Keeping Maine's Forests

A STUDY OF THE FUTURE OF MAINE'S FORESTS

October, 2009

Acknowledgement

This study was funded in part by funds from the Munsungan Endowment in the Center for Research on Sustainable Forests and a grant from the Natural Resource Conservation Service. We also wish to thank the staff of the Governor's office for their support and for the use of the Governor's conference room. A special recognition goes to Mr. Douglas Rooks, the writer of this report.

Chairman's Thanks

I want to take this opportunity to thank the members of this committee. This was indeed a unique and diverse group of people who volunteered their time for almost two years to produce this report. While we may have come from diverse backgrounds, we all shared a common value – an abiding love and respect for the forests of Maine. I believe our shared values helped us work in a way that was harmonious, constructive and mutually supportive.

G. Bruce Wiersma, PhD.
Committee Chair

Coordinated and managed by the Center for Research on Sustainable Forests
5755 Nutting Hall, Room 263 • University of Maine • Orono Maine 04469 • www.crsf.umaine.edu

Executive Summary

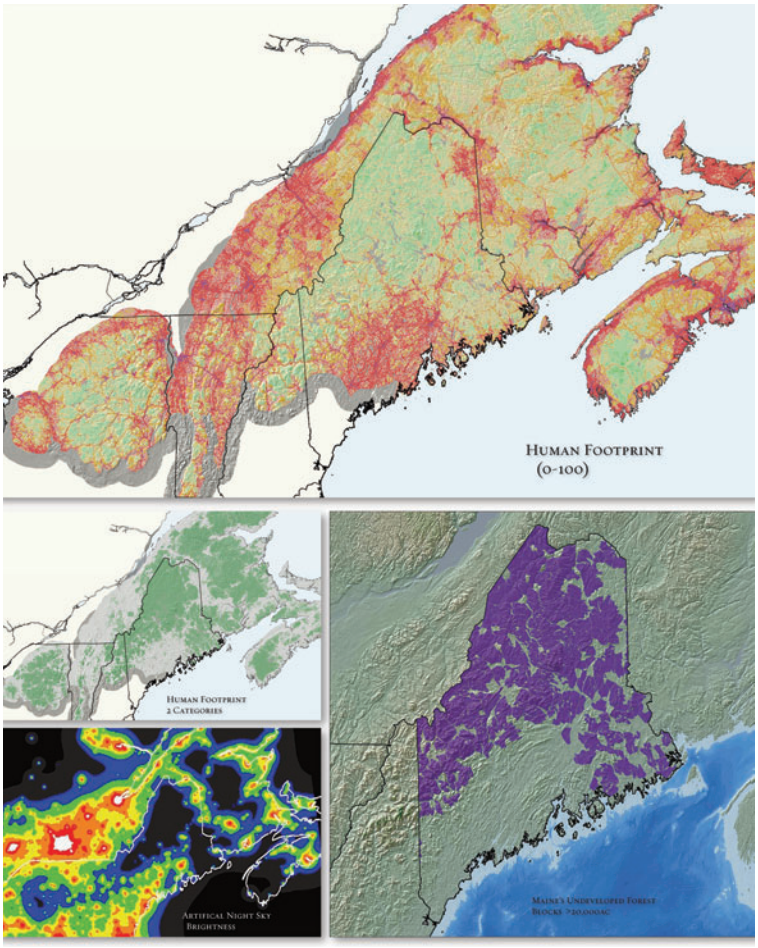
This report is the product of 18 months of regular meetings and sustained discussion among an unusually wide variety of groups, institutions, and businesses who care passionately about the future of Maine's forests — without doubt the state's single largest natural asset, comprising 19 million acres.

It is the finding of Keeping Maine's Forests that an unusual and timely opportunity for a bold, landscape-scale conservation effort may soon arrive. A coalition that represents the interests of landowners, mill owners, loggers, conservation groups and public agencies can be used to pioneer unique arrangements that:

- Maintain a stable or increasing flow of wood fiber
- Protect key natural resources
- Maintain air and water quality
- Preserve key wildlife habit
- Provide abundant recreational opportunities, and
- Sustain local economies.

While this might seem a tall order, we believe that these varied interests are not only compatible, but support each other. While the report considers the state of the forest economy and environment in separate chapters, it is clear they are intertwined. Without a strong commitment to harvesting and manufacturing, the Great Maine Forest would be a poorer place, and without recreation in special natural places with rare and spectacular wildlife, the forest would lose irreplaceable value to Maine residents and visitors from around the world.

Northern Maine: Unique in the Northeast



Source: The Nature Conservancy, used with permission

The opening chapter sketches the historical background and recent events that have strongly enhanced the possibilities of both sustained production and conservation. Through vigorous use of conservation easements, selective public land acquisition, strong support for forest industries, and research and development of innovative new products, the stage has been set for guaranteeing the forest's future. Unique in the Northeast, Maine's forests have major potential to buffer against global warming, produce abundant clean and renewable energy, and continue to provide a major proportion of Maine's jobs and income. A mixture of continued private, state and federal support will be needed to sustain these efforts.

The final chapter details seven key recommendations. It also describes an abundant variety of techniques that can be used in a Great Maine Forest Initiative to conserve forest land both in the unorganized territories and populated areas of the state, where development converts thousands of acres a year to other uses. It includes examples from other states and regions, but insists that, as Maine's history is unique, new land management objectives are needed to achieve success.

This moment must not be lost. Other states have seen their forest industries decline or be displaced, and wrangling about competing land uses has often led to stalemate and frustration. The current close alignment of varied groups and interests in Maine may not endure. Building on the progress of the last decade will be essential for keeping the vast Maine Forest, and all the human activities it sustains, for generations yet to come.

Keeping Maine's Forests: A Design for Sustainability

The Maine woods remains a fabled place for those from away, and even within the state these lands have an aura of remoteness and mystery. Ecologically, the Northern Forest that extends across northern New Hampshire and Vermont into New York State is the largest intact mixed hardwood-conifer zone in the nation, and perhaps the world.

Yet as the 21st century takes shape, profound changes have come to a region that has also been a working forest for more than 200 years. Many of the large forest product companies that owned the land and supplied massive quantities of timber to diversified paper mills have been replaced by a variety of new companies and owners, creating major new challenges for the future.

These issues have been discussed for 18 months, since December 2007, by a large and unusually diverse group, meeting regularly at the State House to hear presentations and discuss policy options and recommendations. A variety of experts made presentations on forest science, ownership structures, drivers of change, forestland conservation, research initiatives, public access, and other topics, which can be found in an appendix.

The Keeping Maine Forests Committee includes representatives of state and federal forest agencies, the Governor's office, the Legislature, conservation and environmental groups, timber company managers, sporting camps, small woodlot owners, and loggers. From these meetings a conviction has emerged that action is possible, and imperative, on a wide variety of fronts, using established and new conservation methods to protect the economic vitality, recreational opportunities, environmental assets, and wildlife diversity of this important region, which comprises nearly 90% of Maine land area and represents a significant portion of the state's economy.

Concerted action now can guard against the many uncertainties about the forest's future resulting from the recent national financial crisis, and from long-term trends that leave the economic viability of its current uses in doubt. The national significance of these lands has become increasingly apparent, and an opportunity to continue conserving this extraordinary resource and landscape may soon emerge.

It is the premise of this report that a variety of techniques and participation by public agencies, non-profit organizations, and private industry and landholders will be necessary to assure that Maine's North Woods remains a productive and economically vibrant region, that nearby communities prosper, that public recreational access is guaranteed, that wildlife and natural habitats are preserved, and that the values of clean air and water are maintained.

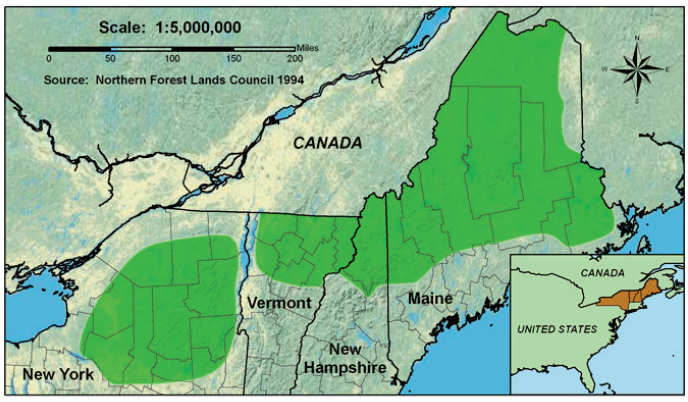
These techniques, which will be discussed in detail, include conservation easements, purchase of high-value assets, transfer of development rights, certification of forest practices, development of new markets, and a strong partnership between public and private interests.

While the public may not be fully aware of the extent and depth of the changes in the forest that have occurred over the past 15 years, the opportunity exists to reinforce the values that make Maine unique. For a variety of reasons, conditions may be ripe for bold actions to assure that we not only keep Maine forests, but enhance their value and preserve their character in the years just ahead.

