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# Land Conservation and Land Use in New England: Trends, Challenges & Opportunities

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# Land Conservation and Land Use in New England

Trends, Challenges  
& Opportunities



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Brittany Howard, Tom Devine, Brett Richardson

# **The Muskie School Of Public Service**

Graduate Program in  
Community Planning and Development

This Capstone Project, entitled

## **Land Use and Land Conservation in New England: Trends, Challenges, and Opportunities**

Amanda Loomis, Tom Devine, Andrea Small,  
Brittany Howard, Brett Richardson, and Stephanie Dulac

is approved and accepted as  
part of the requirement for the

**Master of Community Planning  
and Development Degree**

Approved By (Capstone Advisor):

Richard Barringer

On the 30<sup>th</sup> day of June, 2009



## Land Use and Land Conservation in New England: Trends, Challenges, and Opportunities

Amanda Loomis, Tom Devine, Andrea Small,  
Brittany Howard, Brett Richardson, and Stephanie Dulac

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## Executive Summary

In recognition of the Centennial New England Governors Conference of 1908, Richard Barringer, the chair of the Blue-Ribbon Commission on Land Conservation appointed six Muskie graduate students to research the trends, challenges, and opportunities of land conservation within the six New England states. Below is a regional synthesis of the common themes among the states.

### TRENDS

- During the 20<sup>th</sup> Century, the New England landscape reverted from intense agricultural use to predominantly forest.
- Land consumption has increased more rapidly than population growth and low-density sprawl threatens forestland, farms, and open space.
- New Englanders have increased organizational capacity through grassroots land trusts and statewide non-profit organizations to advance conservation; collaboration among state agencies, non-profit organizations, land trusts, and municipalities is an established and ongoing tradition.
- Public and private funding for land conservation has increased.
- The rise of local agriculture has created greater awareness of food systems production, and enhanced support for farmland preservation.

### CHALLENGES

- The fragmented nature of the current development pattern is self-perpetuating and inhibits the conservation of large tracts of land that support biodiversity and public recreation access.
- Current economic challenges may decrease private funding to conservation organizations and jeopardize state governments' financial commitment.
- Motivation and fundraising for stewardship of conserved lands is diminishing.
- Global climate change will complicate land management efforts.
- Fragmenting land ownership, sprawling land consumption and the downturn of the American forest products industry continue to threaten forestland.
- Aging farmers, development pressure, and limited earning potential threaten New England farmlands, even as demand for locally-grown food increases.
- New England's youth is increasingly disconnected from the outdoors.

### OPPORTUNITIES

- Public support is strong for conservation, and the question is no longer whether to conserve land, but what lands to conserve and how.
- The economic recession has given community leaders, as well as conservationists, an opportunity to slow down and strategically plan where they want to direct growth and where they want to conserve land.
- Regional collaboration can create a New England-wide conservation strategy which will benefit from the well-established land conservation organizations within each state.

- Local and regional open space planning can be integrated within the New England land conservation strategy.
- Statewide tax policies and regulation that redirect growth to urban areas and away from sensitive areas can be further developed and enhanced.
- Youth education and outreach will help cultivate a new generation of conservation champions and land stewards.
- Land conservation can be integrated with climate change mitigation strategies, such as carbon sequestration.



## INTRODUCTION

Sprawling development patterns accelerated across the New England landscape in the last three decades and consumed the region's forests, farms, and open spaces at an unprecedented rate. New Englanders in all six states formed land trusts, supported statewide conservation organizations, and collaborated with state and federal partners to protect some of their most-prized recreation lands, wildlife habitats, and working lands. The current economic recession has slowed development pressures across the region and offers an opportunity to build on recent successes. The time is right to plan a coordinated New England conservation strategy that protects and links the region's natural assets.

In this paper, six graduate students from the Community Planning & Development program at the Muskie School of Public Service identify land use trends, ongoing challenges, and current conservation opportunities in each of the six New England States. To do this, the students reviewed reports from state, federal, non-profit, and private sources, and interviewed and corresponded personally with conservation leaders in each of the states. This paper also offers a review of the collaborative process established by the New England Governor's Conference to coordinate the blue-ribbon Commission Land Conservation (CLC), and the participatory process undertaken in the State of Maine to generate input and consensus on Maine's priorities among the state's leading conservationists.

The CLC builds on a legacy of conservation in New England. Led by Massachusetts Governor Curtis Guild Jr., the six states convened the First New England Governors' Conference in Boston in November 1908 to discuss resource conservation issues. This regional effort was inspired by the 1908 White House Conference of the Governors of the United States assembled by President Theodore Roosevelt to address national concern for natural resources. From this groundswell of interest the White Mountain National Forest, Green Mountain National Forest, and Acadia National Park were ultimately established to protect New England forests, headwaters, and landscapes.

More recently, Charles H. Foster and a team of experts completed a conservation history of the New England states. *Twentieth Century New England Land Conservation: A History Civic Engagement* celebrates the region's conservation champions and legacy of innovation, and helped revitalize interest regional conservation strategies. In September 2008, at the annual meeting of the NEGC

hosted by Maine Governor John E. Baldacci in Bar Harbor, Maine, the governors by Resolve established the CLC, to consist of two members from each state and Richard Barringer as chair.<sup>1</sup>

The CLC met for the first time on January 9, 2009, in Cambridge MA,<sup>2</sup> where members agreed to make recommendations to the six governors on regional conservation priorities for the 21<sup>st</sup> century. The CLC elected to focus on three conservation goals: “keeping forests as forests,” “keeping farmlands in farming,” and “bringing nature close to home.” (A fourth focus area would be added later, namely, “conserving coastal and riverine resources.”) The CLC also endorsed a plan for each state to conduct outreach to its own conservation community; to solicit input on how state priorities might link with regional goals and national trends.<sup>3</sup> A “white paper” was prepared to guide these conversations and focus them on the identified areas of CLC concern.

On May 1, 2009, state representatives reconvened to finalize recommendations made through the state outreach process. The meeting was held in Littleton, Massachusetts and was hosted by the New England Forestry Foundation. The CLC drafting committee will take the resulting recommendations from this meeting to draft the final report for the New England Governors. The draft report, will then be circulated throughout the Commission, and will be finalized at the plenary meeting in June 2009, in Durham, New Hampshire. The CLC will present the final report in September of 2009, at the New England Governor’s Conference.

