

Report of the Blue Ribbon Commission on Land Conservation



New England Governors
Conference, Inc.

September 2009

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Cover photo: Connecticut River coursing through Pioneer Valley, Massachusetts.

Report of the Blue Ribbon Commission on Land Conservation

of the

New England Governors Conference, Inc.

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September 2009

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Acadia National Park, Maine

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We offer special thanks to Bob McIntosh and Nora Mitchell of the National Park Service and to Kent Connaughton of the U.S. Forest Service for sage advice, their enthusiasm for our work, and their contributions to it; to John Shea of the New England Governors Conference, Inc., for his energetic efforts throughout to keep us organized and on-track; to Prof. Jack Kartez, Barbi Ives, and Jennifer Hutchins of the Muskie School of Public Service for their professional assistance with CLC meeting facilitation, project administration, and report preparation, respectively; and to Gordon Abbott, Jr., Jerry Bley, Armando Carbonell, Cris Coffin, Jim Connors, Ted Diers, Ken Elowe, C.H.W.(Hank) Foster, Alec Giffen, Stephanie Gilbert, Greg Ingram, Charles Levesque, James Levitt, Kathleen Leyden, Bernie McHugh, Lorraine Merrill, Lisa Primiano, Steve Sinclair, Mike Tetreault, and Steve Walker for important contributions to the report that we hope they will each recognize.

Finally, the chair wishes to acknowledge the six students of the Muskie School's graduate program in Community Planning & Development who researched recent trends in land use and land conservation in the six New England states, and contributed greatly in the distillation of their Capstone project findings, available at <http://efc.muskie.usm.maine.edu/pages/pubs.html>. They include Tom Devine, Stephanie Dulac, Brittany Howard, Amanda Loomis, Brett Richardson, and Andie Small, now all happily graduated.

Our deepest thanks to one and all. What is of merit in this report is due largely to your caring efforts; responsibility for its shortcomings and omissions is our own.

Richard Barringer, CLC chair
September 2009

Executive Summary

The Background: A Heritage of Concern.

In Boston in November 1908, then-Governor Curtis Guild, Jr. of Massachusetts proclaimed the *First New England Conference Called by the Governors of the New England States*. The convening came on the heels of the landmark White House Conference of the Governors of the United States called by President Theodore Roosevelt. Natural resource management issues, especially degraded forests and their river headwaters, dominated both the White House meeting and the later Boston event that led to creation of the White and Green Mountain National Forests. In September 2008 the region's current Governors celebrated the centennial of the 1908 Boston meeting and established a blue-ribbon commission to identify the most urgent land conservation issues facing New England today, and to report with recommendations to the Governors' meeting in September 2009.

The Challenge: Saving the Stage.

New England today faces unprecedented and profound threats to its land and natural resource base. Climate change and its impacts on the region's biodiversity and agricultural and forest economies, fragmentation of the landscape from sprawling development and the generational turnover in farming and forestry operations, and



Cornfields near Mt. Tom in Easthampton, Massachusetts



1908 White House Conference of the Governors, President Theodore Roosevelt front row, center.

the demand for coastal property threaten the viability of the plants, animals, and resource-based industries that depend on these lands. They also threaten the human experience of our natural world. As an historic marker of change, tourism now eclipses forestry and farming as a source of employment in the region's rural places, yet tourism depends directly on these very qualities of the landscape and rural industry.

These lands may well be viewed as the green infrastructure that future generations of our citizens will require for their health, well-being, and prosperity. At the same time, the New England experience of place – human in scale, with close-by access to the land – resonates widely with virtually all Americans. As the nation urbanizes further, efforts to re-create elsewhere what New England has long enjoyed come at a time when our own qualities of the landscape are in peril. Happily, growing public awareness of climate change and its impacts, the role forests play as carbon sinks, the greatly increased demand for locally-grown foods and resurgence of small-scale, community-based farming, all raise the urgency of and public receptivity for conservation initiatives.

New England has for at least a century been a national leader in maintaining and renewing the human benefits of



Building Mink Brook Bridge, New Hampshire (courtesy National Park Service)

land conservation. A highly developed New England land trust community and creative uses of the conservation easement – both New England inventions – are powerful assets now in use across the nation. New England may once again lead the nation, this time through a collaborative partnership among the public, private, and non-governmental actors necessary to land conservation in the 21st Century.

This is, moreover, a critical time to engage the next generation of citizens of New England to care about our future landscape and quality of place as an active duty of citizenship. With a public that is increasingly urban and suburban, more ethnically diverse, and in many cases with limited access to the outdoors, there is compelling need across the region to engage a new generation in land conservation. A lost generation at this juncture will prove devastating to them, to the landscape, and to the industries that depend on it. As a goal, we believe that no New Englander should be more than 15 minutes from a walk in a natural setting.

The Opportunity: The Time Is Now.

A series of forums with concerned and knowledgeable citizens across New England convince the Commission that now is the time for a high priority, integrated, pan-New England land conservation effort that transcends

state boundaries and the public and private sectors. The collaborative strategy we propose is enabled today by new technologies that allow much-improved, cross-boundary analysis. A new funding model is required, as well, a true and lasting federal, state, local, private, and philanthropic partnership that will serve as a national model for other regions. Central to this funding model is a fair share of federal conservation support to New England, and the development of tax and other mechanisms that will allow farms and forestlands in private ownership to prosper.

The outcomes we foresee for this effort, in terms of both quality and quantity, promise a strong, self-renewing legacy on the New England landscape. They include:

- Farms and forests – a new, national model for growing, producing, and using local agriculture and forest products, and significantly displacing building materials with carbon footprints vastly larger than wood's;
- Climate mitigation and adaptation – preventing the loss of forest and farmlands across the region by focusing development in city and town centers and mitigating forest and farmland loss with new forest cover in cities, suburbs, and marginal farm land;

- **Energy** – exploration and development of alternative energy resources across the region where appropriate and consistent with other values;
- **Sustainable economic and community development** – maintenance of a diverse landscape that will provide jobs and economic opportunity in all and, especially, in rural places;
- **Biodiversity** – conservation of the existing natural landscape and restoration of plant and wildlife habitats that have been and will be adversely affected by development, climate change, and invasive species;
- **Culture and recreation** – maintenance and enhancement of the natural landscapes’ cultural, recreational, and educational experiences; and
- **Public education** – greater opportunity to experience and learn from nature close to home, wherever one may live or visit in New England.

Recommendations: A Lasting Legacy.

The Commission offers five recommendations on which to build a lasting conservation legacy for future generations. These needed innovations will be greatly enhanced by the active support of affected federal agencies and the New England Congressional Delegation.

1. Keep Forests as Forests. Empower the six New England State Foresters, in collaboration with the USFS, the region’s universities, private forest landowners, and other stakeholders and interested parties, to prepare a New England Forest Initiative. This will constitute a new and creative partnership among the New England states, federal government, local communities, and private forest and conservation interests that has as its goals preventing the loss of forestland and ensuring the sustainability of these lands. It will identify

barriers to and opportunities for sustaining forestlands that are in private ownership, expanding regional forest product production and consumption, and identifying the tools to make these policies work.

2. Keep Farmlands in Farming. Empower the six New England Chief Agricultural Officers, in collaboration with the USDA, the region’s universities, private farmland owners, commodity and farm organizations, and other stakeholders, to develop a New England Farm and Food Security Initiative. This will establish the region’s capacity to increase production, utilization, and consumption of New England-grown farm and food products; identify barriers to and opportunities for expanding regional production and consumption; and recommend appropriate means and measures to remove the barriers and achieve these goals and protect the region’s agricultural land base.

3. Connect People to the Outdoors. Empower the six New England State Liaison Officers to the federal Land and Water Conservation Fund, in collaboration with local partners and education leaders in each state, the National Park Service, and U.S. Forest Service, to prepare a New England Outdoor Initiative built upon the several State-wide Comprehensive Outdoor Recreation Plans and related open space planning documents. The initiative will identify



Frog and friend

six-state priorities for outdoor recreation and education, and means to engage younger generations in land conservation; address urban as well as rural needs; and identify priority issues and recreation land conservation projects common to two or more states.

4. Protect Wildlife Habitat. Empower the six New England Chief Wildlife Officers, in collaboration with partner groups, to prepare a New England Wildlife Habitat Initiative, making use of each state’s Wildlife Action Plan as the foundation for regional work on habitat connectivity that will inform land use and public infrastructure investment decisions at the local, state, and federal levels.

5. Safeguard Coastal and Estuarine Lands. Empower the Coastal Program Managers in the several coastal states, in collaboration with the Chief Wildlife Officers and other partners, to develop a New England Coastal Initiative. This initiative will make use of each state’s Coastal & Estuarine Land Conservation Program and Wildlife Action Plan, and the New England Governors and Eastern Canadian Premiers’ Climate Change Action Plan, to identify a regional strategy for coastal land conservation and acquisition that addresses joint goals for climate change adaptation and habitat protection.

The Commission recommends that these several initiatives form the basis of a New England Land Conservation Act to be introduced to the Congress to advance and support

New England’s role in both fulfilling its own priority conservation needs and serving as a national model for regional landscape conservation.

We further urge the Governors to call upon appropriate agencies of the federal government and the New England Congressional Delegation to maintain and fully fund essential land conservation initiatives, including the Forest Legacy Program, the Farmland Protection Program, the Land and Water Conservation Fund, the State Wildlife Grants Program, the Coastal Estuarine Land Conservation Program, and the New Markets Tax Credits; and to include in federal climate change legislation funding for forest, farm, wildlife, and coastal conservation, and for outdoor recreation and education.

Finally, we recommend that the Governors establish the CLC as a standing Commission of the NEGC to continue its work, implementing its recommendations, coordinating the initiatives cited above, and identifying other opportunities for regional collaboration, to the extent funding allows.

.....

With these timely actions, we believe the Governors will set in motion a long-lasting legacy on the New England landscape, a far-sighted and far-reaching initiative to conserve the region’s diverse landscapes and help ensure that they will remain forever healthy, productive, and accessible to the citizens of New England and the nation.

Commission Members

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Building sandcastles (courtesy Massachusetts Coastal Program)

Introduction

The first meeting of the New England Governors as a regional body took place in Boston in September 1908, to address the need for land and water conservation measures throughout the industrializing region. A century later the current New England Governors recognize the importance of continuing to protect our lands and waters for their many benefits to society. New England's natural heritage is not only a source of recreation and beauty, it is an engine of our economy, the foundation of our shared culture, and the identity of New England regionally, nationally, and globally.

In November 2007, sixty recognized New England leaders, with over a thousand years' experience in land conservation matters, gathered at the New England Center in Durham NH to review a draft regional history of land conservation,¹ and to consider today's challenges and possible responses. Foremost among these challenges is the continuing importance of the region's land resource and the largely unplanned and often destructive landscape changes now taking place in all six states.

