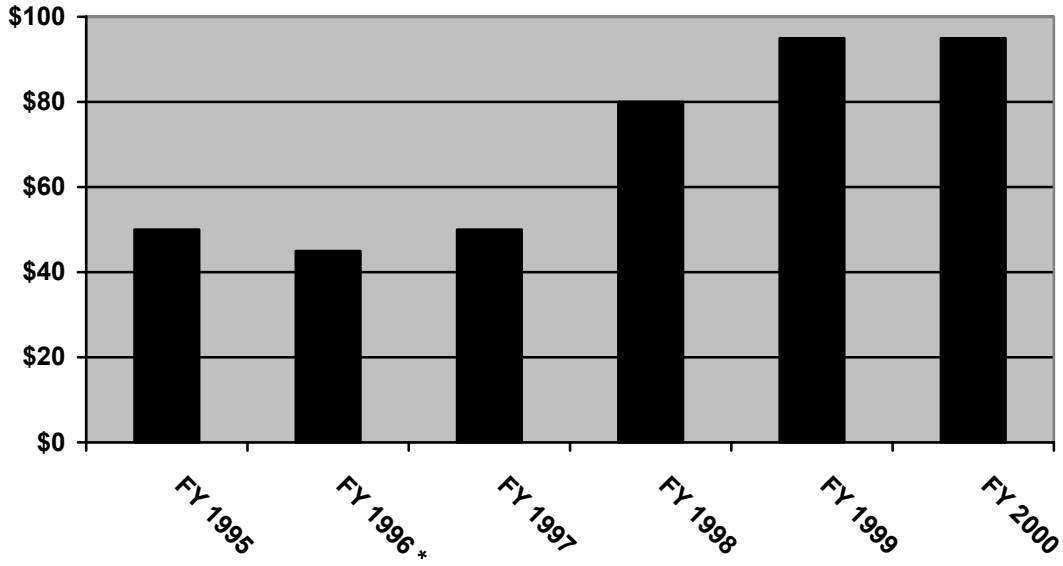
Recommendation 25: Authorize and fund Community Development Financial Institutions or a similar program.

Congress should authorize and fund Community Development Financial Institutions, or a similar program, to steer capital to the Northern Forest region for forest-related businesses including wood products manufacturers, and recreation and tourism enterprises. Community Development Financial Institutions would allow financing decisions that affect natural resource-related businesses to be made by individuals closely connected to the communities and industries involved.

Assessment of Implementation: Implementation begun and substantial progress made.

In 1994, Congress authorized Community Development Financial Institutions (CDFI) and has funded the organization since that time (Figure 3). Four organizations have been certified as CDFIs in Maine, one in New Hampshire, 49 in New York (although most of these are in the downstate area), and three in Vermont. Community Development grants have directed capital to the Northern Forest's forest-related businesses, and recreation and tourism enterprises.

Figure 3: Community Development Financial Institution appropriations (millions of dollars)



Prospects for Future Implementation: Congress has nearly doubled CDFI appropriations in the first six years of the program. The CDFI has directed funding to Northern Forest businesses as the NFLC recommended. Eligible institutions and businesses should continue to seek these funds. If public officials and agencies publicize Northern Forest success stories, funding should continue to implement this recommendation.

Related Recommendations: 22 (Increase funding for Rural Community Assistance programs), 23 (Encourage marketing cooperatives and networks), and 24 (Direct assistance to natural resource-based businesses).

Recreation and Tourism on Private Lands

Recommendation 26: Promote public policy to provide forest-based recreation.
Congress and state legislatures should enact legislation and promote public policy to provide forest-based recreation opportunities to the public. Such initiatives would encourage landowners to keep their land open and available for responsible public recreation. Initiatives should, at a minimum, include the following:

(a) strengthened liability statutes to protect landowners who allow responsible public recreational use of their lands.
(b) updated liability statutes to establish hold-harmless mechanisms for landowners who open their land to public use, whereby each state underwrites a landowner's defense against personal injury suits and assumes costs for property damage and littering.
(c) additional reductions in property taxes for landowners who allow responsible public recreational use of their lands.
(d) state purchases of land in fee, and of temporary and permanent recreation easements and leases, including rights of access.
(e) state and private cooperative recreation agreements.
(f) creation of a recreation coordinator/landowner liaison and remote ranger positions in state government to assist in the management of public use of private lands providing recreation opportunities and other similar services.
(g) strengthened enforcement of trespass, littering, and dumping laws.
(h) improved recreation user education programs.
(i) improved capacity in state park and recreation agencies to measure recreational use, including types, amounts, locations, and concentrations of use, and to identify and address trends in use before they create problems.

Assessment of Implementation: Implementation begun and partial progress made.

Congress: Congress has not enacted legislation to implement this recommendation. Federal agencies have partially implemented this recommendation by improving their recreational visitor education programs. Most of the specific recommendations need to be implemented by the states, rather than Congress.

Maine: The Maine legislature amended its already strong landowner liability law in 1995 to protect additional organizations from liability for land used by the public for recreation, further implementing sections (a) and (b) of this recommendation. Maine Property Tax law implements section (c) by enabling landowners who allow the public access to their lands to reduce their property taxes. The state has acquired fee and less-than-fee interests (including recreation agreements) in lands for recreation in accordance with sections (d) and (e). It is unclear whether sections (f) and (g) have been implemented. Maine has continued to improve its recreation education programs (section (h)). It is unclear whether the state has implemented section (i) by measuring recreational use, but the state's web site is designed to inform visitors about numerous visitation sites, potentially diffusing recreational use.

New Hampshire: New Hampshire has implemented section (a) and partially implemented section (b) of the recommendation (for motorized recreation). New Hampshire law continues to provide a 20% reduction in property taxes for landowners who allow the public to access their lands

(section (c)). The state has acquired fee and less-than-fee interests (including recreation agreements) in lands for recreation in accordance with sections (d) and (e). It is unclear whether sections (f) and (g) have been implemented. New Hampshire has continued to improve its recreation education programs (section (h)), especially its snowmobiler education program. It is unclear whether the state has implemented section (i) by measuring recreational use.

New York: New York has not amended its already strong landowner liability law since sections (a) and (b) were recommended. New York has not implemented section (c). The state has acquired fee and less-than-fee interests (including recreation agreements) in lands for recreation in accordance with sections (d) and (e). It is unclear whether section (f) has been implemented. New York has implemented section (g) by continuing to fund remote ranger positions and supporting the Adirondack Mountain Club's High Peaks Summer Stewards program. The state continues to implement section (h) by improving its recreation education programs. New York has implemented the NFLC's section (i) recommendation by measuring recreational use, especially in the Adirondack Park. The state has used this information in the Adirondack Park Unit Management Plans.