The Four-State Northern Forest

As it happens, efforts to study and influence policy in the Northern New England region, and the Adirondack region of New York, have intensified in recent years. A collaboration by New England's state foresters, the U.S. Forest Service, and the Natural Resource Conservation Service has begun producing draft reports that cover the four-state region, and suggest approaches focused on federal activity in Congress and the Executive Branch. The initial response from federal officials has been favorable.

We have made use of these reports in preparing findings and recommending actions, but this document is focused more exclusively on Maine, while recognizing that economic, cultural, and political actions naturally transcend borders, and that a cooperative approach is the most likely to yield substantial results. Comparisons with other states produce many similarities but often startling differences. As a proportion of its land base, the North Woods and the many forested townships occupy a greater portion of Maine than any of its neighbors, and so decisions regarding the forest here also have disproportionate importance and significance.



The Northern Forest of New England and New York
Figure 1

Maine History and Background

North Woods

The current transformation of the ownership and uses of Maine's northern forest has several beginnings, but one key event was the sudden liquidation of the holdings of the Diamond International Corp. in 1988. The sale of such large blocks of forestland to non-industrial owners marked a profound shift in landholding, as the vertically integrated forest products companies began to give way to investment and real estate trust buyers who now dominate the market. These two classes of buyers are known as timber investment management organizations (TIMOs) and real estate investment trusts (REITs). Family ownership of forest land remains widespread throughout the state, but particularly in southern and central Maine.

While Maine's industrial owners were slower to put their land on the market, by the mid-1990s the shift had begun in earnest. Familiar names such as Great Northern, S.D. Warren, Champion, and later International Paper, Boise Cascade and Georgia-Pacific sold their land and then their mills, ending historic connections that had endured for nearly a century.

In 1988, industrial owners accounted for 7.7 million acres of timberland in Maine, while large non-industrial owners held 3.1 million acres. By 2004, however, these proportions were nearly reversed, with 3.2 million acres held by industrial interests and 6.5 million by non-industrial owners. More than half the industrial acreage was held by a single company, Canadian-based Irving, one of the few major timber producers still holding to the integrated model.

Major factors in the shift away from integrated industrial landholding companies were changes in the federal tax code that inadvertently but effectively penalized traditional corporate structures and favored the real estate trusts and timber management companies that now hold title to much of the Maine woods. These changes will be more extensively discussed in the next chapter.

More intensive and extensive harvesting – prompted in large part by salvaging timber from a devastating spruce budworm infestation in the 1970s and '80s – had also produced intense public concern over cutting practices in the large ownerships of pulp and paper companies in northern and eastern Maine. The Legislature adopted the Forest Practice Act in 1989, which among other provisions imposed the first limitations on clearcutting as a silvicultural technique. To critics, the new law did not go far enough, and a succession of statewide votes followed in the mid-1990s. Both referendums sponsored by a group called Ban Clearcutting were ultimately defeated, as was a competing measure backed by Gov. Angus King called the Forest Compact, but the controversies had lasting effects.

The effect of these events on timber management practices is still open to debate, but several trends have become clear since then. Clearcutting and intensive silviculture have declined, while partial cutting of larger acreages has taken place. Maine Forest Service reports show that twice as much land is being harvested on an annual basis, but that stocking levels have nearly doubled since the 1950s, stands are maturing, and growth still exceeds the volume being cut.

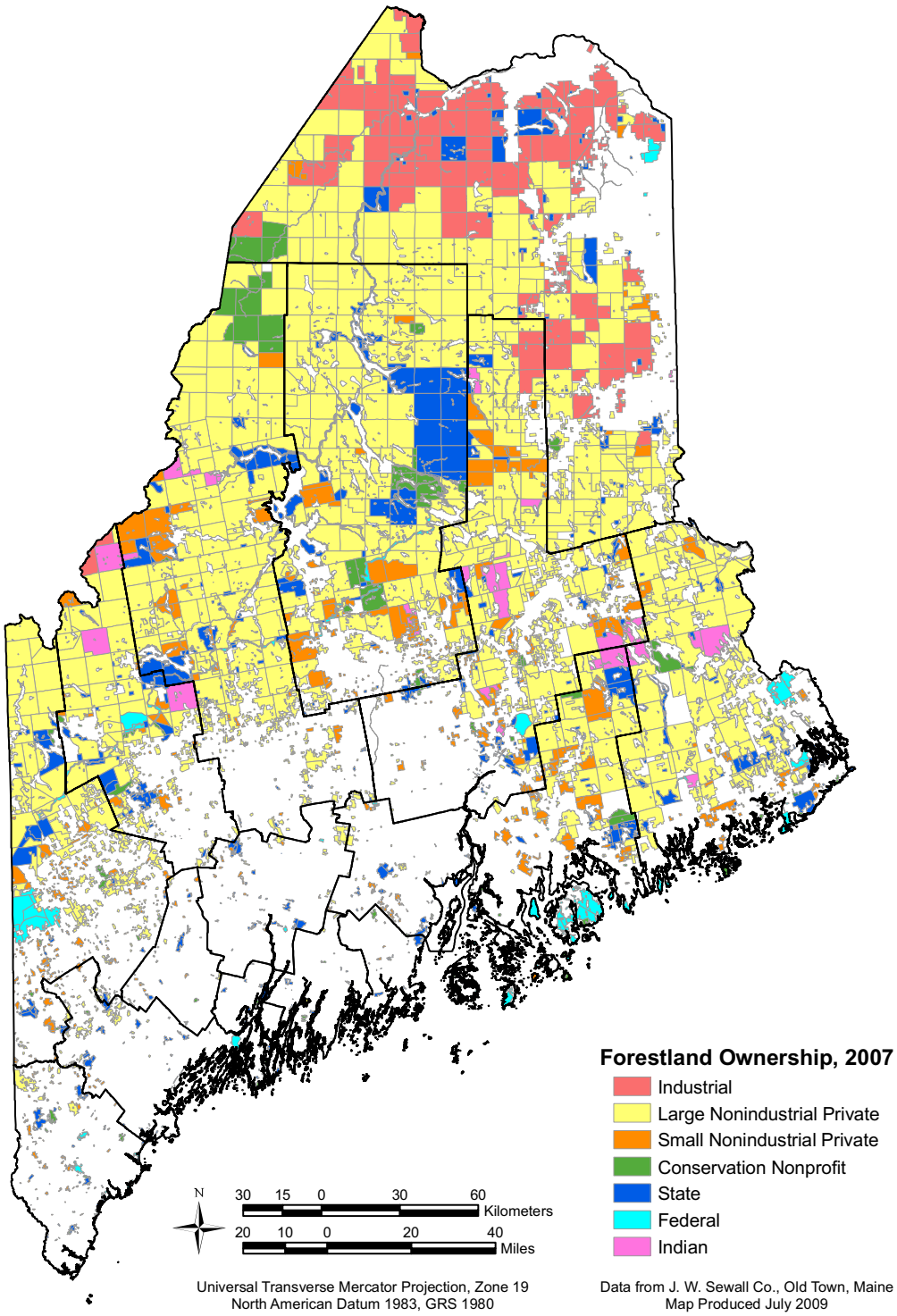
The Legislature also adopted a law intended to limit liquidation harvesting, a practice of heavily cutting forest land, followed by subdivision and sale of lots for residential and second home development.

At the federal level, the alarm created by the Diamond International sales also led to passage of the Northern Forest Lands Act in 1989, and creation of the Northern Forest Lands Council the following year. This was the first formal attempt at cooperation among the four northern forest states, and for a time enjoyed strong support from the region's congressional delegations and governors. Some of the council's more ambitious priorities were not realized before it was disbanded in 1994. But it did lay the groundwork for the highly successful Forest Legacy program that has brought millions of federal dollars to Maine. It is the belief of Keeping Maine's Forests that new ideas and techniques advanced in the 15 years since then make a partnership of public, private, and non-profit organizations more feasible and potentially more effective.

Over the past two decades, many other initiatives, some of them enduring, have reshaped the way Maine's north woods is perceived, managed, and debated.

The Land for Maine's Future (LMF) program was created through legislation and a major state bond issue in 1986, and has played a key role in acquiring public recreational land, preserving access, and, increasingly, partnering with other groups in support of these goals. In its first incarnation, LMF bought acreage outright, but in recent years it has more often worked to leverage private funding and federal government grants for much larger projects than it could undertake on its own. With additional funding from several subsequent bond issues, LMF has, over two decades, committed $83.4 million in state funding, matched by $147.7 million from other sources, to help purchase 210,000 acres in all 16 counties, and protect another 288,000 acres through conservation easements. More than 1,000 shore miles have been protected. Often, these arrangements were made during the sale of industrial forest land to new owners.

Major land purchases and easements were made possible in large part by the Forest Legacy program, which for the first time permitted substantial funding for conservation projects without federal purchases. In its early years, Maine was a major beneficiary, and Forest



Maine Forestland Ownership, 2007

Figure 2

Source: Maine Image Analysis Laboratory, used with permission

Legacy was the biggest source for a number of major projects. It appears unlikely, however, that equivalent funding levels will continue.

