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Issues in Public and Private Ownership of Forested Lands in Northern New England and New York

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Conserving the North Woods

Issues in Public and Private Ownership
of Forested Lands in Northern New England
and New York

Edited by

Clark S. Binkley

and

Perry R. Hagenstein

Produced in cooperation with the Wild Wings Foundation

Yale School of Forestry and Environmental Studies
New Haven, Connecticut
1989

A Note to Readers

2012

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Based on a conference "Strategies for Forest Lands: The Public Private Interface in Northern New England and New York" held on 9-11 May 1989 in Durham, New Hampshire. Sponsored jointly by the New England Natural Resources Center, the Northern Forest Lands Study of the USDA Forest Service, the Wild Wings Foundation and the Yale University School of Forestry and Environmental Studies.

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ACKNOWLEDGEMENTS

This Bulletin is based on a conference "Strategies for Forest Lands: The Public Private Interface in Northern New England and New York" held on 9-11 May 1989 in Durham, New Hampshire. The conference was sponsored jointly by the New England Natural Resources Center, the Northern Forest Lands Study of the USDA Forest Service, and the Yale University School of Forestry and Environmental Studies. It was organized by Prof. Oark S. Binkley of Yale University and Dr. Perry R. Hagenstein, Chairman of the Board of Trustees of the New England Natural Resource Foundation. Kim Elliman and John Echeverria of the Wild Wings Foundation, and Stephen Harper of the USDA Forest Service helped conceive and plan the conference, and gave critical guidance to the project throughout. Four master's students from the School of Forestry and Environmental Studies - Lise Aangeenbrug, Jennifer Marron, Douglas Robotham, and James Weigand -- worked with the discussion groups to report their findings, and also provided thoughtful comments of their own.

The School of Forestry and Environmental Studies at Yale University and the Wild Wings Foundation produced this Bulletin. Dr. Joseph A. Miller, the School's Librarian and Lecturer in Forest History, managed the process of turning conference papers into this book. Margery Maass edited the entire volume. Brian Young got many word processors to speak as one, and Al Letourneau handled the **computer-based** production. Their diligence and skill permitted the **swift release** of what we hope are timely and useful ideas.

Financial support for the conference was provided by the USDA Forest Service.

INTRODUCTION

Clark S. Binkley and Perry R. Hagenstein

The extensive, nearly wild forest lands of northern New England and New York have largely escaped the development which has enveloped the rest of the region (the area of concern is shown in Figure 1). Because these are the last wild lands in a predominantly urban region, each economic boom and the attendant expansion in the demand for second homes sets off waves of concern about their future.

Recent concern has been particularly acute. The technology-based economies of New York and New England led the nation's sustained economic expansion of the mid-1980s. New wealth spurred new development on lake shores and mountains distant from the population centers. At the same time, the regional and national press aggressively covered the activities of developers such as the Patten Corporation and the fragmentation of the lands formerly owned by Diamond International, amplifying the anxiety that likely would have existed even without such vivid portrayals of "threats to the north country."

Changes in the use of northern forest lands portend changes in the economic, environmental and cultural character of this heavily forested region. Without doubt new uses will alter the lives of the many people who draw their livelihood from these forests. Also affected will be those who just visit the region occasionally, or who simply benefit from the northern forest as a backdrop to their everyday lives. Indeed all of these people, the public entities that represent them, and the organizations that own the lands bear responsibility for the future of these forests.

The fate of the lands formerly owned by the Diamond International Corporation exemplifies the current situation. In 1984, near the bottom of the last recession in the forest products industry, British financier James Goldsmith bought Diamond with the intent of breaking up the company and selling its constituent parts. The mills went

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early, but he held the land awaiting more favorable prices. In 1988 nearly a million acres of their lands in northern New England and New York were put on the market. About 800,000 acres in Maine changed hands in two sales, but remained with forest products firms. Land sales of this type, where large blocks move from one firm to another, occur in the region without undue notice. But the rest of the land-89,000 acres in New Hampshire and 96,000 acres in the Adirondack Park in New York-was sold to what the press described as developers. In a flurry of hastily arranged moves, the **State** of New York acquired some of these lands, and, in an innovative but controversial use of easements, the State of New Hampshire and the USDA Forest Service acquired others. Most of the million acres will be managed much as it was when owned by Diamond. Some of it-probably less than five percent of the total-is now or will soon be in smaller parcels and is likely to be developed some way or **another**. But considerably more land would probably have met this fate in the absence of public intervention.

The sale of these lands and the apparent need for hasty, unplanned governmental response focused public attention on the problems of ownership fragmentation and consequent land-use changes in the northern forests and prompted the following: the National Parks and Conservation Association proposed several new national parks and reserves for the region; later the Wilderness Society released a report with a specific proposal for land preservation, a 2.7 million acre "Maine Woods Reserve"; with specific congressional authorization, the USDA Forest Service commenced its year-long Northern Forest Lands Study; the Governor of New York appointed a new commission to study the future of the Adirondack Park. And with each study, land sale, or policy proposal came unusual attention from the press.

In response to heightened public and professional concern, we held a regional conference to explore

- the role of the northern forests in the culture and economy of the region,
- the need for intervention to preserve and enhance the positive contributions made by forests,

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- the ways for controlling, over very large areas, land use and **ownership** fragmentation, and
- the methods for moderating the potential deleterious effects of changes in land use and ownership.

The conference brought together about 70 individuals from the region representing a wide range of interests, from bankers to landowners, the forest products industry to conservation and preservation groups. Each possessed some special knowledge of the region and of the situation.

Discussions were organized around six papers presented in draft form to the conference participants. The first two (one by Prof. David Smith of the University of Maine Department of History and the other by Robert Whitney, Executive Vice President of LandVest, a real estate brokerage and management firm active in the region's markets for forest land) described the broad historical, cultural and economic forces that have produced the situation in the region as we see it today. Each of the remaining four papers focused on a single strategy for controlling land use and ownership fragmentation: improving the economic conditions for current forms of land ownership and use (by the staff of Champion International's Timberlands Division); implementing zoning and other forms of land-use regulation via a multi-state authority (by Prof. Robert Yaro of the University of Massachusetts Department of Landscape Architecture and Regional Planning); developing methods to share landownership rights (by Prof. Robert J. Healy of the Duke University School of Forestry and Environmental Studies and Preston Bristow, Assistant to the Executive Director of the Vermont Land Trust); and acquiring, through public purchase, some or all of the forest lands in question (by Dr. Henry H. Webster, Michigan State Forester). This volume presents these six papers along with a seventh essay that weaves together the important themes of the conference into some elements of policy which we believe should be incorporated into any comprehensive proposal for action.

We conclude that the northern forests pose several distinct challenges for public policy. We see a role for outright public acqui-

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sition, but envision a role limited to a comparatively small area of the region. We discuss but leave open the important questions of which level of government should acquire which lands.

Conservation easements of several types appear to be useful for a far greater area. We specifically analyze the concept of a terminating conservation easement, and discuss the merits of a rollover provision where, for example, a 20-year easement is renewed every five years. The problems of who should hold the easements and how they should be purchased are much the same as with fee acquisition. Management of shared ownerships remains perplexing.

Public acquisition of full or partial property rights will require expenditures at a time when the federal budget is in deficit, and each state in the region is cutting programs and raising taxes to balance its own budget. Whence adequate funds for such a large-scale conservation program? Ironically, the development pressures themselves could generate one source of revenues if development-related capital gains were taxed while other measures were used to insure that development does not destroy the character of the land that makes it so valuable in the first place. Both policies—a capital gains tax on income derived from land development and land-use controls through zoning or easements—could be implemented by the states involved. If fully implemented, the proposed American Heritage Trust combined with the existing state acquisition programs would probably be adequate to handle the total need. We doubt, however, that full funding will come in time, if at all.

Some limited advantage may be gained by enhancing economic returns for landowners who maintain forests in traditional uses. Creating markets for products such as recreation has particular merit for this purpose. Though always a popular point for discussion, abatement in local property taxes has only a limited potential for influencing behavior. Federal tax policy, both income and inheritance, is more powerful, but may be beyond the reach of regional policy.

Regional land-use controls are in place over much of the study area, with the comparatively limited areas of northern New Hampshire and Vermont being the principal exceptions. Instead of developing whole new institutions for regulating land use, it is probably more

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efficient to use scarce political resources to strengthen those that already exist. Here the federal government, perhaps through the two national forests in the region or through redirected efforts of the USDA Forest Service State and Private Forestry program, could play a useful role in providing technical or financial assistance.

The long history of forest land use in northern New York and New England spans several centuries. Land speculation, development and preservation recur. Historic precedent, while surely not an excuse for inaction, suggests that these lands can accommodate human uses yet **provide** the wildness we all cherish. In Prof. Smith's words, with wise management we can "have our forests and cut them too."

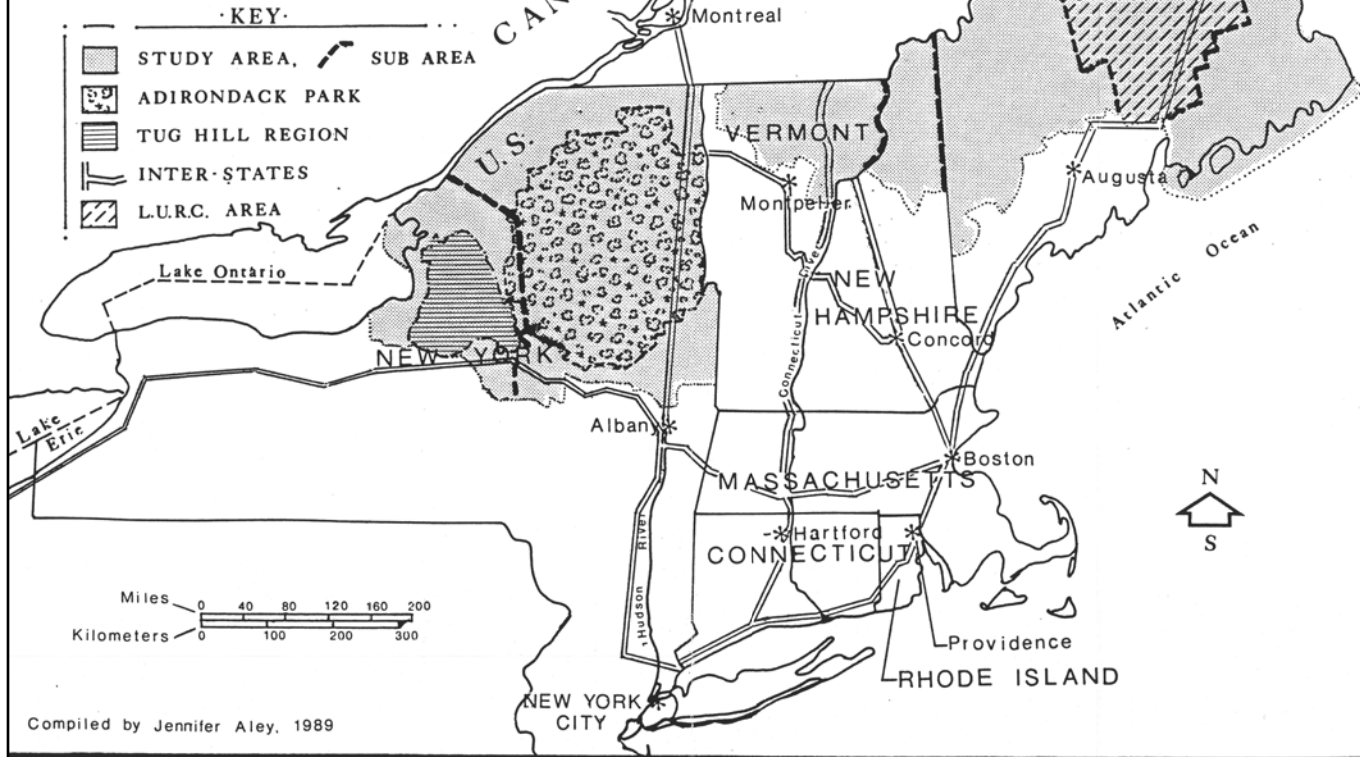
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Figure 1. The map opposite shows the boundaries of the study area used by the USDA Forest Service Northern Lands Study. It encompasses the entire jurisdictions of the Tug Hill Commission and Adirondack Park Agency in New York, and the Land Use Commission in Maine (chapter 1 discusses these organizations), as well as the area in Vermont known as the Northeast Kingdom. To describe the northern forest, others might add to or subtract from this delineation, but the region shown here is indicative of its general size, location and proximity to such urban areas as New York, Boston and Montreal.

• Forest Service, USDA

• Northern Forest Lands

Study Area



POLICY ALTERNATIVES FOR CONSERVING THE NORTH WOODS

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Forested landscapes define the economic, social and cultural character of northern New England and New York. Through their influence on this 31 million-acre area, these lands contribute to the distinctive character of the broader northeast region. But changes, both within and outside the region, are disrupting the established patterns. The desire to preserve these landscapes and the traditional values which they support seems to increase in direct proportion to the magnitude of the perceived changes, and recent pressures have been unusually great.

Traditional values of the northern forest range from the aesthetic to the mundane. The working landscape—a patchwork of farms, managed forests and wildlands—defines New England and New Englanders. Vast areas of unbroken forest cover comprise one of the largest "wildernesses" in the East, and provide enormous opportunity for recreation, wildlife, and human solitude. At the same time, these forests are the main economic foundation, meager though it is, for some of the most impoverished communities in all of the United States. Reconciling these seemingly contradictory values of the north-

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em forest forms the irreducible nub of the public policy concerns addressed in this Bulletin.

The forces changing these traditional values are both social and economic. Increasing affluence of nearby areas (including Boston, Hartford, New York, and Montreal), good and constantly improving highways, and the comparatively low cost of gasoline all work to make the northern forest accessible to literally millions of people where earlier it was the backyard for only a few. This large, affluent, and aging population now wants second homes, not rustic camp sites, and this change in the pattern of demands accelerates the pressure on the northern lands.

Reagan-era restructuring of the forest products industry destroyed some traditional notions about forest land values and, indeed, some traditional forest landowners as well. The deep recession and disinflation of the early 1980s, and the success of major forest products firms such as Stone Container and James River that eschew land ownership led many corporate managers to question the wisdom of owning forest land. For these same managers, land became a liability because it seemed to attract unwanted takeover bids as the examples of Crown Zellerbach, Pacific Lumber Company, and, in the region, Diamond International and the Champion/St. Regis merger attest. Selling land became an attractive possibility, especially if the sale was not to a competitor in the forest products industry, but rather to a pension fund or, indeed, to a developer.

The large nonindustrial ownerships, nowhere in the United States more important than in this **region**, did not escape the blows suffered by the forest products industry. Tax reform meant the loss of **pre-**ferential capital gains treatment for timber income, more onerous inheritance taxes and a host of other revisions in the tax code felt acutely by those investors who hold land. And, as time passes, the internal pressures within these multi-membered ownerships increase as the later generations, alienated from the land itself, critically assess the financial returns from northern forests and compare them to those available from forests in other regions and from other kinds of assets altogether.

Wholesale development of the region is unlikely to occur. First to go will be the lakeshores, ridges with views and lands with easiest access to major highways. Then, the more remote areas and less scenic ones will feel the pressures. Not all areas will be developed immediately and only a relatively few of the millions of acres in the north country will be developed in anyone year. But development on one acre will affect several more around it. As development progresses, the fabric of North Woods will change more rapidly than the number of acres actually converted. [2]

Traditional values confronted by potent social and economic pressures for change—this is the context for the policy debate on how best to manage the public needs and private wants from the forests of northern New England and New York.

Because the problem is complex, an array of approaches will be most useful in dealing with the public and private concerns about northern forest lands. In the ensuing sections we discuss the distinctive values and liabilities of federal acquisition, regional land-use controls, less-than-fee purchases and altering the economic climate for land ownership in the region. While these sections correspond to the subsequent papers in the volume, we have not summarized the papers but rather have indicated where a particular approach is appropriate and where it is not. The last section attends to some problems of change: through what mechanism will these policies be implemented? How much time is there for critical review and reflection before too much land is lost, or before a solution is imposed on the region? Taken together we hope these comments provide some useful guidance for policy debate and formulation.

National significance and federal roles

Nowhere in the United States is the federal role in land management less than in New England/New York. The region contains two national forests (the Green Mountain National Forest in Vermont and the White Mountain National Forest in New Hampshire and Maine), one national park (Acadia in Maine), a complement of wildlife refuges, and several minor units of the national park system. Together

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these lands comprise only 2.3 percent of the land area in the region, as opposed to 32.0 nationally or 48.9 percent in Oregon, a state which is roughly the same size as New York and New England taken together. [3]

The federal role in the northern forest is even more limited. The two national forests are largely south of the undeveloped northern forest zone. An effort in the 1960s to create a federally-controlled national waterway along the Allagash River came to an end in 1970 when the State of Maine and the landowners along the river agreed to protect it as the first state-designated Wild and Scenic River. A proposal made at about the same time for a national park within the Adirondack Forest Preserve in New York was sidetracked by the creation of the Adirondack Park Agency.

Were the wildlands of the study area of only regional or local significance, this lack of federal participation might be readily understood. Yet the benefits of these lands extend well beyond the **region**. For example, depending on the particular site, from **one-quarter** to one-half of the visitors to the White Mountain National Forest come from outside the **region**. [4] Although no data cover the private lands of the northern forest, there are good reasons to expect that the percentage is similar. In fact, the northern forest is an international resource. Many Canadians from Montreal, Quebec City, and other places in the Provinces of Quebec and New Brunswick visit and use **these** forests for recreation. At the same time, logs and processed forest products are exported from this region to the rest of the country and to Canada.

Perhaps the best evidence of the area's national significance comes from the national political interest currently focused on the region. The National Parks and Conservation Society, a national interest group, set the agenda in 1988 by proposing several new national parks for the region. [5] More recently the Wilderness Society, another national interest group made a more detailed proposal for a 2,7 million acre "Maine Woods Reserve" encompassing public and private lands. [6] Congress has acted both through the recent Nash Stream purchase of former Diamond International lands in

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northern New Hampshire and in other ways. In a very real sense, national significance is defined by Congressional attention.

If these lands have national significance, why has the federal role been so small? Three reasons come to mind. The first is historical. In contrast with the West where the federal role is so important, there were never any federal public domain lands in New England and only a small area in New York. Establishment of national parks or Weeks Act national forests confronted relatively large and, in some cases, resistant indigenous populations. By the time that the federal government took an interest in conservation, its ability to act within the region was quite limited in comparison to the possibilities in the other places.

Second, many of the traditional roles of federal lands—camping, hunting, fishing—are provided by private enterprise on private lands. New England and New York is the wealthiest region of the country. This wealth translates into the ability and willingness to pay for recreation. Even dispersed recreation such as hiking has been arranged on a mixture of public and private lands as the Appalachian Trail, the Long Trail and the extensive Blue Trail network in Connecticut attest. The Appalachian Mountain Club, a private nonprofit organization chartered to in 1876 to provide for hiking and other mountain-based recreation, predates both the USDA Forest Service and the National Park Service. [7]

Third, federal ownership invariably means federal control. Maine and New York, particularly, have resisted federal acquisition for precisely this reason. And, as Henry Webster points out in the final chapter of this Bulletin, the cost of federal control has become high indeed. The planning system for the national forests is enormously complex, costly, and, in the end, perhaps ineffective. Federal ownership attracts the symbolic issues associated with federal lands everywhere (such as wilderness and protection of endangered species), whether or not the substance is meaningful for a particular location. Federal ownership dictates who will participate in management decisions, irrespective of their relevance for the region. As a consequence, state political interests predictably resist federal intervention, and so far have been powerful enough to sustain their objections.

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At a time when extant federal institutions such as the planning system promulgated under the National Forest Management Act (NFMA) are struggling, it is difficult to see the merit in creating new ones, as Yaro advocates in the Chapter 6 of this Bulletin. The time required to craft a new federal body probably exceeds what is politically available to deal with the concerns about the northern lands. A new federal organization would undoubtedly attract the same symbolic issues which have made management of the national forests under the NFMA so burdensome.

It is always tempting to look to the presumably deep pockets of the federal government to fund new and desirable land acquisition, but are the pockets really that deep? The entire federal land acquisition budget last year was about \$165 million ¹⁸, enough to purchase only 10 to 20 percent of the area of concern even if all of the budget were allocated to this region, an obviously unlikely possibility. Balancing the federal budget will require cuts in expenditures/increases in revenues of more than a hundred billion dollars. Viewed in this light, the pockets seem quite shallow.

Prospects for a major, new federal role in the region appear to be limited. Fee-simple acquisition of lands is costly for an already burdened federal government, and is undesirable for many important political interests in the region. Likewise, the creation of new federal organizations to deal with the region's problems is costly in terms of time and political process, and shares many of the undesirable political features of federal ownership. Other, more limited methods for federal participation in the region may be possible, but approaches short of a major new federal programs, legislation or organizations are necessary.

Regional entities

Concerns with the northern forests are dearly regional concerns. Otherwise, why a regional conference, a regional Forest Service study and proposals for intraregional cooperation? But do regional concerns imply a need for an overarching regional entity to address them? Not necessarily.

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In Chapter 6 Yaro develops the case for regional "greenlining," that is, the establishment of a regional land-use control authority for the four-state area. As envisaged, the authority would require congressional authorization much in the same manner as the interstate water pollution control authorities and the now-defunct river basin commissions. Although this proposal has some theoretical merit, practical problems appear to limit its utility.

The boundary of the northern forest region is not as distinct as might be suggested by a "green line." In broad terms the region of concern is well understood, but the details are geographically diffuse. For example, should parts of the existing national forests, particularly those more southerly ones, be included? The term "green haze" is perhaps more apt than "green line."

Among the four states the need for a new level of intervention -above local governments but less encompassing than the whole state-differs considerably. Two of the states-New York and Maine-support strong, effective regional land-use control authorities. In Vermont, state legislation has a significant effect on development proposals. In all of these cases a federal authority would duplicate the functions of already-functioning institutions. Ironically, these organizations were established in response to the burst of public concern over the last round of second home development in the late 1960s and early 1970s. [9]

The Adirondack Park, created in 1885, is perhaps the earliest example of a greenline park in the country. In addition to the 25 million acres of state-owned land within the park, another 3.5 million acres of private land are within the park. Partially in response to a proposal for a national park in the area, the Adirondack Park Agency (APA) was established in 1971 to regulate development on these private lands, and to develop policies for the management of state-owned lands within the Park.

Maine's Land Use Regulation Commission (LURC), created in 1971, has jurisdiction over some 10.5 million acres of unorganized towns, townships and plantations of northern Maine. Included within this area are the 265,000 acre Baxter State Park and about 350,000 acres of state-owned forest lands. Most of LURC's regulations deal

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with timber harvesting, but it is also concerned with other uses of land. Its efforts to limit development around "key" lakes is a prime example of its expanding interest in using zoning as a tool to maintain the special character of the region.

The Tug Hill Commission (THC) in New York was established at about the same time as the Adirondack Park Agency, and in response to the same concerns for large-scale second home development. The Tug Hill Commission deals with regional land-use issues by strengthening the land-use planning capabilities of local governments rather than through land-use controls per se.

Together these three organizations have responsibility for about 17 million acres, or more than half of the region of concern. Only the parts of northern New Hampshire and northeastern Vermont in the study area are without any regional land-use authority, (although lands in Vermont are protected by the planning provisions of Act 200, the subdivision regulations of Act 250, and their lands gains tax). [10] Both areas are largely forested, have large tracts of forest industry land and are directly on the fringe of growing pressure for development. The Connecticut River valley, a transportation **corridor** with some farming and development, divides the two states. But it also links them in that it drains both and provides the focus for their economies. Here an interstate compact along the lines suggested by Yaro might be practical, although many of the benefits could be achieved by single-state land-use commissions (like LURC, the APA or the THe), perhaps with an explicit mechanism for coordination of activities across state lines.

Mechanisms less formal than a true interstate compact could be used to coordinate regional interests across the four states. A wide array of arrangements is possible. As Webster points out in Chapter 7, the Northeastern Forestry Alliance, an agreement among the four governors, is already in place. Rather than building new institutions, scarce political capital will be more effectively applied to strengthening existing ones.

The federal government could logically assist the regional land-use agencies, or could enhance interstate cooperation. Help could come in the form of technical or financial assistance, or in a catalytic

role. The mandate of the Green and White Mountain National Forests could be broadened to encompass public/private cooperation at any of several levels. Efforts of **the** State and Private Forestry division of the USDA Forest Service could be expanded to include wildlife and recreation activities on private lands, especially there they influence demands on the national forests. [11]

Shared ownership, less-than-fee purchase and the role of partial preservation

Land is a collection of rights, and the collection may be sundered by public regulation such as zoning or by private agreements such as the alienation of mineral rights. The possibilities for separating rights in lands are obviously quite broad; our intention is not to catalog all of the possibilities but rather to discuss some issues that are relevant to any such scheme.

Five questions attend any less-than-fee arrangement for land-ownership:

- What rights are separated?
- Who shares in the ownership?
- How are the various elements managed?
- For how long does the separation of rights endure?
- What is a fair and equitable value for partial ownership of forest land?

Separation of rights

Although rights in land can be separated for most any purpose, our concern is with arrangements designed to promote conservation or to restrict development. As applied to northern forest lands, a distinction is sometimes drawn between development rights and conservation easements. Buying development rights implies that the purchaser has acquired all rights to develop the land for some specified but more intensive uses such as residential or commercial buildings, industrial uses, mining or recreational developments. A conservation

easement, on the other hand, implies that the purchaser of the easement has, in addition to acquiring the development rights, limited the other uses that can be made of the land and its resources. Thus, with a conservation easement the purchaser may acquire some rights and responsibilities in the management of the land.

These distinctions are by no means fast or universally accepted. Indeed, the terms of an easement must be very carefully written. In the words of one, a conservation easement is whatever it says. But our usage of the term "conservation easement" implies some residual responsibility for management.

Parties in shared ownership

In principle, any two legally constituted parties can share in the ownership of land. So, for example, one individual may own timber rights and another the grazing rights. However, if an organization that is subject to federal taxes grants a permanent conservation or development easement to an organization that is exempt from federal taxes, the former may receive some tax benefits. Typical **tax-exempt** recipients include government agencies and nonprofit organizations. These cases raise some specific problems.

In the first place, the taxable entity, very frequently a forest products company, must believe that the recipient of the easement can carry out its responsibilities. For example, regular inspections of land in order to detect unauthorized development may be difficult and costly. Not all government agencies or nonprofit organizations are capable of sustaining this responsibility over a long period of time.

In the second place, the grantor must believe that the agreement is firm in the sense that further requirements will not be imposed after some time has elapsed and conditions have changed. This is not a frivolous matter especially when granting or selling a development or conservation easement to state or local governments, which are likely to be under pressure to expand agreements as conditions and uses change.

Although the potential federal role in large-scale fee acquisition seems limited, the opportunities for the federal government to serve

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as a party in less-than-fee arrangements may be more extensive. The innovative approach proposed in 1988 for the Nash Stream area in northern New Hampshire, as described by Healy and Bristow in Chapter 5, offers one possible model. The federal contribution of about 40 percent of the purchase price bought what amounts to the development rights and some limits on the way in which the lands will be managed. The remaining 60 percent of the total purchase price was contributed by the State of New Hampshire, which received primary responsibility for the management of the land and rights to any timber income. The seller, Rancourt Associates, reserved some rights to extract gravel from the property. National interests are served by keeping this 45,000 acre tract available for public recreation, while mainly state and local interests were served by keeping the forest available for timber production which will continue to supply nearby mills.

Federal participation in less-than-fee arrangements introduces many of the same problems that are associated with outright fee acquisition, and additional ones as well. For example, with Nash Stream, some interests are calling for full-scale NFMA planning while others in New Hampshire want to avoid the complications attending such an approach. In addition, Congressman Vento, chairman of the key House committee dealing with land acquisition, supports less-than-fee plans "only as a last resort". [12] In the case of Nash Stream, for example, timber receipts flow to the state rather than the federal government while the federal government will incur the cost of monitoring the performance of its easement rights. We suspect that some political work will be required to achieve substantial federal participation in shared-ownership approaches, but the effort could have high returns in terms of the areas of land protected.

Management of alienated rights

The assignment of management responsibilities can be crucial. Consider, for example, the case where a conservation easement is used to sever recreation rights. Is the holder of the remaining land and timber rights responsible for providing access for recreation and for

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maintainence following recreational use? Or do some of these responsibilities fall to the holder of the conservation easement? Especially where large tracts of timberland are involved, these issues must be resolved at the start if rights in the land are to be split.

The cost of managing easements may be significant. for example, the federal government holds a significant area of easements along the St. Croix Wild and Scenic River. The National Park Service spends approximately \$40,000/year monitoring these easements. (13J) Unless an explicit mechanism for resolving disputes is specified in the easement, possibly costly legal action is the only recourse for any party.

Duration of easements

Easements are generally thought to be permanent. Indeed most common easements <e.g., for power lines or sidewalks> are of this sort as are most conservation easements. The current federal tax code requires that easements be perpetual to qualify for the related tax breaks. But "eternity is a long time, espedally near the end" and changes in conditions and in demand for forest land are sure to occur. Land law typically provides for adjustments even in perpetual easements, but such changes may be expensive and difficult, and, at best, have uncertain results.

In the face of future uncertainties, the terminating easement has some merits. Under such an arrangement, conservation values would be purchased for a limited period of time, say 20 years. A particularly interesting version of the terminating easement would contain a "rollover" provision, where, prior to its termination, the easement would be renewed periodically. For example, a 20-year agreement might have a five-year rollover; every five years the agreement would be reviewed. If cancelled, fifteen years would still remain to negotiate a new agreement, develop a purchase alternative, or otherwise effect public policy to protect whatever public interest exists with the parcel. Temporary easements of this sort are similar to the practice in British Columbia of leasing timber harvesting rights for twenty years with lease renewal every five years. The cost of tenn-

inating easements will be lower, perhaps much lower, than the cost of perpetual easements or outright fee acquisition.

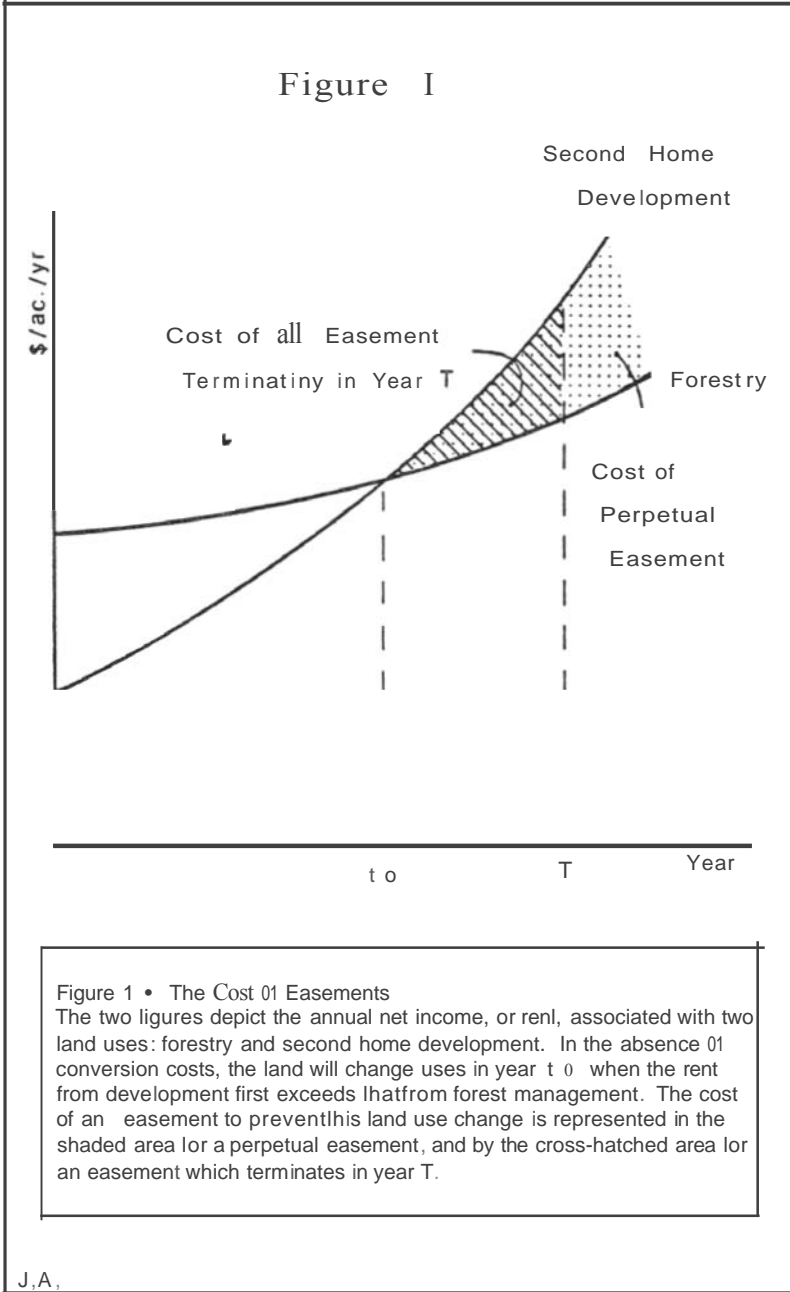
Cost of easements

A conservation easement restricts the use of land, and in doing so reduces its economic value. By comparing the value of the land with and without the easement, one can compute the minimum amount that the landowner would demand for the easement. This section provides some rough calculations that compare the cost of an easement with the cost of fee-simple purchase, and the cost of a permanent easement with that of one which terminates.