Vermont: The Vermont legislature completely revised its landowner liability act to provide more protection for landowners who allow public access to their lands and implementing sections (a) and (b) of this recommendation. Vermont has not implemented section (c). The state's Forest Resource Advisory Council assessed potential recreation uses in Vermont's forests and developed benchmarks to encourage opportunities for compatible recreation. This information has been used by the state when it acquired fee and less-than-fee interests (including recreation agreements) in lands for recreation in accordance with sections (d) and (e). It is unclear whether sections (f) and (g) have been implemented. Vermont continues to implement section (h) by improving its recreation education programs (section (h)). It is unclear whether the state has implemented section (i) by measuring recreational use.

Prospects for Future Implementation: Public and legislator's (federal and state) interest in and support of recreation continues to grow. The broad support for the Conservation and Redevelopment Act, which would support some of this recommendation, illustrates why future implementation is likely. However, many of our experts stated that the public's increased outdoor recreation demands will require additional resources for states to continue to implement this recommendation.

Related Recommendations: 5 (Strengthen current use taxation programs), 14 (Institute a national excise tax on recreation equipment), 17 (Fund state land acquisition programs), and (Employ a variety of conservation tools).

Government Regulation and Public Policy

Recommendation 27: Improve workplace safety.
State forestry agencies, with funding from the USDA Forest Service and other appropriate sources such as the US Department of Labor, should cooperate with appropriate forest products associations and recreation business groups to establish or expand training programs to improve

workplace safety and reduce workers' compensation claims. These agencies also should encourage development of equipment and methods of harvesting that are safer, profitable, and environmentally compatible. A model program for loggers is Maine's Certified Logging Professional program, administered by the Maine Timber Research and Environmental Education (TREE) Foundation.

Assessment of Implementation: Implementation begun and substantial progress made in the states, and implementation begun and partial progress made by the federal government.

This recommendation has mainly been implemented through logger certification programs. These programs have reduced workers' compensation insurance claims and costs.

National efforts to improve workplace safety include the US Department of Labor, Occupational Health Safety and Administration's (OSHA) 1995 amendments to its logging operations regulations. However, many of our experts criticized these regulations as too restrictive. Soren Eriksson's "Game of Logging" program is a national program that combines demonstration with participation to teach logger safety, productivity, conservation and cutting techniques.

Regional efforts include the Northern Vermont Recourse Conservation and Development Council's Yankee Forest Safety Network (YFSN). YFSN is a logger association composed of businesses from five northeast states including New Hampshire and Vermont. The YFSN program, which has been funded by OSHA and state agency grants, combines mandatory safety training with a contract insurer. More than 200 loggers from 20 businesses have completed the program, which has reduced member organizations' workers' compensation rates by 30%.

Maine: Maine's certified Logging Professional program requires courses in workplace safety and first aid. More than 3,800 loggers have completed the program.

New Hampshire: More than 650 loggers have completed the New Hampshire Timber Harvesting Council's Professional Loggers Program which requires workplace safety and first aid training. The New Hampshire Timberland Owners Association, the University of New Hampshire's Cooperative Extension, and Thompson School of Applied Science co-sponsor the program.

New York: New York Logger Training's Trained Logger Certification requires courses in workplace safety and first aid. More than 500 loggers have completed the training. The state and the USDA Forest Service's Economic Action Program have provided funds to improve safety in sawmills. Sawmill workers' compensation costs have decreased.

Vermont: More than 300 loggers have completed the University of Vermont Cooperative Extension Office's Logger Education to Advance Program which requires workplace safety and first aid training. Approximately 375 loggers have been certified under the Vermont Forestry Foundation's Professional Logger Program, a four-day certification that includes safety and first aid training. PLP's recertification program requires 16 credits of first aid training. The Vermont Agency of Natural Resources' Department of Forests, Parks and Recreation has committees that examine workplace safety.

Prospects for Future Implementation: Fewer workers' compensation insurance claims and lower costs should continue the implementation of this recommendation. However, Maine's logger certification program is the only program tied to workers compensation rates. Therefore, continuation of the other programs requires both the public and private sectors continue to provide sufficient implementation resources.

Related Recommendations: 10 (Sound Forest Management Education), 24 (Direct assistance to natural resource-based businesses), 28 (Workers' Compensation Insurance Reform), and 33 (Support cooperative efforts among the four state universities).

Recommendation 28: Reform workers' compensation insurance programs.
State legislatures should reform their workers' compensation insurance programs to reduce costs. Examples of needed reforms include the following: discounting employers' annual workers' compensation insurance premiums if they provide employee safety training; revising liability statutes to limit third party suits; controlling health care costs; better guarding against fraudulent claims; and enacting mechanisms that more quickly resolve disputed claims.

Assessment of Implementation: Implementation begun and substantial progress made in Maine and New York. Implementation begun and partial progress made in New Hampshire and Vermont.

Maine: In 1992, prior to the NFLC recommendations, Maine enacted legislation which included the reforms recommended by the NFLC. Costs have been reduced by more than 35%.

New Hampshire: New Hampshire has enacted legislation that implements some of the NFLC's recommendations. Workers' compensation costs have been reduced. New Hampshire's workers' compensation payments to injured workers are higher than other Northern Forest states.

New York: In 1996, New York enacted its Employment, Safety and Security Act. This implemented all of NFLC's recommended reforms. Costs have been reduced by more than 36%.

Vermont: Vermont has enacted legislation that implements some of the recommended reforms, such as controlling health care costs and enacting mechanisms that quickly resolve disputed claims.

Prospects for Future Implementation: Workers' compensation continues to be an important issue for the business community, especially as Northern Forest states attempt to retain and attract new businesses. Continued reform, even in the states that have implemented the NFLC recommendation, is likely.

Related Recommendations: 24 (Direct assistance to natural resource-based businesses), 27 (Improve workplace safety), and 33 (Support cooperative efforts among the four state universities).

Recommendation 29: Review the effectiveness of administrative rules.
Beginning June 1995, state agencies should review the effectiveness of administrative rules regarding business, land use, and the environment, using a process that repeats every five years and involves all interested parties. Such reviews would enable agencies to evaluate the effectiveness, consistency, practicality, efficiency, and cost of existing regulations.

Assessment of Implementation: Implementation begun and partial progress made, but not as the NFLC envisioned.

No state has engaged in an evaluation of the effectiveness of its administrative rules in 1995. No state has established a program to review its rules every five years. However, states have evaluated the effectiveness of some rules and established mechanisms to do so. Experts suggested that all state agencies informally conduct effectiveness analyses when they react to public, legislative, and executive input and pressure. The enactment of new programs, by both the legislature and agencies, often causes the effectiveness of existing rules to be evaluated.

Maine: "Sunset reviews" require that state agencies and their programs justify their existence (and their effectiveness) every five or ten years. Amendments to Maine's Forest Practice Act in 1998 reviewed the effectiveness of that particular program.

