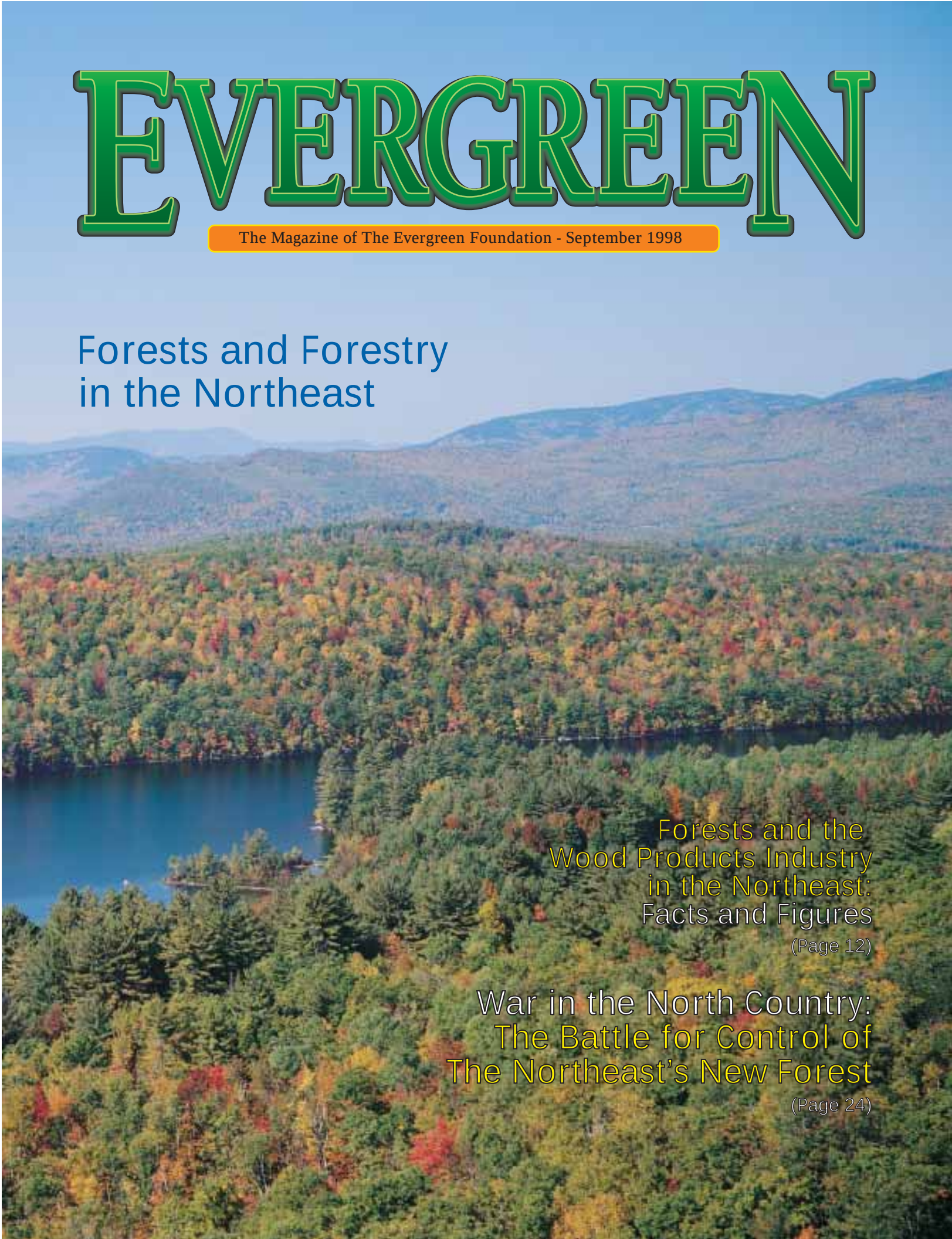
EVERGREEN

The Magazine of The Evergreen Foundation - September 1998

Forests and Forestry in the Northeast

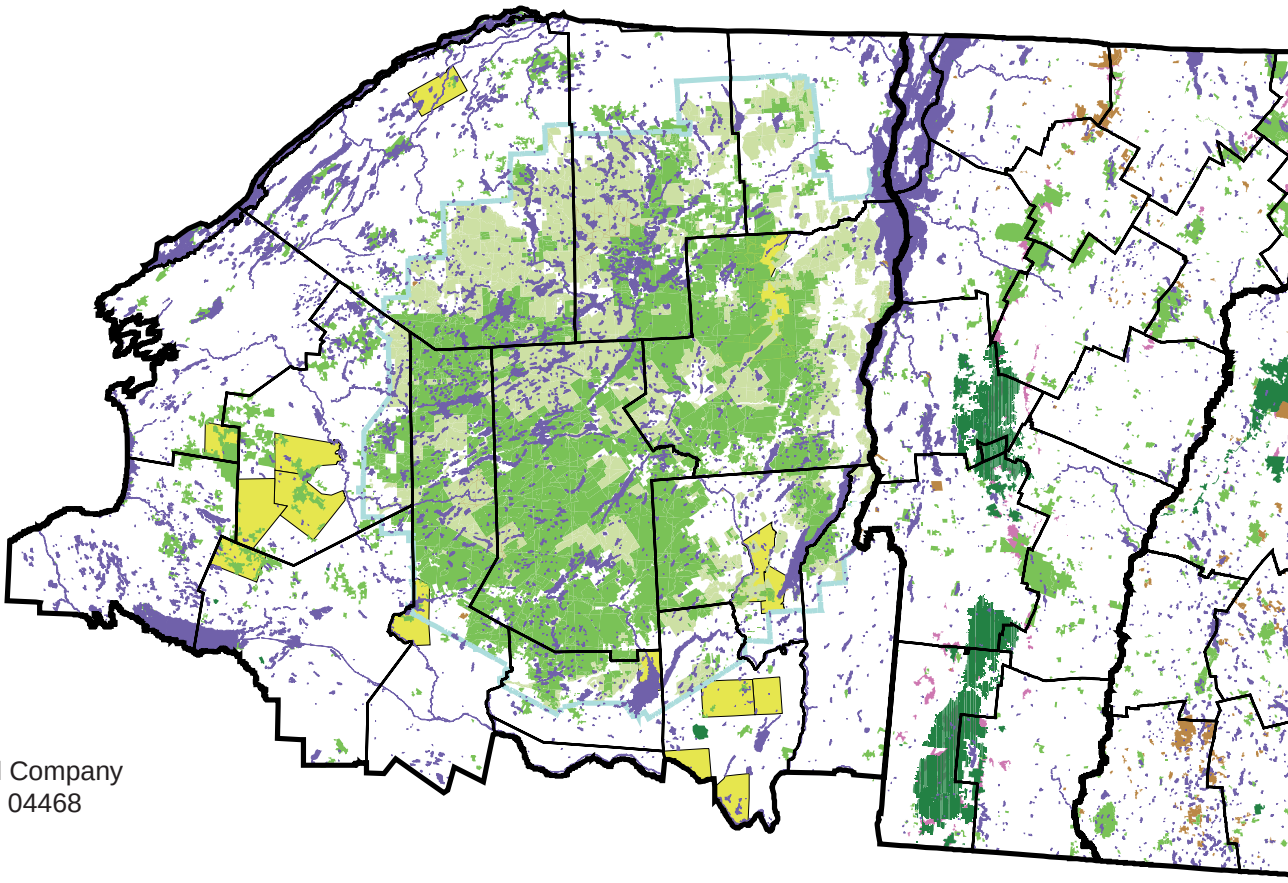


Northern Forest Land Area

Protected and Regulated Areas

1:40,000 close-up of southwestern Nas
Maine, showing LURC protection dist

- State Land
- Federal Land
- Private Conservation Land
- Tribal Reserve Land
- Towns with Timber Ordinances
- Elevation Above 2500 ft on Private Lands (NH & VT)
- Adirondack Park Boundary
- Adirondack Park "Resource Management" Zone
- Maine LURC Jurisdiction
- LURC Protection Districts
- Water
- County Line
- State Line



Produced by
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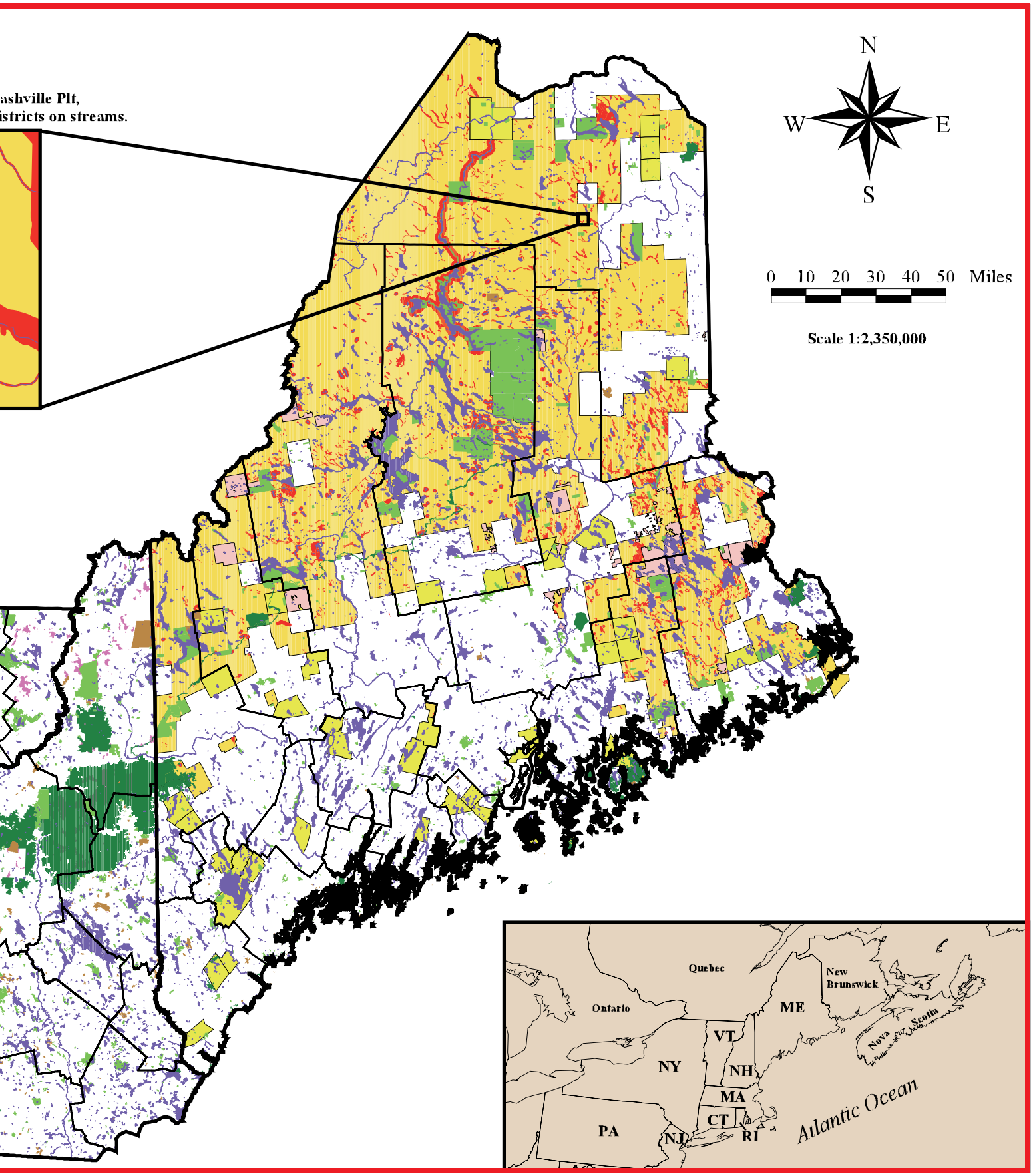
Cover Photo: Fall comes to Heald Pond in the White Mountain region near Lovell, Maine. There are hundreds - if not thousands - of lakes like this in the Northeast. The mile-long lake is surrounded by a mixed white pine and red oak forest, and supports a healthy bass population. This photograph was taken for a real estate brochure. The listing broker described the 492-acre property as "an excellent timber investment in the path of progress or could be the foundation for one or more fine rural estates." Story Litchfield photograph courtesy of LandVest



For a detailed explanation of this map, please turn to page 23,
"Forest Regulation in the Northern Forest Land Area"

TOURING AMERICA FOR FORESTRY

In this issue, we write about forests and forestry in the Northeast. To grasp the magnitude of this story, turn to the back page. There you will find a list of 183 contributors who helped fund this project. In the nearly 13 years we've been publishing *Evergreen* we've never seen such an outpouring from so diverse a group. While we've never met most of these people, we are humbled by their willingness to entrust us with their story. And what a story it is.

Forestry in America began here—in upstate New York—in 1891. The conservation movement got its start that same year in the same mountain range: the fabled Adirondacks. Most of the nation's early industrial history is also rooted here, amid a flowing hardwood and pine landscape that—in the fall—is a sight to behold.

But there is much more to this story than forests or conservation. It is also a story about states' rights and private property rights. In the Northeast, these four forces—forestry, conservation, states' rights and property rights—converge on a single question: how to keep forests forested in an increasingly urban world? The object of this question is the Northern Forest, a 26 million-acre expanse that stretches from the Great Lakes east to the Atlantic Ocean, across the upper reaches of New York, Vermont, New Hampshire and Maine. Though broken by small timber and farming communities, it is one of the largest working forests in America. It is also a playground for 70-some million people who live within a day's drive.

Inside the arbitrarily drawn boundaries of the Northern Forest about 94 percent of the timberland base is privately owned. Timberland sales are big news here, not just because the forest products industry is the region's economic mainstay, but also because there is a widespread fear these vast forests will be sold to land speculators and developers. There is a huge summer home market here, fueled by affluent city dwellers anxious to own a piece of the North Country. Such developments are usually well done, but public access—a New England tradition—is sometimes lost, along with the wildness that characterizes the region.

The Northeast's development fears came to a head in January 1988 when French-owned Generale Occidentale announced its intent to sell 986,000 acres of timberland it had purchased from Diamond International.

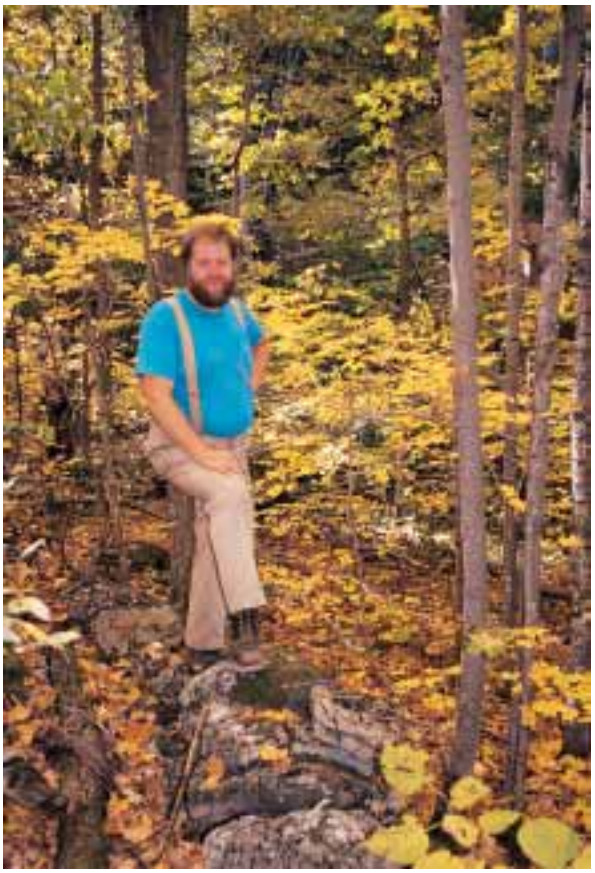
Picturesque Old Forge, New York surrounds Forge Lake (locally known as "Old Forge Pond") at the headwaters of Middle Branch of the Moose River, 30 miles inside Adirondack State Park. The nation's forestry and conservation movements both have deep roots in the Adirondacks.

Jim Petersen

The parcels—800,000 acres in Maine, 96,000 inside New York's Adirondack State Park and 90,000 acres in Vermont and New Hampshire—were offered at prices thought to be well beyond what any forest products company would pay, opening the door to deep-pocketed land speculators. Two walked in: Henry Lassiter, a hard-charging Georgia land speculator, plunked down $16 million (sight unseen) for the Adirondack lands and Claude Rancourt, a construction laborer turned millionaire developer, paid $19 million for the Vermont and New Hampshire tracts. The transactions sparked a firestorm of protest from just about every corner of the New England countryside.

Although most of the old Diamond lands—including the Lassiter and Rancourt tracts—are to this day managed for timber and wildlife, the sales became so politically charged that Congress ordered the U.S. Forest Service—by far the smallest of the Northeast's landowners—to study the region's timberland resources. The *Northern Forest Lands Study*, completed in 1990, led to formation of the Northern Forest Lands Council, a diverse group of citizens appointed by the governors of the four states. The council was given the job of deciding how best to protect the North Country from further speculation. Their 1994 report, *Finding Common Ground: Conserving the Northern Forest*, forms the backbone of the proposed *Northern Forest Stewardship Act*, a hotly contested piece of federal legislation that is the main reason why ***Evergreen*** was invited to conduct this investigation. Our back page sponsor list includes both supporters and opponents of the Act. Supporters see the Act as a way to shore up states' rights in forestry matters. Opponents fear it will open the door to subsequent federal meddling in private landowner affairs. We examine the situation in this issue.

The Northern Forest debate has spawned the usual cast of doomsayers from the left and the right. But there is one very big difference between this forest debate and the debates that have divided the West. Except for a few die-hard environmentalists, no one has suggested that the Northeast's timber industry pack its bags and leave town. Remarkably, most people who live here, including conservationists, see a robust timber industry as the best defense against land development—as the key to keeping forests forested. Thus, timber remains a big part of the North Country culture, and few seem to be offended by the industry's presence—though many wish the big paper companies would stop clearcutting in northern Maine. Twice, in as many years (1996 and 1997), environmentalists asked Maine voters to approve expansive regulatory reforms that would have restricted the size of clearcuts. Twice they refused. The 1997 referendum was defeated by an unlikely coalition of environmentalists, who thought the measure was not stringent enough, and by rural Maine voters who dislike "downstaters" (urban voters) telling them how to live their lives. Counting only contributions of $10,000 or more, big paper interests in Maine spent almost $2.6 million in support of the measure. Environmentalists got virtually all of their money from one source: S. Donald Sussman, a Connecticut financier who contributed more than $800,000 to help fund their advertising campaign. In this issue, we explain why voters turned back two clearcutting referendums.



Jim Petersen

Vermont forester Robbo Holleran stands atop an old stone fence on Vermont Marble Company timberland near Chester. Before the Erie Canal put an end to unprofitable farming in the Northeast, fences like this marked the bounday lines between neighboring farms. After the farms were abandoned, forests overtook the pastures.

We also write about conservation, a word that has a much different meaning here than it has in the West, where writers often use it interchangeably with the word "environmentalism." But in the Northeast a clear distinction is made between environmentalists, who are usually viewed as disruptive *outsiders* not to be trusted, and conservationists, who are *local* and have a long history of constructive involvement in creation and management of publicly revered forest reserves. Conservation has taken some remarkable turns over the last hundred-plus years, but none more startling than the Nature Conservancy's December 1997 announcement that it had purchased nearly 27,000 acres of forestland in Vermont's Green Mountains, which it intends to continue managing as a working forest. In its conservative approach to harvesting, it hopes to set an example neighboring landowners will follow.

Throughout the Northeast, there is a powerful distrust for government, especially the federal government. This is (after all) where colonists fleeing the tyranny of English kings laid the cornerstone for America's republican form of government. Hundreds of rural towns in the Northeast are still run by "Town Fathers" elected by townspeople to carry on the town's affairs for a year. Their Town Meetings—the lifeblood of New England local government—were immortalized by Norman Rockwell in an illustration titled, "Freedom of Speech." In this bedrock environment outside interference is deeply resented. At its core, this may be the main reason why so many living in the North Country oppose the Northern Forest Stewardship Act. Close behind is a fear the Act will somehow open the door to the kind of federally-sponsored litigation that has wrecked so much of the West's timber

Jim Petersen

Berlin, New Hampshire, has been a company mill town since 1852. The old Brown Company, once a world leader in pulp and paper production, got its start here. The mill has since changed ownership several times and is today owned by Crown Vantage. Company mill towns are still prominent features in the rural Northeast.

industry. (Northeasterners are surprisingly well informed where western forestry issues are concerned).

As early as 1631, the British were exporting crudely milled timbers from Maine forests. History records that an Englishman named William Chadbourne constructed the first water-powered sawmill in America in 1634 near Kittery, Maine. If we take this moment in time as the beginning of the nation's timber industry, the Northeast is then on its third forest. White settlers in need of cropland hacked and burned the first forest into oblivion, but it grew back after the Erie Canal opened in 1825. The canal gave Midwest farmers easy access to eastern markets, creating crushing competition for less productive New England farmers who soon abandoned their fields in favor of other more lucrative pursuits. The white pine forests that grew back helped fuel the industrial revolution, including the emergence of Northeast's still thriving lumber and paper industries. Now, a third forest is in the ground and growing, the modern day fruit of forestry principles laid out in the country's first forest plan—written for the Andirondack League Club in 1891 by Bernard Fernow. In this issue, we write about Fernow and his contributions to forestry.

Here are the main points we make in this issue, summarized for those who do not have time to read the entire issue in one sitting:

- Forestry in America began in the Northeast. So, too, did the conservation movement and the industrial revolution.

- The Northeast is on its third forest. Their recovery from earlier abuses is a tribute to the resiliency of nature, the influence of the conservation movement, and a century of progress in Forestry.

- Forests in the four-state region contain a mix of shade tolerant hardwood species (maple and beech dominate), plus several softwoods, including spruce, eastern white pine and fir. Fifty-seven percent of the region's 28.878 million acres of timberland is located in Maine. Another 32 percent is found in New York. There are tens of thousands of forest landowners in the four states —a fact that contributes significantly to the diversity of landscapes and habitats. Many landowners are in the timber business straightaway, while others manage for multiple resources, including timber, fish and wildlife. A few own forests for nothing more than the joy they bring.

- As we have already noted, the most contentious forest-related debate in the Northeast involves the Northern Forest Lands Study Area and the proposed Northern Forest Lands Stewardship Act. The 26 million-acre Northern Forest includes 23.4 million acres of timberland. Across the region there is a deeply felt desire to keep this working forest working and to protect the cultural heritage that resides in its hundreds of timber towns. The question so many are asking [and debating] is "Does the Act protect our timber heritage or open the door to federal meddling and environmentalist radicals?" There are no easy answers, and thus, no easy solutions.

Jim Petersen

Winter trucking near the old Katahdin Iron Works in central Maine. A century ago, forests in this area fueled the iron furnaces that fueled the Industrial Revolution. Today, they provide a steady supply of softwood and hardwood for the region's sawmills and papermakers.

• The nation's pulp and paper industry got its start in the Northeast. The big paper companies—all multinationals now—own more than nine million acres of forestland in the four states, including more than seven million acres in Maine. In the four states, more than 57,000 are employed in primary and secondary paper-related jobs; another 58,000 work in lumber and furniture manufacturing. Within the Northern Forest Study area, more than 43,000 people are employed by the lumber and paper industries, including 24,000 that have jobs in papermaking.

• The industry is reinventing itself in the Northeast, just as it has in the West. New, more efficient, environmentally friendly technologies have cost jobs and created jobs, often under the same roof. For some, the process is painful, but for others, the door to opportunity is opened.

• Clearcutting is also a contentious issue in the Northeast, especially in Maine, where voters have twice rejected referendums that would have banned the practice. Most of the clearcutting done over the last 20 years has been in response to a terrible 15-year-long spruce budworm outbreak. The Maine Forest Service reports clearcutting now accounts for about 11 percent of some 500,000 acres harvested annually, down from 45 percent in 1989.

• In response to public concern about harvesting impacts, logging associations across the four states are teaching loggers how to do a better job in the woods. Most loggers are faithful participants in voluntary Best Management Practices designed to protect watersheds and other environmentally sensitive areas. Still, the fact remains that loggers must do what landowners want, or look elsewhere for work.

• Landowner interest in forest conservation easements is growing, but they remain controversial. Some say they pose an added burden for financially strapped local governments. Others fear such transactions (which often involve the expenditure of public monies) create a contractual linkage that may make it possible for activist lawyers to use federal environmental laws to stop harvesting on private lands outside easement boundaries.

• Many living in the Northeast believe landowners can do whatever they want in their forests without regard to environmental impacts. But the James Sewall Company map on Pages 2 and 3 suggests otherwise. As is explained on Page 19 ("Forest Regulation in the Northeast") many regulatory watchdogs roam the regions' forests.

In the course of researching this issue we made three trips to the Northeast. More than 50 interviews were conducted, and more than 100 reports were reviewed before the writing began. We again invite you to turn to the back cover for a complete list of those who helped fund this most memorable issue. We hope you learn as much from reading it as we learned in preparing it for you.