A highly simplified version of the situation is depicted in Figure 1. The two curves show the current annual economic rent (that is, the difference between gross revenues and total costs) over time for two different land uses, forest management and second-home development. The rents increase over time, for forestry in response to increasing timber prices, and for second-home development in response to increasing population and income.

For much of the study area, the situation is, in broad terms, probably like that drawn in the figure. In the current circumstances it is more profitable to keep the land in timber production than to develop it. But development values are expected to rise more rapidly than those associated with forest management. As a consequence, the market price for forest land now exceeds the capitalized value of timber income, but not all land that is sold at this high price is immediately converted to some other use. Conversion does not take place until some time in the future when the income from **develop-**ment exceeds that from timber production (plus the capitalized value of any conversion costs). The time of conversion is shown and year to in the figure. (14)

The cost of the easement is represented by the present value of the difference in land rents. This cost, suitably discounted, is the shaded area in the figure. Until time t_0 , development will not occur in any case, so the easement poses no burden to the landowner and therefore has no cost.



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The object of a conservation easement is to prevent land development. Because we assume that the rent curves are known, such an easement is unnecessary until time t_0 . Of course, because of the effects of discounting, purchasing the easement now will be less costly than waiting until the land is valuable enough to be developed.

The cost of a terminating easement can be calculated in much the same manner as that of a perpetual one. In the example shown in Figure 1, the cost of an easement of T years is represented by the cross-hatched area between the two rent curves. This is clearly less than the cost of the permanent easement, and the amount less depends on the time between t_0 and T , and the rate at which these annual costs are discounted.

For this analysis, we assume that both the buyer and the seller of the easement use the same discount rate. One might expect, however, that the buyer—a governmental entity or a conservation interest—might have a lower discount rate than the seller. In this case, the buyer may be willing to pay more than the minimum amount the seller would demand for the easement. A similar situation would arise if the buyer believed that development were more likely or more valuable than did the seller.

An appendix to this section develops precise mathematical expressions for the cost of perpetual and of terminating easements under a variety of assumptions about comparative rents, escalation of rents over time and the discount rate. Consider a simple but illustrative example. We ignore some important features of the problem such as the effects of easements on state and federal income taxes or on local property taxes (and the differential effects of perpetual and terminating easements), and the fact that conservation easements on some properties will increase the development value of others. In this example we assume that both forestry and development rents increase through time at a constant rate. To replicate the situation shown in Figure 1, the initial rent for development is less than that for forestry, but the rate of increase is higher. We present two cases.

The base case represents rough estimates of the current economic situation. For forestry the initial annual rent is taken from the work by Champion International reported in Chapter 4 of this Bulletin.

Placing their return figures on a per-acre basis suggests that forests in the region produce a net income of about \$850/acre/year (a figure which, to us, seems optimistic for most owners). For the purposes of this example, we assume that this annual rent will increase by 1%/year in response to rising timber prices. Capitalizing these values at a real interest rate of 5% produces a land value of \$212/acre, about the current level for large tracts of forest land.

Computing the current annual rent for developed properties is much more difficult. As the appendix shows, this value can be inferred from current sales prices, the discount rate and the information of the annual rent available from forestry. Combined with the forestry returns discussed above, a figure for current rent of \$6/acre/year with 3.5% annual real appreciation and a discount rate of 5% produces a market value of \$415/acre for forest land that will be **developed** in the future. This figure is roughly consistent with the average of Rancourt's auction sales of large parcels in New Hampshire (see Table 3 in Chapter 4). As seen from the calculations reported in the appendix, the assumptions for this example suggest that the landowner should manage timber for about 14 years and then develop the property.

To bound the possible value of conservation easements on large areas, we also computed a high development case. We suppose that the annual income from forestry and from development are currently equal, and that rents from development will increase at 4%/year. Here the optimal economic strategy for the landowner is to develop the tract immediately. The land value generated by this scenario is in excess of \$800/acre. This figure seems unrealistically high for the vast majority of land in the study area, but is clearly within the range of some of the areas which have been **developed** in recent years. As a consequence, we believe that this case provides a realistic high bound on the value of a conservation easement.

The results of this analysis are presented in Table 1. In the base case, a perpetual conservation easement costs about half the value of the land. Terminating easements are less costly, costing much less than \$1/acre/year when figured on a 20-year basis (or about \$5 million/year for the study area as a whole). The cost goes up as the

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TABLE 1: THE COST OF CONSERVATION EASEMENTS

	BASE		HIGH LEVEL	
	<u>F'stry</u>	<u>Devel</u>	<u>F'stry</u>	<u>Devel</u>
SCENARIO PARAMETERS				
Initial Rent (\$/ac/yr)	85	6.0	8.5	8.5
Escalation Rate (%/yr)	1.0	3.5	1.0	4.0
Interest Rate (%/yr)	5.0		5.0	
Years to Development	14.0		0.0	
Land Value	212.0	415.0	212.0	850.0
EASEMENT <u>VALUES</u>				
	\$/ac	\$/ac/yr*	\$/ac	\$/ac/yr*
Perpetual	203	10.2	638	31.9
Terminating				
20 years	2.0	0.16	37.1	2.93
25 years	6.1	0.43	53.7	3.76
20 years	11.8	0.76	37.1	4.62

* paid over the indicated term

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tenn is extended since the later years contain more of the high-value development. In the high-development case the cost of the perpetual easement is about three-quarters of the cost of fee simple acquisition, and the tenninating easements are an order of magnitude more costly than in the base case.

This analysis suggests a strategy for preservation. In areas deemed valuable for preservation where development appears imminent, fee-simple purchase is indicated. In such areas the cost of an **easement** will be a large fraction of the value of the property. The guidelines articulated by Healy and Bristow in Chapter 5 prescribe **fee-simple** purchase when the cost of an easement reaches this level. On other lands, where development **pressure** is not so great, tenninating conservation easements may make sense, as a way to preserve land, as a way to buy time, and as a way to focus scarce political resources on the more critical areas. But the value of these easements is low, probably less than a dollar per acre per year. Despite the logic of this analysis, the willingness of landowners to accept this price remains to be seen.

In dosing this **section** on conservation easements, it is important to mention an alternative: zoning. Some argue that if there are public benefits to be achieved by retaining existing land uses, then this result should be achieved by restricting other uses through zoning and the police powers of the state. The argument goes on to say that relying on methods such as conservation easements that provide compensation to landowners calls into question the entire concept of zoning. This argument is especially relevant in cases where public investments in highways and other forms of infrastructure have been responsible for increased development pressures and land values. Even if zoning does not wholly eliminate development as an alternative land use, it may reduce its profitability, and thereby reduce the cost of conservation easements.

Some states, Oregon and California are two, have zoned land for timber production. The results are not conclusive enough to justify using their experience as a model for New England and New York. But where public interest is high enough, zoning seems to be well accepted within the region. In the future, local governments in the

region may exert greater influence over the patterns and extent of land development. The current lack of zoning in much of the northern forest zone suggests that residents do not perceive the public interest in blocking changes in uses as being great enough to eliminate entirely the need for some compensation. This, of course, may change.

Improving landowner returns

Within the strictures of zoning, land in the United States tends to be used for whatever purpose produces the highest economic return. Consequently, one way to affect land use is to increase the returns of a "desirable" land use (or to decrease the returns from "undesirable" ones.) With reference to the diagram in Figure I, this means effecting policies to shift up the rent curve for forestry, thereby forestalling the time to development (and, coincidentally, reducing the cost of a conservation easement).

In a market-based economy, economic arguments justify governmental intervention to alter the returns on some specific activity only if markets do not accurately reflect the true social costs or benefits of the activity. In the case of forest management, markets clearly fail when the landowner cannot appropriate the value of recreation, wildlife or aesthetically pleasing landscapes, all of which are provided by the northern forests. Public efforts to increase the returns to forest management by rectifying these market failures can clearly be justified on basic, conservative economic grounds.

Four general kinds of approaches can be used: establishment of markets for products such as recreation, changes in tax policy, direct payments to landowners, and reductions in the costs of inputs. In evaluating any of these mechanisms, two features of forest economics must be kept firmly in mind. First, any incentive or other improvement in the net income to forest owners is simply capitalized into the value of the land. Land values will rise, and if the incentive is an effective conservation tool, to a level where development is not a financially attractive alternative. But if the market value of land increases, the rate of return on holding this land, calculated using

market values, will not necessarily increase. Second, the financial risk of forestry investments is quite low. [15] Because investors are generally willing to trade a low risk for a high return, the return from forestry investments must also be fairly low--if forestry returns were high, investors would bid up the price of land until the returns were reduced to the low level which is consistent with the low financial risk of forestry investments. Taken together, these considerations indicate the difficulty of assessing the efficacy of economic incentives as a conservation strategy.

Marketing recreation

Recreational activities--camping, hunting and fishing--are valuable products of the forest. With the exception of the Adirondack region of New York where much of the private forest land is leased to hunting clubs, these products are generally not traded in the marketplace. As a consequence landowners gain no financial return **from** producing these socially valuable products.

It is likely that more and higher quality recreation would be provided on private lands if landowners could generate some economic return from these activities through user fees or leases. [16] Two major obstacles stand in the way. By tradition much of the northern forest is open for public access without charge. Changing this tradition is apt to be difficult. Furthermore, the act of levying a fee may diminish the value of the recreation activity itself: money marks the very civilization people seek to escape in the northern forests. The form of the payment may be critical, as the price people will pay for exclusive rights to hunt on leased lands is quite high.

Even if charges for recreation could be made palatable everywhere, the presence of broadly similar public lands (the Green and White Mountain National Forests, for example) available at no cost will severely limit the revenue opportunities for private lands. This is likely to be only a minimal problem for specialized uses such as hunting, but will be a substantial barrier for charging road or general access fees. A coordinated policy on recreation pricing for public and private lands across the four states could help alleviate this problem.

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Public leases of recreation rights represent another approach to this problem. State, local or even the federal government could provide recreation by leasing land from private owners, or by contracting with them for recreation services. For the public this may be much less expensive than purchasing land and developing recreation facilities. The landowner would receive income from the recreation "products" of the forest without incurring the cost and public enmity associated with collecting fees. Public acquisition of the recreation rights could operate either through a term-lease, or through a permanent easement.

Changes in **tax** policy

Taxes-property, income and inheritance-comprise one of the major operating costs of a forest enterprise. Changes in these taxes can be used as an instrument of land-use policy.

Relief from the impacts of ordinary *ad valorem* property taxes is available to forest owners in all four states. [17] Although the programs differ, they generally assess forest land and resources on the basis of their current use (rather than highest and best use), delay some or all of the tax until timber is harvested, and/or tax forests on the basis of the income from the land rather than on the market value of the property. In some cases, the reduction in property tax burden is tied to public use of the land, and may encumber the property with a right of first refusal to the public or a penalty for withdrawal/development.

Expanded application of property tax abatements for forest lands depends critically on fuller consideration of their incidence, that is, who bears the cost? Chapter 4 notes that Champion International has not taken full advantage of current-use assessments because the burden of the lost tax revenue would fall heavily on the towns where their forests are located. In New Hampshire, towns bear the full cost of current-use assessments, and its assessors are understandably reluctant to accept new applications. But even in Vermont, where the state reimburses towns for the revenue lost through current-use

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assessments, the burden falls on a state with relatively limited resources.

If property tax abatements are used as an instrument to maintain the regional and national values of northern forests, then some mechanism should be developed to spread more widely the burden of these abatements. One possible approach would have the federal Land and Water Conservation Funds pay towns, or the state, a portion of the tax abatements. This would represent the value which accrues to out-of-state users of these lands. The payments could **be** made annually, as with the payments-in-lieu-of-taxes now made for some public lands, or in a one-time, lump sum representing the capitalized value of estimated future payments.

Current-use assessments and yield taxes have become the norm throughout the country. While they help put forestry and forest land ownership on a more even footing relative to other real property, the effects on competition in forestry and forest products among states and regions have largely been offset.

In sum, further adjustments in property taxes are unlikely to be a useful method for enhancing the returns from northern forests. Not only are the incremental economic impacts likely to be small, but implementation of acceptable mechanisms for fairly sharing the burden of lost local revenues is uncertain.

The federal tax code offers a more powerful set of incentives for forest management. Timber income once received the same kind of preferential tax treatment as was available to income from the sale of any capital **asset**. The 1986 Tax Reform Act eliminated tax preference for all capital gains, and, in doing so, reduced the value of forest land and the returns to intensified forest management. Inheritance taxes, passive loss rules and provisions in the new tax code affecting the ability to expense management costs all reduce the value of forest land and the returns on forest management.

Though powerful, changes in federal income taxes probably lie outside **the** political reach of conservation interests in New York and New England. Restoring the favorable **pre-1986** tax treatment for timber would require two steps. The first is to re-establish the concept that income from the sale of any capital asset should be taxed

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more lightly than ordinary income, and the second is to insure that timber remains classified as a capital asset. Both steps are problematic.

It is unlikely that the whole tax treatment of capital gains would be changed now in response to the conservation needs of a comparatively small region. Indeed, were the pre-1986 rules reinstated, much of the income from developing forest land would benefit as well. Giving the same benefit to both forestry and development would do nothing to shift the weight of economic considerations toward conservation.

Even if preferential tax treatment for all capital gains were restored to the pre-1986 levels, there is no certainty that timber would remain qualified as a capital asset. To be sure, the 1986 changes left timber classified as a capital asset for some but not all kinds of sales. But the treatment of timber income as capital gains had long been under pressure from the Treasury Department because the benefits were seen as being narrowly focused on only a few of the major forest products companies. [18]

To achieve conservation benefits by differentially enhancing returns to forestry, income tax preference would have to be established for timber production but not for the capital gains associated with the sale of high-value land for development. At a federal level, with the sweeping concern for all types of income and the major problem of generating adequate federal revenues, it is unlikely that such a fine-tuned policy would ever be adopted. The states could produce differentially high after-tax values for forestry by levying a capital gains tax on land sales much as Vermont currently does. Were capital gains tax preference re-established for all assets (including timber) at the federal level, such a policy would still increase the profitability of forestry relative to development.

Direct payments

The federal government subsidizes forest management expenses through several programs that provide direct payments to landowners who engage in certain land management practices. Under the twin

pressures of the federal budget deficit and an administration ideologically opposed to governmental subsidies, the total appropriations for these programs has shrunk dramatically. The total amounts to \$78 million per year for the entire State and Private Forestry budget of the USDA Forest Service [19], or only about 23 cents per acre of private forest land per year. The economic effect of these programs is negligible for the northern forests taken as a whole, and this does not seem likely to change.

Policy dynamics: from here to where, and when?

The **unsettling** pressures for change in the northern forest have produced three critical objectives for policy reform:

- conservation of vast areas of forest land in more or less their current state,
- provision of public access for recreational use of private lands in the region,
- preservation of special-interest areas.

If these three objectives can be met collectively and simultaneously, it may be possible "to have our woods and cut them too", using David Smith's apt wording. The first objective guarantees that a critical element of the region's economic base--timber--is sustained. Along with this economic base comes a landscape, and with a working landscape and healthy communities comes something of the culture. The second objective retains what most people in the region value--the use of the woods for pleasure, not for a livelihood. The third, special areas for wildlife habitat, scenic views, and so on retains the irreplaceable elements of the landscape now and forever. How can these objectives be achieved?

First, since recreation is socially valuable, it seems imprudent to leave its production to chance. Recognizing its value and incorporating that value into the land-use and -management decisions made by landowners are critical; the precise method for doing so is not so obvious. In the absence of region-wide recreation-fee policies for

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public and private lands, public purchase of recreation rights on at least some lands is probably indicated. Because of the significant national interest in the northern forest, some form of federal participation is logical, perhaps through recreation easements purchased by Land and Water Conservation Fund appropriations. If federal support for recreation in the region is absent, and the states fill the void through the purchase of public recreation rights on private lands, the states should develop methods to insure support from out-of-staters. Many mechanisms are available to do so, including admission fees, season passes, or even special tolls on the major incoming highways.

Second, maintenance of landscape values over vast areas demands **low-cost** solutions. On large areas in the region the development pressures are not considerable, so the cost of protecting against them need not be large. Important areas of the region already receive some measure of attention-the Adirondack Park, Tug Hill, and the LURC jurisdiction in Maine. As a starting point, any state or federal action in the region should work to strengthen these organizations and, if need be, help focus their efforts more sharply on specific problems associated with conserving the north woods. Federal assistance could come through a USDA Forest Service State and Private Forestry program redirected to include nontimber aspects of forest **manage-**ment, especially recreation, wildlife habitats and watershed protection.

As a second step, the states of New Hampshire and Vermont should give consideration to similar bodies to influence regional land uses. In Vermont, this could be accomplished by strengthening the relevant regional environmental commissions although other methods are surely possible. Not only would such action provide benefits for local residents, but it would also curtail the demands for more stringent measures. The federal governments, perhaps through the national forests in those states, could provide technical or financial assistance to the establishment of such entities.

In addition, the use of conservation easements, both perpetual and terminating, over large areas deserves more analysis and trial cases. These easements could include public access for recreation, thereby supporting all three policy objectives: increasing the returns

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to landowners so the essential economic base is sustained, preserving land, and providing direct public benefits.

Finally, areas of special preservation value, or high-quality areas in imminent danger of destructive development, are best handled through fee-simple purchase. In the former case, the social value of strong protection is great. In the latter case, the cost of alternate approaches such as easements is apt to be **close** to the fee price yet fail to provide the same level of protection. If other land conservation measures, such as easements, are actively used, the area requiring fee-simple purchase would be fairly small. The question of who should own the land--a private concern or some level of government--remains, as do the problems of managing the lands after acquisition and raising adequate funds.

Development pressure itself may generate one source of funds. The fact that land prices are rising indicates a strong, and, in the context of a market economy, fully legitimate, desire on the part of private individuals to own northern forest lands. If public policy is successful in ensuring that the character of the region is maintained, the value of these lands will be greater still. Taxing development-related capital gains, much as is done in Vermont, would provide a source of revenues for the purchase of conservation easements or special-interest properties.

As another approach, the proposed American Heritage Trust offers a useful mechanism for federal involvement. The \$24 billion Trust would be built by fully using the \$900 million/year currently authorized for the Land and Water Conservation Fund (about \$200 million are currently appropriated, leaving \$700 million for the proposed **Trust**.) When fully capitalized, the Trust would produce about \$1 billion/year in interest, of which at least 30% would be allocated to the states for land acquisition on a SO/SO cost-sharing basis (in contrast with the \$300 million/year which would be provided under this proposal, the states received only \$17 million from the Land and Water Conservation Fund last year; see note 5, below). For the three northern New England states and New York, the proposed program could produce about \$35 million per year for land acquisition. [20] Combined with the existing state land acquisitions programs in New

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Hampshire, New York and Maine, this could provide an annual land acquisition budget of perhaps \$40-\$50 million per year for the next five years, an amount which would provide for about 100,000 to 250,000 acres per year of protection in the region through fee-simple acquisition, and much more if lower-cost options such as easements were used. To put this in perspective, the acquisition of Nash Stream and associated lands, amounting to about 45,000 acres, has been described as "the largest land protection effort in New Hampshire in at least 50 years." (21) Or as another point of reference, this rate of acquisition would be two to four times the average rate which built the region's 6.1 million acres of existing public forest land during the past century. To focus federal assistance for land acquisition, the federal cost share could be increased for lands within the zone, or for lands designated for acquisition within the areas covered by existing regional entities-LURC, the Tug Hill Commission and the Adirondack Park Agency.

Unfortunately, it is questionable that the American Heritage Trust Act will be passed, and, if passed, funded adequately in time to help preserve the North Woods. Building the Trust as planned in the current proposal would take more than a decade, and would increase the federal deficit by about \$700 million/year. To limit the fiscal impact, the bill phases in the \$1 billion obligation limit over a six-year period. Until the trust is fully funded, it is likely that appropriations for land acquisition will remain at about their current level. Even if it is possible to convince Congress to allocate an additional \$700 million/year to the Trust, given the immediate needs for land preservation, it might be preferable to increase current appropriations and extend the period of time required to fund fully the Trust.

These two sources of funds--taxes on development-related capital gains and the proposed American Heritage Trust--produce substantially different distributions of the costs for land acquisition. The former bears on the selling landowner, the developer or the ultimate purchaser of the developed land, all of whom benefit from development, and all of whom help create its social costs. The latter bears on the federal taxpayer, and appropriately so to the extent that values of national significance are at stake.

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What are the next steps towards implementing this set of policies? Major uncertainties surround the use of easements over such a large area, particularly the use of terminating easements. Further analysis could usefully construct some sample legal instruments, and apply them to actual properties to test the product and assess the costs. Similarly, federal financial participation in fee-simple acquisition is well understood, but its possible role in less-than-fee plans is not. The Nash Stream **case** provides one model to study, but surely others can be identified and analyzed. Finally, what are high priority targets for fee-simple acquisition, what is the cost, and what are the possible institutional arrangements for acquiring these specific parcels and for their subsequent management?

The time available for effective action within the region may be limited. If the economy of the Northeast remains robust, new proposals for development in the northern forest are likely to emerge. Although the total area developed in anyone year is not apt to be large, the effect of inaction will accumulate; land development can be only reversed only slowly if at all. Some of the most desirable areas for development--lake shores and places with scenic views--also possess significant public benefits, so some of the best opportunities for conservation may be lost early on. And finally, unless development is carefully planned, the area adversely affected by development will exceed by several times the area actually converted. All of these considerations argue for thoughtful action soon.

The history of conservation in New England and New York is one effective action within the region: the Appalachian Mountain Club, the Adirondack Forest Preserve, Baxter State Park to name but a **few** examples. At some point, as development progresses in the North Woods and the national interests which reside there are damaged, intervention by Congress will become so politically attractive as to be irresistible. Once that occurs, the capacity to build unique regional solutions, fitted to the unique problems and character of the region, will be diminished or lost altogether.

REFERENCES

1. We thank Stephen Harper of the USDA Forest Service, John Echeverria of the Wild Wings Foundation, Garry Brewer and John Wargo of Yale University, and Roger Milliken Jr. of Baskahegan Forests for useful comments on an earlier draft of this chapter. Joseph Miller of Yale University straightened out our understanding of the public land transactions in the region in the period between 1785 and 1800. Courtland Washburn of Yale University reviewed the analysis presented in the Appendix. They are of course not responsible for the opinions or facts expressed here.
2. Irland calls this process "shadow conversion", and estimates that each acre converted affects two to three more. (L.c. Irland, *Maine's Land Boom: Land-Use Trends, Causes, Concerns, and Policy Issues*, (The Irland Group: Augusta, ME, 1988) p. 39. Parcel fragmentation may also decrease recreational access to private lands (D. J. Kozak, *Maintaining Large Forest Landholdings in Northern New England* (Appalachian Mountain Club: Gorham, NH, 1988), esp pp. 30-50.
3. In 1985, the area of the six New England states and New York was 71,082 square miles, of which 1,611 square miles was federally owned. The State of Oregon encompasses 61,599 square miles. All data are from the Statistical Abstract of the United States, (GPO: Washington, D.C, 1987), Table No. 318.
4. Clark S. Binkley, *Forest Products Demand on the White Mountain National Forest*. unpublished report to the White Mountain National Forest, April, 1982. See especially page 5 and Table 1.1.
5. P. Austin, "Proposed: A Maine Woods Preserve", *Maine Times* 2 December 1988, pp 26-29.
6. Michael J. Kellett, *A New Maine Woods Reserve* (Washington, D.C.: The Wilderness Society, 1989).

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7. Although a "Superintendent of Forests" was established in 1876, his total budget amounted to only \$2,000. The Division of Forestry was established within the Department of Agriculture in 1886, to become the Forest Service in 1905 when the first national forests (then called forest reserves) were transferred to it from the Department of **Interior**, see H. K. Steen. *The U.S. Forest Service: a History*. (Seattle: U. Washington Press, 1976). The U.S. Congress created the first national park, Yellowstone, in 1872, but the National Park Service was not established until 1916. Prior to that time, the US Army protected the parks, evicted trespassers, stocked fish and otherwise **managed** the national parks, see W. C. Everhart, *The National Park Service*, (New York: Praeger, 1972).

8. Personal Communication, Ross Gorte, Congressional Research Service. Of this amount, only about \$17 million was allocated to the states for land acquisition; the remainder was spent by the four federal land management agencies: the USDA Forest Service, the National Park Service" the Fish and Wildlife Service and the Bureau of Land Management.

9. The role of state-level land-use authorities in the region is discussed by L. C. Irland, *Wildlands and Woodlots* (Hanover, NH: University Press of New England, 1982); and by R. G. Healy and J.G. Rosenberg, *Land Use and the States* (Baltimore: Johns Hopkins University Press, 1979), esp. ch. 3.

10. Passed in 1970 and amended in 1987, Act 250 is basically a powerful state-wide subdivision law which is operated through a State Environmental Board and several regional environmental commissions. The Act establishes performance-based standards for large development projects, but, unlike zoning, does not directly control the location of such projects. Act 200, passed in 1988, seeks to coordinate local land-use planning with state objectives but does not establish regional land-use controls *per se*. The Land Gains Tax imposes a progressive tax on capital gains from land sales of up to 60% if the land is held for less than a year. The tax declines as the

holding period decreases, and is eliminated altogether once the holding period exceeds six years. Recently these land-use controls have been criticized. See Vermont Natural Resources Council, *Corporate Land Speculation in Vermont*, (Montpelier, VT: 1986); L. Goodspeed, "Act 250" *s/f* November/December 1988, pp. 61-72; and L.S. Merrill, "The Road Not Taken" *Planning* November, 1987 pp. 22-24. Merrill also argues that because of Act 250, local land-use controls have been less effective in Vermont than they have been in New Hampshire.

11. Some of these ideas are expanded in Clark S. Binkley, Garry D. Brewer and V. Alaric Sample, "The Resources Planning Act: Strategic Planning or Policy Analysis" in Clark S. Binkley, Garry D. Brewer and V. Alaric Sample, eds. *Redirecting the RPA*, Yale University School of Forestry and Environmental Studies *Bulletin* 95 (New Haven, CT: 1988)

12. Statement of Congressman Bruce F. Vento before the House Subcommittee on Forests, Family Farms and Energy, 1 June 1989. Vento specifically opposes federal purchase of conservation easements from states, leaving open the possibility for shared ownership plans involving the federal government and private interests.

13. Vento, *ibid.*

14. A more realistic model would treat the two curves as stochastic. In this context, an easement restricting development represents precisely the purchase of an option to develop the property. Viewed this way, the value of an easement can be calculated from an option pricing model. Robert MacDonald and Daniel Seigel, "The Value of Waiting to Invest", *Quarterly Journal of Economics*, 40(1987): 707-727 develop this point for the general case of irreversible investments. They show, for example, that the presence of uncertainty in the rent curves delays the optimal time of conversion in comparison to the deterministic case analyzed here.

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15. See, for example, W. L. Mills, Jr. and W. L. Hoover, "Investment in Forest Lands: Aspects of Risk and Diversification", *Land Economics* 58(1982): 33-51; C. H. Redmond and F. W. Cabbage, "Risk and Returns from Timberlands Investments" *Land Economics* 64(1988): 325-337. C. L. Washburn and C. S. Binkley "Some Problems in Estimating The Capital Asset Pricing Model for Timberland Investments" in *Proc. Southern Forest Economics Workshop*, 2-3 March, 1989, San Antonio, TX. gives a critical review of these and other similar studies.

16. This point is discussed in more detail in C. S. Binkley and R. M. Mendelsohn, "Recreation User Fees: An Economic Analysis" *Journal of Forestry* 85(1987): 31-35, and in C. S. Binkley and P. Hagenstein. "Economic Analysis of the 1985 RPA Program" *Journal of Forestry* 85(1987): 25-30.

17. The programs are described in J. Marron, "Property Tax Abate-ments for Forest Owners in the Northern Forest", unpublished report, Yale University **School** of Forestry and Environmental Studies, and in the various volumes of the *Timber Tax Journal*.

18. Capital gains tax preference for timber was first established in 1943. Since that year, congressional proposals to reduce or eliminate the benefit altogether have been made many times. E. Sunley "The Federal Tax Subsidy of the Timber IndUstry", pp 317-342 in Joint Economic Committee of U.S. Congress (Washington: GPO, 1972) documents the main Treasury Department concerns.

19. USDA Forest Service, "Report of the Forest Service, 1988" Table 42 (Washington, D.C: GPO, 1989): 159. This figure includes all payments to state governments and private landowners, including the subsidies for insect and disease control and forest fire management.

POLICY ALTERNATIVES

20. Nat William, The Natural Conservancy, personal communication. Williams estimates the states shares as follows:

Total AHT Program Funding (\$ billion/year)	0.5	1.0
Funding to States (\$ million/year)		
Maine	2.4	3.7
New Hampshire	2.4	3.6
Vermont	2.1	3.1
New York	14.6	24.4
TOTAL	21.5	34.8

These figures include the 30% allocation to the states, and half of the 20% allocated to congressional discretion.

21. *New Hampshire Conservancy News*, Fall, 1988, p. 6.

Appendix to Chapter 1: The Cost of an Easement

Clark S. Binkley

An easement restricts development, and thereby reduces the value of land. To the landowner, the cost of the easement is the present value of the difference in the net annual income of property with and without the easement. If the easement is permanent, the annual losses are discounted and summed over perpetuity; if the easement is **terminating**, the annual losses are discounted and summed over the term of the easement.

Consider the most simple case possible. The land has only two uses, forest management and second-home development. We wish to calculate the value of an easement which prohibits second-home development, requiring in our example that the land forever be used for forest management. We assume that capital markets are perfect (so all market participants can lend and borrow at the same interest rate D). Future rents from the two uses are known. Ignore the effects of income taxes. To calculate the value the easement, define

$r_D(t)$ = rent in year t from development

$r_F(t)$ = rent in year t from forest management

Suppose that the rent for either use grows exponentially, at rates S_D and S_F respectively but that the rate of value increase is greater for development than for forest management (so $S_D > S_F$). Then the two rent curves can be written

$$r_D(t) = a_D e^{S_D t} \tag{1}$$

$$r_F(t) = a_F e^{S_F t}$$

To depict the situation drawn in Figure 1, the initial rent for development must be lower than that for forest management, so $a_F > a_D$.

Time to development

Assuming that there are no costs associated with converting the property from one use to the other, in the absence of the easement conversion will take place when the annual rents are equal, or in the year when

$$a_D e^{s_D t} = a_F e^{s_F t} \quad (2)$$

Solving this equation gives the time of development t_D as

$$t_D = \ln(a_F/a_D)/(s_D - s_F) \quad (3)$$

The value of forest management, the value of development and the cost of a permanent easement

The market value of a property in a particular use equals the capitalized value of the annual income emanating from that use. For the simple situation outlined above, we can compute the value of the property were it managed for forestry, and its value if developed for second homes at the optimal time to do so. The cost of an easement to the landowner is simply the difference between these two values.

The present value of the rents from forest management, NPV_F , is

$$NPV_F = \int_0^{\infty} a_F e^{s_F t} e^{-it} dt = a_F/(i - s_F) \quad (4)$$

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The present value of developing the land, NPV_D is somewhat more complicated because the landowner's best strategy is to hold the land in forestry until t_D , then to convert it to second homes. Consequently, the value of the property under the development option is composed of the present value of the rents from forest management from now until t_D , plus the present value of rents from development from t_D on. Or

$$\begin{aligned}
 NPV_D &= \int_0^{t_D} a_F e^{s_F t} e^{-it} dt + \int_0^{\infty} a_D e^{s_D t} e^{-it} dt \\
 &= a_F \left\{ [(1 - e^{-(i-s_F)t_D}) / (i - s_F)] + \right. \\
 &\qquad \qquad \qquad \left. a_D e^{-(i-s_D)t_D} / (i - s_D) \right\} \quad (5)
 \end{aligned}$$

The first term is simply an annuity of a_F paid for t_D years where the effective discount rate is $i-s_F$. The second term is a perpetual annuity of a_D at an effective discount rate of $i-s_D$, not paid until t_D years from now.