New Hampshire: When New Hampshire recodified its forest laws in 1995, it evaluated the effectiveness of its existing forest laws. Forester licensing rules were also reviewed and substantially revised in 1998.

New York: Governor Pataki established the Office of Regulatory Reform which reviews administrative order's effectiveness in accordance with the NFLC recommendation.

Vermont: 1999 amendments to the Agency of Natural Resources, Department of Forest, Parks and Recreation's Strategic Plan reviewed the effectiveness of that Department's rules.

Prospects for Future Implementation: While regulatory reform, which encompasses the NFLC's vision, remains an important issue, the lack of resources and legislative initiative continues to prevent the systematic implementation of this recommendation.

Related Recommendations: 5 (Strengthen current use tax programs), 11 (Assess forest practices and programs), 28 (Reform workers' compensation programs), and 30 (Simplify and stabilize the regulatory process).

Recommendation 30: Simplify and stabilize the regulatory process.
Beginning June 1995, state agencies should develop and implement innovative approaches to simplify and stabilize the regulatory process. Such approaches would improve the business climate in general and provide new opportunities for smaller businesses to get started in the region. These should include:

(a) creation of a single permit to cover all requirements for a single project.

(b) voluntary no-fault environmental audits, in which agencies review environmental compliance in a constructive and non-punitive manner. Responsible parties are not penalized for inadvertent violations discovered by the audit if the violations are corrected within a specified period of time.
(c) negotiated regulations, in which government agencies cooperate with industry, environmental organizations, and other interests to develop and implement regulations in a manner that achieves the desired outcome without being unnecessarily burdensome.

Assessment of Implementation: Implementation begun and partial progress made.

Northern Forest states have stabilized portions of their regulatory processes. Efforts to simplify the regulatory process, including innovative approaches have been concentrated on the federal level. Experts suggested that efforts to stabilize the regulatory process are often dependent upon political stability within the state executive and legislative branches. Most of the efforts to simplify the regulatory process, especially sections (a) to (c) of the recommendations have occurred at the federal, rather than the state level.

Maine: Maine has established a voluntary no-fault audit program. This program implements section (b) of the recommendation.

New Hampshire: New Hampshire's recodification of its forestry laws directly simplified these laws, and indirectly stabilized them. Work has also been ongoing to streamline review of wetlands permitting.

New York: New York's Office of Regulatory Reform reviews proposed and existing regulations for need, consistency and simplicity.

Vermont: Vermont has attempted to consolidate the permit process to implement the section (a) recommendation.

Prospects for Future Implementation: Complete implementation by states is limited by the complexity of the issues, and the lack of resources and legislative directives. Improvements in technology may help manage the complexity, but the legislatures' failure to provide resources and incentives prevent implementation of this recommendation. Federal success and experience with sections (a) to (c) of the recommendation will provide models and information for states to implement these programs.

Related Recommendations: 5 (Strengthen current use tax programs), 11 (Assess forest practices and programs), 28 (Reform workers' compensation programs), and 29 (Review the effectiveness of administrative rules).

Recommendation 31: Review land use planning programs.
Agencies and organizations involved with land use planning should review their existing programs and plans. They should assess them for adequacy in guiding development to appropriate areas, and in supporting traditional uses of the forest. Landowners, businesses,

residents, and other interests should be included in the review. Agencies and organizations involved in land use planning across the region should regularly share successes and failures of their various programs. Such cooperation would facilitate the flow of information to planners, both within and among states, and it would stimulate more effective planning at all levels. Because rural areas often lack the resources to conduct such planning activities, states should provide money and technical assistance to further these efforts. Municipalities or regional agencies with comprehensive or master plans in place should receive priority for funding for economic development.

Assessment of Implementation: Implementation begun and substantial progress made in Maine and Vermont. Implementation begun and partial progress made in New Hampshire and New York.

Maine: In December 1998 and 1999, the State Planning Office revised its February 1997 Strategic Plan. The plan addresses the Office's responsibility to provide technical assistance to local and regional planning groups. The Maine Department of Conservation's Land Use Regulation Commission (LURC) has revised its programs and plans since this recommendation was issued, and is currently proposing substantive and procedural changes for planning, permitting and/or compliance. The LURC provides on-line access to documents that define mission, authority, and standing of the Commission and set rules and standards for planning, permitting and compliance.

New Hampshire: The state has not conducted a comprehensive review of its existing programs and plans. However, the Office of State Planning's Municipal and Regional Planning Assistance Department provides significant information and assistance to local and regional governments. NH Resources Net, "an information resource for planners, town officials, resource managers and the public," provides some information to the state's local planning and zoning boards. These resources include model ordinances cited for their currency, innovation, or relevance to sparsely (or densely) populated communities, and the PlanLink list serve, which is an on-line discussion and information sharing forum for the NH planning, zoning and land use regulation community. The Office of State Planning also publishes a newsletter that provides information on planning activities. Other related work has occurred through the University of New Hampshire's efforts to aid communities in their efforts to identify development/protection priorities.

New York: The state has not implemented this recommendation for private lands. The New York State Department of Environmental Conservation is currently developing Unit Management Plans for the Adirondack Park. These plans address state lands in the Park and have implemented some of the NFLC's suggestions in this recommendation.

Vermont: The Vermont Environmental Board has reviewed and amended its existing programs and plans. For example, the Board has proposed revisions to its regulations and amended its Master Permit Policy this year. The Board's "E-note" index provides on-line and hard copy access to key legal findings from past Board decisions. The Board also has an on-line notification service that allows the Board to notify subscribers when a new Board decision is issued.

Prospects for Future Implementation: Agencies involved in land use planning usually recognize the need to review their programs and plans. Reviews require resources and state legislatures have often failed to allocate resources for this task because of resource scarcity or political and/or public dislike for land use planning or its effect. The World Wide Web increases the ability of land use planning agencies to disseminate information and facilitate information sharing by local and regional land use regulation organizations.

Related Recommendations: 10 (Educate forest users and the public about sound forest management) and 11 (Assess forest practices and programs).

Recommendation 32: Establish consistent truck-weight regulations.
State transportation agencies should coordinate with one another to establish consistent truck weight regulations across the region. Regulatory consistency will do much to improve the flow of goods across state lines and enhance the region's ability to compete in national and world markets. To achieve this, a compatible system of road classifications needs to be developed, and roads which cross state boundaries should have consistent classifications from one state to another.

Assessment of Implementation: Not implemented.

While states that adhere to the Federal Bridge Formula ensure that Interstate Systems in these states have uniform weight limits, state highways are not necessarily governed by these rules. State transportation agencies have generally failed to establish consistent truck weight regulations and establish a compatible system of road classifications.