Onward we go,
Jim Petersen, Editor
Evergreen Magazine

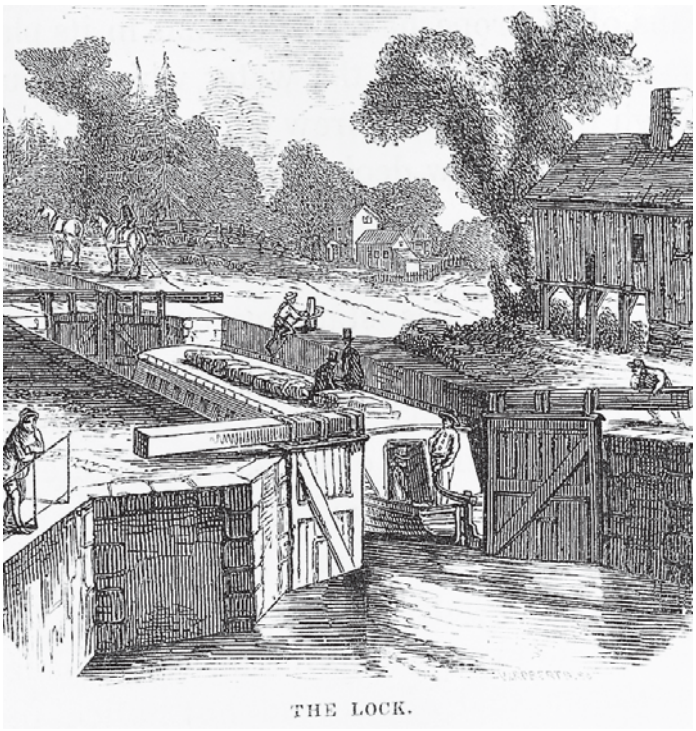
The View From John Sanderson's Farm, Part 2

"And again the land did not change, except in terms of the human values of the time. It merely seeded itself to white pine and went on being productive but in its own way. In the early 1900s the people who owned it found to their amazement that it had value again of an entirely different kind."

- Hugh Miller Raup, "The View from John Sanderson's Farm: A Perspective for the Use of Land," ***Forest History***, April 1966

Hugh Raup's seminal essay, "The View from John Sanderson's Farm: A Perspective for the Use of Land," is a story about how seemingly unrelated events have altered the course of forestry and land use while forests themselves remain relatively unchanged. His thesis: land does not change. What changes is how people value it.

Raup, a Ph.D. botanist, was director of the Harvard University forest from 1946 until his retirement in 1967. He traveled widely during his career and published hundreds of research papers. As an inductive thinker—and member of a small band of Harvard rebels who called themselves "scholars of the here and now"—he had little use for the politically correct forestry terms currently making the rounds: plant communities, forest succession, climax forest and ecological niche. For him, these were reified bits of someone else's deductive theories.



New York State Library

"The Lock" from *Marco Paul's Voyages and Travels—the Erie Canal* (1852) by Jacob Abbott. The opening of the Erie Canal in 1825 gave productive Midwest farmers access to lucrative markets in the East, eventually driving most Northeastern farmers out of business. In time, land farmers had cleared for crops reverted to forests, paving the way for eventual development of a prosperous late nineteenth century timber economy.

In "John Sanderson's Farm," a 1966 article written for ***Forest History***, the magazine of the Forest History Society, Raup traces his family's early New England history back through events that forever altered the course of forestry in the Northeast and beyond. Of these events, none seems to have loomed larger than the 1825 completion of the Erie Canal. The canal crossed New York State from Albany, the head of navigation on the Hudson River, to Buffalo on Lake Erie, opening the fertile farmlands of the Midwest to equally fertile markets in the East. In the ensuing battle for market share, New England's farmers found their small but productive fields were no match for the Midwest's vast and fertile expanse. Midwest farmers could produce more for less—a fact that created both opportunity and capital for fledgling farm implement manufacturers, whose early reapers and rakes made a monumental contribution to the efficiency and profitability of Midwest farming.

"It was this that destroyed the agricultural prosperity of the Sanderson family in Petersham [Massachusetts] and of similar families in southern New England," Raup wrote. "The farms here could remain prosperous only so long as they had no serious competition. Once the latter appeared, their economy collapsed. And it did so rather suddenly and on a large scale over wide expanses of the landscape. Agricultural use of the land was simply abandoned as the Sandersons and others like them sought prosperity elsewhere. Probably at least half the open land, and perhaps more, went out of farming within 20 years after 1850."

What happened next laid the cornerstone for the Northeast's vast lumber and paper industries: eastern white pine overtook hundreds of thousands of acres of abandoned farmland. By 1900, most of the New England farms that had been carved from forests in the early 1800s were forest again. Today, the tumble down remnants of stone walls that divided pastures and ownerships are all that remains of nineteenth century farming in New England.

The completion of the Erie Canal was the first of two great events that were to forever alter the hopes and dreams of a thousand John Sandersons. The second was the Industrial Revolution. By 1820 it had leaped the Atlantic and was making its way inland, fueling technological innovation and markets for newly created products. Among them: the water-powered gristmill, which fostered robust demand for grain meal and a concurrent need for better roads linking New England farmers to more distant markets. Then the Erie Canal opened,

and New England's farm economy collapsed. But for a time, Raup wrote, prosperity had " ...made it possible for the people of Petersham and other such towns to form new concepts of their destiny and new values for their lands in terms of these concepts. The land itself did not change. Only the people's ideas changed in response to other people's ideas brought to bear from outside the region."

True indeed. By 1850 the Industrial Revolution was running full tilt, and southern New England's farm economy had gone to pieces. The Sandersons sold their farm and started a bank.

"And again the land did not change, except in terms of the human values of the time," Raup wrote. "It merely seeded itself to white pine and went on being productive but in its own way."

By mid-century, "summer people" began to move into the old farm towns. They were mainly affluent city dwellers in search of vacation hideaways. They bought up old farm houses and renovated them in order to have a quiet place to wile away the summer. Before long, they were remodeling main streets, imposing their own ideas about what a rural town ought to look like. Their influence can still be seen in small New England hamlets that have become year-round enclaves for city dwellers anxious to save the past.

By the early 1900s, when the Northeast's forest caught up with the Industrial Revolution, it had created an entirely new set of demands that favored a new industry: lumbering. Demand for boxes, barrels and pails to carry the products of a burgeoning Midwest farm economy over a rapidly expanding railroad system created a market for the pine that had grown back on abandoned farmland in the Northeast. Once again, the land had value.

But, Raup wrote, "The pine had no value in itself. It acquired value only because in the period of time when it happened to come to maturity there was a human demand for containers that could be made from its wood, a transportation system to carry both the wood and the packaged products, a labor force and a local technology to cut and mill the lumber and make the containers, and a price and wage structure to make the whole thing economically feasible."

Two other events would alter history in the Northeast and beyond: the emergence of forestry as a system of managing forests, and the parallel emergence of conservation as a means of saving them. Both events unfolded in New York's Adirondack Mountains.

Conservation came first, in 1885, when the New York State legislature created the Adirondack Forest Preserve to assuage mounting citizen concern that a massive harvesting effort then underway in the Adirondacks might lead to a timber famine. There were also fears that excessive harvesting in upstate New York forests might disrupt water flows in commercial waterways, including the Erie Canal or, worse yet, cause a loss of safe municipal drinking water. Two years later, the State drew a blue line around the reserve, creating the Adirondack Park, wherein water, recreation and wildlife would be given special consideration. Seven years later, in 1894, New York state voters—still fearful of lumber industry could not be contained—approved a constitutional amendment granting the park "forever wild" status.

Henceforth and forever, public timber inside the park could not be sold, destroyed or removed. A drive was

Harvard Forest Museum

Early stages of land use around Petersham, Massachusetts, where John Sanderson's father settled. (Harvard Forest Model, c.1700-1760)

Jim Petersen

A cabin on Adirondack League Club land near Old Forge, New York. Timber harvesting has been an important revenue source for the club since its founding in 1890.

mounted to fund state purchase of all the private land within the park, but it never materialized. Today, the six million-acre park still holds 4.2 million acres of private land, much of it managed for timber production.

Historically speaking, the Adirondack Park's most notable private landowner is the Adirondack League Club, for it was on club land that forestry got its start in America. It is all laid out in the club's 1890 charter:

"The objects of this Club are (1) the preservation and conservation of the Adirondack forests and the proper protection of game and fish in the Adirondack Region. (2) the establishment and promotion of an improved system of forestry. (3) the maintenance of an ample preserve for the benefits of its members for the purposes of hunting, fishing, rest and recreation."

The man behind the league's second objective was Bernard Fernow, a club member, but more notably, the first Chief of the Forestry Bureau of the United States Department of Agriculture, the forerunner to the U.S. Forest Service. Fernow had helped write New York's 1885 Forest Reserve Act, and now he was determined to show the state that forestry—not outright preservation—was the key to protecting the Adirondacks. Perhaps more than anyone else, he understood that the club's plan for combining recreation and forest management would perfectly illustrate the hopes of New Yorkers who shared his concern for the future of the entire Adirondack region.

The club had two motives for managing its forests. First, it needed money to pay off the mortgage on its 125,000-acre purchase. Members who plunked down $1,000 apiece (a huge sum of money in 1890) to join the club expected a dividend, just as they would from any other investment they made. Second, ever mindful of destructive logging going on nearby, the club hoped to set a better example for its neighbors by managing its land according to scientific principles of the day. And so, amid the glow of well-crafted publicity, ***Garden and Forest*** magazine editor Charles Sprague Sargent declared, "the people of the United States will have for the first time a practical object-lesson in the management of their woodlands, according to the established principles of forestry."

Fernow presented his plan to the club's executive committee in 1891. In it, he laid down a set of forestry principles that many contemporary forest scientists talk about as though they are new ideas:

❖ As agriculture is practiced for the purpose of producing food crops, so forestry is concerned in the production of valuable wood crops, both attempting to create values from the soil.

❖ Forest preservation does not, as seems to be imagined by many, exclude proper forest utilization, but on the contrary, these may well go hand in hand.

❖ Reproduction is the aim of the forest manager, and the difference between the exploitations of the lumberman and by the forester consists simply in this, that the forester cuts his trees with a view to securing desirable reproduction, while the lumberman cuts them without this view.

❖ As in the animal world, so in the vegetable, there is a constant struggle for existence and supremacy going on among the different species as well as among the individuals of the same species. All struggle for the occupancy of the soil.

❖ Light is one of the essential factors of tree growths and almost the only one that man can regulate. Forest management, then, could be defined in the main as management of light conditions.

❖ The general rules of management need to be modified according to local conditions, and it will appear at once that a considerable exercise of judgement, born from experience and knowledge, is expected of the forest manager.

❖ The forester considers his property as a permanent investment, to produce revenue constantly and forever, in increasing rather than decreasing ratio. The factor of permanence is ever present in his methods. Like the owner of a large office building, he spends part of his income from year to year to repair, improve and enhance its value.

Not all the club's members liked the idea that timber harvesting would occur in their sporting camp, but the need for money took precedence. There were other problems too. The fact that hardwood logs would not float—making it impossible to drive them downriver to sawmills—meant the harvest was limited to lighter weight softwoods that would float. There were also problems with unsupervised pulpwood loggers, who often took trees smaller than a foot in diameter, even though such harvesting was prohibited in club forests. The club even stopped harvesting for awhile, but money needs prevailed again and the logging resumed. Poor timber markets also plagued the club from time to time, and nearly forced it into bankruptcy during the Depression. But by the 1950s better roads and improvements in hardwood pulp utilization vindicated club members who had supported forestry through good and bad times. Today, the club manages about 52,000 acres and uses its harvest income to support both wildlife and recreation programs.

Forest History Society

Bernard Fernow wrote the Adirondack League Club's first forest plan in 1891. He was the first Chief of the Forestry Bureau of the United States (forerunner of the modern-day U.S. Forest Service), and an early voice in the nation's conservation movement.

Man's Defeat By Nature: The Tragedy of the New Hampshire Hills

Human muscle could no longer cultivate the fields. Pines grew up in the pastures and overshadowed the feed of the cattle. Black alders sprouted thickly by the brooks and encroached upon the mowing. Brush filled in the roadsides and miles of little traveled highway were abandoned. Nature was closing in, year in and year out, by summer increasing the growth of brush and trees, by winter filling the long miles of lonely road with deep drifts of snow.

– New York *Evening Post*
Saturday, September 28, 1907

The odd mix of public and private land found inside Adirondack Park —and the fact logging occurs on private land inside park boundaries —puzzles outsiders from the either-or world of preservation versus management. But the combination of preservation and management works here, in no small measure because of the club's obvious success in following Mr. Fernow's plan.

In the club's centennial history book, "The Adirondack League Club: 1890–1990," historian Edward Comstock, Jr., wrote that the club's survival turned on its dedication to sound forestry and its successful marriage to practical concerns for recreation—facts that he said "make the Club one of the best examples of what the Adirondack Park has represented in American environmental history."

Maybe so, but if Hugh Raup were still alive, he would probably argue—again—that the Adirondack Park and the Adirondack League Club have not succeeded because of public policy, or adherence to a particular forest plan, but because they fit with the times. People want to own a piece of the Adirondacks, and so they buy a membership in a sporting club, or they buy a second home. Others, perhaps less affluent, enjoy the simple pleasures of a drive through the park. Most do so without ever realizing timber is still being harvested here more than a century after the park and the league club—disparate visions of the same hope—were founded, one inside the other, in the same mountain range. Raup's "summer people" have become permanent residents, thanks to technological advancements that make it possible for them to live wherever they want without abandoning their careers or their capital investments. Their presence is again changing the way people value land, adding to the challenges Fernow and others have faced in their efforts to demonstrate that forest preservation and forest utilization may well go hand in hand.

Forests and the Wood Products Industry in the Northeast: Facts and Figures

The Remarkable Recovery of Northeastern Forests

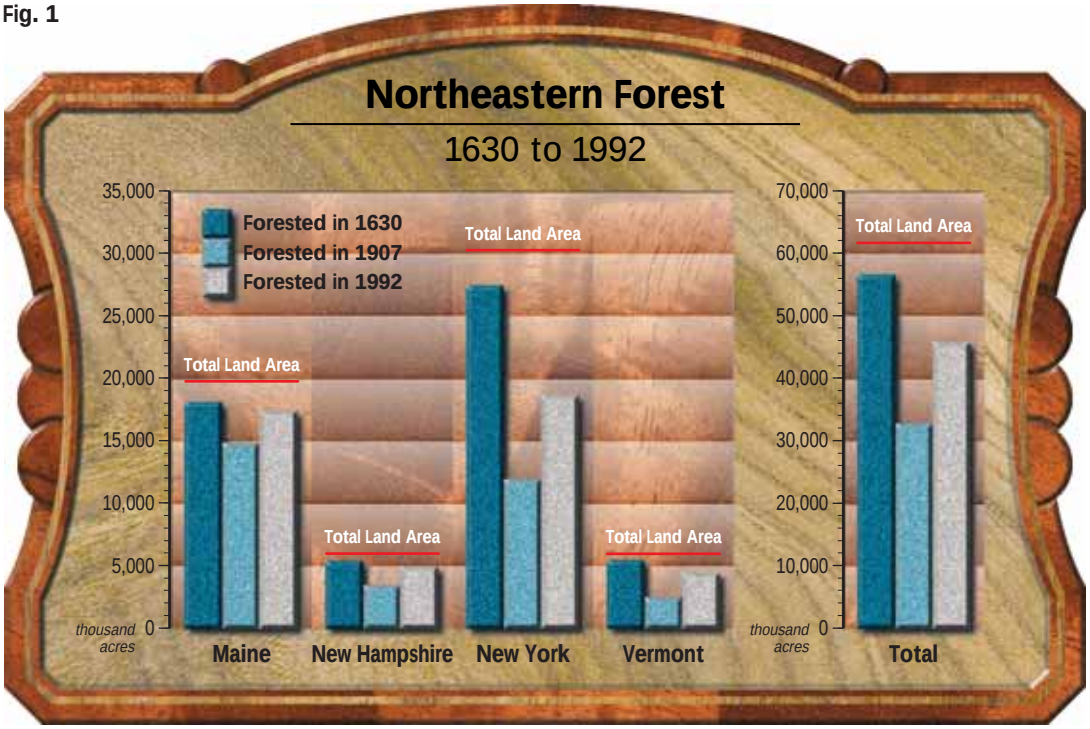
Figure 1 traces the remarkable recovery of northeastern forests - perhaps the greatest untold environmental story in the history of America. Historic and scientific records indicate that the four-state region was about 93 percent forested when white settlement began in earnest in the early 1600s. Over the next 250 years, forest clearings for agriculture, fuel, railroads, home construction and industrial and commercial development took a huge toll. By 1907, the Northeast's forestland base had declined from 93 percent to 54 percent.

Forest recovery began in the early 1900s, thanks mainly to a seemingly unrelated technological advancement: the invention of the internal combustion engine. Gas powered tractors replaced draft animals, allowing farmers to convert grazing land to crop production. At about this same time, mature forests began to reappear in New England fields that had been abandoned after the Erie Canal opened in 1830. The canal provided more productive Midwest farmers with efficient access to eastern markets, forcing New England farmers out of business.

Today, the region is 79 percent forested, securing the recovery of wildlife species that were pushed to the brink of extinction in the last century. Now a new wave of technology is influencing the character of the region's forests. Advancements in logging, lumber milling, papermaking and recycling have extended the region's fiber supply far beyond anything thought possible 30 years ago.

Laser-guided saws maximize wood recovery from each sawn log, while engineered wood products utilize small diameter trees and odd sized pieces of wood that were once unusable. More than 60 percent of all newspaper and more than 70 percent of all corrugated material are now recovered and reused. This is good news for a nation that is consuming more wood and paper than ever before.

Fig. 1



Source, Fig. 1: U.S. Forest Service timber supply reports and studies published in 1909, 1920, 1938, 1958, 1965, 1973, 1982, 1987, 1989 and 1992

Many Different Tree Species Grow in the Northern Forest

The Northern Forest contains many different hardwood and softwood tree species. **Figure 2** displays the major "forest types" in the Northeast: White-red jack pine, spruce-fir, oak-pine, maple-beech-birch and aspen-birch. As the map and accompanying chart (**Fig. 3**) indicate, spruce-fir (dark green) forests dominate northern Maine, while maple-beech-birch (gray) forests are more prevalent in upstate New York, Vermont and New Hampshire. Pine forest types (red) are more common in the southern reaches of New England. For the entire region, maple-beech-birch is the most common forest type, covering about 13.2 million acres, far more than the seven million acres dominated by spruce-fir forests.

Fig. 2

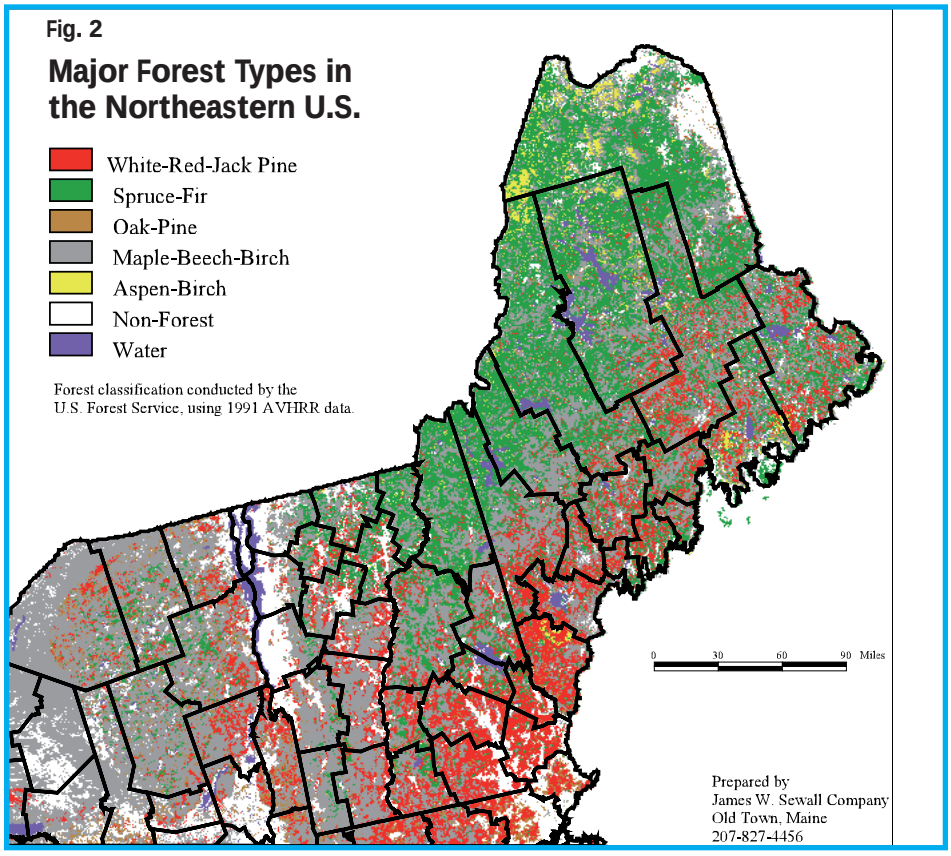
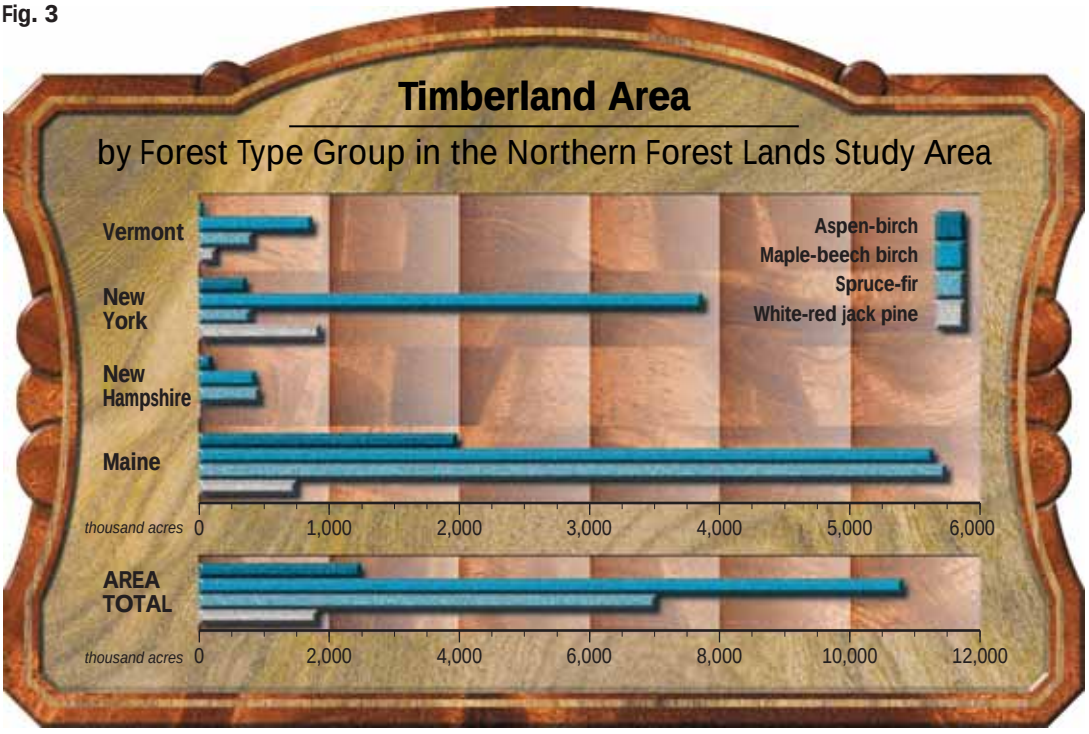


Fig. 3



Source, Figs. 2 and 3, USFS, Forest Inventory and Analysis (FIA)
Definition: **"Forest type"** is a classification of forestland based on the species mix presently forming a plurality of live trees in a particular area.