To view the final draft of the New England Governors’ Conference, Inc., Commission on Land Conservation, Report and Recommendations: *Building Connections – Across Jurisdictions, Sectors & Generations*, please refer to <http://efc.muskie.usm.maine.edu/>

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<sup>1</sup> Appendix 1 - for documentation of the centennial meeting

<sup>2</sup> Appendix 2 – meeting minutes

<sup>3</sup> Appendix 3 – white paper





## **Land Use & Land Conservation in Connecticut Trends, Challenges, and Opportunities**

**Amanda Loomis  
May 2009**

## Executive Summary

This document was developed to focus the attention on Connecticut's important resources of farm, forest, and open space which are at risk of being lost to development within the state. Although Connecticut has been at the forefront of conservation efforts, recent trends in land use jeopardize the environmental future, quality of life, and quality of place within the state. Currently, Connecticut faces the challenges of sprawl, fragmentation, funding, a lack of connectivity, and a loss of open space within the state. Nonetheless, Connecticut has the opportunity to make a difference and enhance the fate of land conservation within the state and throughout New England.

### Trends:

- Connecticut has been at the forefront of conservation efforts; many of its innovations have since been replicated by other states. Those efforts include the founding of the land conservation easement, Connecticut Agricultural Experiment Station, the Forest and Park Association, The Nature Conservancy and numerous citizen-led land trusts.
- Connecticut has gone through transitions of land use, from a forest rich state, to one that is agriculture intensive. Currently, the state faces the development of farm and forest land for businesses and residential homes.
- Connecticut's population trends indicate that the state's population is growing slowly; not from immigration, but from residents movement from urban areas to the suburbs. Between 2000 and 2007 the state's population increased by 2.84 percent, urban cities population grew between 1995 and 2005 an average of 1.12 percent, while five suburban towns witnessed a 18.72 percent population increase.
- Government entities, private, businesses, and nonprofit organizations have collaborated to address and attack the issues of land conservation, through the development of programs and plans to deal with the loss of forest, farm, and recreational lands in the state.
- Rising land values increase the pressure for current landowners to sell farm land, forest land and open space to developers. This trend deters landowners from conserving the land due to the high cost of taxes, maintenance, and debt often owed on the land.
- Fragmentation and lack of connectivity often results when parcels of land are sub-divided. This causes surrounding landowners to frequently sell their land to developers, causing environmental problems to natural resources such as water quality, wildlife habitat, and carbon sequestration.

### Challenges:

- Funding for land conservation, through the challenges set by the current tax structure, deficit of available funds during times of economic downturn, and the lack of information to current landowners about available funding.
- Sprawl has spread throughout the state like a wildfire. Counties that were forest-and-farm rich are now a target for development. Litchfield and Tolland have experienced the greatest amount of growth within recent years.
- The fragmentation and lack of connectivity of natural resources as a result of development and the high prices of land.
- The management of acquired land. Often once the land has been acquired it is left unmaintained, resulting in unproductive, and an eye sore to the community and a deterrent for future gifts of land for land conservation.

### Opportunities:

- Securing funding for times of economic downturn, when land prices are at a low. This allows more land to be purchased during these times.
- The use of Connecticut as a model for land conservation funding and land stewardship.
- The use of smart growth for development strategies, to hinder the state's sprawling suburbs.
- The addition a mass transit system throughout the state, and throughout New England and to New York City.
- The use of Connecticut's location as an opportunity rather than a barrier. This could be achieved through the collaboration of the New England states and New York. To decrease fragmentation at the borders of these states, and create a continuous track of forest, farm or recreational land.

## Land Use & Land Conservation in Connecticut

Connecticut has long been at the forefront of conservation efforts, many of its innovations having since been replicated by other states. The state, for example, founded the land conservation easement.<sup>4</sup> Other accomplishments include the Connecticut Agricultural Experiment Station, founded in 1875; the first state Forest and Park Association, established in 1895; The Nature Conservancy, the first to be incorporated, in 1951 (Foster, 2009); and numerous small community-based and citizen-led land trusts begun in the early 1960s. According to the Connecticut Department of Environmental Protection, today the state has approximately 115 active land trusts<sup>5</sup> (Connecticut Department of Environmental Protection, 2009a).

Despite Connecticut's deep roots in land conservation, the state faces tremendous pressures to expand its highway system and convert its open space to development. The state's location and proximity to large metropolitan areas increase pressure to develop the state's forest, farms, and accessible open space. How the state responds to that challenge will determine its environmental future, its quality of life, and its quality of place. Connecticut's past can be a catapult into a new dimension of land use and conservation trends, or it can be forgotten. If current land use trends continue, by 2050, 60.9 percent of Connecticut will be urban (Nowak & Greenfield, 2008). To confront those challenges, Connecticut will need to examine carefully its land conservation practices. Above all it must consider farm, forest, recreational land.

Connecticut is known for its traditional New England Farms, rolling lands, and deep forests, which are important to the state's economy and to its ability to attract new residents, vacationers, and industry (McCarthy, 2007). Throughout its history, the state has gone through periods of transition from a forest industry to a farming economy. Those transitions have had major impacts on the state's landscape and land-uses.

### Land Use History

Connecticut's forests have long been under development pressure. In the 19<sup>th</sup> century, the state reached its agricultural peak, most of its land having been cleared for agricultural uses. By the 1820s, just

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<sup>4</sup> In The Nature Conservancy's document, *Conservation Easements: Conserving Land, Water and a Way of Life*, Conservation easements are a legal agreement, which prevents certain uses and development from occurring on an easement property, now and in the future (The Nature Conservancy, 2009).

<sup>5</sup> According to the Connecticut Department of Environmental Protection, "Land Trusts are private, non-profit organizations dedicated to land conservation. Land trusts protect natural areas and open space in their local communities." Various organizations contribute to Connecticut's high number of land trusts operating within the state. The actual number of land trust varies in the state; with an average of one working land trust per town in Connecticut (Connecticut Department of Environmental Protection, 2009a).