Despite these changes, Maine remains a state dominated by private landholding, which has important policy implications about how timberland should be managed.

In 1998, The Nature Conservancy purchased 185,000 acres from International Paper around the headwaters of the St. John River, marking the first time a major corporate mill owner in Maine had sold a major parcel to a conversation organization. It marked the beginning of a flood of private money aimed at conserving Maine forestland, primarily through easements prohibiting most forms of development.

Since the initial TNC purchase and the first significant conservation easement, on the Pingree lands in far northern Maine, there have been many similar projects involving hundreds of thousands of acres. Among the most notable are the Penobscot West Branch project (329,000 acres), Downeast Lakes Partnership (312,000 acres), Katahdin Forest near Millinocket (241,000 acres), Katahdin Iron Works project (37,000 acres), Tumbledown Mountain reserve (15,000 acres), Nicatous Lake (20,000 acres), and the Machias River project (18,000 acres) in Washington County.

While some land was purchased outright for its exceptional recreational and scenic values, most of it remains in timber production, though with varying restrictions. Another major addition to conservation easements is projected for 400,000 acres now part of Plum Creek's concept plan for the Moosehead Lake region it acquired from South African Pulp & Paper (SAPPI) in 1996, shortly after S.D. Warren's sale of all of its Maine assets.

In Maine, the amount of conserved forestland has increased from about 5% of the land base, virtually all of it publicly owned, to about 18%, with most of the increase through conservation easements on privately owned land, which restricts development, preserves access, and provides other public benefits. Overall, just over 8% of the forest is owned by the state, federal, and municipal governments and non-profit land trusts. Nearly 10% is held under conservation easements, most of it by land trusts, and a smaller portion by the state.

Among the northern forest states, New Hampshire has 26% of its land area in public ownership, New York, 23%, Vermont 19% compared to Maine's 8%, according to the U.S. Forest Service.

Southern and Coastal Maine

While the North Woods get most of the attention, the forests of Maine's populated counties are in much greater danger of being converted to other uses. Fragmentation – divisions of forest land into smaller and smaller parcels – has been identified as perhaps the leading threat to high-value forest management and intact ecosystems, and it is in areas of greatest population and commercial growth where fragmentation is most likely to occur.

In the mid-Atlantic and New England states, the amount of developed lands has increased by 47% over the past 25 years. This is the phenomenon we know as sprawl, and the consumption of open land has greatly exceeded population growth in much of the United States. While much of the conversion from open space to development to date has involved pasture and cropland, forested land is seen as increasingly vulnerable to new development pressure.

Some of Maine's highest value timberland — including acreage managed for white pine production, the state's emblematic tree species — is in York, Lincoln, Waldo and other coastal counties. While year by year the amount of land conversion may seem small, over time it has a dramatic impact on a landscape scale. At present, about 10,000 acres are converted to other uses per year.

The working forest is rarely, if ever, compatible with full-scale subdivisions and commercial development. If the forces of sprawl are to be contained, attention to forestland is as important as farmland preservation and parks and recreational access.

Starting in the 1990s, one major response was the proliferation of local land trusts. There are now nearly a hundred active local trusts, many of them cooperating with larger trusts such as Maine Coast Heritage. From purchasing individual lots and open space traditionally used for recreation, to protection of whole watershed and tidal areas, land trusts have poured millions of dollars into conservation and protected thousands of acres.

Like the boom in conservation easements in the North Woods, however, the large scale of land trust activities was financed in large part by an unprecedented buildup of private capital and investments funds. Since the stock market slumps of 2008 and the precipitous loss of value in endowments and trusts, capital for these purposes is likely to be much more limited in the immediate and perhaps even the long-term future.

If Maine's forests are to be preserved throughout the state, new methods of conservation and new sources of funding will have to be found.

The Forest Economy

In one sense, the economy of the vast northern forest of Maine – 18 million acres, including both the unorganized territory and woodland areas within municipal boundaries – has changed relatively little in recent years. The dominant commercial use is still the harvesting and supply of wood to papermakers, sawmills and biomass generators.

Yet from another perspective, change has been profound. The large, integrated forest product companies that controlled most of Maine's land base for 100 years have separately sold their mills, and their forest land, leaving many unfamiliar names and faces, and uncertainty about future ownership as well. In some cases, though, change has been more apparent than real. The Rumford mill now owned by New Page has had five different owners since the 1970s, reflecting different investment strategies in the industry, yet remains one of the most modern and best-capitalized mills in the region.

The wholesale shift in land ownership during the 1990s from large corporations such as Great Northern, International Paper, Boise Cascade and Georgia Pacific to real estate investment trusts (REITs) and timber investment management organizations (TIMOs) followed the statewide debate over clearcutting and forest practices, but was caused by a variety of factors.

Among the most important influences were cumulative changes to the federal tax code that favored LLCs and investments that produced capital gains, rather than traditional corporations like the vertically integrated forest products companies that paid out dividends. As pass-through entities, REITs faced taxation only on shareholder's incomes, while C corporations were double-taxed for corporate income, and for shareholders as dividends. REITs also have capital gains tax advantages not available to corporations. For companies whose physical plants were aging and in need of substantial investments to compete in global markets, selling their land assets was a logical alternative, and produced income that could in turn be reinvested in plant improvements. Finally, Wall Street rating practices, which had traditionally offered a premium for mills that owned their own timber supplies, shifted. The new standards emphasized "pure play" investments, effectively penalizing companies that owned both manufacturing plants and timberland.

The revolution in land ownership is nearly complete (See maps) and the new owners operate on different time horizons. Many TIMOs, for instance, are organized on a 10-year basis, meaning that at the end of a decade the trusts and LLCs expect to sell their lands to realize the accumulated return on investment. Not all of these ownerships are managed this way, however. Some TIMOs are extended beyond their nominal investment period, while other landowners make more frequent, smaller-scale sales of their holdings. REITs, on the other hand, are publicly traded and do not have any projected terminal date for ownership. In both cases, there is an incentive to manage for long-term land values before land is sold.

While some observers expect little change in the underlying land use – sales of timber and fiber continue to yield the highest value, in many areas – the mere fact that new owners can be expected to arrive far more frequently has created uncertainty in the landscape. Increased "parcelization" – divisions into smaller landholdings – may also affect timber supply. The disposition of the former Great Northern Paper landholdings, once the largest in Maine, (see Figures 3 & 4 on pages 8 & 9) shows this shift most dramatically.

There are also new economic uses for the northern forests whose significance is still unfolding. The advent of industrial-scale wind farms, most of them located within large forest blocks, has created a valuable new land use that is expected to multiply over the next two decades. While wind towers and transmission lines will create significant value for landowners, and are compatible with continued harvesting, their development can be seen as changing the character of previously remote landscapes. A more complete list of commercial and industrial uses follows later in this chapter.

Nature-based tourism in the North Woods has significant growth potential, expanding the reach of what is now considered the state's largest industry inland and away from the coast. A recent cooperative initiative called Maine Woods Discovery is aimed at creating package tours, and the state's lengthy and well-documented history of logging, river drives, and railroads could prove attractive to sophisticated travelers who seek culture and solitude more than full-service vacation resorts.

Hunting and fishing have long been economic mainstays of the North Woods, and continue to attract many visitors, though in slowly decreasing numbers. Deer, moose and bear are the most sought-after big game animals, and while bear and moose remain abundant, the decline of the northern deer herd has cut into business at sporting camps and remote lodges. Upland bird hunting opportunities, however, have increased.

The value of wildlife to tourism should also not be underestimated. While hunting and fishing are still the "cash crops" of North Woods visitors, the overall numbers of participants has declined slightly, while visitors who want to photograph moose, watch birds, and explore trails, vistas and back roads are growing in numbers. And while these uses of the forest have a different focus, they are fully compatible with other traditional uses and in fact reinforce them, since the intact forest is the basic attraction.

The northern forest also has value as a buffer against climate change by sequestering carbon. Land kept as

forest, including land harvested on long-term rotations, not only recycles enormous amounts of carbon dioxide, the most critical greenhouse gas, but its preservation also prevents the equally enormous release of carbon that is caused by large-scale development. Preservation of forest land has become a focus of international talks to combat climate change, and could be included in a cap-and-trade system such as the one now before Congress.

The most familiar but also most potentially consequential change in forest land values comes from development, both residential and commercial. Sprawl has been identified as a key challenge for planners in southern Maine, particularly York and Cumberland counties, but it has an impact in most populated areas of Maine. The scale and location of development is also important.

While it is true that far northern Maine, where there are few public roads or utilities, is relatively free from development pressure, the fringes of the unorganized territory have seen significant second home development. When new subdivisions are approved, the "fringe" moves further into the forest land base. New and scattered development across the landscape can have off-site consequences in fragmentation of commercial forest land, impact on wildlife habitat, and the future expectations of other landowners.