Varied Timberland Ownership Pattern Adds Diversity to Northeast's Privately Owned Forests

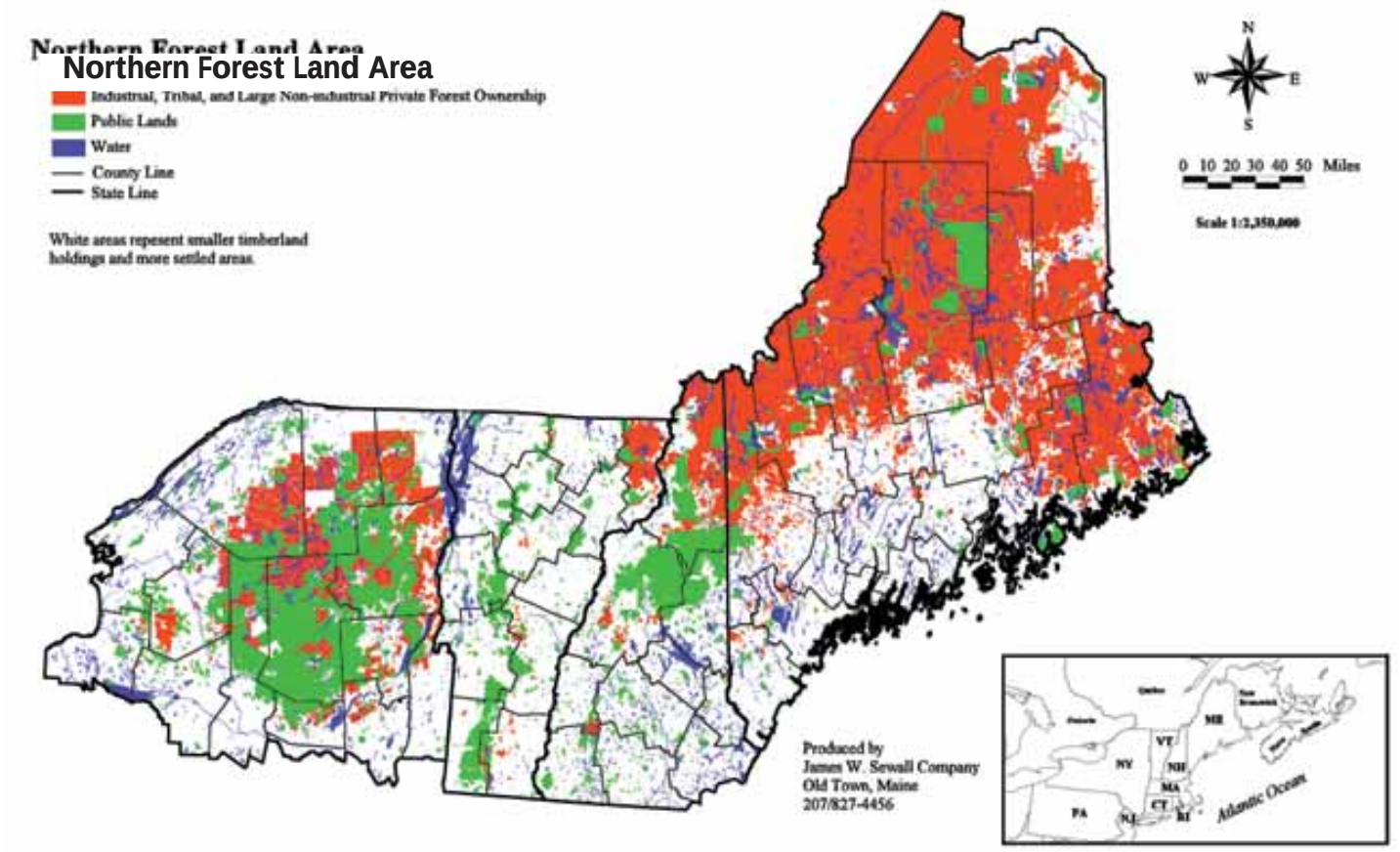
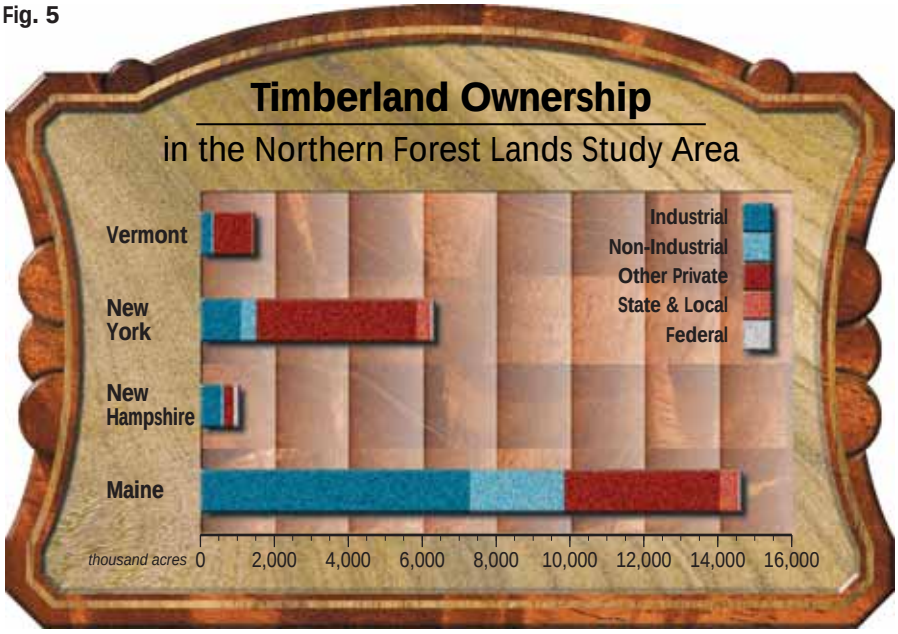


Fig. 5



Figures 4 and 5 illustrate the timberland ownership pattern within the boundaries of the 26 million-acre Northern Forest study area. Individuals, large non-industrial landowners and industrial landowners own 94 percent of all timberland in the study area. Forest management objectives differ widely within owner groups—a fact that adds significantly to the structural and biological diversity of the region's forest landscape. While the region's industrial landowners tend to emphasize pulpwood production, individual landowners (who own more forestland than does any other owner group in the Northeast) tend to be less driven by the need to harvest. Many report they place their highest management priority on wildlife habitat protection.

Source, Fig. 5: Northern Forest Lands Study, USFS, April 1990 and USFS, Forest Inventory and Analysis (FIA). Definition: **"Timberland"** is forestland not withdrawn from production that is capable of growing 20 "cubic feet" of industrial wood annually. A **"cubic foot"** is 1 foot by 1 foot by 1 foot.

Considering the Sustainability Of Northern Forests

No doubt you've read or heard something about the "sustainability" of managed forests—managed forests being those from which timber and pulpwood are periodically harvested. Sustainability is a very subjective term for which no agreed upon means of scientific measurement exists.

There are, however, some time-tested means of measurement from which one can make some inferences concerning the long-term sustainability of managed forests. One way is to survey "stand-size classes." Such measurements give a good indication of a forest's ability to sustain itself through time. Ideally, the stand-size classes (sawtimber, poletimber and sapling/seedling stands) should be fairly well balanced, with few non-stocked acres. As **Figure 6** indicates, this is generally the case throughout the Northeast, though there is a preponderance of mature sawtimber in some areas. While there is nothing wrong with mature forests, they are past their prime in terms of future growth potential.

Another way to consider long-term sustainability is to regularly measure the volume of timber growing in a particular forest. Two related measurements are generally taken: volume of growing stock and volume of sawtimber. Taken together, these measurements are useful in calculating long term growth trends. Such trends are important when developing long-term harvesting plans. In the Northeast, the growing stock and sawtimber volume trends are both positive, as is indicated by **Figures 6 and 7**.

Fig. 6

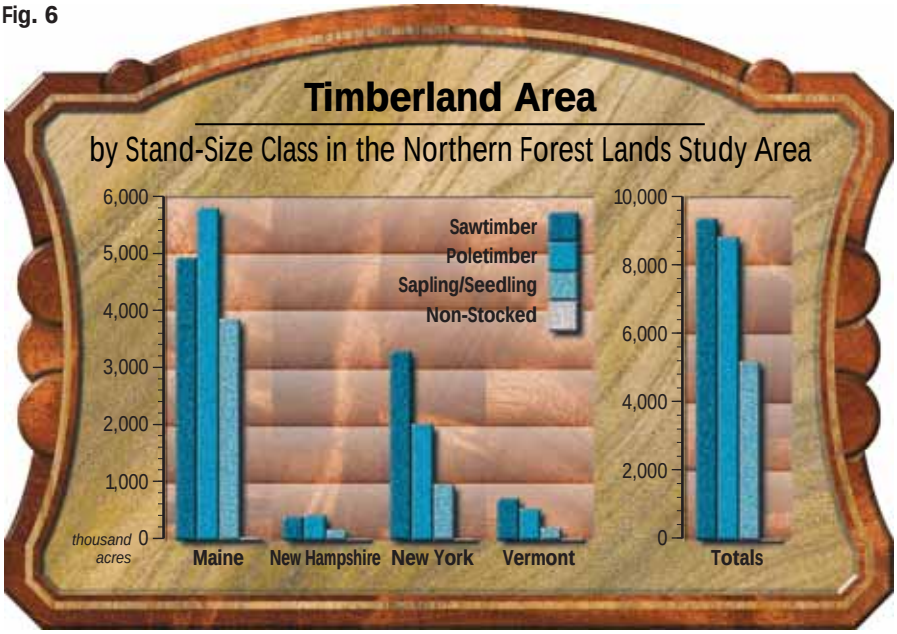
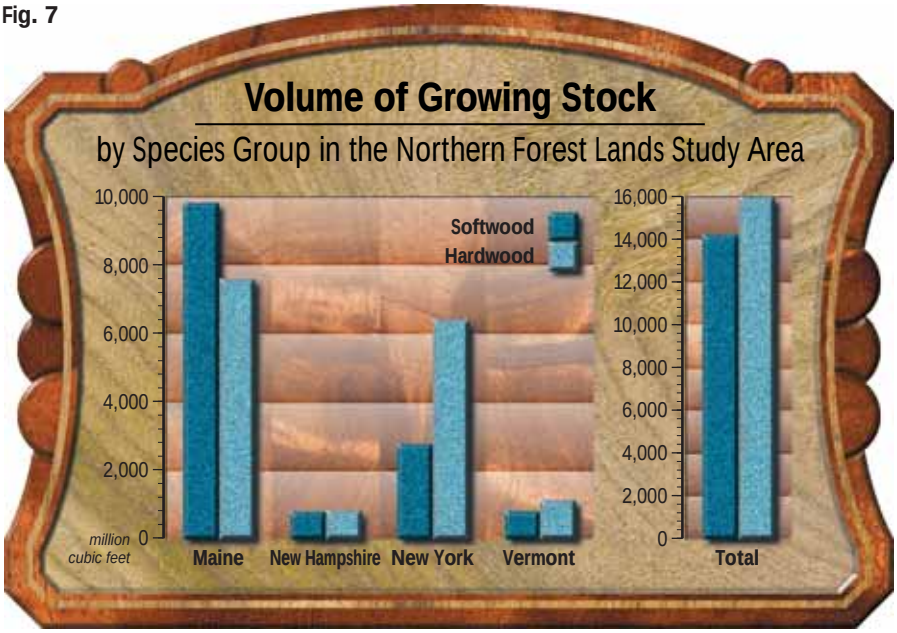


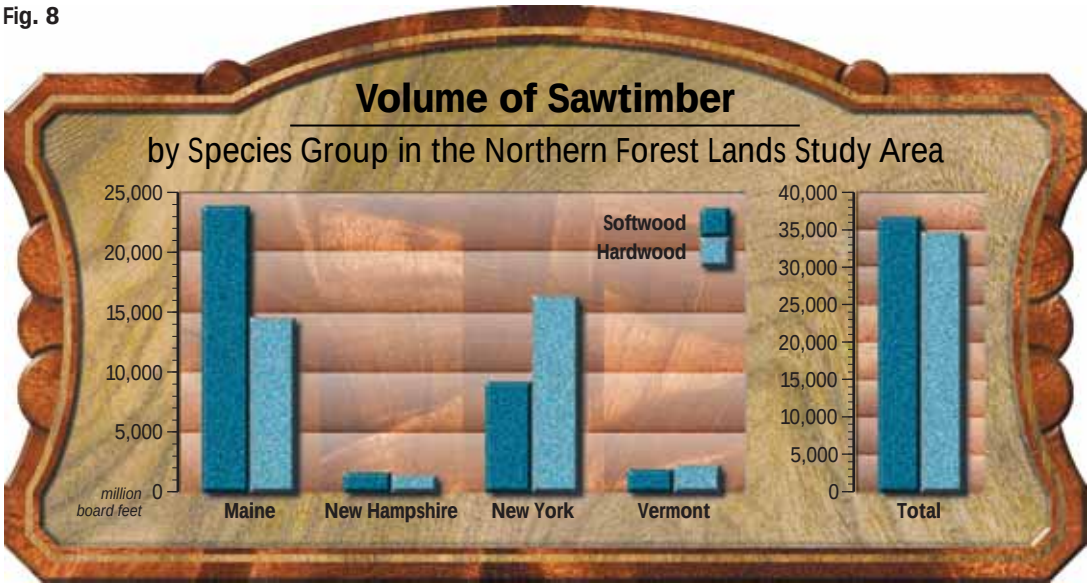
Fig. 7



Source, Fig. 6: USFS, Forest Inventory and Analysis (FIA). Definition: **"Stand Size class"** is classification of forestland based on the "size classes" of all live trees. **There are four size classes: non-stocked stands, seedling-sapling stands, poletimber stands and sawtimber stands.** Nonstocked lands—recently harvested areas or reverting agricultural lands—have less than 10% of full stocking in live trees. Seedling-sapling stands are at least 10% of full stocking and contain at least 50% stocking in seedlings and saplings (live trees 1–4.9 inches dbh). Poletimber stands are at least 10% of full stocking and contain at least 50% stocking in poletimber (live trees at least five inches dbh). Sawtimber stands are at least 10% of full stocking and contain at least 50% stocking in pole or sawtimber or both.

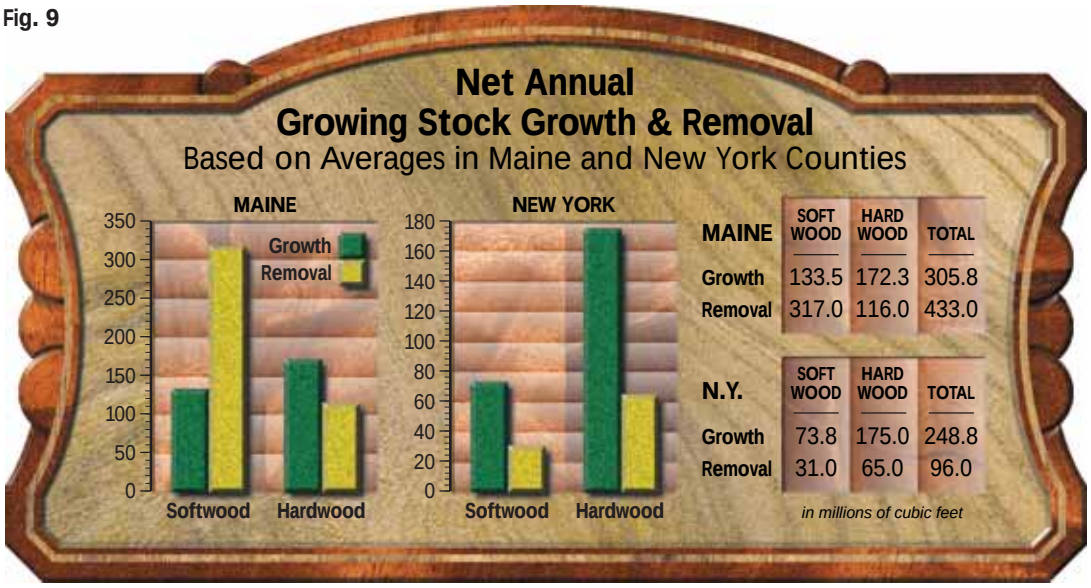
Source, Fig. 7: USFS, Forest Inventory and Analysis (FIA). **"Growing stock volume"** is a cubic foot measurement of live trees of commercial species meeting specified standards of quality and trees. To be included, trees must be at least five inches "dbh" (diameter breast high) or larger. **"Species Group"** means the tree is either softwood or hardwood.

Fig. 8



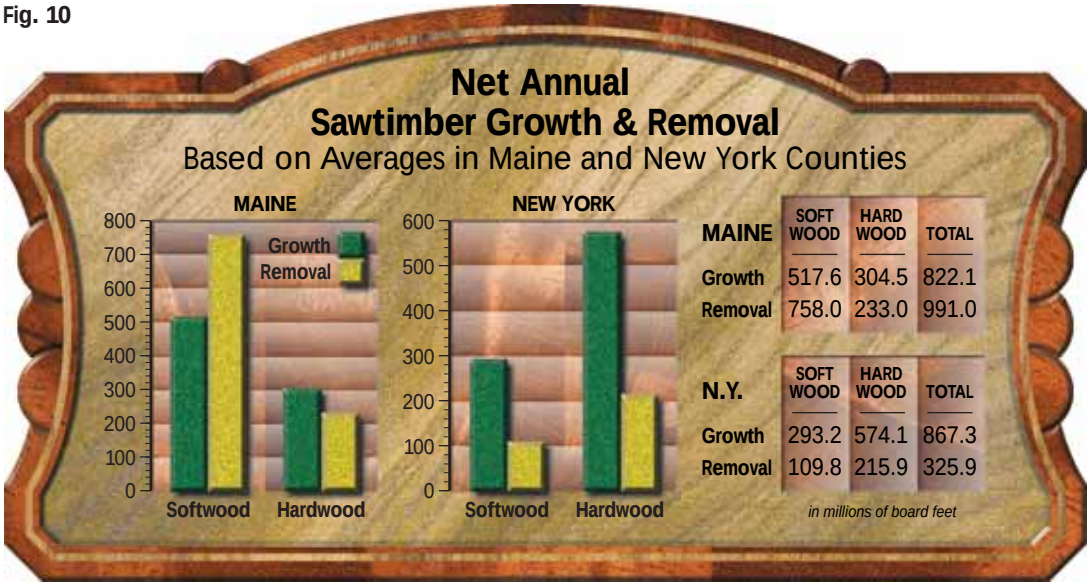
Source, Fig. 8: USFS, Forest Inventory and Analysis (FIA)
"Sawtimber volume" is a "board foot" measure of live trees containing at least one 12-foot saw log or two noncontiguous 8-foot logs. Softwood saw logs must be at least 9 inches dbh and hardwood logs must be at least 11 inches dbh. A **"board foot"** is 12 inches by 12 inches by 1 inch. There are about 4.5 board feet in one cubic foot.

Fig. 9



Source, Figs. 9 and 10: USFS, Forest Inventory and Analysis (FIA) (4)
"Net annual growth" is gross growth minus mortality, minus the net volume of trees that are no longer of commercial value. In addition to volume harvested, **"Removals"** include unutilized wood volume from cut or otherwise killed growing stock, cultural operations such as precommercial thinnings or from timberland clearing.

Fig. 10



Growth Exceeds Harvest Except for Areas Where Spruce Budworm Infestations Necessitated Aggressive Salvage Logging

Across the Northeast, net annual forest growth exceeds harvesting by safe margins, except in Maine spruce-fir forests devastated by the most recent spruce budworm epidemic. (See nearby, "Condition and Outlook for Maine's Spurce-fir Forests: Aftermath of the Spruce Budworm Eipdemic"). Fig. 12 (pg. 19) illustrates net annual growth and removals of growing stock and sawtimber for Maine and New York counties in the Northern Forest Lands Study Area. Such detailed information is not available for Vermont and New Hampshire because the relatively low intensity of field inventory plots did not provide statistically valuable estimates at the county level.

How Timber Harvesting Affects Migratory Birds

The remarkable recovery of northeastern forests is paralleled by the equally remarkable recovery of many wildlife species that were pushed to the brink of extinction by nineteenth century timber and farming influences. Among this century's success stories: the return of moose, black bear, white-tailed deer and wild turkeys.

Until recently, much less was known about the recovery of migratory bird populations. Now there is evidence many of them are doing quite well, while others still have some distance to go. Not all bird species use the same kinds of forest habitat, a fact that has a direct bearing on their population numbers. For example, birds that do well in younger, more open forests appear to have no difficulty adapting to timber harvesting, while others that prefer more mature, closed-canopy forests do have trouble adapting to harvest-created habitat changes. How much difficulty these birds are having is hard to gauge, because even species that prefer the seclusion of mature forests sometimes find their food in more open environs.

Some of the most interesting habitat research currently underway in the Northeast is being conducted by Dr. John Hagan, Senior Ecologist and Director of Conservation Forestry at Manoment in Brunswick, Maine. Manomet (formerly Manomet Observatory) is a non-profit scientific research group. It got its start in the 1960s monitoring migratory bird populations. Since 1992, Dr. Hagan has been studying the effects of industrial forestry on birds and forest structures in Maine. His research is concentrated on lands belonging to S. D. Warren and Great Northern Paper.

"What we can say at this point is that some bird species benefit from harvesting, while others appear to be hindered," Dr. Hagan said in an April interview. "We also know that clearcutting does not create 'biological deserts' as some have suggested."

Among bird species that benefit from clearcut-related habitat changes: Chestnut-sided Warbler, Common Yellowthroat, American Kestrel, Lincoln's Sparrow and Mourning Warbler. And among birds that are hindered: Blackpoll Warbler, Black-throated Green Warbler and Blackburnian Warbler.

Most bird species are "site-faithful," meaning they return year after year to where they were the year before. When they find their previous nesting area has been harvested, they generally move to an adjacent forest. What is not known is how or if harvest related habitat losses impact population numbers. Some birds seem to need no more than an acre of habitat, while other breeding pairs need a hundred acres or more.

"We have some data for southern New England," Dr. Hagan reports. "We know urban-related forest fragmentation is a big problem for some birds, but annual surveys have only recently been conducted in northern Maine, so in a long-term sense, we don't know how bird numbers are impacted by harvest-related habitat changes."

Given the likelihood that reliable harvest impact data will not be available anytime soon—and to reduce the potential risk of species loss—Dr. Hagan is encouraging the Northeast's large landowners to maintain an age-class distribution that provides ample mature (80–120 year old) habitat for species that need it.


John Heidecker for the Cornell Univ. Lab of Ornithology

Black-throated Green Warbler

"Presently, I cannot identify any bird species in Maine that require old growth forests to maintain a healthy population," Dr. Hagan says. "The challenge is to figure out how to keep a full array of habitat in a working forest. That's not easy to do when you are a paper manufacturer. Paper company forests are definitely trending toward younger age classes."

The trend toward younger maximum forest age has become a focal point in Dr. Hagan's habitat research. With annual harvest rates running at about 1.5 percent, he wonders whether any plant or animal species associated with mature forests will drop out as younger forests become more predominant in northern Maine.

"The forests we see today are the product of an earlier era when the annual harvest rate was less than it is now," he explains. "What this means is that the Maine forest landscape we see today will not look the same in 30 or 40 years. We need to learn how to accommodate a full range of wildlife species in this changing landscape."

But how can such a range of wildlife species be accom-

modated in forests that are growing younger? Many who voted to ban clearcutting in Maine think such a ban would produce the older forests they believe would most benefit wildlife, but Dr. Hagan is less certain how wildlife would benefit.

"Selection cutting usually involves harvesting 20 to 30 percent of the timber in a stand every 15 or 20 years," he explains. "The result is a more open-canopy forest with fewer slightly older trees than would naturally be present. But selection harvesting does not mimic the mature, closed-canopy forest nature would offer up across much of Maine's Northern Forest if given the chance. Both techniques—clearcutting and selection harvesting—mimic nature is some ways, but neither technique produces an exact replica of natural disturbance patterns produced by wind, disease, ice or the occasional fire we see in the North woods."

Isador Jelkin for the Cornell Univ. Lab of Ornithology

Common Yellowthroat

Then there is the acreage factor: given the demand for—say—a billion board feet of wood fiber annually, it takes many more partial cut acres to meet demand than it does clearcut acres. Is it better to disturb fewer acres more intensively every 60 to 70 years, or is it better to enter a stand less aggressively every 15 or 20 years? Which alternative produces the better overall outcome for wildlife? Dr. Hagan concedes he does not know. But the Maine Forest Service has come up with some interesting numbers worth considering. Between 1989 and 1994, clearcutting decreased from 45 to 11 percent of annual harvest acres. At the same time, the number of partial cuts increased from 55 to 89 percent—and the number of total acres harvested by clearcut and partial cut increased from 326,000 to 504,000 acres.

To help mitigate the immediate impacts of harvesting, Dr. Hagan offers a suggestion that seems certain to raise the eyebrows of a public obsessed with orderliness in forests: leave more snags and woody debris—branches and treetops—in harvested areas. Such debris holds moisture, enriches the soil and provides hiding and nesting cover for birds, small mammals and amphibians.

"Leaving woody debris may seem to add to the eyesore clearcuts create," Dr. Hagan explains, "but logging residue is very helpful where wildlife is concerned. Policymakers need to accept the fact that many of the things that benefit wildlife don't fit well within the public's perception of what constitutes good forest stewardship."

Where the future is concerned, Dr. Hagan is both a pragmatist and an optimist. "About all we can do is learn as we go," he says. "We need to be flexible and open to new knowledge. Where wildlife is concerned, we will never have perfect knowledge, and we will never know all there is to know."

Editor's note: To learn more about Dr. Hagan's views concerning timber harvesting and wildlife habitat, read "Clearcutting in Maine: Would somebody please ask the right question?" Maine Policy Review, July 1996, or write Dr. John Hagan, Manomet, 14 Maine St., Suite 404, Brunswick, Maine, 04011.

Condition and Outlook for Maine's Spruce-fir Forests: Aftermath of the Spruce Budworm Epidemic

Maine's spruce-fir forests are products of a convergence of human and natural events. Between 1890 and 1920, the state's softwood forests experienced very heavy cutting. The nation's economy was growing rapidly, and Maine's forests provided an enormous amount of wood for residential and commercial building. The impact of 30 years of heavy harvesting was exacerbated by a spruce budworm outbreak that occurred between 1912 and 1920. This combination of events—the heavy harvest and the budworm outbreak—set in motion the cycle of natural regeneration (**Fig. 11**) that created the spruce-fir forests that dominated Maine's landscape until the 1970s when a devastating spruce budworm epidemic necessitated another cycle of heavy cutting. The outbreak lasted 15 years (1970–1985) and unleashed a storm of criticism from citizens who were angered by the amount of clearcutting that occurred.

"People were angry," reports Lloyd Irland, owner of The Irland Group, a Winthrop, Maine, forest consulting firm. "It all happened so fast. Spruce-fir forests that had become Maine landmarks were harvested on an unprecedented scale. Some of the clearcuts were adjacent to heavily traveled roads. It was not a pretty scene."

The budworm infestation hit spruce-fir forests so hard that growth collapsed for more than a decade. Between 1975 and 1990, budworm-related mortality in balsam fir exceeded both gross growth and harvest. (**Fig. 12**) Red spruce fared better, as did the hardwood species. In all, between 20 and 25 million cords of spruce and fir were killed, though much of it was salvaged.