Substituting the value of t_D from (3) gives

$$\begin{aligned}
 NPV_D &= a \left\{ [1 - (a_F / a_D) e^{-(i-s_F)(s_D-s_F)^{-1} t_D}] / (i - s_F) \right\} + \\
 &\qquad \qquad \qquad a_F e^{-(i-s_D)(s_D-s_F)^{-1} t_D} / (i - s_D) \quad (6)
 \end{aligned}$$

The cost of the permanent conservation easement (CPE) can be found in two, equivalent ways, either as $NPV_D - NPV_F$, or as the present value of the difference in the rents after time t_D (i.e., the present value of the shaded area in the figure). Substituting from (4) and (6) and rearranging gives,

$$\begin{aligned}
 \text{CPE} &= \text{NPV}_D - \text{NPV}_F \\
 &= [a_F e^{-(i - s_D)t_D} / (i - s_D)] - \\
 &\quad (a_F^2 / a_D) [e^{-(i - s_F)t_D} / (i - s_D)] \quad (7)
 \end{aligned}$$

The interpretation of this expression is somewhat clearer if it is rewritten with t_D , or

$$\text{CPE} = [a_D e^{-(i - s_D)t_D} / (i - s_D)] - [a_F e^{-(i - s_F)t_D} / (i - s_F)] \quad (8)$$

Cost of a term easement

Suppose that the easement is not permanent, but only extends for a term of T years from the present. What is the cost of such an easement? As discussed in the main text, if $T < t_D$, the term easement has no value. Otherwise, the cost of the term easement can be calculated as the present value of the difference in the development and forest management rents between the years t_D and T . That is,

$$\text{CTE} = \int_{t_D}^T [r_D(t) - r_F(t)] e^{-it} dt \quad (9)$$

$$\begin{aligned}
 \text{or } \text{CTE} &= [a_D / (i - s_D)] [e^{-(i - s_D)t_D} - e^{-(i - s_D)T}] - \\
 &\quad [a_F / (i - s_F)] [e^{-(i - s_D)t_D} - e^{-(i - s_F)T}] \quad (10)
 \end{aligned}$$

Both CPE and CTE are in present value form, but can be annualized for the purpose of computing annual payments.

LARGE LAND HOLDINGS AND THE NORTH WOODS: STASIS -- OR -- CHANGING TIMES

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Of all the figures we think of when we think of the North Woods -- Jigger Johnston, King LaCroix, Bill Hilton, Garrett Schenck, John Sinclair, David Pingree, Park Holland, - the list can be extended almost indefinitely - my favorite, because he exemplifies the way people from the north country really behave, is Austin Cary. Cary was blunt in his comments, soft-spoken in his delivery, sure of his views, and laconic in his style. He once attended a black tie affair at the White House. When his feet hurt because of the patent leather shoes he was forced by custom to wear, he rose from the table, walked twice around it, and went to the cloak room to put on his moccasins as they were more in keeping with his life style, and by extension, his democratic values. Teddy Roosevelt, sitting at the head of the table, roared with laughter, and later described this scene as an example of how New England people met and conquered the world.

Cary made a great many pithy comments in his lifetime with regard to the North Woods, and how landowners should, and perhaps would, manage their holdings. When talking about his earliest efforts for the Forest commissioner in Maine in the summer of 1895, he told B.E. Femow, "It is work that will tell with the hard-headed lumbermen and land owners. . . ." He was describing an effort to obtain funding to hire cruisers in the summer so that the North Woods people would know who owned what and roughly what sort of forest production could be expected. Cary knew, however, that long scientific tomes were not the answer for his clients. What was needed were short, sharply written, cogently argued materials which would convince the land owners of the necessity of good forestry management practices. He told his readers, in one comment, "You can grow

timber in Maine as well as you can grow grass or potatoes or presidential timber." but, in another place, he further remarked, "You can't stop the economic forces that are cutting down our forests, but you can guide them if you go at it right." Good business interest and practice would, Cary was convinced, dictate conservative management, sound conservation practice, and provide employment, profit, and recreation for all who needed it. [1]

Cary viewed the woods from a good long perspective, and his remarks reflected his feelings that decisions in woods management, and woods usage should take into consideration the longest possible periods of time, so that profits, and any resulting exploitation could be dealt with in a context which would allow profits, but control exploitation. It seems almost axiomatic that these ideas should still guide our use of the woods.

People reading these remarks may not be prepared to go as far as has been suggested in a course which several colleagues and myself have been offering in recent years at the University of Maine. Prepared under the joint auspices of the College of Forest Resources, the Institute for Quaternary Studies, and the History Department the course is entitled, "The Maine Woods - The Last 13,000 Years." It makes an effort to deal with all aspects of the Maine Woods, from soil formation by the last glaciation, down to the flora and fauna of today. My belief is that any remarks on the woods of the North Country should be put into the longest perspective possible, and not only in that experimental course, but also in practice. Therefore this paper is designed to provide as long a horizon as the reader is able to accept.

The course had its origin on a quaternary field trip ten years ago when four colleagues, -- one in history, archeology, paleoecology, and glacial ecology -- began to discuss what each saw when he looked at a particular landscape. As we listened to each other we became aware of the need to look differently at what we saw generally, because envisioning a long time span enlightened our views of our own reality. Whether it was the action of the glaciers on making soils, the sea incursion after the glacial retreat, the development of plant

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biota over time, (along with such events as the hemlock dieback of c. 4,000 B.c.), the incursion of paleo-Indians, the changing mammal populations, or the work of the men with horse, oxen, pickpole, peavey, and eventually machinery -- all of these events worked together to make up the woods which is our subject.

I would, therefore, like to establish two paradigms of thought which should infuse and enlighten all aspects of discussion of the North Woods, and ask all who read, listen and comment on what follows to attempt to think in terms of my paradigms.

The first is:

1. Virtually all decisions taken since the European incursion into North America are economic in nature. They may be modified by social constraints, but remain, nevertheless, economic to a very great degree.

and,

2. The most significant characteristic of northern New England is its woods, and the history of the woods flows in a continuum since the last glacial advance, and will continue to flow until the next glacial advance.

I do not have to tell you that there is substantial tension between these two paradigms. They hide great conflicts of the past as well as the future. However it is the difference in interpretation, discussion and the eventual release of the tension through civilized discussion, which has enabled those interested in the North Woods, as I have said before, "to have our woods and cut them too." To a considerable degree finding solutions that meet that basic desire is the purpose of these talks and meetings, and the way we meet the challenge will detennine how we will all **be** judged in future times.

The historic perspective

Lack of time and space prevent spending much time on the earliest history, but observers should remember that climate, soil, and elevation are conditions which determine how species grow, and affects how they interact with other species. The area of the state inundated after the glacial retreat which occurred from 9,000 to 6,000 years ago coincides roughly with the area of major settlement in Maine, at least outside Aroostook county. Although the location of inundation is not a major factor in New Hampshire and Vermont, (however, the glacial dams/and lakes which lay behind Crawford and Pinkham Notches do make substantial local differences) latitude, elevation, and glacial action on the soils have created a geographical unity in northern New England, and the settlement of this previously submerged area provides a population pool of settlers who move into other areas as **pioneers** and exploiters. The similar regions in the Maritime Provinces and **Quebec** are not included in this discussion despite the fact that political boundaries totally disregard the geographical and physical ones.

Outside of this once submerged area lies the major geographic location of the North Woods. Species grow in this North Woods zone roughly coincident with the contour lines -- above 300 meters for the spruce species, pine in the lower altitudes, while hemlock and cedar tend to occur in wetter lands. Pine grew best (or at least the most merchantable white pine) below the 300 meter contour line and south of the incursion area (the so-called Presumscott formation marks the incursion area geologically).

Climate varies widely in this area, and there have been major dips and climbs in both temperature and precipitation, so that the boundaries move and change in response to these matters, but generally this description is accurate. [2]

When Europeans arrived off the northeast coast of North America -- the Norse appeared as early as 1000 A.D., fisher people from England, France, and Spain by the mid-fifteenth century, and others by the latter part of that century, -- the area was much as we have

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known it. Climate variations have modified the land and its flora but slightly as the "Little Ice Age" has apparently only come to an end about 1850.

It is the similarity of conditions, however, which needs stressing, as our **species** has lived since that time in this general location, in one of **the** most optimum of all times climatically. But most indications are that the present time is a period of high variability with great possible changes to come. (3) Although it is perhaps too much to describe this area as "marginal" except in certain agricultural senses, when making decisions on usage it would be wise to take into account the implications of climate and precipitation patterns even though those factors have been ignored in previous periods.

By the middle of the eighteenth century, however, the area under discussion began to be penetrated by venturesome persons, some of whom wished to exploit the timber located there, while others were interested in the fauna, and still others in converting the area into fanns. Primitive tools, lack of anything but animal and human power, along with rather limited markets controlled this movement until well after the American revolution. [4]

At the end of this period of first settlement some of the lands of the North Country in Maine passed into the hands of the heirs of William Bingham, of Philadelphia, who purchased two tracts of roughly one million acres each, one in western Maine on the Kennebec watershed, and a second, in eastern Maine, east of the Penobscot river, in much of what is now Washington county. Other areas went into the hands of substantial land owners, such as Henry Knox. However, most of his land passed into the possession of smaller holders. Although the northern lands of New Hampshire and Vennont were more fragmented in ownership, settlement did not penetrate into the heavily forested country so the alienation process did not move rapidly. [5]

This part of New England had been placed, by circumstance, in a client relationship to the Boston center, acting both as its hinterland and as supplier of raw materials which were bulwarks of the economy of Boston center. Tension grew between the two areas, and one by one the outliers broke away politically. First New Hampshire, then

Vennont, and finally Maine sought and won their freedom. All three states thought of their timber holdings as major sources of tax revenue in the near future, and at the same time all three states sought to attract settlers to the area for the long run.

Climate, geography, and the available federal lands in more salubrious areas meant that these dreams were mostly unfulfilled. The need for tax revenue continued, however, and so the tensions did not disappear. The situation was even worse in Maine, the last to break away, the least settled, but with the most valuable potential in **terms** of the forest. Massachusetts, while granting the freedom sought, managed to control a **fifty** percent holding in the extremely large northern forest acreage. This situation did not end until 1854 when Maine finally achieved full independence from its Massachusetts incubus. [6]

The twin desires, for both settlement and tax revenues, guided the way governments in these areas dealt with their timber lands. In Maine this was accomplished by establishing that the lands would be surveyed in a regular manner and offered for sale in blocks of ten townships each year (about 230,000 acres). The sales were to be **con-**ducted in an auction format, with an upset price in order to control the speculation. Unfortunately for the states involved, the federal government began to divest its western lands in about the same manner at the same time, so the usual price never went much above \$1.25 an acre. The rather **better** lands available in the Ohio, Indiana, and Illinois prairies also diminished the interest in northern New England woodlands. In response to this, the states began a series of **efforts** to divest the land, and at the same time to obtain the largest initial revenue, deciding to rely on potential taxes from settlers rather than original sales for revenue.

Various legislative acts to deal with these matters followed. In 1828, Maine began a homestead policy which provided that a settler who cleared ten acres, planted it to grass, and erected a house and barn, could obtain 200 acres in ten years for \$200 worth of labor, working **off** the debt as a SO-cents-a-day road laborer. Other measures provided that larger tracts, 500 acres in extent, could be offered to

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smaller potential loggers and lumbermen. The first five ranges of towns west from the east line of the state (later two more ranges were added) were to be available only as settling lands. The auction system continued, prospective mill owners were granted power sites and land adjacent. People proposing to build an extensive road network and finally, a railroad across Maine were given more than 700,000 acres of land to sell in order to have adequate funds to build these transportation facilities. Maine even undertook a rather substantial foreign immigration policy focussing on Swedish migrants.

Maine has done an excellent job disposing of its lands, when one considers that the prevailing wisdom was that these lands would be a source of revenue and provide homes for taxpaying citizens for a long time to come. The final disposition of these lands has only recently been concluded by the settlement of the court case which returned the public lots to state control. Since then, through the controlled trading of lands, the state and the landowners have been able to consolidate their holdings. The resolution of the court case centered around the ruling that "timber" referred only to merchantable lumber, a definition originally given in a writ from King Alfred in ninth century England. When one applied that definition to the word "timber" in the grants to "timber and grass" given by the legislature in the 1840s, many tree species now in use were then regarded only as "weeds." The other issue in the case was whether those who made these grants, usually on state lands reserved for schools, until the area should be accepted as a township, actually believed that settlement would come to the area in the near future. The court decision, on appeal, essentially upheld this interpretation, and the lands in question reverted to the state from their granted hosts. When one adds to this change in landholding, the impact of the federal legislative decision dealing with the land claims of the Penobscot and Passamaquoddy tribes of native Americans, the final chapters in Maine public domain have only recently been written.

In New Hampshire the inclusion of lands in the White Mountain Forest after the passage of the Weeks Act in 1911 has solved many potential problems of usage and ownership, while in Vermont, much of the area actually was settled originally. Subsequently these lands

were abandoned, to a **great degree**, and so have recently provided a new settlement area for those seeking a different life experience. [7]

As a result of this history much of the timbered land in northern New England, especially in Maine and New Hampshire, has remained in large contiguous blocks since the first exploitation. In other areas, consolidation has been a major fact of life. For instance, the lands which were first purchased by David Pingree and Ebenezer Coe form the bulk of the lands that makes up the Seven Islands Corporation today. The ten townships which were auctioned each year by Maine and Massachusetts from 1838 to 1854 were bid off at a auction held at the land office in Bangor. David Pingree, Marblehead, Massachusetts, and his colleague, Ebenezer Coe, Bangor, purchased many of these townships at the auction sales. Pingree also purchased other significant holdings, such as the boom rights on the Penobscot River, and the lands surrounding the Telos Cut (a small canal which diverted some of the waters of the St. John River headwaters to the Penobscot waterway, thus controlling where the logs would be sawed). This judicious selection of rights made their timber lands very valuable, and they were able to "control" the auction sales because of their preeminence. [8]

Lands acquired in the latter part of the nineteenth century by a firm known as the Manufacturer's Trust, which put a major pulp and paper mill on the Kennebec, became part of the Great Northern Paper Company holdings. Originally much of this land was located in Bingham's Kennebec holding. Much of the lands originally held by the logging brothers, Philander and Abner Coburn, form part of this tract as well. The land tract given to the European and North American Railroad passed into the hands of the Maine Central, and eventually along with the woodlands of the Dunn estate, the McCrillis estate, and Hinckley and Egery holdings (all of which were substantial) form the bulk of the lands now controlled by the International Paper Company. Some of the McCrillis lands are now owned by the Irving interests. The holdings of the Brown Company in Maine and New Hampshire are also still generally intact, and where holdings were smaller in size, on both sides of the border, they have been con-

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solidated into the White Mountain National Forest. The important fact is, that although there was some fragmentation, most of the large land holdings in the north have been relatively intact since the 1850s. (9)

It could be said, especially **if** one includes the consolidation after the public lots court case and the settlement of the Indian lands case, that the moves in land ownership have been lateral in nature. In order to protect contiguous areas and facilitate management and control most companies have purchased available lands when they **were** offered. This set of historical facts has played a role in the area, and it is one which is always **present** when **the** future of large land holdings are considered.

Other historical events have affected the land holdings. These events have both **increased** consolidation and threatened long range management. Originally virtually every early observer **assumed** that the woodlands would be cut, and agriculture and towns would follow. This mind set created a "cut out and get out" philosophy, much as was true in New York, Pennsylvania and **the** Lake States. In fact, many of the persons who cut in those areas were former workers and land owners from northern New England. [10]

As the first major cutting ended, however, a major invention changed this situation. An **increased** population, substantially greater literacy, and more leisure time led to an effort to provide cheaper books and newspapers. This effort was successful, and in 1867, usable and economical paper was **made** from wood cellulose. A revolution in paper use occurred, and within a decade virtually all paper for books and newspapers was made from this new and very inexpensive product. This meant that northern New England woodlands were again valuable, both for the trees remaining (especially previously unused species of trees) and as an area where the trees could be grown for wood cellulose production. [11]

The paper industry in the north responded in two ways, by further consolidating lands and manufacturing units (GNP, IP, and others date from this point), and by establishing modern forestry and sustained yield management practices led by professional foresters, trained at first in Germany (as was Austin Cary), and later at the new forestry schools established in the region, (especially at the University

of Maine, Yale, and at Syracuse.) All of these matters tended to coalesce ideas on long-tenn holding and management and the timber holdings were seen generally as large blocks of land to be managed for an extended time to come. (12)

The solidification of these ideas was advanced further by the impact of World War One, which greatly accelerated the use of wood cellulose for paper and packing boxes. Besides military usage, the Interstate Commerce Commission (in the Pridham decision, 1914), (13] mandated that common carriers must accept such boxes for transport. The new **paper** processes, **developed** in Germany in the 1890s, using **the** kraft (literally strong) method of manufacture, assured a product strong enough for the designated purposes. At about the same time, however, it was found that certain tree species, especially southern pine, were ideal for kraft process use, so the 1920s and 1930s were a period of great expanSion in the cotton and cutover lands in the southern part of the U.s. During World War II, many new uses of paper caused further expansion in the industry, and the development of faster and bigger papermaking machines, along with new **modifica-**tions to manufacturing technique, helped further a boom in the industry in the South, the West, and in the Northeast. Labor was a problem in the wartime **period**, and this was an indication of possible problems in the woods after the war; however, even here new machinery was to ease substantially any potential problems.

Since World War II, expansion has continued, predominantly in the South and West. Increasingly the Northeast has found itself in a more difficult competitive situation, which has been ameliorated mainly through first moving to more specialized manufacture, and ultimately to consolidation of the industry as smaller northeastern-based firms found themselves surviving only as parts of larger firms with corporate headquarters located elsewhere. The problem of high labor cost has continued, but this factor has been alleviated by the introduction of new machinery. This change to in-the-forest chippers, and other high technology machinery has meant that a substantial portion of recent harvest has been of a "dear-cutting" type. These changes have also created problems as earlier formulated long-term

cutting plans based on rotational cutting or high **grading** and thinning were of little significance in a new technology where all of the trees, and all parts of the tree were available to use.

Industry in the South met these problems, less drastic there because of climate and terrain, through major planting programs and strong support for genetic research at universities and their laboratories to improve the size of the tree, the strength of the fibers, and to shorten the length of time it takes to **grow** a tree to harvest potential. These options have been much less used in the Northeast, where research has tended to focus on the mill, rather than the woods, and where labor costs (as expressed in machinery) have **been** dealt with more effectively. To some degree these differences are a reflection of higher northern labor costs in general, although these mixes are very hard to differentiate. [14]

Consolidation of smaller firms into larger parent companies has often meant that pressures on the woods, at first indirect, but recently more pointed, as expressed in profitability, have substantially increased in recent years. Virtually every northern New England firm founded in the latter part of the nineteenth century, such as Great Northern Paper Company, S.D. Warren and others is now part of a national firm with land holdings and paper mills all over the United States. Moreover, as the economies in the mills **seem** to have limited potential for change and the potential workforce in the woods is relatively small and not very well trained, the situation in the northern woods can move in only a very few directions. Therefore, in recent years, larger and wider usage of machinery has dominated changes in the North Woods'economy, but it is difficult to see much change forthcoming in these areas in the future.

Today's world

These historic aspects just discussed all play a role in the way we look at our world today, and they will continue to affect the world in the future. It behooves all observers of the North Woods to remember these matters, and insert them in the proper place when making plans, providing comment, and offering advice. But, as important as

history is, it must be put in perspective as new, significant matters develop in today's world.

We have heard a lot of talk about the day when the world population increases. That day is now here. As one flies through the night, the lights of Megalopolis are visible from Norfolk, Virginia to Portland, Maine. Those lights are surrogates for a population which has been for many years seduced, cajoled, and otherwise attracted to the New England north. Whether these people actually know what the North is does not matter, for they want to come, to experience whatever their perception of the North Country is. And they are coming. Until now, many of them have been content with the sea-coast, or visiting L.L. Bean's, but increasingly they want to climb Mt. Katahdin, camp for a week on Lily Bay, ski in Tuckerman's Ravine, look at Screw Auger Falls, or fish in Square Lake. Even if this is only a small percentage of the visitors, the numbers have reached crisis proportions. Responses to these numbers include the reservation system in Baxter Park, and on the Allagash waterway, the protection of local residents' access to hunting permits, especially for moose, a general rise in out-of-state license costs, fees for use of woods roads, and increasingly the installation of gates, custodian booths, and other deterrents. These measures are a bit better than King Canute's efforts with the tides, perhaps, but not much. They will, it seems to this observer, be less and less effective in the future.

There is certainly going to be a decline in the use of petroleum-based plastics over the next years. One applauds this, not only from the point of view of amenity and aesthetics, but also because these fossil fuels are finite in amount, and should be saved for better usages. They are also increasingly dangerous to obtain, as new supplies are located in wilder and more remote areas. Their end products do not biodegrade, and remain dangerous to the biota where they are strewn. As the change in usage occurs, the pressure on cellulose-based products will inevitably increase. The main difference in these raw materials is that one of them is replaceable in a relatively short time, while the other would take a geological era. Although the pressure on cellulose has been met, up till now, by tree planting and through

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better use of the trees grown, available lands for new planting in the U.s. are rapidly being exhausted (although watch for my remarks on climate change below), and new planting, even with better genetically designed trees, cloning, and faster growth will not be sufficient.

Casual tourism increases every year, and with vehicles designed for winter **use**, the woods now get much less chance to rest in what used to be the off season. Demands for hunting and fishing experiences by an urban population striving to retain some wilderness ideal is sure to grow, and this will be a population with little or no idea of traditional matters such as how to deal with campfires, the number of fish limited to each angler, or the need to protect fish and other animals limited in numbers and habitats. The stupid acts of the men who allowed the perch into Moosehead Lake; other persons who have dumped trash bait fish into northern New England lakes and streams, and the idiots who vandalize hatchery fish or shoot eagles, loons and osprey are all examples of persons who lack traditional ethics about the woods. As machines (both individual and those used for commercial purposes) proliferate, the ecological constraints of preserving the woods will become more significant, and the tensions where economics and social demands meet will become **even** more frustrating than they are today.

These matters then raise the significant philosophical question of "Who **owns** the woods?" Is it the person who pays the taxes on the lands? Certainly, this individual must be treated with great deference. But what is the role of the state and federal government with regard to matters such as the preservation for future generations of the genetic pool especially in relict and endangered populations; and the pressures on government to provide a milieu for year-round residents so that they may find good jobs, provide for their heirs, and still have the unique esthetic benefits of the North Woods they have created and preserved.

Is it the uniqueness, the scientific and ecological constraints, the economic and social drives of ordinary citizens, or the profits for the landholder which drives the governmental/social/political network in which we now live, and will live in future? How do we recognize

and accommodate these and other restraints on our individual rights? It is, incidentally, this last question, especially in the area of restraints, which is not being addressed in the United States. And yet, wherever one travels, at least in the first and second worlds, these matters seem to be the primary concern of citizens. It is my opinion that this matter of individual rights versus those of the larger community is likely to be and should be the focus of the next revolution in the United States. If this revolution does not take place, the results might be very dire indeed.

Finally, I have put as the last item in my catalogue the profits of the landholder. Last, not because I favor attacking or diminishing these profits, but because I think that this is the area where we can expect the most pressures in the immediate future. The issue of profits, loss, and ownership are increasingly under inspection. That matter is a hidden issue in the recent discussions of Township 30, which is under consideration in eastern Maine as a landfill; the use of Moody Beach, on the coast of Maine, which the courts have recently closed to many modern usages; the law suits over land use for electricity in Lebanon, Maine, a situation which reflects the impact of a growing population; the siting of condominiums in Old Orchard Beach, "development" in Corea, and Cape Rosier (these last two towns have declared a year moratorium on "development"), the degrading strip development of the main street between Norway and South Paris where I grew up, new living situations in Bangor and Hampden where condominium development has created new demands for sewers, and the "forced" purchase of leased camp lots on Schoodic Lake in Maine (land long held by a family are now being sold to meet death duties and because the family has diminished in numbers) to say nothing of similar problems in Hartford, on Tunk Lake, and in Lincoln as well as much of northeastern Vermont, and some parts of New Hampshire. These examples are mostly from **Maine** as they are the ones which appear in the local newspapers. But if one considers just the attempted development in northern New England by the Patten Corporation, the threats to traditional landscapes and areas is extremely clear.

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And, if these matters are of substantial importance in what is still the periphery of the North Woods, can involvement of the whole be far behind? Of course not! Historically, the landholder has had complete rights to the land, with the exception of the legal and common law restrictions of the Great Ponds Act in Maine and (this is of great importance) the long-term conventions of usage that North Woods people have honored, including permission to cross each others land, even to camp, fish, trap and hunt on the land of others, to use that land as if it were their own. Camps were left open in case a lost hunter arrived, and stores were left to succor the cold and hungry. If people borrowed a canoe or boat they returned it. A quasi-communal society lived and played together, not without tension, but with a fair amount of bon homie. The casual sojourner at a logging camp knew that food was available, a bunk, even clothes and tobacco on many occasions.

That world is nearly gone. It disappeared under the pressure of population, as more and more people did not know these customs, and others simply felt they were no longer significant. The pressure of quarterly dividends to stockholders, who may not even know of their ownership of the Maine woods, is increasingly important in decision-making in the north.

How many people have looked closely at the portfolios in their own retirement packages, their mutual funds, even insurance funds? A few professors may know that their TIAA/CREF (especially the latter) holdings deal with with some high profit but low social position holdings - South African companies, and firms which rely on cutting in the tropical forests are examples. But most people do not think of these matters, do not have any social measures for judgement. The companies they own, and support, are driven by the need for dividends, the profits that make that retirement/medical/insurance package worth buying to begin with.

Medium-sized land holdings which are closely held face the demands for subdivision every day, for the potential profits may be immense. How does one say to the landholder whose family has been on the land since Revolutionary Days that they cannot sell ancestral woodlot property, no longer maintained for that purpose, but which

has become irresistibly attractive for the subdivider. The question is especially relevant when the funds realized could be used to send a child to a better university, would allow a winter home in Florida or North Carolina, pay egregious medical bills, or simply accrue interest in high-yielding investments. If this is the issue on the periphery, when does it go to the heartland?

My guess is that there is no large landholder in the state who has not already been approached to sell choice lake shores, good fishing brooks, easily accessible horseback-ridge land (the local name for eskers left by the glacier, and among the better lands in the woods}, and cutover spruce lands still coming up to puckerbrush. Perhaps some can resist for historical reasons, -- as they might say, "we have a history", "we go back over a century", "land always appreciates, even in depression", -- but the pressure will grow and intensify. Occasionally one hears of propositions for private hunting and fishing preserves, but this means that only those who have the money can share the land, essentially an untenable position in the North. There are at least two farms in southern New Hampshire which are being operated today by what are the sixth and eighth generations. But how long can this last? These are three-and-a-half century old farms, among the dozen oldest continuously owned family farms in this country. Shall they fall to the developer?

Taxation is another potential matter for careful consideration. Inheritance taxes are a bugbear for the medium and small land holder, and as property appreciates under the population pressures, this tax burden will similarly affect land holdings of diminishing size. The ability to entail land is generally limited by the Constitution to three generations, and even though this can be a very long time (The Bingham rights were controlled from about 1812 to 1960 or so, in one of the longest examples), that protection will eventually disappear. The establishment of **large** inheritance groups (all of the heirs of John Doe, for example) is one way of keeping large land holdings intact, but as the heirs proliferate, some individuals in the group may wish to maximize their profits. Land banks, tree farms, the postponement of taxation until harvest all help that group. But also to be considered

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are revenue requirements which increase with the growth of an aging population whose needs must be considered in a responsible society.

There has been a great deal of recent talk about living in global villages, and being only one species, but the implications for democratic life in those circumstances have not yet **been** absorbed by many, including those who make the remarks. The lucky break that determined that most of my readers were born into their current positions rather than ones in Eritrea, Bangladesh, or even Mexico City needs greater emphasis, especially when decisions of future land use are considered.

Underlying all this, at least in Maine, is that **great** common law fact, the Great Ponds Act of 1647. All bodies of water in Maine over ten acres in extent are Great Ponds, and are owned in common, and cannot be alienated. That is the fact. Now, beyond that fact, how does one control access, or can one control access to his or her property? Is it possible to charge for the use of the way to that property? Is it possible to limit access? Who determines what is the proper fee, or if one can be charged? What about those who are not from Maine who wish to use the same property? How does one qualify as a Mainer? One can vote on the day one moves in, if registered. In-state tuition rights at the university vary in the time it takes to qualify, and this may even be a function of the official in charge of the decision. What about the person who remains as a voter, but who has lived "away" for dozens of years? What about the Maine person who lives out **their** working years in Connecticut or elsewhere, and returns, after not contributing through taxes to the maintenance of 'their Maine'?

There are also a number of instances in Massachusetts law, where the Great Ponds Act still applies, and which provide some guidance as to what the courts might do, but Massachusetts is a more settled area, and the lands, especially in the eastern part of the state, have come under pressures, not so much from persons wishing to use the woods, but from those who want to alienate the lands, and aggrandize them to small groups or individuals. This situation in these common lands may well be, in the future, similar to the history of the enclosure movements in England, and landowners can't help but remain cognizant of these matters.

A very dim crystal ball

Anyone who raises the sort of questions already asked in this paper has a responsibility to provide a glimpse into the future, even though that glimpse is through a very dim and cloudy crystal. So what is in store for the large landholder, or even the smaller landholder, and others who are involved in these matters?

It seems to this writer that the uses of paper will grow in the future, but whether that growth will be steady, or more of a sine curve, is difficult to say. The rise in paper usage has increased steadily as we look back at **the** last 125 years. But, if we put that growth in terms of per capita consumption it is less steady, more of a series of plateaus as new groups come into the mix, or the use of new products makes its way into the population in general. In 1970, in a book on the paper industry, I predicted a greater interface between plastics and paper, as the industry seemed on the verge of using paper making techniques in the use of urea and other plastics not based on fossil fuels. It seems that the predictions were right, but just a bit premature. New fossil fuel discoveries lowered prices so short term profits ruled the usage, but that time is going to run out, and sooner than one thinks (how long will the world stand for more events like that in Valdez, Alaska?). So other plastics -- the paper industry tends to call them non-wovens - will make a greater interface with cellulose usages in the future, but again, will the issue be now, in twenty years, or forty years from now? Twenty years is probably more accurate, but even so the demand for cellulose is certain to rise.

It is even possible that some aspects of the "greenhouse effect," if it is to come, may provide a climate in which trees (perhaps different species) grow more rapidly, and in areas where much hardier species now abound. Of course, that may be offset by the diminution of land adjacent to the sea, as another sea incursion may cover lands presently inhabited. Up till now this area of the continent has experienced fewer changes than are occurring elsewhere. [As of this writing, on May 1, 1989, the heating degree figure for all spots in Maine this year

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is about 98.1% of the thirty year average figure, as an example, and even the snowfall and precipitation are about on their long-term averages.] The implication is that recent changes in the North are well within "normal" circumstances. But, some change will come. The present scientific prediction is for "greenhouse conditions", but some scientists who look at **the** very long run ask how this will work with the probable coming glacial regime. In fact, some areas of the North show higher variability and slightly lower temperatures since **ap**-proximately 1950, facts which are felt by a few observers to herald a different sort of climatic change. If this were the case, the species change would differ in another way: birch, willow, poplar might be **the** harvestable species in the north woods under this regimen, along with more water-tolerant species such as cedar. The planner must, however, be aware of one thing, that is, that the future is going to be different in climatic terms, consequently society will not have the stability it has had during the last century.

Whatever the climatic change brings, recreational use is going to climb in the near future, and not in a series of plateaus. In 1972, a book which resulted from a year's study of national parks in the future, predicted such an increased use of those facilities that a kind of lottery scheme might have to be introduced. This was felt to be **true** even if newer parks east of the Mississippi were created. [15] New parks have been created, although nowhere nearly as many as were called for. However, usage has grown more than predicted. Theme parks and private commercial enterprises have filled the void, and usage has changed somewhat with the shift away from tent camping into motel/Winnebago/bed-and-breakfast facilities. Even so, some facilities, such as the state park surrounding Mount Katahdin, are close to a lottery-based usage, and it might be wise to institute such a plan in Acadia, on the Allagash, as well as in Yosemite, Yellowstone, and even more importantly in places like Gates of the Arctic, Glacier <and perhaps sites like the Alamo, Gettysburg, the White House, or the Custer Monument should be included as well).

State and municipalities are under vastly increased pressure - one only has to arrive after noon in summer and witness the crowds at Reid State Park, at Sebago Lake Campgrounds, or even at Lily Bay

or Twin Lights to realize the enormity of the problem. My guess is that some of the same conditions are true around Screw Auger Falls, in Dolly Copp, or other areas nearby in the White Mountain National Forest. What will this mean in years to come to the wilderness facilities at Chamberlain Lake, at Seven Islands, Lobster Lake, Eagle Lake, Little St. John Pond, Memphramagog, or Fifth Connecticut Lake as examples? Who will be able to go to these sites? What does it take to get there? Is this an experience to be reserved for the wealthy? Shall we apply a knowledge test; a W.Q.(wilderness quotient) test, or what? Or, shall we let the situation just drift until visiting those areas becomes the **same experience** as going to Walden Pond, Cape Cod, or Kennebunkport? These are real issues, and even though we will not have to face them, our grandchildren, if not our children, will have to deal with them.