Maine: Maine is the only state that does not follow the standard 80,000 lbs. limit imposed by the Federal Bridge Formula for interstate highways. Maine has not made a comprehensive effort to examine other state's regulations for inconsistencies or to implement a compatible road classification system. Maine has examined neighbor state's truck weight regulations when amending its own regulations. However, these efforts have generally failed to implement the NFLC's recommendation because other states have subsequently amended their regulations, creating new inconsistencies.

New Hampshire: New Hampshire has not addressed inconsistencies in its truck weight regulations or road classification system.

New York: New York has not made a comprehensive effort to correct inconsistencies in its truck weight regulations or road classification system. However, New York and Vermont have agreed to consistent overweight permitting.

Vermont: Vermont conducted a study on truck regulations which identified inconsistencies in its truck weight regulations and road classification system, and is attempting to standardize its truck length regulations with other states. New York and Vermont have agreed to consistent overweight permitting.

Prospects for Future Implementation: It is doubtful that this recommendation will be implemented in the near future.

Related Recommendations: 29 (Review the effectiveness of administrative rules).

Promoting More Informed Decisions

Research and Technology Transfer

Recommendation 33: Support cooperative efforts among four state universities.
The state universities and USDA Forest Service's State and Private Forestry Bureau should support formal cooperative efforts among the forestry schools of the state universities in the four Northern Forest states. These cooperative efforts should include:

(a) working with state forest roundtables.
(b) working with the Northeastern Forest Experiment Station to increase research and transfer technology to the wood products industry on efficient and most up-to-date wood processing, and ways to reduce waste, pollution, and energy consumption in the industry. Information should be practical and usable for small firms.
(c) serving as a clearinghouse on ecosystem management and on public and private programs affecting ecosystems. Specifically, this formal cooperation should:
    (1) collect existing research and information;
    (2) broaden this information base through additional research.
    (3) disseminate existing and new information to landowners, public and private resource managers, state forest roundtables, and the general public.

Assessment of Implementation: Not Implemented

State universities collaborate with the USDA Forest Service on a variety of projects, but not those recommended by the NFLC. State universities have not collaborated with each other. Experts cited institutional barriers, and lack of cooperative mechanisms and resources for the failure to implement this recommendation. Vermont Senator Leahy's legislative attempts to establish a Northern Forest Research Cooperative have failed because of regional politics.

Prospects for Future Implementation: Until educational institutions' barriers and resource deficiencies are addressed, this recommendation will not be implemented. This issue currently lacks public and legislative attention and support. However, federal budget surpluses increase the possibility for addressing resource deficiencies in the future.

Related Recommendations: 10 (Educate forest users and the public about sound forest management), 11 (Assess forest practices and programs), 12 (Achieve principles of sustainability), 15 (Refine state land acquisition planning programs), 21 (Conserve and enhance biodiversity), 23 (Encourage marketing cooperatives and networks), and 37 (Promote natural resource education for the public).

Recommendation 34: Track and analyze land trends.
Appropriate state agencies should develop information management systems to track and analyze real estate conversion trends. Timely collection and analysis of such information, consistent between states, would enable states to make more informed decisions for land conservation efforts. This would include the magnitude, number, and location of subdivisions, consolidations, and land sales.

Assessment of Implementation: Implementation begun and substantial progress made, but not as the NFLC envisioned in New Hampshire. Not implemented in Maine, New York, or Vermont.

Maine: No comprehensive survey has been undertaken. The Maine State Revenue Service tracks land sales, but the data is not analyzed for conversion trends. The Maine Forest Service collects timber harvesting data, but the information is fragmented and not combined with other data to understand land conversion trends. The state has no formal mechanism to use this information to inform decision making.

New Hampshire: State agencies collect and analyze this data periodically. The Society for the Protection of New Hampshire Forests published a report *New Hampshire's Changing Landscape* which analyzed past and present, and predicted future, land conversion trends. The state has no formal mechanism to use this information to inform decision making because it does not have a statewide land use regulatory board. Land use decisions are determined locally. The Office of State Planning tracks real estate and growth trends. Some of the Office's data on land conversion is analyzed by the Division of Forests and Lands.

New York: The New York State Land Acquisition Law requires New York's Department of Environmental Protection and Office of Parks, Recreation and Historic Preservation to conduct comprehensive inventories of land having conversation significance. However, the survey, which is incorporated into the states' biennial Open Space Conservation, does not conduct a comprehensive analysis on land conversion trends. The state's Board of Equalization collects data that includes land conversion information, but does not analyze the data for land conversion trends. The state has no formal mechanism to use this information to inform decision making.

Vermont: The Vermont Agency of Natural Resources relied on land conversion information provided by a University of Vermont professor. Since the professor retired, the Agency does not have detailed data tracking land conversion trends. The Department of Taxation collects some data from real estate records, but does not analyze this information in a manner that implements the recommendation. The state has no formal mechanism to use this information to inform decision making.

Prospects for Future Implementation: The new annualized USDA/state Forest Inventory and Analysis Program will provide some additional information on land use trends that begins to address some of the concerns that prompted this recommendation. The improvement of Geographic Information Systems (GIS) since the NFLC's report improves states' ability to track land conversion trends. However, state legislatures have failed to provide agencies with the resources needed to collect data from multiple sources and implement this recommendation. Until resources are available, it is unlikely that this recommendation will be implemented. This recommendation was implemented differently than the NFLC envisioned. GIS tools may enable

a private company or consortium to conduct this analysis and sell the results to states, local governments and universities.

Related Recommendations: 11 (Assess forest practices and programs), 12 (Achieve principles of sustainability), 33 (Support cooperative efforts among the four state universities), 35 (Conduct and publish decennial surveys in a timely fashion), and 36 (Use the Northern Forest Resource Inventory).

Recommendation 35: Conduct and publish decennial surveys in a timely fashion.
Congress should provide the funds necessary for the USDA Forest Service to conduct and publish decennial surveys in a timely fashion.

Assessment of Implementation: Implementation begun and substantial progress made, but not as the NFLC envisioned.

The 1998 Farm Bill requires the USDA Forest Service prepare an annual forest resource inventory for each state. The Forest Service is supposed to measure annually 20% of all sample plots in a state. Lack of resources is forcing the USDA Forest Service to implement this mandate in a seven year, rather than five year, cycle. The Maine inventory was begun in 1999. The New Hampshire, New York and Vermont inventories will begin in 2002.

Prospects for Future Implementation: Congress's annual inventory mandate will enable states and other stakeholders to have more timely information as long as Congress continues to appropriate resources to conduct the inventories. The federal budget surpluses make implementation of this program more likely.

Related Recommendations: 11 (Assess forest practices and programs), 12 (Achieve principles of sustainability), 33 (Support cooperative efforts among the four state universities), 34 (Track and analyze land trends), and 36 (Use the Northern Forest Resource Inventory).

Recommendation 36: Use the Northern Forest Resource Inventory.
In their land conservation and planning efforts, states should use the natural and economic resource data provided through the Northern Forest Resource Inventory.