The largest current example of development on large tracts is the Plum Creek lake concept plan recently approved by the Land Use Regulation Commission. In one scenario, the Plum Creek plan, which includes two residential resorts and nearly 1,000 separate houselots, could absorb the demand for seasonal homes for many years to come, while in others it could create more demand if Maine again becomes a more desirable summer and winter destination.

As currently designed, the Plum Creek plan contains a 430,000 acre conservation easement that would prevent future development on a substantial portion of its holdings. This could provide a balance that directs and limits future development, and well as spurring near-term construction.

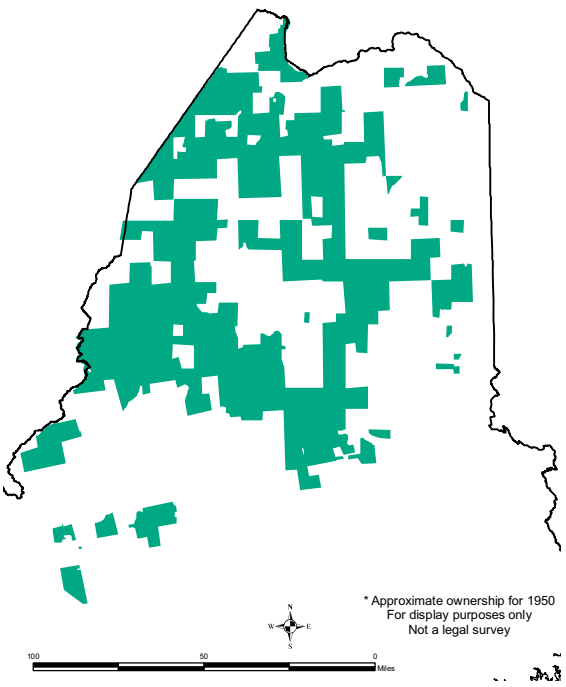
In southern Maine, the vigor of the forest economy is increasingly in question. Fragmentation of commercial forest land, reduction in habitat for key animal and plant species, and diminished recreational opportunities is a reality and could accelerate with the eventual revival of the economy. Many property owners who purchase land without intending to develop it may also discontinue active harvesting and forest management because it is not part of their objectives as landowners, effectively removing parcels from the working forest.

A timber shortage that drove commodity prices, including lumber, to record levels by 2006, and a doubling of pulp prices by 2008, has been succeeded by a bust and rapidly falling prices. This year is an excellent time to reassess forest land values and likely future changes, and to reopen discussion on the best ways to preserve the largest intact mixed hardwood-conifer forest in North America, and one of the largest in the world.

Issues Facing Forest Products and Manufacturing

Maine remains the second largest paper-producing state and product shipments remain stable as a result of much greater productivity, mill employment has dropped sharply over a generation as process improvements mechanized previously labor-intensive operations. Beginning in the 1990s, mills began shutting down for the first time in generations as part of industry-wide consolidations. While some large mills have increased production, smaller and older mills have ceased operations, including, earlier this year, Wausau Paper, which ran the original International Paper mill in Jay. While sawmill operations had generally been holding their own, the global slump in demand has also prompted shutdowns and some permanent closures this year.

Maine's industrial electricity prices are among the highest in the nation, a significant change from the days when low-cost electricity was a priority here. As a comparative disadvantage to other states, the price gap has worsened. In 2006, Maine's average industrial rates were 14.4 cents per kilowatt hour, compared with peer states such as Minnesota, Wisconsin and Michigan, where rates were below 6 cents/kwh. Even New York and California have lower industrial prices than Maine. Maine paper mills have redoubled their efforts to become energy self-sufficient, in some cases successfully. Oil-fired generation



Great Northern Paper 1950 Land Ownership Map*
Figure 3 Source: Maine Forest Service, used with permission

is giving way to biomass boilers and co-generation in most paper mills. Though the typical sawmill does not demand similar levels of heat, there is new interest in biomass among sawmill owners looking to make their plants more efficient, and emerging technology could help them do so. If sawmills could sell electricity back to the grid, co-generation would be more cost-effective.

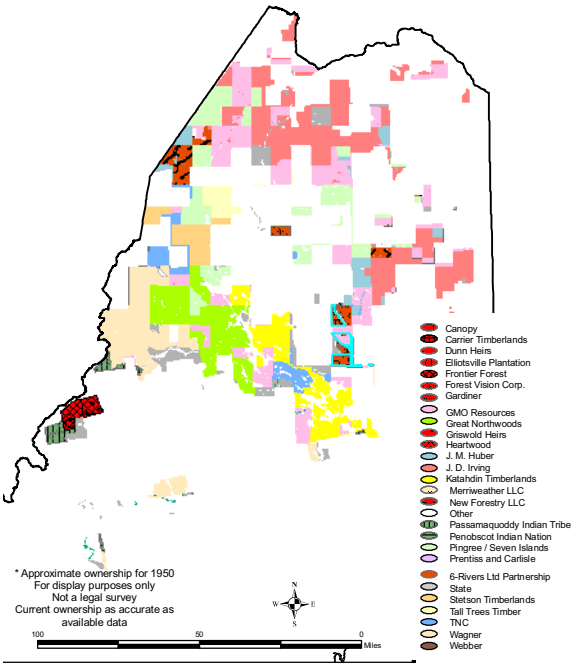
The tax picture is mixed. Building on efforts undertaken during the King administration, the Baldacci administration has effectively repealed the property tax on business equipment that was a major factor in investment decisions. Like most other Northeastern states, Maine now exempts new projects from the tax, unlike the King-era Business Equipment Tax Reimbursement (BETR) program, which required businesses to apply for payments from the state. In times of austerity, BETR payments were reduced from full value – as they were again this year – creating additional costs for manufacturers. Equipment installed before 1995 remains fully taxable.

The forest products industry may benefit from the tax reform legislation adopted by the Legislature in June. While corporate tax rates are not affected, the reduction in personal income tax rates may make the state more attractive to investors, while the sales tax expansion to services used to pay for these reductions will have relatively little impact on the industry, which is capital-intensive and goods-producing. An additional state tax benefit for landowners is that those who sell after holding timberland and farmland for more than 10 years pay lower tax rates on these gains.

Further changes to offer lower rates or higher exemptions in the Maine estate tax for long-term uses like forestry and agriculture would also further stability in ownership, particularly since the estate tax is no longer coupled to the federal tax code.

The overall cost of Maine's state and local government remains high in relation to personal income, which means that the aggregate tax burden remains above average among the states.

Maine colleges and universities supply trained graduates in forestry, but in other technical fields programs important to the industry, there are gaps. The paper industry needs mill managers, millwrights and equipment operators for whom there is no formal training in public higher education, and there is a particular shortage of skilled sawmill operators. Programs at the community college and university levels could make a difference in investment decisions regarding new plant and equipment, where training and retraining costs are a significant factor.



Great Northern Paper 1950 Land Ownership Today*
Figure 4 Source: Maine Forest Service, used with permission

New Products and Opportunities

While there is a tendency to look at shrinkage in forest product industry employment as an overall indicator of terminal decline, this is far from being the case. For nearly a century, Maine had a leading manufacturing business that dominated the landscape. For the next century, Maine is more likely to have a wide mix of uses whose size and scale cannot now be predicted. Yet the overall quantity and value of the fiber being grown in Maine is immense, and may be amplified in ways that cannot now be foreseen.

Some of the new sectors that are now or soon will add value to the forest economy are described below.

Biofuels are a potentially major user of wood fiber on a scale that will easily match or exceed the wood-fuel boilers that power most paper mills and produce electricity for the grid. Already, biomass meets 25% of the state's energy, and produces 20% of its electricity. A national emphasis on renewable fuels to replace petroleum makes the cellulosic components of wood an attractive energy source.

From an efficiency standard, the widespread use of ethanol, the primary liquid fuel produced from plant material, has some serious drawbacks. Conversion rates for corn are not especially favorable, and the use of a major food crop for combustion may not be a good strategy for increased use in the future. The conversion of cellulose to fuel has been thoroughly researched and is now at the pilot project stage. It presents a significant opportunity to make unused or underused portions of the wood fiber supply into raw material for a new Maine-based industry.

Wood pellets have emerged as a viable source of home heating in a state that is now heavily dependent on petroleum, and hence vulnerable to price spikes that have repeatedly disrupted markets in recent years. Where biomass boilers are practical mainly at an industrial scale, pellets are available to homes throughout Maine, representing a significant new market. Converting

thousands of homes from petroleum to pellets is a practical alternative, and one that is already being chosen by many consumers who find woodstoves burdensome or impractical in urban or suburban neighborhoods. Pellets also target saw mill residuals and underutilized portions of the fiber supply, although they also are a competitor in the existing pulpwood market for commercial-grade pellets.