There are special international factors that come into play in this part of the country. Northern New England, New Brunswick, and Quebec coexist in a situation in which the normal border constraints do not really apply for the products of the large landholdings. The Jay treaty, the Webster-Ashburton treaty, and the St. John River Commission (from the agreements arrived at from 1909-1916) allow the free passage of some people (native Americans, and some bonded labor), logs (any merchantable timber may be driven to any saw mill - -however the courts determine the meaning of these words-for resale without tarim, and water which must flow unimpeded except by agreement. Of course, with the recent passage of the free trade pact **between** Canada and the United States, nearly anything can pass freely back and forth.

This condition of affairs has almost always been to the benefit of the actual landholders. [16] It has also meant that cutting took place in a wider market and the forces were not contained within a country's borders. Whether that cutting and use is heavier than it would have been without these freedoms is very difficult to detennine. It may be, of course, that over time this situation needs to be reassessed. Most commentary has been in the context of the short term, usually

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confined to the horizon determined by the length of a public official's term in office.

In the short-, or even the medium-run, the pressures to divest cannot be questioned. Lowered prices, competition from the South, the shift to nonwovens and plastics, the problems posed by recreational uses, state and inheritance taxes, wider and more remote ownerships, and quarterly dividends all have as their greatest thrust the need to maximize profits, and in the short run, that goal results in a move toward divestment and reinvestment elsewhere. Massachusetts capitalists made fortunes in the Orient in the late eighteenth century, reinvested in cloth manufacture, then in western railroads, and finally in municipal bonds. And, although this does not include all groups of these investors, it is an instructive history, as the need for surer and wider profits have tended to cut risk taking at each step. Can those who invested in the paper industry, or in woodlands ownership resist such pressures?

Similar pressures in Prince Edward Island and Nova Scotia have already resulted in changes which will modify the way of life in those provinces. In P.E.I., each sale of actual farm land must either be to a person who guarantees to farm it or the sale must be approved by the Provincial Cabinet. In Nova Scotia similar restrictions are being applied to shore lands. The practice north of the border has allowed "interference" with individual freedoms for the good of the whole, and it may be time to consider such an option here in the "land of the free." These are not hypothetical questions, but they are ones from which most politicians will retreat. However, those who provide solutions which will really deal with these matters may go down in the history books as a kind of savior--politicians like Senator Justin S. Morrill, who changed American life with the introduction into Congress of the Morrill Land Grant College Act in the 1860s, or F.D.R.'s planning group which created the G.I. Bill of Rights, or the persons who invented the stop light, the railway junction block, or the sewing machine (to take three inventions without which modern life would be at an absolute standstill.) Of course, these people really are quite anonymous, but that is the fault of historians who are more concerned to name those who defile life, rather than those who preserve it.

However, if one looks at the long run, or even in the medium range, it may be possible to have ones' lands and cut them too. For what appears to be the most urgent pressure, the need to experience the Northern Lands, their ambience, their salubrious air, may be the very thing which is possible to sell forever; in other words, to profit from all of the experiences - aesthetic, economic, social - to have the woods and cut them too. If it is the North Woods style, *WeltanscMuung*, culture, choose your own word - that enervating and restorative factor created by being in the North, under the sky watching the stars, and listening to the loons, or listening to a crusty old-timer offer salty responses to tourist queries, or eating lobsters, mussels and fiddleheads, or just listening to the sounds of the North, - a canoe paddle in white water, the thunder of an August storm, the ice cracking in the outside wall in February, and the fire which keeps the frost away -- if these things are most important, well, it just may be that the way to preserve them is to hang on, and take the short-run problems for the long-run possibility. *Dirigo* is the Latin motto of the State of Maine, and it means, "I Lead", but that may well mean waiting, rather than acting precipitously.

A radical suggestion

A very good friend and colleague over time has been Harold E. Young. As it is with most controversial prophets, he has angered as many as he has pleased, and his swath is filled with fallen, or at least bruised enemies. As with others in the North Woods Valhalla, he has not suffered those whom he felt to be fools very gladly. As a very tough old denizon of the woods said to me about William Hilton, "No, I didn't really know him. I met him once on 'Suncook Dam, and I got out of his way." So it has been with Harold, just as it once was with Austin Cary and the others I mentioned at the beginning of this talk.

When we were probing each others minds a few years ago, Harold said to me, "People are such fools. They can have their woods, and all the cellulose they need, but it may take a radical change in

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the way they think. If we were to build a series of large greenhouses along the banks of the Penobscot from Hampden to Old Town, and from Orrington to Eddington, think what it might bring." He went to say that we could grow our cellulose sources under artificial light, using genetically created and cloned plants fed with the best of absolutely scientifically measured food, then simply harvest the growth, by machinery standing in place, - and provide all the cellulose one needs for the foreseeable future. It all depends on how you think about trees - if you think of them as long term mushrooms, or bamboo, then such a possibility is easy to contemplate.

If one thinks seriously about England, with its huge population, it is clear that similar problems were solved by the acts of pollarding trees, of training them, or cutting and saving only parts of the trees, so that today the forest still abounds. If Harold's ideas are true, the woods could remain intact for the other uses which may be so important, and they could be managed with reference to those needs, for the short run as well as the long haul.

This may seem like a Brave New World, and perhaps it is. But, is it that far removed from the Georgia plantations which were plowed, planted with genetically selected seedlings, and given a dose of fertilizer, all from those great end-gate seeders developed in the 1970s by the Ben Meadows company moving across the landscape at the rate of two or three acres an hour? The growth on this land (which grew cotton in 1920 and is now in its third crop of cellulose), is thinned regularly, and harvested every 17 years from trees that have no branches for the first 40 feet, grow to a uniform size, and provide two major crops a generation. Is Harold Young's idea so far removed from cloned sycamores, planted in and grown for the first year under hydroponic methods, and which are harvestable under laboratory conditions in three to five years?

Every day we utilize food grown under forced and hothouse conditions. Would a person who eats fried chicken, veal parmigiana, mushrooms, or California tomatoes balk at using paper products grown in a Penobscot greenhouse? Is looking at the greenhouses worse than an area of clear-cutting? If the Penobscot is too near, put

the greenhouses on the upper St. John. Cost would make the move come later rather than earlier, but what price aesthetics?

Large landholders are beginning, and have already faced major pressures. These pressures are going to grow, and new ones will arrive, often before we expect them. Medium and smaller landowners will probably face some of them even sooner. Individual rights are almost certainly going to be curtailed on this globe over the next fifty years. Nothing will be able to stop this move. But, rather than trying to retrieve a past which is gone forever, or which never really existed (and that is more likely), why not **face the** future with plans, with ideas, and meet it head-on? In 1945, the president of the United States, Franklin D. Roosevelt, with victory in sight, began thinking about the postwar world and wrote a speech which he never delivered. But it seems appropriate to end this paper with remarks from that undelivered speech. Those remarks have influenced me since I first read them, close to forty years ago:

"The promise of the future is only diminished by our limitations of today. Let us move forward in clear and active faith."

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REFERENCES

1. For the story of the **nineteenth** century move toward better forestry in northern New England, see my *Lumbering in Maine, 1860-1960*, (Orono, University of Maine, 1972,) chapter 13. For Austin Cary, **see** pps. 345-9; 357-361. The quotations come from his letter to B.E. Femow (National Archives RG. 95), April 16, 1895; Also **see** Austin Cary, 'The Forests of Maine,' *Paper Trade Journal*, 15 April, 9, 16 May 1895; "How To Apply Forestry to Spruce Lands," *Paper Trade Journal*, 18 February, 1898; "How Lumbermen in Serving Their Own Interests Have Served The Public," *Journal of Forestry*, XV, no. 3, (March, 1917), 271-289.
2. There is a host of information on these subjects. But the two **recent**, scientifically drawn maps from the *Maine Geographic Survey of Bedrock Geology and Quaternary Geology*, illustrate my points quite dearly. I have developed these ideas in a recent chapter in a book, edited by James Leaman, et ai, *Maine in the Early Republic*, (Portland, and Dartmouth, University Press of New England), 'The Changing Maine Landscape to 1820" pps. 13-25. A forthcoming book from the Maine Geological Survey, on "Crustal Warping in Maine" with chapters on bedrock geology, paleoecology, glacial geology, seismology, and land changes by human activity, among others, gives a good introduction to the long history of the Maine coast and adjacent areas. Similar work by some of these same authors has been undertaken in the remainder of the northern New England area. **See**, for example, D.C. Smith, W.R. Baron, et ai, "Climate Stress and Maine Agriculture, 1785- 1885, in T.M.L. Wigley, et al, eds., *Climate and History*, (Cambridge, England: Cambridge University Press, 1981): 450-464.
3. A forthcoming volume of *Agricultural History* (Vol. 43, no. 2, April, 1989) is devoted to papers given at an international conference at the University of Maine, June, 1988, on "Climate, History and Agriculture." Papers in that work by this author, "Climate, History and Agriculture" and by W.R. Baron, on the bibliography of this general subject, as well as others offer important analyses of these

subjects. The clearest statement of the scientific evidence is in W.R. Baron, D.C. Smith et al, *Long-Time Series Temperature and Precipitation Records For Maine, 1808-1978*, (Orono, August, 1980, MAES Bulletin 771.) and a series of bulletins on New England, New York, New Jersey and Pennsylvania on such matters as frost-free days, snow fall, precipitation, severe weather, cloud cover, wind directions, and phenology from 1740 to present, due to appear regularly from September, 1989 which will provide substantial data for analysis of past events.

4. The best accounts of this early work is still in the earliest histories, as all of them include a good description of the land at the time the migrations began. See Samuel Williams, *A History of Vermont* (Burlington, 1795); Joshua Belknap, *A History of New Hampshire* 3 vols. (1795-1812); and Joseph Williamson, *A History of Maine*, 2 vols., Gardiner and Augusta: 1821, 2cd edition, 1828, 1833.)

5. The Bingham story is well told in Frederick W. Allis, ed., *William Bingham's Maine Lands*, (2 vols., Vol. 36, 37, Proceedings of Massachusetts Historical Society, 1956.)

6. Only the Maine story has been told well, and that does not emphasize the role of the northern Maine lands. See Ronald Banks, *Maine Becomes A State*, (Weslayan University Press, 1970).

7. The Maine story has been told in my "Land Disposition on the Northeast Frontier: Maine and Its Public Domain," in David Ellis, et al, eds., *The Frontier in American Development*, (Ithaca, New York: Cornell University Press, 1969), 113-137. The relevant court case on the public lots is Cushing vs State of Maine, SJC(Maine), 434 Ald 486, decided August 24, 1981 and it is best discussed in Lee Scheppes, in "Maine's Public Lots: Emergence of a Public Trust," in *Maine Law Review*, 26, no. 2 (1974): 217-272. For some implications of the Vermont story, see Hal Barron, *Those Who Stayed Behind*, (Oxford, 1985.) The Indian Land Claims case, so called, was not settled by the courts,

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but by Congressional action. For statements by persons who were interested at the time of settlement, one should seek out Francis J. O'Toole and Thomas N. Tureen, "State Power and the Passamaquoddy Nation: "A Gross National Hypocrisy," *Maine Law Review*, Vol. 23, no. 1, (1971), **1-39**.

8. Details of these sales appear in the Land Agent, *Annual Report*, Public Documents, Augusta, Maine, yearly in this period, up to 1878.

9. Paul E. Bruns, *A New Hampshire Everlasting and Unfallen*, (Concord: Society for the Protection of the New Hampshire Forests, 1969). (*Forest Notes*, Winter, Spring, Summer, 1969.] William Robinson Brown, *Our Forest Heritage, A History of Forestry and Recreation in New Hampshire*, (Concord: New Hampshire Historical Society, 1958).

10. David C. Smith, "The **Logging** Frontier," *Journal of Forest History*, 18, no. 4, <October, 1974>: 96-106, describes this western movement from the northeast to the Pacific slope.

11. David C. Smith, "Wood Pulp and Newspapers, 1867-1900," *Business History Review*, XXXVIII, no. 3 <Autumn, 1964>, 328-345, and David C. Smith, *A History of Papermaking in The United States, 1690-1960*, (New York: Lockwood's, 1971.) In addition, my "Wood Pulp Paper Comes to The Northeast, 1865-1900," chapter 6 of that book, which appeared in an earlier form in *Forest History*, 10, no. 1, <April, 1966>: 12-25, focuses on the area under discussion here.

12. This story is told in my *History of Maine Lumbering* and my *History of Papermaking* books generally.

13. Interstate Commerce Commission, *Reports*, Vol. 30, 117-134. <Washington DC, 1914.> See Harry J. Betterndorf, *Paperboard and Paperboard Boxes - A History*, (Chicago, 1946.)

14. This argument is made with a great deal of detail in the last five chapters of my *History of Papermaking in the United States*. I have a

book nearly completed, to be published in the spring of 1990, which is a study of the Technical Association of the Paper Industry (TAPPI), which will make this point with regard to scientific research, chemical engineering and genetic study, in Chapters 4, 6, and 7 in particular.

15. *National Parks For the Future*, (Washington, D.C.: The Conservation Foundation, 1972.) *Preserving a Heritage*, Final Report to the President and the **Congress** of the National Parks Centennial Commission, (Washington, DC, 1973.)

16. Paul B. Fredrick, ed., *Maine-Quebec Lumber Trade: A Discussion*, (Panel Discussion Presented at the Maine Council for Canadian Studies Conference, "Focus on Quebec,") University of Maine, Farmington, April, 1983. Jack Aley, *The Export of Maine Sawlogs to Quebec*, Maine Forest Service, August, 1981. Also see the informed discussion in Stephen J. Hornsby, et al, eds., *The Northeastern Borderlands: Four Centuries of Interaction*, (Orono, Maine and Fredericton, N.B., Canada: Acadiensis Press, 1989.) Richard Barringer, et al, *The Western Mountains of Maine: Toward Balanced Growth*, (Augusta: The Maine Watch Institute: October, 1987

FORCES FOR CHANGE IN FOREST LAND OWNERSHIP AND USE: THE LARGE LANDOWNERS' SITUATION

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Issues and concerns facing land owners are beginning to receive deserved attention. Some large landowners would rather not have the attention, but it is vitally important that all concerned about forest land use understand the owners' situation in the northern forest area. Especially important are the problems of the large landowner, who over the past **century** has taken the basic resource risk, and has provided the foundation for the economy, the recreation, and the working culture of the region.

The influence of the large landowners in the North Woods is widely recognized. What is not widely appreciated is their situation - how forces of the past 25 years and current economic and cultural trends are affecting them, how a relatively stable, secure, and progressive (with wise management) investment, is now, in 1989, becoming destabilized and more risky. Knowing their situation will help us understand probable consequences of the trends. For example, there may be more short-term decision making and less long-term commitment to forest management due to higher risks.

There may also be greater opportunity for new buyers or new capital to acquire large tracts. And what effects large ownerships assuredly effects the smaller ones where the primary objective is forest production, income derived therefrom, capital appreciation, or some combination of investment and use/recreation.

Many aspects of this topic have been covered before in greater detail. This effort is a result of a modest literature search, my own knowledge from 25 years as a service provider to landowners in the northern forests, and from consultation with many of the large land-

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owners, their representatives, other professionals, and business people in the area.

Background

Using U.S. Forest Service data and area designations, principally from "Forest Landowners Series" by Thomas W. Birch et al [1], plus other sources, I estimate that in the study area approximately 21,340,000 acres is privately owned forest land [2]. Defining a large forest land owner as one owning 5,000 acres or more, then, based on published data and my knowledge, I estimate there are no more than 485 owners. They own approximately 12,600,000 acres, or about 60% of the area. In fact, in the study area, probably less than 45 firms control almost 11,000,000 acres, or about 50% of the study area. Most of these large ownerships are in Maine.

There are really only two types of large landowners - major forest industry and all the rest. In trying to keep the categories that simple, it must be recognized that within these groups there is a noteworthy diversity of interests, expectations, strategies, and benefits from land ownership. Those large landowners who own major manufacturing complexes clearly have similar concerns and reasons for ownership, but have a variety of strategies for managing them.

In contrast to major industry ownership, the non-industrial group is fairly diverse if we consider the number of owners. But if we consider ownership by acres, this non-industrial group is fairly cohesive. In the northern lands area, it is dominated by the large family or partnership holdings in Maine, managed by firms such as Seven Islands Land Company and Prentiss & Carlisle. This type of owner controls millions of acres in Maine. Their situation is representative of all large non-industrial owners holding land primarily for investment and income purposes. All large landowners, even those whose primary objectives may differ; i.e., recreation, face the same trends.

It is hard to make uniform comments for all of the study area. In New York State, the Adirondacks show a unique history of ownership, development, and legislation. That region presents a more extreme case of the effects of present trends on large landowners.

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The situation within the "Blue Line" is so different compared to the rest of Northern New England, that it should serve as a model of what to avoid if a vision for the North Country includes maintaining the balance as it now exists in Maine, **New** Hampshire, and Vermont. That is, a vision that includes a healthy and profitable forest-based economy, a wide range of recreation opportunities, clean air and water, and wise and balanced land **use**, with the lowest amount of government intrusion and taxpayer expense.

Stability of land ownership is considered an important factor in maintaining the **stream** of benefits from the northern forest. The non-industrial large owners have had a very stable ownership pattern compared to that of industry. From the 1950's to the end of the 1970's although industry increased the number of acres it owned, there have been ebbs and flows of change. This has been much more evident nationally than it has been in the Northeast. Industry owners are affected by the factors of worldwide competition, financial trends, and the highly publicized Wall Street doings. As described by **R.J. Slinn [3]**, in the five years prior to 1988, at least 28% of the pulp and paper industry's production capacity changed hands. Forest ownership is based on a wide range of philosophies and strategies which can and do change, for industrial ownership patterns are cyclical and dynamic. The outlooks can be as varied as James River's basically "Don't need any" to the land-rich position of the Great Northern Paper Company.

The increased emphasis on short-term financial performance in corporate America in the 1980's caused some companies to reexamine their ownership philosophy, especially after the industrial forest-land buying surge in the 1970's. Some companies decided to sell land to generate cash to invest in manufacturing plants or other alternatives yielding better rates of return. During the 1980's, knowledgeable persons could easily identify 8 to 10 million acres of industrial forest land available for purchase. This is almost one-seventh of the estimated 68,000,000 acres of industry-owned commercial forest land in the United States.

The northern forest has felt the influence of these financial factors, most notably in the Diamond example. Diamond International

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was acquired by Sir James Goldsmith and his French partners in 1983. Crown Zellerbach was acquired by the same group shortly thereafter. After selling the Diamond mills early on, the two million acres of lands owned by the firm were brought to market in 1987-1988. Approximately 986,000 acres were in the Northeast - 800,000 acres in Maine, 96,000 in New York, and 90,000 acres in New Hampshire and Vermont.

Much publicity attended the sales of the lands. One reason was "environmentalism". Another was that these lands had not been available on the open market for a very long time; almost 80 years in the case of much of the New Hampshire lands. A third was fear that the property might go out of multiple use into single use, either preservation or development. The publicity, involvement of politicians, single-issue crusaders, and multiple-use advocates focused on one specific tract in New Hampshire. This was the so-called Nash Stream block of about 45,000 acres, all of which was contiguous, or located nearby. Concern grew to large proportions when a buying group headed by Claude Rancourt signed a purchase and sale agreement with Diamond. Rancourt is a self-made multi-millionaire and a classic American success story. He immigrated to Lowell, Massachusetts, as a child from Quebec, started with nothing, and made his mark as a **developer** of housing and commercial properties.

The fact that corporate philosophy towards ownership and purchase or sale of land is a dynamic, does not mean that **traditional** uses of the forest are going to change. The land purchasing activity in the '50s, '70s, and sales in the '80s have not resulted in marked changes in primary uses of the forest. No factual basis suggests that the approximate 12,500,000 acres in large holdings is going to be developed, or that its primary use will be significantly altered, simply because the property is sold in the ordinary marketplace.

Returns/benefits for large landowners

What do the large landowners in this area currently expect as benefits or returns on their investment? This is a complex topic, probably with as many opinions as owners. In general, since all the

Wholesale development of the region is unlikely to occur. First to go will be the lakeshores, ridges with views and lands with easiest access to major highways. Then, the more remote areas and less scenic ones will feel the pressures. Not all areas will be developed immediately and only a relatively few of the millions of acres in the north country will be developed in anyone year. But development on one acre will affect several more around it. As development progresses, the fabric of North Woods will change more rapidly than the number of acres actually converted. [2]

Traditional values confronted by potent social and economic pressures for change—this is the context for the policy debate on how best to manage the public needs and private wants from the forests of northern New England and New York.

Because the problem is complex, an array of approaches will be most useful in dealing with the public and private concerns about northern forest lands. In the ensuing sections we discuss the distinctive values and liabilities of federal acquisition, regional land-use controls, less-than-fee purchases and altering the economic climate for land ownership in the region. While these sections correspond to the subsequent papers in the volume, we have not summarized the papers but rather have indicated where a particular approach is appropriate and where it is not. The last section attends to some problems of change: through what mechanism will these policies be implemented? How much time is there for critical review and reflection before too much land is lost, or before a solution is imposed on the region? Taken together we hope these comments provide some useful guidance for policy debate and formulation.

National significance and federal roles

Nowhere in the United States is the federal role in land management less than in New England/New York. The region contains two national forests (the Green Mountain National Forest in Vermont and the White Mountain National Forest in New Hampshire and Maine), one national park (Acadia in Maine), a complement of wildlife refuges, and several minor units of the national park system. Together

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penses, based on the present value of the property (To equate this to alternative current returns, add the current inflation rate). Some institutional investors who understand this type of investment (not all do), who invest for capital appreciation with small running yields, currently hope to achieve a 6 to 10% real return (pre-tax) over 10 years, on their initial investments. Large landowners who are speculators or developers have much higher expectations, of **course**. It is those expectations, and the actions (or threat thereof) needed to achieve them, that create concern among a variety of groups and are fodder for media hyperbole. High rates of return can really only be **generated** from small portions of properties with high aesthetics, water orientation, and/or a speculative sales program.

Some large landowners, as exemplified by the clubs and "park owners" in the Adirondacks, expect different benefits. They are not looking for annual economic returns, they derive their benefits from the environment, aesthetics, hunting, and long-term security of building an estate. Part of the return is the satisfaction of being the owner of a large private kingdom that is protected from public intrusion.

For some, an unquantifiable part of the "benefit" is being a responsible owner, one who passes to future generations an estate from which goods and services will flow for the benefit of society at large, and from which the owners expect to get fair returns to compensate them for the risks and expenses of ownership. Whether these expectations can continue to be **fulfilled** is the crux of the problem for this class of owner.

What changes are occurring

Quantifying the actual extent of land sales and changes of use is a task that needs plenty of specific research. That change is occurring is obvious. Whether current patterns are significantly different from those in other periods of change is difficult to know. The northern forest has gone through many cycles of land booms and shifting ownership.

The media often portrays the image of current stability being disrupted for the sake of short-term speculation and development

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profit. This image is overstated and perhaps even fictitious. The public seems to have forgotten the land boom of the '60s and early 70s, the rapid camp development along lakes and rivers prior to that, the uncontrolled subdivision, the big shifts in industrial ownership, the ski area developments, and so on. As a result of the energy crisis, stock market, and deep recession, there was a hiatus from 1974 until the late 70s, with intensified activity coming again in the middle '80s. It would be most useful to have an assessment of past patterns of changes **in** order to make a comparison with the current ones. We might **be** able then to **better** gauge the impacts. What about the tens of thousands of acres in the Adirondacks that were purchased for speculative development? What about the fact that general woodland prices in Central Vermont rose from \$10 to \$20 an acre in 1960 to \$80 to \$120 an acre by the late '60s, and in some cases, to \$200 to \$300 **per** acre? What were the effects, positive and negative? We do know that just the perception of change creates problems nowadays for the large landowners.

The activities of the most highly publicized agent of change, The Patten Corporation (which became active in the late 1960's in Vermont) have been documented. Published information estimates that in the Adirondacks, they purchased some 14,000 acres, and in Maine, some 64,000 acres. Compared to the 21,300,000 acres in the study area, this is an infinitesimal amount.

The Diamond land sales were certainly a media event. Regional shifts in ownership were often evident in past patterns; this one exemplified the international factors at work. The 986,000 acres in the four states amounts to about **4½%** of the study area. But after the first two years of sales efforts, only 44% has been sold, and of that, at least 80% will remain as commercial forest land use. During the late 70s, large transactions involving about 7% of the area occurred, with little of the publicity transactions receive today (except, of course, for the cases involving settlement of Indian land claims).

A significant factor in change is the border strategy of some Canadian firms. In 1988, some 108,000 acres in the St. John River area were sold by Boise to two Canadian companies, Kruger and Daquam Lumber; 238,000 acres of the Diamond lands in Maine went

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to another Canadian firm, Fraser Paper Ltd.; and there have been increasing inquiries in the past four years from numerous Canadian companies, all seriously evaluating U.S. forest properties. This increased interest occurs primarily because of the change in regulations in Canada on Crown lands, the shortfall in wood supply, and lack of large blocks near the border mills. Many of the Canadian companies have long-term acquisition strategies focusing on the study area. These are essentially comparable to the industrial transactions of the late '70s. And New York State is included in these patterns.

As to the amount of acres in large ownerships changing hands, I estimate that if 5% of the land in the study area is on the market in any year, that would be unusually high. The market simply is not large enough to absorb land at this high a rate, as the Diamond example has shown.

What actual land-use changes are occurring as a result of these ownership changes? If the Diamond sales are an example, then despite the predictions of widespread development, closure to public access, etc., it appears that the answer is, not much. The buyer of the New Hampshire/Vermont lands acted essentially as a wholesale distributor. Other buyers were also interested, mostly forest investors. Rancourt merely took a distributor's risk and profit. End use has not changed dramatically.

Rancourt sold 45,000 acres to the State of New Hampshire as a multiple use forest (some will go to the White Mountain National Forest). There were two other serious and qualified for-profit buyers who had the same objectives. Seven thousand acres, the uplands of Victory Bog in Vermont sold to The Nature Conservancy, will most likely become single-use preservation, even though it is commercial forest land. This is a use dictated by politics, not land characteristics.

On September 10, 1988, Rancourt auctioned 12,902 acres of scattered parcels ranging in size from 6 to 1,810 acres. Most buyers were local. Average parcel size was 239 acres at a price of \$319/acre, the going market price. Some land use changes will occur, but nothing as dramatic as TNC's single-use purchase, or the campground development Rancourt has in mind for 1,100 acres.

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Lassiter Properties, purchaser of Diamond's lands in New York, has both short-term and long-term objectives. Timberland is the core of their investment strategy. Thus, we do not know exactly how much of this property will go out of production. But we do know that, by virtue of easement restrictions, 40,000 acres now can only be used for forest production and recreation. We also know that the 15,000 acres acquired by New York State as part of the "forever wild" Adirondack Park will be out of commercial wood production forever. Many of the remaining lands **are** scattered holdings with much higher values than those of commercial forest land.

The results from **the** unique situation in the Nash Stream (N.H.) block in terms of forest product flow and recreational opportunities remain to be seen. There inevitably must be compromises based on the unique mix of ownership interests. The State of New Hampshire has the fee, the United States Government the "development rights", with various not-for-profit interest groups as advisors. If the New Hampshire State Employees Pension Fund had been the winning bidder in New Hampshire (it was a close second), it is still probable that some of the New Hampshire/Vermont 90,000 acres would have been sold for different uses because of its higher values. This does not necessarily mean that they will either **be** out of production forever, or abused. Evidence abounds from Connecticut, Massachusetts, and Southern New Hampshire that even in suburban locations commercial harvesting goes on. Market economics will work if allowed to.

If the desired vision of the northern forest is that of a productive and profitable, multiple-use forest, operated in the context of our free market system and traditional freedoms, rights, and responsibilities, then one of the primary questions is about change. Change is inevitable. How will the results of a market allocation system differ from those of a preservation system supported by government edict, or from a limited use system supported by government regulation and edict, based on aesthetics, and absent the noise, traffic, and the manufacturing infrastructure which comes with the forest products industry. Are changes in ownership or use better or worse than taking large blocks of productive commercial forest land out of production forever?

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Consider, for example, state lands within the Adirondack Park, or Vermont's purchase of 7000 acres of upland woodlands around Victory Bog, **formerly** some of Diamond's best **timberland** and certainly not a fragile, threatened, unique resource.

More important to actual or perceived **harmful** change is not the large landowners' behavior, but the actions of the plethora of smaller land speculators, forest liquidators, and subdividers operating principally on the small ownership tracts, plus a few notable operations in Maine that have liquidated the timber on large areas. These activities often occur along accessible roads and are highly visible, creating a publicity climate crying for protective legislation. It is interesting to note that most of the publicity is directed at the buyers of these properties rather than the sellers. However, that too may be changing if we look to the Adirondacks as a trend setter, where groups promoting protectionism now term the sale of land a "development", which therefore must be regulated.

Forces affecting large landowners - financial

The corporate view of timberland as a financial **asset**, as opposed to a mill resource, has been a force of change in some ownership patterns and modes of management. The "Wall Street factor" (including hedging against corporate raiders) resulted in innovations such as the master limited partnership of International Paper and the acquisition of industrial forest land by pooled pension funds. The pension fund phenomena, which was given impetus by the requirements of ERISA, has been viewed by some as an opportunity to source new, **long-term** capital for forest investment. Desirable investment characteristics for a pension fund—security, an inflation hedge, and returns not correlated with financial markets—combine with the funds' **long-term** outlook, to match well with the investment characteristics of forest land. Since fund managers are conservative by nature, they **normally** look for secure markets and highly credible management. Consequently, most pension fund properties are managed by industrial foresters or companies allied with the industry.

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With the exception of the International **Paper** Company lands, there have been none of these new forms of ownership in the northern forest. The U.S. pension fund market is focused on the South and West. But pricing in **those** regions being high compared to those in the North, there is now some interest in these lands. Most observers do not feel that the pension funds will replace traditional ownership in any large measure. This is a new market, and as such, the investors require fairly high cash yields on an annual basis. There are long-term questions as to whether a typical large forest holding in the northern forest can sustain these, when much of the forest needs investment for improvement and a build up of growing stock.

A small subset of financial influences is the international funds flow. Foreign investors (here not meaning Canadian Forest Products industry), principally British Pension Funds, have been investing in northern properties based on expectations for long-term returns from the forest products. This is a limited market but indicative of a variety of incentives and perceived benefits from owning forest land in the North. Their motivation is diversity, a hedge against their own currency, and a perception of very good values (i.e., U.S. land is inexpensive) with good potential for increasing returns from the forest by superior management. They are willing to invest and make improvements for the long term. The emotional context of "foreign ownership" seems to have faded in the face of the new fear word, "developer". Direct land purchases for long-term forest investment and management by foreigners has been a positive force in improving forests in the study, but still remains a minor phenomena. Such purchases for forest investment in the study area probably total no more than 800,000 acres in the 1980's. This estimate does not include stock investments by foreigners in industry, Diamond-type mergers and acquisitions, or similar forms of indirect ownership of forest land.

Financial concerns have influenced the industrial owners' **manage-**ment practices. These vary from company to company. In some cases capital is available for regeneration and improvement practices, while in others the financial focus is so short-term that some holdings are essentially liquidated to meet short-term performance criteria.

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Large non-industrial owners do not directly suffer from Wall Street decisions, but they do have their own financial criteria to meet. They are influenced to the extent that rates of return available in alternative investments are higher than those coming from the forest. Their property rights or options for management and use are influenced also by liquidation of large properties, media events, and regulatory actions spurred by such events as the Diamond land sales.

Operating economics

Basic economics, stumpage prices, yields, management and harvesting costs determine timberland values and returns for all large landowners. To the extent that regulations and laws affect transportation, energy, labor, liability insurance, and a multiplicity of other similar factors, the returns from the forest are lowered, and the justification for the continuing investment is diminished. The industrial owner has more of an opportunity to pass on these costs through the chain of manufacturing and retailing, even if the timberland is on a stand-alone profit center, since returns from the manufacturing process are much greater than the returns from the forest.

For the non-industrial owner, the situation is much more difficult. The past few years have seen a healthy increase in some stumpage prices. But many operating costs are rising faster than the mill-delivered prices. A classic example is associated with trucking weight limits. They can vary from town to town in Vermont. In New York State, they may severely limit low-value harvesting operations, which can serve as improvement cuts. Not only is running yield reduced, but the incentive, or even the ability to market low-grade material is reduced, thus limiting the improvement of future forests.