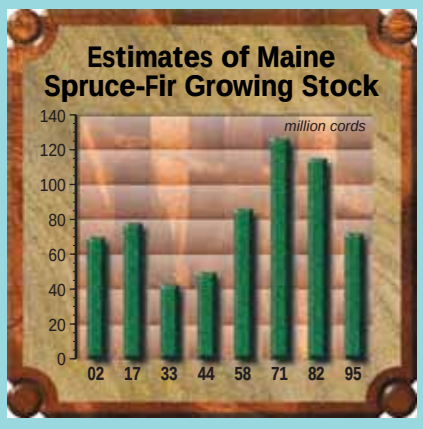


Fig. 11, tracks spruce-fir growing stock volume in Maine's forests from 1902 through 1995. Inventory was at its lowest point in 1933—a result of two factors: a heavy harvesting cycle that slowed at the end of World War I and the 1912–1920 budworm outbreak. Wood utilization standards have changed significantly over the years, so the earliest inventory data is not comparable to current data. However, its reflection of the spruce-fir life cycle is accurate. Source: "Condition and Outlook for Maine's Spruce-Fir Forest," The Irland Group, February, 1998; and the Maine Forest Service.

Spruce budworms are very efficient killers. Though their name implies a preference for spruce, they will also attack balsam fir. They begin their work in treetops, invading buds and cones first.

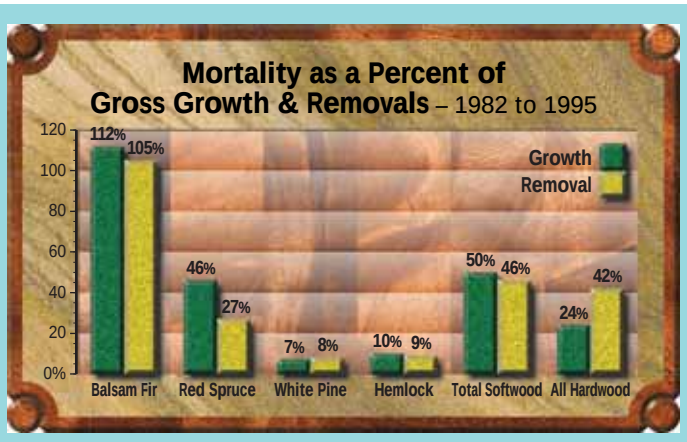


Fig. 12 , tracks mortality as a percent of gross growth and removals for 1982–1995. By far, the heaviest losses occurred in balsam fir. Source: Data by the U.S. Forest Service and calculations by The Irland Group.

Then they parachute into the understory below, where they attack seedlings and saplings.

"They are hell on regeneration," Mr. Irland says. "In a serious outbreak, like the one we experienced in the 1970s, about all a landowner can do is pick up the pieces and start over."

In a February report, "Condition and Outlook for Maine's Spruce-Fir Forest," Mr. Irland suggested that had landowners elected not to aggressively salvage dead and dying spruce and fir, balancing growth against harvest and mortality would have required much of the industry to shut down by the late 1970s. "In retrospect, such a sacrifice would not have helped much because the budworm outbreak was concentrated in mature, short-lived balsam fir," he explained. "Thus, growing stock volume would have declined even if no salvage harvesting had occurred. Though it created a momentary eyesore, salvage logging was likely the lesser of two evils if only because it gave landowners the opportunity to recover their capital."

Since 1982, the region's paper companies have invested more than $90 million in treating some 900,000 budworm-damaged acres. Herbicides were applied to control growth in competing vegetation long enough to give new naturally regenerated spruce and fir an opportunity to overtop brush. Overly dense spruce-fir stands were thinned and, where necessary, entire stands were replanted by hand.

When it calculates growing stock volume, the U.S. Forest Service does not include volume or growth data for trees smaller than five inches in diameter. In Maine, it takes from 20 to 25 years for spruce or fir to attain such size, so the industry did not get credit for its post-epidemic investments in the agency's 1995 survey.

"It's unfortunate," Mr. Irland says. "The public has been left with the perception that growth and harvest are way out of balance in Maine. Harvest exceeded growth when landowners were out battling budworms, but current indications suggest that spruce-fir harvest is probably in balance with long-term average growth."

It would seem so. One landowner Mr. Irland is assisting estimates its new immature stands are growing at a rate of 1.15 cords per acre per year—twice the state average measured before the budworm outbreak. Another reports growth in surviving mature spruce-fir forests has doubled since the budworm infestation subsided.

Softwood timber harvesting in Maine has been declining since budworm-related salvage cutting peaked in 1985. Other factors have kept the harvest below its 1985 peak. Increased use of hardwood has enabled the industry to maintain output despite a decline in softwood usage. Recycling is playing an increasingly important role, allowing mills to reuse fiber rather than harvest new wood. Advanced sawing technologies are also helping, enabling mills to use smaller logs that were once considered waste.

As the budworm epidemic has subsided and production-related factors have begun to exert their own influences, clearcutting has given way to a wide array of partial cutting techniques. The Maine Forest Service reports that since 1989 the number of acres clearcut has declined from 45 percent to 11 percent of total acres harvested. (**Fig. 13**) Nevertheless, there is no denying that, during the worst of the epidemic, a few landowners took advantage of the crisis—liquidating forests that were not infested or had suffered only minor damage.

"Their actions made it tougher for other landowners who were really struggling to get ahead of the budworms," Mr. Irland says. "Unfortunately, not all landowners share the same conservation ethic."

Though the worst is over, there is not enough data available to determine what sort of harvest level is sustainable in the foreseeable future. The U.S. Forest Service and the Maine Forest Service are conducting an in-depth review of current data, and a report is expected later this year. Preliminary estimates suggest that softwood harvest levels of the past several years are sustainable, but these estimates are based on growth and harvest modeling assumptions that have yet to be

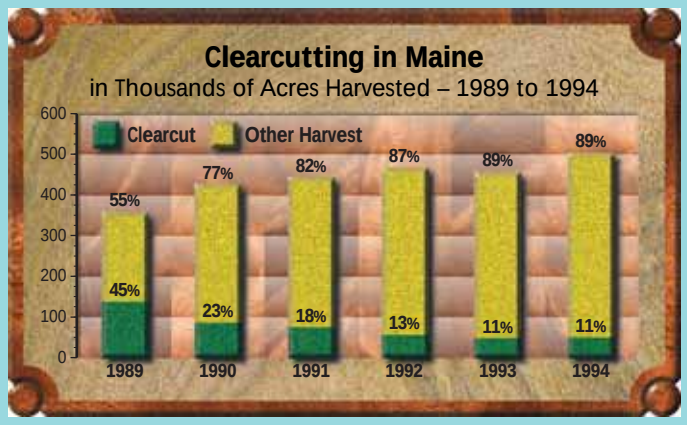


Fig. 13 , tracks the decline in clearcutting in Maine from 1989 through 1994. As clearcutting has declined, it has been necessary to partial cut more acres to produce the same harvest volume. Source: Maine Forest Service

fully tested. There is additional concern for the fact the budworm outbreak and the resulting salvage harvest have at least temporarily decreased the acreage of Maine's spruce-fir forest.

"We know acreage typed as spruce-fir declined during the budworm outbreak," Mr. Irland explains. "What we don't know is what forest type will replace it. We may see another spruce-fir forest right away, or hardwoods may become more dominant for a while. We don't know for sure."

For the time being, it appears that yield-increasing intensive forestry—which has already cost landowners more than $90 million—offers the best hope for restoring Maine's spruce-fir forests.

The Forest Products Industry is a Major Employer in the Rural Northeast

The economic strength of a region is determined by its ability to export its goods or services to other regions. **Figures 14 through 19** illustrate the economic importance of the Northeast's forest products industry. Lumber and paper producers operating within the Northern Forest Lands Study Area employ more than 43,600 people. More than half of them—about 24,000—work in the paper industry.

Dependence of forest products manufacturing is greatest in rural counties. For example, in Essex County, Vermont, the wood products industry accounts for 66.2 percent of basic income and 63.3 percent of basic employment. Basic income and employment derive their importance from the fact that certain industries—called basic industries—export their products or services to other regions, thereby generating new dollars for the region in which basic industries operate.

Figure 14 compares employment in key sectors within the Northern Forest Lands Study Area. Wood products employment totals 43,601, about 36 percent of total manufacturing employment within the study area. Almost 69 percent of total manufacturing employment within the New Hampshire study area, and almost 60 percent of manufacturing employment within the Maine study area.

Source, Fig. 14: Minnesota IMPLAN Group, Inc.

Fig. 14

Employment by Key Sectors

in the Northern Forest Lands Study Area – 1994

SECTOR	MAINE	NEW HAMPSHIRE	NEW YORK	VERMONT	AREA TOTAL
Agriculture & Fisheries	11,073	289	17,499	4,032	32,893
Forestry	819	10	192	46	1,067
Mining	83	29	1,261	69	1,442
Construction	18,466	972	33,555	5,631	58,624
Manufacturing	39,648	3,598	69,773	9,399	122,418
Food Processing	2,431	10	4,749	1,747	8,937
Textiles & Apparel	2,834	341	3,675	1,055	7,905
Primary Wood Prod.	6,946	648	1,586	899	10,079
Hardwood Dimension	382	65	239	151	837
Veneer & Plywood	442	0	147	214	803
Other Primary	6,122	583	1,200	534	8,439
Secondary Wood	4,731	4	1,200	166	6,101
Wood Furniture	522	174	1,084	1,242	3,022
Primary Paper	10,857	1,403	7,456	1,046	20,762
Secondary Paper	291	243	2,631	472	3,637
All Wood Products	**23,347**	**2,472**	**13,957**	**3,825**	**43,601**
Primary Metals	20	0	6,948	153	7,121
High Tech Mfg.	706	40	8,567	107	9,420
Transportation Equip.	1,007	0	2,538	62	3,607
Other Mfg.	9,303	735	29,339	2,450	41,827
Transport., Comm. & Util.	10,788	789	18,494	2,240	32,311
Wholesale Trade	10,188	935	18,888	2,071	32,082
Retail Trade (excl. eat & drink)	33,816	2,617	73,929	7,959	118,321
Finance, Insurance & Real Estate	8,555	675	28,110	2,418	39,758
Services (excl. lodging & computer)	58,467	3,857	135,561	13,636	211,521
Computer & Data Services	290	32	2,666	147	3,135
Eating, Drinking & Lodging	15,596	2,083	41,713	5,652	65,044
Government	38,369	2,438	131,207	9,202	181,216
TOTAL	**246,158**	**18,324**	**572,848**	**62,502**	**899,832**

Fig. 15

Forest Industry Employment

for States in the Northern Forest Lands Study Area – 1994

SECTOR (income in millions)	MAINE		NEW HAMPSHIRE		NEW YORK		VERMONT		AREA TOTAL	
	Jobs	Income	Jobs	Income	Jobs	Income	Jobs	Income	Jobs	Income
Primary Wood Prod.	7,837	$211	2,532	$72	5,157	$132	3,136	$82	18,662	$497
Hardwood Dimen.	392	$10	85	$2	1,204	$30	729	$20	2,410	$62
Veneer & Plywood	443	$10	0	$0	283	$7	942	$24	1,668	$41
Other Primary	7,002	$191	2,447	$70	3,670	$95	1,465	$38	14,584	$394
Secondary Wood	6,742	$167	3,419	$93	12,165	$353	2,448	$68	24,774	$681
Wood Furniture	1,142	$23	1,350	$35	9,563	$276	2,415	$59	14,470	$392
Primary Paper	13,402	$810	2,127	$106	9,565	$547	1,191	$51	26,285	$1,515
Secondary Paper	1,996	$85	2,586	$116	25,682	$1,003	1,079	$38	31,343	$1,243
TOTALS	**31,119**	**$1,297**	**12,014**	**$422**	**62,132**	**$2,311**	**10,269**	**$298**	**115,534**	**$4,328**

Figure 15 illustrates employment and income (wages paid in millions of dollars) for the various sub-sectors that make up the lumber and paper manufacturing industries in Maine, New Hampshire, New York and Vermont. Total primary and secondary employment in wood products, wood furniture and paper manufacturing exceeds 115,500 and total annual income exceeds $4.32 billion.

Source, Fig. 15: Minnesota IMPLAN Group, Inc.

Fig. 16

Forest Industry Employment

for All Counties in the Northern Forest Lands Study Area – 1994

SECTOR (income in millions)	MAINE Jobs	MAINE Income	NEW HAMPSHIRE Jobs	NEW HAMPSHIRE Income	NEW YORK Jobs	NEW YORK Income	VERMONT Jobs	VERMONT Income	ALL COUNTIES Jobs	ALL COUNTIES Income
Primary Wood Prod.	6,946	$187	648	$16	1,586	$38	899	$23	10,079	$263
Hardwood Dimen.	382	$10	65	$1	239	$6	151	$3	837	$20
Veneer & Plywood	442	$10	0	$0	147	$4	214	$7	803	$20
Other Primary	6,122	$167	583	$15	1,200	$28	534	$13	8,439	$223
Secondary Wood	4,731	$114	4	$0	1,200	$29	166	$3	6,101	$146
Wood Furniture	522	$9	174	$4	1,084	$28	1,242	$31	3,022	$72
Primary Paper	10,857	$657	1,403	$70	7,456	$383	1,046	$46	20,762	$1,156
Secondary Paper	291	$12	243	$7	2,631	$104	472	$17	3,637	$139
TOTALS	**23,347**	**$979**	**2,472**	**$97**	**13,957**	**$582**	**3,825**	**$120**	**43,601**	**$1,776**

Figure 16 illustrates employment and income (wages paid in millions of dollars) for the various forest industry sub-sectors that operate in counties within the Northern Forest Lands Study Area. Total employment in wood products manufacturing exceeds 43,000 and total annual income is $1.77 billion. Primary and secondary paper products employment (24,399) exceeds employment in primary and secondary lumber products (19,202) by 5,197. More than half of all wood products employment and income generated in the study area is in Maine.
Source, Fig. 14: Minnesota IMPLAN Group, Inc.

Fig. 17

Basic Employment & Income

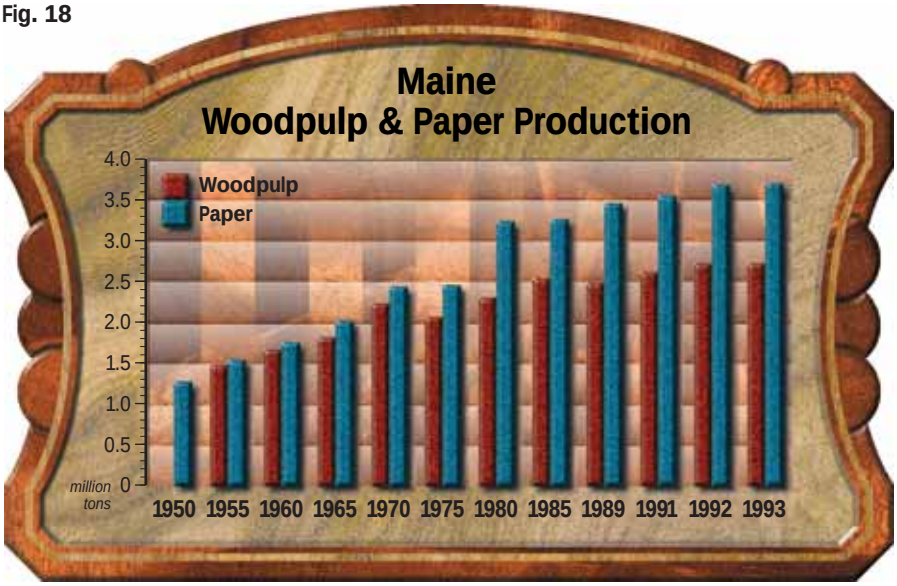
by Percentage in the Northern Forest Lands Study Area – 1994

SECTOR	MAINE Jobs	MAINE Income	NEW HAMPSHIRE Jobs	NEW HAMPSHIRE Income	NEW YORK Jobs	NEW YORK Income	VERMONT Jobs	VERMONT Income	AREA TOTAL Jobs	AREA TOTAL Income
Agriculture & Fisheries	7.8	2.4	0.8	0.3	0.6	0.0	6.8	3.0	0.1	0.0
Forestry	0.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mining	0.0	0.0	0.2	0.2	0.0	0.0	0.6	0.7	0.0	0.0
Construction	7.2	4.0	7.4	4.4	0.7	0.0	9.7	6.0	0.8	0.1
Manufacturing	46.2	52.9	48.1	59.5	13.4	13.7	40.5	51.1	15.9	15.3
Food Processing	2.5	1.8	0.5	0.9	0.4	0.4	3.7	3.9	0.4	0.4
Textiles & Apparel	2.9	2.5	1.8	1.9	2.3	1.7	0.5	0.4	2.0	1.5
Primary Wood Prod.	4.7	3.8	1.0	0.8	0.0	0.0	3.4	2.6	0.0	0.0
Hardwood Dimension	0.1	0.1	0.0	0.0	0.0	0.0	0.9	0.8	0.0	0.0
Veneer & Plywood	0.1	0.0	0.0	0.0	0.0	0.0	1.2	0.9	0.0	0.0
Other Primary	4.5	3.6	1.0	0.8	0.0	0.0	1.2	0.9	0.0	0.0
Secondary Wood	3.8	2.8	1.5	1.1	0.0	0.0	2.2	2.0	0.3	0.1
Wood Furniture	0.1	0.0	0.4	0.3	0.0	0.0	2.9	2.2	0.0	0.0
Primary Paper	9.8	17.7	1.0	1.3	0.0	0.0	1.0	1.3	0.7	0.6
Secondary Paper	0.7	1.0	1.0	1.4	0.1	0.0	0.8	0.8	0.1	0.0
All Wood Products	19.0	25.3	4.9	4.9	0.1	0.0	10.3	8.9	1.1	0.7
Primary Metals	0.2	0.3	2.7	3.1	0.0	0.0	0.7	1.0	0.0	0.0
High Tech Mfg.	2.6	2.8	20.3	29.0	4.4	5.2	11.8	21.6	5.3	6.1
Transportation Equip.	8.1	11.2	0.2	0.1	0.0	0.0	1.8	2.6	0.1	0.0
Other Mfg.	10.9	9.0	17.7	19.6	6.2	6.4	11.8	12.8	6.8	6.6
Transport., Comm. & Util.	1.6	2.1	1.4	3.4	4.6	2.5	1.4	2.1	4.3	2.5
Wholesale Trade	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.1	0.0
Retail Trade (excl. eat & drink)	14.3	11.4	18.4	12.1	1.2	0.3	10.3	8.3	1.9	0.4
Finance, Insurance & Real Estate	0.2	2.3	2.2	3.0	17.5	39.9	0.0	0.1	16.6	38.8
Services (excl. lodging & computer)	14.6	14.7	18.0	14.1	44.5	32.3	16.0	14.5	44.6	32.3
Computer & Data Services	0.0	0.0	0.8	1.6	0.0	0.0	0.0	0.0	0.0	0.0
Eating, Drinking & Lodging	2.5	2.1	2.2	1.1	0.0	0.0	10.8	6.9	0.0	0.0
Government	4.9	7.5	0.4	0.4	16.7	11.1	3.9	7.3	15.6	10.6
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Figure17 compares basic employment and income (on a percentage basis) for key sectors of the economy for states within the Northern Forest Lands Study Area. Note that in Maine (which accounts for 58 % of the study area) 19.1% of basic employment and 25.3% of basic income is in the wood products sector. However, in New York (where jobs and wages are concentrated in the greater New York City area) the industry's contributions are barely negligible. Also, note that for the region, the tourist-related sectors of basic income and employment (eating, drinking and lodging) is only a fraction of wood products basic income and employment. The single exception is Vermont, where tourist employment exceeds wood product employment. However, basic wood product income in Vermont exceeds basic tourist income.

Source, Fig. 17: Minnesota IMPLAN Group, Inc.

Fig. 18

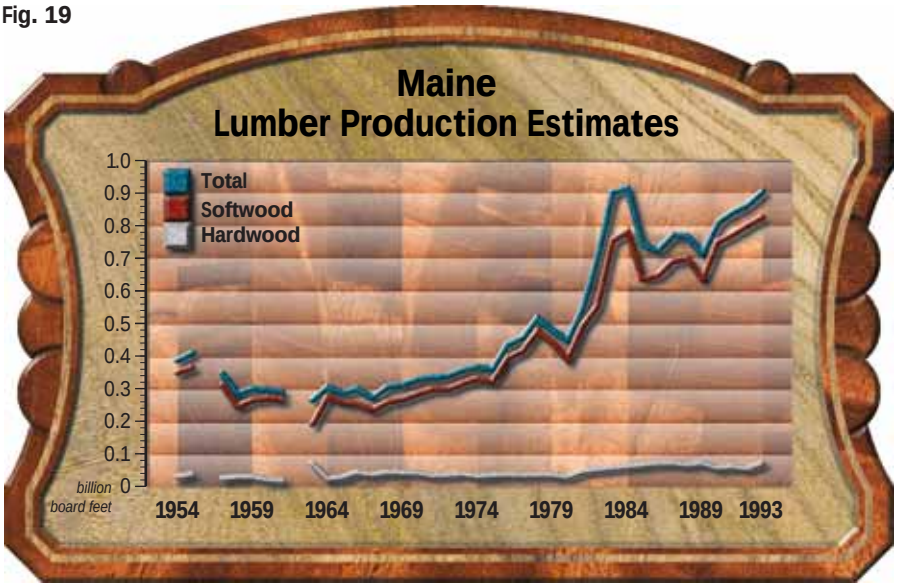


Maine's Paper Industry

Maine's pulp and paper production has been increasing since 1950—a fact that should serve to dispel an oft-repeated environmentalist claim that the industry is in decline. **Fig. 18** tracks more than 40 years of steady growth.

Source, Fig. 18: Atlas of the Resources of Maine, Supplement Feb. 1987, The Forests of Maine; Current Ind. Rept. MA26A (89)-1 to 1989; and Paper 1991–1993 from AFPA. Pulp not available after 1989.

Fig. 19



Lumber Production in Maine

Maine's lumber production has been increasing steadily since 1954. (**Fig. 19**) Production lagged during the late 1970s global recession, then shot up again after interest rates fell and the homebuilding industry recovered. Production dipped again in 1989 on recession fears, but has increased steadily ever since.

The Northeast's lumber industry accounts for about 7% of all softwood and hardwood lumber manufactured in the U. S. East, a region that includes all states east of the Continental Divide. Softwood lumber production in the four-state Northeast is about twice hardwood lumber production, but hardwood lumber production in New York State is more than four times softwood production. The major softwood lumber species are spruce, fir and eastern white pine, while the major hardwood species are oak and maple.

Source, Fig. 19: Steer 1948, and U.S. Department of Commerce, Lumber Production and Milstocks.

Wood and Paper Products Manufactured in the Northeast

There are literally thousands of hardwood and softwood lumber and paper products manufactured in the Northeast. Below is partial list.

Tissue	Typing paper	Pulp	Newsprint	Stationery	Bowling pins
Log homes	Chairs	Tables	Bed frames	Croquet mallets	Golf tees
Plywood	Handles	Veneer	Cutting boards	Veneer	Decoys
Toys	Signs	Snowshoes	Charcoal	Acetate	Piano parts
Fishing rods	Wood alcohol	Dowels	Studs	Molding	Windows
Baseball bats	Chair legs	Chair seats	Chair backs	Stool tops	Cabinet parts
Furniture parts	Stair parts	Clothespins	Toothpicks	Tongue depressors	Trophy bases
Toy parts	Bird feeders	Buttons	Bird houses	Knobs	Finials
Beams	Rafters	Joists	Paneling	Balls	Bowls
Candle cups	Spindles	Golf tees	Game pieces	Key rings	Honey dippers
Pallet boards	Shaker pegs	Spacers	Spools	Checkers	Canoes
Canoe paddles	Drawers	Drawer pulls	Packaging	Paperboard	Clock cases
Coat hangers	Lamps	Boxes	Racks	Rails	Shelving
Wedges	Trim	Picture frames	Flooring	Siding	Fuelwood
Coated paper	Livestock bedding	Garden bark	Mulch	Mousetraps	Fencing

Wood-based chemicals used in food additives, plastics, pharmaceuticals, cosmetics and photographic film

Forest Regulation in the Northern Forest Land Area

Compiled by the James W. Sewell Co.

The Northern Forest Land Area embraces 26 million acres – an area 13 times the size of Yellowstone National Park. It stretches from the Great Lakes east to the Atlantic Ocean, across the upper reaches of New York, Vermont, New Hampshire and Maine. Though broken by small timber and farming communities, it is one of the largest, most diverse forests in America. Individuals, private corporations and industrial landowners own 94% of this forest, but in keeping with New England tradition, virtually all of it is accessible to campers, hunters, hikers, anglers and others who enjoy the outdoors.

The Northern Forest Land boundary was arbitrarily drawn in 1988 when—at the request of the region's governors—Congress ordered the U.S. Forest Service to study the area's timberland resources. The impetus for the study was the sale of 186,000 acres of timberland—then owned by a French conglomerate—to two wealthy land speculators. The sales prompted outcries from citizens who feared that more timberland might be sold to developers, thereby limiting public access and forever altering the region's rural timberland culture.

Although fears of widespread development and loss of public access have never materialized, the Northern Forest Lands Study—and a subsequent study by the Northern Forest Lands Council—have sparked a citizen debate that continues today. The issue: what role—if any—can special interest groups play in decisions involving the use or sale of private lands within the Northern Forest. Many believe the public has no legal right to involve itself in the affairs of private landowners, but others say citizens have a right to get involved when landowner decisions impact publicly owned resources on private land, namely air, water, fish and wildlife. Some believe the best way to protect these resources is through publicly funded land purchases. Others favor government-imposed regulations that restrict what owners can do on their property.

Jim Petersen

An eastern white pine Tree Farm near Old Forge, New York. This forest is growing inside Adirondacck State Park boundaries. State-owned land inside the park is "forever wild" - meaning timber harvesting is forbidden—but harvesting is permitted on private land within the park.