Composite building materials with wood components have shown promise as an alternative to steel and concrete in applications from buildings to bridges. While this market has not yet developed to a commercial scale, research at the University of Maine continues. Potentially, this could be a premier market for larger trees grown on long rotation cycles, as well as using less valuable fiber.

Carbon removal and storage. While not a new product per se, the value of large forests like Maine's will be considerable in any large-scale attempt to combat global warming. While early international treaties focused on reducing industrial and vehicle emissions, the recycling capacity of plants and trees cannot be ignored in any comprehensive effort. Keeping forests intact also prevents the large-scale release of carbon characteristic of most development, avoiding sudden greenhouse gas increases at a time when potential technologies to recycle carbon are still in their infancy. Paying landowners to maintain their forests makes at least as much sense as paying farmers to conserve soil, and could be part of future regulatory or incentive-based climate programs. By adding to the return on investment for landowners, this also makes it more likely that forests will remain intact and not converted to other, more environmentally damaging uses.

Wind farms are now being built in northern Maine at an accelerating pace. The state has set goals for 2000 megawatts of installed capacity by 2015, and 3000 megawatts by 2020. If achieved, this would place Maine among the nation's leaders in windpower production. Although offshore wind platform may eventually become a reality, current prime locations for large installations are mostly within the forest. Wind turbines are capital-intensive to build but have no fuel costs, meaning that leasing space for them can bring major benefits to landowners. Like carbon storage, but in a more tangible way, windpower creates additional value for landowners and helps preserve the larger forest economy. While turbines require a sizeable footprint and transmission corridors, they are fully compatible with most harvesting regimes, and place no additional demands on public services, unlike most other forms of development.

Water bottling has become one of the fastest-growing natural resource-based industries in Maine. While not originally associated with the forest – the historic sites were in southern Maine – opposition to new extraction sites and municipal water sales there make it likely that the north woods will increasingly be the mainstay of new development. Preserving the forest is essential to maintaining healthy aquifers. Water bottling fits equally well into planning for maintaining intact forests.

Certification of sustainable harvesting practices has been a major focus for forest landowners over the last decade. Programs run by the independent Forest Stewardship Council (FSC) and the industry's Sustainable Forestry Initiative (SFI) have certified more than 7 million acres in Maine, the highest proportion of private lands in any state.

"Green" certification, as it is usually known, could be a powerful tool to influence consumer behavior as well as provide confidence in responsible management by landowners. To date, however, it has been far more successful in achieving the latter objective than the former.

Efforts to market green-certified lumber have been only marginally successful to date. Lumber purchases are highly price sensitive, and how timber is grown has created a price premium in only a few cases for either commercial or consumer purchases. This experience contrasts with successful efforts to create markets for organic milk and produce that have benefited Maine farmers and growers. The short answer seems to be that products consumed directly by humans, such as food, are more likely to command premium prices than products used to build homes, furniture, and the countless other wood products in circulation.

Maine's reputation for green certification may have had an effect on land purchases, however, since some buyers want the assurance that forest land has been managed for the long-term, with appropriate attention to preserving plant and wildlife habitat. To that extent, certification has had both economic and environmental benefits, which could prove more important in the future.

There are many potential new uses for forests and fiber beyond those mentioned here. Whether the next wonder drug is discovered somewhere in the Maine woods, or a chemical compound that transforms an industry lies within its fiber store, is impossible to predict, though this has happened repeatedly elsewhere.

The important point is that most of the potential economic uses of the forest depend on it remaining as forest. There are still abundant quantities of land elsewhere that can be used for development. Development in the heart of the north woods has the potential to diminish its values far more than scattered development can add to it. Even in southern Maine, the importance of the working forest to local economies continues, and the need for commercial and residential development must be carefully balanced against what may be lost by conversion to other uses.

The Forest Environment

Since the days when Thoreau described his climb of Mt. Katahdin, the Maine woods has carried epochal significance to generations of Americans. Yet the forest environment we see today is the product of extensive management and use of almost all the acreage that makes Maine our most heavily forested state.

Even in Thoreau's day, the apparently inexhaustible wealth of the forest was being depleted, and a century later, in response to a severe spruce budworm infestation, heavy cutting and clearing of thousands of acres roused widespread public concern.

Today, the forest is as healthy as it has been in years, as the superior natural regeneration characteristic of the Northeastern hardwood-conifer mixed growth forest takes hold; unlike other major wood-producing regions, Maine can regenerate up to 40,000 seedlings per acre. Maine has not had to deal with the controversies over old growth cutting in the Western forests, nor has it proved suitable for the plantation-style cycles characteristic of the South. It can produce enormous quantities of useful fiber for many different uses while still retaining its environmental integrity. The increased standing stock produced in recent years offers not only increased recreational opportunities and improved wildlife habitat, but also provides timber for such high-value uses as furniture manufacturing and cabinetry.

In the last two decades, easement purchases and public land acquisition through state programs such as Land for Maine's Future, and federal funding through the Forest Legacy Program, have addressed the comparative rarity of publicly owned forest land in Maine. While private landowners still dominate, there have been numerous selective purchases where the values of recreation, wetlands and water, and unusual wildlife habitat are particularly high.

It is of course not possible to preserve every value in every portion of the forest, but the new range of tools makes it possible to fine-tune uses in ways not available a century ago in the days when most national forests and national parks were being created. Maine was offered an extraordinary gift by Gov. Percival Baxter, whose namesake state park created both a wildlife and nature sanctuary, and a scientific forest management area whose potential is now being realized. Building on this example, landowners and conservation groups, for instance, can now specify conditions for use that can be more inclusive than the no-development clauses of the earlier forest easements if purchasers are willing to pay more. With public or non-profit ownership of significant conservation assets, the line between public and private can be flexible and tailored to individual sites.

Controlling Development

Development represents the most substantive recent change to the forest environment. Most Mainers have seen old photographs of mammoth clearcuts undertaken to salvage timber after the spruce budworm epidemic, but even those lands have now substantially regrown as forest.

Throughout southern and central Maine, forested land has been converted to roads, utilities and structures at a pace exceeded only by the takeover of farmland. More than 850,000 acres have been impacted by development over the last 20 years. But while farming has developed many champions in recent years in York and Cumberland counties, with numerous purchases of development rights, forests in the region are comparatively neglected.

A developing resurgence of small- to moderate-scale farming in southern Maine, based on local and regional markets, is a potentially important development that can complement and extend forest conservation as well. Bringing conservation groups from both fields together with woodlot owners is essential.

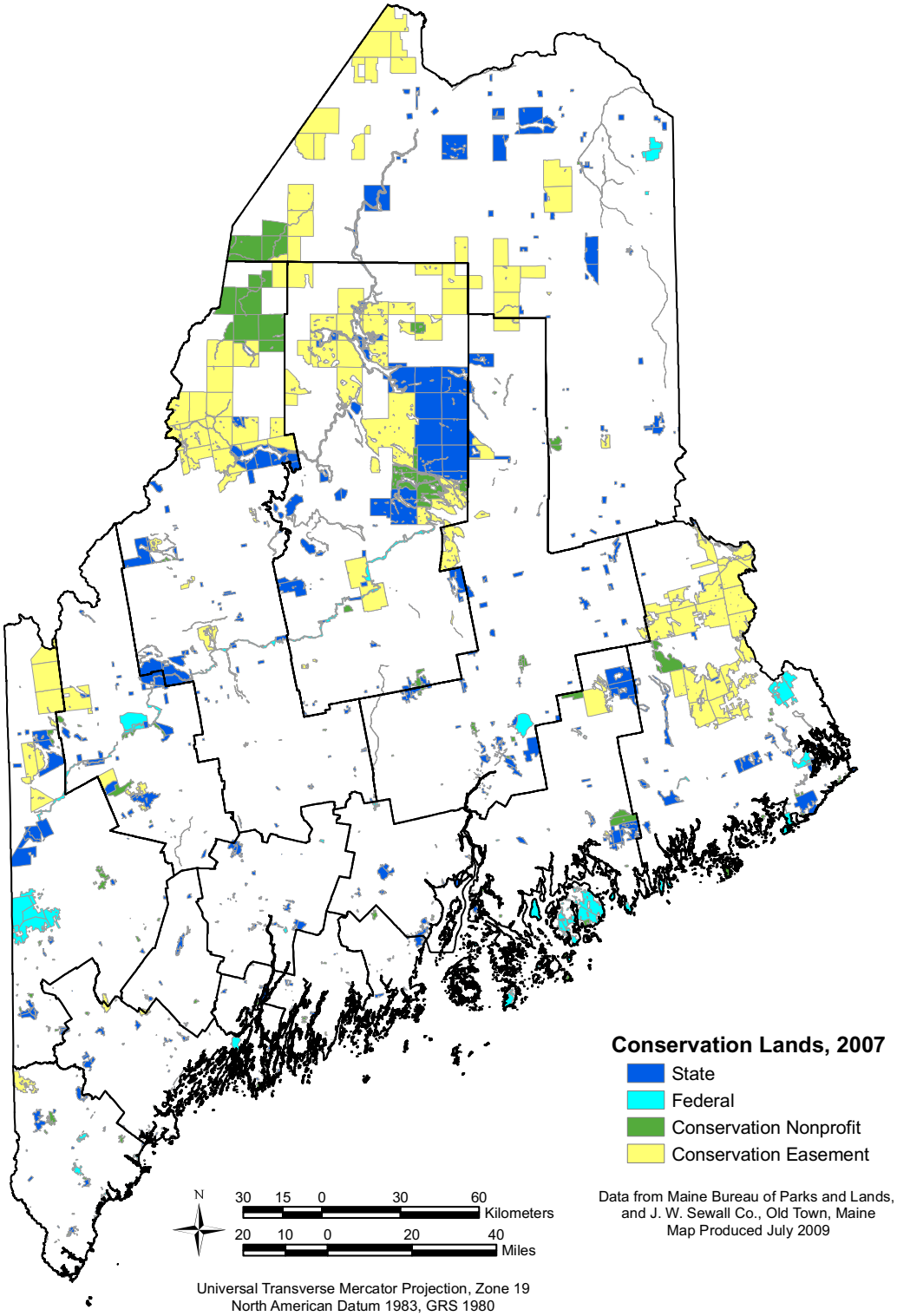
Sprawl, the dominant form of development for nearly half a century, is particularly injurious to the continued economic and environmental stability of forests. Just as fragmented ownership, with scattered development spread throughout a township, can make timber management impractical, it can also disrupt plant and animal habitats.