The idea was put forward unanimously to propose a blue-ribbon panel of the region's conservation leaders to celebrate the centennial of the 1908 New England Governors Conference, and to:

- emphasize the role of land conservation as a needed infrastructure investment in the quality of life services that most New England'ers today take for granted, including clean air and water, biodiversity, habitat, recreation, energy, transport, and the core economic land uses of forestry, agriculture, and tourism;

1. *Twentieth Century New England Land Conservation: A Heritage of Civic Engagement*. C.H.W. Foster, ed., Harvard Forest, Petersham MA, 2009.

- encourage collective purpose and structure among the several states, across the public and private sectors, for a conservation effort that now is fragmented and largely opportunistic; and
- set the stage for possible joint initiatives and action through coordinated planning, priorities, means of funding, and implementation.



President Theodore Roosevelt

At the meeting of the New England Governors Conference (NEGC) in Bar Harbor ME on September 16, 2008, the six New England Governors established a blue-ribbon commission, charging it to assess land conservation in the region and recommend needed initiatives to advance regional landscape conservation.² The Commission on Land Conservation (CLC) consists of two representatives from each state – one, a senior state policy official, the other a private conservation leader – and has augmented its discussions with help from an advisory panel of interested stakeholders within each state, as well as with public outreach appropriate to each state.

The report that follows identifies key issues facing the New England region in land conservation, based on current research and knowledge. It reviews the challenges we face in preserving and protecting our natural resources, and the opportunities available for joint action by the New England Governors. It offers a set of guiding principles and overall goals for a regional conservation strategy. Finally, it presents a series of considered recommendations to the Governors for their consideration, to accelerate needed progress toward these goals.

2. See Appendix A.

Findings

The Commission's deliberations involved numerous meetings of state and regional stakeholders. Rather than presume a set of issues and solutions based on members' own experience and expertise, the CLC chose to frame a regional dialogue through five questions posed to both the CLC members and the broader stakeholder community of conservation leaders, land trusts, philanthropies, academics, business and political leaders, and interested citizens. The questions, and the general responses to them, follow.

1. What are the major trends, challenges, and opportunities today and over the next decades in N.E. land use and land conservation?

The region faces a number of challenges that impact land conservation and our natural resources. Urban "sprawl," intense demand for coastal property, and fragmentation of agricultural and forested lands threaten the viability of the resource-based industries that depend on them and the many ecosystem services and benefits they provide. The observable and potential impacts of climate change, and additional financial pressures to exploit forest resources especially impact our ability to preserve forest lands.

At the same time, tourism now eclipses both farming and forestry as a source of employment in rural economies, and



Aerial view, Connecticut coastline (courtesy Connecticut Coastal Program)

tourism depends directly and heavily on the conservation of lands and waters. Growing public awareness of climate change and its impacts on coastal and estuarine systems, the role forests play as carbon sinks, increased demand for locally-grown foods, and a significant rise in new farms and farmers help to create a more receptive environment for conservation initiatives. A highly developed land trust community throughout the region is a powerful asset in their support.

Connecting younger generations and diverse cultural communities to the land to sustain interest in land conservation is a compelling goal shared throughout the region.

2. Is there a shared vision for land conservation that the six N.E. governors might embrace and advocate?

The United States faces new and growing challenges today. In this context, the New England states are uniquely positioned to address these challenges by bridging the traditional divides among efficient land use, effective land conservation, and sustainable economic development. The Northeast region is the most highly urbanized in the U.S; as the nation urbanizes, New England may serve as a national model to:

- Protect working landscapes of farmlands and forest blocks that will support nature-based and agri-tourism, mitigate the impacts of climate change, produce renewable food and energy, and filter and recharge groundwater;
- Integrate land use and sustainable economic and community development;
- Sustain the productive and ecological health of coastal and estuarine resources;
- Maintain viable and diverse plant communities and wildlife populations through strategic habitat conservation and management;

- Increase regional food and energy security through expanded agricultural and forest production and processing capacity; and
- Promote community conservation that connects people to the natural world and their food and wood supplies, and protects quality of place in rural, coastal, and urban communities.

3. What might the six governors do collaboratively to ensure that land conservation continues to go forward in New England?

In addition to supporting the initiatives recommended in this report, the Governors may, in particular:

- Advocate for a national carbon “cap and trade” system that will contribute directly to land conservation efforts;
- Encourage the New England Congressional delegation and President Barack Obama to address the historic inequity in federal funding for land conservation in New England, and to continue raising the profile of conservation issues on the regional and national stages;
- Encourage President Obama to commission a national study of the connection and importance of an adequate farm, forest, and coastal land base to the nation’s economic, food, and energy security, to public and environmental health, and to the quality of life of our citizens; and
- Continue, themselves, to elevate the importance and awareness of land conservation issues with state agencies and the general public.

4. How might additional resources be made available from the public, private, and philanthropic sectors in support of N.E. land conservation?

A new model is required for funding land conservation that will build a true and lasting federal, state, local, private, and philanthropic partnership appropriate to the region’s current circumstances and time-honored traditions. A fair share of federal resources devoted to these purposes is in

order, as New England’s share of U.S. departments of the Interior and Agriculture expenditures for land acquisition and management has long been disproportionately low, given our population, the challenges we face, and the opportunities we offer.



Hiking on Gile Mountain, Vermont (courtesy National Park Service)

5. What national interests might land conservation in N. E. advance, and by what means?

The collaborative conservation strategy we advocate here will serve federal, state, local, and private interests by protecting and maintaining a productive land base to be used in perpetuity for the production of a vast supply of social goods, including agricultural and forest products, alternative energies, tourism development, climate change mitigation and adaptation, air and water quality, wildlife habitat, biodiversity, public education, cultural enjoyment, and outdoor recreation.

Challenge and Opportunity

The Commission summarized responses to these questions by defining the overriding challenge and opportunity respecting land conservation in New England today.

The Challenge: “Saving the Stage”

Beyond the sprawling development patterns that took root after World War II and reached what may well be their peak in this decade, land conservation in New England and the U.S. faces unprecedented challenges in the coming decades – historic changes whose effects we may observe and whose outcomes are unknown.

Economic Change. Global changes in markets for labor, capital, and technology have driven massive changes in land tenure and land ownership patterns and interests, principally in northern New England but not exclusively; will continue to drive structural changes in the region’s economy, in part due to the federal tax code and its impact on business planning; and will continue to affect both available job opportunities and their location, even as the current global recession creates new challenges and opportunities for land conservation.

Fiscal Change. Meanwhile, state governments throughout New England (and the nation) that have actively and creatively supported land conservation for the past generation face severe and continuing fiscal stringency that will mean less state funding in coming years for these efforts and all natural resource protection and management functions.

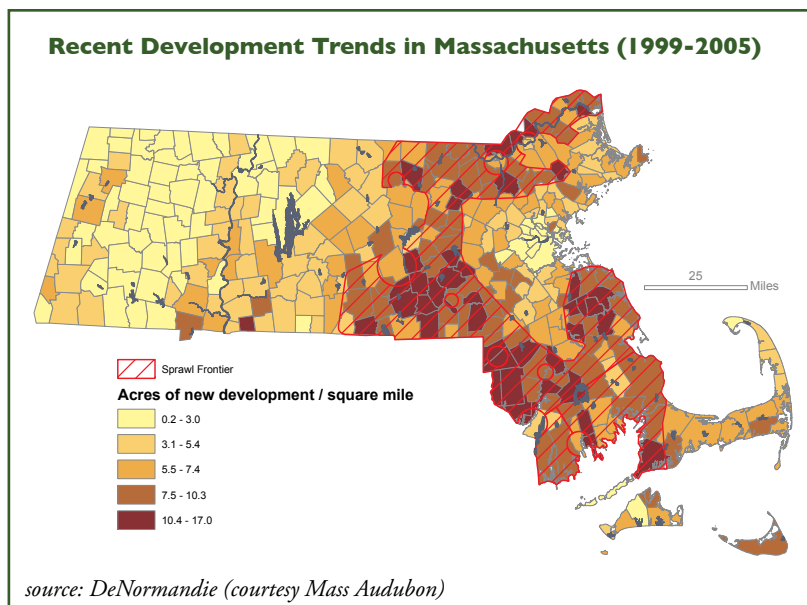
Climate Change. Changes in precipitation, temperature, storm patterns, and sea level will impact habitats and plant communities and cause dislocation of native wildlife, open the way for new invasive species, and compel

human communities to adapt in ways that may create additional impacts on natural resources and natural communities, as well as on the primary industries of agriculture, fishing, and forestry.

Demographic Change. Changes in the average age and distribution of the population, and a growing diversity of national, ethnic, and racial groups mean that people will want to use the land in new ways for food production, recreation, and other important economic and cultural activities.

Cultural Change. Changes in living patterns and technology have created more emphasis on indoor recreation; the loss of access to private land will reduce opportunities for hunting and fishing; summer camps and outdoor education programs are succumbing to financial and legal constraints; and the pressures from second-home development will increase.

In this dynamic setting, each of these changes presents opportunities for the way we think about land conservation, even while it presents different aspects in different states



and localities. There is no single, universal solution to be found, although the challenges do have a strong common thread, in that they presage a changing set of players who will pursue different interactions with the land.

All these challenges – as well as those of “sprawl” – are usefully framed within the unifying concept of *saving the stage* – that is, to preserve the working landscape, recognizing the need, as well, to protect the activities that preserve working landscapes and the underlying land base; and even while knowing that the players and scenarios we see today will be very different 25 and 50 years from now. Within this frame, detailed solutions may be tailored to individual states and local communities, while founded upon a common philosophy and strategic approach to land conservation.

The Opportunity: “The Time is Now”

Challenging times offer opportunities, as well. Land conservation, by definition, is an issue that spans generations, and does not lend itself to the quick-fix, to a short-term vision, or to timid goals.

New Englanders have a long tradition and enduring vision for their natural landscapes and communities, one built on thinking ahead and creating new, pragmatic approaches to protecting and benefiting from our natural heritage. The present time should be no different. Every few decades, an opportunity presents itself – a political and economic window – to revisit this vision and renew it. This is such a time.

Persistence in achieving this vision will be needed. The ideas of the Regional Planning Association of America in another era of change, the 1930s, remain relevant and valid today: how may we bring the country to the city in a manner that better ties our people, our communities, and our region together?

Innovation in land conservation – such as the invention of the land trust and the conservation easement, and their creative application – has long been part of the New England tradition. This regional heritage must be drawn upon at this time.

While each state has somewhat different needs and possibilities, the region itself is closely knit ecologically, culturally, and economically. All will profit from the presentation to the new federal Administration of a strong vision for land conservation. In addition, land use, land conservation, and economic development across the region will all benefit from recognition and use of an authentic and widely-recognized regional “brand.”

This is, moreover, a critical time to engage the next generation of leaders in New England who will care about our future landscape and quality of place. A lost generation in this work will prove detrimental to the public health, our natural resource-based industries, and the future prosperity of the region. Access to the land for outdoor recreation, the experience of nature, and production of food and other natural resource-based products and services is crucial to connecting the next generation to the land. Innovations promoting this connection are called for now.