Across the Northeast, it is widely believed that timberland owners can harvest timber whenever and wherever they want, without regard for fish and wildlife or air and water quality. This is not true. **The map on Pages 2 and 3 depicts—by color—areas where harvesting is regulated or prohibited.**

Across the region, there are several areas where no harvesting is permitted. Baxter State Park, the large green area in north central Maine is one such example. No harvesting is allowed inside this 200,000-acre park except in the Scientific Forest Management Area in the northern quarter. Otherwise, the park is dedicated to recreation with minimal road access and many backcountry campsites.

Harvesting is also tightly controlled in the Adirondack Park, the large green area in upstate New York. Six million acres lie inside the park's famous blue line. Regulated harvesting is permitted on private land within the park, but no harvesting is allowed on 2.8 million acres of "forever wild" state land that lies within park boundaries.

Very strict regulations limit or prohibit harvesting and road building in the region's two federally-owned forests: Vermont's 180,000-acre Green Mountain National Forest, and the 774,000-acre White Mountain National Forest, which lies mainly in New Hampshire but spills eastward into Maine.

Regulations limiting harvesting and road building apply to every timberland acre on this map, including the white areas, which depict private land that is not regulated by Maine's LURC (brown areas) or New York's Adirondack Park Authority (light and dark green areas inside the park's blue line). Some communities (shown in yellow blocks) also limit harvesting and regulate log hauling.

Regulations restricting harvesting vary somewhat from jurisdiction to jurisdiction, but generally they bind landowners to a notification process that requires them to advise regulating agencies of planned harvests. Regulations also limit the size of clearcuts, protect visually sensitive areas and restrict or prohibit harvesting in stream corridors and around lakes. Harvesting and road building are also restricted when such activities might disturb birthing wildlife or their offspring.

Some regulatory authorities are attempting to streamline overlapping permitting processes, but there are still many instances where landowners must apply to multiple agencies to obtain permission to harvest timber or construct roads.

"I suggest that the principal role of the land and the forests has been that of stage and scenery. The significant figures have always been the people, and the ideas they have had about what they might do at specific points in time when the stage properties are at hand. At each such point in time an actor could play his role only by the rules he knew—in terms of his own conception of his relation to the play of which he was a part."

–Hugh Miller Raup, "The View from John Sanderson's Farm: A Perspective for the Use Of Land," ***Forest History***, April, 1966

War in the North Country: The Battle for Control of the Northeast's New Forest

An Essay by James D. Petersen

On Saturday, September 8, 1900, a rough and tumble sawmill crew at Berlin Mills Company in Berlin, New Hampshire set a world's record that stands today. In one frantic 11-hour shift, it cut 221,319 board feet of lumber from 714 logs. It did so using a single-cut band saw mounted on a single log carriage, a staggering accomplishment, even by today's standards.

The remarkable history of Berlin Mills is a good vantage-point from which to look back on the history of the Northeast's timber industry—an industry that is today a colossus with enormous economic and political clout. Berlin represents all that was good—and bad—about the industry during its formative years.

The company was founded in 1852 by investors from Portland, Maine who partnered as H. Winslow and Company. That same year they dammed the Androscoggin River at Berlin, then built their first sawmill—thus capitalizing on the Atlantic and St. Lawrence Railroad spur that reached Berlin just ahead of them. By 1861, the mill was sawing 30 million feet of timber annually, and in 1866 a new investment group, led by Portland industrialist William W. Brown, bought the operation. They renamed their purchase the Berlin Mills Company and it operated as such until 1917 when World War I hostility toward anything German (including the word "Berlin") forced its renaming again. The Brown Company would go on to become a giant in the pulp and paper industry.

In its heyday, the company owned more than 5,800 square miles of timberland in the Northeast and Canada—an area the size of Connecticut and Rhode Island combined. By 1890, it was exporting top quality spruce lumber to points as far away as Argentina. Three hundred worked in the mill and another 1,200 worked in the woods.

In 1888, the company entered the pulp and paper business, and in 1904...built the world's largest self-contained pulp and paper mill in nearby Gorham. By 1920, employment in Brown Company lumber, pulp and paper operations reached 4,200. Another 2,400 worked in the woods or drove logs down the Androscoggin River.

The company was also a leader in efforts to improve woodland management. In 1898, it hired Austin Cary, a pioneer forester and friend of both Bernard Fernow, the first chief of the Forestry Bureau (forerunner to the U.S. Forest Service) and Gifford Pinchot, first chief of the Forest Service. Cary was an early opponent of the "cut and run" tactics then in vogue. "You can't stop the economic forces that are cutting down our forests," he warned. "but you can guide them if you go at it right." Though his recommendations were not always followed, his ethic took root in the company's greenhouse, one of the first nurseries in the timber industry. By 1920, it was producing four million conifer seedlings annually. The company also built the paper industry's first research and development laboratory, where in 1931 it perfected the first practical process for pulping hardwood.

But the company's fortunes slowly faded. In 1913, it sustained a $300,000 loss when its record-setting sawmill burned to the ground. One thousand jobs were lost. A smaller mill was built in its place, but by 1930 their capital intensive pulp and paper operation forced it to cease lumber production. Then, in 1935, it was forced into bankruptcy by Depression-era events it could not control. In the ensuing years, the company changed hands several times, but it never regained prominence. In 1980, Virginia-based James River Corporation bought Brown's paper mills at Berlin and Gorham. Both plants have since been sold to Crown Vantage.

The Brown Company's boom and bust history is mirrored all across the Northeast in timber fortunes made and lost during the hell roaring days of river drives railroad logging and splash dams. Technological and scientific advancements, mergers and acquisitions and economic ups and downs have since changed the face of the industry many times. But this story is about the forces *behind change*—about people and ideas

Jim Petersen

The Boreas River between Old Forge, New York and Chester, Vermont

Harvard botanist Hugh Raup found more important than land or trees. "I suggest that the principal role of the land and the forests has been that of stage and scenery," he wrote in 1966. In this story, the characters—Raup's actors—play their roles just as he said they would—by the only rules they know.

Last November, an amazing thing happened in Maine. A 59-year-old grandmother with no money to spend on political advertising led a voter uprising that handed Maine's paper industry an election-day victory it seemed not to want. Her name is Mary Adams, and in rural Maine timber towns she is something of a folk hero.

Ballot Question 1—also known as the Forest Compact—was (in the words of one forestry consultant) "a regulator's dream come true." Among other things, it asked voters to reduce the size limit for clearcuts from 250 to 75 acres. They refused, defeating the measure by a 53 to 47 percent margin. Had the compact been approved, the state's paper manufacturers would have found it more difficult to efficiently harvest its 60–70 year-old forests at a time when its competitors south of the equator are growing entire forests on plantations in seven to ten years. But the election outcome does not appear to have turned on forest practices, the fact paper is Maine's largest industry, or even the industry's stated willingness to accept some regulation in order to deflect public criticism of clearcutting. What mattered more to voters was the specter of an increasingly intrusive government, which is something they have railed against since Maine became a state.

In bygone days, the paper industry might well have picked up the tab for Mrs. Adams' grass roots uprising. But as a measure of just how much times have changed, the industry spent close to $3 million in a failed attempt to convince Maine voters a little regulation was not such a bad thing. The story might end here were it not for the fact that a year earlier—in 1996—the industry spent almost *$6 million* trying to convince voters that limiting the size of clearcuts on private forestland would be okay. Maine governor, Angus King, who endorsed both measures, is rumored to have said the only thing that could defeat the 1996 measure was "Mary Adams and $50,000." She did it with $45,000. How she did it is an object lesson in high school civics.

Jim Petersen

Mary Adams and her campaign colleague, Kenneth Johnson, have twice defeated clearcutting initiatives on the Maine ballot. Mrs. Adams has been battling what she calls "the cloak of government" since 1977 when she led a successful referendum repealing a statewide property tax.

"This isn't a forestry issue," declared Mrs. Adams in a February interview. "The issue is whether Maine citizens will retain control over their destiny, or relinquish control to environmentalists who have no respect for our way of life. If environmentalists can define the area of discussion by creating a surrogate issue—in this case clearcutting—they can use the cloak of government to control our lives."

Mrs. Adams is no stranger in Maine's grass roots war against government control. In 1977, she teamed with Maine's Freedom Fighters in a successful referendum repealing a statewide property tax. Thereafter, she vanished from public view for many years, but her decision to fight the 1996 clearcutting referendum immediately made headlines.

"The press played up the property rights angle, but that wasn't my motive," she explains. "What concerned me most was that the Compact was laced with fuzzy language and fuzzy concepts, like sustainability, that gave environmentalists footholds they could later use in court."

Clearcutting accounts for about 11 percent of Maine's annual timber harvest, down from 45 percent in 1989. Increasingly restrictive state harvest regulations and the ebb of a devastating spruce budworm outbreak are the reasons why. But these events have not deterred opponents who say that clearcutting creates an unnatural look, fragmenting forests along some of northern Maine's most heavily traveled corridors. But the prospect of an urban-inspired, government-imposed ban on clearcutting was simply too much to bear for many for whom working in forests and sawmills is a way of life. With such sharply divided opinions on the line, Mrs. Adams found that the hard work had already been done for her out West. All she had to do was capitalize on it, which she did in a series of brightly colored banners that reminded rural voters to beware of the plummeting fortunes of the West's timber industry. Her four-word message: "Remember the Spotted Owl."

"Everyone here knows about *spotted owls* and about federal betrayal on Alaska's Tongass National Forest," she explained. "We simply said, "If you like what happened in the West, vote for the compact."

As for strategy, Mrs. Adams' self-assessment of her back-to-back wins is instructive. "Tiny packs of irritated citizens are not enough to carry the day. They almost always end up fighting amongst themselves about the purity of their motives. We offered unifying themes: spotted owls and the specter of an increasingly intrusive government. Last November we also benefited from the measure's complex wording. We told voters they should not vote for what they could not understand."

That Maine's paper industry twice misread voter sentiment is for Mrs. Adams an object lesson in the nature of big corporations. "As great and generous as the industry is, it is also politically naive. Faced with controversy it tries to compromise, and it is always dumfounded when opponents it has emboldened come back for more. The trouble with most of these big company

Jim Petersen

A peaceful fall morning along the Androscoggin River, just north of Berlin, New Hampshire. In the distance, a steam plume floats over the Crown Vantage paper mill. Logs were driven down this river for 110 years. In that time, two billion board feet of timber were delivered to the old Brown Company paper mill and sawmill at Berlin. The river runs quietly here, held in check by a dam first constructed in 1852 to provide waterpower for the sawmill. Log booms were chained to concrete piers erected in the slack water just off this point.

CEOs is that they have never seen a hill they would be willing to die defending. I have."

As originally written, the 1997 ballot measure asked landowners to comply with voluntary limits on clearcut sizes. But at the insistence of his political advisors, Governor King decided the size limits should be mandatory. The decision divided the industry along philosophical lines that have frequently distanced small timberland owners and family owned milling interests from the industry's corporate giants. No doubt for political reasons, the paper companies stuck with Governor King, but many smaller companies stepped to the sidelines to await the outcome.

To make matters worse, environmental groups sided with Mrs. Adams in opposing Question 1—not out of any fear of regulation, but because they did not believe the measure went far enough. They found a friend in Connecticut financier S. Donald Sussman, who bankrolled their advertising campaign with an $804,000 contribution. Between the disparate factions, there were more than enough votes to defeat the measure.

The morning after the 1997 election, *Portland Press Herald* columnist Jim Brunelle wrote a penetrating analysis in which he suggested the paper industry was shedding "obligatory tears" over its loss. "Let's remember that the paper companies were dragged into the compact agreement only under threat of the ban clearcutting proposal," he wrote. "A lot of their enthusiasm for regulatory compromise surely faded with the defeat of the ban last year and probably has disappeared altogether now that the compact has gone under as well...Behind the tears, there's glee."

The compact's defeat tossed the clearcutting controversy back into the lap of the Maine legislature. This spring it strengthened the state's hand by granting the Maine Forest Service broad authority to draft new harvest regulations when and where it sees a need. New draft rules will be submitted to the legislature next January. The measure also establishes annual reporting and monitoring systems for clearcut areas. More broadly, it instructs the state's Forest Service to establish a process for assessing the sustainability of Maine forestlands, building on "principles of sustainability developed by the Northern Forest Lands Council." Mrs. Adams says such a move would "give environmentalists an important foothold they have not had, opening the door to the worst fears of freedom loving Maine voters."

"This is precisely the sort of regulatory fuzziness we predicted," she warned. "If it goes unchallenged, Maine's timber industry will be pushed too far toward the kind of environmental socialism that is destroying communities in the rural West. We intend to fight it."

What—if anything—the paper industry will do now is anyone's guess. To say the very least, this is not the outcome that was envisioned in 1994 when Maine industry executives first discussed the possibility of supporting a regulatory safety net that included voluntary but verifiable standards encouraging sustainable forestry.

"We saw the 1996 referendum as an opportunity to move policy in a direction

Jim Petersen

Cleaning up after nature: This clearcut—on investor-owned land managed by the Hancock Timber Resource Group—was not planned. It was made necessary in the aftermath of last winter's severe Northeast ice storm—the worst such storm to strike the region's forests since the still remembered 1938 hurricane. Less than one percent of the 670,000-acres Hancock manages in the Northeast suffered material damage. However, many of the region's smallest timberland owners suffered devastating losses.

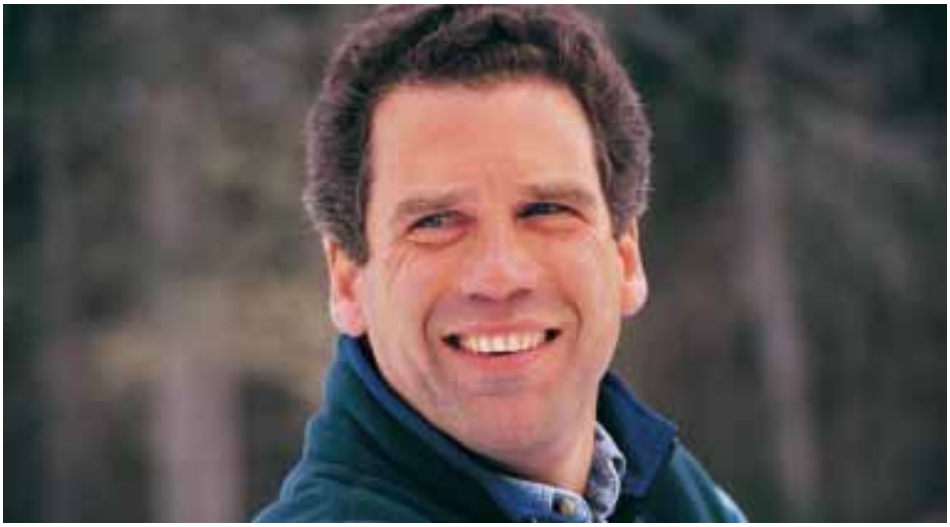
that would support long-term forest sustainability and away from the kind of command and control micro-management found in forest practices acts in the West," explains Joel Swanton, Champion International's senior management forester for the northeastern region. "What began as an attempt to move beyond command and control, degenerated into a political campaign with clearcutting as the focal point. We had a tiger by the tail, not once but twice."

Undeterred, Champion and other regional members of the American Forest and Paper Association's Sustainable Forestry Initiative are moving ahead with a third-party process designed to verify the sustainability of their respective forestry operations. In late 1996, Champion assembled a seven-member review team that included forest scientists, environmentalists and the public at large. According to Mr. Swanton, the company got "a respectable" C+ in its first audit. Last fall, the process was repeated in Vermont and New Hampshire. This fall a new team will reevaluate Champion lands in Maine.

"Third-party verification of the sustainability of our forest practices is very important to us," Mr. Swanton says. "We know some parts of sustainability are subjective, and we know many think it is nonsense, but verification is providing important baseline data we are using to improve our management practices. Is this the best or the only way to address public worries about the environmental impacts of industrial forestry? I don't know, but we are committed to moving forward despite the referendum's defeat."

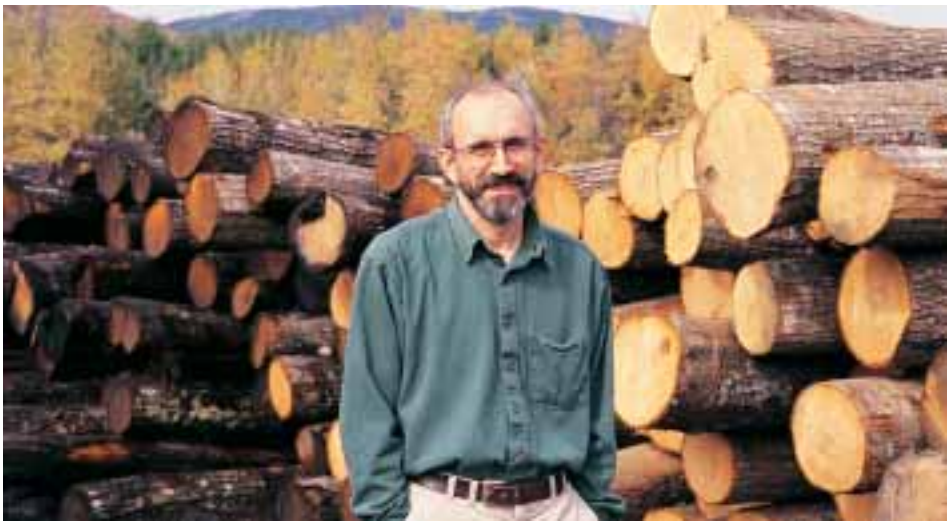
The defeat of Question 1, and what subsequently happened in the Maine legislature, cannot be fully understood until placed in the context with a far larger issue some see as a federal attempt to dictate land use policy across all four Northeastern states: Maine, New Hampshire, Vermont and New York. The issue is the Northern Forest Lands Stewardship Act, an outgrowth of two landmark studies: the 1990 Northern Forest Lands Study and a 1994 report titled Finding Common Ground: Conserving the Northern Forest. The latter study was the work of the Northern Forest Lands Council, a four-state advisory committee whose formation was among the recommendations contained in the first study, which was conducted by the U.S. Forest Service and a task force selected by the governors of the four states.

The impetus for the 1990 study was the sudden 1988 sale of almost one million acres of timberland by French-owned Generale Occidentale. Henry Lassiter, a Georgia poor boy who made millions in Atlanta real estate, bought 96,000 acres in the Adirondacks for $16 million, and Claude Rancourt, a construction laborer turned Massachusetts developer, paid $19 million for 90,000 acres in Vermont and New Hampshire. Their purchases sparked angry and often visceral outcries across the entire Northeast. "The beginning of the end for New England's North Country," declared a Vermont newspaper editorial. One local official blasted Mr. Rancourt declaring he had "just figured he could come in here, bulldoze the hell right out



Jim Petersen

Henry Whittemore is northeast regional manager for Hancock Timber Resources Group, an investment subsidiary of Boston-based insurance giant John Hancock Financial Services. As such, he oversees 670,000 investor-owned acres supplying timber to 120 lumber and paper producers. In its quest to hold the political middle, Hancock has become a leader in granting conservation easements in investor-owned forests.



Jim Petersen

Grass roots activist, Leon Favreau, is one of the Northeast's best known small mill owners. His company—Bethel Furniture Stock—makes chair parts for the furniture industry. He is a founder and president of the Multiple Use Association and an outspoken opponent of the Northern Forest Stewardship Act.

Jim Petersen

Robert "Mike" Whitney is a principal in LandVest, a Boston based firm that provides forest management and consulting services throughout the Northeast. The firm represented French-owned Generale Occidentale in its 1988 sale of the fabled Diamond International lands. Initial fears the Diamond lands would be sold to developers have never materialized, but the sale ignited a public debate that continues to this day.

of it, and make us grin and bear it."

Political leaders moved swiftly to assuage North Country fears that a long-cherished rural lifestyle would soon be sold to the highest bidder. Equally onerous was the prospect public recreation access to private timberlands (a New England tradition) would be lost. In October 1988, the Forest Service and The Governors' Task Force met to map out a federally funded study of mostly private forests inside an arbitrarily drawn boundary encompassing 26 million acres that came to be known as "the Northern Forest."

The Northeast's development fears have never materialized on a scale close to what was envisioned in 1988. But the presence of the Forest Service—a minor landowner in a region where most forestland is privately held—quickly spawned a separate fear that property owners would fall victim to the same regulatory maw that was wreaking havoc in the West. To calm fears of federal overreaching, two of the region's most prominent political leaders, Vermont Senator Patrick Leahy, and then New Hampshire Senator Warren Rudman, wrote the Forest Service to remind it that concerned citizens sought "reinforcement rather than replacement of [historic] patterns of ownership and use." But by May of 1991, only months after the Council was formed, Task Force members were talking openly about codifying the results of their work, not in state law, but in federal law. Their rationale: such a law would give the states access to federal money needed to purchase private forests the public wanted to protect from exploitation. The battle lines were quickly drawn.

"This is a classic assault by the rich against the poor, the urban and suburban dwellers against the country folk, trying to turn our communities and homes into a park for their recreation," declared Carol LaGrasse of the Adirondack Cultural Foundation. But the *Maine Times* saw things differently in its editorial endorsing the proposed Act. "Residential development must be strictly curtailed. The most dangerous critter in the woods is not a man with a chainsaw but a man with a lawnmower. We must accept our part in the millions of acres the public will control and give up our need to own a quarter-acre of it."

Now, after seven stormy years, the Council is gone. But the essence of the 1994 report lives on in proposed legislation that may never become law, despite Senator Leahy's persistent

attempts to attach it to other Senate bills. The fact that he has done so—in an effort opponents view as clandestine—is for them proof enough the Act threatens both state and property rights, providing an avenue the federal government could use at will to impose costly restrictions on those who own land inside Northern Forest boundaries.

No one has worked harder to keep alive the principles contained in the Council's 1994 study than Charles Levesque, a New Hampshire forester and natural resource policy consultant. Mr. Levesque was executive director of the Council during its four-year life. In an April interview, he looked back on its work, often paraphrasing the report.

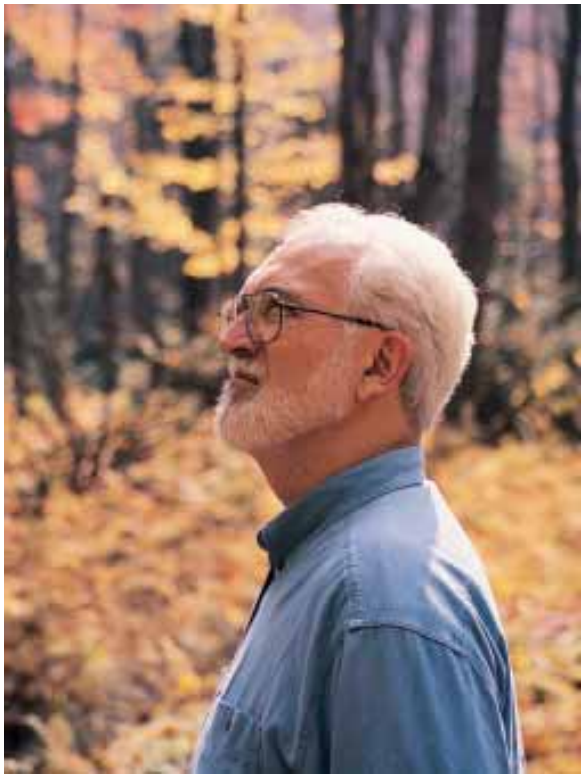
"We envisioned a win-win equation, a landscape of interlocking parts and pieces, inseparable and reinforcing each other: local communities, industrial forestland, family and individual ownerships, small woodlots, recreation land and public and private conservation land. Our recommendations were intended to support property owners who kept their forests forested and to help communities strengthen their resource-based economies, while also protecting biological diversity, acquiring lands for public ownership and providing for public recreation."

The governor of each state selected four people to serve on the 17-member Council, one representing each of four interests: forest landowners, environmental groups, affected communities and state conservation organizations. The seventeenth member represented the U.S. Forest Service. By all counts, Mr. Levesque was an excellent consensus builder who worked tirelessly to find common ground between landowners and environmental groups. But lately he has begun to fret about a loss of mutual trust engendered during the Council's tenure. He talked about it in 1997 speech to members of the Northern Forest Alliance, an environmental coalition formed after the Council disbanded.

"The trust I thought I saw built

Jim Petersen

Ted Johnston is past president of the Maine Forest Products Council. For six years he worked tirelessly to keep forestry and forest communities at the center of what has become a very public debate over the future of the mostly privately owned Northern Forest. Mr. Johnston is now a lobbyist and is no longer directly involved in the industry.



Jim Petersen

George Mitchell is executive director of the Northeastern Loggers' Association. He believes the proposed Northern Forest Stewardship Act constitutes "a federally-funded land grab by people whose only interest lies in controlling land use in the Northeast." NELA is base at Old Forge, New York and represents about 2,100 logging companies in 21 eastern states.

over five or six years is almost gone," he said, lamenting the rise of a win-lose mentality that has supplanted the win-win environment he says existed during the Council's heydays.

"One of the things that really concerns me is the lack of environmental community commitment—or even recognition—of one of the most fundamental premises of the work and output of the Northern Forest Lands Council. [It] is the legitimacy of private forest land ownerships and timberland management as the bedrock of what the Northern Forest is, and must continue to be, if it is to be conserved long term," he said.

Mr. Levesque also told Alliance members he believes their group is "at a crossroads" in its quest to conserve the Northern Forest. "You can continue to hammer away on negative win-lose approaches, or you can look for win-win equations for environmentalists and landowners."

But the win-win equation Mr. Levesque worked so hard to solve still appears to defy solution. To his dismay he concedes environmentalists are now trying to wrestle away what landowners have and cherish most: the Northern Forest—the very essence of the region—and the social license to manage it.