25 percent of Connecticut remained forested. As Connecticut moved into the textile industry in the late 19<sup>th</sup> and early 20<sup>th</sup> century, hillsides were cleared to make charcoal for the brick, brass, and iron industries. In the early 20<sup>th</sup> century, fires broke out over the landscape; many started accidentally by sparks from the railroad and other industries, while others were started deliberately to clear the underbrush so the land could be used for farming. State records from the early 1900s show that anywhere from 15,000 to 100,000 acres of forested land burned annually (Flounders, 2003). Clearly, forestland was then of much less value to the people of Connecticut than it is today (Hurd, J., Parent, J., Civco, D., Tyrrell, B., & Butler, B., 2009).

The history of Connecticut as a farming state dates to its early European settlement. During the Revolution, Connecticut provided a majority of the food for the Continental forces, earning the nickname “The Provision State.” At that time, Connecticut grew and provided vegetables, fruits, dairy, and tobacco products. Today, Connecticut produces primarily wines, cheeses, and ornamental plants, in addition to dairy products and tobacco. In 1945, Connecticut had 22,000 farms; by 2005 the number had declined to 4,191. Connecticut saw a decrease in farmland acreage from 50 percent of the state’s total land area to just 11 percent. (Coleman, K., Coffin, C., & Martin, J., 2005)

Since 1636, when the state was first settled, it has been under pressure to use its land. For three hundred years Connecticut’s development took the form of small unified, planned compact towns and cities. It was not until the industrial revolution that the state’s population steadily increased, which, coupled with the rise of the automobile, led to segregated, unplanned modes of development, also known as sprawl. Sprawl, in time, required the addition of even more roadways to allow suburban dwellers to commute into urban centers for work (Poland, 2009).

Today, government entities, private, and nonprofit organizations have recognized the need to shift their attention from impromptu land consumption to strategically planned conservation of farms, forests, and open land for the state’s residents and visitors (Sutherland, 2009).



Stonington, Staton-Davis Farm, owned by a single family since the 17<sup>th</sup> century is still an active working farm

## Demographic Trends in Connecticut

**Population Trends** Previous generations of Connecticut residents did not face the same challenges and threats to open space, farmland, and forest land as do current residents. As the nation's economy grew, so did Connecticut's population. That created a demand for more housing<sup>6</sup>, business, industry, transportation, and recreational areas. Over the years, Connecticut has seen many changes to its landscape, including the development of major transportation routes, the use of its coastline and rural land for the increasing number of vacation homes, and suburban development.

Since the 1950s, Connecticut's overall population has increased, led by growth in the suburbs, while its cities have remained static or decreased. Connecticut's slight population increase of 2.84 percent between 2000 and 2007 does not represent the population movement from urban to suburban areas that occurred in the state since the 1950s. For example, in the 1990s, Hartford's population decreased by 13 percent, the largest decline in any municipality in Connecticut. At the same time, 40,800 acres of rural land was converted for development uses (Farmland Information Center, 2009). Suburbs close to Hartford and throughout Connecticut saw an increase in population and related services. As jobs moved to the suburbs to follow the populations, Hartford's poverty rate rocketed to 30 percent in 2000, one of

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<sup>6</sup> Donald J. Poland (AICP) executive director, for Connecticut's Partnership for Balanced Growth stated in *Sprawl Myths: Connecticut's Development is a Result of Sprawl*, that "Sprawl is a new phenomenon and our recent growth is destroying our state's character: Compare the rate of development from 1970-1980 and 1990-2000 in the same five sprawling communities (Hartford, West and East Hartford, Bloomfield and Wethersfield), and we find that the rate of development or sprawl was far more significant in the 1970's. From 1970 to 1980 the five sprawling communities experienced a 52 percent increase in the number of housing units, with a total of 4,542 new housing units. From 1990 to 2000 the same five communities experienced an 18 percent increase in the number of housing units, with a total of 2,854 new housing units. So a 52 percent increase in housing in the 1970's was called suburbanization and an 18 percent increase in housing in the 1990's is now known as sprawl (Poland, 2009)."



the highest rates in the country, even while Connecticut had the highest per capita personal income<sup>7</sup> (Orfield & Luce, 2003).

Cities throughout Connecticut saw little change in population during 1995-2005, while the populations in suburban areas increased. The cities of Bridgeport, Hartford, and New Haven all experienced a 1.4 percent population increase, and two other major cities, Stamford (2.4 percent) and Waterbury (-1.0 percent) experienced a slight population fluctuation between 1995 and 2005. Meanwhile, suburban areas recorded significant increases in population during the same period, including Goshen (22.8 percent), Preston (22.5 percent), Hartland (17.2 percent), Eastford (15.9 percent), and Chaplin (15.2 percent). Connecticut's suburban towns are located either near major transportation routes, such as Rt. 8, I-84, I-91, and I-95, in close proximity to the major cities in Connecticut; or near the borders of Massachusetts, Rhode Island, and New York. This allows the workforce of New York City, Providence, Boston, and Springfield to commute to work and live in Connecticut (Connecticut State Government, 2009).

**County Population** County population is an element of Connecticut's growth. Tolland County (8.6 percent) and Windham County (7.3 percent) have experienced the highest growth rate between 2000 and 2007. The increase in accessibility, through the development of major transportation routes, allows city workers to take advantage of the low population density and the homes in the country. Fairfield (1.4 percent), Hartford (2.3 percent), and New Haven (2.6 percent) counties have experienced miniscule growth between 2000 and 2007 and have the highest population and highest population density of Connecticut's eight counties<sup>8</sup> (United States Department of Agriculture, 2009a).