Finally, the time has come for integrated, “pan-New England” land conservation planning and priority-setting across state boundaries and the public and private sectors, the absence of which becomes ever more problematic and frustrating to local and state efforts. New technologies that allow much-improved, cross-boundary analysis are readily available and make this strategic effort possible today.

Principles and Priorities

The Commission offers a set of “guiding principles” upon which to base the Governors’ actions, including:

- It is now insufficient to view land conservation as a “good” solely for its natural benefits; it must today be linked directly with economic and social benefits, as well.
- Multi-state collaboration toward New England land conservation, to protect and preserve this important natural heritage at a regional scale, is a matter of national interest, particularly in light of climate change and its impacts; and is, therefore, deserving of federal support.
- Whatever the Governors may ask of the federal government in this regard, it needs be expressed in terms of advancing the national interest and, perhaps, proposed as a pilot project for the nation.



Farm outside Conway, Massachusetts



Mother and daughter on biking trip

The Commission also recommends five compelling goals for regional collaboration across New England, a set of policy priorities upon which to build a regional conservation strategy. These include:

- 1. Keep Forests as Forests,*
- 2. Keep Farmlands in Farming,*
- 3. Connect People to the Outdoors,*
- 4. Protect Wildlife Habitat, and*
- 5. Safeguard Coastal and Estuarine Lands.*

We address each in turn, and then turn to the question of sustaining this most important effort.

Building Blocks for a Regional Conservation Strategy

1. *Keep Forests as Forests*

New England's forest-cover defines the character of the region and sustains its communities, from the expansive timber ownerships of the Northern Forest to the back-forty woodlots of the south. Having recovered in astonishing fashion from land clearing and excessive harvesting in past centuries, these woodlands and wildlands cover some 32.5 million acres, more than 70 percent of the regional landscape. They are home to a wondrous diversity of plant and animal life and the source of clean water for our rivers, lakes, aquifers, and reservoirs.

For generations, New England's forests have provided a sustainable source of timber for products ranging from toys and building supplies to fine furniture and papers, creating jobs in the woods and mills and serving as an economic engine of the region's rural economies. Increasingly, the woods are viewed as an important source of renewable energy that will reduce dependence on fossil fuels and enhance national security. The forest landscape creates a scenic backdrop for our cities and towns, and offers unsurpassed adventures for all who enjoy the outdoors. For urban dwellers, forests provide places of beauty, recreation, solitude, essential eco-system services, and connection to nature. For those looking to escape the city, forests offer alluring destinations, supporting a tourism industry that is poised to grow as visitors seek out nature- and eco-tourism experiences.

Ecologically, New England's forests are recognized as a resource of increasing national and international significance. They represent the largest intact temperate broadleaf forest in the country, including almost 19 million acres in contiguous blocks of at least 25,000 acres in size.³ The world's

3. See Appendix B.

major temperate broadleaf forests are primarily located in areas where the human "footprint" has been greatest, such as Central and Eastern Europe and Eastern China. When viewed from this perspective, the New England forest, particularly the Northern Forest and its native plant and animal populations, stands out as remaining largely intact despite the demands of modern society.

Climate change has emerged as the great environmental challenge of our time; the more we learn, the clearer it becomes that forests *must* play a central role in our response to this challenge. Nationally, forests recover and store 10-13 percent of all CO₂ emissions from U.S. sources; and the EPA estimates that through improved management the carbon capture and storage function of U.S. forests could be doubled to approximately 25 percent of U.S. emissions. Maintaining New England's forests and managing them in a manner to maximize their storage of carbon will be important to combating the build-up of greenhouse gases in the atmosphere.⁴

As climate changes, so do our forests, altering habitat for plants and wildlife. If we hope to preserve the region's biodiversity, we must maintain a forest landscape that provides a diversity of habitats and allows plants and animals to migrate and adapt to changing climate conditions.

New England has a remarkable human and institutional capacity to address these matters; but the key to both future forest management and protection lies largely with the many thousands of private individuals, families, organizations, corporations, and institutional investors who hold forestland for myriad reasons. With some 85 percent of the region's forests in private ownership, decisions made by policy makers and forest landowners in coming years

4. See Appendix C.

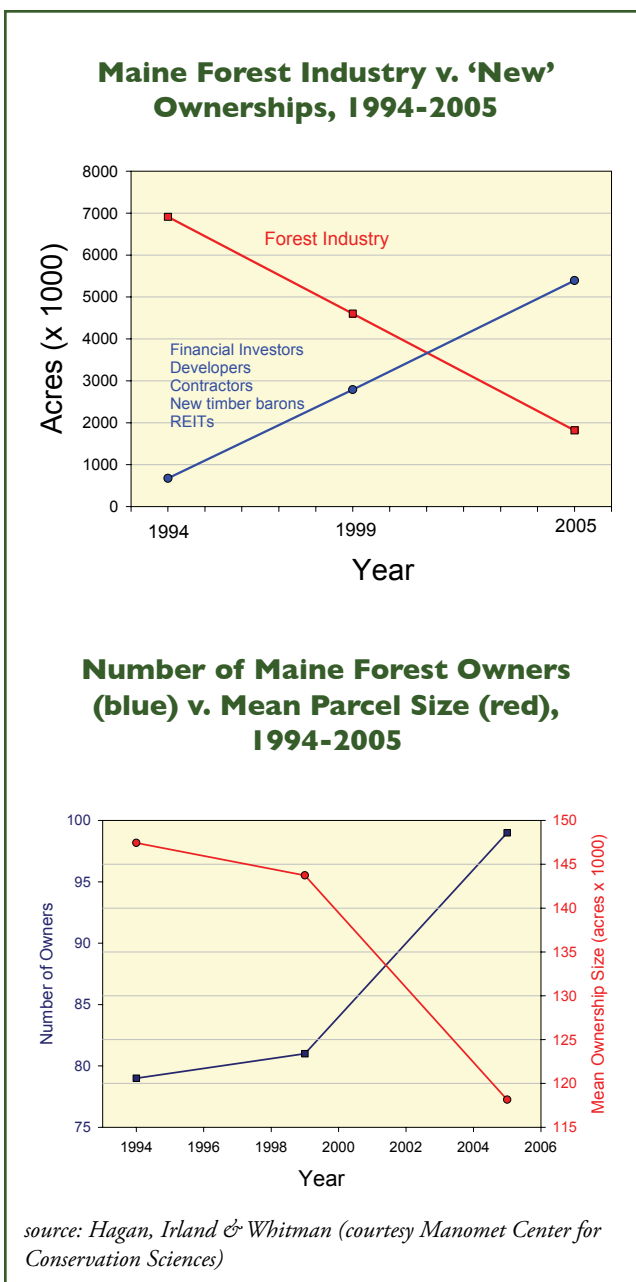
will determine whether New England's forest landscape and the public values it provides will remain intact for future generations. The New England Governors must work with these landowners to ensure that the values they hold and cherish in their land are rewarded for the benefits their lands provide to all of New England and the world.

A Forest at Risk: Recent trends indicate that New England's forests are today at risk:

- Over the past two decades, fully two-thirds of the Northern Forest area has changed ownerships, and tens of thousands of acres have been converted to development uses;
- Since 1993 the average parcel size of forest land ownership has dropped significantly across the region, as forest land tracts have been subdivided and sold;
- A comprehensive survey of forest landowners conducted by the U.S. Forest Service in 2006 found that 43,000 landowners in New England owning 1.75 million acres indicated they plan to sell some or all of their lands over the next five years; and 28,000 landowners owning 500,000 acres of forest land indicated they plan to subdivide their forest lands over the same period;
- In the coming years, intergenerational transfers of forest land will occur at an unprecedented rate, as over one-third of forest owners who own 44% of forestland in the US are today 65 years or older.
- In many parts of the region there is a wide and growing gap between the timber value of forest land and its value for development; and
- Uncertain markets, foreign competition, high domestic production costs, and mill closings and job losses

present unprecedented challenges to our forest products-based infrastructure and communities.

If concerted action is not taken these trends will accelerate, undermining the integrity of forest ecosystems, diminishing the economic productivity of the forest, and degrading the resource values of wildlife habitat, clean water, scenic vistas, and recreation opportunities.



Basis for Action: Bold action is needed to keep one of the region's signature resources – its forests – intact, and to maintain the many values they provide the citizens of the region. In the face of anticipated changes in our climate and economy, each acre of forest is important, has value, and contributes to sustaining the health and well-being of New England life.

Healthy forests are inextricably linked to healthy communities. Today, while there are exceptions, much of this forest remains threatened by conversion to other uses and further fragmentation. Facing an uncertain future of climate and environmental change, an intact natural landscape offers the best opportunity for both mitigating and adapting to climate change. A top priority for all New Englanders must be to protect this globally-important resource in as intact and continuous a state as possible. Equally important, New Englanders must manage these diverse forestlands sustainably for the many values and benefits they afford.

President Barack Obama recently announced a strong agenda for protecting America's open spaces, and charged the Department of the Interior with its implementation. On March 4, 2009, Secretary Ken Salazar expressed a bold vision for conserving America's "Treasured Landscapes," including both federal lands and important private lands; and hopes to inspire federal, state, and local initiatives that will involve private partners. In the same month, President Obama signed the Omnibus Public Lands Management Act of 2009, establishing the 26-million acre National Landscape Conservation System in the Bureau of Land Management, designating more than two million acres of new wilderness, protecting 1,000 miles of wild and scenic rivers, and launching new national park units, hiking trails, heritage areas, water projects, and historic preservation initiatives.

In New England today, we need nothing less than a paradigm shift that fully recognizes the many benefits the



Path through beech forest in spring

public receives from our forest lands, and an ambitious, region-wide approach to forest conservation that will reflect the importance of the resource to future generations. Many worthy federal, state, and private efforts over the past decade have attempted to address the growing threats to New England's forests, but have proven insufficient to achieve the objective at the required scale. Effective action must go well beyond incremental improvements to existing programs.

Historically, America's grandest conservation achievements have occurred in the west; even today, the Western U.S. reaps a disproportionately large share of federal conservation funding. The time is right for New England to set an ambitious forest conservation agenda, assuring that as much as an additional 16 million acres, approximately half of the region's forests, will be conserved.⁵ Achieving this will require unprecedented collaboration among local, state, and federal interests, and the engagement of private landowners with public agencies and non-profit organizations.

5. Currently, at least 7 million acres appear to be conserved.



Stone River, New Hampshire (courtesy New England Forest Foundation)

With its recommendations below, the CLC seeks to embark on an ambitious and far-reaching initiative to conserve New England's forests, and ensure that they will remain indefinitely intact, healthy, productive, and accessible to all segments of society.⁶ The outcomes we foresee are two-fold: (1) to ensure that as much of New England's forestland remains in forest condition as possible; and (2) to see that these forests are sustainably managed for their many benefits. The pressures to convert forestland to non-forest conditions are powerful. Deterioration in New England's forestland base will lead to irreversible declines in the environmental, social, and economic benefits associated with it. Every acre is important, and forward-thinking policy can inform events and shape outcomes.