Assessment of Implementation: Implementation begun and partial progress made.

The Northern Forest Resource Inventory (NFRI) data continues to be available. States use the NFRI on a case-by-case basis. When the data fits their needs, states use it. The data has been combined with more recent data to develop information on trends and changes. A number of experts stated the NFRI was the NFLC's most valuable work product.

Maine: NFRI data was collected and automated. The data continues to be used by various state agencies and other organizations.

New Hampshire: NFRI data has been used to develop trends.

New York: NFRI data is available, and was used by the state for analysis of the 1998 Ice Storm. Nonprofit organizations have also requested and used this data.

Vermont: All GIS layers and data have been distributed to regional planning commissions, which regularly use the information. Data was used to decrease processing time for the acquisition of the Northeast Kingdom's Champion Lands.

Prospects for Future Implementation: NFRI data will continue to be valuable as baseline data. However, with each year it becomes historic, rather than current, data. Reinvigorated and new land acquisition programs in Maine and New Hampshire may use the data. Additional resources will be required so that NFRI data can be integrated into continually changing GIS programs.

Related Recommendations: 11 (Assess forest practices and programs), 12 (Achieve principles of sustainability), 33 (Support cooperative efforts among the four state universities), 34 (Track and analyze land trends), and 35 (Conduct and publish decennial surveys in a timely fashion).

Natural Resource Education for the Public

Recommendation 37: Promote natural resource education for the public.
States should promote natural resource education for the general public, from youth to adult. These education programs should focus on the region's forest resources, natural processes, and resource management.

(a) State education departments should require that all students complete one year of natural resource education to graduate. Options to meet this requirement should include:
  (1) one year of junior high school science focusing on natural resources and land-based economies such as agriculture and forestry;
  (2) the equivalent of one year of natural resource and land-based education between the grades of 7 and 12; and
  (3) integration of natural resource and land-based education into present science programs of grades kindergarten through 12.

(b) Teachers should have curriculum material and training opportunities through such programs as Project Learning Tree and Project Wild.

(c) State conservation agencies, state education departments, and private organizations should provide continuing education opportunities for adults to enhance their understanding of natural resources through new and existing public and private programs. Innovative mechanisms such as interactive television, personal computer networks and on-line services should be used to expand delivery of these educational opportunities.

Assessment of Implementation: Implementation begun and partial progress made.

No NF state has implemented section (a) of the recommendation, although Project Learning Tree, Project Wild, etc. do provide information about how their resources fit some state-mandated curriculum. All states have implemented

section (b). Each state has numerous natural resource programs that implement section (c) of the recommendation. While a comprehensive listing and analysis of each one of these programs is beyond the scope of this report, a review of these programs indicates that they implement section (c) of the recommendation. Each state's conservation agencies have natural resource education web sites.

Maine: Various Maine state conservation agencies support and fund Project WILD, Project WILD Aquatic, Project Learning Tree, and Project Wet, and help teachers utilize these materials in their classes. The Maine Bureau of Forestry employs a natural resource educator to develop and coordinate natural resource education for school-age children, forest landowners, forest products harvesters and forest managers. Specific duties include working with the Maine Department of Education to integrate forestry and forest science programs into the science curricula in public schools. State conservation agencies, the University of Maine's Cooperative Extension Office, and numerous private organizations continue to educate the public on the state's natural resources.

New Hampshire: The New Hampshire Fish and Game Department coordinate Project WILD and Project WILD Aquatic activities for teachers. State forestry/conservation agencies, the University of New Hampshire's Cooperative Extension Office, and numerous private organizations continue to educate the public on the state's natural resources. Project Learning Tree in New Hampshire has developed a crosswalk with the State Department of Education curriculum frameworks to help educators link Project Learning Tree activities with mandated curriculum elements. The Division of Forests and Lands has three forestry education centers in New Hampshire for public outreach and education.

New York: The state's Department of Environmental Conservation facilitates teachers' use of Project Learning Tree and Project WILD. New York's Biological Research Institute's mission includes biodiversity education. State conservation agencies, Cornell's Cooperative Extension Office, SUNY ESF and numerous private organizations continue to educate the public on the state's natural resources. New York's network of conservation education camps and environmental education centers enhances natural resource and public education of youth.

Vermont: The Vermont Department of Forests, Parks, and Recreation administers Project Learning Tree, while the state's Department of Fish and Wildlife coordinates Project WILD. The Vermont Nongame and Natural Heritage Program's mission includes establishing educational programs on natural communities. State conservation agencies, the University of Vermont's Cooperative Extension Office, and numerous private organizations continue to education the public on the state's natural resources.

Prospects for Future Implementation: While portions of this recommendation have been implemented and those efforts are likely to continue, the general public and the education community's support for requiring a natural resource component for graduation have waned. Newly enacted mandatory testing focuses administrators' and teachers' efforts on core curriculum and student's successful completion of tests, and poses a barrier to integrating new material on natural resources into the curriculum. The extensive use of the World Wide Web presents both opportunities and problems for organizations involved in natural resource education. While it enables these organizations to provide more directed education materials, it requires these organizations to keep the information updated and sufficient to satisfy the public's

education needs. As the process of compiling the information for this report demonstrated, many natural resource organizations' web sites do not meet this challenge. Information is often not available, dated, or difficult to find. As the public acceptance of this new media grows, experts predict that the web will be the public's initial source for natural resource information and education materials. To fulfill this demand, natural resource organizations will require additional monetary, and perhaps personnel, resources.

Related Recommendations: 4 (Encourage green certification programs), 10 (Educate forest users and the public about sound forest management), 12 (Achieve principles of sustainability), 33 (Support cooperative efforts among the four state universities), and 35 (Conduct and publish decennial surveys in a timely fashion).

CONCLUSION

During our research for this report, one of the interviewees told us that working on this project was like "holding up a lightning rod in an electric storm." He was correct. Our interviews and questionnaires elicited some interesting responses including five page letters and e-mails. As one of our interviewees stated, the NFLC's report and the process that produced it forced people with differing views to discuss issues that affected their families, friends, jobs, communities, and future. Some people never supported the NFLC process, while others embraced its findings and recommendations.

The NFLC's recommendations are one of many forces that encouraged change over the last decade. Whether or not the NFLC recommendations were always critical is not important. The fact that considerable change has taken place is truly important. The NFLC provided grounding and a baseline for improvement.

This report documents many accomplishments. Green certification, easements and other non-fee ownership mechanisms, improved workplace safety, and increased forest-based recreation are important examples. Many recommendations, however, have been only partially implemented or not implemented at all. This is especially true of recommendations directed toward Congress. Action by the Congress will require using the federal budget surplus to fund the actions or reduce tax impacts on private owners. To date, this only has occurred in the shotgun fashion commonly known as the pork barrel. Serious reflections and action are unlikely at the federal level in the near term.