In Maine, workman's compensation insurers requested a 45% increase in rates. For woods operations, this meant a hike from the current tax on payroll of \$36 per \$100 to \$51 per \$100. A settlement was reached at \$43 per \$100. The State of Maine estimates that the number of woods workers has dropped from 6,000 in 1985 to an estimated 3,500 currently. Not coincidentally, workman's compensation

rates were only \$26 per \$100 in 1982. Forest production cannot occur without a viable labor force.

Another example is the cost of regulatory compliance. Several large landowners have estimated that 10% to 15% of **their** forest management payroll costs are devoted to forest land regulatory compliance, let alone costs all face complying with the ever increasing federal rules and regulations for general business activities.

If the cash flow and current returns from woodlands were better, demand for long-term forest land ownership would be more competitive, and those whose primary investment return comes from the forest products and recreational income would dominate the land markets. And the forest products industry would face less pressure for short-term results.

Taxation

"The power to tax is the power to destroy" is the net effect of the current tax policies as perceived by both classes of owners. Tax problems of concern included income taxes, estate taxes, fire protection taxes, and of course, property taxes. Here are a *few* examples as memory joggers.

Federal tax policy which eliminated the 60% exclusion of long-term capital gains and taxed them at ordinary rates was a devastating blow to those who had invested in forest land and management over the decades. The playing field for competition among various forms of real estate investment- -commercial vs. land-may be more level, but what has become annual changes in federal tax policies leads most prudent investors to believe that there is no such thing as policy stability. Therefore, a long-term outlook for something illiquid, such as a timber stand improvement practice, is a high risk. State tax policies make the problem worse. For example, the State of Maine did nothing to adjust for the radical change regarding the 60% exclusion of long-term gains. By that inaction, the State automatically increased the capital tax gains rate in Maine by 250%.

Because of changes in the federal tax, many large landowners whose primary asset is their land and timber held in a corporate

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forn, now face the tax rate of 56% on the gain from asset liquidations. Those who liquidated before the change in the tax code faced much lower levies. Changes like this are great motivators for large non-industrial landowners to liquidate their holdings.

Current income tax policies have certainly added to the owners' concerns. The combined Federal and State marginal tax rate in Maine is 35.2%. This is the highest income tax rate in the nation, along with Hawaii. New York State's is 6th highest at 34%, and even 'Taxachusetts' is remarkably lower than Maine's, as the Maine rate is approximately 11% higher than Massachusetts. Some industrial forest managers must contend with taxes in the range of 25 to 30% of total operating costs. These tax problems add to the forces for change by making landowners capture the higher values found in the lakes/river/road frontage and high aesthetic portions of their holdings, or by liquidation of timber capital.

Large private owners also face estate taxes **which** can quickly reach 50%. As Brad Wellman of Pingree Associates stated so well, "**The** 1986 tax act resulted in forcing private non-industrial land owners in the State of Maine, who own about 4,000,000 acres of land and who are, in general, 55 and older to take a very short-termed focus on their ownership objectives." [4]

The income, estate, and liquidation tax issues are also a concern for industry. In addition, there are other taxes that, by reducing annual cash flow, force a change to short-term thinking. Take, for instance, Maine's Commercial Forestry Excise Tax. The C.F.E.T, is an euphemism for higher real estate taxes for owners of parcels of land over 500 acres in size. It has singled out the large forest landowners for what many consider to be an unjust tax for fire suppression. Unfair since most forest fires in Maine occur outside the study area. This is perceived as a political tax which singles out a particular group that does not have voting power. Another example which raises concern is the varied proposals for a speculative land sales tax. again raises concerns.

In the State of New York, property taxes on large forest tracts raise a revenue of \$2 to \$5 per acre, and these amounts cannot be sustained by forest-based income. Fortunately, because of traditions in

New York, much of this land can be leased to private hunting and fishing groups, thus basically covering the costs of the taxes.

Contrast that property use for generating income with the situation in Maine, where private leases are the exception. The Maine Speaker of the House proposed legislation to disqualify from Maine's Tree Growth Tax Law, owners who made recreational leases. The use of the property tax as an instrument of social change, or to promote the interests of one special group, is a destabilizing factor.

Tax management is a continuing activity of all large, industrial concerns, especially in the forest industry. Maine's Tree Growth Tax Law has generally been regarded as being a good method of approaching taxation of forest lands, and the current use tax program in New Hampshire has worked well. Vermont's is a newer piece of legislation, with more administration required. The 480A Act in New York State, which allows current use taxation, is dearly the most difficult to administer and comply with. Some owners have entered the program, but not on a large scale. Its unpopularity testifies to its effectiveness. Large owners basically view it as forcing them to cede management control to the State for a \$1.50 to \$2.00 per acre tax savings, a deal for the most part they are unwilling to accept.

Regulations

The present regulatory environment has **been** with us since the late '60s, but it has intensified in the past decade. And there are no signs that the pace will slacken. The environmental movement of the '60s, which focused in a positive manner on many real problems, has continued to grow. It is now a large industry itself, with jobs, careers, and money at stake. It needs problems in order to be able to grow.

New Hampshire and Vermont have long had common sense forest laws and regulations, which, in general, are what any intelligent land owner would do as a minimum. The APA regulations in New York have increased the regulatory context in New York State dramatically. And in Maine, the Land Use Regulation Commission (LURE) has had its effects. Most of the large landowners in Maine feel that

the LURE regulations intend to encourage management practices which should be adopted anyway by a responsible land owner. In other words, the standards for erosion prevention, water quality, roads, and so forth, are basically reasonable. But the continuous extension of rules, extensive regulation, delays in permitting, administration by inexperienced or poorly trained persons, rezoning, rules which make little practical sense, are all discouraging to owners. In fact, most managers of industrial (forest land) feel their biggest operating problem is regulation.

Many large individual owners have found that the regulatory climate has been the last straw, forcing them to make the decision to sell. Regulatory problems have been a detriment to new investment in some cases. We have had several examples of investors choosing the Adirondacks over the unorganized towns in Maine because of perceptions of a more favorable regulatory environment!

Regulation is an extensive topic and deserves thorough consideration. Strict regulations are one problem, but instability is still worse to many managers. Most managers just want to know what the regulations are going to be, want them clear, fair, enforceable, and legal. Then they can plan, comply, and manage. And the professional manager has a **limited** voice, limited time, and limited money. There is often not enough of any of these for a reasoned discussion of each **proposed** extension of regulatory authority. The (act that industry and large landowners built roads which dramatically improved access to the woods, and then allowed free public use, has come back to haunt them and increase their problems. A harvesting operation is a messy event to which a suburban population reacts negatively, thereby spawning more regulation.

Societal pressures

As frustrating and expensive as compliance with some of the regulations are to all the landowners, the larger force affecting the attitudes of landowners in their long-term outlook comes from the trends in our society and court system. There is a perception amongst the large landowners that the basic rights of property owners

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are being ignored and will be increasingly so. Some feel it is a clash between recreational or single-purpose use and forest production, with the landowners paying the costs.

This pressure comes fundamentally from an urban society which has no direct connection to the land or the culture there. Even in the northern states, the legislatures are more and more influenced by people from urban or suburban backgrounds and locations. There is a joke that the Adirondacks have always been a fiefdom - only now it's the fiefdom of Manhattan, and Manhattan's surrogate, **the State**, as distinct from being a fiefdom of wealthy families. The Adirondacks are a special case because the New York Constitution mandates that all state land within the "Blue Line" will be wild forever. It is the current policy of New York to acquire as much as possible. Recently local political forces in the Adirondacks seeking to preserve the forest based economy and culture have become more vocal in their opposition. But these pressures **are** intense on the large landowners in that state.

These tensions **between** urban and rural desires is evident through much of our political history. The environmental movement, and point organizations like The Wilderness Society which are responsible for much of this pressure, have ardent spokespersons at the highest levels of government. This causes all large landowners to look over their shoulders. As B. T. Edwards, Executive Vice President of Champion International, has observed, industry is viewed as a bad guy in the East. But out West and down South, industry is a member of society, a welcome and important part of the community.

Large owners find it unsettling that the "conservative" U.S. Senator Rudman from New Hampshire, a State whose motto is "Live Free or Die", obtained passage of a federal bill that said, in essence, if the Rancourt group did not sell by a certain date the Nash Stream lands to parties named in the bill, the Justice Department was ordered to take the land by eminent domain. [5] This land was not a rare and fragile ecological unit, nor one that was threatened by massive destruction. Using the power of the Federal Government in a negotiation on land values between a private buyer and private seller certainly added to the perception of new threats to owners. Another

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similar example occurred with the Diamond lands in New York. There the Commissioner of Environmental Conservation, Thomas Jorling, told the owners' agents, LandVest, that, if the Diamonds lands on the market in New York are not sold to a party that the State approved, they would use the powers of eminent domain to control the property. [6]

In Maine, some feel that despite a positive intention, the Lakes Assessment program of LURC is a taking of property rights. A recent proposal regarding Moosehead Lake was seen by some as a public grab for keeping things the way they are. In Maine this year, about 400, or 20%, of the bills put through the legislature involve land-use issues, ownership problems and the critical concerns of individual property rights vs. the rights of society.

The forest situation is similar to that facing farmers in Vermont, as described by Martin Harris in the June, 1988, issue of *New England Farmer*. Mr. Harris notes, "What came out of these hearings was a Widespread lack of concern by the proponents [of land-use control] for the economic forces driving the urbanization of farmland (forest land) . . . and, in fact, a lack of respect for farmers." Mr. Harris sums up the irony of the situation; "What the urban population wants to prevent, in fact, is more of exactly what it has succeeded in creating: endless suburbia, strip development, scattered industrialization. But it has created these things because it has profited from their creation. Now it would say no more. Farmers and landowners, too, would say no more, if they had a choice . ." For the urban society which effectively prevented him from saving for retirement out of milk production earnings assured him he could at least sell his land, and now it doesn't even want to allow him to do that."

Public access and use of private lands is another evolving situation. In Maine, its prominence is recent, and is based on increased automobile access. The Maine woods were always open to the public, but the number that used them were few, and generally the hardier breed that was willing to travel by canoe or rough transport in the vast, almost unroaded stretches of northern Maine. Large landowners have opened up access to the forests in part because of environmental legislation eliminating the river drives. Better access combined with

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the traditional policy of public use has, in effect, created the problem. So, for example, Great Northern Paper Company learned that around 800 commercial bear baiting operations had sprung up on their property as a result of greatly improved access.

This is a sharp contrast to the Adirondacks region's history and sociology in terms of forest use. In Maine, public recreation is allowed on an estimated 94% of the lands in the study area, whereas in the Adirondacks public recreation is not permitted on at least 47% of the privately owned land and 63% of the land is posted to limit **the** type of use. (7) In Vermont, public recreation is permitted on about 78% of the land in the study area.

The public lacks an awareness of these benefits provided by private lands, and the large land owners have not mounted a vibrant public relations program to reverse these misperceptions. The result is backlash when change is proposed. A classic example occurred when one large landowner in Maine proposed to lease certain sections to private hunting groups. A huge outcry ensued. A recent opinion po)) in Maine declared that 75% of the sample felt that it was their right to have free use of forest land. But there has **been** progress, most would agree, in **the** public's acceptance of the modest fees and common **sense** rules such as those used by **the** North Maine Woods, a non-profit consortium of landowners managing recreational use on 2,800,000 acres under unified policies and plans.

Another societal pressure is the demand, once again, for forest practices laws. Proposals such as the Forest Practices Regulation Bill, sponsored by the Audubon **Society** in Maine, will accelerate the trend toward the sale of productive timberland. (8) If forest practices Acts are to be made law, they should be based on what needs to be achieved, not how to achieve it through cookbook specifications of silvicultural practices and wildlife management with punitive damages indicated for deviation from detailed rules.

Current proposals for massive takings by national special interest groups, such as the Wildemess Society'S proposal for a new National Park of up to 2,000,000 acres along the Washington County coast and Canadian border, as well as the 2.7 million acre 'Wildemess Reserve', are further examples of pressure. (9) A similar situation existed with

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proposals for federalization of the Allagash **River**. Fortunately, Maine resolved to deal with this problem itself, and most people now believe the solution was a positive one. Most landowners would agree that a federalization program would inalterably change the economics and the culture of the area.

New investors seeking investments based on forest production values recognize these forces. They are, therefore, more short-term oriented in their thinking. They generally have an initial time frame of five to ten years. They also hope to capture some of the higher values inherent in water frontage and special environments. Thus, most of these potential buyers are entering into forest land ownership situations with some change of use, such as limited development concepts, in mind. Present landowners, who are concerned with forest production, are insufficiently staffed to implement such programs. But they may be forced to capture some of the high current values as a means to offset increasing costs, and as a hedge against having values eroded by regulation or zoning change.

The consequences for landowners of the present trends seem to be:

1. A poor climate for long-term investments because of unstable tax policies;
2. The continuing erosion of property rights through regulation, zoning, legislation, and other use restrictions, without compensation;
3. Increased operating and management costs;
4. Increased risks in starting production and gaining approvals;
5. Potential of large forest liquidations by non-industrial owners;
6. Possible limitations on the ability to generate income from the leasing of recreational or hunting rights and other innovative

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forms of income generation tied to values of the forest other than that of timber production;

7. Large-scale social and economic disruption and dislocation if the manufacturing component cannot operate profitably (sourcing wood is part of this);
8. Higher values for small portions of their properties, which might be beneficial if they can be actualized.

Some owners in the area have indicated a willingness to transfer development rights, or to sell to the public higher and better use lands in exchange for lower annual costs, relief from regulatory pressure and protection of mill supplies and forest income. Most industry managers feel that a large land base is important for the protection of the mill operations. They look to the example of the many mills in the West that have been forced to shut down because of the federal timber sale policy. It's something to consider if a national park or a federal wilderness area were created in the North Woods.

Despite the list of problems, wood values have been rising recently and over a 40-year period as well. The values for large tracts of commercial forest land have also been rising, with the increases based largely on the increases in timber and forest product values. The ability of the forest products industry to survive in the northern forest is critical to the way of life and the economy. The large landowner situation in New York State is perhaps the exception. Industry there is located around the fringes of the park, and although industry owns a large portion of the lands, it is nowhere near the dominant force that it is in Maine and New Hampshire. With New York's financial and political muscle and ability to raise hundreds of millions of dollars from bond issues, it is readily conceivable that the State could acquire another million acres over the next twenty years.

Current large landowners remain in the region because of their investment in plant, and/or their low cost base in the land. But running yields in relation to current values are low. It takes a special

kind of owner!investor to make these types of investments over a long time. The lack of demand in the investment marketplace for the northern forest compared to that of the South and West in the investment marketplace renders this point obvious.

Knowledge about the **true** situation of the landowners is needed. A better understanding of the benefits that have been provided by these landowners over the past hundred years can form a basis for constructive proposals to provide stability and a positive climate while they carry on their financial, fiduciary, and land stewardship responsibilities. In other words, to preserve and improve the regions multiple-use forest requires a fair profit for the landowners who take the risks. Profits are the bedrock from which the stream of benefits can continue to flow to the public without significant additions to the public's costs, and without social and economic destabilization.

REFERENCES

1. See the *Forest Land Owner's* series Northeastern Forest Experiment Station Resource Bulletins NE78, NE90, NE102:

T. Birch, "Forest Land Owners of Maine - 1986". *Northeast Station USFS Research Bulletin NE 90*.

T. Birch, "Forest Land Owners of New York" - 1983. *Northeast Station USFS Research Bulletin NE 78*.

T. Birch & R. Widmann, "Forest Land Owners of Vermont - 1983". *Northeastern Forest Experiment Station, USFS Research Bulletin NE 102*.

2. My acreage estimate is derived from forest land acres in counties involved in study area (or parts of counties where applicable). The basic figures came from the *Forest Statistics* series published by the Northeastern Station Resource Bulletins NE71, NE81, NE87, NE88. The Tug Hill area and lands west of Routes 12 and 812 in New York were not included in my acreage estimate.

T. Frieswyck & A. Malley, *Forest Statistics for New Hampshire, 1973 & 1983*. Northeastern Station USFS Resource Bulletin, NE88.

T. Frieswyck & A. Malley, *Forest Statistics for Vermont 1973 & 1983*. Northeastern Station USFS Resource Bulletin, NE87.

T. Frieswyck & T. Considine, Jr., *Forest Statistics for New York - 1980*. Northeastern Station USFS Resource Bulletin, NE71.

D. Dickson & D. Powell, *Forest Statistics for Maine - 1971 & 1982*. Northeastern Station USFS Resource Bulletin, NE81.

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3. R. Slinn, "The Impact of Industry Restructuring on **Fiber** Procurement", *Journal of Forestry*, 87(Feb 89).
4. "Tax Reform: Impacts on Forestry", *Proceedings Governor's Forestry Conference*, Maine, April 15, 1987.
5. Senator Warren Rudman, New Hampshire's rider to Senate Interior Appropriation Bill HR 4867, June 1988.
6. Meeting between Commissioner Thomas Jorling, members of his staff, and LandVest representatives in Albany, **New** York, in June 1988.
7. See Reference 1.
8. LD 429, An Act Regarding State Forest Practice Laws, March 20, 1989 - initiated by the Maine Audubon Society.
9. The Wilderness Society, *A New Maine Woods Reserve*, (May 1989).

OTHER REFERENCES CONSULTED

- F. H. Armstrong, "Is Timber The Highest and Best Economic Use of Vermont Forest Properties". *Northern Journal of Applied Forestry*, 4, no.4 (Dec 87).
- "Financing Forestry Investments" *Workshop Proceedings May 10-11; 1982*. Sponsored by National Forest Products Association & Duke University.
- P. Hagenstein, *A Challenge for New England: Changes in Large Forest Land Holdings*. (The Fund for New England, 1988).
- M. Harris, "Marpies, Orps & Oinks: Saving Farmland?" *New England Farmer* (June, 1988).
- L. Irland, *Wildlands & Woodlots* (University Press of New England, 1982).
- J. O'Laughlin & P. Ellefson, "Strategies for Corporate Timberland Ownership & Management", *Journal of Forestry* 80(Dec. 1982).
- R. Labonta, et ai, *Forest for the Future - A Report on Maine's Forest*. Forests for the Future Program (Jan, 1988.).

CHANGING THE LANDOWNERS' ECONOMIC CONDITIONS: A NEW HAMPSHIRE/ VERMONT CASE STUDY OF CHAMPION INTERNATIONAL CORPORATION

Timberlands Staff

New York Region - Champion International

West Stewartstown, New Hampshire Deferiet, New York

Champion International, headquartered in Stamford, Connecticut, owns and manages approximately 333,000 acres in the Northeast Kingdom of New Hampshire and Vermont. These lands are essentially operated as a stand-alone profit center where their income is generated through sales to outside customers rather than by sales to Champion mills. This means that the income statement reflects a real situation in terms of sales, costs and profitability; there is no artificial transfer-price mechanism.

Thus, these lands are an ideal case study of the actual profitability of managing a timber business in New England and the results and pressures on any land owner, large or small, to seek ways of improving that profitability.

History

Role of strategic reserve

The New Hampshire/Vermont lands currently play a minor but strategically important role in furnishing four-foot spruce and fir pulpwood to Champion's 600-ton per day groundwood mill in Deferiet, New York, located over 320 haul miles to the southwest. In the mid seventies, 55,000 cords of spruce fir pulpwood, comprising about 50% of Deferiet's total needs, were shipped to Deferiet from these

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lands. Because of sharply rising freight rates, this volume was reduced to less than 3,000 cords by 1986. During this period Deferiet's needs were made up by wood purchased locally. However, the supply of wood laborers in northern New York has been reduced because of the significant expansion at Fort Drum and of the New York State Prison System. This shortage of labor in New York may again increase demand for New Hampshire/Vermont wood.

Champion also manages a large paper mill in Bucksport, Maine as well as a sawmill in Costigan, Maine. Both of these facilities are much closer than the Deferiet Mill, lying approximately 220 haul miles southeast of the New Hampshire/Vermont lands. Any significant increase in production at Bucksport, or change in Maine timber availability would necessitate the transportation of wood from the New Hampshire/Vermont lands to Maine.

Land tenure

Records indicate that these lands were owned by the Connecticut Valley Lumber Company **from** 1880 to 1926, at which time St. Regis Paper Company and International Paper Company purchased the holdings and formed the New Hampshire/Vermont Lumber Company. A common and undivided interest of 2/3 and 1/3 respectively was maintained until 1928 when St. Regis acquired International Papers share. The following year lands of the New Hampshire Stave and Heading Company were added, positioning this entire land base as a back-up supply for St. Regis' five mills in northern New York. In 1984 St. Regis was merged with Champion International.

The land

The lands are situated in two states, four counties and some 23 towns in the northern most part of New Hampshire and Vermont (Figure 1). They support an inventory of approximately 5 million cords of standing timber of which approximately 70% is hardwood

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(Table 1). It is interesting to note that 50% of the total standing volume is low value hardwood fiber. The remaining 30% of total growing stock is almost exclusively spruce and balsam fir. Significant for the management of these lands is that balsam fir is the major component of the total softwood volume and stem count. Over 1/3 of the fir stems are 8" d.b.h. and greater.

Topography is generally rolling to mountainous, ranging in elevations from 1,000 to 3,700 feet above sea level. Soil associations typical of this area vary greatly with topography from fertile valley soils, to the fertile upper and lower slopes, to thin mountain soils. Many of these soil associations support excellent forest growth rates.

The ownership surrounds or borders pristine mountain lakes, 35 ponds (0.00 acres or larger), and some 165 fishable trout streams. These water systems have complimented the recreational opportunities afforded to the general public for years in and around this land base. Four lakes in New Hampshire are used for hydropower and/or flood control. For the most part, these lands drain to the Connecticut River.

Climate

Situated along the 45th parallel, mean annual climatic conditions produce some 45 inches of rainfall, 165 inches of snowfall, and some 90 days free of frost. Near Himalayan conditions exist in some of the higher elevations, and deep winter snows often significantly hinder logging.

Harvesting

The lands have a well documented history of producing and supplying forest products, and providing employment opportunities and economic benefit to the local communities of northern New Hampshire, Vermont and Quebec. Records first reveal harvesting activity in an 1851 log drive on Nulhegan Stream. Logs were driven

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TABLE 1: NEW HAMPSHIRE/VERMONT OPERATIONS STANDING INVENTORY VOLUME AND ACRES BY COVER TYPE.

	Volume (Cords)	(%)	Cover Type (Acres)
HARDWOOD:			234,000
Fiber (low value>	2,500,000	50%	
Sawlogs and Veneer	<u>1,000,000</u>	<u>20%</u>	
Total	3,500,000	70%	
SOFTWOOD:			99,000
Fir	975,000	19%	
Spruce	495,000	10%	
Other	<u>30,000</u>	<u>1%</u>	
Total	1,500,000	30%	
TOTAL:	5,000,000	100%	333,000

down the Connecticut River all the way to Springfield, Massachusetts. The first significant logging occurred in the late 1870s when old growth white pine and spruce sawlogs were transported to the southern New England markets. To some extent, these lands supported the advent of larger-scale paper making of the 1900's.

As the furniture industry became established, old-growth yellow birch and sugar maple were selectively harvested to take advantage of the increasing demand for high quality hardwood lumber. Ethan Allen furniture was first manufactured in Beecher Falls, Vermont, just a short distance from Champion's West Stewartstown, New Hampshire headquarters and in close proximity to the New Hampshire/Vermont lands. Champion continues, to this day, to supply Ethan Allen.

Insignificant hardwood fiber markets existed until the early 1970's. From that time to the present, harvesting operations have helped supply the increased local demand for hardwood fiber. These markets continue to provide economic silvicultural opportunities and benefit the overall forestry program. In recent years, these lands have played an important role in supplying Canadian green dimension mills, situated mostly along the International Border.

The current situation

Forest management

Champion's forest management activities in New Hampshire/Vermont, like most of the Northeast, rely almost exclusively on natural regeneration. Regeneration established either from direct seed or from coppice root and stump sprouts is further enhanced by appropriate harvesting systems and techniques. In the case of New Hampshire/Vermont, these systems currently rely on conventional hand labor as harvesting mechanization in steep country is difficult.

These lands, for the most part, are managed on an even-aged basis using accepted standard shelterwood methods and, to a minor

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degree, clearcutting. Regulated or self-imposed resource buffers are maintained on an uneven-aged basis, and today represent about 8% of total acres managed.

Organizational structure

On the New Hampshire/Vermont district, Champion employs 13 people. Located on the headwaters of the Connecticut River and the boundary between New Hampshire and Vermont, this district is part of the New York Region, and the District Operations Manager reports directly to the New York Region General Manager headquartered in Deferiet, New York. The New York Region is one of three regions comprising the Northeastern Operation, reporting to a Vice President-General Manager who is responsible for 1.6 million acres from Minnesota to the Maine Coast.

The people

Champion employees live primarily in the four communtles of Colebrook, Pittsburg, and Stewartstown, New Hampshire and Canaan, Vermont. These towns collectively support a population of about 6,000. Traditionally those who come here from "away" are called "flatlanders" - until such time as they have three generations or more of ancestors in local cemeteries. Half of Champion's workforce is native, the rest are flatlanders. The staff consists of 10 professional foresters, a road construction and maintenance superintendent, and administrative staff. They are an integral part of this community and very active in community affairs, including participation in school boards, Town Moderator, Tax Collector, Deputy Fire Warden, zoning and planning boards, chamber of commerce, civic groups, church organizations and others.

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Contract labor force

Operations *are* supported by contractors who collectively operate **some** 250 pieces of heavy equipment used for logging, transportation, and road construction. These are successful businessmen who, as a whole, employ nearly 200 **people** of which about 50% are Canadians (1/3 visas, 2/3 bonded laborers). Although independent, these contractors and their employees have **been** a stable part of the business for years and are highly valued as some of the most productive and skillful crews in **the** United States.

In 1988, Champion directly **contributed** about \$11.5 million to the local economy, including payments for logging, trucking, road construction and maintenance, wages, taxes and consulting services. This contribution is multiplied by two or **three** fold as these earnings are **recycled** through the local economy. In addition, Champion wood resource provides employment to over 1,000 mill workers, excluding those pulp and paper mills.

Current markets

The New Hampshire/Vermont operations sell forest products to several mills in New Hampshire, Vermont, Maine and Quebec. Softwood sawlogs are sold to eight sawmills, most of which are green dimension mills. Of these, seven are located in Quebec. Most of these mills saw over 25MMBF production per year and employ approximately 30-50 workers each. Softwood pulpwood is sold to Boise in Rumford and to Intemational Paper in Jay, Maine and in lesser amounts to Champion'S own mill in Deferiet. Hardwood sawlogs are moved to 13 mills, eight of which are in the United States. These mills vary from 2-10MMBF production **per** year and from eight employees to secondary processing plants, including furniture processing, that employ several hundred. Ethan Allen's plant in Beecher Falls, Vermont employes about 500 people and had gross sales of about \$30 million in 1988. Champion sawlogs, some of which came

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from the New York lands, supported approximately 25% of their annual production in 1988. Hardwood fiber is sold in the form of roundwood to Boise in Rumford, Maine and James River in Berlin, New Hampshire, or as whole tree chips (unscreened) to two wood fired generating facilities in New Hampshire and one in Vermont.

In 1989, approximately 40 containers of high grade yellow birch veneer will be exported from our New Hampshire/Vermont lands to Taiwan through the Port of Montreal.

Markets are currently strong for quality sawlog products and spruce and fir pulpwood. Markets for low grade hardwoods however, have been less than adequate and severely restrict the amount of standing fiber which can be harvested annually. This reduced demand limits the application of silviculturally desirable harvests and, therefore, adversely affects current and future revenues.

Stumpage values

Stumpage values are the returns from sales revenue less basic delivered costs (Table 2). Generally, in comparing operations in Maine to New Hampshire/Vermont, we see comparable values for sawlogs, but lower ones in New Hampshire/Vermont for softwood and hardwood pulpwood including fuel chips.

Higher logging costs associated with **steep** terrain, environmental sensitivity to mountain soil conditions, longer skidding distances, as well as supply and demand, and higher transportation costs explain the principle elements of these differences.

Canadian market contributions

From this discussion it is clear that Champion relies heavily on Canadian mills to market its forest products. Roughly 85% of the New Hampshire/Vermont district's softwood sawlogs and 40% of the hardwood sawlogs are sold in Canada (approximately 75-80% of the manufactured lumber comes back into the United States). Sixty percent

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of the gross profits in New Hampshire/Vermont before allocated overhead are supported by these sales.

It should be noted that the recent softwood lumber tariff case found that the Canadian Federal and Provincial governments have subsidized their sawmills in order to maintain employment and infrastructure in their small communities.

Profits **and return** on investment

New Hampshire/Vermont had sales of \$13.8 million and profits of \$2.8 million before taxes in 1988 (Table 3). The return on sales of **20%** looks healthy but the return on investment tells another story. The book value of these lands is \$41.2 million or \$124/acre. **The before-tax** return is 6.8% on book value which is extremely low when compared to an ultra safe U. S. Treasury Bill, currently yielding 9.8%. Using the current corporate Federal tax rate of 34%, Champion's **after** tax income would be \$1.8 million which provides a return of 4.5%. At **current** inflation levels the adjusted after-tax return would become **negative**.

This analysis is based on cash accounting and does not consider the balance-sheet effect of increasing or **decreasing** asset values over time. Such balance sheet changes would not materially affect the way in which the New Hampshire/Vermont lands are viewed in terms of overall profitability.

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TABLE 2: COMPARISON OF STUMPAGE PRICES BETWEEN CHAMPION'S MAINE AND NEW HAMPSHIRE/VERMONT OPERATIONS FOR SELECT PRODUCTS.

Product	Maine	New Hampshire Vermont
Spruce/Fir Pulpwood	\$26/Cord	\$21/Cord
Other Softwood Pulpwood	\$16-18/Cord	\$8/Cord
Spruce/Fir Logs	\$85-100/MBF	\$80-95/MBF
Hardwood Fiber (includes chips)	\$9/Cord	\$6/Cord
Maple Sawlogs	\$1Q0-120/MBF	\$95-120/MBF
Birch Sawlogs	\$11D-130/MBF	\$12D-135/MBF

Source: Champion international field operation estimates
by region.

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TABLE 3: NEW HAMPSHIRE/VERMONT OPERATIONS 1988
INCOME STATEMENT.

	VOLUME (CORDS)	(\$000)	SICORD
SALES:			
Hardwood Logs	20,028	2,631	131.34
Hardwood Pulpwood	39,358	2,135	54.24
Softwood Logs	65,156	6,860	105.29
Softwood Pulpwood	18,816	1,380	73.34
Chips	<u>37,974</u>	<u>760</u>	<u>20.00</u>
TOTAL SALES	181,332	13,765	75.91
COST OF SALES:			
Hardwood Logs	20,028	1,257	62.78
Hardwood Pulpwood	39,358	1,888	47.98
Softwood Logs	65,156	4,160	63.85
Softwood Pulpwood	18,816	1,062	56.42
Chips	<u>37,974</u>	<u>561</u>	<u>14.78</u>
TOTAL COST OF SALES	181,332	8,929	49.24
GROSS PROFIT:			
Hardwood Logs	20,028	1,373	6857
Hardwood Pulpwood	39,358	246	6.26
Softwood Logs	65,156	2,700	41.44
Softwood Pulpwood	18,816	318	16.92
Chips	<u>37,974</u>	<u>198</u>	<u>5.22</u>
TOTAL GROSS PROFIT	181,332	4,836	26.67

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TABLE 3 (continued):

	VOLUME (CORDS)	(\$000)	\$/CORD
OPERATING EXPENSES:			
Roads	181,332	678	3.74
Procurement	181,332	624	3.44
Gen&Admin	<u>181,332</u>	<u>275</u>	<u>1.52</u>
SUBTOTAL	181,332	1,577	8.70
OTHER EXP (INC.>:			
Forest Mgt	181,332	141	0.78
Property Taxes	181,332	430	2.37
Severance Tax (NH)	71,670	122	1.70
Lease Income	<u>181,332</u>	<u>(250)</u>	<u>(1.38)</u>
SUBTOTAL	181,332	443	2.44
TOTAL NET EXPENSES:	<u>181,332</u>	<u>2,020</u>	<u>11.14</u>
PROFIT BEFORE TAXES:	<u>181,332</u>	<u>2,816</u>	<u>15.53</u>
LESS TAXES @ 34%	181,332	957	5.28
PROFIT AFTER TAX:	<u>181,332</u>	<u>1,859</u>	<u>10.25</u>

Book value vs. market value

Historical book value is not always a good guide for **judging** an investment, particularly when there are alternative uses by a corporation for the cash realized by a sale of the investment. The pertinent question is "what are the returns on market value?" If the returns are acceptable, then there is no point in disinvestment.