Recommendations for Keeping Forests as Forests

- 1) **Through the six State Foresters, work to create a new and creative partnership among the New England states, federal government, local communities, private landowners, and forest and conservation interests that has as its goal to conserve New England's forest landscape and the many public benefits it provides. This initiative would seek to:**
 - a) Set clear economic and environmental goals, targets,

⁶ See "Connect People to the Outdoors," p. 24 below.

and benchmarks for the forests of the region as a whole;

- b) Identify region-wide forest land conservation priorities, considering ecological factors, recreation needs and opportunities, the region's forest product industry and communities, environmental justice, and other public values, taking into account the adaptation of the region's forests to climate change;
- c) Advocate and coordinate support for forest land conservation, including fee and easement acquisitions needed to protect public values, and forest-based economic initiatives developed at the local, regional, state, and national levels; and
- d) Seek federal funding to support the partnership's work and to advance these forest conservation goals.

2) Strengthen the forest-based economy of New England that supports quality jobs and dynamic rural economies.

- a) Support programs that will promote New England's forests as a sustainably managed and globally competitive resource, including joint promotion and marketing of wood products, and incentives for capital investment in new technologies for forest products and alternative energy sources;
- b) Work collaboratively to brand New England's forests as a nature- and eco-tourism destination of national significance.

3) Provide strong incentives to private landowners to conserve forest land and manage it in a sustainable manner.

- a) Strengthen and broaden current use tax programs on forest lands, such as additional tax benefits for certified lands and public access;
- b) Expand state and federal income tax incentives for conservation easement and fee donations, such as the transferable tax credit programs now offered in several states; and

- c) Develop public and private programs that provide payments to private forest landowners for management practices that increase carbon sequestration and provide other ecological services such as clean water and biodiversity.
- 4) Support climate change policies that recognize the importance of New England’s forests in combating greenhouse gases and climate change. These policies will:
- a) Allow carbon offset credits for forestry projects that provide net carbon benefits and store additional carbon in a verifiable and permanent manner;
 - b) Allocate a portion of the revenues from the sale of “allowances” to emit carbon for programs that encourage land owners to keep forests as forests and sequester more carbon;
 - c) Encourage the use of wood products to sequester carbon instead of products that have a larger carbon footprint;
 - d) Provide funding for efforts to maintain large-scale interconnected forest systems that will allow for adaptation to climate change; and
 - e) Provide funding for research and other initiatives focused on sequestering carbon in forests and forest products and facilitating forest adaptation to climate change.



Vermont farm

fiscal health of their local communities, offsetting the costs of residential development. They reduce flooding, filter and recharge ground and surface water, improve air quality, provide critical plant and animal habitat, and sequester carbon.

For a change, New England agriculture today is at a promising crossroad. Growing demand for local food among New England’s 14 million consumers fuels exciting new market opportunities in agriculture. Direct-to-consumer sales – through farmers markets, roadside stands, farm

2. *Keep Farmlands in Farming*

Agriculture has shaped New England’s economy, identity, and self-reliance for centuries. From dairy and maple syrup to potatoes, cranberries, and cigar wrappers, the region’s family farms have connected the country to the city and the field to the table through the generations. Today, New England’s 33,000 farms remain integral to the economy, the community character, and the landscape that draw millions of tourists to the region annually. They are vital to the



The Stanton-Davis Farm, Stonington CT, has been owned by a single family since the 17th century and is still an active working farm. (courtesy Connecticut Trust for Historic Preservation)

restaurants, and pick-your own operations – have skyrocketed. According to the Census of Agriculture, direct-to-consumer sales in the region increased 62 percent from 2002 to 2007, helping to increase by 30 percent the total market value of agricultural products sold. New England state governments have developed innovative programs to encourage these types of sales as well as agri-tourism, making the region a national leader in delivering local food and farm products on the retail level. Farm-to-school and farm-to-institution programs are flourishing in all six states, opening new markets to local farms and increased access to local foods for consumers of all income levels.

The demand for renewable energy also opens new markets for the region’s farms. Wind and solar systems reduce on-farm energy costs while providing additional farm income through net-metering. Methane digesters help dairy farmers reduce greenhouse gas emissions and tap into emerging carbon credit markets. Energy from biomass, including cellulosic ethanol, has potential to expand the economic returns from New England hayfields and pastures. Ecosystem services represent a potential source of new income for farmers. Through the federal Conservation Stewardship Program – retooled and expanded in the 2008 Farm Bill – Congress has recognized the environmental value of well-managed farmland, offering payments to farmers for the environmental benefits their farmlands provide.

Farms and Farmlands at Risk: While a resurgence of interest in local agriculture expands sales across the region and causes growth in actively farmed land, New England faces serious challenges to expanding its regional agricultural production. Among these are:

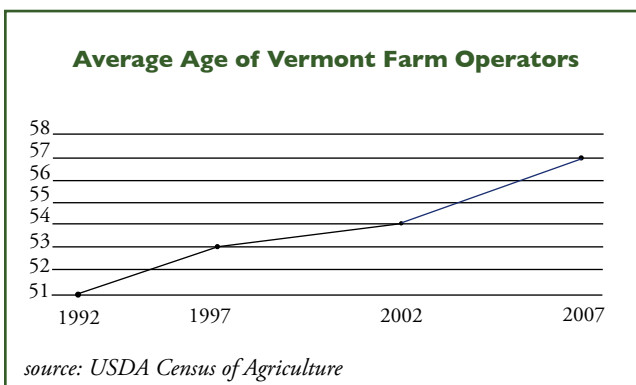
- Dairy farms are the “anchor tenant” of New England agriculture, as a majority of cropland in five of the six states is used to support the region’s dairy industry. The industry has been severely impacted by the global economic crisis, and the potential loss of thousands of

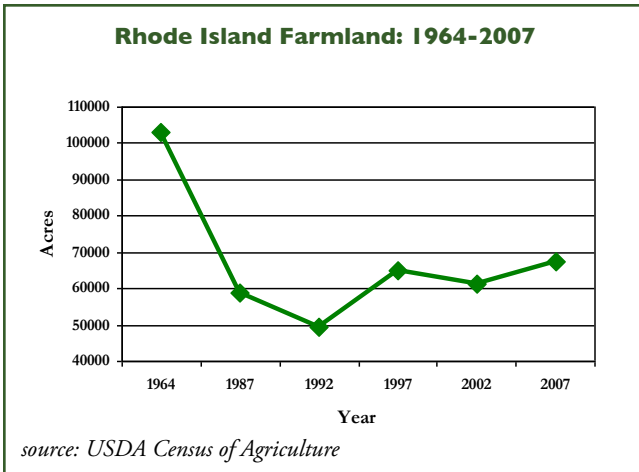


Dairy cows

the region’s dairy farms threatens the region’s economy and environment. Current prices, set through federal milk market orders, are well below the region’s costs of productions, and the federal Milk Income Loss Contract (MILC) program does not provide an adequate economic safety net for dairy farm families.

- While growth in local food consumption has created new markets, it also challenges the region’s production, processing, and distribution capacity. The December 2008 ice storm was a stark reminder that the region has but a 3-4 day supply of food in its regional distribution system. More infrastructure is needed to meet demand and increase regional food security.
- New England continues to lose its most productive cropland. According to the 2007 Census of Agriculture, just 1.6 million acres of New England’s 4 million acres of land in farms is cropland; of that, 85,000 acres has





gone out of production since 2002. Our farmland is a limited natural resource and its loss to and fragmentation from development may only be viewed as permanent.

- New England’s highest-in-the-nation farm real estate values limit farm expansion, farm transfer, and the entry of young farmers. More than half the farmland in New England is owned or managed by farmers over the age of 55. Ensuring the transfer of this land to the next generation of farmers is critical.
- Our region’s higher production costs and web of federal, state, and municipal regulations and myriad other constraints continue to affect the viability of farm businesses. More must be done to educate public officials about the impact of local regulations on agriculture, and to reduce and streamline their burdens.

Basis for Action: New England’s farms are a keystone to the region’s identity, landscape, economy, environment, and public and community health. The family farmers

who steward the region’s farmland have close ties to their communities and a strong conservation ethic. While these farms produce myriad public benefits and sustain the region’s land, air, water and wildlife resources, their economic viability continues to be challenged by global competition, rising production costs, increased regulations, and the challenge of farming on the urban edge.

With its recommendations, the CLC seeks to increase farm profitability, stabilize the land base on which farms rely, expand the region’s agricultural capacity and food security, and protect the activities that keep working landscapes working. We seek to encourage the economic and environmental sustainability of agriculture in New England and to recognize the important role agriculture can play in combating climate change and shrinking the region’s carbon footprint. We see economic opportunities associated with ecosystem services, agri-tourism, and value-added and institutional markets, and believe significant new investments will be needed to rebuild the region’s food system.

We view the USDA as an important ally and partner in these efforts. We encourage USDA to recognize the unique needs of the region’s farms; to increase the capacity of its agencies to deliver programs on the ground; and to strengthen federal investments in programs that facilitate access to fresh foods, encourage market and product development, protect farmlands, reward farmers for the public benefits they provide, and expand processing and distribution capacity. We also urge USDA to take immediate action to alleviate the current crisis in the dairy industry, recognizing the critical role dairy farms in New England play.



Recommendations for Keeping Farmland as Farms

5) **Address sustained low milk prices in the dairy industry to ensure the region's citizens a sustainable supply of fresh, regionally-produced milk.** The Northeast Dairy Compact reflected the states' understanding of the critical value of dairy farms to the region's economy, natural resources, and working landscape, and functioned effectively from 1998 to 2001 before the region lost the support of the Congress. The states must work together and with Congress to re-examine the Compact's applicability or find another means to raise the prices farmers are paid for milk in New England.

6) **Increase "buy local" and branding efforts at the local, state and regional level.**

- a) Encourage federal farm policies that support greater consumer access to locally-produced agricultural products;
- b) Investigate and implement innovative marketing approaches, such as "fair trade" labeling, to enhance farm profitability; and
- c) Explore opportunities to expand agri-tourism in the region.



Harvesting blueberries on a farm in Vermont

7) **Increase state, federal and private investments in farmland protection, including programs that facilitate the transfer of farmland from one generation of farmers to the next.**

- a) Increase state financial commitments to farmland-protection programs, as Connecticut and Massachusetts have done of late;
- b) Push the USDA to change its Farmland Protection Program to a grants program with a robust certification process that will support rather than frustrate state efforts;
- c) Make permanent the expanded federal charitable deduction for donation of conservation easements; and
- d) Advocate for federal adoption of a mitigation requirement for farmland conversion, similar to the national "no net loss" policy for wetlands.