To paraphrase one of our interviewees, "the NFLC and its recommendations got people's attention and got them talking." We hope that this report rekindles interest in the NFLC's recommendations both within the states and in Washington, D.C. and empowers them to implement many of the remaining recommendations.

LITERATURE CITED

Harper, Stephen. 1990. *The northern forest lands study of New England and New York: A report to the Congress of the United States on the recent changes in landownership and land use in the northern forest of Maine, New Hampshire, New York, and Vermont.* Rutland, Vt: USDA Forest Service.

Governors' Task Force. 1990. *The northern forests: A strategy for their future.* Vermont Department of Forests, Parks and Recreation.

Northern Forest Lands Council. 1993. *Listening log of public comments on the findings and options: A compilation of all public comment on the findings and options considered by the Northern Forest Lands Council as it transformed its options into draft recommendations.* Concord, NH: Northern Forest Lands Council.

Northern Forest Lands Council. 1994a. *Finding Common Ground: Conserving the Northern Forest.* Concord, NH: Northern Forest Lands Council.

Northern Forest Lands Council. 1994b. *Finding Common Ground: The draft recommendations of the Northern Forest Lands Council for public policy changes affecting the 26 million acre northern forest of Maine, New Hampshire, New York, and Vermont.* Concord, NH: Northern Forest Lands Council.

Northern Forest Lands Council. 1994c. *Technical appendix: A compendium of technical research and forum proceedings from the Northern Forest Lands Council*. Concord, NH: Northern Forest Lands Council.

U.S. House. 1989. Committee on Agriculture. Subcommittee on Forests, Family Farms, and Energy. *Review of the draft of the Northern Forest Lands Study report.* 101th Cong. 1st sess. October 26, 1989.

U.S. Senate. 1991. Committee on Agriculture, Nutrition, and Forestry. Subcommittee on conservation and Forestry. Oversight on forest land conservation and related economic development within the northern forest lands study area. 102nd Cong. 1st sess. July 15, 1991.

APPENDIX A:
February 1997 Implementation Analysis

In February 1997, Joseph Michaels, the NFLC federal liaison, assessed whether the NFLC's recommendations had been implemented two years after *Finding Common Ground* was released. This appendix contains Mr. Micheal's implementation analysis, which we have reformatted. We have included this analysis because it can be compared with our report to analyze recommendation implementation progress during the past four years.

Recommendation 1: Fund Forest Legacy

None – National program funding has fallen back to only $2 million despite much progress on tracts acquired and a new state grant option. NFL states will get less than half of this in '97.

Maine: 9,815 acres protected; Needs – $2 million for 15,259 acres.

New Hampshire: 400 acres protected; Needs – $1.5 million for 9,940 acres.

New York: 141 acres protected; Needs – $658,000 for 1,878 acres.

Vermont: 37,477 acres protected; Needs – $1.2 million for 6,000 acres.

Total Needs: $5 million plus in unfunded cases, plus a back log of interested landowners estimated at $40 million per year.

Recommendation 2: Fund state easement programs

Maine: Not Assessed.

New Hampshire: None now or likely in the near future.

New York: Voters passed $1.75 billion Clean Water/Clean Air Bond Act which includes $150 million for acquisition.

Vermont: Not Assessed.

Recommendation 3: Fund the Stewardship Incentive Program

None – has been cut back to $4.5 million.

Table 8: Non-Industrial Private Forest (NIPF) Lands enrolled in Stewardship Incentive Program (SIP)

	State's NIPF lands (thousands of acres)	State's NIPF lands enrolled in SIP (thousands of acres)	Percentage of state's NIPF lands enrolled in SIP
Maine	8,353	161	2%
New Hampshire	3,370	269	8%
New York	13,687	807	6%
Vermont	3,421	173	5%

Recommendation 4: Encourage green certification programs

AF&PA has been very proactive with its national Sustainable Forestry Initiative (SFI) . . . but does not "certify"
Maine: SFI active.
New Hampshire: Industry sponsored programs associated with SFI are moving forward.
New York: DEC finds marked lack of manufacture or consumer demand. SFI strong.
Vermont: SFI.

Recommendation 5: Strengthen current use tax programs.
Maine: No new action; current program being challenged.
New Hampshire: Very effective program in place.
New York: No new action.
Vermont: Property tax reform on legislative agenda this year including "current use."

Recommendation 6: Consider replacing ad valorem taxation system with current use.
Maine: Legislation to accomplish failed in last session of legislature.
New Hampshire: One in place now.
New York: No new progress to report.
Vermont: See #5

Recommendation 7: Change estate tax policies.
Sen. Gregg's proposed legislation will be re-introduced in the next Congress. Maybe this time.

Recommendation 8: Allow inflation adjustment on the original cost of timber.
Nothing on the horizon for IRS, and nothing likely to occur that would threaten revenues with balancing the budget a top priority.

Recommendation 9: Eliminate rule on 100 hours per year (passive loss – IRS).
Same. With balancing the budget the #1 issue, no support for more tax relief.

Recommendation 10: Educate forest users and public about sound forest management (sustainability).
Maine: Undertaking assessment of its current Natural Resource Education Program.
New Hampshire: Ongoing outreach plus EPA grant to conduct landowner and professional workshops on *Recommended Forest Practices Manual*.
New York: A sustained effort in outreach re: forest stewardship and management.
Vermont: Forest Resource Advisory Council (FRAC) working on Sustainability Management practices.

Recommendation 11: Assess forest practices and programs.
Maine: Situation unclear. Expect continued debate over state forest policy.
New Hampshire: Recodified all existing legislation.
New York: Forest Practices Board is assessing and revising forest practice standards and a draft timber harvesting ordinance.
Vermont: See #10 . . . plus conducted assessment of clearcutting, acceptable management practices, and heavy cutting.

Recommendation 12: Achieve principles of sustainability.
Maine: Council on Sustainable Forest Management issued report in July 1996.
New Hampshire: FSSWT group released draft "Recommended Voluntary Forest Practices Manual" in December 1996. Will complete "Current Condition and Capability Assessment" in 1997.
New York: No new progress to report.
Vermont: FRAC's benchmarks of sustainability complete (Phase 1).

Recommendation 13: Fund public land management agencies.
Green and White Mountain National Forests' budgets declined.
Maine: Bureau of Public Lands and Parks and Recreation combined. Downsizing. Many jobs eliminated.
New Hampshire: Budges going down.
New York: Job reductions though attrition.
Vermont: Reduction in staff and budget.

Recommendation 14: Institute national excise tax on recreation equipment.
Some pending legislation floating around. May possibly be included in resurrected NF Stewardship Bill to be re-introduced this Congress. NY says Wildlife Diversity Initiative still alive.