The procedures for estimating the market value of timberlands are expensive and time consuming. Fortunately for the analysis done in this paper, there is the purchase and subsequent partial resale by Rancourt Associates of **the** Diamond lands. Estimates show the value per acre on the 90,000 acres to be around \$264 (Table 4). Applied to the New Hampshire/Vermont operations 333,000 acres gives a market value of \$87.9 million. The before tax return would then become 3.2% with an after tax return of 2.1% which is dearly unsatisfactory.

Improving operational costs

The first place to look for improvement in these low returns is in realigning and enhancing the cost and income structure. This section deals with some major elements of cost, many of which would require political decision to change.

Transportation

In analyzing 1988 cut-and-haul contracts in New Hampshire/Vermont, transportation alone accounts for 30% (\$2.7 million) of the total gross cost of \$8.9 million (Table 3 - transportation not reported separately). While all of our hauling of wood is done by contractors, their cost increases are eventually passed on to Champion. In the forest products industry, we are seeing excessive insurance increases and associated problems as well as proposed legislation at the state and federal levels that is worrisome.

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Workers' Compensation is **the** most volatile of the transportation industry's costs. Recent data collected from a large Maine trucking company reflects a 40% increase in workers compensation rates from August 1985 to the present and **proposed** future increases of the same magnitude.

Liability **Fleet** Insurance costs have increased at a rate about equal to inflation. However, many insurance carriers are tightening driver requirements and a good driving record will, in **the** near future, be a prerequisite for fleet, health and workers' compensation insurance. This will ultimately **be** a positive benefit to society but will directly reduce the availability of transportation labor and will increase costs.

Fuel prices have remained relatively constant over the past several years. However, this is about to change. Of particular concern to this industry are current discussions of a \$.40 per gallon federal excise fuel tax to help solve budget problems. With logging trucks averaging about 5 miles per gallon, a proposed increase of this magnitude is obviously a concern. Vermont is proposing an \$.11 per gallon incremental fuel tax increase implemented over a **three** year period. It has passed the House and is now in the Senate.

Overweight violations and associated penalties are an additional concern. Champion encourages regulations that equitably and sensibly recognize axle configurations which **are** properly matched to maximum gross weights and supported by appropriate penalties. The American Pulpwood Association and the Northeast Loggers Association are sponsoring truck driver safety workshops which address the hazards of overloading.

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TABLE 4: ESTIMATED REALIZATION FROM THE DIAMOND INTERNATIONAL LAND DISPERSAL IN NEW HAMPSHIRE/VERMONT.

90,000Acres - New Hampshire/Vermont
67,000 Acres - New Hampshire
23,000 Acres - Vermont

Purchase by Rancourt Associates -
Nashua Based Land Development Company

Purchase Price - \$19MM - \$211/Acre

RESALE BY RANCOURT

U.S. Forest Service, Nature Conservancy and Society - Protection of New Hampshire forests purchase of Nash stream parcel:

45,000 Acres for \$12.75MM - \$283/Acre
Funded 60% by NH State land - Conservation Investment Program and 40% Federal Appropriation.

5,000 Acres within proclamation boundary White Mtn. National Forest - Managed by U.S.F.S.

40,000 acres underlying fee retained by State of NY - NH - U.S.F.S. negotiating terms of a conservation **easement** where U.S.F.S. regulates development rights - Conservation easement to be between \$85-100/Acre.

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TABLE 4 (continued)

AUCTIONED AT PUBUC LAND AUCTION

5,000 Acres in NH (23 parcels) \$3961 Acre

5,000 Acres in VT (27 parcels) \$2821 Acre

10,000 Acres Averaging \$3391 Acre

16,000 Acres (22 parcels) attempted to auction but did not sell.

8,000 Acres acquired for State of Vermont through the Nature Conservancy - Approximately \$2401 Acre.

11,000 Acres remainder - lands we believe Rancourt intended to keep.

TOTAL AVERAGE REAUZATION TO DATE

45,000 Acres at \$2831 Acre = \$12.8MM

10,000 Acres at 3391 Acre = 3.4MM

8,000 Acres at 2401 Acre = 1.9MM

63,000 Acres at 2871 Acre = 18.1MM

27,000 Acres at 2111 Acre = S.7MM

90,000 Acres at \$2641Acre = \$23.8MM

Recommendations:

1. Pennit higher maximum weights where appropriate, provided they are matched to proper axle configurations. Vennont should raise its gross pennitted weights of 90,000 lbs. to the same standards as those of Maine, New Hampshire or New York. An **extra** 10,000 lbs. of allowable weight represents about a \$5/cord savings, or \$550,000/year on the volume passing through Vennont.
2. The federal interstate system, which specifies superior construction standards for secondary roads, should pennit the 100,000 lbs. limit currently allowed on Route #2 from Gorham to Lancaster, N.H. On the federal Interstate system, the maximum allowable gross vehicle weight is only 80,000 lbs. In Maine on secondary roads with a six-axle combination, the maximum is 100,000 lbs.

Property and severance taxes

Property and severance taxes cost the New Hampshire/Vermont operation \$552,000 in 1988 or an average of \$1.66 per acre. It represents the highest operating cost and requires 20% of the profit before tax to offset (Table 5). This amounts to 30% on an after tax basis.

Champion presently takes advantage of the current **use** taxation rates on about 6% of its acreage in New Hampshire/Vermont and is seriously considering other options. However, there are some social concerns. For example, the ownership in Pittsburg, New Hampshire accounts for about 75% of that entire township (90,000 acres). Taking advantage of the current use assessment in this case would shift a tax burden of about \$90,000 from Champion to the families of the 590 registered voters in that community, with obvious **implications** for local taxes and unwanted political controversy. In New Hampshire, Champion has exercised this option only where it has had a minimal effect on the total tax base.

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Regarding the current-use program, Champion is specifically concerned about the requirements for long term, but frequently updated management plans, and that compliance with the plan is left to subjective interpretation. We are also concerned about property liens and stiff penalties associated with the program if the landowner is judged not to be in compliance.

Recommendations:

1. New Hampshire should take a similar approach to Vermont and implement state reimbursement to local taxing jurisdictions for tax revenues lost due to exemptions provided by current-use classification. The New York State Legislature has a similar proposal before its current 1989 session.
2. Vermont should modify the requirements of the current-use tax laws to make them more attractive to landowners. The withdrawal penalties pertaining to timberlands should provide the same flexibility that they afford the Vermont farmer.

Federal taxation

Previously the low after-tax book return on New Hampshire /Vermont lands (4.5%) was demonstrated. In part, this is the result of the elimination of the capital gains tax preference for timber harvesting profits. Capital gains tax treatment recognized the social concern for the health, maintenance and increase of forest lands in the United States. It also recognized the high risk, long-time frame and low returns inherent in the commercial management of forests. Prior to 1987, timber income was taxed at 28% while normal corporate profits were taxed at 46%. Currently, timber profits are **taxed** at 34%, the same rate as normal corporate profits. If timber were taxed at a capital gain rate equivalent to the prior to 1987 ratio, the new rate would be 21%. This would at least make forest investment somewhat

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more profitable and would compensate for the high risk, long-term characteristics of the business.

Favored tax treatment for the **timber** industry was attacked by many because of the perceived low-risk nature of the business. But, in fact, the losses in New England from fire, insect and floods have been severe. A 1938 hurricane resulted in severe windthrow on 29,000 acres. In the late 1970's and early 1980's, the spruce budworm caused the Maine operation to lose approximately 1.2 million cords of spruce/fir and the New Hampshire/Vermont forest to lose 200,000 cords in direct mortality and loss of growth. The loss to Champion was conservatively estimated at \$2 million in New Hampshire/Vermont alone. Since 1903, 10,000 acres have been lost to fire and in 1988, flash floods in the Indian Stream area of New Hampshire cost \$90,000 in road and bridge repairs.

Recommendations:

Restore the capital gains treatment for timber to compensate for the inherent high risk of a long-term investment.

Insurance, workmen's compensation and safety

Issues pertaining to workers' compensation, general liability and equipment insurance significantly affect the loggers roadside costs.

Woodworker safety performance, which is unacceptable in the Northeast, is the principle cause of high workers' compensation insurance costs. Champion in its Northeastern Operation is committed to improving this situation by developing programs to enhance safety awareness and compliance on Champion's operations. The State of Maine has experienced five logging-related fatalities in the first quarter of 1989, and, in the second half of 1988, a logging contractor's employee was killed on Champion land in Vermont.

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TABLE 5: 1988 MAJOR OPERATING AND CAPITAL COSTS FOR NEW HAMPSHIRE/VERMONT OPERATIONS.

CATEGORIES	UNITS	\$0	00%
Property and Severance Tax	333M Acres	552	27%
Salaries/Wages/Benefits	13 People	510	25%
Expense Roads	20 Miles	258	13%
Road Maintenance	205 Miles	347	17%
Other		<u>353</u>	<u>18%</u>
Total Expense		52,020	100%
Capital Roads	10 Miles	207	
Capital Bridges	3 Bridges	<u>89</u>	
Total Capital		\$296	

Workers' compensation represents between 8-10% of a loggers roadside cost with a one-point increase in the base compensation rate increasing that cost by about \$0.35 to \$0.40 per cord.

Recommendations:

1. The logging industry should implement effective woods worker safety programs that convincingly demonstrate to loggers the need, commitment, and opportunities to significantly reduce injuries.
2. The industry must become more active in voicing legitimate concerns relative to the intolerable and blatant abuses of the workers' compensation system.
3. Decreased exposure to injuries afforded by mechanized logging operations should be recognized and commensurate rates implemented.

Enhancing operating revenues

New markets

The creation of federal, state and local financial incentives designed to attract new markets would offer potential and significant improvement to forest land owners in northern New Hampshire/Vermont. It has been noted that Canada provides incentives and assistance in various forms to its forest products sector.

A new wood-fired generating facility has recently been proposed in Stewartstown, New Hampshire. Completion of this or a similar project would add 200,000 tons of demand for chips within a favorable trucking radius from Champion lands. This would increase useable fiber from those trees harvested plus allow the removal of additional low-quality trees, thus improving the quality of future saw logs. It would also reduce transportation costs on some of the chip

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volume presently sold to long-haul markets. The best estimate of improving the net return is \$410,000 through:

- Transportation savings - 20,000 cords shifted to Stewartstown market from long hauls. Savings of $\$2.50/\text{cd} = \$50,000$ (assumes no price improvement).
- Additional demand/price improvement on 90,000 cords @ $\$3.00/\text{cd} = \$270,000$.
- Additional volume sold: 15,000 cords @ $\$6/\text{cd} = \$90,000$.

The current market situation for veneer requires sorting for several markets. This sorting process is costly and results in less-than-optimum recovery of all potential veneer quality material. About 25% of all veneer logs are sold to an exporter. These logs are trucked to Montreal, shipped to the Orient where they are processed into veneer and then shipped back to the United States to be used in the manufacture of doors. By having a state-of-the art veneer mill in the local area, sorting and transportation costs would be reduced. Also, additional volumes would be recovered that currently cannot be economically separated. The best estimate of improving profits would be \$321,000/year through:

- Additional volume recovered as veneer - 200 MBF at the present differential between veneer and sawlog prices = \$75,000.
- Cost savings associated with sorting, tagging, waxing, and transporting - 1,200 MBF @ $\$30/\text{MBF} = \$36,000$.
- Price improvement or the ability of the customer to pay raw material costs due to efficiencies of technology at the mill and reduced cost of transportation to domestic versus foreign processing facility amount to 1,400 MBF @ $\$150/\text{MBF} = \$210,000$ net to the landowner.

Construction of a green-dimension softwood mill in the United States, in the vicinity of our New Hampshire/Vermont lands, would

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not represent significant savings. It is estimated that transportation savings would be offset by higher operating costs of a U.s. mill. Payroll paid in U.s. dollars, unemployment and liability insurance, energy and taxes are all higher in the United States. According to a large Canadian **softwood** log customer, Canadian mills enjoy government subsidies.

Public access/recreational values

Unlike the majority of Champion's 6.5 million acres of timberlands, the New Hampshire/Vermont forest is open to the general public. Some 60 to 65 gates strategically located to control access are closed for approximately two months during the mud season and on a case-by-case basis during other excessively wet times of the year. This is done to minimize damage to the approximately 550 miles of gravel roads and the 30 miles of new roads added each year.

We currently welcome public use of these lands including hunting, fishing, trapping, camping, canoeing, hiking, snow-mobiling, bee keeping, bird watching, and firewood cutting (ATVs not permitted). In addition there is a long established leasing program on small sections of the land with some 775 lease sites. **These** sites vary from developed leases, such as those on Maid Stone Lake, to remote hunting camp sites. Identifying the costs associated with free access is difficult, although there are the obvious costs of wear and tear on the road system, equipment vandalism, increased vulnerability to forest fires and hazardous waste dumping. We have estimated that the administrative costs associated with providing public access offsets more than half the income generated through the lease program.

In most other parts of the country, however, the trend is towards privatization of recreational values. Champion has hunting leases on approximately 2 million acres of its timberlands nationwide and is committed to increasing this amount both in the West and the South, as well as in New York State, where there has been a long standing policy to lease hunting rights. The history of the Company's lease

program generally shows that there is initial local resentment to leasing for recreational purposes, but the sense of ownership that the **lessee** develops reduces this resentment over time. In fact, local communities who are involved in the lease programs, particularly in the South, support leasing strongly. Certain states pay Champion to open sections of land for hunting.

Anyone who spends time on Champion's New Hampshire/Vermont lands recognizes that we have maintained a beautiful, well managed forest for generations. An initial plan for privatizing recreational values could consist of Champion designating 25% of its lands for private hunting leases. The balance of the land could be made available for public hunting with the State absorbing the costs and providing tax credits. Additional incentives for implementing quality wildlife management programs, which did not substantially hinder timber production, could also be established.

Impact of cost and revenue improvements

The impact of potential operating cost improvements and revenue enhancements shows a favorable result when applied to the 1988 earnings statement (Table 6). Given that net improvements of \$1.6 million could be realized, the 1988 before tax return and book value would increase from the current 6.8% to an adjusted rate of 10.8%. The after-tax return, based on a capital gains rate of 21% would be 8.5%. This compares to the 4.5% actual return in 1988, using an ordinary corporate tax rate of 34%

The probability of attaining this magnitude of improvements in the short term is unlikely. Therefore, the scenario described is **op-**timistic, bordering on being unrealistic and should be viewed as a best case situation.

Financial conclusion

An 85% after tax return on fixed assets is certainly an improvement over the current situation of 4.5%. But even in the unlikely event that local, state, and federal authorities recognize timberland owners' financial dilemma and do something to alliviate it, the question remains, is an 8.5% return on book assets a competitive rate that will slow the disinvestment process?

When comparing the return rate on book fixed assets to rates currently existing in the forest products industry, the New Hampshire/Vermont timberlands at 6.8% are shown to be a marginal investment (Table 7). A 10.8% rate would probably rank in the bottom third of profitable assets within any forest products company. On an after-tax basis with adjustments to improve profits, the return of 8.5% is more competitive, but this assumes that capital gains exclusions will be reinstated. This return is not directly comparable to the other after-tax returns.

Thus far, scrutiny of timber assets by Champion and other major companies in the Northeast has been relatively benign. New England lands have been managed for the long haul and factors other than profitability have been involved. Concern for local sensibilities, backup reserves for new mills, and stewardship of the land have also been deciding influences.

Because of environmental concerns, it is doubtful that any new paper mills will be built in New England unless there is a technological revolution in the manufacturing process. This partially eliminates the need for reserves of timber.

It is also doubtful that the James Goldsmiths of the world will disappear. The restructuring phenomenon which results in the sale or breakup of low-return assets finds an easy target in assets such as forestland with a low return but potentially high breakup value. The six generations of careful forest management may well become a pleasant memory.

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TABLE 6: **THE** IMPACT OF POTENTIAL COST AND REVENUE ENHANCEMENTS ON THE OVERALL FINANCIAL RETURNS OF THE NEW HAMPSHIRE/VERMONT OPERATIONS.

AREAS OF IMPROVEMENT	BASIS OF IMPROVEMENT	IMPACT \$000
Insurance	Hold workmen's compensation at current rates	0
Transportation	No increase in fuel taxes	0
	Vermont standards on weight the same as NY, NH - \$5/cd savings on 110,000 cds. shared with the hauler	275
Local Taxes	Savings from current use vs advalorem assessments	200
New Market	\$710,000 discounted by 30% Potential	500
Wildlife and Public Access Fees	250,000 acres @ \$1/acre	250
Hunting Leases	25% of land - 80,000 acres @ \$\$/acre	<u>400</u>
Total Improvements		\$1,625

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TABLE 6 <Continued)

	5000
Actual 1988 Operating Profit	<u>\$2,816</u>
Adjusted 1988 Profit	54,441
Less: Taxes @ 21% Capital Gains Rate	<u>933</u>
Profit After Tax	53,508

Return on Book Value (\$41.2 million):

Adjusted Before Tax	10.8%
Adjusted After Tax	8.5%

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TABLE 7: COMPARISON OF ACTUAL 1988 RETURNS ON BOOK FIXED ASSETS OF SELECT FOREST PRODUCTS COMPANIES.

COMPANY	BEFORE TAX (%)	AFTER TAX (%)
Boise	18.6	11.3
Weyerhaeuser	15.2	9.8
International Paper	14.6	9.2
Champion - Total	13.8	8.6
New Hampshire/Vermont (Actual)	6.8	4.5
New Hampshire/Vermont (Adjusted)	10.8	8.5*

* Assumes capital gains tax rate of 21% net. Companies listed above would also benefit but this improvement not shown.

SHARED OWNERSHIP OF FORESTLANDS: EXPERIENCE AND PROSPECTS

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Particularly since the mid-1960s, a rising number of claims have been made on America's forestlands, both in New England and nationwide. A wide variety of individuals and groups assert these claims. Recreationists express concern about denial of access and motorists complain of loss of scenic views due to timber harvest or land use changes. Owners of second homes have come to feel a proprietary interest in the management of timbered parcels adjoining their own. Persons and organizations concerned about fish and wildlife habitat and about water quality have strongly objected to management practices on both publicly and privately owned forestland. As Marion Clawson put it, "the **number** of people who neither own nor use...land now, nor propose to do so in the future, but who nevertheless assert an interest in its use, is rising sharply." [1]

This increase in concern by non-landowners has occurred in the context of intensified timber management on many forestlands, rising land prices, and increased pressure to convert land to non-forest uses. Most often it has been expressed by calls for increased governmental regulation to protect newly defined "public interests". [2,3] It has also resulted in a large number of fee-simple purchases of rural land, as persons with a new-found interest in rural land either purchase it outright for their own private use or seek its transfer to public ownership. [4] The availability, particularly during the late 1960s and the

1970s, of large amounts of federal money under the 1965 Land and Water Conservation Fund Act encouraged substantial purchases of rural land by federal, state and local park systems. Increasingly active have been private land conservancies--there are several hundred nationwide--which purchase land either for their own preserves, or for eventual resale to government agencies. [5]

Somewhat neglected in the attention paid to increased regulation of rural land and increased public and private purchase has been a third important way in which newly emerging demands on rural land might be fulfilled. This is shared ownership, a set of institutional arrangements through which ownership rights to land are divided among multiple parties. This can involve joint ownership of a single right (e.g. multiple ownership of timber cutting rights), temporary severing of one or more use rights (e.g. various forms of leases) or the permanent dedication of easements (e.g. conservation easements). It can also involve shared ownership of undivided interests in a single large parcel. These new forms of shared ownership often involve new legal arrangements, for example limited partnerships, land conservancies, and community land trusts. They also can involve new sorts of arrangements among government agencies or between government agencies and private entities.

This paper reviews the principal varieties of shared ownership of rural land, with particular attention to those which are relevant to large tracts of timberland. It also poses some of the important public policy issues which these new arrangements raise.

Legal and customary bases for shared ownership

In legal theory, as well as in land economics, the ownership of land is seen as entitling the owner to a "bundle of rights" including, among others, rights to possession and use, to sell, devise, lease, mortgage, subdivide, and to grant easements. ¹⁶¹ Fee-simple ownership, the dominant ownership form in the U.S. includes a very broad range of rights. However, even the owner of a fee-simple interest is limited by the government's reservation of several important rights,

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including the right to tax, the right to take land under eminent domain, and the right to regulate land use under **the** police power.

It is not unusual for fee-simple title to land to be held by multiple owners, either through partnerships, trusts and estates, and corporate entities. There is also a long history of severing certain rights from the fee-simple bundle, which are then held by others and sometimes resold. Perhaps the most common severed rights are easements, which allow others to traverse the property (access **easements**) or allow public or private authorities to build roads, power lines, and pipelines across the property. Water rights may also be severed from land, and are sometimes resold to third parties. Perhaps the most active market for severed rights is for mineral rights, including oil, gas and coal. The existence of this multiplicity of severed rights provides a precedent for more ambitious forms of ownership sharing, in which multiple entities share fee-simple ownership or divide the bundle of rights according to their own desires.

New forms of rural landownership have borrowed several of the legal procedures of earlier types of rights sharing or rights severance. For example, conservation easements are recorded and exercised in much the same way as access or utility easements. But new landownership arrangements have also been influenced by new ideas in capital markets, most of them fully developed only in the past two decades. One is the limited partnership, which has become a very important shared-ownership arrangement for a variety of capital assets, from apartment buildings to airliners and rail cars. Another is the condominium form of ownership, which offers the advantages of pooled ownership, but allows the owner to claim the security and tax benefits of individual title. Both of these concepts have already been applied to rural land ownership.

Still other financial market concepts have yet to be widely **applied**. For example, the participating mortgage allows the owner of a fixed income security instrument to share in the equity value or profits of an enterprise. In the case of a shopping center, for example, the holder of a participating mortgage would be entitled to a fixed monthly payment plus a percentage of rental income.

American financial markets have very rapidly become quite sophisticated about new arrangements for shared ownership of capital assets. Condominium ownership interests in apartment units, considered a very strange form of ownership only two decades ago, **are** now handled by virtually **every** real estate broker in the country. Limited partnerships have much greater liquidity than they did even five years ago, and a few of the largest ones are sold on the New York Stock Exchange. Irland and Howard note the increasing "**secu-**ritization" of asset ownership, including timberland ownership, as assets are repackaged by various financial intermediaries in order to appeal to wider markets. [7] The combination of new financial sophistication, and a long tradition within real estate law of severing some of the "bundle of rights" is setting the stage, we believe, for consideration of new forms of shared ownership of rural land. The remainder of this paper analyzes experience to date with these new ownership forms, and points out some of the important issues which they raise.

Forms of shared ownership

Conservation easements

One of the most common forms of shared ownership is the dedication to a second party of a conservation easement. The term "scenic easement" is also widely used, although it appears to be losing linguistic ground. Such easements may involve extinguishing of development rights or may limit land to a specified use, such as pasture or timber. A national survey of government and non-profit organizations' easement programs, taken in 1985, identified 1.77 million acres of land that were subject to conservation easements. Some 1.23 million acres were subject to conservation easements held by the federal government, 205,000 acres had easements held by non-federal government units, and 336,000 acres had easements held by non-profit entities. [8] About three-quarters of the easements had been purchased by the holders, the rest had **been** donated. A 1989 survey identified 743 land trusts nationwide, and noted that over seventy percent accept conservation easements. [9]

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A very wide variety of organizations hold such easements. Federal holders of conservation easements included the National Park Service, Fish and Wildlife Service, Forest Service, Corps of Engineers, Bureau of Land Management and Bureau of Reclamation. The 1985 survey also found 50 state agencies holding conservation easements in 32 states, 156 local governments, five national conservation organizations, and 213 local and regional land trusts and conservancies. (10]

Conservation easements originated as a means by which government could protect scenic values at a cost lower than that of fee-simple acquisition, and without unnecessarily disrupting agricultural **uses** of the land. For example, during the 1930s, the federal government acquired easements along the routes of the Blue Ridge Parkway and the Natchez Trace. During the 1950s, the State of Wisconsin made extensive use of scenic easements along the Great River Road, which runs along the Mississippi River. (11) The federal government has more recently used easements in the Wild and Scenic Rivers program and in the creation of the Sawtooth National Recreation Area.

Easements have also been widely used by private conservation groups, again partly to save money (they are often acquired by donation or bargain sale), and partly because continued agricultural or forestry use of the land is actually considered beneficial to its scenic quality. Increasingly, easements have been used by non-profit conservancies as part of "limited development" projects. In this concept, a developer will donate to a non-profit entity an easement over portions of a property under development. This provides a tax deduction for the developer, and through permanent holding of an easement by the conservancy, assures that important natural values on the developed site (stream corridors or wetlands, for example) will be protected.

New Hampshire's Lake Chocorua offers an interesting example of how restrictions on development can be collectively self-imposed by a group of property owners, benefitting them and the public at large. (12) The lake had long been a **popular** site for summer homes, with most of the shoreline held by **about** 55 families. During the late 1960s, market conditions made it feasible to develop homes at much higher densities around the lake, and owners began to worry that

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some among their number would subdivide property, affecting scenic views and contributing to pollution of the water. In response, two families which together controlled 60 percent of the shoreline organized the property owners to support a plan for the lake's future development. After negotiations, nearly all landowners agreed to voluntarily restrict development to lots a minimum of eight acres in size, limit timber cutting, and prohibit structures higher than the surrounding forest cover. The restrictions are enforceable through covenants deposited with the Chocorua Lake Conservation Foundation. In order to encourage all owners to join the pact, the original land-owning group deposited its covenants in escrow, to be released and recorded when other key owners executed their agreements.

Transferrable development rights

A mirror image of the conservation easement is the transferrable development right (TDR). This is a legal device which permits all or part of the legal permitted development potential to be transferred off-site to some other property. There has been a modest amount of experimentation with the TDR technique, both in protecting historic structures in urban areas and in reducing the development of farmland. The TDR technique might be used to protect large forestland holdings, although we are unaware of any specific instance in which it has been tried. Early in the historical development of TDR, John Costonis proposed a rights transfer from a natural marine area in Puerto Rico, Phosphorescent Bay. "If the [TDR] scheme could protect the Phosphorescent Bay," wrote Costonis, "couldn't it also safeguard woodlands, nature preserves, estuaries, and other environmental resources that are similarly threatened?" [13] Recently, TDRs have been discussed as a possible means for protecting the shoreline of Maine's Moosehead Lake. Development might be concentrated on certain parts of the shoreline and development rights transferred away from properties elsewhere on the lakeshore.

Prerequisites for using TDR to protect forestland are that there be an active demand for development both in the area to be preserved and in the area that will receive the development rights. Also

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necessary are regulatory controls on the receiving are that restrict development to below the present level of market demand. Only when these requirements are present--and they rarely are in rural areas--will **there** be a viable market for the development rights.

Pooled management of timber

A number of arrangements exist through which groups of landowners might theoretically manage their timber as a common pool. They are infrequently employed in New England, where the large timberland owners do not need them, and the small owners are too diverse and independent to accept joint decisionmaking about investment and harvest scheduling. A number of timber companies have created what are in effect management pools of private properties through various "Landowner Assistance" or "Tree Fann Family" programs. Under these arrangements, private landowners within a reasonable hauling radius of a firm's mill are given management advice, free or **at-cost** seedlings, and access to equipment. In return, they may agree to give the firm the right-of-first-refusal when they decide to harvest. Often the firm makes **no** formal demand on the owner, but assumes that it will be considered when the owner is ready to harvest. Sometimes consulting foresters or land management companies make *ad hoc* arrangements with groups of owners whose properties lie within a reasonable distance of one another to offer joint timber sales or to undertake replanting or timber stand improvement.

Limited partnerships in timberland

Limited partnerships, which may involve a handful of investors or many thousands, offer investors a way to own timberland without becoming personally involved in management. Other benefits are the ability to control a larger amount of land than an individual investor could afford, the opportunity for diversification, and the possibility of hiring higher quality professional managers. [14] Limited partnerships also offer somewhat greater liquidity than does individual or

pooled ownership of individual timber tracts, particularly when the number of partnership units is **large** and where national brokerage firms or banks are involved in forming the partnership and maintain a secondary market for partnership interests.

Limited partnerships can be classified as private placements (generally partnerships having fewer than 35 investors) and public offerings. (15) All are based on the concept that a general partner is responsible for management and is liable for debts incurred by the partnership, while the limited partners are liable only to the extent of their original investment. There is a wide range in the sizes and sponsorships of timberland partnerships, including some put together for small **groups** of high income investors, partnerships sold nationwide by syndicators or brokerage firms, and publicly traded partnerships that represent spin-offs of timber company landholdings. (16)

Howard and Lacy estimated that in 1986, at least 9.1 million acres of forestland was held by limited partnerships, with over 80 percent represented by public offerings of four large timber companies. (17) (It is likely however that some small private offerings may have been overlooked in their survey.) At least two insurance companies have marketed timber partnerships to pension funds, emphasizing the purchase of immature timber, to be sold 10 to 20 years later at maturity. (18) It appears that an important difference among various partnerships is whether they intend to manage the land over one or more harvest and regeneration cycles, or simply serve as the passive owner of standing timber.

The economic attractiveness of timberland limited partnerships, like all timber investments, was somewhat diminished by the Tax Reform Act of 1987, which removed capital gains treatment of timber harvest revenues and limited the deductibility of losses from passive investments. However, the attractiveness of timber as an inflation hedge remains, as well as its benefits as a means of portfolio diversification.

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Maine's common and undivided lots

The majority of the 110 unorganized townships in northern Maine are owned as "common and undivided lots." These are the result of the acquisition during the early 1800's of entire townships by small groups of investors. Over the years, as interests were conveyed to heirs, the common and undivided interests became increasingly fragmented. All owners-regardless of the size of their fractional interest-must be in agreement for any management activity to take place on the land. Several large land management companies in Maine specialize in managing such properties, securing a management agreement from the multiple owners. One observer notes that the trend among government, individuals and private owners is to privatize these interests through swaps, trades and divisions. However, most common and undivided lots are held by families-some have 20, 30 or more owners-and many families are content with the current arrangement. [19]

Timber leases

Another form of shared ownership of timber producing land is through long term timber **leases**. These appear to be most common in the southeastern states. Meyer, Klemperer and Siegel found that in 12 states in the southern U.S., the amount of land under timber lease had fallen from 6.0 million acres in 1967 to 4.7 million acres in 1984. [20] However, land subject to landowner assistance programs, negligible in 1967, had risen to 4.2 million acres in 1984. The authors noted an apparent preference within the timber industry for making new procurement arrangements under landowner assistance programs rather than long-term leases or contracts. **The** decline in timberland leasing was attributed to landowner concerns over the length of contracts, inflation fears, and tax problems and to forest products firms' difficulties with broken contracts and disputes **with** the IRS over expensing of contract payments. The landowner assistance programs seem to offer both landowners and firms many of the

advantages of leasing, without incurring inflexible obligations on either side.

Hunting and recreational leases

The leasing of hunting rights on timberland has long been practiced by large timber companies, mainly as a way of controlling access, rather than for revenue purposes. However, in a few parts of the country, notably parts of Texas and Maryland's Eastern Shore, revenues from hunting rights has been a lucrative sideline for landowners. Hunting leases appear to be fairly uncommon in New England, although International Paper Company indicates that it has three leases for hunting, fishing and recreational access to its lands in Maine over an area totalling 51,000 acres. (21]

The limitation of free hunting access as a result of increased posting of private land has led to increased use of hunting leases, particularly in the Southeast, and to significant increases in the cost of such leases. A 1985 survey of 187 firms managing 20 million acres of forestland in the South reported that "the amount of income that can be derived by selling access to wildlife is substantial and increasing." (22] He found an average payment of \$1.38 per acre on 6.3 million acres under lease.

Leasing of fishing rights is not extensively practiced in the U.S., mainly because most streams are publicly owned. In England and Scotland, however, where streamside property owners can appropriate the rights to fishing, there is a lucrative market for fishing rights and fishing leases. Anderson reports that landowners in the Gallatin and Yellowstone Valleys of Montana are leasing fishing access to streams that occur entirely on private land. (23] The revenue potential from this use is giving them an incentive to make investments to improve fish habitat.

There may be significant economies of scale in offering recreational leases, both in marketing and administering the leases and because large contiguous areas may be relatively more attractive to lessees. The North Maine Woods Association is an organization of 18 private landowners (mainly corporations and land management companies)

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which collectively Own or manage 2.5 million acres of forestland in northernmost Maine. (24,25,26,27J Since 1974, the Association has controlled access to this land, selling permits that allow use of the land for hunting, fishing and camping. Initially, fees were set low so as to avoid public relations problems with visitors long accustomed to free access. By 1983, user fees had risen to \$294,000. This is still not sufficient to fully compensate owners for the costs of providing access <the Association's yearly deficit is about \$10,(00) but owners feel that group management offers them help in controlling liability and vandalism, as well as allOWing them public relations benefits.