8) **Through the six Chief Agricultural Officers, and in collaboration with the USDA, the region's universities, commodity and farm organizations, and other partners, work to create a New England Farm and Food Security Plan that will seek to:**

- a) Measure the region's capacity to increase production and consumption of New England-grown farm and food products;
- b) Identify barriers and constraints to meeting this increased regional production and consumption; and
- c) Identify state and federal investments and state, federal, and regional policy reforms and initiatives needed to address these barriers and facilitate achievement of regional production and consumption goals.

3. Connect People to the Outdoors

The Commission believes that, as a goal, no New Englander should be more than 15 minutes from a walk in a natural setting. To achieve this, we need to protect and promote key parcels in neighborhoods that, wherever possible, will form a network of green spaces. This idea embodies the 19th century ideal of New England native Frederick Law



Father and daughter enjoying the view

Olmstead, in the winding woodland paths he created along the Emerald Necklace that graces our largest city, Boston.

Close to home, these parcels may inspire their users with a love of nature and the outdoors, becoming a nursery of conservationists who will think on a regional, national, and global scale. Opportunities to visit and learn about landscape-scale conservation where natural processes, plants, and wildlife remain largely intact and public values are protected are as important and influential as a visit to a local green space.

These natural places offer people the opportunity to invigorate the body and refresh the spirit, a refuge and respite from the demands of daily life. They invite the curiosity of children and furnish the accidental natural habitats of the young. In his recent book, *Last Child in the Woods*,⁷ author Richard Louv offers extensive research findings to the effect that contact with nature buffers the impact of life's stresses on children, and helps them to deal with adversity; to develop powers of observation, creativity, and a sense of place and of one-ness with the world; and to have more positive feelings toward one another.

7. *Algonquin Books of Chapel Hill, Chapel Hill NC, 2005.*

In the Great Depression era, the Civilian Conservation Corps, a federal program, linked public relief with employment in the natural resources sector and helped bring the country out of economic and social crisis. It created an infrastructure in parks and other public places that is still enjoyed each year by millions. In our current economic crisis and time of large-scale environmental change, we may draw on the Civilian Conservation Corps model to respond to today's need for access to nature, green jobs, and an infrastructure founded on the principles of sustainability.

Currently, the Maine Conservation Corps provides a great educational experience for mostly rural youth and an excellent public service. A pilot program at the University of Vermont (UVM) provides opportunity for university students to learn and apply advanced analytic skills while generating products and services useful to organizations in the public, non-profit, and private sectors. These services include, among others, GIS mapping, site assessments and baseline documentation reports, forest carbon inventories, conservation easement monitoring, and school curriculum development. A 2007 evaluation indicates that this model has potential applications far beyond its current use.⁸

8. *Barnes, James, 2007 Evaluation of the LANDS Program for the Land Trust Alliance & Student Conservation Assoc., May 2008, at www.uvm.edu/~conserve/lands_website/?Page=eval.html*

Basis for Action: Growing urban populations, urban and suburban sprawl, and a lack of opportunities for young people to experience, enjoy, and contribute to our natural environment have contributed to a lack of awareness of land conservation matters among the general public. In the long-term, the preservation of our natural world will be linked to the connections our citizens feel to nature and the environment; this in turn will be linked to the political and financial will to protect and preserve natural places. Connecting a younger, culturally diverse citizenry to nature will require innovative programs, public outreach, and new approaches to land use and planning. Healthy community forests will have energy conservation, climate change mitigation, tourism, quality of life, aesthetic, and other benefits.

Recommendations for Connecting People to the Outdoors

- 9) Advocate with President Obama and the Congressional Delegation to re-invigorate and fully fund existing federal conservation programs; to seek federal cap and trade funds to support urban and community forestry programs; and to encourage the permanent re-authorization of the federal tax credit for land conservation interests. Existing programs especially include the Land & Water Conservation Fund; the Urban Park and Recreation Program; the NPS Rivers, Trails & Conservation Assistance and Wild & Scenic Rivers programs; and the USDA Forest Legacy and Community and Urban Forestry program; and the 2008 Farm Bill Community Forestry Program.⁹
- 10) Promote a New England-wide network of multi-purpose trails and greenways that will tie population centers to one another and to the mountains, rivers, lakes, and seas. Urban forestry, community gardening, wildlife observation, and other outdoor-connecting

activities – and access to these – are all parts of building support for a strategic regional vision for land conservation.

- 11) Advocate with President Obama and the Congressional Delegation for a new call to public service through a Community Conservation Corps that will revitalize our parks, greenways, and other urban and community forest, field, and wetland infrastructure, and engage youth and adults in community conservation efforts; and through a College Conservation Corps affiliated with New England’s community colleges and universities and supported by the region’s states and the federal governments as a demonstration project and possible national model.
- 12) Encourage federal and state policies that will ensure opportunities for biking and pedestrian transportation, community-based open space and recreation, urban forestry, and other “smart growth” principles.
- 13) Engage state representatives from the New England Environmental Education Alliance and the Farm-Based Education Association to encourage current state, regional, and national education initiatives to realize the benefits of outdoor recreation and sustain-



Connecticut Department of Environmental Protection’s No Child Left Inside program

9. See Appendix D.

able farmlands and forests; environmental literacy plans for K-12 schools; and state-level No Child Left Inside campaigns and related state and national legislation.

- 14) Coordinate a regional conservation message to raise awareness among an increasingly urban public that will make land conservation matter to a new generation of citizens and, especially, a useful tool in sustainable development, energy independence, and climate change mitigation and adaptation.

4. Protect Wildlife Habitat

Large, intact, and functioning ecosystems, healthy fish and wildlife populations, and public access to natural landscapes contribute greatly to New England's economic well-being and quality of life. The integrity of New England's ecosystems is today at risk from increasing human activity that fragments the remaining important habitats and the connections that enable the habitats to function. Aquatic and terrestrial habitat connectivity and an interconnected network of significant plant and wildlife habitats across the region are critical if we are to ensure that species can adapt under shifting climatic conditions. The region's complex mix of private, state, and federal ownerships and home rule authority further challenge a unified, regional approach to saving our ecological stage. Several factors especially contribute, namely:

Land Use: Across the several states, we see how human land uses can compromise wildlife and the habitats on which they depend. A vast scientific literature demonstrates how the patterns of land use affect the seasonal and daily movements of species and the functioning of ecosystems that support not only plants and animals but ecosystem services that benefit local and regional economies. Further



Osprey

fragmentation of remaining habitats will limit species and ecosystem resilience in responding to climate change.

Transportation: Roads and rail lines can impede animals' ability to meet their basic life needs for food, shelter, mates, and other resources, sometimes isolating wildlife populations, reducing their genetic diversity, and threatening the population's persistence. Future transportation investments must consider alternative project designs and alternative forms of transit that will minimize further fragmentation and restore broken habitat linkages.

Energy: Emerging energy trends such as land-based and offshore wind generation, tidal power, and bio-fuels each has potential to impact species and their habitats in ways that are not well-understood, given the relative newness of these technologies to New England.

Public Awareness: Rapid advances in electronic media and communications have come to dominate much of our



Black bear cub climbing birch tree

remaining recreational time. The ever-expanding global marketplace has further separated us from the importance of our local, rural resource industries. The net result has been a generational disconnect from nature and a resulting lack of awareness of the biodiversity and opportunity for meaningful conservation in our hometowns.

In response to these and other challenges, the Congress in 2005 charged each state and territory with developing a statewide, Comprehensive Wildlife Conservation Strategy. Its goals are to create a vision for strategic conservation of the states' and nation's fish and wildlife; to identify species most in need of conservation and habitats that are critical; and to develop prioritized actions for their conservation. While each state's strategy reflects its distinct resource base,

management needs, and priorities, states have begun to work together with federal agencies and their conservation partners to achieve consistency, coherence, and common efforts across state lines. This is especially true in the Northeast.

Basis for Action: The conservation of our region's wildlife resources is an economic¹⁰ as well as a biological necessity. The goals of sustainable economic and community development, mitigating and adapting to climate change, efficient transportation planning, development of alternative energies, and broadening a public constituency for wildlife will all be enhanced and improved by bringing to bear the best available knowledge to inform decisions at all levels and effectively balancing the conservation of plant and animal habitats with these objectives. There is compelling need for a collaborative initiative to encourage and energize this decision-support system.

The Northeast Association of Fish and Wildlife Agencies from the 17 northeastern states has made progress on a number of related fronts, including:

- Developing regional definitions for standardized characterization of wildlife habitats;
- Coordinating the development of consistent approaches to link habitats across political boundaries;
- Development, with public participation, of comprehensive State Wildlife Action Plans that detail species most at risk, habitats that these species depend on, and priority tasks for conservation. These plans may serve as the foundation to define regional habitat conservation priorities; and
- Collaborative approaches to critical fish and wildlife habitat conservation at a landscape scale across political boundaries, including the impacts of climate change on habitat conservation approaches.

¹⁰ According to the US Fish and Wildlife Service, approximately \$5,311,377,000 was spent in the New England states in 2006 for wildlife related recreation, including angling, hunting, and wildlife watching.

There is need to ratchet-up these and other efforts to coordinate corridor and habitat conservation across the region, including ongoing efforts to align national policy and funding initiatives that affect conservation of these critical habitats.

Recommendations for Protecting Wildlife

15) Through the six Chief Wildlife Officers, work to create a new partnership among the six New England states, the federal government, local communities, and conservation partners that has as its goal to conserve the region's diverse plant and wildlife species and habitat. In particular, this partnership will seek to:

- a) Identify key wildlife corridors and habitats across the region which, if conserved, will benefit regional priority habitats and species of greatest conservation need, as identified in State Wildlife Action Plans;
- b) Develop forward-looking land acquisition plans based on State Wildlife Action Plan conservation priorities that will account for species' adaptation to issues such as climate change, future growth, fragmentation, and invasive species;
- c) Explore creative approaches to resolving deep-rooted conflicts over land use, protect critical wildlife corridors and habitat, and recognize and reward landowner partnerships;
- d) Spearhead development of plans for increasing permeability of transportation infrastructure for wildlife movements in key wildlife corridors and habitats;
- e) Coordinate implementation of needed policy options and tools to protect and preserve these prioritized landscape habitats; and
- f) Amplify the importance of biodiversity to New England citizens, especially school-aged children, and highlight opportunities for watchable wildlife and outdoor education experiences.

16) Advocate with President Obama and the Congressional Delegation for their support of pending climate change legislation that will make available to states resources to address these urgent responsibilities, especially for additional funds to support the State Wildlife Grants program. This program funds conservation projects that help coordinate and implement the region's State Wildlife Action Plans to conserve species and habitats of greatest conservation need, and to prepare for the impacts of climate change.

5. Safeguard Coastal & Estuarine Lands

For our mutual benefit, New England's coastal areas need to be productive, accessible, affordable, attractive, and ecologically functioning. New England was settled by Native Americans and Europeans along its diverse coastal reaches, productive bays, and great rivers. Today, people of the region and nation enjoy daily benefits from these salt and freshwater resources, as they provide employment, food, recreation, energy, transport, and invaluable ecosystem services.