Recommendation 15: Refine state land acquisition planning programs (goal-oriented process).
Maine: State Planning Office now coordinating public lands acquisition process.
New Hampshire: Nothing right now but SPNHF to gear up as ecological reserve project becomes better defined.
New York: Open space plan prioritizes acquisition targets, plan update underway.
Vermont: Major planning initiative underway . . . next 1.5 years.

Recommendation 16: Fund L&WCF Program (at least 60%).
NF Alliance et. al. working with a new national coalition to refund L&WCF with strong commitment to state funding.

Recommendation 17: Fund state land acquisition program.
Maine: Maine Outdoor Heritage Fund from state lottery game. Also "affinity credit card" where proceeds go to Land for Maine's Future program.
New Hampshire: See #15
New York: See #2
Vermont: Continues through Vermont's Housing & Conservation Trust Fund Appropriations.

Recommendation 18: Employ variety of conservation tools to conserve landscapes.
See #1 (Forest Legacy) and #2 (State easement programs).

Recommendation 19: Exclude from income tax portion of the gain from conservation sales.
See #9

Recommendation 20: Assess water quality trends (by 6/96).
Maine: Forest Resource Advisory Team published an assessment of compliance with BMP's. Discussion about future policy coming up.
New Hampshire: No new progress to report.
New York: No new progress to report.
Vermont: Assessment of Acceptable Management Practices (AMP). Water quality statutes now being evaluated by DEC.

Recommendation 21: Conserve and enhance biodiversity (by 6/96).
Maine: Forest biodiversity project still active. Released assessment of Maine's biodiversity in 1996.
New Hampshire: Published "New Hampshire Living Legacy, the Biodiversity of the Granite State." Ecological Reserve Steering Committee established last year. They will develop a framework for ecoreserves.
New York: Ongoing forest and wildlife management programs are achieving this objective.
Vermont: Biodiversity Project well underway. Conservation Lands Strategy underway.

Recommendation 22: Increase funding for rural community assistance program (USFS-RD through Forestry).
Rural Development Funding is decreasing . . . not increasing.

Recommendation 23: Encourage marketing cooperatives and networks.
No new progress to report.

Recommendation 24: Direct assistance to natural resource-based business (state agencies).
Maine: No new progress to report.
New Hampshire: Sarah Smith (Coop Ext) now works one day a week in Office of Business and Industrial Development.
New York: Strong DEC Forest Products Utilization and Marketing program. Partnerships with state and local economic development organizations formed.
Vermont: On-going work in Marketing & Utilization . . . working with Economic Progress Council.

Recommendation 25: Authorize and fund community financial institutions, or something similar.
No new progress to report.

Recommendation 26: Promote public policy to provide forest-based recreation (e.g., liability).
Maine: Legislation passed. Simplifies regulatory program for rebuilding sporting camps and remote campsites on private land.
New Hampshire: No new progress to report.
New York: No new progress to report.
Vermont: Landowner Liability protection amendments new in legislature.

Recommendation 27: Improve workplace safety.

No new progress to report.

Recommendation 28: Reform worker's compensation insurance programs.
Maine: Completed.
New Hampshire: No new progress to report.
New York: Recent legislation on comprehensive reforms with anticipated 15% cost reduction.
Vermont: No new progress to report.

Recommendation 29: Review the effectiveness of administrative rules (state agencies).
Maine: All agencies undertook in 1995.
New Hampshire: No new progress to report.
New York: No new progress to report.
Vermont: No new progress to report.

Recommendation 30: Simplify and stabilize the regulatory process (6/95 state agencies).
Maine: Legislature passed a law in 1996 requiring legislative review and approval of "major and substantial" rules.
New Hampshire: No new progress to report.
New York: No new progress to report.
Vermont: No new progress to report.

Recommendation 31: Review land use planning programs.
Maine: LURC still revising draft Comprehensive Land Use Plan.
New Hampshire: No new progress to report.
New York: No new progress to report.
Vermont: No new progress to report.

Recommendation 32: Establish consistent truck weight regulations (state agencies).
Maine: No new progress to report.
New Hampshire: No new progress to report.
New York: No new progress to report.
Vermont: On-going effort in legislature.

Recommendation 33: Support cooperative efforts among four state universities (Universities and USDA FS-SP&F).
I have contacted Research (Northeastern Station) asking for a meeting to start moving this forward. This is also addressed in proposed stewardship legislation.

Recommendation 34: Track and analyze land conversion trends (state agencies).
Maine: No new progress to report.
New Hampshire: No new progress to report.
New York: No new progress to report.
Vermont:: Major Landowner Survey conducted. Assessing trends.

Recommendation 35: Conduct and publish decennial surveys in a timely fashion.
State Foresters met in March 1996 to address this and other FI&A issues. Core group presented recommendations to NAASF. Final report due 3/97.

Recommendation 36: Use the NFL Inventory.
Maine: Info collected and automated; is regularly used by state agencies and others.
New Hampshire: No new progress to report.
New York: No new progress to report.
Vermont: All GIS layers and data distributed regions and planning commissions.

Recommendation 37: Promote natural resource education for the public (states).
Maine: See #10
New Hampshire: No new progress to report.
New York: No new progress to report.
Vermont: Working on "Ecosystem Management Centers." Other on-going work in PLT, Project WILD, et. al.

APPENDIX B:
NFLC's Citizen Advisory Committee and Work Group Subcommittees Questionnaire

A Five Year Assessment of Implementation Progress
of the Recommendations of the Northern Forest Lands Council
by
The Faculty of Forestry
at the
SUNY College of Environmental Science and Forestry

Part I
Assessing the Northern Forest

In the Northern Forest Lands Council's (NFLC) 1994 report, *Finding Common Ground*, the NFLC declared that its recommendations were intended to help the Northern Forest become "a landscape of interlocking parts and pieces, inseparable, reinforcing each other: local communities, industrial forest land, family and individual ownerships, small woodlots, recreation land, public and private conservation lands." While the NFLC stated that this was its long term goal and that it would take years to attain this goal, we would like your opinion on whether conditions have **improved** in the Northern Forest since 1994.

Please circle your response.

Since *Finding Common Ground* was issued in 1994, I believe that:

1. Property owners have been able to hold and manage land for forest products and other benefits.

Disagree						**Agree**
1	2	3	4	5	6	7

2. Communities have strengthened their natural resource-based economies.

Disagree						**Agree**
1	2	3	4	5	6	7

3. Biological diversity has been protected through management based on sound scientific principles.

Disagree						**Agree**
1	2	3	4	5	6	7

4. Lands have been acquired for public ownership based on clear public priorities, demonstrated need, and fairness to landowners.

Disagree						**Agree**
1	2	3	4	5	6	7

5. Public recreation has been provided on public and private land as an important part of the region's economy and way of life.

Disagree						**Agree**
1	2	3	4	5	6	7

6. Conservation easements have been used to protect lands from development to ensure sustainability of the forest resource in areas with significant development pressures.