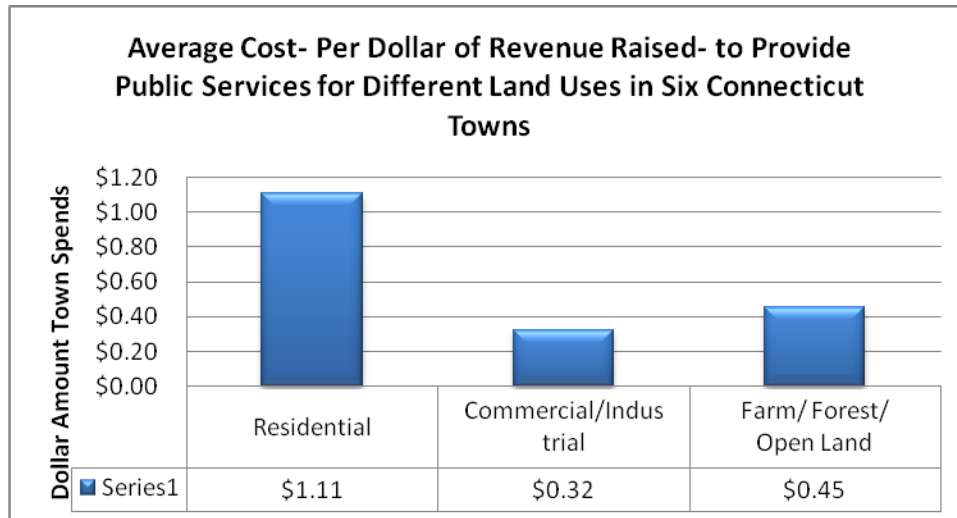
Suburban communities, like those in Litchfield and Tolland Counties, are built to low density standards, leading to the encroachment of development on open spaces, surrounding farms, and forest areas. Such development results in the demand for new infrastructure and roads, and decreases the opportunity for the development of mass transit. In rapidly growing suburban areas, the cost of infrastructure and services such as schools, police, and fire, result in higher housing prices and increased taxes (Orfield and Luce, 2003). Data from a study conducted on the six towns of Bolton, Durham, Farmington, Hebron, Litchfield, and Pomfret "show that on average, for every \$1.00 of revenue generated by the residential sector, \$1.11. was required to service its land use; while for every \$1.00 of revenue generated by agriculture or forest land, the towns spent only \$.45 in services(Coleman, K.,

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<sup>7</sup> In 2000, Connecticut's per capita personal income (PCPI) was \$41,492; this figure is 39 percent above the United States' National Average of \$29,845, up by 8.2 percent in 1999. (Bureau of Economic Analysis, 2009)

<sup>8</sup> For additional Connecticut Population trends refer to Appendix I

Coffin, C., & Martin, J., 2005.” Local governments often promote commercial and industrial uses as a way to offset the high cost of residential development. Although such promotions generate surplus revenue in the short term, towns that use that method often have the highest tax bills in the state (Coleman, K., Coffin, C., & Martin, J., 2005).



Data Source: Coleman, K., Coffin, C., & Martin, J., 2005

Towns include: Bolton, Durham, Farmington, Hebron, Litchfield, and Pomfret

**Acreage per resident** Land use trends within Connecticut indicate a high rate of change from undeveloped to developed land. A recent study conducted by the University of Connecticut’s, Center for Land Use Education and Research (CLEAR), indicates between 1985 and 2006, there was an increase of 2.9 percent in developed land, and a decrease of 3.5 percent in forest cover<sup>9</sup> (CLEAR, 2009). Between 1970 and 2000, urbanized land area grew by 102 percent; while population only grew by 12 percent (Orfield & Luce, 2009).

Rural counties such as Litchfield offer a low ratio of people to open space compared to densely populated counties like New Haven and Fairfield. Litchfield County has approximately 4,000 acres per 10,000 residents; Tolland, New London, Middlesex, and Windham Counties provide roughly 2,200 to 2,700 acres per 10,000 residents. However, counties such as Fairfield, Hartford, and New Haven provide less open and recreational space, with 365 to 430 acres per 10,000 residents. On average a rural town in Connecticut offers its residents 4,164 acres per 10,000 residents, compared to a suburban town, which offers 949 acres per 10,000 residents, and an urban center offering 122 acres per 10,000 residents (Connecticut Department of Environmental Protection, 2005).

**Connecticut’s Wealth** As of 2007, Connecticut had the highest national per capita income, 40 percent above the national average. Connecticut serves largely as a bedroom community for its

<sup>9</sup> Refer to Appendix II for Change in Connecticut’s Landscape

surrounding states' major cities, in addition to being the location for second and vacation homes for the well-to-do (Bureau of Economic Analysis, 2009).

While Connecticut has the sixth lowest poverty rate in the country (9.170), within Connecticut's major cities there is a large population living in poverty (Boston, 2008). According to David Boston, "six major cities in Connecticut live with poverty rates that are at least 50 percent above the national average. That indicates that the poor people living in Connecticut are not geographically separated into entirely poor cities, but that most of the poor people live in poor sections of major cities (Boston, 2008)." High levels of poverty within urban areas<sup>10</sup> lead to low education levels, which forces residents to search for scarce entry level work, and leads to high unemployment levels. As industries and businesses moved to the suburbs, numerous entry level jobs followed, creating a vicious cycle of high poverty rates and increased unemployment in the older cities (Boston, 2008).

**Recreational Participation** A recent survey conducted for the Connecticut Statewide Comprehensive Outdoor Recreation Plan (SCORP) found that Connecticut residents have a very high outdoor recreation participation rate. Of the 2,238 households that participated in the survey, 93.8 percent participated in land-based activities such as running, biking, and hiking; 85.3 percent participated in water-based activities; and 54.3 percent participated in some type of winter activity.<sup>11</sup> The high activity level among residents contributes to the state's low obesity rate, where Connecticut ranks 46<sup>th</sup> in the nation. Still, obesity rates among Connecticut's adults have increased from 10.9 percent in 1991 to 19.1 percent in 2005. This indicates that increased access to outdoor recreation activities would be beneficial for educational, physical, social, and economic purposes within Connecticut's communities (Connecticut Department of Environmental Protection, 2005).

**Other Threats** Connecticut's tax structure and the economic pressures of development are also threats to Connecticut's land use and conservation efforts. According to John Calandrelli, State Program Director of the Connecticut Sierra Club, Connecticut's current tax structure is centuries old. A majority of its tax system is based on property tax; on land owned by individuals. Connecticut is the last state in the nation to rely on property taxes to pay for its schools (Calandrelli, 2009).