The Cost to Wildlife

New research has been able to quantify the threats of population decline and extinction for numerous species, and the results are often sobering. Maine's emphasis on preserving riparian habitat – through LURC regulations in the unorganized territory, and state-mandated shoreland zoning in municipalities – is a justifiably central policy focus.

The coastal and interior wetlands and seasonal vernal pools provide the breeding habitat for most fish, amphibian and reptile species. These animals in turn are the "grocery store" that provide food for larger, more charismatic species, some themselves threatened, such as bald eagles and Canada lynx.

One key component of forest environmental health is the role of small streams in providing spawning habitat for cold water species. Heavy cutting around such streams may, through increased siltation and higher water temperatures, adversely affect fish and amphibian species. New shoreland zoning rules for towns and cities recommend, but do not require, additional stream protection. Conservation easements may be employed as effective means to that end. LURC rules do require small stream protection in the unorganized territories.



Maine Conservation Lands, 2007

Figure 5

Source: Maine Image Analysis Laboratory, used with permission

The detailed stories behind each threatened species often provide surprises. Roads – the inevitable consequence of scattered development – turn out to be more hazardous to animals than most humans imagine. Dramatic declines in the number of wood turtles, statewide, and spotted turtles and Blanding's turtles in York and Cumberland counties – the latter two both with Endangered Species listings – may have resulted in large part from road kill and separation from breeding grounds. Any slow-moving animals, from snakes to frogs, have similar vulnerability. Since reproduction rates for reptiles, for instance, is often quite low, even 2 to 3 percent mortality per year can lead to ultimate extinction.

While these conditions are more prevalent in southern Maine, some species are at risk when even seemingly minor amounts of development take place, as in most of northern Maine. Animals on state and federal Endangered Species lists, such as the pine marten and Canada lynx, are well-known examples of animals needing large, undisturbed tracts, but many birds are equally affected, including red-shouldered hawks, warblers like the northern parula, and ovenbirds.

Where development has occurred or is planned, maintaining wildlife corridors is important to predator species, to game animals such as deer and moose, and to a host of smaller mammals. With the acceleration of global warming, corridors will play an even larger role for both plants and animals, and may mean the difference for most species between successfully adapting to more northern areas, or extinction caused by a lack of mobility.

Declining Deer Herd

Management of deer habitat has been a particular dilemma for landowners, sportsmen, and state agencies. Unlike other major game species, such as moose and bear, whose populations are stable or growing, deer numbers have been declining steadily in northern and eastern Maine. Suburban areas, ironically, have become prime deer habitat in Maine, as in other states, yet hunting in usually limited in these areas.

While several factors have been proposed to explain the decline of the deer herd in northern Maine, including the decline of farming and increased predation, the single most important limiting factor appears to be a lack of winter habitat. Sporting camps that once thrived on visiting deer hunters must look for other clients.

The Land Use Regulation Commission at one time wrote regulations to prevent overcutting in deeryards, called Deer Wintering Areas, some of which remain in effect. Since then, voluntary agreements between landowners and the Department of Inland Fisheries and Wildlife have been the rule. Policy continues to evolve, but deer numbers remain low.

It is possible that easement agreements with landowners could be constructed to include greater protection of winter habitat, with landowners being compensated for lower harvest levels. Such an incentive-based system might be more effective than either state attempts at regulation, or relying solely on the goodwill of landowners.

Recreational Needs

While all human activities that take place in the woods rely on maintaining intact forests, recreation is particularly sensitive to environmental concerns. Since it is completely voluntary, and corresponds to our often ideal images of nature and "getting away from it all," visitors need to be encouraged, but their activities sometimes need to be curtailed to prevent overuse. Recreation in the unorganized territory has been efficiently coordinated by North Maine Woods, which offers an example of low cost and high value recreational opportunities through a voluntary association of major landowners.

The mainstays of motorized recreation – snowmobiles in winter, ATVs in summer – continue to thrive, as do human-powered excursions in mainstays like the Appalachian Trail, the Allagash Wilderness Waterway and Baxter State Park.

Recreation has also become increasingly diverse and dispersed. A number of new initiatives, taken together, indicate that Mainers and visitors to the state are changing the way they see and use the North Woods. A cross-country ski and hut system now under construction is projected to extend from Andover to Moosehead Lake. Another hut and trail network is planned for the Katahdin Iron Works region, building on the existing attractions of the Appalachian Trail. Several canoe trails have been established across northern Maine and other sections of the four-state northern forest. A major biking and multi-use trail is being constructed over 86 miles on the railbed of the old Calais Branch line from Ellsworth to Machias, joining several existing multiple-use trails. And the Maine Birding Trail, Ice-Age Trail, and other nature-based tourism plans respond to still more uses of the outdoors.

These linear recreational experiences bring people into the woods in different ways than point-to-point visits by motor vehicle that have been the standard for most recreation trips up to now. There is also considerable room for expansion; the rails-to-trail movement began in the Midwest and has been relatively slow in reaching Maine. The state should continue and expand its efforts to retain valuable rights-of-way.

In all of these experiences, contact with large tracts of forest land is essential and one of the main attractions. Fixed trails have not previously been part of most forest management schemes, but accommodating them may be in the long-term interests of forest landowners, with appropriate compensation. The enviable tradition of widespread public access to private lands is a major

strength for Maine, and provides a solid foundation to build on. The existing partnerships of private landowners and public agencies both to oversee and to enhance recreation should be the model.

Climate Change

The greatest environmental challenge of the 21st century is likely to be the climate change brought on or accelerated by human activity. Maine's forest may be an inestimably more valuable resource than it appears today. Whether the sheer economic value of forest will increase rapidly or not – and some recent large land sales suggest there could be a premium on greenhouse-gas absorbing landscapes – forest planning must now accommodate the reality of major shifts in habitat, soil conditions, and resource use. All of these factors suggest that preserving as much as possible of the indigenous North Woods appeals not only to traditional conservationist instincts, but even to maintaining our current way of life,

The global warming models considered most probable today suggest that within the century, Maine's climate may resemble that of North Carolina today. Accommodating those changes will likely be far more successful if the forest remains largely intact and unfragmented. The more gaps in the natural forest infrastructure, the more likely some animal and plant species will die out, in turn creating environmental changes whose outcomes cannot be predicted, but which could disrupt both natural ecosystems and human economic systems. Current science is not adequate to make specific predictions, but adapting to change is far more likely to be successful if development is controlled, energy use and greenhouse emissions are reduced, and natural systems like the forests are maintained.

Images of Maine change over time. The state seal, from the mid-19th century, celebrates farmers and fishermen as the mainstays of the economy. The uniqueness of this small, still largely rural state in a new century is visible across the country in such details as the label on a popular brand of bottled water – an image that captures Maine's bountiful flowing water surrounded by the forest that sustains it. These may still be the state's most important assets.

Fitting the Pieces Together

To fulfill the vision of ensuring a Maine forest encompassing most of the state, as it does today, that also contributes substantially to the state's economy, its quality of life, its attractiveness to Mainers and visitors alike, while preserving its vital natural quality, would seem to be a tall order.

Nonetheless, the methods for doing so, and the willingness to craft agreements for applying them, are present within the state and in the larger world outside. While no era is free from conflict and contention, there seems to be an unusual consensus developing that traditional uses of the Maine woods, suitably refined and updated, are fully compatible with its most important environmental qualities and natural assets.

There are many initiatives that could be employed to further these goals. We cite those that seem to have the greatest impact, and the greatest likelihood of being employed in this period of economic scarcity, with an awareness of common goals.