Disagree						**Agree**
1	2	3	4	5	6	7

Part II
Identifying Experts on Specific Recommendations

We would like you to identify experts within YOUR state that will enable us to evaluate whether specific NFLC recommendations were implemented in your state. Upon receiving these questionnaires, we will contact the two experts selected by the most respondents. If they agree, we will conduct a telephone interview with these experts to get their opinion on whether the NFLC's recommendations have been implemented in your state.

The list below contains a summary of the recommendations we need to evaluate. If you would like more information about any of the recommendations, please refer to the enclosed sheet that contains a complete description of all of the NFLC's recommendations.

In addition, we have provided a list of all the members of the NFLC's Citizen Advisory Committee and Subcommittee Work Group members located within your state cited in the Appendices of *Finding Common Ground*. We have included this list for your convenience since we believe that some of these people may be experts on whether some of these recommendations have been implemented.

Please list the names of your recommended experts below each recommendation. We realize that you may not be able to recommend one or two experts for each recommendation. Please list as many as you can.

Recommendation 2: Fund state easement programs. States should continue to support and fund their conservation easement programs.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 4: Encourage green certification programs. State forestry and economic development agencies should encourage and cooperate with emerging private green certification programs that recognize landowners who practice sustainable forest management.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 5: Strengthen current use tax programs. State legislatures should review existing current use tax programs and adopt a variety of changes.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 6: Consider replacing the* ad valorem *taxation system. State legislatures should consider replacing the *ad valorem* system with one based on current use for all property.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 7: Change estate tax policies. Congress and the state legislatures should change estate tax policies to reduce the pressure on heirs to sell, convert, or otherwise change the character of family forest ownerships.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 8: Allow inflation adjustment on the original cost of timber. Congress and state legislatures should change income tax policies to allow adjustments for inflation on the basis (original cost) of timber owned by forest landowners.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 10: Educate forest users and the public about sound forest management. States should strengthen and expand current programs to inform loggers, foresters, landowners, and the general public about sound forest management practices, and the Principles of Sustainability.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 11: Assess forest practices and programs. States should conduct, by June 1996, and periodically thereafter, scientifically-based assessments of the impact of existing forest practices, programs, and regulations, to evaluate their adequacy in achieving the Principles of Sustainability.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 12: Achieve Principles of Sustainability. State forest roundtables, or something of a similar nature, should implement action to achieve the Principles of Sustainability.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 13: Fund public land management agencies. Congress and the states should provide sufficient funds to public land management agencies to manage and maintain existing public land holdings and recreation facilities for increased public use; to protect fragile areas; and to enhance public health and safety at existing facilities.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 15: Refine state land acquisition planning programs. By June 1996, states, in consultation with local governments, should refine their existing state land acquisition programs to follow a goal-orientated, public planning process.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 17: Fund state land acquisition programs. States should continue their history of providing funding for land acquisition through land purchase bonds, dedicated funds, private contributions, and legislative appropriations to purchase fee or less-than-fee interest in lands in conformance with the land acquisition process.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 18: Employ a variety of conservation tools. States should employ a variety of tools in addition to fee acquisition to conserve working landscapes and public values.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 19: Exclude from income tax a portion of the gain from conservation sales. Congress and the state legislatures should change their income tax codes to exclude from income tax a portion of the gain received from sale of "qualified forest lands" and conservation easements to public conservation agencies (or third party organizations if lands are re-conveyed to a public agency within two years).

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 20: Assess water quality trends. By June 1996, states should assess water quality trends within the Northern Forest from data, report on suspected or confirmed causes of identified deterioration, and propose revisions to state water pollution laws to stem that deterioration.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 21: Conserve and enhance biodiversity. By June 1996, states should develop a process to conserve and enhance biodiversity across the landscape.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 23: Encourage marketing cooperatives and networks. State and federal forestry and economic development agencies should encourage and support primary and secondary wood products firms by fostering establishment of marketing cooperatives or networks.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 24: Direct assistance to natural resource-based businesses. State economic development agencies should work with state natural resource agencies to direct financial, technical, and marketing assistance to natural resource-based business concerns.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 26: Promote public policy to provide forest-based recreation. Congress and state legislatures should enact legislation and promote public policy to provide forest-based recreation opportunities to the public.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 27: Improve workplace safety. State forestry agencies, with funding from the USDA Forest Service and other appropriate sources such as the US Department of Labor, should cooperate with appropriate forest products associations and recreation business groups to establish or expand training programs to improve workplace safety and reduce workers' compensation claims.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 28: Reform workers' compensation insurance programs. State legislatures should reform their workers' compensation insurance programs to reduce costs.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 29: Review the effectiveness of administrative rules. Beginning June 1995, state agencies should review the effectiveness of administrative rules regarding business, land use, and the environment, using a process that repeats every five years and involves all interested parties.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 30: Simplify and stabilize the regulatory process. Beginning June 1995, state agencies should develop and implement innovative approaches to simplify and stabilize the regulatory process.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 31: Review land use planning programs. Agencies and organizations involved with land use planning should review their existing programs and plans.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 32: Establish consistent truck weight regulations. State transportation agencies should coordinate with one another to establish consistent buck weights regulations across the region.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 33: Support cooperative efforts among four state universities. The state universities and USDA Forest Service's State and Private Forestry Branch should support formal cooperative efforts among the forestry schools of the state universities in the four Northern Forest states.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 34: Track and analyze land trends. Appropriate state agencies should develop information management systems to track and analyze real estate conversion trends.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 36: Use the Northern Forest Resource Inventory. In their land conservation and planning efforts, states should use the natural and economic resource data provided through the Northern Forest Resource Inventory.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Recommendation 37: Promote natural resource education for the public. States should promote natural resource education for the general public, from youth to adult.

Recommended Experts:

1. Name: _____ Affiliation: _____

2. Name: _____ Affiliation: _____

Part III
Your Assessment of NFLC's Recommendations

We would like your opinion about whether the NFLC's recommendations have been implemented. In the space provided, please identify the recommendation(s) you are evaluating and provide us with your opinion about:

1. The extent of implementation,
2. Barriers to implementation, including changed circumstances, and
3. If the recommendation was not implemented, factors or conditions that prevented implementation.

Please feel free to attach additional pages.

_____

_____

Part IV
Comments

Please provide us with any additional comments you have about the implementation of the NFLC's recommendations.

We would like to thank you for your cooperation. Your assistance will help us provide a the North East State Foresters Association with an objective, meaningful, up-to-date report on whether the NFLC's recommendations have been implemented.

If you have any questions or comments about this questionnaire, please contact us at (315) 470-6909 or rwmalmsh@esf.edu. Otherwise, please mail this questionnaire in the enclosed self-addressed, stamped envelope as soon as possible to us at: Robert W. Malmsheimer, 320 Bray Hall, SUNY ESF, One Forestry Drive, Syracuse, NY 13210.

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