In the 2004 fiscal year, Connecticut collected \$6,801,676,000 in property taxes.<sup>12</sup> Connecticut collections per capita yielded, \$2,167, ranking second highest in the nation, after New Jersey (\$2,372) in collections of such tax (Tax Foundation, 2009).

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<sup>10</sup> The following cities are 50 percent above the state poverty average: Bridgeport (18.4%), Hartford (30.6%), New Britain (16.4%), New Haven (24.4%), New London (15.8%), and Waterbury (16.0%). (Boston, 2008)

<sup>11</sup> See Appendix III for Connecticut's Top Ten Outdoor Recreation Activities

<sup>12</sup> The collections for per capita property tax equaled \$1,944 for all levels of government (Tax Foundation, 2009)

"It's the property tax.. Connecticut has, according to the Tax Foundation, the 49th worst property tax policy in the nation. Only New Jersey is worse, by their standard. Communities that depend as heavily as Connecticut does on the property tax could be facing real problems if housing values continue to fall. Think about what it would mean to the mill rate if property values fall to their pre-bubble levels of almost a decade ago. Some places might have to double their taxes to maintain services." (Varon, 2008)

In addition to Connecticut's high property taxes, the state currently ranks the third highest in the U.S. for state and local taxes. It is estimated since 1995, Connecticut has ranked in the top five for state and local tax burden compared to the U.S. average. For the past three decades the state has been among the nation's highest taxed states, with the average Connecticut tax payer paying roughly \$7,007 per capita in state and local taxes. (Tax Foundation, 2009)

Such high taxes could hinder the ability to purchase land for land conservation purposes, and prevent farmers, owners of forest land, or owners of open space from keeping their land as one large parcel. Often, due to high taxes, large-parcel landowners subdivide their land.

## **Government Entities, Private, Nonprofit Organizations**

Despite the pressures to develop Connecticut, many organizations throughout the state have collaborated to address and attack issues through programs and plans that work to preserve undeveloped land. Government entities, private, and non-profit organizations have acquired a total of 328,000 acres of recreational land (or 964 acres per 10,000 residents) within the state (Connecticut Department of Environmental Protection, 2005).

Since 1901, the state of Connecticut has acquired 251,001 acres for its parks, forest and wildlife, and fishery and natural resource management areas (McCarthy, 2007). Connecticut's governmental entities, private, and nonprofit organizations afford substantial access for open space to the residents and visitors of Connecticut. The state has more than 100 parks that cover roughly 33,911 acres of land, and are distributed throughout the state. Connecticut also has 32 state forests that cover about 169,800 acres of land, and provide access to hiking, hunting, camping, and wildlife views. According to SCORP, organizations that contribute to land preservation include:

- Connecticut Water Company owns and maintains a total of 6,100 acres of land in its natural state for the purpose of watershed and aquifer protection (Connecticut Water Company, 2009).
- The Nature Conservancy owns and manages 21 separate parcels in the Lower Connecticut River Valley and in Western and Eastern Connecticut, which combine to roughly 65,467 acres of owned, eased, and managed land.

- Connecticut has 115 local land trusts with over 39,000 members and a total of approximately 51,000 acres in fee land and another 21,400 acres under easements.
- The National Park Service owns 6,488 acres and 51.6 miles of Appalachian Trail corridor that runs through the Northwestern portion of the state.
- The Connecticut Forest and Park Association (established when Connecticut was 20 percent forest cover) maintains and owns the 825 mile Blue Blazed Hiking Trail through 88 towns, the backbone to the recreation trail network within the state.
- Yale Myers Forest, owned by Yale University, is the largest of seven Yale forests, comprising 7,840 acres. The only Yale Forest in Connecticut, it is located in the towns of Ashford, Eastford, Union, and Woodstock, and used for purposes of active education, research, and harvesting (Yale Myers Forest, 2009).



“Members of the Yale Forests Program talked about sustainable forestry practices during a program held near Yale Myers Forest” (Yale University, 2008)

## State Plans for the Future of Connecticut

- **The Green Plan:** The Green Plan was established to protect Connecticut’s land in a variety of settings across the state, and to ensure that 21 percent of its open space area would be protected by 2023. To meet this goal, the state must preserve 673,210 acres of its 3,205,760 acres: 320,576 acres to be acquired by Connecticut and 352,634 acres by the state’s partners which include local land trusts and organization such as The Nature Conservancy, The National Park Service, and the Connecticut Water Company. As of January 2007, Connecticut had acquired 251,001 acres,

78 percent of its goal. Partners of the state have acquired roughly 229,798 acres, or 65 percent of their goal (McCarthy, 2007).

- **No Child Left Inside:** Connecticut has adopted the No Child Left Inside program to encourage children and their families to take part in outdoor activities. The state has set aside \$300,000 towards an outreach campaign to families throughout Connecticut, with a focus on urban families, to ensure they are aware and have access to recreation



opportunities available in the states parks, forest, and waterways (Connecticut Department of Environmental Protection, 2005).

- **Farmland Preservation Program:** The Farmland Preservation Program was established in 1986, in response to the disappearance of farms. Connecticut set a goal of preserving 130,000 acres, including 85,000 acres of cropland. If this goal were attained, it would allow Connecticut to meet a minimum of 50 percent of its milk needs, and to produce 70 percent of its in-season fresh fruits and vegetables. To date, the state has preserved only 30,157 acres and 214 farms, just 23 percent of its goal (Connecticut Department of Environmental Protection, 2005).
- **Connecticut Statewide Forest Resource Plan 2004-2013:** This plan was produced to describe best management practice methods for forest management, in response to proper management and protection of the state's Forest Ecosystem Health, Public Forest Stewardship, Private Forest Stewardship, Recreation, Education and Outreach, and planning policy (Connecticut Department of Environmental Protection, 2005).
- **Walk CT:** The Path to Health and Happiness: Designed by the Connecticut Forest and Parks Association, this program aims to provide each resident with the opportunity to enjoy the outdoors, with the objective that "no resident is farther than 15 minutes away from a great walk (Connecticut Forest & Park Association, 2009)."