The State of Maine, which owns about 5% percent of the area managed by the Association, is also represented, but does not share in the deficit. North Maine Woods has made improvements in facilities for visitors, prOViding 236 individual campSites and offering directions and help in spreading out usage. The Association has a policy of not advertising recreational use of the area under management, **because** most of the private owners view recreational use as a source of public relations incidental to the timber business, rather than as a source of profit. (28]

Pooled recreational development

One of the most notable features of the rural land market is the tendency for large parcels to sell for lower prices per acre than do smaller parcels. (29J As a result, landowners catering to the recreational development market have found it quite profitable to divide larger parcels into the 1 to 40 **acre** tracts most in demand by those planning to erect a second home or to make other recreational use of the property.

A small number of rural recreationists have discovered that they can appropriate these profits from land division by making a group purchase of a large tract, then dividing it among themselves. A variant of this practice is to retain that portion of the tract on which no development is intended as an undivided whole. This allows participants to share in what Whitney calls "the satisfaction of being the owner of a large private kingdom that is protected from public

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intrusion." [30] One West Virginia group, for example, manages a tract of 3,000 acres of forestland for recreational purposes. [31] The Chestnut Woods Association, formed in the early 1970s, is a partnership among 14 families, many from the Washington, D.C. area. Each participant owns a share in the association, which entitles them to exclusive use of a **12-acre** tract, with improvements permitted to only 4 of those acres and no further subdivision possible. The remaining 2,784 acres are held in common, and is available in its entirety for hunting and other recreational pursuits by the members.

Another arrangement involving individual ownership of small homesite parcels and group ownership of extensive common lands was begun in 1980 near Mountain View, Missouri. The 600 acre tract was acquired for the specific purpose of protecting land bordering on the Ozark National Scenic Waterways. [32]

In 1980 an agreement was recorded in the Town of Tinmouth, Rutland County, Vermont, covering the common management of a 992 acre tract of forest and farmland as the "Tinmouth Mountain Land Condominium." Four individuals agreed to divide four "houelots" from the larger parcel, then to manage the remainder as a common area. A conservation easement was granted to the Vermont Land Trust, but the houelot owners retained the right to "unlimited use and enjoyment of the common area." Owners of houelots also agreed to give the others a 60-day right of first refusal in the event of sale.

Perkins describes a 17,06D-acre forestland limited partnership in Maine that combines timber management with future recreational use of the property. [33] Organized by a Boston-based investment advisor, it consists of himself as general partner and more than a dozen clients as limited partners. The land, located in the township of Attean, contains a large number of scenic lakes and ponds. Before the land was sold to the partnership, the previous owner donated conservation easements on part of it to a non-profit entity, the Forest Protection Society of Maine. There were also restrictions placed on timber management practices. The limited partnership has put into effect a forest management plan, but also has retained the right to design a limited development on that land not subject to easement.

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Government-private land sharing

Government agencies, both state and federal, are involved in a variety of land sharing arrangements with private parties. Some are a consequence of longstanding government practices of allowing neighboring ranchers use adjoining federal lands, others are residual private interests based on old land transactions, still others are the consequence of very recent attempts to accommodate new types of private sector and governmental interests.

Grazing leases on federal lands, mainly in the Western states, have been very common since passage of the Taylor Grazing Act of 1934. The initial distribution of grazing leases favored those already owning land in the vicinity and tended to legalize longstanding practice. [34] Because the leases were renewable and transferrable, and because grazing fees have been below their true market value, the right of access to federal land has become an important part of the property rights of many western ranches, and its value is capitalized in their sale prices. There has been constant controversy between ranchers, the Bureau of Land Management, and environmental groups over the degree to which these grazing leases cause overgrazing and a diversion of public resources to private advantage.

Special Use Permits are used by the U.S. Forest Service to allow for certain long-term private uses (not including timber harvest) on the National Forests. Many of New England's major ski areas operate under special use permits on National Forest land; so do the huts and lodges operated by the Appalachian Mountain Club.

An unusual federal-private arrangement for shared management of a large timberland involves the U.S. Forest Service and a large timber company, which cooperatively manage more than 100,000 acres near Shelton, Washington. The "cooperative sustained yield agreement" began in 1946, under provisions of a 1944 federal law. The law, which was intended to maintain local employment in areas where private timber was depleted, allowed private owners to contribute cutover land and reforest it, in exchange for access to sufficient federal timber to maintain harvest levels. The intent was that the private land would eventually return to production when the federal

land had **been** harvested. Timber management on both private and federal land would be subject to a joint planning process.

The 100-year joint management agreement between the Forest Service and the Washington company was the only one undertaken under the 1944 law. The company's access to federal timber has enabled its nearby mill to continue in operation. However, changing economic conditions and new environmental demands have put strains on the relationship. The Forest Service has come under pressure to withdraw land from timber production for environmental reasons; the company chafes under federal restrictions that prevent it from selling logs from company lands within the management unit to Japan, where they would bring much higher prices than they do in domestic markets. The agreement illustrates some of the potential problems with very long term agreements between parties whose economic or political objectives may be subject to change.

Both federal and state governments have acquired land on which timber or other rights have been reserved by the seller. Vermont, for example, owns a number of tracts on which timber cutting rights have been reserved. One 1958 transaction, for example, which involved purchase of 6409 acres from a timber company, allowed the company the perpetual right to harvest any timber over six inches in diameter. (35] A 1985 federal transaction, also in Vermont, involved the purchase of 435 acres (for \$95,000) of International Paper Company land for addition to the Appalachian National Scenic Trail. Although the federal government acquired the fee title to the land, International Paper reserved the right to harvest timber. In order to protect the scenic quality of the land, a 100 buffer around the Trail was to be left unharvested, and all harvest must be done on an individual tree or group **selection** basis. (36]

In other situations, the federal government has participated in sale-and-lease-back transactions that have acquired scenic lands, extinguished development rights, then leased them for limited rural use to private parties. This was done on the Blue Ridge Parkway, where the National Park Service acquired 177 scenic easements on 1,468 acres, incorporated them in the park, then allowed neighboring farmers to graze animals or raise crops in exchange for a small permit

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fee. This relieved the Park Service of the cost of managing the land in the desired grassland state. (37]

It is not uncommon for state agencies to be holders of conservation easements on private lands, particularly where they adjoin state-owned recreational lands. It is possible, however, for states to acquire more extensive rights of public use of private land, either by lease or by purchase. For example, in Florida there is an extensive state program of leasing hunting rights on private forestland. In New Hampshire, private lands open to public recreation without entrance fee are **given** an additional 20 percent reduction in **property** taxes, over and above the benefits of use-value assessment. Vermont has acquired hunting rights on some 5,500 acres of private land.

A recent land sharing arrangement recorded in Franklin County, New York illustrates how more extensive and permanent public use rights might be acquired. (38] Paul Smith's College of Arts and Sciences owns of 623 acres of forestland adjoining the State of New York's Adirondack Forest Preserve. The college has long used the land for educational purposes, particularly for forestry and ecology courses. In consideration of payment of \$81,000, the college conveyed to the state a permanent easement allowing public camping, hiking and canoeing on the property. The college also agreed to limit future building of structures and to prepare a forest management plan that is subject to state approval. If the property is ever to be resold, the state **will** have the right of purchase at appraised value. Elsewhere within the Adirondack Forest Preserve, an access easement on 35,000 acres may soon be transferred from The Nature Conservancy to the State of New York.

Intergovernmental sharing arrangements

A pending transaction in the Nash Stream area of New Hampshire provides an example of innovative federal-state cooperation in protecting a large block of forestland. The **40,000-acre** tract was part of a larger piece of property that had been placed on the market by Diamond International Corporation, a timber company. A development corporation bought the larger property, causing great concern

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among the New England environmental community. In 1989 an agreement was struck between the developer, the U.S. Forest Service and the State of New Hampshire whereby the state would purchase Nash Stream for \$13 million, then execute an easement in favor of the Forest Service (which owns the adjoining White Mountain National Forest) prohibiting sale, subdivision or lease. Two private groups, the Nature Conservancy and the Society for the Protection of New Hampshire Forests, played a critical role in putting the deal together and arranging temporary financing.

The easement would allow the state of New Hampshire to manage timber, but would limit clearcuts to 30 acres each. The Federal government is to pay the State \$4 million for the easement. As of this writing, the State has purchased the land but the easement has not yet been recorded.

Community land trusts

The community land trust is a **very** interesting form of shared ownership, developed only since the 1960s. [39,40,41] In its classic **form**, title to land is **vested** in a non-profit community corporation, but the land is leased, generally for a long period of time, to an individual or individuals. The income from using the land is shared under specified arrangements, between the trust and the **lessee**. Often leases are transferrable to the landowner's heirs. Improvements made to the land are property of the lessee, but any increment in land value due either to inflation or simply changing circumstance, such as a new road or greater demand, accrue to the community trust. A major purpose of the community land trust is to reduce or eliminate land speculation by making it unprofitable. (42)

A variant of the land-trust approach is the "shared equity deed." This is an agreement, which can be executed by a land trust or other conservation-minded landowner (grantor), to sell a property at below market value to a buyer (grantee) who intends to use it for farm or forest use. If the property is ever resold, the grantee is entitled to his purchase price, plus the value of any improvement, plus a **specified** proportion of the appreciation over the fair market value at the time

the grant was made. This technique was utilized by the Vermont Land Trust in a 1988 transaction in Charlotte, Vermont. It enabled a family which intended to farm a 101 acre tract to acquire it for \$500/acre rather than the fair market value of \$1,200/acre, subject to a 50-50 split with the Land Trust of any appreciation **realized** upon resale. [43]

Land trusts **offer** a significant opportunity for both managing development and for making land available for agriculture, forestry or housing at affordable prices. They present difficult problems, however, in valuing improvements made to the land, particularly over long periods of time, and determining how land value appreciation can equitably be shared between the **lessee** and the trust.

Issues in ownership sharing

Marketability issues

Because land markets have relatively little experience with most forms of shared ownership rights, their marketability is quite problematic. Several issues are involved. First, **if** fee simple title is shared among several parties, the value of a proportional share may be hard to determine. It is not necessarily true that a 1/10 interest in a 100 acre tract of forestland represents 1/10 the fair market value of the whole. There may be a proportional income claim (e.g. a limited partnership share is entitled to a proportional share of timber harvest revenues) but owners of minority interests do not have power to make or perhaps even to influence management decisions.

Second, many partial rights in land are not resold on markets <e.g. scenic easements> or are only infrequently traded (e.g. hunting rights). Many are held by nonprofit entities or by governments, which participate in land markets as buyers, but rarely as sellers. This absence of frequent, profit-motivated transactions makes partial rights very difficult to appraise. The absence of regular markets also makes partial interests quite difficult for the owner to liquidate, particularly **if** cash is needed immediately.

Third, in the absence of reliable appraisals and regular markets, banks and other lending institutions will be reluctant to accept partial rights as loan collateral.

Many of these market imperfections could be overcome as market participants become more accustomed to the concept of shared and partial land interests. Indeed, it is not difficult to envision the creation of markets for some rights, particularly timber rights and recreational access rights, that would make them considerably more liquid than they are in their current undivided state.

Management issues

Partial or shared land rights can sometimes be difficult to manage. The owner of a given right must be constantly vigilant so that some other co-owner or co-user of the land will not encroach on or even extinguish his interest. For example, when timber rights and recreational rights are independently owned, the recreationist must be concerned that timber harvest does not reduce the scenic value of the land, disturb wildlife habitat or damage the roads. The timber owner, for his or her part, must worry about fires and litter caused by the recreationists. These conflicts are generally avoided when all rights are in single ownership.

On the other hand, sharing of ownership can in some cases make management easier. For example, multiple ownership of timber rights or recreational rights can make it possible for a group of owners to afford professional management in such areas as timber stand improvement, timber **marketing**, and road maintenance.

A special class of management issues may be encountered when federal or state governments share rights with private owners. One wonders, for example, how federal planning requirements such as the National Forest Management Act and the National Environmental Policy Act can be applied to properties where ownership is shared or where partial rights have been severed.

Perpetuity issues

Most divisions of partial rights or easements are intended to divide the rights in perpetuity. Indeed, according to Internal Revenue Service regulations, only gifts of perpetual easements qualify for income and estate tax benefits for the donor. (44) This fractionating of rights in land can produce management problems if circumstances change for either the land or its owners. For example, division of mineral rights under "broad form" deeds in the early part of this century allowed the owner of the mineral rights essentially unlimited right of access. This would not necessarily interfere with use of the surface right under the deep mining technology prevalent at the time. However, the increased use of stripmining in more recent decades has led many surface owners to seek legal protection against exercise of the mineral rights in this manner.

The same may be true for conservation easements. Kingsbury Browne, for example, speculates that "Eventually conservationists and tax administrators will have to resolve some thorny issues (regarding perpetual easements). If an easement designed to protect the nesting habitat of a rare shore bird prohibits man-made alteration, would an amendment to modify the limitation to permit the construction of a dike to hold back rising seawaters be permissible under the amendatory language? The answer is by no means dear if **perpetual** really means perpetual." [45J If urban growth continues in an area, nature reserves may be surrounded by more intense activities to such an extent that they are no longer viable for their original purpose, yet easements or other perpetual encumbrances may restrict their conversion to another use, for example developed parkland.

Local and non-local interests

The severing of rights and the sharing of ownership has a tendency to direct rights toward individuals and groups that are willing and able to pay for them. This is one of the principal arguments for land sharing, as it imposes "market discipline" on the various rights to land. If hikers, for example, are able to buy or lease access rights,

they will have the opportunity to demonstrate the intensity of their desire to use a particular piece of land. If some alternative use, for example **clear-cut** timber harvest, is even more profitable on a particular piece of land, the hikers will be priced out of the market and directed toward land with lesser timber value.

A potentially important issue in imposing this market discipline is the possibility that traditional local land users will be less able to compete for land use rights than under current arrangements. For example, if hiking or hunting clubs were able to compete for access rights, it is quite possible that recreationists from outside the locality would be able to pay more for such rights than local people. This situation would be much less likely to arise under alternative arrangements, such as regulation or fee-simple purchase by government. In both of the latter cases, use of the land would be most likely open to all. Local users would generally have an advantage, simply **because** of proximity and their superior local knowledge of which lands were open to use.

Distributional questions may also arise when development rights have been extinguished on land through easements held by government or non-governmental **entities**. Reduction in development value is likely to lead owners to seek reassessment of their property and may reduce the local tax assessment base. In response to this problem it has been suggested that states make annual payments in lieu of taxes for lands whose assessment has been reduced as a result of easements held by the state.

Conclusions

Despite the difficulties enumerated above, the creation of partial and shared rights offers a new set of land management options to both private citizens and to government and nonprofit entities. Non-owners of land are likely to continue to feel that they should have some control over the uses to which privately owned rural lands are put. Shared ownership can provide alternatives to regulation and to fee-simple purchase, and may allow the expression of diverse interests in ways that satisfy the interests of all parties.

REFERENCES

1. Marion Clawson, Address to National Land Use Policy Conference, Des Moines, Iowa. 18 November, 1972.
2. Robert G. Healy, and John S. Rosenberg, *Land Use and the States* (Baltimore: Johns Hopkins University Press for Resources for the Future, 1979).
3. Frank Popper, *The Politics of Land Use Reform* (Madison: University of Wisconsin Press, 1980).
4. Robert G. Healy and James L. Short, *The Market for Rural Land: Trends, Issues, Policies* (Washington, D.C.: The Conservation Foundation, 1981).
Robert G. Healy, *Competition for Land in the American South* (Washington, D.C.: The Conservation Foundation, 1985).
5. Janet Diehl and Thomas S. Barrett, *The Conservation Easement Handbook* (Alexandria, Virginia: The Land Trust Exchange, 1988).
6. Raleigh Barlowe, *Land Resource Economics, 4th ed.* (Englewood Cliffs, NJ: Prentice-Hall, 1986).
7. Lloyd C. Irland and Theodore E. Howard, "Innovative Forms of Timberland Ownership: What Are the Driving Forces?" *The Consultant* (April 1989): 32-37.
8. Land Trusts' Exchange 3, no.4 (1985): 5-8.
9. "Land Trust Facts." Land Trusts' Exchange (March, 1989).
10. Land Trusts' Exchange 3, no 4 (1985): 7.

CONSERVING THE NORTH WOODS

11. David D. Gregory, *Easement as a Conservation Technique*. IUCN Environmental Law Paper No. 1 (Morges, Switzerland: International Union for the Conservation of Nature, 1972).
12. Charles T. Gallagher, "The Preservation of Chocorua Lake, New Hampshire" in Kingsbury Browne, ed., *Case Studies in Land Conservation* (Boston: New England Natural Resources Center, 1976).
13. John Costonis, *Space Adrift: Saving Urban Landmarks Through the Chicago Plan* (Urbana: University of Illinois Press, 1974).
14. Vaughn Rasmussen, *Limited Partnership Investing* (Englewood Cliffs: Prentice-Hall, 1986).
15. Ibid.
16. Irland and Howard, "Innovative Forms" (1989).
17. Howard and Lacy (1986).
18. James A. Rinehart, "Institutional Investment in U.s. Timberlands," *Forest Products Journal* 35 no.s (1985): 13-18.
19. Albro Cowperthwaite, North Maine Woods, Inc. Private communication, 1989.
20. Richard D. Meyer, W. David Klempcrer, and William C. Siegel "Cutting Contracts and Timberland Leasing," *Journal of Forestry* 84 (December 1986): 35-38.
21. Thomas Eubanks, International Paper Company, Augusta, Maine. Personal communication, 1989.
22. Roy A. Lassiter, *Access To and Management of the Wildlife Resources On Large Private Timberland Holdings In the Southeastern United States* (Cookville: Tennessee Technological University, 1985).

SHARED OWNERSHIP

23. T.L. Anderson, *Water Crisis:Ending the Policy Drought* (Baltimore; Johns Hopkins University Press, 1983); 81-85.
24. Albro Cowperthwaite, "Presentation for American Pulpwood Association, Northeastern Technical Division". 11 October 1984. Sugarloaf, Maine.
25. Albro Cowperthwaite, "Recreation Fees in the North Maine Woods". *Proceedings of Conference on Fees for Outdoor Recreation on Lands Open to the Public, 1985*.
26. Meadows, ed. "Enhancing Income from Public Use of Private Lands: The North Maine Woods Experience," presentation to seminar on "Wildlife and Recreation Enhancement Through Fee Access," 16 and 18 December, Takoma and Moses Lake, Washington, Me.(1985).
27. U.s. President's Council on Environmental Quality, *Environmental Quality: Fifteenth Annual Report* (Washington, D.C.: U.s. Government Printing Office, 1985); 381-87.
28. Cowperthwaite, 1985.
29. Healy and Short, *The Market for Rural Lands, 1981*.
30. Robert H. Whitney, "Forces for Change in Forest Land Ownership and Use: The Large Landowners' Situation," in *Conserving the North Woods. Issues in Public and Private Ownership of Forested Lands in Northern New England and New York*. Yale School of Forestry and Environmental Studies Bulletin 96 (New Haven, Ct., 1989).
31. Healy and Short, 1981.
32. Ibid.
33. Richard F. Perkins, "Maintaining the Working Landscape of the North Woods," *New England Landscape* 1, no.1 (1988).

CONSERVING THE NORTH WOODS

34. Gary Libecap, *Locking Up the Range: Federal Land Controls and Grazing* (Cambridge: Ballinger, 1981).
35. Barnard, Vermont. Town land records, Book 32, 1958: 493.
36. Barnard, Vermont. Town land records, Book 47, 1985: 48.
37. William H. Whyte, "*Securing Open Space for Urban America: Conservation Easements*". Technical Bulletin No. 36 (Washington, D.C.: Urban Land Institute, 1959).
38. Franklin County (N.Y.) Land Records. Indenture between Paul Smith's College of Arts and Sciences and the People of the State of New York. Liber 525 (July, 1986): 686.
39. Community land trusts, as defined here, should be distinguished from "land trusts", a much broader term that includes land conservancies, most of which neither lease land nor intend for it to be **im**-proved for economic use.
40. John Emmeus Davis, "Reallocating Equity: A Land Trust Model of Land Reform," in C.C. Geisler and F.J. Popper, eds., *Land Reform, American Style*, 1978.
41. Institute for Community Economics, 1982. *The Community Land Trust Handbook* (Emmaus, Pa.: Rodale Press, 1982).
42. Davis, *Reallocating Equity*, 1978.
43. Vermont Land Trust. Permanent File, Pizzagalli Property, Charlotte, Vermont, 1988.
44. Diehl and Barrett, *Conservation Easement Handbook*, 1988.
45. Browne, in Diehl and Barrett, 1988.

"GREENLINING" IN THE NORTHERN FOREST LANDS OF NEW ENGLAND AND NEW YORK

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One of the principal supporters of greenline parkS, New Jersey Senator Clifford Case, once stated that greenlining is most suited to landscapes that are "too large, too complex, too valuable, too interwoven with the fabric of existing communities to be protected by the federal government alone or by any existing system of parks, recreation areas or preserves". (1) Although he was not referring directly to the northern forested areas of New York, Vermont, New Hampshire, and Maine at the time, this descripti(m of a large, complex landscape portrays the essence of this region.

This paper investigates whether and how a "greenline" strategy might be employed to maintain the forest lands of northern New England and New York as a working, productive, and largely undeveloped landscape. It is **based** on the 1989 findings of a University of Massachusetts graduate regional planning studio team directed by Robert Yaro and coordinated by Kathy Sferra that researched this subject in the spring of 1989. This effort was conducted as part of the Northern Forest Lands Study, sponsored by the U.S. Forest Service.

The study began by examining the use in the United States and abroad of "greenline" planning to protect resources and assure economic development in regions containing important natural, scenic, cultural or recreational resources. Next, an investigation was conducted of existing planning and regulatory mechanisms within the

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four-state study area of New York, Vermont, New Hampshire and Maine. The team members proceeded to investigate the feasibility of adapting the greenline experience of other regions to the Northern Forest Lands region, then developed a mechanism and strategy to implement such a program.

Background

The Northern Forest Lands of New York and New England comprise the largest contiguous area of primarily undeveloped land in the eastern United States. The region is also the largest area in the northeast where the economy remains predominantly resource-based. More than 20 million acres of this region are managed as commercial forests, supplying raw materials to a wood products industry that is the major employer in the region. [2]

The value of the Northern Forest Lands is not limited to timber. The region's open spaces, scenery and "indigenous culture" were identified as early as the 1920s by Benton MacKaye and others as being of special significance to the rapidly expanding metropolitan areas of the northeast. It was predicted that, in time, this area would become a refuge from the increasing sprawl and congestion that northeasterners were only beginning to experience more than 60 years ago. [3] Today, growing numbers of metropolitan residents find the region's lakes, mountains, trails, ski areas, hotels, and camps to be increasingly accessible and attractive as year-round weekend and vacation retreats. As a result, widespread land speculation, subdivision, and second home development has occurred in the region throughout the 1980s.

In response to these demands for outdoor opportunities and open space protection, each of the region's four states has funded major conservation land acquisition programs. New York's Environmental Quality Bond Act provided \$250 million in matching funds for park development, land acquisition, and preservation improvement projects. The \$30 million "Land For Maine's Future" bond provides money for conservation purposes. New Hampshire and Vermont also have acquisition funds of \$20 million each (the latter also includes afford-

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able housing). However, it is clear that **these** funds will not be sufficient to protect any significant fraction of the region's critical environmental and recreational lands. In addition, New York and Maine have established regional commissions with planning and/or regulatory authority. In New York these are the Temporary State Commission on Tug Hill (which serves as an advisory regional planning agency in this **rural** region of New York) and the Adirondack Park Agency. Maine's Land Use Regulation Commission has land planning and regulatory authority in Maine's unorganized areas.

In 1988, Vermont and Maine enacted new comprehensive state planning programs that provide strong incentives for local planning and land-use regulation consistent with state goals. Vermont's planning legislation, Act 200, also provides for establishment of regional commissions with extensive powers to **regulate** development throughout the state. Maine's law, entitled "An Act to Promote Orderly Economic Growth and Natural Resource Conservation" relies on local governments to develop plans for managing and directing future development. These programs are in the process of implementation and their effectiveness has not yet been demonstrated.

However, the inability of existing programs to manage the fundamental changes now underway in the region's land ownership and development patterns was highlighted by the 1988 sale of Diamond International's north country timberlands in the four states. At great expense, a small portion of these lands in New Hampshire was subsequently protected through a concerted effort by the states, private conservation groups and the Congress. The recent proposed sale of the Hearst Corporation's timberlands in Maine, and other large land sales in Vermont and New York are likely to be repeated, providing a potential threat to the future economic livelihood and natural **re-**sources of the Northern Forest Lands.

As a result, Congress directed the Forest Service to conduct a study of changes in the region's timber economy and land ownership, and to identify options for future management of the region. The Forest Service contracted with the University of Massachusetts Department of Landscape Architecture and Regional Planning to examine

ways that a "greenline" or regional commission strategy might be applied to the Northern Forest Lands.

Origin and definition of greenlining

Greenline areas have been defined as 'living landscapes wherein private ownership, existing communities and traditional land uses can be maintained even as their outstanding public values are protected.'

(4) More specifically, greenlines are large land areas that are protected through a partnership of local, state, and federal governments under a coordinated regional plan. A variety of protection techniques can be employed within greenline areas: zoning, fee and less-than-fee acquisition, land trusts, tax incentives, and regulatory mechanisms. The federal role is generally limited to cost-sharing grants, leadership, technical assistance, and in some cases, acquisition of critical areas. Most lands remain in private ownership, and resource-based activities, such as farming and forestry, are encouraged. An intergovernmental commission, state or local agency often has jurisdiction over the area and is responsible for setting general development standards and guiding new growth away from critical areas.

The origin of the **term** "greenline" is attributed to two sources: the Adirondack Park's 'blue line' boundary, and Britain's national parks-which are designated on maps by a green boundary line. In contrast, most U.s. maps show national and state parks in solid green, indicating public ownership. In both the Adirondack Park and the British national parks, on the other hand, most land within park boundaries remains in private hands, subject to a comprehensive management plan for the entire park area.

The first greenline area in the United States, Adirondack Park in upstate New York, was established in 1892. This six million acre State-owned Forest Preserve is a checkerboard of public and private lands and has been protected since 1894 by a provision in the State Constitution that declared it "forever wild." In 1971, the Adirondack Park Agency was established to prepare a land-use plan for public and private lands within the Park. The Agency was also charged with administering land-use regulations based on the plan.

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The greenline technique was not used again for more than half a century. In 1949 however, greenlining was adapted to the British countryside with the establishment of ten national parks in scenic upland and coastal areas of England and Wales. Most of the land in these parks is privately owned, but on key properties owned by the private National Trust public access is provided by an extensive system of public footpaths. Each park has its own National Park Authority which includes both local representatives and central government appointees. They have responsibility for preparation of national park plans and control of all development within each park. (5) In a variation on this greenline approach, another 38 Areas of Outstanding Natural Beauty which cover 13% of England and Wales have the same protection as do National Park areas, but with land use controls vested in local governments. (6)

In recent years, the greenlining idea has gained popularity in the United States. It has been used at the Pinelands National Reserve in New Jersey and the Columbia River Gorge in Washington and Oregon. In the Pinelands, federal (the National Parks and Recreation Act of 1978) and state (the New Jersey Pinelands Protection Act of 1979) statutes required protection of the area. The state Pinelands Commission lead this effort by first developing and now administering a Comprehensive Management Plan and land use regulations for the one-million acre region. Federal land acquisition funds and technical assistance are provided to the Pinelands Commission by the National Park Service, and a designee of the Secretary of the Interior is a voting member of the Commission. The Commission also coordinates the activities of the state Pinelands Development Credit Bank, which facilitates transfers of development rights in order to direct development away from conservation areas and into designated "regional growth areas,"

The nation's newest greenline area is at the Columbia River Gorge in Oregon and Washington. In 1986 Congress established the Columbia River Gorge National Scenic Area in a 250,000-acre corridor along the Columbia River, with the goal of preserving the scenic and natural resources of the Gorge, while enhancing the region's economy. Responsibility for developing and administering the area's comprehen-

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sive management plan is shared between the U.s. Forest Service (in Special Management Areas) and a bi-state Columbia River Gorge Commission (in General Management Areas). In addition, 28,000 acres within the NSA are designated as Urban Areas, where land use controls are administered by local governments. Membership on the Commission includes six voting representatives from each state (half appointed by the governors, and half appointed by the county commissions), and a nonvoting member representing the U.s. Forest Service. Congress has authorized \$40 million for land conservation efforts in the Gorge, and has further authorized the Forest Service to conduct land exchanges for National Forest lands located outside the Gorge. An additional \$20 million is authorized for recreational and interpretive programs associated with the NSA. Finally, Congress has authorized \$5 million for each state's economic development efforts in corridor communities.

Elements of the greenline technique also have been used by the National Park Service at Cape Cod National Seashore, Santa Monica Mountains National Recreation Area, and other national park system units. Other federal agencies have undertaken similar programs as have various regional and interstate commissions.

A northern forest lands greenline proposal

The vast scale of the Northern Forest Lands, the region's traditional patterns of private ownership, and the goal of maintaining a working landscape rather than a natural "museum" would appear to preclude conventional land conservation techniques for the area. Greenlining, on the other hand, can provide a practical mechanism for maintaining the traditional landscapes, industries, and ownership patterns of the Northern Forest Lands, while respecting national and state fiscal constraints. Greenlining could also succeed in a political environment in which state and local governments, not to mention landowners, are reluctant to surrender their traditional roles and responsibilities. The challenge is to devise a greenlining program that reflects and balances these realities in the four-state region.

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The goal of any greenlining effort in the Northern Forest Lands should be to protect the region's working landscape through a program that would include federal financial assistance to the states for planning, land-use regulation, land conservation, and economic development. In addition, tax policy changes or other incentives can be provided to ensure that the region's forest products industry remains viable and competitive in the future. These objectives could be met by establishing, through an interstate compact, a regional commission (a "Northern Forest Lands Commission") with representation from the participating states and the federal government. The Commission's mandate and programs should be designed to allow the states to assume primary responsibility for land-use planning and regulatory activities while protecting the region's environmental and economic resources.

The initial step in this process would be enactment by Congress and ratification by the states, of an interstate compact that would:

- articulate the federal and state interest in the region and the need for the four states to work cooperatively on land planning, conservation, and economic development;
- establish the boundary of the greenline area, subject to minor modification;
- establish an interstate commission (called the "Northern Forest Lands Commission") and specify its structure, membership and responsibilities;
- set forth broad goals to provide policy direction to the Commission;
- require each state to appoint or designate a planning entity to develop a plan for its portion of the study area consistent with the Commission's policies;

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- authorize and enable each state to use creative zoning and acquisition techniques within the study area (e.g. transfer of development rights);
- establish the mechanisms for funding the Northern Forest Lands Commission, economic development incentives, and land acquisition;
- designate a lead federal agency responsible for working with the Northern Forest Lands Commission (most likely the U.s. Forest Service);
- require that federal and state agency plans and activities be consistent with the Commission's policies and state land-use plans; and
- establish any interim controls that might be necessary until the state plans are developed.

The Northern Forest Lands Commission would prepare a policy plan for the four-state region, establishing objectives and guidelines for state actions that would be consistent with the goals set forth in the interstate compact. The Commission would receive federal appropriations, and provide funding to the states for preparation of management plans and regulations for each portion of the greenline region.

In addition, the Northern Forest Lands Commission would:

- focus a portion of its efforts on research and experimentation with creative planning and acquisition techniques to develop new strategies for the long-term protection and development of the region;
- establish procedures for approval of state plans and regulations, and certify state plans for compliance when completed;

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- provide a forum for mediation of interstate disputes, and possibly establish an arbitration board to avoid litigation when possible. The Commission could also have a role in reviewing projects with regional impacts, as well as interstate projects;
- establish enforcement procedures in cases where states or local governments do not comply with approved plans and regulations; and
- play a role in promotion of the region and a sense of regional identity to attract tourism and industry.

Under this model, the role of participating states would be to establish or designate a state or regional commission to carry out the goals of the greenline program in each state. These commissions, within general guidelines provided by the Northern Forest Lands Commission, would inventory regional resources and develop **manage-**ment plans and regulations. State plans should identify significant commercial forest resources, natural resources, and existing villages and towns, as well as potential sites for new economic development within the region. The preparation of state plans would take place with extensive local public involvement, and periodic updating of the plans would occur.

Plans and regulations could vary to meet the needs and institutions of each state, but would require the establishment of a program of fee and less-than-fee acquisition for key sites, using federal, state, and private funding. Regulations should also be supplemented with federal and state economic development and tax incentive programs designed to encourage continued commercial forest management and local participation in the program. To encourage local support for the program, federal and state payments in-lieu-of taxes should be made to local governments where public acquisition of conservation lands occurs.