While coastal lands and waters are among our most productive, they are today among our most besieged. A key magnet for a thriving tourism industry, their bounty supports a major fishing industry that is the economic foun-



"Cottages," Maine coast

dition of many coastal communities. They are also where most of us live and even more want to live or have second homes, often foreclosing traditional public access. Still, with depletion of their fisheries and sea level rise predicted to be most severe in the Northeast, they will bear the most immediate and direct impact of climate change and global warming.

Estuarine and riverine ecosystems are essential to human life. They purify the water we use, moderate floods and droughts, and provide great wildlife, recreational, and economic benefits. Yet here, too, the need for careful stewardship is urgent and emphatic. As human demands upon them grow, these systems unravel before our very eyes. The lands adjacent to our coasts have unique and rare species, and those that drain to our coasts are critical to coastal water and resource quality. Their waters are home to forage fish eaten by recreational fishing targets, as well as the juvenile life stages of the beleaguered groundfish that frame New England history.

Land conservation is integral to all coastal zone management efforts. This has been acknowledged from multiple perspectives – from creation by the Congress of the Coastal and Estuarine Land Conservation Program (CECLP) to the multi-state effort to protect first and second order streams entering the Chesapeake Bay. State Coastal Zone Management (CZM) grants from the National Oceanic and Atmospheric Administration have since the 1970s provided consistent but limited funding to coastal communities for land protection projects; this funding has not kept pace, however, with the increasing challenges that face coastal states.

A significant new source of funding is needed for coastal land conservation. An Ocean Trust Fund could provide significant new resources, derived from such sources as un-



Boston and its inner harbor

allocated federal revenues from offshore uses including oil and gas or alternative energy activities, and revenues from future carbon tax revenues.

Regional efforts around climate change have justifiably been focused in recent years on mitigation. States and the region as a whole now turn their attention to adaptation planning. Some important efforts to model future coastal inundation scenarios have been completed, and work continues throughout the region. Sea level rise of two feet over the next century would engulf the region's shoreline parks and beaches and alter coastal habitats. The impulse of lawmakers and homeowners may be to "wall-off" the coast with hard engineered structures that will further limit public access and choke sand supplies for beaches. An active strategy is in order now to purchase back dunes, quite likely our next shoreline, and to conserve buffers to allow marshes to migrate.

Basis for action: New England's coast and estuaries are at once among our most beautiful, fragile, and ecologically and economically important assets; they are also the most densely populated part of the five states fronting saltwater. They are a magnet for recreation, host to significant historic resources, the site of many unique environmental functions, and an economic engine for fisheries, tourism,

shipping, and other valuable business pursuits. Because of so many amenities and opportunities, the coastal area especially suffers from overdevelopment that may cause irreparable harm to important natural systems and built assets, and public access to these. Impacts from climate change are already seen along our coasts, on land that is particularly sensitive to the resulting elevated sea level and increased storm frequency.

Land conservation plays a particularly critical role in meeting resource protection and management objectives ranging from water quality protection to public and commercial fishing access. Conservation of coastal and estuarine lands helps achieve multiple objectives of resource protection, public access, floodplain management, storm protection, and protection of scenic character. Land conservation will be especially important as the region works actively on climate change mitigation and adaptation.

At the same time, coastal and estuarine lands are under the greatest threat of any lands in the nation. More than half our population now lives within 50 miles of a coast; by 2025, this is expected to grow to more than 60 percent. Only through an active focus on priority coastal and estuarine lands will our coastal resources survive to provide livelihood to shell- and fin-fishers, and enjoyment to both bucket-wielding beach-goers and striped bass fishers, alike.

Recommendations for Safeguarding Coastal & Estuarine Lands

17) **Urge President Obama and the Congressional Delegation to establish a permanent Ocean Trust Fund.** As recommended by both the U.S Commission on Ocean Policy and the Pew Oceans Commission, the Ocean Trust Fund would enjoy a dedicated revenue source, growing from \$1 billion to \$4 billion per year in support of management, protection, and understanding of the natural and economic resources along



An endangered Piping Plover chick walks a Maine beach

our nation's coasts, Great Lakes, and islands. Its funding would be over and above existing appropriations, to meet the increasingly complex and unmet needs of ocean and coastal managers.

- 18) **Advocate for reauthorization of the Coastal Zone Management Act and increased appropriations for state grants under CZM.** Congress recently authorized \$60M in funding for the Coastal Estuarine Land Conservation Program (CELCP), but failed to appropriate nearly that amount for high priority coastal land conservation projects nominated by the states. Inclusion of this program at full funding in the reauthorization of the CZMA would significantly advance coastal land conservation.
- 19) **Take action to restore estuarine habitats, protect remaining natural shorelines for the benefit of people and wildlife, and promote development of traditional water-dependent uses in already developed areas.** Bills now before Congress would create a national grants program to protect working waterfronts for commercial fishing and other water dependent uses. Matching grants would be available to coastal and Great Lakes states with a suitable plan to protect and secure working access for commercial fishing, aquaculture, recreational fishing businesses, boatyards and

marinas, and other water-dependent businesses. Concerted effort is needed to gain Congressional support for the inclusion of this program in the re-authorization of the CZMA.

20) Take action to plan for sustainable mitigation of impacts from sea-level rise and storm surge, using the combined resources of government, insurance companies, NGOs, and other private sector partners. This sustained effort should begin with a call for coordinated mapping and modeling of projected sea level rise and its impacts along our coasts.

6. *Sustain the Effort.*

Basis for Action: To ensure effective implementation of the recommendations contained in this report and adopted by the Governors, an ongoing administrative structure will be required. The Governors and others involved in this report will expect accountability in the follow-up, refinement, and implementation of the priorities and actions identified here.

Critical to implementation of any strategic conservation plan is mobilization of adequate funding to support strategic initiatives, programs, and land acquisition. The CLC recognizes the changing relationship in recent years among the public, private, and philanthropic sectors in this regard, both regionally and nationally; and believes it is time to explore new models for funding conservation initiatives.

Recommendations for Sustaining the Effort

21) Convene a regional Funders Summit of interested public, private, and philanthropic agencies to explore new mechanisms for conservation funding, including flexible matching funds and other concepts, and tax policy changes to support conservation initiatives.

22) Request of the New England Congressional Delegation that it create a standing New England Caucus on Land Conservation to work with the Governors, the NEGC, and the CLC on a regular and continuing basis to address these urgent matters.

23) Establish the Commission on Land Conservation (CLC) as a standing commission of the NEGC, with responsibility for facilitating, promoting, and coordinating actions contained in this report and adopted by the Governors. In addition, the CLC will:

- a) Provide an annual report of its activities, with a work-plan for the coming year, a progress report on implementation of these recommendations, and any new initiatives it may wish to propose;
- b) Work with the Congressional Delegation and other organizations and institutions to leverage resources to implement these measures; and
- c) Explore opportunities to cooperate on shared conservation priorities with the Eastern Canadian provinces through the Conference of New England Governors and Eastern Canadian Premiers.



Farmer's Market, Boston (courtesy American Farmland Trust)

APPENDIX A

A RESOLVE CONCERNING THE 100th ANNIVERSARY OF THE FIRST MEETING OF THE NEW ENGLAND GOVERNORS TO ADDRESS CONSERVATION

WHEREAS, the history, economy and regional culture of New England is closely linked with its natural places; and

WHEREAS, on November 23-24, 1908 the six New England governors met in Boston for what is believed to be the first time as a regional coalition; and

WHEREAS, this first New England governors' meeting was convened to address natural resource issues, particular those related to our region's forests and riverways; and

WHEREAS, this meeting led to the establishment of the White Mountain and Green Mountain National Forests, and of Acadia National Park; and

WHEREAS, the governors of the New England states continue to share a deep commitment to preserving our natural heritage and cooperating on issues of regional interest, such as protecting our northern forests; and

WHEREAS, the governors recognize the importance of land conservation in the overall quality of life of our citizens;

NOW THEREFORE, BE IT RESOLVED that the governors recognize the centennial of the 1908 meeting of the New England governors in Boston and the beginnings of the land conservation movement that has become in many ways a model for the nation as a whole; and

BE IT FURTHER RESOLVED that the governors commend the documenting of our region's shared history of conservation in the book "Twentieth Century New England Land Conservation: A Heritage of Civic Engagement" , to be released by the Harvard University Press later this year; and

BE IT FURTHER RESOLVED that the New England Governors' Conference, Inc. (NEGC), requisite on appropriate philanthropic support, establish a blue-ribbon commission appointed by the governors to consider the most urgent conservation issues facing our region and develop recommendations on preserving and protecting our natural heritage and places for presentation at the NEGC meeting during the 33rd NEG/ECP in 2009; and

BE IT FURTHER RESOLVED that the NEGC is encouraged to explore potential cooperation and joint initiatives with other region's that possess northern forest species, such as Canada, Scandinavia and Russia.

*Adopted at the Conference of the New England Governors and Eastern Canadian Premiers,
Bar Harbor, Maine, September 16, 2008.*

Background to the Resolve

The 1908 Meeting of the New England Governors. Among the earliest regional manifestations of natural resources interest in the United States was what then-Massachusetts Governor Curtis Guild, Jr. proclaimed the First New England Conference Called by the Governors of the New England States, in Boston on November 23-24, 1908. The gathering included every New England governor and governor-elect, as well as prominent citizens chosen by the governors and members of the U.S. Congress, numbering two per member.

This convening came directly on the heels of the landmark White House Conference of the Governors of the United States, called by President Theodore Roosevelt in May 1908. Natural resource issues, especially the nationwide concern over our forests and their river headwaters, dominated discussions at the White House and later in Boston where Gifford Pinchot, chief forester of the United States, was keynote speaker.

These issues were significantly enhanced by the event, and Massachusetts Congressman John Weeks introduced legislation that the Congress would enact in 1911, authorizing a new system of eastern national forests to protect river headwater areas. The result would be state consent for the establishment of the 800,000 acre White Mountain and Green Mountain National Forests. It likewise provided early encouragement and stimulus to creation in 1916 of the Sieur de Monts National Monument, later to become known as Acadia National Park.

Continuing the Tradition, 2008. In November 2007, sixty recognized New England leaders, with over a thousand years of experience in land conservation matters, convened at the New England Center in Durham NH to review a draft regional history of land conservation¹¹ and to consider today's challenges and possible responses. Foremost among these challenges is the continuing importance of the region's land resource and the largely unplanned and often destructive landscape changes now taking place in all six of the states.