## Keeping Connecticut's Farmland in Farming

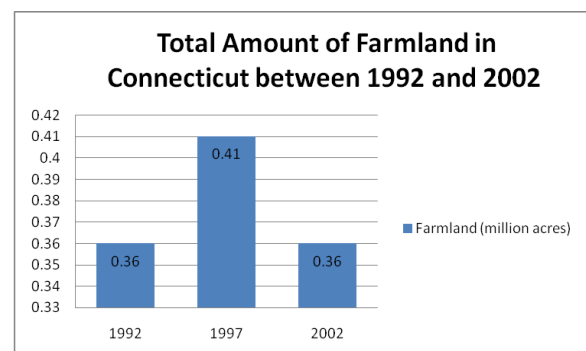
Connecticut is one of the nation's oldest and strongest farming states, but faces the potential loss of farmers and farmland to development. One threat to the farming culture is Connecticut's location and close proximity to Boston and New York City, in the middle of the "Northeast Economic Corridor or "New Atlantic Triangle" where the probability for new development and industry growth is very high (Coleman, K., Coffin, C., & Martin, J., 2005).

Historically, agriculture was the foundation that determined all other land uses in Connecticut. Farming was a family business, and farms were passed down through generations. Until recently, farms and farmlands were the cornerstone of most Connecticut communities, with long generations of families, and vast landscapes of open fields and pastures. Farms and farmlands provide a link between the past and the future of these small towns, and show how things used to be, and what they have the potential to become again (American Farmland Trust, 2008). According to Working Lands Alliance's report, "A Call to Farms!," "Connecticut loses 7,000-9,000 acres of land in farms to non-agricultural uses every year. At this rate, we will have no farmland left to preserve by 2040." Connecticut lost over 12 percent of its farmland between 1997 and 2002, and now has the highest percentage of farmlands loss in the U.S. (Coleman, K., Coffin, C., & Martin, J., 2005). If farmers and farmland within Connecticut are lost to the high cost of farming and sprawl, Connecticut will lose a major piece of its heritage and traditional way of life.

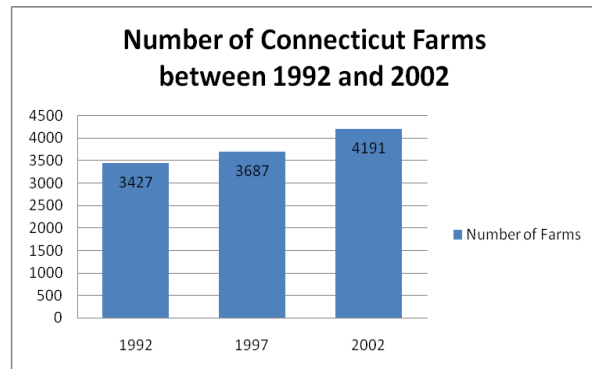
### Farming Trends

In the 19<sup>th</sup> century, Connecticut was three-quarters cleared for farming. Since then dynamics among the farmer, the agricultural sector, and the landscape have continually changed. Current trends include:

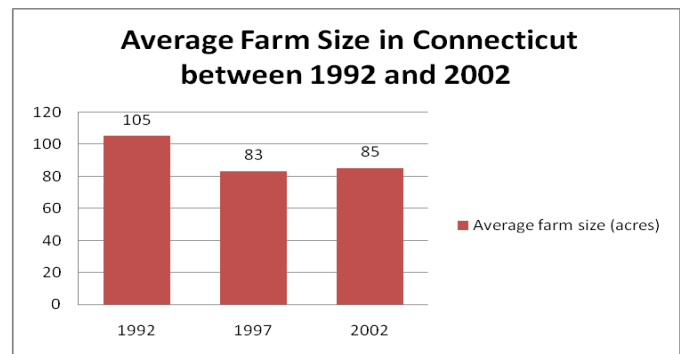
- Decrease in Acres of Farmland:** The amount of farm land available in Connecticut has decreased as lands are developed or revert to forestland. Connecticut lost .05 million acres of farmland between 1997 and 2002; in 2002, 11.5 percent of Connecticut was farmland, a decrease from 13.1 percent in 1997 (United States Department of Agriculture, 2002).



- Decrease in the number of farms:** On average Connecticut loses 142 farm businesses per year (Working Lands Alliance, 2005). In 2002, Connecticut had 4,191 farms, down from 4,905 farms in 1997, a 15 percent decrease. Between the years of 1915 and 2005 the number of farms dropped from 25,200 to 4,200. In 1935, Connecticut saw its largest number of farms since its agricultural peak in the 19<sup>th</sup> century, with a record of 29,800 farms. In 1990, 55 years later, Connecticut recorded a record low of 3,900 farms (United States Department of Agriculture, 2002).



- Farm size:** Connecticut's farm size is relatively small compared to other states in the U.S., the state has the third smallest average farm size. More than half of the state's farms have fewer than 50 acres, and 96.91 percent of Connecticut's farms are less than 500 acres<sup>13</sup> (Coleman, K., Coffin, C., & Martin, J., 2005). In addition, the acreage of land in farms has decreased through the years. In 1997, there were 406,222 acres of farmland; this decreased to 357,154 acres by 2002, a 12 percent decrease. Although the number of farms and the amount of farm land has decreased, the average size of farms within Connecticut has increased, up two percent (between 1997 and 2002 average size 83 acres). (United States Department of Agriculture, 2002)



- Farmer Characteristics:** The farming population is aging; the average operator age increased from 55.0 in 1997 to 55.4 years in 2002. Despite this trend there has been increased interest in farming by new and young farmers; however, these new farmers face a barrier when trying to enter the industry. Currently, when farmers retire or leave the farming industry, the land is developed, rather than their families continuing the farming tradition. This occurs due to the lack

<sup>13</sup> Refer to Appendix IV for additional Connecticut farm trends



of interest in continuing the family farm, high property taxes, or need for money to pay back farm's debt that has accrued over the years (United States Department of Agriculture, 2009c). Between the years of 1992 and 1997, 8,100 acres of farmland were developed, ranking Connecticut 10<sup>th</sup> in the country for the number of agricultural acres converted in to development uses (Farmland Information Center, 2009). Despite an increased interest, in farming, the barriers for these new farmers are too great to replace the loss of the older farmers. This leaves Connecticut at risk of losing a large percentage of revenue from the sales of agricultural products.