What must emerge from the continuing debate about Maine's forest is a new and balanced concept of diverse uses, where the values of intact ecosystems are balanced with sustainable management and harvesting, where opportunities for recreation and contemplation increase and where greater economic returns from forest products can be realized. While some would hold these goals to be in conflict, recent political, economic and cultural trends show that they can be harmonized and even institutionalized. And they must be, using new models for conservation that build on and amplify existing partnerships. Maine's forests are healthy, but it cannot be assumed that this fortunate condition will continue on its own. Sustainable forestry needs to be financially attractive to landowners and not just a worthy goal.

We recommend the following steps toward making a positive future more likely.

- **Use a mixture of public and private funding to craft a landscape-scale initiative to protect large tracts of forestland, to be known as the Great Maine Forest Initiative.**

Because the menu of options is so much broader than it was 20 years ago, it is no longer necessary to argue about national parks and forests, on one hand, and a fully privatized, unregulated form of management on the other. An intelligently designed initiative can include qualities desired by all parties to the debate over the forest's future, tailoring the mixture to meet resource needs as well as local circumstances and priorities.

It is unlikely that any single conservation or management technique can provide all of the results necessary to maintain a healthy, intact, and economically productive North Woods. An emphasis on innovation and flexibility will be necessary to craft a plan that meets the most important objectives.

Conservation Easements

In recent years, conservation easements have become the most important forest conservation technique, and have been shown to be flexible and adaptable that has served Maine well and can continue to do so. Easements stretch public and foundation dollars because not all rights to the land need be purchased. At its simplest level, a conservation easement may prevent residential and commercial development on a given tract, while allowing forestry to continue at sustainable levels in perpetuity.

Easements may allow for other priorities, too – additional protection for lakes and streams, including buffer zones. It can protect key wildlife habitat, from deeryards to lynx, provide new recreational opportunities, and guarantee public access points.

Each restriction on the economic return from forestry, however, can be expected to increase the bundle of property rights that needs to be acquired, and hence the purchase price of the easement. Those who may advocate acquisition instead of easements should recognize that it is possible to acquire further rights to a forest tract under easement, up to and including title to the land. There are also instances when straightforward protections against development will be adequate.

To achieve their long-term goals, conservation easements of all types must be monitored to ensure that their terms are carried out. In some previous agreements, endowments to pay for continued monitoring have been created, but in any case provisions must be made for long-term compliance.

Conservation easements have proven to be well-suited to Maine's needs. In a state which has the highest proportion of its timberland under private ownership, easements provide an important way to provide public benefits. Targeted public acquisitions have been part of most large easement agreements, and these, too, are appropriate in areas of high-value recreation and wildlife habitat.

A New Opportunity

An opportunity may soon exist for a large-scale conservation agreement that would include substantial amounts of federal funding. While Maine helped pioneer, and has substantially benefited from, the Forest Legacy program that has allowed federal dollars to be used more flexibly than ever before, grants have become more competitive and Maine's share has fallen. At current funding levels the program is not likely to redress a

historic imbalance between federal assistance to New England, where public lands are relatively scarce, and the Western states, where the federal government is sometimes a majority landowner. And the sources of private philanthropy that drove a considerable proportion of forest conservation over the previous decade have now declined significantly.

Because of the presence of a vast, intact, forested region close to major population centers that has experienced economic decline and is now making plans for a resurgence, there may be a unusual opportunity for a major conservation effort that also retains most current and future commercial uses of the forest.

Unfortunately, discussion of federal participation in conservation efforts in Maine has often led to polarization. Promotion of a national park dominated headlines for several years, but this form of conservation seems unlikely to be well-suited to Maine's historic forms of land ownership and use, because it generally excludes harvesting and other commercial uses. Even Percival Baxter, founder of Baxter State Park, opposed federal intervention in parkland acquisition, and a similar pattern was evident when state ownership was chosen over federal purchase for the Allagash Wilderness Waterway.

National forests provide a more likely model, but here, too, most were created from existing federal and state public lands, not through wholesale purchase of private land. Harvesting levels are usually significantly lower than on private land, and an increasingly litigious environment concerning timber sales in national forests has further restricted cutting in recent years.

Now may be an excellent time to explore other models. Federal agencies like the U.S. Forest Service, which established the Forest Legacy Program more than a decade ago, have also been receptive to new designs for forest conservation. Public discussion initiated by the Forest Service of conservation options in areas like the Berkshires of Massachusetts have begun, and the scope for similar efforts is broader and perhaps more likely to achieve consensus in Maine.

Another example of landscape-scale conservation lies in an unlikely place—the Pine Barrens of southern New Jersey. In the nation's most urbanized state, efforts beginning in the 1970s have preserved the 1.1 million acre Pinelands National Reserve, with common land use rules and concentration of development in existing towns and villages. Only 10 percent of the Pinelands area is owned by the federal government; most of the rest is state forest and reserved land, but a significant portion remains privately owned. As in Maine, one of the great treasures is groundwater. The Pine Barrens aquifer is one of the largest in the East, containing an estimated 17 trillion gallons. Maine's aquifers will also increase in value as growth elsewhere continues. The zoning overlay that was used in the Pine Barrens is, however, different from likely to be crafted for Maine.

Multi-state conservation efforts are rare, but one is now taking shape in the highland areas of New York, New Jersey and Connecticut, which include forested parts of the Appalachian chain and the Taconic Range.

A notable example of management alternatives on federal land has recently taken shape in the Land Between the Lakes National Forest recreation area in Kentucky and Tennessee. This unique 170,000 acre parcel was transferred from the Tennessee Valley Authority (TVA) to the U.S. Forest Service in 1999, and is flexibly managed, with a strong emphasis on recreation as the primary goal. With 2 million annual visits and a summer capacity of 4,000 overnight visitors, Land Between the Lakes is essentially the largest town in the area. Forest Service managers aim to enhance local economies outside the unit by offering complementary but not competing services. They have also undertaken scientific forest management, and are restoring 9,000 acres to oak-grassland conditions as a pilot project that includes controlled burning. Because of its management flexibility, LBL is considered a laboratory for other National Forest units, and could offer useful examples for a Maine initiative.

Other examples of innovative conservation come from within Maine itself. The undeveloped shoreline of the south end of Sebago Lake, the state's second largest after Moosehead, is a result of land purchases by the Portland Water District, which operates one of the largest public water systems in the Northeast for Maine's largest city and a dozen surrounding communities. While such examples of regional cooperation are relatively uncommon, the fact that they have worked in the past should give us confidence that they can succeed again.

Discussion of new options should focus the proposed Great Maine Forest Initiative. Private timberlands can and should continue to be a major component. On a willing-seller basis, conservation can be designed to add easements, purchases and planning guidelines to limit and concentrate development, with continued support from federal, state, non-profit, and private sources of funding. Particularly important is a process to identify high-value lands that should be the focus of conservation efforts. Examples include protection of remote ponds and streams, significant old-growth stands, and unique natural features.

Mainers have shown great ingenuity over the past decade in employing a mix of public and private funding, cooperative efforts involving many and diverse partners to protect existing forest uses and conserve natural values. We can extend and expand those efforts in the years just ahead.

Private donors, working with state and federal partnerships in the Forest Legacy and Land for Maine's Future programs, have achieved remarkable gains for conservation in the working forest in a relatively short period of time, but this wave has now crested. Amid a continuing economic slump, public investment is likely to be even more important in the years ahead.

The objectives of this effort will include maintaining or increasing wood production, protection of late successional old growth, preserving biodiversity, and maintaining public access.

- **Encourage consideration for transfer of development rights at the local and regional level.**

Local and regional land trusts have done yeoman work over the last decade and a half, working primarily though not exclusively in towns and cities where development pressures are highest. Successful campaigns have been conducted from the Mt. Agamenticus area in southernmost York County to Maine's eastern border with Canada, in Washington County's Downeast Lakes region. The acreage protected in this manner has skyrocketed, from 135,000 to 1.7 million acres.

Funding for such efforts has declined recently, however, and municipalities have shown interest in new planning tools that can achieve some of the same purposes.

At least two towns, Topsham and Scarborough, have adopted ordinances that provide for the transfer of development rights (TDR) from valuable open space parcels, where conservation and recreation are the highest priorities, to designated growth areas, where development is most easily handled, and where transportation and utilities are already available. Typically, developers are permitted to build more densely in growth areas in exchange for payments that are then used to acquire easements or title to forest, farmland or waterfront areas. The TDR system permanently protects a community's vital environmental assets while also using resources more efficiently in developed areas by avoiding sprawl.

Transferable rights have not been widely used in Maine, but they could be. The Sebago Lake holdings of the Portland Water District are an example of where, in the face of today's pressure for sprawling development, offsetting development credits could be used to fund the purchase and preservation of open space. Many Maine service center communities would like to encourage denser development, but lack a full range of tools to make it happen. TDRs could function as such a tool in at least a half dozen of the state's populous counties, particularly if regional planning councils are employed in the effort and towns are willing to make cooperative agreements to take in larger areas.