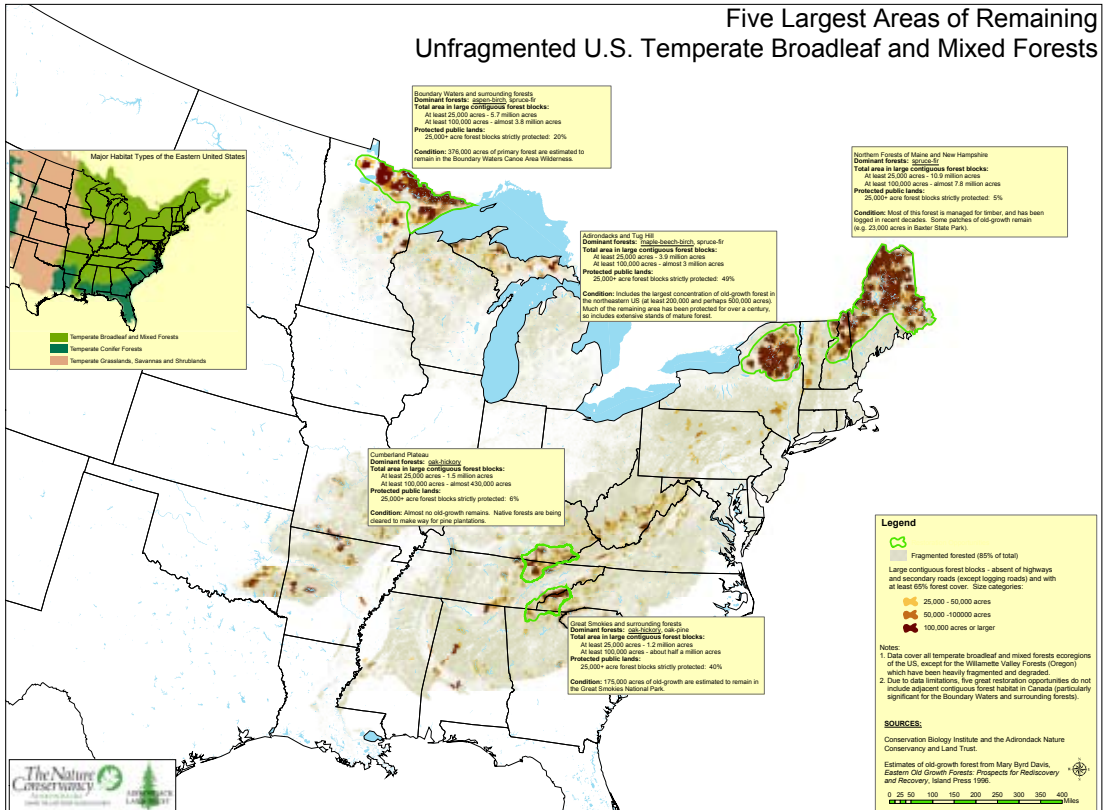
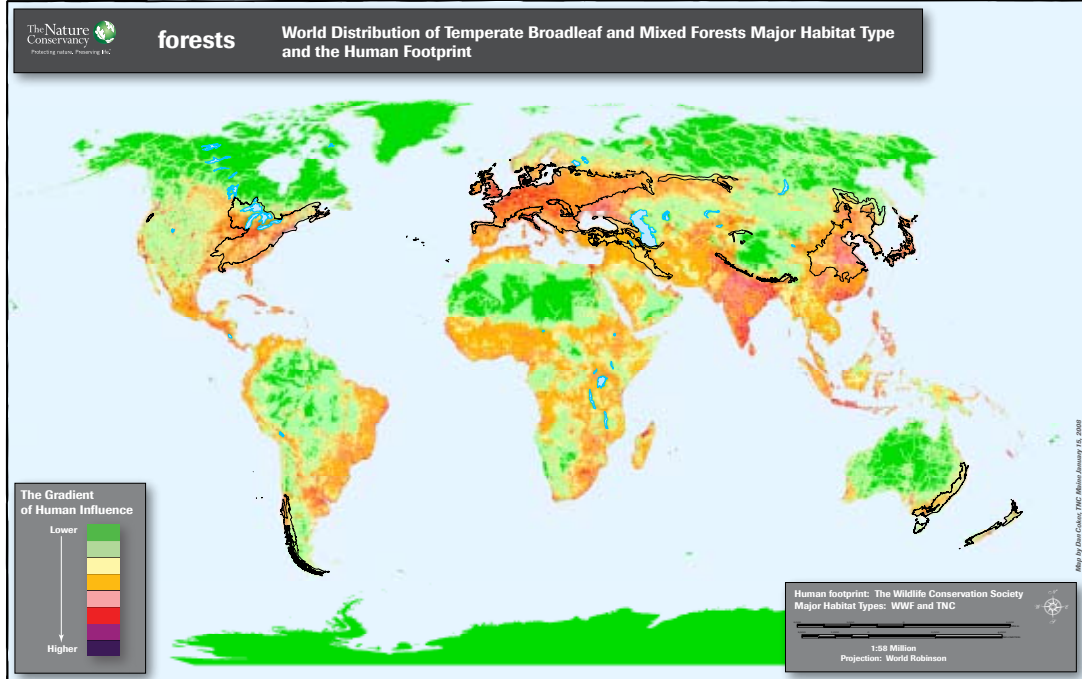
The idea was put forward and received much support to propose the convening a blue-ribbon panel of our region's conservation leaders not only to celebrate the centennial of the 1908 New England Governors Conference on this issue, but also to:

- underscore the crucial role of land conservation as a needed infrastructure investment in the quality of life services that most now take for granted, including clean air, clean water, biodiversity, recreation, energy, transport, and economic values;
- encourage collective purpose and structure among the several states, across the public and private sectors, for a conservation effort that now is fragmented and largely opportunistic; and
- set the stage for possible joint initiatives and action through coordinated planning, priorities, means of funding, and methods of implementation.

11. *Twentieth Century New England Land Conservation: A Heritage of Civic Engagement*, C.H.W. Foster, ed., Harvard Forest, Petersham MA, 2009.

APPENDIX B

World & U.S. Distribution of Temperate Broadleaf and Mixed Forests



APPENDIX C

PAST AND FUTURE FOREST RESPONSES TO CLIMATE CHANGE IN NEW ENGLAND: The Urgency of Maintaining Healthy Forested Landscapes

A White Paper prepared for the New England Governors Conference
Commission on Land Conservation by

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Research in paleoecology and paleoclimatology has produced strong, independent evidence about the post-glacial vegetation and climate of northern New England and adjacent Canada. At the end of the last ice age, between 14,000 and 10,000 years ago, post-glacial environments in the region included extensive areas of treeless tundra—more so than was the case in glaciated areas of mid-continental North America. Tree taxa spread into the region gradually from the south, with most current forest elements present by about 8000 years ago. But even after these familiar forest species were present, subsequent changes in climate greatly affected their distribution and abundance.

Stratigraphic changes in physical and biological characteristics of lake sediments indicate that between 9000 and 5000 years ago, temperatures were as much as 2°C warmer and that the moisture balance (precipitation minus evaporation) was considerably lower (drier) than today. These reconstructions are consistent with well-known climate forcing by Earth's orbital variability (especially precession of the equinoxes). During that warm period, solar radiation (insolation) in summer was as much as 8% greater than today. Studies of lake-level changes have demonstrated that the hydrologic balance was considerably drier during the early Holocene.

Several lines of paleoecological data corroborate this paleoclimatic reconstruction. White pine (*Pinus strobus*) was widespread and abundant in the early to middle Holocene, probably because frequent fires created conditions favorable for seedling establishment. During that same time, both white pine and hemlock (*Tsuga canadensis*) were present at elevations as much as 300 to 400 m higher than their present upper limit in the White Mountains of New Hampshire and the Adirondack Mountains of New York.

Conditions changed considerably during the past few thousand years, however, as the climate became cooler and moister. Fossil-pollen evidence shows that the distribution of white pine, which had been so extensive during the drier early and middle Holocene, has diminished consistently during the past 4000 years. This decline appears to have resulted from a reduction in frequency of forest fires during the late-Holocene shift toward a cooler, moister climate.

As white pine and oak became less abundant in the recent past, other tree species have assumed much more prominent roles in the region's forests. Good examples include some of the most prominent components of our modern northern forests. Within the past 1000 years, populations of several boreal forest taxa, including spruces (*Picea* spp.) and balsam fir (*Abies balsamea*) expanded along the southern margins of their distribution in Canada and along the

northern tier of the United States from Minnesota to Maine. The strong expansion of spruce in the Great Lakes-New England region, especially the past 500 years, appears to have been associated with summer cooling of about 1°C during the Little Ice Age.

What does this tell us about forests of the future? General Circulation Model (NCAR CCM3) projections for a future with twice the present atmospheric concentration of CO₂ suggest that both summer and winter conditions in northern New England may be 3°C or more warmer than at present, and that precipitation may also be greater in all seasons except summer. If the models are correct, the summer conditions may be as warm as or warmer than those 6000 to 8000 years ago. For forests, the clear implications are that the distribution and abundance of tree species in this region will undergo changes as dramatic as some of those that have taken place in response to changing climate in the past. Modeled projections of species change indicate that species such as red spruce (*Picea rubens*) and balsam fir (*Abies balsamea*) will be much less well suited to Maine and other parts of northern New England, and the taxa such as oaks (*Quercus*) will likely prosper.

These projections have several important implications for natural biodiversity and for economic uses of the region's natural resources. Long-term changes in the distribution and abundance of forest species will be influenced by the matrix of forest cover and by whatever land-management practices have been in effect. The changing mix of species in the forests will also likely require the forest-products industry to adapt its research goals, its silvicultural practices, and its production technologies. While it is quite possible that these forests will be able to produce more biomass per unit area than is currently the case, composition of the forests will certainly be different. Therefore, adaptations within the forest-products industry should logically begin soon.

Viewed more broadly, the challenges posed by upcoming climate change underscore the great urgency of maintaining healthy forests in New England and adjacent Canadian provinces. As in the past, the composition of these forests will be altered by changing climate, but the productivity of the forest ecosystems may well increase (biomass per area per year). These extensive landscapes can and should serve as one of the primary mechanisms for carbon sequestration at a time when slowing the rate of increase in greenhouse gases must be given highest international priority.

The connected forests of the northeast also have an essential role in maintaining the region's biodiversity into the future. Although the many public and private conservation lands (parks, natural areas, ecological reserves, etc.) are central to this, the extensive working forests that connect them across the landscape are equally important if species are successfully to change distribution and abundance through time.

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APPENDIX D

FINANCING NEW ENGLAND LAND CONSERVATION IN THE 21st CENTURY

A White Paper prepared for the New England Governors Conference
Commission on Land Conservation by

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Over the last century in New England, billions of dollars have been spent on land conservation by public agencies, corporations, philanthropies, and private individuals. The justification for such action today is more compelling than ever, and a fundraising case statement, national in scope, is needed to address the importance of increased government and private spending for land conservation in the 21st Century.

The percent of funding for conservation when compared to all public and philanthropic spending is very, very small. Yet the benefits of land conservation far exceed the costs in both the short and long term. The opportunity to create additional conservation lands is “non renewable.” When funds are provided for such things as watershed protection, areas are conserved for carbon dioxide capture and wildlife habitat; similar multiple benefits are gained when areas are conserved for forestry, wetland and estuarine nursery grounds, and livable communities that provide close-to-home spaces for healthy living, outdoor recreation and education, and clean air and water.