“Current trends in American agriculture including the loss of family farms, an aging grower population, global competition, industry consolidation, and increasing distance between the point of production and consumption have led to concerns about food security, the health of rural communities, and economic and environmental sustainability. A concomitant increase in the importance of direct marketing, consumer demand for products with ‘embedded’ characteristics, and the number of small farms on the urban fringe, present an interesting counterpoint to these developments (Michigan State University, 2009).”

- **Rising Land Values:** Connecticut's development pressure has resulted in high land prices. In 2004 the average price per acre of farm land was \$10,200, up 55.32 percent from \$6,567 in 1995. The increase in land price is accompanied by an increase in property tax. Although Connecticut has a property tax abatement law under Public Act 490<sup>14</sup>, property taxes are often still too high for a farmer to make a profit. Between 1997 and 2002, the average property tax paid per farm increased by 44 percent, the second highest rate of increase in the Northeast. In 2002, the average property tax paid per farm was \$4,523. In addition, debt payments for New England farmers are among the highest in the nation, resulting in a significant deterrent to farming (Coleman, K., Coffin, C., & Martin, J., 2005).
- **Farm Fragmentation:** Farmers generally share equipment, trade farm products, and support local businesses and services. With each farm lost, it becomes harder for remaining farmers to obtain the services, equipment, and goods needed to run a farm, and make a profit (Connecticut Department of Agriculture, 2007).
- **Leasing Farmland:** An alternative method for many farmers in Connecticut and within New England is the leasing of land for crops, grazing, and other agricultural uses. But leased land is under the same development pressures as farmland owned by a farmer. So farmers are uncertain about the availability of such land for farming.

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<sup>14</sup> Public Act 490: allows farmland, forest area and open space to be assessed at its use value rather than its fair market value or “highest and best” property value (Connecticut Department of Agriculture, 2009e).

## Agricultural Industry

Connecticut has seen its agricultural industry transition from dairy and tobacco to vineyards and production of value-added products, such as cheese, wines, and ice cream. These changes are a result of the loss of land to development, farmers leaving the farming industry, and demand for new products.

Several of Connecticut's most important and profitable farming sectors include:

- **Aquaculture:** Connecticut is ranked second in the U.S., and first within the Northeast, for the number of saltwater acres in aquaculture; more than 70,000 acres, the majority of which are located in the Long Island Sound. In 2006, over 475 million pounds of mollusks were harvested, at a value of over \$20 million (American Farmland Trust, 2008).
- **Dairy:** The dairy industry is Connecticut's second most valuable agriculture sector, generating more than 4,242 jobs and producing between \$145- \$208 million in personal income. Connecticut's 152 dairy farms produce more than 45.5 million gallons of fluid milk each year, supplying Connecticut with 65 percent of its milk (American Farmland Trust, 2008).
- **Tobacco:** Tobacco is Connecticut's most valuable export, valued at more than \$30 million dollars annually. In 2006, approximately 70 farms produced over 4 million pounds of broad and shade leaf tobacco. The tobacco industry represents about 2,430 acres within the state (American Farmland Trust, 2008).
- **Non-Traditional Crops:** In the future Connecticut will focus more on the production of such agricultural products as goat cheese, black currant juices, wines, eastern oysters, manure, potted flowers, ice cream, fruit brandy, wool, and grass-fed beef, in addition to aquaculture, dairy and tobacco industry. To meet consumer demand, Connecticut farmers are willing to alter production when resources and funding are available.



Tobacco fields in Connecticut

## Programs for Conserving Farmland

Connecticut has the third highest average of per-farm direct-to-consumer sales in the U.S. New programs and laws have been developed with the hopes to help keep farmers in farming, and farm land in farming. While a good start, these programs alone will not be enough to save Connecticut's farms unless the challenges facing Connecticut's farmlands are addressed. These programs include:

- **Farms-to-School Program:** Incorporates locally grown fruits and vegetables into school lunch programs, provide activities to incorporate Connecticut grown foods into children's lifestyle such as Harvest Celebration Days, farm tours, and provides promotional advertisements to promote local farming. The Farm-to-School Program works to supports local farms and ensures that school meals are locally grown and nutritious. In 2006, 15 new farms joined the program. In 2007, over 50 schools within Connecticut participated in the Farm-to School Program, buying from more than 45 local farms within the state (Connecticut Department of Agriculture, 2007).
- **Farm-to-Chef Program:** Funded by PA 228<sup>15</sup> monies, to promote and increase the use of Connecticut-grown products within restaurant, institutions, and other dining facilities menus within the state. The program works to link chefs with locally grown products by hosting educational workshops, tours, demonstrations and discussions about locally grown produce and

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<sup>15</sup> "The Community Investment Act" (also known as Public Act 05-228) was signed into law on July 11th, 2005. The Act provides increased funding for open space, farmland preservation, historic preservation and affordable housing (Connecticut Department of Agriculture, 2009)."

products, such as lobster, fin fish, and shellfish, in addition to safety and sanitation taught by renowned local chefs. (Connecticut Department of Agriculture, 2007)