"As a landowner and one who has represented private landowners over the years, I know how this feels," he told Alliance members. "It feels like someone has taken out your wallet or purse or pack and started to take things out of it while putting these things in their own pocket or purse or pack. And it makes you damn mad."

Among the 37 recommendations made in *Finding Common Ground* were several requiring federal dollars the Council hoped Congress would appropriate when it took up the 1991 Stewardship Act. But the nation's political winds reversed direction that year and the Act became a political hot potato. Dollars that might have flowed into such a program in previous administrations were diverted to other causes. The $25 million the Council sought for purchasing conservation ease-

Jim Petersen

Jim Petersen

The two photographs on this page tell a rarely told story of wood utilization. In the top photograph, low quality hardwood trees are de-limbed and cut to truck length. Removing these trees from a forest is an essential step in improving the vigor and quality of the residual stand. In the bottom photograph, Robbins Lumber Company co-owner, Jim Robbins, stands at the foot of an enormous pile of chips. The chips—made from the low quality hardwood shown in the top photograph—will be burned in boilers that heat the mill's lumber dryers and offices. Ash from the boilers is sold as fertilizer. Many consider wood to be an energy source of choice because fossil fuels are not renewable.

ments in the Northern Forest became a $2 million appropriation *for the entire nation*. A similar fate befell a stewardship incentive program that would have rewarded landowners willing to manage their land for resources other than timber.

The Council's estate tax recommendations have fared better. Portions of the Family Forestland Tax Act, ratified in last year's tax bill, should make it easier for some families to retain ownership of timberlands that in the past might have been sold to developers to raise cash to pay estate taxes. Other *Common Ground* recommendations concerning harvesting and forest sustainability have been taken up in new, mostly state level venues formed after the Council disbanded. New Hampshire has completed a field manual designed to assist timberland owners wanting to harvest timber. A public-private partnership in Maine is trying to figure out how to define and measure biological diversity. Conservation easements appear to be gaining favor despite criticism from groups concerned about a loss of property tax revenue. Logging interests—led by the Northeastern Logger's Association—have done much to make the industry more aware of public concerns about the visual and environmental impacts of harvesting. And Maine and Vermont are separately trying to improve public access to forums where forest regulations are first considered.

Of these many efforts— all inspired by the Council's work—Mr. Levesque says, "The social license to own and harvest timber is a public commodity. Those who hold these licenses are well advised to do all they can to keep the public happy."

After Leon Favreau finished reading the Council's landmark 1994 report, he fired off a fax to Mr. Levesque. It read simply "B+". Those who know Mr. Favreau may be surprised to learn this. He has long campaigned against federal interference in the affairs of private property owners, and he has opposed the Act since it was proposed in 1991. Recent changes

Jim Petersen

Jim Petersen

Signs of the times: These two signs—the Hampton Woods sign on top and the Tree Farm sign beneath it—tell the story of the Northern Forest debate as powerfully as it can be told in pictures. Most northeasterners would rather see a Tree Farm sign than a sign advertising woodland home sites for sale. Even environmentalists seem to understand that the only practical way to prevent development of forests is to allow them to remain working forests. But there is still a brisk summer home market in the Northeast, fueled in part by landowners that fear environmentalist-sponsored regulation will make their forestry operations unprofitable.

in the draft legislation seem only to have hardened his position.

"I gave the Council's report a B+ because I thought it accurately described the challenges facing landowners and timber communities in the Northeast. But since almost everything proposed by the Act is already being done here at some level, why do we need it?" He asks. If the Act is passed, it will only elevate federal interest in acquiring land in the Northeast, exposing the region to unnecessary new layers of regulation, thereby opening the door to environmentalist radicals who will use the federal courts to gain control of the region's forests. Our region's communities would begin to suffer economically, just as communities in the West are suffering."

Mr. Favreau co-owns Bethel Furniture Stock, a small chair parts fabricator at Bethel, a picturesque town of 2,500 near the Maine–New Hampshire border. His late father founded the company in 1958, but the younger Mr. Favreau did not join the company until his father's death. After he took over the business, he built it into one of the fastest growing operations of its kind in the U.S. But in recent years the business has suffered from fierce foreign competition, robust overseas demand for New England hardwood logs, and a decline in harvesting on the nearby White Mountain National Forest. "About a third of our logs used to come from White Mountain," he said. "Now we don't get any."

By his own admission, Mr. Favreau has spent an enormous amount of time battling environmentalists—time he concedes might better have been spent tending his business. But, he adds, "My ability to purchase logs at competitive prices has suffered terribly in recent years, in part because of political pressure from environmental groups that oppose harvesting."

Where environmental skirmishes are concerned, Mr. Favreau is no shrinking violet. "Let's remember that the forests environmentalists want to control are privately owned," he explained in a January interview. "Remember,

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New Hampshire consulting forester, Charles Baylies (left) with landscaper Mark Sullivan. The pair is part of "Team EBM," a diverse consulting group Mr. Baylies founded that works with small timberland owners in New Hampshire. "Mostly, we practice Martha Stewart forestry," Mr. Baylies explains. The letters "EBM" stand for "ecosystem-based management"—a management philosophy Mr. Baylies has embraced as a tool for opening landowner eyes to forestry's many possibilities. "Team EBM" has its own web site: www.teamebm.com.

too, that these groups have nothing to offer in exchange, so when they talk about 'compromise' they're talking about the landowner giving up something *he* owns. When the old Diamond lands were sold in 1988 they saw an opportunity to advance the idea that they ought to represent the public's interests whenever private timberland is sold. Since then, this region has lived in fear its forests will be sold to developers. I don't see it happening. What we have here is a surrogate issue environmentalists are using to gain power for themselves."

Politics aside, Mr. Favreau is right about one thing: the 1988 Diamond land sales did not unleash a torrent of development despite Forest Service predictions that it would. A 1993 analysis by the widely respected James Sewall Company revealed 92 percent of Northern Forest timberland sales from 1980 through 1991 involved companies or individuals already in the timber growing business. Sewall conducted the analysis for the Northern Forest Lands Council, which felt such a study would prove development fears were justified. But the report produced the opposite result. Of 7.63 million acres that changed hands (in timberland tracts of 500 acres or more) only 203,000 acres were converted to another use, and only 40,000 acres were subdivided, presumably into home sites. Sellers sold for four reasons: estate tax planning, to pay inheritance taxes, because timberland investment returns proved inadequate, or to capitalize on land values pushed upward by a robust vacation home market.

The Sewall study also indicates the Northeast's "unstable regulatory and political environment" is becoming a factor in the decision to buy or sell timberland. With so much invested in its mills, the region's pulp and paper industry is in no position to sell out, so the 9.2 million acres it owns within the Northern Forest will likely remain forested. But nonindustrial landowners could more easily liquidate the 9.8 million acres they own because they have no capital investments in manufacturing.

"The current political climate is a destabilizing factor," explains Dave Edson, Sewall vice president of forestry and natural resources. "If tax and environmental regulations cut more deeply into future profitability, timberland owners worried about the safety of their investments will turn to developers who are ready and willing to pay top dollar for their land."

Few in the Northeast monitor timberland investments more closely than does Robert Whitney. Mr. Whitney is a principal in LandVest, a Boston based forest management and consulting firm with offices throughout the Northeast. The firm represented French-owned Generale Occidentale in its sale of Diamond timberlands sold to Lassiter Properties and Rancourt Associates. For

Mr. Whitney, a forester by profession, the transactions offer ample proof that a federal presence in the Northern Forest is unnecessary.

"Less than one percent of the land that changed hands has been subdivided for the vacation home market," he recounted in a recent interview. "Another 23 percent has been set aside in no-harvest preserves. The rest is still being managed for multiple benefits including timber, wildlife and public recreation. Where is the crisis?"

But the sales did precipitate a crisis on political fronts in all four states, leading the governors to ask for a congressionally funded investigation—a fact that still disgusts Mr. Whitney. "The *entire* Occidental transaction involved 986,000 acres," he explained. "Why then was it necessary to study an area *26 times* larger? The answer is that opportunistic environmental groups whipped the public into a frenzy."

Forgotten amid the ensuing melee was the fact Occidentale initially offered to sell all of its U.S. timberland (some four million acres) to the Nature Conservancy—a fact that calmer heads should have seen as a sign the company was not interested in dealing with land speculators. In any event, the Conservancy reported it was interested only in the New York, Vermont and New Hampshire parcels, for which it wanted to pay no more than $100 per acre. Messrs. Lassiter and Rancourt later paid almost twice that amount.

The final dispensation: In 1988, the states of Vermont and New Hampshire and the U.S. Forest Service paid $14.8 million ($275 per acre) for 54,000 acres that Rancourt Properties bought earlier that year from Occidental for about $211 per acre. That same year, Lassiter Properties sold a 40,000-acre conservation easement and 15,000 acres in fee to the State of New York for $10.4 million. Two years later, Occidentale and James River Corporation—by then a 23 percent owner of Occidentale subsidiary Diamond Occidental Forest Industries—sold about 40,000 acres in Maine to the Conservancy, which had partnered with Land For Maine's Future and the National Park Service. James River Corporation bought most of what remained in 1993 when it purchased the rest of Diamond International's outstanding shares.

"One of the most interesting and least appreciated aspects of the Diamond sale is that the Northern Forest gained several new timberland owners, including some whose only motive is conservation," Mr. Whitney concluded. "The free market proved that it can still produce important societal benefits. Those left pounding the table for a federally-funded buyout of private timberlands are mainly urban types who want only to impose their political will on a rural lifestyle they admire but don't want to pay for."

Jim Petersen

This birch grove is located on timberland owned by the Vermont Marble Company. The company mines some of the world's finest marble. It also routinely harvests timber from forests atop its mountain of marble. Protection and creation of deer habitat is a primary management objective in company forests.

Not everyone sees the Northern Forest Stewardship Act as a threat to landowners in the Northeast. Stephen Schley thinks it may provide an unusual opportunity for landowners to codify their sovereignty over those who desire a federal takeover. Mr. Schley is president of Pingree Associates, a small management company that links the heirs of David Pingree with forests he began purchasing in 1840, when he was a sea captain sailing from Salem, Massachusetts. Though his name does not survive, his 65 heirs—including Mr. Schley—own about one million acres of prime timberland in northern and western Maine. The forests are managed by the Seven Islands Land Company, which is also owned by Pingree heirs.

"I am convinced the agreed upon language in the bill provides solid protection for private property owners," Mr. Schley said in an April interview. "As written, it prevents the federal government from intervening in the relationship between private landowners and state governments, unless invited to do so by a governor of one of the states. I don't believe language this strong—describing the relationship between the federal government and the four states—exists anywhere else in federal law."

Apart from what may be precedent setting language, Mr. Schley says the bill contains an underlying message that is aimed squarely at the West's environmental activists. "The message," he declares, "is 'You can't come here and do what you are doing in the West'."

Most of the Northeast's major timberland owners concur with Mr. Schley's assessment of the bill's strengths, and with so much at stake it is hard to see how anyone could oppose such a tightly written bill. But the fact is the precise wording Mr. Schley and other major landowners agreed to may be falling apart in a partisan battle between Vermont Senator Leahy and Idaho Senator Larry Craig, who heads the Senate subcommittee considering the Act. Senator Craig opposes the bill as written. To garner support elsewhere, Senator Leahy has been tinkering with the bill's wording much to the consternation of Mr. Schley. "What Senator Leahy is doing constitutes an inappropriate end run," he declares.

Senator Leahy's maneuverings have also provoked the Maine Forest Products Council. In a June letter to its Senate delegation, the Council said it would withdraw its earlier support for the bill if its wording was altered or if Senator Leahy reneged on an earlier promise to conduct field hearings before a final Senate vote is taken.

Somewhere beyond the indelible lines that separate supporters from opponents of the Northern Forest Stewardship Act there lies a second set of lines that are much harder to trace. Like seams in a quilt fashioned from thousands of odd-sized pieces, they zoom off in different and unpredictable directions. These lines define the patchwork ownership of the Northeast's forests. Follow them and

Jim Petersen

When the YMCA of the Greater Rochester (New York) area found itself in need of money a few years ago, it turned to Mart Allen, one of the Northeast's finest woodsmen. The forest plan he developed for the organization's 1,200-acre youth camp has thus far generated more than $90,000 in harvest revenue. Mr. Allen has been a practicing forester for more than 50 years.

you will find examples of just about every kind of forestry there is—from clearcuts that stretch from ridge top to ridge top, to areas so subtly logged you would be hard pressed to find the evidence. The result is a forest landscape as diverse as any on earth.

"The possibilities are endless," says Charles Baylies, a Whitefield, New Hampshire forester who works with New England Forestry Consultants, the for-profit subsidiary of the nonprofit New England Forestry Foundation, one of the Northeast's best-known conservation groups. NEFCO works with hundreds of small forestland owners scattered across the region. (Mr. Baylies is also a member of The Evergreen Foundation, which publishes this magazine).

"Our clients are mainly interested in improving the appearance of their woodlots," Mr. Baylies explains. "Most of them love wildlife and are delighted to learn we can thin their forests in ways that encourage habitat formation. It's Martha Stewart gardening on a grand scale."

Mr. Baylies has given his brand of forestry a name that certainly has a nice marketing ring to it. "We call it ecosystem-based management—EBM for short," he explains. "Landowners rarely call me to talk about harvesting timber. Most want to talk about ecosystem management. I use the opportunity to talk possibilities."

Foresters are not known for being crack salesman, but Mr. Baylies is an exception. To attract new customers, he even formed "Team EBM," a loose-knit consulting group that includes a professional landscaper, a wildlife biologist, a botanist and plant breeder. Few landowners could ever afford to hire so much talent outright—a fact that forces Mr. Baylies to pick his jobs very carefully. "Most of our clients expect that sufficient timber can be harvested to pay for our services," he explains. "It is a rare landowner that is willing to pay us out-of-pocket."

Eco-cutting"—another term from Mr. Baylies' marketing lexicon—relies on steady pulp and biomass markets for low quality wood Team EMB harvests from lands that were logged decades ago by workers hired to remove only the best wood. "You would be amazed how good one of these junky old stands can look after only a few years of loving care," he declares with characteristic enthusiasm. Most of Mr. Baylies' clients are absentee landlords who are indeed amazed by the results of his work. Among them: Bob Merritt, a Boston stonemason for whom owning a piece of New Hampshire timberland is the culmination of a life's dream.

"I have been a member of the Ruffed Grouse Society for many years," he explains. "I always wanted a place where I could hunt grouse and encourage their

propagation. I am doing it with Mr. Baylies' help. Fifty years ago this was an abandoned pasture. It grew back, and we have turned it into fine grouse habitat. To say that I am pleased would be the understatement of the century."

A stunning half-day drive south of Whitefield, Robbo Holleran works in Vermont forests that were fields a hundred years ago. The Midwest agricultural boom and the Erie Canal put an end to nineteenth century farming in Vermont, but remnants of stone fences still mark the boundaries of abandoned pastures. They lie hidden beneath towering stands of maple, oak, cherry, ash and birch. Although there has been some logging in these new forests, Mr. Holleran's generation of professional foresters is the first to significantly influence harvesting here. "These forests have never been managed," he explained in an October interview. "They grew here by themselves after the farmers left."

This is the Vermont of white church steeples, neon fall color and picturesque farms frozen in time on millions of calendars. Everyone wants to save this scene, but few seem to understand how. It is an irony that is creating a market for foresters like Mr. Holleran who are spending increasing amounts of time counseling landowners who want to improve the look of their woodlots, but don't have the slightest idea where to begin.

"You have to start with what nature left," Mr. Holleran explained. "With periodic thinnings we gradually remove the lesser value tree species while encouraging growth and natural reproduction in the more valuable species, like hard maple, oak and cherry. The result is a diverse and increasingly valuable forest."

Such work is rewarding, but not very profitable. Few small landowners are willing to spend beyond the revenue harvesting brings. Fortunately, Mr. Holleran has other larger clients that keep him busy most of the year. Among them: the Swiss-held Vermont Marble Company, which owns several thousand acres of prime timberland in southwestern Vermont. The company has been mining premium-grade marble in the area for more than a century. The hardwood forests that sit atop its mountain of marble are a bonus.

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Fall graces a woodland walking path near Old Forge, New York. This forest belongs to the YMCA of Greater Rochester. Harvest revenue is used to fund several youth programs the organization sponsors.

"We have two objectives," Mr. Holleran explains. "The first is to encourage long term tree growth in commercially valuable species, and the second is to mitigate the visual and wildlife impacts associated with quarrying operations. Providing good quality deer habitat is a priority."

Clearcutting has been common in northern Vermont's low-grade hardwood forests, which lie within easy hauling distance of New Hampshire's pulp mills. But last year one such harvest near popular Green Mountain ski areas led the state legislature to pass heavy cutting legislation aimed at curbing abuses by so-called "liquidation harvesters." According to Mr. Holleran, the legislation has had little impact in southern Vermont where smaller woodlots and more diverse forests make larger clearcuts unlikely. Maple and ash regenerate themselves in shade, but oak and cherry—often found in the same stands—need more sunlight to regenerate. In such a diverse environment, selection harvesting works best. "Wind, disease and ice are the tools nature uses to control the amount of sunlight that enters these forests," Mr. Holleran explains. "By thinning, we can control sunlight in much the same manner."

Mr. Holleran is not the aggressive marketer Mr. Baylies is, preferring to rely on his reputation to bring him new business. Even so, potential clients get a handsome brochure describing the basics of forestry as well as his services. He also participates in county fairs where he annually gives away hundreds of copies of this magazine.

"Forestry still enjoys a good reputation in Vermont," he explains. "But we are under constant public scrutiny, and there are a lot of new people living here who think the best way to protect these forests is to set them aside in federally controlled no management reserves. Faced with this threat, I've concluded that the time I spend at fairs and other public gatherings is important to maintaining our working landscape."

A day's drive west, the story repeats itself amid Adirondack splendor. A surprising 62 percent of New York State is forested. In round numbers: 18 million acres. More than a third of it—some 6.3 million acres—now lies inside the arbitrarily drawn boundaries of the Northern Forest. By one count, more than half a million private ownerships are involved. The specter of a federal presence in these forests is a big worry for many, including George Mitchell. Mr. Mitchell is executive director of the Northeastern Loggers' Association, which has its offices at Old Forge, in the midst of the Adirondack State Park. The association represents about 2,100 logging companies in 21 northeastern and east-central states.

"The Northern Forest Stewardship Act constitutes a federally-funded land grab by people whose only interest lies in controlling land use in the Northeast," he declared in a November interview. "It is awfully hard to swallow given the steadily improving condition of this region's privately owned forests."

New York State is a case in point. Its forests have staged a remarkable comeback since the turn of the century when only 25 percent of the state was forested. Even more remarkable is the fact that growth in commercial forests is concentrated in older trees, a strong indicator that modern-day landowners have steered clear of the harvesting excesses that were so common a century

Jim Petersen

Jim Petersen

These side by side photographs tell the story of how human intervention saved a dying spruce-fir forest. This site was clearcut about 50 years ago. As often happens, the forest that grew back after clearcutting (left) contained too many trees. Minus adequate sunlight and soil nutrients, it began to die. But once thinned (right) the remaining trees quickly recover from the strain of trying to survive in an overstocked condition. The wood thinned from the stand on the left will be sold as pulpwood. The adjacent stand on the right will begin to produce good quality sawtimber in about 20 years. These photographs were taken in a recently purchased Seven Islands' managed forest near Rumford, Maine.

ago. A 1993 U.S Forest Service survey of New York forests revealed net growth (gross growth minus mortality) exceeded harvest by a margin of 3 to l, creating what the agency termed "an opportunity to expand the harvest in the future on a sustainable basis."

New York's 15 million-acre commercial forest has spawned an impressive forest products industry that includes more than 500 sawmills and eight pulp and paper facilities. More than half of all primary and secondary forest-related employment in the four-state region is located here: 35,000 work in pulp and paper and another 27,000 work in lumber and furniture.

Despite robust, well managed forests and a powerhouse industry, many New Yorkers still equate forestry with destruction of forests. When the YMCA of the Greater Rochester area needed money four years ago, it reluctantly agreed to a small test harvest at its 1,200-acre youth camp near Old Forge. Mart Allen, considered by many to be one of the Northeast's finest woodsmen, developed a long-term management plan that has thus far netted the organization almost $100,000 in harvest revenue. After touring the carefully thinned test site, a director who had opposed the harvest admitted to Mr. Allen that he feared "logging meant all the trees would be chopped down."

Apart from producing much needed income, Mr. Allen's efforts have added many years to the life of a long-neglected forest that had begun to deteriorate. "Our objective is to improve the quality of this forest," he explained during a tour of the property. "We are retaining the larger, well-formed trees, favoring more valuable cherry, hard maple and yellow birch—all fine natural seed sources for years to come."

It would appear the YMCA was doubly fortunate in finding Mr. Allen. The work he is doing—marking individual trees—is a highly subjective process requiring years of on-the-ground experience. In Mr. Allen's case, more than 50 years. "It is an inexact science," he concedes. "There is a lot to consider: the site, the mix of tree species, their age and condition, the desired future stand structure and, of course, the market value of the wood. We have made a good start. I hope I live long enough to see the result."

The clearcutting initiative defeated last November by Maine voters did more than divide the state into opposing camps. It also divided its timber industry along predictable lines: big pulp and paper outfits on one side and smaller family-owned milling and logging companies on the other. Among the most notable exceptions were Jim and Jenness Robbins, big names among a handful of Maine lumbermen moving toward the perceived center in an increasingly contentious forestry debate. The brothers campaigned actively for the measure's passage.

"We need to make ourselves more appealing to the majority of voters," brother Jim explained in a recent interview. "Had it passed, Question 1 would have helped us move to the

Jim Petersen

This hardwood stand in a Seven Islands' managed forest in Maine was harvested last year, but the logging was done so carefully it is hard to find evidence of timber cutting. Seven Islands uses a variety of thinning techniques in its hardwood forests. Its management practices are much admired and often praised by environmental groups.

political center without adversely impacting science-based forestry."

The Robbins brothers are fourth generation owners of Robbins Lumber Company, a Searsmont milling and timberland concern founded in 1881 by their great grandfather. He made barrel staves and shingles in a small building that stood a stone's throw from the company's state-of-the-art sawmill. Among its products: custom cut pine lumber, shelving, bevel paneling, tongue and groove siding and pre-cut components used in rat traps, bread boards and racks for kitchen spices and compact disk storage. Wood shavings are bagged and sold as livestock bedding, and the lowest quality logs are chipped and burned in an on-site power plant that heats lumber dryers. The various milling operations employ 135. The brothers also own about 5,000 acres of mixed pine and hardwood timberland, plus another 22,000 acres purchased jointly with Champion International in 1996. They also manage timber tracts for other landowners and farm about 150,000 Christmas trees.

Where forestry and milling are concerned, few companies have earned wider recognition than Robbins Lumber. In 1989, it was named the Outstanding Land Steward in the United States by the Arbor Day Foundation, and in 1992 it won the Maine Governor's Award of Excellence. The Maine Conservation Rights Institute and the Natural Resources Council of Maine have also honored its work. Apart from the pleasure of being publicly honored, Mr. Robbins says the awards mirror boyhood lessons learned from their late father. The elder Mr. Robbins was for more than 50 years one of Maine's most respected lumbermen and conservationists. "At an early age we were taught to take our civic, business and environmental responsibilities very seriously," Mr. Robbins says of his upbringing.

Mr. Robbins is president the Maine Forest Products Council, the only venue in the state where paper and lumbering interests sit at the same table. Since 1991, when they were asked to join the Northern Forest Lands Council, the organization has been immersed in the ensuing debate. The issue has tested its diverse membership's mettle as well as that of Mr. Robbins, but they have held on despite Sen. Leahy's recent attempts to alter critically important wording in the Northern Forest Stewardship Act.

"It has been very frustrating," Mr. Robbins concedes. "But by our participation we have kept forestry and forest families at the center of a critically important political process that was going forward with or without us. I hate to think where we would be today had we stood by while environmentalists decided what our future would be."

Of the Northeast's big timberland owners, the Pingree family (heirs of David Pingree) may be the most admired. That is certainly the case where the region's mainstream conservation groups are concerned. Hardly a month passes without one of them holding up the family's land ethic as one they wish others would emulate. It is an

image Pingree heirs enjoy but wisely refuse to flaunt.

"People like us because we rarely clearcut in our forests," explains Stephen Schley, president of Pingree Associates, a management services company that links Pingree heirs to Seven Islands Land Company, another family-owned entity that manages timberland owned by the heirs.

"The tree species we are managing will tolerate a good deal of shade, which means they respond very well to unobtrusive selection harvesting techniques," Mr. Schley explains. "Not having to clearcut often has strengthened our public image."

But the emphasis on barely visible selection harvesting methods is not the only reason why Pingree heirs and Seven Islands enjoy such extraordinary popularity with conservationists. They also jumped on the certification bandwagon well ahead of their competitors. The move pleased niche marketers who want to showcase lumber bearing a third party label certifying that the product came from forests that are managed in sustainable ways. The market for certified wood is small but growing rapidly, especially in Europe—a fact that weighed heavily in the decision to seek certification.

"Certification provided an opportunity for us to differentiate our Seven Islands product lines and management style," Mr. Schley explains. "It was not an attempt to embarrass competitors or curry favor with environmental groups."

Seven Islands enjoys other advantages over its competitors. It has no capital investments in milling, unlike most big timberland owners in the Northeast. Moreover, the Pingree heirs take a much longer view of their investments than do most stock market shareholders. The success the company thus enjoys has not gone unnoticed. Mr. Schley reports several major timberland owners and investment funds currently mulling timberland acquisitions in the Northeast have asked Seven Islands to consider managing their purchases.