Each state would also work with local and regional governments to establish land-use zones which would be based on underlying resource values and designed to preserve the region's important

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natural resources, commercial forest lands, and recreational opportunities, and to ensure their appropriate growth and development. This system could provide the basis for a transfer of development rights (TOR) program and open space community (or rural cluster) zoning, so as to maintain the traditional pattern of compact development in the region. Areas containing the most important resources should be designated as TOR sending zones, from which the development rights could be sold to developers and landowners in "receiving zones" - areas deemed to be suitable for more intensive development. Through TOR and open space community zoning, and through establishment of **use** zones, the region's working landscape would be maintained. Specific zones should be established for:

- continuation of commercial forest and agricultural areas;
- preservation and protection of critical environmental resources;
- existing villages and towns;
- promotion of appropriate rural recreational development; and
- regional growth areas (existing or new communities where regional growth and economic development would be guided).

Implementation

The book *Greenline Parks: Land Conservation Trends for the Eighties and Beyond* by Marjorie Corbett was published in 1983. [7] It contained a list of 17 areas that would make good candidates for designation as greenline parks, including the Columbia River Gorge. However, it contains no mention of the Northern Forest Lands region. At that time, the changes currently taking place in the region were not foreseen. Today there is still not consensus across the region that a significant problem exists. This is particularly true in Maine, where the amount of land that has been offered for sale is small compared with the total amount of land in forest production. Thus, the first

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step toward implementation of a greenline strategy is perception of a problem or threat. Recent land sales, and the Forest Service study and related workshops and papers are focusing public attention on the region. The study should help to document the magnitude of the changes taking place in the Northern Forest Lands and is an important step toward building this awareness.

Next, the perception of a problem must be translated into the **need** for action and, in this case, recognition that a regional solution is an appropriate way to address this issue in the four states. The four states also have a long tradition of regional coordination and cooperation on issues that cross state boundaries. The Governors' Task Force on the Northern Forest lands has already played an important role in bringing together diverse interests from the four states interested in seeking a common solution.

There needs to be a broad-based public involvement strategy to seek ideas from local governments and citizens. The public needs to have a basic understanding of the resources of the Northern Forest Lands, and the need for protection and sustainability of these **re-**sources. The Forest Service's study has begun this process, but more needs to be done in the form of public workshops and hearings. Experience from other areas suggests that residents will be much more willing to implement a strategy that is perceived as "home grown."

The various interests in the **region** - private landowners, the forest industry, conservationists, developers and others -- need to work together on a strategy for the Northern Forest Lands. Each must be willing to compromise in order to achieve an environmentally and economically sound future for the region. Differences on issues such as forest management must be put aside, along with "hidden agendas." There is a lack of trust among the different interests. For example, timber company representatives fear that environmentalists will put forth a compromise proposal as a ruse to lock up the region as public land. Environmentalists are similarly mistrustful of forest industry motives. The Forest Service study and the Governors' Task Force have played an important role in getting the various groups to discuss common concerns. This effort must be continued.

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Once consensus is reached on a strategy, legislation to establish the interstate compact and Northern Forest Lands Commission needs to be drafted and introduced into Congress. At this point, there would be a great deal of benefit from convening a working group of greenline experts to provide information, based on the experience in other areas, about legislative drafting and strategy. There is also a need for sound legal review. Most greenline areas are challenged in the courts shortly after their establishment. For example, in the Pinelands several lawsuits were filed. Although unsuccessful, they delayed implementation of the program. It cannot be overemphasized that the legislation needs to provide for maximum flexibility and local autonomy in developing plans. Each state should be allowed to develop plans as it sees fit, as long as the plans achieve compliance with the goals of the legislation.

The process of Congressional debate and passage can be lengthy. However, strong leadership from the region's Senators and Representatives can pave the way for passage of the legislation. Legislators from the region currently hold some key committee and leadership positions in **Congress**. Their support will be essential. In addition, the powerful grassroots advocacy role that state and national conservation organizations can provide both inside and outside the region should be tapped.

An equally important source of support must be the leadership of each of the states. For example, the strong support of then-Governor Brendan Byrne was essential to the early success of the Pinelands effort.

Once the legislation is passed by Congress, the process of state ratification could begin. The Northern Forest Lands Commission would be established and would prepare a policy plan. The time frame for development of this plan should be kept short. This effort should be conducted with the assistance of a widespread public involvement effort. In addition, the establishment of special interest "task forces" to assist the commission during the planning effort should be encouraged. Once the state commissions are established, the state planning process will begin. State plans should be com-

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pleted by a specified date - probably within 18 to 24 months of passage of the legislation.

While the planning effort is underway, some kinds of interim controls should be considered. In the Pinelands, the Pinelands Commission administered a development moratorium during the planning effort. While a regionwide moratorium would probably not be appropriate in the Northern Forest Lands, some program should be in place to assure that the character of the region is not significantly altered during the planning process. Two options might be considered. First, a moratorium on large lot (to be defined) subdivision could be put in place allowing forest land to be sold, but not subdivided. Alternatively, the states (or Commission) could be given the right of first refusal on land sales during the planning period. In either case, emergency federal acquisition funds should be available in the event of the sale of critical tracts. These lands would then be turned over to the states upon completion of the planning effort.

Finally, in order for a greenline strategy to be successful there must be a long-term commitment to its implementation and supervision by local, state and federal government officials. One commonly heard criticism by present greenline area managers is that long-term federal commitment to funding and staffing has been absent in past efforts.

Conclusion

This paper has briefly critiqued the greenline experience in other regions and identified ways that this technique might be adapted to the Northern Forest Lands of New England and New York.

The greenline model proposed here has the potential to meet the conservation and economic development needs of the Northern Forest Lands, while safeguarding the interests of property owners, the states, and local governments. Traditions of home rule and the diversity of each of the four participating states can also be respected by a well-designed greenline initiative. Greenlining can also achieve these objectives in the current setting of fiscal limitations at all levels of government.

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It is hoped that this paper will stimulate public discussion and debate about the manner in which greenline techniques could be employed as part of a larger strategy to maintain the living, working landscape of the Northern Forest Lands.

One of the most important challenges will be to convince those within the region that some kind of change is inevitable. Without intervention a series of incremental actions is likely to alter permanently the landscape and lifestyle of this region. Ignoring the **problem** will not make **it** go away. And in the meanwhile desirable future scenarios may **be** precluded. A proactive and flexible strategy which leaves a great deal of control at the state and local level and balances conservation and economic development, such as the greenline mechanism proposed in this paper, can maintain the living, working landscape of the Northern Forest Lands.

REFERENCES

1. American Land Forum, "Policy Forum: The Future of the Greenline Concept," *American Land Forum*, 3, no.1 (1982): 9-25.
2. Perry Hagenstein, "A Challenge for New England: Changes in Large Forest Land Holdings" (The Fund for New England, 1988).
3. Benton MacKaye, *New Explorations* (1928).
4. Charles Little, "The National Perspective: Greenline Parks." In *Proceedings: Greenline and Urbanline Parks Conference* (New York State Department of Environmental Conservation, 1983): 3-5.
5. Duncan and Judy Poore, *Protected Landscapes: The United Kingdom Experience*. Published for the International Symposium on Protected Landscapes, Lake District, United Kingdom, 5-10 October 1987.
6. *European Environmental Yearbook-1990* (1989).
7. Marjorie Ruth Corbett, *Greenline Parks: Land Conservation Trends for the Eighties and Beyond* (Washington, D.C.: National Parks and Conservation Association, 1983).

PUBLIC FEE ACQUISITION OF FOREST LAND

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New strategies for forest lands in northern **New** England and New York are important, important in the first instance as a means for retaining the special character of the extensively forested areas of the northern part of this region, and second in their deliberate attempt to design institutions to carry out this task. Such deliberation is a crucial and pleasant contrast with the out-of-the-hip-pocket way institutions are sometimes created by legislative whim or related happening. Just as everyone knows something about lunch, everyone knows something about organization! The deliberate attempt to compare alternative institutional arrangements is much more promising and encouraging.

My assignment is to **discuss** outright public acquisition of forest lands. "Public fee acquisition" is the accepted term. The essential **case** for outright public acquisition is that it provides the most thorough public control of uses of land. Also in some **sense** it is the simplest sorting out of roles and responsibilities for land management. "This land has been acquired by this level of government, and it is the assigned responsibility of that agency to manage it".

I will attempt to do four things as requested within my assignment. The first is to layout some simple but very important requirements for responsible acquisition and **subsequent** management. The second is to consider some questions related to financing acquisition. The third is to examine several alternative institutional arrangements for management following acquisition. The fourth is to consider some matters of transition that may be important before institutional arrangements for land ownership and management are fully in place.

Examples are drawn from the Lake States, and from Michigan in particular. The Lake States don't have all the answers by any means, but this familiar material nicely illustrates some critical points.

*Some requirements for responsible acquisition
and subsequent management*

Providing for the revenue **needs** of local government is the first requirement of public acquisition. The schools still have to operate; the municipal utilities have to function; and the streets and roads have to be built, maintained, and plowed. Impoverished local government is not consistent with responsible public land acquisition and management. The arrangement now used in Michigan indicates both the **seriousness** of the matter and a solution. On all land acquired by the state after the date on which the Legislature acted we now pay the full equivalent of ad valorem real estate tax to local government. Land acquired earlier under a different arrangement currently involves a lower level of payment (but with periodic adjustments to bring payment closer to ad valorem real estate tax). The State Tax Commission takes a strong hand to ensure uniform assessment, thus preventing any overloading on the newly acquired public land. The central result is that the state assumes responsibility for a proportionate share of the revenue needs of local governments.

A second responsibility relates to the concept of "proportionate share" in a different sense. As a public land system gets **progressively** larger there becomes a progressively stronger obligation to provide a proportionate share of resource-commodity-supplies as well as recreational and environmental uses. This is a fairly widely-voiced idea in my part of the country. Our public land systems are **quite** large (for example, one-third of Michigan's forest land is in national and state forests). A gross departure from the proportionate-share idea could readily lead toward local scarcity of timber and related resource commodities, increased prices, possible industrial distress, and increased unemployment. This point was made very succinctly by John L. Martin, speaker of the House of Representatives in Maine. His comments on a proposal for large scale land acquisition were quoted in the March 20 issue of the New York Times: "...any plan has to assure that wood could still be taken out of the forests, that's our livelihood". [1] We apply the proportionate share idea to the state forest system. This system contains one-fifth of Michigan's forest

land. We attempt to supply sufficient timber to **meet** equivalent of one-fifth of total apparent demand at any given time. This is well within the sustainable growth capacity of the state forest system.

Small public land systems have much less obligation of this sort-their proportionate share in some cases being too small to matter greatly. Some small public land systems are also in locations where there is very little forest land in all ownerships combined. In such situations, the very "limited amount of public land may have greatest value simply because it provides contrast with an otherwise intensively developed landscape. This point was originally made with reference to portions of the eastern national forests by Bill Shands and Robert Healy in their book "The Lands Nobody Wanted", 12] It is a point that applies in some areas but definitely not in others, especially since the area of forest land in relation to human population differs so greatly **from** one region to another. For example, Maine has 15 1/2 acres of forest land per person, while Massachusetts has one-half acre per person. There is also great variation in forest area in relation to population within particular states. In the region considered in this *Bulletin*, such variation is probably greatest in New York.

My analysis requires responsible land acquisition. This requirement has two dimensions. First, management approaches should separate uses and users to the **degree** needed to minimize conflict. Values and uses of concern here include naturalistic values, fairly intensively developed recreation uses, and intensive vegetation management for both timber growth and wildlife habitat. This amounts to applying multiple-use management at a modestly larger scale than the intimate scale at which it is sometimes applied. Second, the management planning system should be simple and robust enough to accomplish this sort of partial separation of uses and users effectively without becoming itself a source of conflict.

Larger-scale application of multiple use was originally suggested by Marion Clawson of Resources for the Future. He made this suggestion in two books titled *Forests For Whom and For What*, [3] and *Forest Policy: Conflict, Compromise, Consensus*. 14] In both he presented a detailed analysis of which uses are complementary, compatible, and potentially conflicting if applied on the same acres in an

intimate, small-scale sense (as multiple use in sometimes practiced). He then made the essential argument for separating conflicting uses and users by putting them more fully in separate places in a large-scale pattern. Examination of his detailed tabular analysis with a reducing-glass (not a microscope) revealed three kinds of uses, any two of which would finally conflict if pushed hard on the same small areas. His choice of words was wilderness, intensively developed recreation, and intensive timber growth and harvest. A slight change of terminology represents the central idea a bit better. Hence the phraseology used a moment ago: naturalistic values, intensively developed recreation, and intensive vegetation management for both timber and wildlife habitat. The central idea is the same, and Marion Clawson is the originator of the idea.

This idea is being applied in the management of the State Forest system in Michigan. That system consists of six large State Forests averaging somewhat over 600 thousand acres of public land each. The whole idea is to separate those three kinds of uses and users on a particular State Forest to the extent needed to avoid unnecessary conflict. Where there is no significant prospect of conflict during the 10-year planning cycle no separation is made. Such land remains a mixed-use zone. Where separation is needed, one of the three kinds of uses and users is designated as primary, the other two as secondary. Secondary uses are encouraged but only to the point where they would begin to interfere with the primary use. Major investment in each of the three kinds of uses and users is concentrated to a degree where it is the designated primary use. This is called key-value management, the name given the system by the Natural Resources Commission when that body formally directed us to use this approach. The issue is what to put where, not which use is most important—they all are.

In Michigan we have attempted to create a simple and robust planning system to guide this approach. The process is about half completed. A simple and robust planning system has perhaps three principal characteristics: it tries to do only a few reasonably straightforward things, it focuses on formation of consensus right from the start, and it enjoys at least some measure of immunity from legal

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challenge on procedural grounds. Our system started several years ago with a statewide forest resources plan which was endorsed by the Governor and other bodies. This plan linked forest resources closely to Michigan's central societal problem concerning employment and associated economic development. (Hundreds of thousands of relatively high paid jobs have been permanently lost in the dominant heavy industries). It suggested a central sense of direction for forest resource management and use. And it developed statewide output goals for all principal forest services and products. I would certainly not argue for the same central sense of direction in places where the situation may be quite different. But having an appropriate central **sense** of direction is most helpful.

Planning for each of the six state forests starts with a set of provisional output goals from a disaggregation (by geography and land ownership classes) of statewide output goals. The other major ingredient is a highly-developed resource inventory for state forests that measures resource capability quite accurately. An interdisciplinary team of agency people has primary responsibility for effectively preparing a draft plan. Representatives of interested groups participate at appropriate direction-setting points. The central question is how best to produce the output goals within resource capability and with minimum conflict among uses and users. What to put where is the key.

A focus on formation of consensus strongly affects the kind of public involvement we use. The statewide forest resource plan set a model. There was considerable correspondence with representatives of many groups during the time a draft plan was being prepared. We also had substantial analytic help from one of our major universities at this stage. Representatives of **these** groups were then invited to a workshop once a draft was in hand. The purpose was to all sit on the same side of the table and work to improve the draft. This procedure worked quite well. A workshop of essentially this same character will be the primary focus of public involvement concerning the management plan for each State Forest. Representatives.....who are all invited to sit on the same side of the table.....for improvement are the key points.

Our planning process is being done entirely on administrative initiative. There is no state legislation specific to forest resource planning. This in fact seems advantageous as compared with legislation in some jurisdictions (including the National Forest Management Act at federal level) that specifies planning processes in **great** detail. It is inevitable that some parts of highly specified planning processes will work better than others, some won't work at all, and some worse than that. But in systems that are legislatively specified in detail, failure to do all steps as specified opens basis for suit on procedural **grounds**. Significant change requires new legislation. We are not **subject** to suits of this character, and can more readily adjust and change and simplify our planning process as experience suggests. Also we have no direct equivalent of the formal appeal process involved in management planning for national forests. The Natural Resources Commission serves as a considerably less formal and less legalistic approval and appeal entity.

Some questions of financing acquisition

Fee acquisition is presumably the highest cost method for keeping these properties intact. It involves buying all of the straws in the bundle of property rights, rather than just some of them. But under some circumstances the cost of acquiring only part of the bundle of property rights can in fact closely approach the cost of acquiring all. In the early 1970's a detailed and **well-designed** study of costs of alternative approaches to guiding use of recreationally valuable land and highway corridors was carried out as a PhD. thesis at Iowa State University under my direct supervision. [5] The experience of several federal, state, and local agencies in five upper midwest states was systematically examined. Among these agencies, only the Wisconsin state agencies responsible for natural resources and transportation were able to consistently acquire effective easements at costs substantially lower than those for outright acquisition. After a good deal of **re-examination** and concentrated thought, the writer of the thesis concluded that the Wisconsin agencies simply knew a **great** deal more about defining the terms of easements, and about negotiating them,

than did any of the other agencies. This certainly did emphasize the apparent role of specialized expertise.

Cost of outright acquisition is likely to be quite substantial (if I at all understand the scale of the problem in northern New England and New York). As much as 10 million acres of forest land might eventually be involved. Publicly available information on forest land transactions in the area report values in the range of \$220 to \$250 per acre. If at all representative, this suggests a bill for outright acquisition of as much as \$2.5 billion. (This is beginning to approach that wonderful observation by Everett McKinley Dirksen, the senator from Illinois: "a billion here, and a billion **there**, and pretty soon you're talking about real money").

There is some real difficulty immediately visualizing any single source that could quickly provide the complete financing package. Indeed, visualizing a combination of sources for a quick and complete package puts some strain on imagination. This is probably rather beyond total state financial capacity except perhaps for New York. A report of state budget squeezes in many northeastern states that appeared in The New York Times on May 7 and emphasized the problem. (6) It rather sharpened a point concerning some softening of economic growth in New England that had appeared three months earlier. (7) Federal appropriations are also obviously hard to come by in this Gramm-Rudman era. But Mr. Rudman does represent one of the states involved in this undertaking. Whether or not that fact provides sufficient hope can be best judged by people knowledge of the region.

Perhaps my best approach is to suggest some possible sources of core financing around which other sources might be grouped. Three occur to me.

- One possibility is the renamed and strengthened land and water conservation **trust** fund that has been recommended by the Presidential Commission on Americans Outdoors. The intended purpose of this American Heritage Trust Fund appears to focus on acquisition of additional land for public recreation, particularly in corridors adjacent to or linking urban areas. This focus is

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certainly valuable at some appropriate scale. But applied at very large scale it could well be inconsistent with the second of three requirements for responsible acquisition and subsequent management: That newly acquired lands continue to supply a reasonable proportionate share of timber and other regionally important resource commodities. Timber can certainly be grown and harvested on land receiving a modest amount of recreational use. But high levels of concentrated use can set up a severe conflict of uses and users ultimately greatly reducing or ending active management for timber. The same result could occur much more quickly if major focus on acquisition for **recreational** use is assumed by either congressional sponsors or administrative agencies to simply preclude significant timber growth and harvest. Careful determination of the degree of consistency or inconsistency in advance would be vital if this funding source is to be considered for large scale acquisition. Otherwise major difficulties arise. Some wit once said that solutions are sometimes a major source of problems. That usually occurs when side effects of the "solution" are not adequately identified. Determining degree of consistency or inconsistency in advance is simply a matter of carefully identifying a possible side effect.

- A second possibility may be one or more bond issues, revenue bonds or general obligation bonds, or both. Use of revenue bonds will require very hard-edged economic analysis with detailed attention to cost and revenue streams. General obligation bonds require an affirmative vote in a public referendum in most or all states.

Who will construct and issue the bonds? One possibility would be separate bond issues by **each** of the states involved. A joint authority created by the four states could possibly be an alternative if bonding requirements in the four states are sufficiently similar in all. Getting the region's best bonding and legal people in on this at the beginning will be vital if bond issues are con-

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sidered. Such people can be extremely helpful. That is the recent-and I think relevant-experience of my agency.

The Michigan Legislature has before it a proposed enabling act that would create an entirely new financing mechanism for improving the management of carefully selected portions of the State Forest system. Revenue bonds would be issued to finance more intensive management of the most productive **one-fifth** of the system <specifically those high productivity areas where management planning identified intensive vegetation management as the primary purpose of management). The bonds will be repaid out of increased future receipts resulting from more and better timber available for sale to expanding industries. This proposed arrangement has been carefully thought through over the past six years as part of the Governor's target-industry program. The forest resources agency and the Michigan Department of Treasury have worked together, very directly aided by the major financial and legal firms that regularly advise the state on bonding arrangements. The proposed enabling act has been physically written by the major legal firm on the basis of extensive and long-continued discussion that combined expertise in resource management, and in financial and legal matters. The financial and legal people took a notably constructive role. They devised arrangements that they believe will appeal to investors without impairing our land tenure arrangements, our forest management planning methods, our silvicultural guidelines, or our timber sales methods. And they made this look as much as possible like other revenue-bonding arrangements used by the state. This will heighten recognition-value among investment institutions.

Assistance from the financial and legal firms is invaluable. Their involvement from the start has also quite apparently given legislative sponsors confidence that the plan will work. The level of the people involved can be personalized in terms recognizable to many. Our primary working colleague at the financial firm is

the executive vice-president. At a much earlier stage of his career he "did" the revenue bond issue that financed the graceful five-miles-over-the-water bridge that links Michigan's two peninsulas. Do your very best to get this type and level of people involved early on in any bonding arrangements.

- A third possibility for financing land acquisition stems from the fact that people outside these four states will receive a substantial share of some of the benefits from keeping these forest properties intact. By itself this situation **suggests** a federal role of significant proportions via regular appropriations, as well as **the** trust fund mentioned above. But note a potential contradiction with one of the points discussed subsequently concerning arrangements for resource management, specifically the methods used to prepare management plans for National Forests.

Perhaps there is a conclusion here. The pattern and sources for successfully financing fee acquisition on a large scale does not seem neither clear nor available. Perhaps that is not so surprising. After all, this is potentially the highest cost approach since it does involve buying all the straws in the bundle of property rights. Fee acquisition at smaller scale, in combination with other less costly methods, may be substantially easier to achieve.

What about using the power of eminent domain to expedite land acquisition? Use of eminent domain on a large scale in this region would probably set **off** a major wave of local resentment. This might well be sufficient to poison relationships that are vital to successful resource management. Resource management agencies that come to be seen by even a few locals as an army of occupation will not get very far and will have major difficulties all along the way. Societal attitudes have undoubtedly changed a good bit in this region since I was more directly and intimately familiar with it in the early 1960's. But has the north country eastern branch changed so much in attitudes that use of eminent domain on a large scale is even conceivable? This is a question for those whose currently know the region

better than I do. Use of eminent domain for just a very few small tracts of extraordinary public value may be a different question.

Institutional arrangements for resource management

Experience shows that forest lands can be successfully managed by several different levels of government. Adequacy of professional expertise, and of funding, are more the question than which level *per se*. Examples with which I am directly familiar are provided by national forests, and by the variety of arrangements for management of extensive amounts of non-federal public land in the Lake States. Michigan has the most extensive system of state forests in the contiguous 48 states. Wisconsin has the largest system of county forests. And Minnesota has the largest system in both state and county ownership. Constitutional provisions concerning the level of government to which tax delinquent land reverted in each state have historically controlled the situation.

Effective resource management is possible in all of these arrangements. No sweeping point can be made concerning the "best level" of government. Nevertheless, there are a number of more detailed considerations that need careful attention in actually getting organized for resource management.

At least some readers may see a potential pattern emerge from the detailed considerations that follows. Suppose that land acquisition and management is to be shared among several levels of government. Perhaps the federal level can best focus on acquiring land with various sensitive characteristics, and land with potential for large-scale recreational uses that may draw visitors from a wide region. State and county levels can perhaps best focus on other land with greater potential for timber and other resource commodity outputs, and for smaller-scale more nearly local recreational uses and users.

- County ownership and management works far better when backed by extensive state assistance and guidance. The major example is in Wisconsin. The forest resources agency in Wisconsin Department of Natural Resources works directly with coun-

ties, supplying technical expertise and a portion of the funding for resource management. The forest resources agency also guides adjacent counties toward reasonably similar resource management policies and some related matters. There is a small, neatly-etched example in Gogebic County, Michigan, the one county in the state having extensive county forests. The forest resources agency in the Michigan Department of Natural Resources helps the county forest manager by including him in training sessions, by providing considerable analytic support, and in other related ways. He publicly **makes** the point that this assistance helps him do a much better job than he otherwise could. A simple conclusion is that positive state help is quite important if land is assigned to counties or other units of local government.

- Federal land ownership and management provides strong expertise and substantial funding. But it also brings relatively higher costs and an exceedingly complex planning process that is legally mandated in much detail. Because of its rigidities, this planning process may be as much or more part of a problem than it is part of a solution. My departed and much respected **friend** Ernie Gould was a close observer of the planning process used on national forests. He stated that "...this process seems to do more to gather opposition, than it does to form consensus". [8] There is also a tendency to draw in issues (and often largely symbolic issues at that) from other parts of the country. For example, it is my understanding that New Hampshire people reached some reasonable consensus concerning management of the White Mountain National Forest. That consensus was apparently then sabotaged by several contending national groups who in effect transferred an on-going disagreement among themselves to New Hampshire.
- State management **can** provide essentially the same level of professional expertise as federal management. Whether it does in any particular place depends on state fiscal capacity and commit-

ment. State management can also use simpler, more result-oriented planning processes to identify and emphasize management methods that lead to agreement. These processes can be much more flexible, not being bound by the legal mandate of the National Forest Management Act. That legal mandate carries an implied threat of court suits on procedural grounds if national forest planning processes are substantially modified other than by new legislation. States can use methods that put more emphasis from the start on consensus formation. And state or county management can potentially draw the line more successfully against importation of symbolic issues/disagreements from elsewhere. The land belongs to **the** citizens of this particular jurisdiction.

An example can be drawn from the so-called below cost timber sale issue. This is dominantly a Rocky Mountain issue, quite naturally given the rugged terrain and associated high costs. But it and associated budgetary difficulties are making it very difficult for the three National Forests in my state to offer their reasonable proportionate share of total timber supply.

The State Forest system is not suffering this same difficulty. A quite straightforward disaggregation of our costs has been made. We have separated costs incurred for timber, and those for other specific values. And we have separated current cost for current timber sales, investment in future crops, and permanent capital improvements. These separations of costs facilitate meaningful comparison with revenues, comparison that shows black ink of considerable proportions. In addition, state and local groups much more than national ones seem intuitively to associate industrial employment and income as a related and relevant benefit of timber sales.

- State or county management may more easily than federal management pay direct attention to resource commodity outputs and other matters aiding local and regional economic development. In

the regions I know, this would engender stronger local support for the effort to hold **these** forested properties together to a reasonable extent.

- Management across several states could be given a common focus via existing institutions. Note that the resource agencies of the three northern New England states and New York are linked in a **forestry-oriented** alliance of some standing. This alliance is called the Northeast Forest Alliance. It was formed three years ago via a cooperative **agreement** among the directors of the agencies that house the state forest resource programs in the four states. (These agencies are the Maine Department of Conservation, the New Hampshire Department of Resources and Economic Development, the New York Department of Environmental Conservation, and the Vermont Agency of Environmental Conservation). Under this agreement, these agencies are working together on a considerable range of joint projects. These include (to my understanding) joint efforts in export market development and joint efforts in providing public information concerning major forest resource trends, to mention just two examples. The cooperative aid agreement is essentially an open working arrangement, to which additional projects can be added when appropriate. Thus efforts to define reasonably compatible standards of management for newly acquired forest land could be added as an important new alliance project without great ceremony.

Possibly some form of regional advisory body may be useful to help set initial direction. The public board of directors for the Lake States forestry alliance may offer an initial guideline for thinking about a regional advisory body. The state forest resource agencies in Minnesota, Wisconsin, and Michigan, and the Forest Service, have for at least eight or ten years worked **together** on numerous joint projects. The pattern of interagency relationships was, I judge, a good bit like that among the agencies in northern New England and New York. A useful element was added in 1987. Governors Perpich, Thompson, and Blan-

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chard fanned the Lake States Forestry Alliance at a joint governors' conference on forestry. (The Conservation Foundation provided considerable help over several years in bringing this about). An appointed board of directors, who then elect their own officers, guides the alliance and takes an advocacy role in support of joint projects. One current example is the effort to organize a joint analytic center on international trade in forest products. This center would involve people at four universities in the three states. The board of directors spans a substantial range of interests and groups related to various uses of forest resources. In making the appointments, there was a quiet effort to link to established regional institutions and to select the most thoughtful and reasonable representatives that could be identified. A strong theme in activities of the board is an effort to find a common sense of direction. For example, in May of 1989 the board of directors will **conduct** a regional workshop on "Timber and Recreation: Partners in Community Revitalization". The state foresters for the three states serve as an institutional link between the board of directors and on-going agency business. The Forest Service also takes an active role.

Some variation of this pattern might be useful here. Two items perhaps bear particular emphasis. First, build on the alliance that already exists among the resource agencies of the four states. Proceeding via the Northeast Forest Alliance as the core will avoid using up a lot of scarce energy creating a new institution where one already exists. The considered advice of the agencies **involved** in the existing alliance will be useful in deciding how best to proceed.

And second, arrange any regional advisory body in a pattern that draws in and links to established regional institutions. That can help considerably to **form** consensus that endures.

Some matters of transition

Important successes by organizations such as the Nature Conservancy suggest a possible need for "quick" public financing to get options on properties as they come on the market. Indeed some of this sort of thing may already have **been** done, involving both **prospective** outright acquisition and conservation easements.

This approach may well make sense for carefully selected tracts at relatively small overall scale. But prospects for successful financing of **fee** acquisition will have to become much clearer before the case for quick interim financing at large scale is very good. Quick interim financing is in essence a "bridge". A bridge is **useful** only if the other shore is actually there or soon will be.

If this hurdle is surmounted, then existing arrangements for interim financing should be used to the extent realistically possible. The role of the Natural Conservancy in public land acquisition is an obvious example.

The Nature Conservancy makes interim purchases of land intended for public acquisition in the near future. They hold the land while the necessary appropriations of public funds are being made to a specific agency agreed upon in advance. The land is then turned over to that agency, and the Natural Conservancy is reimbursed for its expenditure for the interim purchase. The Natural Conservancy thus functions as a sort of revolving fund for land acquisition. For this to work, the interim-financing entity must be assured that public appropriation will actually be made at the necessary scale. A revolving fund is like an airplane in flight. Things have to revolve. Otherwise the fund will stall-with predictable bad consequences. And what successfully revolves at modest scale, may simply not be able to do so at very large scale.

It will be important to clarify the scale of intended acquisition in relation to capacity and interest of the Natural Conservancy and similar organizations.

Summary

Outright public land acquisition provides the most thorough public control of use of land. It also sorts out roles and responsibilities in a simple elemental way.

There are at least three requirements for responsible acquisition and subsequent management. They involve adequate attention to the revenue needs of local governments. If acquisition is at large scale, they involve providing a reasonable proportionate share of resource-commodity-supplies as well as recreational and environmental uses. And they involve management in a manner that sorts out uses and users in a manner that prevents excessive conflict among them.

Outright public acquisition is likely to be the highest cost methods for keeping these properties intact. And the total cost could be very substantial if a large part or all of the properties in question are **acquired**.

It may be quite difficult to find any single source of financing for acquisition. Three possible core sources have been identified. Getting an appropriate match between the objectives/constraints of some core sources and the requirements for responsible acquisition may not be easy.

Land can be successfully managed by at least three levels of government if organized correctly and funded adequately. Examples of successful federal, state, and county management have **been** cited. Successful county management almost always requires strong state help. Federal management brings important assets but it also brings some severe complications rooted in complex planning processes and imported symbolic issues. State management has at least the potential to lessen these complications while retaining substantially the assets. An existing institution linking state resource agencies could be the base for reasonably unified management across the four states.

Prospects for financing acquisition need to become a good bit clearer before quick, interim funding arrangements on a large scale seem warranted. Existing institutions could best be used for interim arrangements to the maximum extent feasible.

REFERENCES

1. John L. Martin, quoted in an article titled "Group Urges Huge Forest Preserve In North Maine," *The New York Times*, 20 Mar. 1989:13.
2. William E. Shands and Robert G. Healy, *The **Lands** Nobody Wanted: Policy For National Forests In The Eastern United States* (Washington, D.C., The Conservation Foundation, 1977).
3. Marion Oawson, *Forests For Whom and For What*, Published for Resources for the Future (Baltimore, Md.: Johns Hopkins University Press, 1975).
4. Marion Oawson, Editor, *Forest Policy: Conflict, Compromise, Consensus* (Washington, D.C.: Resources for the Future, Inc., 1974).
5. Ervin G. Schuster, *Cost **Economics** of **Land** Use Controls In Public Outdoor Recreation* (Iowa State University, Ames, 1971).
6. "In The Northeast, States Face Budget Squeezes", *The New York Times*, 7 May 1989:15.
7. "Its 'Miracle' At End, New England Slips In Economic Growth", *The New York Times* 14 Feb. 1989:9.
8. Ernest M. Gould, quoted in an annual report of the work of Harvard Forest during 1986.

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