TDRs are also part of the recipe by which the Pine Barrens in New Jersey were permanently conserved. The remaining growth areas in the region have been rendered more valuable by offsetting credits from forest and watershed protection.

A likely focus for transferable rights discussions would be areas identified as vulnerable to growth and development. In Maine towns and cities, these include the lower watersheds of the Penobscot, Kennebec and Androscoggin rivers, and the entire course of the Presumpscot.

As presently conceived, TDRs are more likely to focus on larger towns and cities, where development pressure is more intense. On large ownerships in the unorganized territories, however, there is a potential for pairing permanent conservation through TDRs with development that includes resorts and other relatively intense uses. LURC zoning includes tools such as lake concept plans, which could be adapted for this purpose.

- **Encourage planning for and development of community forests.**

Communities often take ownership of concepts like sustainable management and a balanced local economy when they directly participate in such efforts. There is a strong tradition of town and city forests in Maine, some of them dating to the 19th century and the original settlements. More recently, rapidly changing land ownership has prompted renewed examination of local public ownership. In one case, a new municipal forest in Grand Lake Stream, the Farm Cove Community Forest, was created as part of a larger conservation effort in the Down East Lakes and Machias River region. In another instance, Amherst is working with the Department of Conservation and the Forest Society of Maine to develop a new town forest.

- **Rationalize green certification for forestry and encourage branding for Maine forest products.**

The political controversies of the 1990s, combined with the turnover in land ownership in the decade following, resulted in great interest in "green certification" of Maine forest land. Under several different sponsors, ownerships were surveyed and monitored to ensure that harvesting practices were sustainable, forest management was conducted according to recognized silvicultural practices, and that key wildlife, ecological, and recreational values were maintained.

While 7.5 million acres of Maine forest land have been certified, the results for landowners have been mixed. Initial attempts to market certified lumber at a premium were often unsuccessful due to limited supply, but certified forestland received a major push from publishers like *Time* magazine, which required that its paper come from green suppliers. Creating a financial premium for such requirements, as is being considered at both the state and national levels, could spur further certification by landowners.

Creating additional value for forest products from Maine will be vital if the state is to remain competitive in a world market where other producers can grow fiber faster, and may face fewer regulations and restrictions. The state

can play a role in encouraging certification for small- and medium-sized tracts where landowners may need technical assistance.

- **Encourage and plan for development of new forest products, markets and uses, while maintaining existing capacity.**

While pulp and papermaking has long dominated public perceptions of the forest products industry, demand for saw timber has been strong in recent years and is expected to rebound by 2010-11. Biomass energy has seen strong demand increases recently, and new products such as wood pellets have emerged. The potential of cellulosic ethanol production is significant, and new commercial uses of forest products can be expected to multiply. Federal investment in biofuels and biomass use is increasing, which can provide new incentives for landowners to practice forest stewardship.

A new generation of value-added forest products is arriving. With continued investment in research and technology, and use of existing and expanded manufacturing facilities, Maine's rural economies can be substantially strengthened.

Existing mills, meanwhile, continue to employ thousands of Mainers, and are the largest component of the state's manufacturing base, contributing $10 billion annually to the state GDP. Declines in production have been registered in several adjacent timber-producing states, but not in Maine.

Even uses not directly related to fiber production have the potential to produce significant new revenue. Locating wind farms for electric production within the working forest has significant advantages, both in reducing conflicts with other land users and providing a new revenue stream for landowners. Ecosystem services are offered regionally and nationally by a variety of Maine firms, whose client bases and staffing levels are growing. This could be a real opportunity for companies located here but capable of serving much larger markets.

In many of these cases, new systems for permitting and planning facilities will be needed. Local, state and federal governments will need to be attentive to these new uses in terms of minimizing conflicts and delays, while still ensuring protection of the environment and other public resources. Agencies like the Land Use Regulation Commission, which are particularly critical to the northern forest, should have the resources and structures to meet these new challenges.

- **Credit active forest management within the RGGI and emerging national cap-and-trade systems.**

Healthy, growing forests have significant potential for carbon sequestration and reducing the harmful effects of greenhouse gases. While most of the focus of the Regional Greenhouse Gas Initiative adopted by Maine and other Northeastern states, and developing legislation in Congress with the same aims, has been on pollution and industrial emissions, the costs and value of active timber management should be included, and credited, within any trading markets that emerge.

- **Form a Maine Forest Advisory Council.**

The experience of Keeping Maine Forests, which involved representatives from all major interests concerned with the forest – industry, landowners, conservation groups, and the public sector – suggests that its work should be carried on by a new ad hoc group charged with implementing the Great Maine Forest Initiative. All the diverse interests present in the KMF group will be essential to sustainable progress on a conservation plan different from any others yet created, though techniques and plans adopted from other efforts should prove useful.

The objective should be not simply keeping Maine's forests, but making them a more valued and valuable resource in the years ahead. Basing its work on sound economic, scientific, environmental and recreational values, the new group should develop a variety of strategies to achieve these goals.

Appendix I

Keeping Maine's Forests Presentation List (February - December 2008)

February 15, 2008

"A Summary of Recent Change to Maine's North Woods" Professor Charles Colgan, University of Southern Maine Dr. Charles Lawton, Chief Economist, Planning Decisions, Inc. Mike LeVert, Economist, Maine State Planning Office

"Monitoring Maine's Forests From Above: From Science to Application" Professor Steve Sader, University of Maine, School of Forest Resources

"Timberland Ownership Structures: Financial & Time Horizon Characteristics" Peter Triandafillou, Huber Resources Corporation

"Seven Drivers of Change for the Maine Forests" Professor Bruce Wiersma, University of Maine, Center for Research on Sustainable Forests

April 29, 2008

"Trends in land conservation in Maine's forests and the role of private, non-profit organizations" Alan Hutchinson, Forest Society of Maine

"Working forests conservation easements: The future of forestland conservation in Maine" Frank Reed, Catamount Consulting Group

"Alternative Futures for Maine's North Woods" Professor Rob Lilieholm, University of Maine, School of Forest Resources

"A Look at Forest Certification in Maine" Pat Sirois, Maine Sustainable Forestry Initiative

June 30, 2008

"Speaking out on the North Woods: A Summary of Interviews With Opinion Leaders" Julie Wormser, Harvard University Kennedy School of Government

"LURC: A Planning & Regulatory Agency" Catherine Carroll, Land Use Regulation Commission

"Quality of Place: Framework for a 21st Century Economy" Eleanor Kinney, Maine Quality of Place Council

August 4, 2008

"Recommendations to RGGI for Including New Forest Offset Categories: A Summary" Alec Giffen, Maine Forest Service

"LD 1305: An Act to Encourage Long Term Holding of Maine Timberland and Sustainable Forest Management" Pat Flood, Maine House Representative

September 12, 2008

"Influences of climate variability on Maine's Forests: Past, Present, and Future" Professor George Jacobson, University of Maine

"How policies affect logging contractors in the Maine woods" Andy Irish, Professional Logging Contractors of Maine

"Maine's Forests: Promises & Possibilities" Donald Mansius & Dave Struble, Maine Forest Service

"Forest Bioproducts Research Initiative (FBRI) at the University of Maine" Professor Hemant Pendse, University of Maine

October 28, 2008

"Public Access and Use of Maine's Forest—History and Trends" Al Cowperthwaite, North Maine Woods

"History of Maine's Sporting Camps" Rick Givens, Maine Sporting Camp Association

"The Next Generation of Family Forests" Conference call-in from Al Sample & Catherine Mater Pinchot Institute

December 10, 2008

"Institutional Investors in the North Woods—Who Are Those Guys?" Dr. Bret Vicary. J.W. Sewall Co

"The History of the Northern Forest Lands Council" Donald Mansius, Maine Forest Service

Appendix II

Keeping Maine's Forests
Member List and Affiliation

Anne Archie, US Forest Service

Bruce Bornstein, Isaacson Lumber Co.

Patrick Flood, Maine House of Representatives

Alec Giffen, Maine Forest Service

Tim Glidden, Land for Maine's Future

Sherry Huber, Maine TREE Foundation

Dr. Ken Cline, College of the Atlantic

Rick Givens, Maine Sporting Camp Assn., ret.

Andy Irish, Professional Logging Contractors of Maine

Eleanor Kinney, Natural Resources Council of Maine

Dr. Ray (Bucky) Owen, University of Maine

John Piotti, Maine House of Representatives

Hank Swan, Wagner Forest Mgt. Ltd.

Mike Tetreault, The Nature Conservancy

Karin Tilberg, Office of the Governor

Everett Towle, Small Woodland Owners Association of Maine

Peter Triandafillou, Huber Resources

Tom Wagner, US Forest Service

Dr. Bruce Wiersma (Chair), University of Maine

Karen Woodsum, Sierra Club

A Member of the University of Maine System