Although Mr. Schley will not say what companies have inquired, it is likely some of them also own land in the Southeast and Pacific Northwest, where clearcutting is as common as it is uncommon in Seven Islands' managed forests. In any event, Mr. Schley's response is instructive. "Everything we do is predicated on our ability to manage shade. Our system would not work in a Douglas-fir forest because that species thrives in full sunlight and is best promoted by clearcutting, in spite of all the negative issues that go with it."

Although Pingree-owned forests are rarely clearcut, Mr. Schley concedes that clearcutting is occasionally the only realistic option. During the 1970s, its forests were hit by the same spruce budworm outbreak that devastated the entire Northeast. Almost 40,000 acres had to be clearcut before the infestation subsided. Thereafter, to rebalance growth and harvest, Seven Islands' foresters reduced logging in spruce-fir forests by 50 percent for several years.

"The decision to dramatically curtail logging created a short-term financial hardship for the landowners," Mr. Schley recalls. "But their sacrifices are now being rewarded in terms of new, healthier, fast growing forests. Unfortunately, the massive amount of clearcutting that was done left many believing clearcutting is still the dominant harvesting method in Maine, when, in fact it is the least dominant."

Jim Petersen

Daryl Martens stands beside a deck of white ash in Plumb Lumber Company's log yard at Andover, Vermont. The ten-employee company cuts ash, maple, oak, hickory, cherry, basswood and butternut for flooring and furniture manufacturers. Such species diversity is common through the Northeast's hardwood forests.

Although conservation groups have been generous in their praise for Seven Islands, the company is caught up in the same land war as everyone else—a fact that concerns Mr. Schley. "Many of the same groups that praise what we are doing also take political positions detrimental to our business," Mr. Schley concedes. "Other landowners considering change see that it hasn't insulated us from the onslaught. They conclude—perhaps correctly—that there is no incentive to follow in our footsteps. It is time for conservationists to decide whose side they are on."

The world's day begins along the International Dateline—an imaginary transection that divides the South Pacific into two days at an archipelago called the Kingdom of Tonga. Back in the 1970s, Henry Whittemore worked here on the island of 'Eua as a Peace Corps volunteer. His fondest memories are of hiking from his village to a volcanic ridgeline, arriving in time to watch the sun rise over the eastern Pacific.

"Because we were right on the Dateline, I always knew I was one of the first people on earth to watch the new day dawn," he said in a recent interview. "I wish I could find a similar promontory from which to view the future of forestry."

These days, the search for a promontory from which to view forestry's future is attracting a lot of attention. Even the venerable Nature Conservancy has gotten into the act. Last December, its Vermont chapter purchased almost 27,000 acres of timberland in the Green Mountains. Amid political fanfare—and to the delight of the locals—it said it plans to manage its $5.5 million purchase as a working forest. Among other things, the Conservancy hopes to chart a new more enlightened course for forestry in the Northeast.

But if there is any one person capable of finding the overlook from which to look down on forestry's new day dawning, it is Henry Whittemore. Mr. Whittemore is Northeast Regional Manager for the Hancock Timber Resource Group, an investment subsidiary of Boston-based insurance giant John Hancock Financial Services.

John Hancock is not a name often linked to forestry, and its subsidiary Timber Resource Group is relatively new to the business. Founded in 1985, the group develops and manages timberland portfolios for institutional investors—mainly public employment retirement systems. Its current U.S. portfolio includes about 2.6 million acres valued at $2.8 billion. As Northeast regional manager, Mr. Whittemore oversees 670,000 investor-owned acres supplying timber to 120 lumber and paper producers. Its best cherry is so valuable that it attracts veneer buyers from Indianapolis—800 miles distant. The day-to-day work is done by New Hampshire based Wagner Forest Management, freeing Mr. Whittemore to do what he does best: represent Hancock's timberland interests in high-level political and environmental forums.

"Forestry has become a very public business, but it suffers from a lack of leadership," Mr. Whittemore says. "We hope to fill the void by bringing a conservation ethic to our business and a business ethic to our conservation activities. Our successes lower the chances that a political skirmish will undermine the safety of client investments in timberland."

Jim Petersen

21-year old Dennis Walter pauses beside a skidder he operates for a logging company in Maine. Mr. Walter hopes to make logging his life's work. Such well paying opportunities still abound in the Northeast, where most timberland is privately owned, but are increasingly scare in the West, where most forests are federally owned.

Four years ago, Hancock judged the Northeast to be the most stable investment environment of its three operating units—the Southeast and the Pacific Northwest being the other two. But the recent political tumult surrounding Maine's clearcutting debate and uncertainty about the future of the Northern Forest is causing the company to assume a more public role to protect investor interests. It supported Maine's failed forestry compact and New Hampshire's widely praised Memorandum of Understanding restricting harvesting in visible high elevation areas. It is also working behind the scenes for ratification of the Northern Forest Stewardship Act.

"The Act could provide a mechanism wherein federal funding could be allocated to states to conserve forests that contribute to the economic, environmental and social well being of the region," Mr. Whittemore explains.

Jim Petersen

Robbins Lumber co-owner Jim Robbins discusses a customer order with Myrtle Wilson, manager of the company's cut-up plant. The Searsmont, Maine lumber company employs about 135 people. Women account for about half the workforce in such milling operations in the Northeast. Counting benefits, they earn about $12 an hour, far more than is earned by most working women.

But many Northern Forest landowners disagree, noting that repeated attempts to legislate forestry solutions in the Pacific Northwest have served only to embolden environmental activists. In Oregon and Washington, hundreds of thousands of investor-owned acres have been lost to federally enforced habitat conservation programs. But Mr. Whittemore remains optimistic, in part because he thinks the political climate in the Northeast is more hopeful than it is in the Pacific Northwest.

"The fact that there is so little federal land in the Northeast is a big factor," he explains, "but I detect other more fundamental differences. The cultural values embodied in forestry and milling still enjoy wide public acceptance in the Northeast, but the most fundamental differences reside in our town meeting form of government. Rigorous debate is encouraged but it rarely divides communities. We may harbor deep differences of opinion but we remain neighbors first."

In its quest to hold the political middle, Hancock has become a leader in granting conservation easements in investor-owned forests that hold intrinsic values the public reveres. In just two years, the company completed two of the largest such sales ever in the Northeast—a 2,700-acre tract in the 13-Mile Woods corridor along New Hampshire's Androscoggin River and 31,000 acres in Vermont's Northeast Kingdom. Easements are popular with conservation-minded citizens because they limit harvesting in protected areas, but those who oppose easements say that such transactions result in a loss of local property tax revenue—a charge that Mr. Whittemore vigorously denies.

"Hancock remains sensitive to the negative tax burden some people perceive," he says. "Properly executed easements yield no such unintended consequences, and—in fact—provide a proven strategy for landowners who want to do their part to conserve privately owned but publicly valued forest resources. Moreover, the easement debate has helped focus legislative attention on the need to make certain tax policies don't shift the revenue burden back onto the shoulders of local taxpayers."

Although Mr. Whittemore remains optimistic about a peaceful settlement of the Northeast's escalating land war, he admits there are times when he too is discouraged by the increasingly bitter debate between those who envision dramatically different futures for the region's forests. "Public values and business values are clearly converging on a common destination," he says. "Where Hancock is concerned, the future depends on our ability to manage client-owned timberland in a way that strikes a dynamic balance between economics, environmental health and societal needs. Other major land managers in the Northeast might say it differently, but I suspect they view the current situation in much the same light."

The Northern Forest Lands debate will not be quickly or easily resolved. If anything, the sharp edges that define the protagonists are hardening with age. In June, opponents of the Northern Forest Stewardship Act met at St. Johnsbury, Vermont to consider new strategies for keeping the federal government at bay. Attendees reportedly formed a new coalition dedicated to making certain the Act "never passes." Barely 20 miles away, the terrorist group, Earth First, set up a summer training camp at Wheelock Farm. Meanwhile, back on earth, there are new worries about "the Wall Street factor," a refined version of the earlier fear that developers would swallow up the Northern Forest. The big paper companies are all under enormous investor pressure to increase profitability. The question is, "How?" Some have suggested "improving the bottom line" is as simple as selling land. While such sales would surely raise capital, they would also play into the hands of those who dream of a federal takeover. Then, too, there is the fact the mills would still need fiber, for which they might then have to pay a premium.

What—if anything—the general public thinks about all this is hard to gauge. Sherry Huber believes the underlying issue is the same as it has always been. "The public has no

confidence in the kind of forestry it believes is being practiced."

Mrs. Huber is the executive director of the Maine Tree Foundation and a former member of the Maine House of Representatives. She is also a former chair of the Maine Audubon Society and the Maine chapter of The Nature Conservancy. For many years, her late husband managed the timber and mineral divisions for J. M. Huber, a New Jersey based conglomerate with major landholdings in Maine.

"There is a public perception that forestry has moved beyond the bounds of sustainability," she said in an April interview. "People believe that what landowners are doing in forests is hurting wildlife, soil, water and wildness. The industry has thus far been unable to calm these fears. The clearcutting referendum and the stewardship act are reflections of concern, confusion and mistrust."

Jim Petersen

A worker checks the bend in chair backs at Bethel Furniture Stock in Bethel, Maine. This machine uses high voltage electricity and hydraulic pressure to bend pre-cut hardwood strips into the desired arc. The bending process takes about 20 minutes. Bethel inventories different arc designs for several customers for whom it makes a wide variety of chair parts. The company employs 85, Bethel's second largest work force.

Although Mrs. Huber shares many of the public's concerns, she also sympathizes with "enlightened Maine landowners that have always managed their lands responsibly." Moreover, she sees a big difference between "home-grown environmentalists and beltway environmentalists that—however well-intended—don't mirror the Maine point of view."

"Local control is a big issue here," she explains. "There are only 1.2 million of us in the entire state. We know each other and we know our culture. The challenge lies in drawing divergent points to common ground. Extremists at the far edges of the debate made this very difficult"

Under her direction, the Maine Tree Foundation is shopping a funding proposal for a new forestry education program called LEAF—Long-Term Education About the Forest. But many of the region's biggest forest products companies are no longer headquartered in the Northeast, making fund raising more difficult. She is undaunted: "If the industry can spend $10 million on two clearcutting referendums, it can surely afford to spend half a million a year on a long term forestry education program that might someday restore the public's trust in forestry."

Ted Johnston sees an entirely different forest growing out of an increasingly political landscape. The past president of the Maine Forest Products Council bade goodbye to the timber industry several years ago after six excruciating years of involvement with the Governor's Task Force and the Northern Forest Lands Council. Now he is a registered lobbyist in the Maine legislature, working mainly for the insurance and natural resource industries.

"I was naive enough to actually think we were talking about a win-win situation involving forestry and forest conservation," he says of his time on the Northern Forest Lands Council. "Now I am a cynic. Environmentalist activists don't give a hoot about forests or land. For them, the issue is how to gain control over the largest single block of privately owned forestland in the United States. None of the tools they used in the West will work here, so they are investing in new strategies for gaining control. The Northern Forest Stewardship Act is at the center of their strategy."

Mr. Johnston makes no apologies for his outspoken views concerning environmentalists. He is equally critical of the industry's ineptness. "They were terrible at politics during the early stages of the Northern Forest debate," he said in a February interview. "They wanted to believe the best about everyone, and they refused to accept the fact that environmentalist activists were bargaining in bad faith."

According to Mr. Johnston, Maine's two bitterly fought clearcutting referendums opened the industry's eyes to "some of the public realities" that confront them. "Their education was painful to watch," he says, "but they've come a long way in a short while, and I give them credit for new-found perceptiveness. Now if they could only agree on a straightforward forestry message the public can embrace."

If the industry is confused about what the message should be, Mr. Johnston is not. "Here it is in two simple sentences," he declares. "There is only one way to keep working forests working—and that is to prevent environmentalists from using the power of the federal government to control how private landowners manage their forests. The day landowners are no longer free to work their forests profitably, two New England traditions are gone forever: public access to private forestland and the vibrant rural culture forestry has created."

The quest to keep forests forested is one of the few connecting points in the debate about the future of the Northern Forest. But it has inspired much different visions of what the Northeast's forests should look like. Some see working forests. Others see wilderness. A few see both.

Even the most ardent proponents of wilderness seem willing to grudgingly admit that working forests have helped to arrest development. In "An Explosion of Green," [*Atlantic Monthly*, April, 1995] Bill McKibben wrote, "One

of the chief fears of eastern environmentalists is that the twin plagues of industrial forestry and over development will merge. In New England, for instance, the forest products industry—which for all the damage it has inflicted has at least kept the vast woodlands it manages free of houses and pavement, and thus theoretically restorable—could decide to start selling off land it has cleared."

Mr. McKibbens views this century's recovery of Northeastern forests as the last chance for environmentalists to save them. He dreams of a time when wolves will again roam free, drawing tourists to the North Country "where they buy T-shirts and go on howling expeditions. In short, wolves belong here. The East will not be fully renewed until their packs wander its mountains again. That this is even a real possibility is a wonder, nearly a miracle."

Mike McMurray

A moose quenches its thirst in a pond south of Maine's Baxter State Park. The moose is Maine's state animal and Baxter is the state's largest park.

But others look at these same forests and see something completely different. In 1989, Paul Bofinger, then president of the Society for the Protection of New Hampshire Forests, laid out his vision for writer John G. Mitchell in "Mountain Views, Bargain Prices," [*Harrowsmith*, July-August]. "It's not just the trees. It's not just the pretty scenery and the flowing waters. The character I'm speaking of is a way of life—the people in their checkered shirts and their boots and their pickup trucks. You know what I mean? We have to preserve that. We don't want to bring in a lot of conventional tourist facilities and put those people to work as chambermaids for minimum wage. We've done enough of that, other places, right? Let's face it. What we have here is a wonderful wood resource, and to preserve the character of the North Country we have to learn how to use it better. We have to create the markets and jobs right here to protect that way of life."

The late Mollie Beattie, who was then Commissioner of Vermont's Department of Forests, Parks and Recreation, once talked about turning her state's Tree Farms into dude ranches. "Why not," she told Mr. Mitchell. "We're not talking about replacing the forest economy. We're talking about *maintaining* it. It has a value of its own. It deserves to be maintained for its own sake."

Just how much tourism the North Country will tolerate is an open question. Most businesses welcome it, but residents in these quiet communities—particularly *new* residents—seem to resent its trappings. "I see *condominiums*," Mr. Mitchell wrote in *Harrowsmith*. "I see *luxury townhouses*. I see Cinemas Four and The Depot and Mansion Hill and Star Ridge and The Village at Loon Mountain and The Nordic Inn...Is this what's in store for Mattawamkeag, Molunkus and Macwohoc? Will the new arrivals who inhabit these places in Lincoln (weekends and vacations only) wake up some morning and notice that their panoramic views are getting cluttered with other people's condominiums."

For its part, the Wilderness Society has been out beating its "timber is dead, tourism is the future" drum, just as it did in the West a decade ago. But a 1989 study (*All That Glitters*) by the Southeast Women's Employment Coalition leaves no doubt about tourism's shortcomings. "Beyond the small pool of management and short-term, male-dominated construction industry jobs associated with tourism development, the employment 'opportunities' that remain in successful development communities are those of food servers, maids, and retail clerks. Traditionally held by women, these jobs routinely offer minimal wages, marginal benefits and virtually no opportunity for advancement."

The study, which was funded by the Ford Foundation, the Aspen Institute and the U.S. Department of Commerce, also concluded, "tourism development, as it is currently practiced, is not a sound economic development strategy. While successful development generates much needed local and state revenue, it also places costly demands on a community's infrastructure, raises the cost of living, degrades the environment, which first attracted tourists, dilutes often fragile local cultures and generates principally marginal, seasonal jobs."

Others are focused on a less intrusive kind of tourism normally reserved for the affluent and the physically fit. They see the mountainous Appalachian Trail as the backbone of a wilderness expanse stretching from Maine to Georgia. Vermont environmentalist Jamie Sayen envisions "continuous wild habitat the length of the Appalachian Range, which in time could enable the return of unique plants and large animals—panthers, bears, wolves, moose—that have been exterminated throughout all or part of the mountain chain."

Other big picture thinkers, like the Audubon Society's Brock Evans, more quickly cut to the chase. The Northern Forest "should all be in the public domain," Mr. Evans declared at a 1990 conference at Tufts University. "If that sounds unreasonable, so be it. Be unreasonable. Let's take it all back."

It is precisely this sort of inflammatory rhetoric that has convinced Stewardship Act opponents the legislation is no more than a smokescreen concealing an eventual federal takeover. Though the Act makes no

provision for purchasing or confiscating land, proponents believe it opens the door to "greenlining," a zoning process that has become so politically onerous that environmentalists have stopped talking openly about it. Mr. Mitchell had this to say about greenlining in his 1989 *Harrowsmith* article. "As defined in a seminal document on the subject—Charles E. Little's 1975 report to the U.S. Senate Subcommittee on Parks and Recreation—a greenline park would be a resource area containing a mix of public and private land that is comprehensively planned, regulated and managed by an independent agency set up specifically to preserve the area's recreational, aesthetic, ecological, historic and cultural values."

New York's Adirondack Park is a greenlined area and has been for most of this century, though the lines there are blue, not green. But elsewhere in the rural Northeast, talk of greenlining or bluelining—and the comprehensive planning it necessitates—will get you run out of town on a rail. Few have written more pointedly on the subject than Martin Harris, an architect and former farmer now living in Vergennes, Vermont.

"The real reason there's a problem, I would suggest, is that both the regulators and their mostly urban supporters see no need to consider the economic fallout of their land-use desires," he wrote in "A Battle Over Land Use." [*Journal of Forestry*, November, 1991] "With no ties to the land, with personal incomes quite independent of land use or capability, with little interest in or sympathy for those whose personal incomes and future security are closely tied to the land, it's been remarkably easy for them to build (and then systematically enlarge) a set of seemingly logical environmental regulations ostensibly aimed at such reasonable goals as preserving wetlands, woodlands and agland. It's not they who have to live with the economic implications of withdrawing the basic resource of other people's livelihoods from the marketplace."

Just last month, this decade-long saga came full circle with a Wilderness Society call for the federal purchase of 900,000 acres of Maine timberland recently offered for sale by Sappi Fine Paper North America. The asking price: $200 million. Sappi's intent to sell has not yet generated the same public outcry the 1988 Diamond land sales generated, but to rally public support for federal intervention the Society has added the tract to its list of the 15 most endangered wild lands in the nation. "The importance of protecting significant parts of the Sappi holdings cannot be overstated," said Bob Perschel, the Society's Northeast regional director. "This is a huge opportunity, but if money can't be found to acquire key parcels, these lands are almost certain to be logged or subdivided."

"Alarmist rhetoric" retorted Main Forest Products Council communications coordinator Dennis Tompkins. "(They) use these sales to try to generate panic on the part of the public, and they continually fail to realize that these are privately owned commercial woodlands."

Separately, Mary Adams wrote Maine Governor Angus King to remind him that recreation access, job-creating investments in timber production and a stable tax base are among "the virtues of private ownership."

"The (Sappi) land should stay in private hands and productive use," she wrote. "The last thing we need is to turn sections of the woods into a patchwork quilt of various uses, depending upon which special interest group had the ear of the Governor at the time conservation easements, riparian zones, watershed protections, endangered and threatened species, land trusts, management plans and environmental lawsuits the tools that are being used to take land out of production in the West are being used here as well."

Jim Petersen

New Hampshire consulting forester Charles Baylies takes his work very seriously—as his license plate suggests. The "EBM" in 1-EBM stands for "ecosystem-based management." Private individuals own most of the Northeast's timberland, providing a lucrative market for foresters like Mr. Baylies.

Not to be outdone, environmentalists conducted a "stop the chain-saw massacre" rally July 14 in the state's capital. Declaring the recently revised state forest practices act "a failure," they threatened to launch yet another citizen initiative to ban clearcutting. "We will do whatever it takes to stop the rape and pillage," declared Johathan Carter of the Forest Ecology Network.

Meanwhile, 3,000 miles west, Oregon's first-ever ban clearcutting initiative will appear on the state's November election ballot— prompting one logger to ask if it might not be time for someone to follow the money trail that feeds petition drives in states where voters referendums are permitted.

Hugh Raup was right. Land and forests are mere stage and scenery. People are what bring the stage to life—arranging and rearranging the scenery at hand to fit their story. In the Northeast—and elsewhere in America—a war story is currently playing. In it, the protagonists fight to the finish over the right to rearrange the scenery the way they think it should be. We don't know how this play ends because the last scene has yet to be written, but this much is certain: the land and its forests will always be there for the enjoyment of some and the prosperity of others—stage and scenery in a two-act play that had its first fun in the Adirondack mountains more than 100 years ago.

The Changing Face of the Northeast's Logging Industry

By Eric Johnson, Editor
The Northern Logger

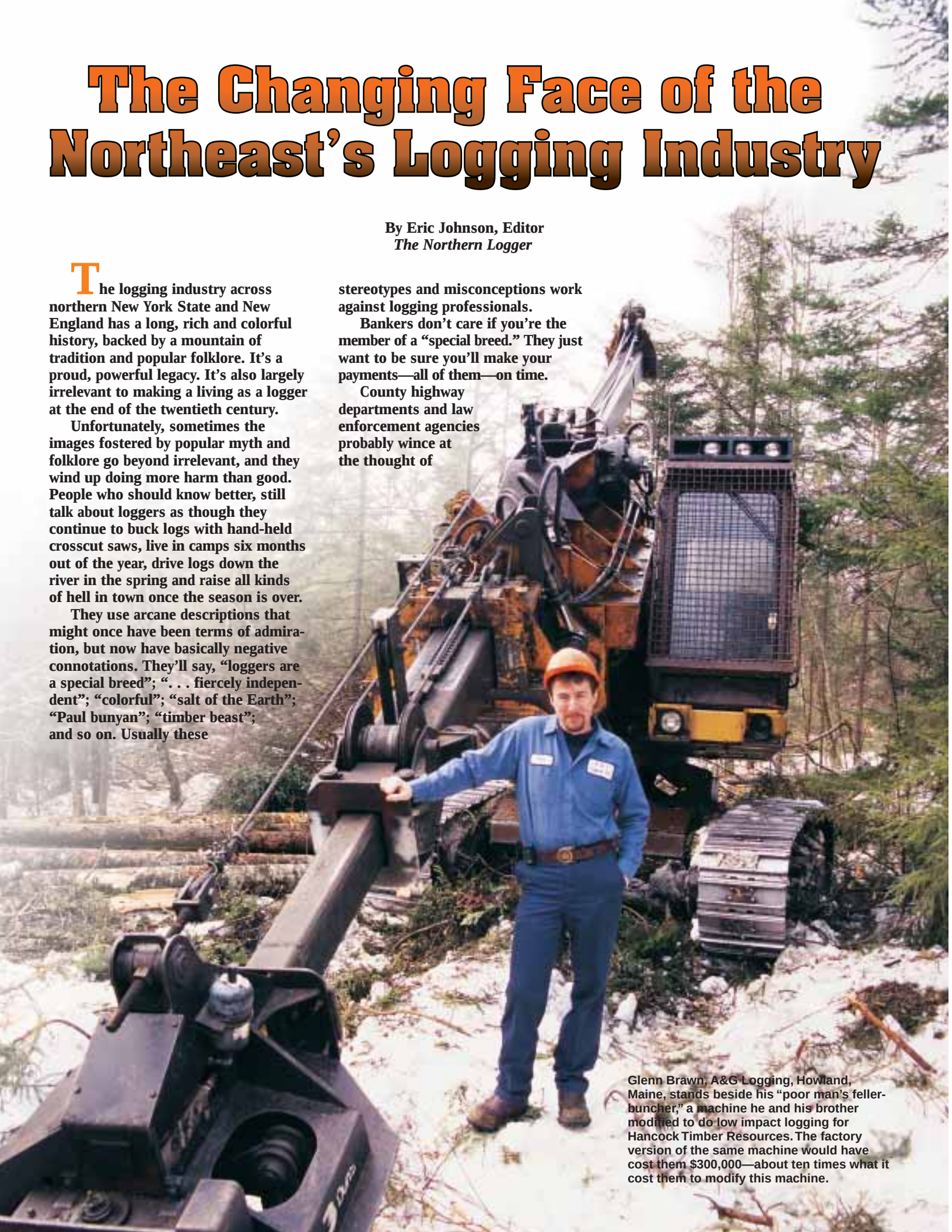
The logging industry across northern New York State and New England has a long, rich and colorful history, backed by a mountain of tradition and popular folklore. It's a proud, powerful legacy. It's also largely irrelevant to making a living as a logger at the end of the twentieth century.

Unfortunately, sometimes the images fostered by popular myth and folklore go beyond irrelevant, and they wind up doing more harm than good. People who should know better, still talk about loggers as though they continue to buck logs with hand-held crosscut saws, live in camps six months out of the year, drive logs down the river in the spring and raise all kinds of hell in town once the season is over.

They use arcane descriptions that might once have been terms of admiration, but now have basically negative connotations. They'll say, "loggers are a special breed"; ". . . fiercely independent"; "colorful"; "salt of the Earth"; "Paul bunyan"; "timber beast"; and so on. Usually these stereotypes and misconceptions work against logging professionals.

Bankers don't care if you're the member of a "special breed." They just want to be sure you'll make your payments—all of them—on time.

County highway departments and law enforcement agencies probably wince at the thought of



Glenn Brawn, A&G Logging, Howland, Maine, stands beside his "poor man's feller-buncher," a machine he and his brother modified to do low impact logging for Hancock Timber Resources. The factory version of the same machine would have cost them $300,000—about ten times what it cost them to modify this machine.