There are two main avenues to increase land conservation: public policy that offsets future land protection costs, and land protection through public and philanthropic funding. The two are linked, and provide an important opportunity to develop new constituencies to help communicate the need for land conservation.

Public Policy. Sound public policy should recognize the physical and monetary values of conservation, and put the environmental security costs on the front end of economic growth and development. Infrastructure planning along with cluster-type development and dedicated land set-asides for conservation and recreation in community master plans and subdivisions lessen the future demand for public and philanthropic funds. Permanent authorizations for enhanced tax deductions for conservation donations enable private landowners to afford the donation.

Criteria and priorities for all levels of public and philanthropic funding for housing, education, transportation, economic development, and health must also be viewed as an investment in environmental security. There are currently many examples where public policy is appropriately aligned, but we see examples of destructive land use every day. Much more can and should be done; better, more comprehensive policies can be established at all levels of government and in the private sector.

Public Funding. Public funding creates a different challenge. There are 13 federal funding sources that have contributed over the last century at least \$1.2 billion dollars for land conservation in New England. Still, this sizeable amount of funding is far short of the unmet needs for land conservation. Federal land conservation funding with few notable exceptions is subject to annual appropriation. The Land and Water Conservation Fund, currently the largest single authorized fund source, has never seen an appropriation equal to the annual authorized amount; and the annual appropriations vary widely.

The FY 2010 request for the Land and Water Conservation Fund is \$420 million or 00.04 percent of the total request for discretionary fund. The NPS Land and Water Conservation Fund – State Assistance Program 2008 Annual Report cites a \$200 million backlog of unmet need for the six New England states. The document cites a nationwide backlog of \$27 billion; the Administration request for the Land and Water Fund in FY 2010 is \$27.2 million.

Given this unmet need, existing or new revenue sources should be permanently dedicated, without annual appropriation, to fund land and water conservation. Efforts have been made since the 1970s to permanently authorize without annual appropriation the \$900 million authorized annually to the Land and Water Conservation Fund. Federal offshore oil and gas lease royalties are the authorized revenue source for this annual appropriation. In a June 10, 2005 Congressional Research Service Report, Jeffery Zinn reported on funding for the Land and Water Conservation Fund and noted that the most recent effort to achieve full funding starting in 2001 failed to succeed.

National priorities are shifting. The current Administration is projecting full funding (\$900 million) for the Land and Water Conservation Fund in FY 2014. While one may be hopeful, similar projections in the past have not been realized; the case for permanent authorization without annual appropriation must continue to be justified on an annual basis. Dedicated oil and gas royalties are available and should be made available without appropriation at the authorized amount.

Most recent attention, however, has been focused on the emerging clean energy legislation. The House Committee on Energy and Commerce on May 21, 2009 passed H.R. 2454, The American Clean Energy and Security Act. If enacted, this would ensure a significant amount of dedicated funding for land conservation. The bill as currently drafted will allocate revenues from the sale of carbon credits to The Natural Resource Climate Change Adaptation Fund.

In a May 18, 2009 memo John Kostyack of the National Wildlife Federation estimates the values of the natural resource allocations in the early years of the program. Starting at \$610 million in 2012, the Fund reaches \$4.52 billion in 2030. The average annual funding is estimated to be \$1.9 billion over that same period. The legislation also provides a formula for allocating these funds, which Kostyack reports as follows: 32 percent for State Fish and Wildlife Agencies, 17 percent for DOI wildlife, land and water programs, 12 percent for the Land and Water Conservation Fund, 7.5 percent for the EPA aquatic ecosystem programs, 7 percent for NOAA coastal estuarine and marine ecosystems, 6 percent for State coastal agencies, 5 percent for the U.S. Army Corps of Engineers aquatic ecosystem programs, 5 percent for DOI cooperative grants, and 3 percent for Tribal wildlife grants.

Good news, yes but even this funding does not bring the Land and Water Conservation Fund to its full annual authorized amount. Based on Kostyack's estimates, the Land and Water program will receive natural resource adaptation funds in the amounts of \$73 million in 2012, \$542 million in 2030, and an annual average of \$228 million over that period. One can argue that between the oil and gas lease royalties and the revenues from HR. 2454, ample revenues exist for full funding. One should argue that Congress carry out the original intent of the Land and Water Conservation program and provide full funding from oil and gas revenues and that the revenue allocation from HR. 2454 be in addition to the \$900 million currently authorized.

At the state level, dedicated funding mechanisms should continue and be enhanced. One of the original goals of the Land and Water Conservation Fund has succeeded – to encourage the states to establish their own conservation fund programs. Funding levels in many states are in excess of the available Federal funds. By varying means, each New England state has provided such funds through general appropriations, bond authorizations, and special taxing mechanisms. These funds are essential, as they show a commitment to provide matching funds for the Federal grant programs; and more importantly, they provide funds for state and local initiatives.

Philanthropy. Private philanthropy for land conservation is significant and important. The Annual Report on Philanthropy for 2002 by the Center on Philanthropy at Indiana University reports U. S. gifts of \$3.25 billion for land conservation (compared to the \$420 million Land and Water Conservation Fund request for FY 2010). Philanthropy plays a large and important role and it should continue to invest when and where necessary to provide leadership and to close the funding gap on strategic and high priority land conservation projects.

Conclusion. In conclusion, the need to establish equilibrium between non-renewable energy consumption and land and water conservation is immediate. It may take 25 years at \$2 to \$3 billion levels of annual funding and tax deductions or credits nationally to reach a reasonable equity. The New England governors, together and individually, can establish a bold policy and funding agenda for New England land conservation. They can seek better funding from the Federal government, sustain and improve policy and funding at the state and local level, and set common agendas and priorities with the private sector and philanthropy. Each in its own way and in its own state can build a land conservation constituency and ethic for the 21st Century.

A selected list of currently authorized federal funding for land conservation follows.

Selected Federal Funding Programs for Land Conservation

Migratory Bird Conservation Fund. Authorized in 1929 and administered by the U.S. Fish and Wildlife Service the fund has acquired migratory bird habitat by fee purchase, easement, or lease. There are four major sources for money for the Fund. The most well-known source is the revenue received from the sale of Migratory Bird Hunting and Conservation Fund, commonly known as Duck Stamps. Other sources include: appropriations authorized by the Wetlands Loan Act of 1961; import duties collected on arms and ammunition; and, receipts from the sale of refuge admission permits as provided for by the Emergency Wetlands Resources Act of 1986.

Land and Water Conservation Fund. The Land and Water Conservation Fund (LWCF) was established by Congress in 1965. The Act designated that a portion of receipts from offshore oil and gas leases be placed into a fund annually for state and local conservation, as well as for the protection of our national parks, forest and wildlife areas.

Forest Legacy Program. Established in 1990, the U.S. Forest Service Forest Legacy Program provides federal funding to states to assist in securing conservation easements on forestlands threatened with conversion to non-forest uses.

Farm and Ranch Lands Protection Program. First established in 1996, the Farm and Ranch Lands Protection Program (FRPP) provides matching grants to states, local, tribal and non-profit entities for the purchase of agricultural conservation easements. The program is administered by the USDA Natural Resources Conservation Service.

Coastal and Estuarine Land Conservation Program. Congress established this program in 2002 Under this authority NOAA funds pass-through grants to states and local governments for land acquisition in a state's coastal zone.

Transportation Enhancements. In 1991, Congress authorized ISTEA (Ice Tea), the Intramural Surface Transportation Efficiency Act. This multibillion-dollar law included for the first time a federal commitment to use transportation dollars to offset negative effects of highway construction projects, such as fragmented communities and the loss of open space. Congress has enacted similar authorizations every five years thereafter.

Cooperative Endangered Species Conservation Fund. In the early 1980's, as a response to a rising tide of protracted Endangered Species Act conflicts, Congress authorized the Cooperative Endangered Species Conservation Fund. Through the U.S. Fish and Wildlife Service the program provides up to 75 percent funding to States and Territories for species and habitat conservation actions on non-Federal lands.

Brownfields. In 2002 Congress established the Small Business Liability Relief and Brownfields Revitalization Act. Public Law 107-118 authorizes funding to turn abandoned sites into parkland and open space.

Wetlands Reserve Program. To address the loss of wetlands nationwide Congress authorized and in 1996 amended the Wetlands Reserve Program to provide funding for the protection and restoration of wetlands. The program is administered by the USDA Natural Resources Conservation Service.

North American Wetlands Conservation Act. The North American Wetlands Conservation Act (NAWCA) of 1989 was created, in part, to support activities under the North American Waterfowl Management Plan, an international agreement for the long-term protection of wetlands and associated uplands needed by migratory waterfowl and other bird species. The program provides matching grants to organizations and individuals who have developed partnerships to carry out wetlands conservation projects in the United States, Canada, and Mexico for the benefit of wetlands-associated migratory birds and other wildlife.

National Coastal Wetlands Conservation Grant Program. The National Coastal Wetlands Conservation Grant Program was established by Title III of P.L. 101-646, Coastal Wetlands Planning, Protection and Restoration Act of 1990. Under the Program, the U.S. Fish and Wildlife Service provides matching grants to States for acquisition, restoration, management or enhancement of coastal wetlands.

Community Forest and Open Space Conservation Program. Sec. 8003 of the Food, Conservation and Energy Act of 2008 (Farm Bill) established a grant program to provide federal matching grants to help local governments, tribes, or NGOs acquire private forests that are threatened by conversion to non-forest uses and are intended to provide public benefits to communities, subject to appropriation. As of yet no funds have been appropriated for this purpose.

Federal New Markets Tax Credits. Reauthorized in 2007 for 5-years, the Federal New Markets Tax Credit Program permits taxpayers to receive a credit against Federal income taxes for making qualified equity investments in designated Community Development Entities. There are now several examples of Federal New Market Tax Credit conservation projects in the Northeast, including a recently announced a 22,000-acre Community Forest and Sustainable Development Project in Grand Lake Stream, ME.

Federal Clean Water State Revolving Fund. The Federal Clean Water State Revolving Fund programs have provided more than \$5 billion annually in recent years to fund water quality protection projects for wastewater treatment, nonpoint source pollution control, and watershed and estuary management. These funds have been used to fund land conservation projects associated with water quality and watershed management.

APPENDIX E

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Wood, Jonathan – Vermont
Zeiper, Matt – Massachusetts

APPENDIX F

Selected Bibliography

A vast body exists of literature, research, and reports on the five topical areas addressed in this report. As points of departure, the interested reader is directed to the publications below, each of which offers additional references and sources.

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Maine: www.maine.gov/ifw/wildlife/groups_programs/comprehensive_strategy/

Massachusetts: www.mass.gov/dfwele/dfw/habitat/cwcs/pdf/mass_cwcs_final.pdf

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