"fiercely independent" log truckers on the roads. They want law-abiding, responsible log truck drivers operating in their jurisdictions.

Few landowners want "colorful, salt-of-the-earth" characters working on their land or adjoining woodlots. They want—and have a right to expect—skilled and competent professionals, preferably with good references, credentials and business habits.

There is nothing wrong with the proud history of logging in this region, nor with the people who made it. On the contrary. The modern logger's problem occurs when otherwise intelligent people form an image of today's loggers based largely on their romantic notion of what a lumberjack used to be. When the ideal and the reality don't square, sometimes it's funny—and sometimes it's not.

Eric Johnson photograph

John Adler—Chester, Vermont: "The best part is seeing all these skeptical loggers come to our sessions because their employers make them, and then turning them into believers before the end of the day."

Loggers are among the first to concede that a share of the forest products industry's negative public image has been earned over the years. But they will also point to dramatic changes—many seen in the past ten years—that have helped create a better industry populated by better loggers.

One thing nearly all modern loggers mention when asked about challenges is the high cost of equipment, timber and skilled labor. Managing these resources, they point out, requires a high degree of responsibility and business skill not expected of their predecessors. Training, education, membership in trade associations and involvement in local, state and even national politics have all become important to successful logging in the late '90s. Positive public relations is becoming increasingly important.

Modern loggers cite a vast array of external forces—from workers compensation insurance requirements to new OSHA standards to steadily-strengthening environmental regulations affecting their work—that have prompted big changes in the way they operate. Staying in business has become more expensive and complex, which has thinned the ranks over the years, and has forced those who remain to become more efficient.

And operational efficiency is the name of the modern logging game; every successful logger on the scene today has a strategy for achieving even more of it over time. The best loggers will tell you, for example, how much more profitable and satisfying it is to work the same woodlots over and over again during the course of their careers. Not only can they minimize travel and other logistics and work in familiar surroundings, but by improving the long term health and value of the resource—other people's forests—they share the rewards. Nowhere is the old adage that happy customers are repeat customers more appropriate than in modern logging.

Evergreen recently visited four independent logging contractors operating in the "Northern Forest" region, which covers much of the northern parts of the states of New York, Vermont, New Hampshire and Maine. We asked them to describe the changes they see affecting their operations and those of their peers, and to share their insights into the state of contemporary logging in the region.

John Adler

At first blush, John Adler of Chester, Vermont appears to be a throwback to the past: a part-time logger with another job on the side who works alone, cuts trees with a chain saw and produces wood one load at a time. Meanwhile, the industry around him rapidly mechanizes.

But dig a little deeper and you find that John Adler is not only on the cutting edge of logging technology and professionalism in the Northeast, he's one of the major forces behind it.

Adler is a part-time logger because the rest of his time is spent training other timber harvesters. His main focus is on safe and productive chain saw use for manual cutters, but his broader message applies to nearly every aspect of modern logging: Think about what you're doing, and then find a way to do it more efficiently, more safely and more responsibly.

Ask John Adler what single force has had the most important impact on the logging business in the region over the past ten years and he doesn't miss a beat. "Soren Eriksson" is his answer.

For Adler and many loggers in the region, Soren Eriksson, a short, middle-aged Swede with a bad back and a heavy accent, is the guru of safe, productive logging. Over the past 15 years, Eriksson has almost single-handedly guided a big chunk of the logging industry out of the dark ages and into an era of enlightenment. He did it with a dynamic personality, a great system of work habits and techniques originally developed and

refined in Sweden. And he did it with the help of proteges like John Adler.

When he first met Eriksson, Adler was working as a cutter for another Vermont logger. After seeing one of the Swedish instructor's demonstrations on safe chain saw use and productive work habits, the young cutter was amazed. "I suddenly realized how little I understood about what I was doing," he says. In the subsequent months and years, Adler learned as much as he could about the new "Swedish technique" and applied all of it to his work both as an employee, and later, in his own logging operation.

Eventually, Eriksson approached Adler, who has an associate's degree in forestry from Paul Smith's College, with the idea of becoming a professional trainer. He jumped at the chance. "The best part is seeing all these skeptical loggers come to our sessions because their employer is making them," Adler explains, "and turning them into believers before the end of the day."

Eric Johnson photograph

Rick Lessard—West Ossipee, New Hampshire: "In 40 years of watching and working with loggers, I've never met one yet who cut trees for the pure joy of it. Obviously, there's a huge consumer demand for wood products and money to be made producing them."

The difference between good, intelligent logging practices and some of the more "traditional" methods of cutting trees, skidding logs and otherwise producing merchantable wood, is enormous. Production is increased dramatically, as is on-the-job safety. Disturbance to the residual stand and its surroundings is minimized. Loggers take pride in their work and strive to become even better. The advantages are immediately obvious to anyone in the industry who sees them being practically applied, and most come away from such demonstrations convinced of their value.

That's certainly the case with one of the major logging workers compensation insurance carriers in the region, the New York Lumbermen's Insurance Trust Fund, which has employed Adler for the past five years to train its members and their employees. Other groups, such as the Vermont Forestry Foundation, contract for Adler's training services, as well as a number of other private, independent logging contractors. "We're approaching 1,000 people trained so far," he notes. Adler's wife, Mary Beth, keeps the books for both businesses and handles various paperwork and other logistics.

On the logging side of his operation, John Adler prefers to work on small woodlots for private landowners, and he tries to establish long-term relationships with his customers. On a recent spring morning, he was selectively thinning white pine sawtimber from a woodlot five minutes' drive from his home in Chester.

He had done improvement cuts on the property, which was recently named one of Vermont's Outstanding Tree Farms by the American Tree Farm System, at various times during his logging career. The stone walls running up and down the heavily-wooded hillsides betrayed its past as hard-scrabble farmland. An independent trucker was loading pine logs for shipment to a nearby mill.

"I'm constantly trying new things and keeping an eye on efficiency and productivity," Adler tells a curious visitor during a break. "That's the key to survival for the small logger."

Rick Lessard

Rick Lessard became fascinated with the logging business as a young boy, when he would accompany his father, Philip, to work on weekends and school holidays. "I just wanted to be there; doing anything I could to be involved," he says. After receiving an associate's degree in Industrial Engineering and a brief stint as a tool and dye maker, Lessard headed back to the woods, where he's worked ever since.

Today Lessard's company, North Country Lumber, is one of the biggest logging contractors operating in New Hampshire. From his home base of West Ossipee, the 47-year-old logger runs a highly mechanized operation producing a wide variety of forest products, from veneer logs on the high end to whole tree fuel chips on the low end—and pretty much everything in between.

"In 40 years of watching and working with loggers, I've never met one yet who cut trees for the pure joy of it," Lessard says, adding, "Obviously there's a huge consumer demand for wood products and money to be made producing them." He goes on to point out that it's imperative for loggers to conduct their businesses responsibly and with attention to the details, particularly the needs of the landowner and the environment.

North Country Lumber is setting that example. In 1991 Lessard's company was named the New Hampshire Timberland Owners' Association's "Outstanding Logger of the Year." In 1998, he was named the Northeastern Loggers' Association's "Outstanding Forest Industry Activist" award. The year before, he received that organization's "Outstanding Forest Industry Leadership" award and in 1992, he was named

"National Logger of the Year" by the American Pulpwood Association.

Like most mechanized loggers, Rick Lessard is production oriented and adamant that it's possible—maybe even easier—to log responsibly with state-of-the-art equipment. But high production also means a large, steady appetite for wood. Since 90 percent of North Country's work is done on private forestland, Lessard has to constantly scout around for woodlots, having gone as far away as Boston for the right opportunity. "But we like to stay within a 50-mile radius," he says.

"I'd say our biggest challenge has been finding the right sites to cut in the spring" when the frost in the ground begins to thaw and otherwise firm soil takes on the consistency of chocolate pudding for a month or two, Lessard notes. In the past, many loggers were inclined to just gut it out on regular ground during "mud season,"—especially during periods when markets for pulpwood and logs were good. This typically resulted in an ugly mess.

But an increasing number of loggers have begun to seek out higher, well-drained sites for spring logging, and they are trying to optimize the advantages of modern equipment, which when properly used, can have less ground impact. Lessard is obviously in this group, but all the competition is making it more difficult. "We can log sustainably and be kind to the environment," Lessard notes. "We have to."

Although only ten percent of the company's wood comes from publicly-owned forestland, Lessard says the prospect of losing access to publicly-owned timber has major ramifications for overall timber supply in the region. "If you take away that 30 million board feet of sawlogs produced annually by the White Mountain National Forest," he explains, "it's going to have to be replaced by timber from private land," thus putting a heavier burden on the privately-owned resource.

But the biggest challenge to future timber supplies may have already occurred. The infamous "Ice Storm of '98" destroyed or severely damaged millions of acres of public and private timberland across the Northern Forest. Lessard believes "a whole generation of timber may have been destroyed by the storm. I may be sitting here at age 75 wondering where all the sawlogs have gone," he muses.

Clearly, Rick Lessard fully expects to be logging when he's 75—some 68 years after his first taste of the business. Ironically, today the tables have turned and Lessard's father is now working for him, along with 21 other employees. "He tried to retire from logging but couldn't stay away," Lessard explains, "so I said, 'why not come work for me?'"

Eric Johnson photograph

Andy Irish—Peru, Maine: "Our main goal has always been to have all our members obeying all applicable laws. We also have plenty of work to do on other important issues, including logger training."

Andy Irish

Rumford, Maine, is an old New England papermill town, which is to say that all life centers around the mill. Literally. That's where all the good jobs are, and nearly all commerce entering and leaving this little community on the Adroscoggin River is somehow related to paper production. Not surprisingly the mill is, physically, right smack in the middle of town.

Andy Irish, 41, was born and raised in Peru, Maine, about a ten-mile drive south of Rumford. His dad and most of his acquaintances and relatives worked at the mill, but Irish got an early feel for the logging business, working for a neighbor part-time through junior high and high school. Upon graduation, he chose the woods over the papermill.

Irish is still in the logging business—now with his own company and 11 employees—but it's a different industry than the one he grew up in. Radically different. "The whole push today is toward logging professionalism, and it's long overdue," he observes.

A few years ago, Andy Irish noticed that even though the world was changing rapidly, he and other loggers weren't doing much to prepare for the future. He saw environmentalists gaining ground on the industry in Maine, public opinion going against timber harvesters on important state-wide issues, and problems between industrial consumers of wood and the loggers who produce it. Many of these problems, he believed, were either being caused by loggers themselves or aggravated by their behavior.

In 1994, Andy Irish found what he was looking for in the Professional Logging Contractors of Maine, a trade association with the main goal of raising the standard of professional loggers in the state. The PLC's mission is to:

- Promote professional conduct among loggers in Maine;
- Provide a forum for the resolution of issues of concern through communication, education and legislation;
- Promote compliance with forestry and harvesting practices that maintain

sustainable forestry levels.

PLC members agree to comply with all OSHA regulations and all state and federal environmental laws. They also pledge to maintain adequate insurance for their operation, have a Federal Employer ID Number, and "be responsible for the execution of all phases of the harvesting operation from stump to roadside." Providing logger safety training and professional certification for employees is one of the most important requirements.

"Our main goal has always been to have all our members obeying all applicable laws," says Irish, who is the PLC treasurer. "In addition to that, we have plenty of work to do on other important issues, including training." The PLC is affiliated with the American Loggers' Council, which is, among other things, a national forum for loggers around the country to share ideas and concerns about the future of their industry. Irish is also a director of the Northeastern Loggers' Association, which is involved in regional logger training, public relations and trade publishing efforts.

Today, training and professionalism in Maine isn't limited to those directly employed in the forest products industry. Irish's teenage son, Jason, is enrolled in a special logging vocational program through his local high school, where many of the same skills and professional standards promoted by the PLC are part of the curriculum. Successful graduates will already have their Maine Certified Logging Professional certificate, thus, making them immediately qualified in the industry.

"A few years ago things were not so good in this industry and I wouldn't have been happy to see Jason join me in the logging business," Andy Irish says, "but that's changed now, and I think we're back on the right track."

Peter Gucker

Peter Gucker is standing next to a huge, ugly pile of shattered white pine logs, limbs and other "biomass," which he hopes to see chipped and hauled away before the onset of hot, summer weather. Nearby, a hydraulic log loader is salvaging what few sawlogs the skidders are dragging in from the adjacent woodlot and putting the rest of the material on the biomass pile. It's growing a lot faster than the pile of logs. Gucker explains that while he would prefer to be cutting more profitable hardwood sawlogs and pulpwood, he feels an obligation to help out this particular landowner, whose woodlot was heavily damaged during the January ice storm. Gucker has worked this property in the past, and he is not about to let his customer down when the going gets tough.

Eric Johnson photograph

Peter Gucker—Keesville, New York: "The thing is nobody's buying white pine pulpwood, so we decided to chip it for fuel, but that market is jammed up too, so I've got a lot of money invested in this big pile of wood that may not move."

"The thing is," Gucker says, "nobody's buying white pine pulpwood, so we decided to chip it all for fuel, but that market's jammed up too, so I've got a lot of money invested in this big pile of wood that may not move."

Gucker of Keesville, New York, in the northeast corner of the Adirondack State Park, has built a respected mechanized logging operation, in part, on his reputation for consistent quality and reliability. He also pays attention to operational details. This becomes apparent even after a brief conversation. "The nice thing about mechanized felling," he notes, "is that it allows you to work far enough ahead of the skidders to that you can plan the most efficient skid route for the wood that's been cut." This not only cuts costs because it means fewer trips by the skidders so bigger payloads, but minimizes the risk of residual stand damage because of fewer, more direct skids.

Another detail is employee training. Through his workers' compensation insurance carrier, the New York Lumbermen's Insurance Trust Fund, Gucker has had logging trainer John Adler on the job helping his employees improve their working efficiency and safety. "John's training has made a big difference for us," Gucker says, adding that skilled workers tend to be happier and more productive.

Other recent training included facilitating the "Logger Rescue" program, which is a first-aid course put on by the industry-sponsored New York Logger Training program. Gucker also trains his employees in maximizing log values—getting the most value out of what is being harvested—which he says is the most important aspect of his entire operation. A director of the Northeastern Loggers Association, Peter Gucker says that one of the best ways to generate good public relations for the industry is to maximize the value and utilization of the forest resource.

The Ward Family:

Pioneers in New York's Sawmill Industry

Eric Johnson photograph

Sidney Ward Jr., the third generation of Wards to be in the sawmilling business of Jay, New York. The Ward Lumber Comany employs about 150. Small, family-owned sawmills supply the nation with most of its lumber.

By Eric Johnson, Editor
The Northern Logger

Sidney Ward Jr. is sitting at his desk early one summer morning, in a spacious, wood-paneled new office suite built directly over the company garage. Through a large picture window just behind him, a wisp of smoke streams out of the stack of one of the lumber company's wood-fired boilers. Beyond that is a breathtaking view of the wooded mountains surrounding the small town of Jay, New York, home of Ward Lumber Company.

"This whole valley was stripped at one time," Ward explains, "part of it by fire and the rest for farmland and timber harvesting." He pauses. "Now, of course, it's all forest. That parcel back there," he says, pointing over his shoulder, "is some of our own timberland."

Looking around the valley from the central vantage point of the Ward Lumber log yard, the mountains today look almost pristine—untouched save for the widespread damage recently inflicted by nature herself in the devastating "Ice Storm of '98."

Indeed, it would not be unreasonable for tourists to think they were looking at virgin forestland, following the Ausable River as it winds through the valley down from Lake Placid, a short drive to the southwest. That's because both Placid and the town of Jay are located within New York's Adirondack Park—a six million-acre "forest preserve" in which timber harvesting is prohibited on the roughly 2.5 million acres of state-owned land and restricted to some extent on the remaining 3.5 million privately-owned acres.

Visitors—most of whom are aware that they are in a "forever wild" preserve but may not know that forest management is allowed on the private land in the Park—often confuse the two. To the untrained eye, in fact, some of the land managed for timber production is more inviting than the "forever wild" parcels.

Observers with a little more forestry savvy, by contrast, see an obvious distinction. State-owned land is dominated in many cases by over-aged timber, which, since the establishment of the Adirondack Park Forest Preserve more than a century ago, has been allowed to fall over and decay. Many wildlife species prefer managed forests because they contain more diversity and thus, more opportunities for food and shelter.

"I think it's a shame New York State doesn't manage its land in the Park," Sid Ward says simply.

Ward, who retired as full-time CEO two years ago at age 54, is the third generation to head up the family-owned company. His sons, Sid III ("Jay") and Jeff, represent the fourth generation. He points to a child nestled in her mother's arms in a family photo: Jay's daughter, Mollie. "She might be the fifth generation."

At age 80, Sid's mother, Agnes Ward, still reports for work as company Treasurer every morning, as does her son. But, Ward is quick to point out that he and his mother are strictly support personnel—Jay and Jeff now run the company, as President and Vice President of Manufacturing, respectively. Their mother, Janet, served as company secretary until joining her husband in retirement.

On one level—as a family-owned white pine sawmill—Ward Lumber Co. is a fairly typical enterprise in the northern Pine Belt. Hundreds of companies fitting this narrow description are scattered across the region stretching from the Adirondacks to the Atlantic coast. They come in a wide variety of sizes and conditions—from 120 million board foot per-year behemoths, to operations sawing a million feet a year or less. Some are extremely successful, while others just barely hang in there. Many have become technological marvels, while a few still look more like something out of the nineteenth century. Size has little to do with success or failure in the modern pine business.

Eric Johnson photograph

The Ward Family: (L-R) Janet Ward (Mrs. Sid Ward Jr.), Ward's son Jay (Sid III), Sid Ward Jr., Mr. Ward's mother, Agnes and the Ward's other son, Jeff. Jay and Jeff, the fourth generation of Wards, now run the company. Most of America's sawmills are still small, family-owned operations much like Ward Lumber Company.

But beyond the superficial similarities with other operations, Ward Lumber Co. is not a typical white pine sawmill. Over the generations, the company has joined an elite group of mills in the region, combining creative utilization of the forest resource—white pine logs in this case—with aggressive and imaginative marketing of the resulting lumber and all other byproducts.

In fact, the company is involved in every aspect of converting white pine into useful consumer products—from growing the trees to selling what they yield to the end user. As such, retail sales represent a big part of the company's recent growth. The Ward Lumber Co. hardware store and building center, located adjacent to the sawmill complex, has long provided a retail outlet for some of the mill's finished products. The company recently expanded retail operations when it acquired a store from the defunct Grossman's chain in Plattsburgh, a small city and major population center about 35 miles to the north on the Canadian border.

"I think it is a shame New York State doesn't manage its land in the Adirondack Park."

On a typical day, freshly-harvested white pine logs enter the Ward log yard on trucks, and they are quickly turned into a dazzling array of useful products. Maximizing lumber production is everyone's main goal, of course, but the company also produces everything from pet bedding (dry planer shavings) to livestock bedding (green sawdust) to landscape mulch (ground bark) to chips for making paper (chipped slabwood) to fuel for the company's lumber drying kilns (various wood wastes).

Not long ago, these residues were considered (and disposed of as) waste. Today, they're called "byproducts" and can mean the difference between profitability and bankruptcy. Virtually all white pine sawmills in the region today have markets for non-lumber byproducts.

What distinguishes Ward from most other pine mills, however, is the lengths to which it goes in producing and marketing lumber. The two retail stores are a good example. Sid Ward says that the combination of product diversity, niche markets, production flexibility and quality have been essential to the company's success. He points to large-dimension green timbers, used in such upscale projects as post-and-beam buildings and log homes. "Years ago when we first got into the log home market I figured it was a passing fad," he says, "but it's become a steady, long-term market for us."

From the big-timber sorting area, he crosses the yard to the planer mill, where wide, dry pine boards are being turned into different kinds of siding. At one end of the planer mill, pine clapboards are stacked. In another, cove siding emerges from the planer. A shipment of rustic pine siding is being loaded onto one of the company's distinctive green trucks for shipment to New England.

In a warehouse full of tongue-and-groove paneling and planed boards—the premium stuff—Ward points to a pallet stacked with short boards averaging about one foot wide and two feet long. These, it turns out, are defective sections trimmed from premium boards to increase their grade and thus, their value. "In the past we would have chipped these for the paper mill," Ward says of the short ends, "but we've developed a market for 'hobbyist' wood sold through retail outlets."

The list of markets and potential markets goes on and on. Some companies specialize in trimming high-value

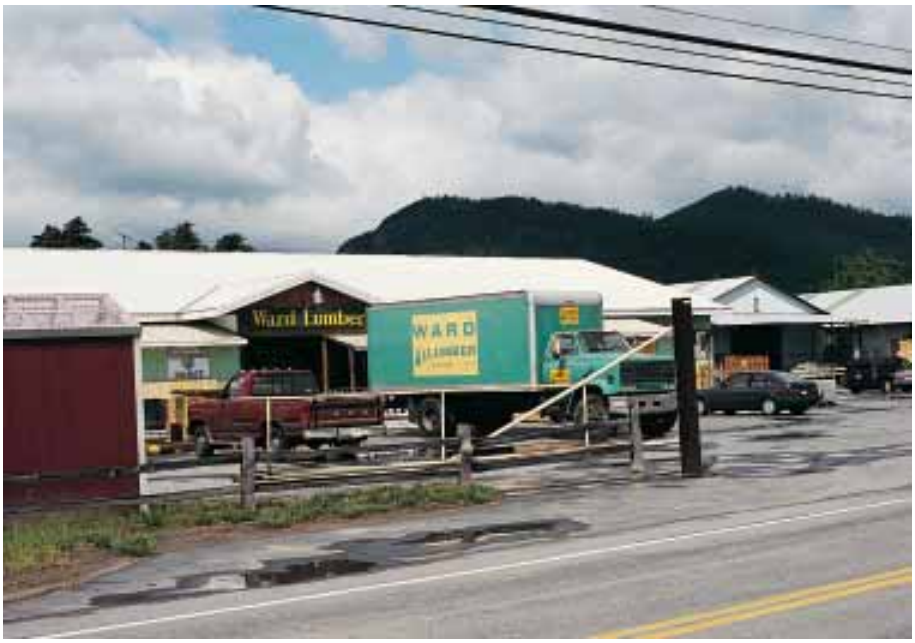
sections out of knotty and other defect-laden boards. Ward has a supply of low-grade lumber ready for shipment to one of these "chop-shops." One big industrial customer uses low-grade pine to make pallets and shipping crates for its machines. Ward employees sort out the right boards, accumulating loads to fill the orders.

Where does all this wood come from? Sid Ward says that about 95 percent of the 11 million board feet of logs sawn annually by the company come from independent loggers working on private forestland—much of it in the Adirondack Park. Ward itself has roughly 4,500 acres of timberland in the Jay area, which is managed for the sustainable production of pine. "Most of our land was acquired by my father in the '50s," he notes, "and a lot of it was old farmland that has been planted or naturally regenerated to pine. We don't post our property," he adds, "in part because we believe people should be able to enjoy managed forests." And when hunting season rolls around, "managed forests are where you find the deer."

The company has a full-time forester, Kendall Southard, who splits his time between managing company lands and buying logs for the mill from logging contractors and landowners.

Lately, company woodlands have been contributing a much larger share than five percent of the mill's logs. The huge ice storm, which devastated millions of acres of productive timberland across northern New York State and much of New England in January of 1998, took a heavy toll on the forests around the mill. Ward has been salvaging what it can from its own property, resulting in smaller logs on average, than those usually supplied by independent loggers. According to Sid Ward and others, the small-to-medium sized pine trees took the biggest hit during the storm.

The immediate effect of processing smaller logs has been a reduction in the number of big timbers sawn and a big increase in boards—narrower boards in particular. Ward says the glut of smaller logs has created both production and marketing challenges, which have to be balanced with the need to care for Ward timberlands and salvage damaged timber from the property.



Eric Johnson photograph

Ward Lumber Company operates its own retail lumberyard adjacent to its Jay, New York sawmill. Most family-owned lumber companies sell their products exclusively through brokers and wholesalers.

"Most of our land (was) old farmland that had been planted or naturally regenerated."

There's an old adage in business circles that most family-owned and run companies don't make it past the third generation. Part of this has to do with problems common to dividing up estates, such as steep inheritance taxes and complicated legal maneuvering. But changing personalities within the company and attitudes towards the business are perhaps even more important. It's just tough to sustain the interest in, and commitment to, a family-owned business from generation to generation, particularly as the distance from the founder increases.

Ward Lumber Co. seems to be headed in the opposite direction.

"Years ago, Jan and I didn't know if our sons would be interested in the business, even though they grew up around this mill and worked here through school," Ward notes. But in the late '80s both sons chose to bring their college degrees—Jeff's is in engineering and Jay's is in business—back to the mill to focus on different, but complementary, aspects of the family business. Their father is clearly pleased.

In recent years, Jeff and Jay have headed up major projects—from acquiring the store in Plattsburgh to installing a new wood-fired boiler for the kiln drying operation. The next big step, according to Sid Ward, will probably be replacing the main sawmill building with a bigger, more efficient and productive place to turn raw logs into lumber.

Walking through the Ward Lumber Co. complex, Sid Ward discusses the changes he's seen and adapted to in the business over his working life. He marvels at those he sees just ahead, that his sons will have to tackle. He says he's proud that the new mill he built in 1973 to cut one million board feet of pine annually is now turning out 11 million board feet, and proud of how the company payroll of 147 people pumps millions of dollars directly into the regional economy every year through paychecks.

"The last thing the State of New York needs is more publicly-owned land," he says. "What we really need to do is create more opportunities like this—" he states, pointing to a truckload of dry paneling, "—clean industries that use renewable resources and provide good jobs."

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