- **CT Grown Promotional Material:** Introduces the advertisement for “CT Grown”<sup>16</sup> at trade shows, meetings, fairs, special events, speaking engagements, sponsorships, etc. Through promotional items such as pins and stickers, with the CT Grown logo. Such signage helps shoppers identify locally grown products, and helps promote locally grown produce and products. While the program has been in existence since the late 1980s, it has recently increased its promotion tactics. (Connecticut Department of Agriculture, 2007)
- **New Haven Senior Farmer’s Market Nutrition Program (SFMN):** SFMN is another project funded by PA 228 monies. The program provides seniors within Connecticut the opportunity to buy locally grown produce at certified farmers’ markets through the use of vouchers. With recent increases in program funding, SFMN was able to provide \$15 worth of Senior Coupons to 1,200 “nutritionally-at-risk” seniors within the New Haven area. (Connecticut Department of Agriculture, 2007)
- **Farmland Preservation Program:** The Farmland Preservation Program was established in 1986, in response to the high number of farms within the state that were disappearing (Connecticut Department of Environmental Protection, 2005). The goal of the program is to preserve 130,000 acres of farmland, while distributing roughly \$4,000,000 annually to “improve the timeliness of preservation transactions, increase acreage and number of farms preserved each year, and increase the number of staff in the Farmland Preservation Program” (Connecticut Department of Agriculture, 2007). Currently the program, is working to preserve four farms (combined total of 443 acres of land, worth \$1,969,010) within the state with PA 228 funding. (Connecticut Department of Agriculture, 2007).
- **Connecticut Farmlink Program:** Works as a “clearinghouse” helping farmers and landowners locate and transfer farms. One of the biggest challenges facing farmers is the finding and transferring of land: including sale, lease, work-in or other tenure relationship (New England Small Farm Institute, 2009). This program works well for those farmers who would like to retire, but wish to keep the in land in farming. This program connects them to new farmers who wish to start a career in farming, and provides land for farmers looking to expand or move an existing

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<sup>16</sup> The Department of Agriculture’s Bureau of Agricultural Development and Resource Preservation established a Connecticut Grown (CT Grown) as a promotional technique in the late 1980s to help promote brand recognition to Connecticut’s agricultural industry. (Connecticut Department of Agriculture, 2007)

farm (Connecticut Department of Agriculture, 2007).



## Keeping Forests as Forest

### Forest Characteristics

Connecticut's forests have not always been highly valued due to the state's high percentage of forest cover, its unique mix of tree species, and ability to support wildlife habitat. There are few other places where so many people live amid such a large amount of forest. Connecticut has approximately 702.9 people per square mile (Hurd, J., Parent, J., Civco, D., Tyrrell, M., & Butler, B., 2009), which makes Connecticut the fourth most densely populated state; still, Connecticut ranks 13<sup>th</sup> in the country for percentage of forest cover (Flounders, 2003).

- **Forest Cover:** In 2002, the percentage of forest land in Connecticut was 59.3 percent or 1,886,246 acres<sup>17</sup>. Between 1985 and 2002, small percentages of interior forest were lost each year, either to fragmentation or development. If Connecticut continues to lose an average of 10,000 acres of forest to development every year, by 2059 its interior forest will be eliminated, lost to fragmentation and development<sup>18</sup> (CLEAR, 2009).
- **Tree Species:** The Connecticut forest has an assorted mix of tree species; 64 tree species were identified according to an inventory conducted in 1998. Of the trees identified, 88 percent were common species<sup>19</sup> including, red maple (the most common), northern oak, hemlock. Although oak and hickory<sup>20</sup> are common throughout the state, both species have been on a steady decline<sup>21</sup> (United States Department of Agriculture, 2006).

<sup>17</sup> According to the USDA "statewide tree canopy cover averages 64.5 percent and tree cover in urban or community areas is about 51.0%, with 15.5% impervious surface cover and 60.3% of the total green space covered by tree canopy." (Nowak and Greenfield, 2008)

<sup>18</sup> Refer to Appendix V: Acre of Forest Land in Connecticut

<sup>19</sup> A large percentage of the identified trees were common to the Northeast and Connecticut; however, a small population was "uncommon." Two contributing factors that lead to the introduction of uncommon species into an area include development and climate change. After land is cleared for development the land is often landscaped to re-vegetate the area, this often leading to uncommon species and non-native plants being planted. As the climate continues to change, this leads to warmer weathers, resulting in plants tolerant to warmer conditions, such as trees from the Carolinas, and southern states to move to the north, resulting in common plants decreasing in population or dying off.

## Forest Land Use

Connecticut's urban flight trends have been the cause of the largest decrease in forest land since the 19<sup>th</sup> century, with a large percent of loss during the 1950s and 1960s when a majority of people migrated from the cities to suburban homes. However, as farmers leave the farming industry, their non-working farms are abandoned, and slowly revert back to forest, which has led to a small increase in forest land. This trend is unlikely to continue due to the increasing pressures of development within the state. Between 1952 and 1972, forest land declined from 1.99 million acres to 1.83 million acres. However, between 1985 and 1998 forest area increased from 1.85 million acres to 1.86 million acres. At present, Connecticut roughly has 1.9 million acres, equivalent to 60 percent of its land covered with forest, equivalent to six out of every ten acres (Wharton, E.H., Widmann, R.H., Alerich, C.L., Barnett, C.J., Lister, A.J., Lister, T.W., & et al, 2004).

- County Land Use Trends:** Connecticut's eight counties have diverse land covers, ranging from high percentages of forested land to high percentage of urban area. For example, Litchfield County is made up 75 percent forest land and about 12 percent urban area (other counties average 26 percent urban), with approximately 198 people per square mile. Litchfield County has the largest percentage of forested area within the state, with parcel sizes more than 2,500 acres. Continuous large parcels like the ones found in Litchfield are unusual in such a densely populated state, and provide a stable habitat for wildlife. Even with its low population density and high percentage of forest land, Litchfield is still susceptible to development. Between 1995 and 2005, Litchfield saw a 5.5 percent growth increase in population (Wharton, E.H., Widmann, R.H., Alerich, C.L., Barnett, C.J., Lister, A.J., Lister, T.W., & et al, 2004).

Fairfield and New Haven Counties are two of the most densely populated counties within Connecticut, with the least amount of forest land. Fairfield County has a population density of more than 1,400 people per square mile, with 39 percent of its land used for residential purpose. Fairfield County has the lowest percentage of forest land (37percent forested); a majority of forest patches within Fairfield County are less than 2.5 acres. New Haven County has

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<sup>20</sup> In 1952, there was roughly 2.7 million acres of oak and hickory within Connecticut. However, in 1972 there was a 57 percent decline to 1.155 million acres; in 1985 another decline of 21 percent, leaving 913.8 thousand acres; and in 1998 a small decline of four percent leaving 875.8 thousand acres of oak and hickory. Other trends within Connecticut's tree species population include the decrease of white and red pine in addition to the decline of elm, ash and red maple. In years pass these species had increased, due to the conversion of farmland to forestland. (Wharton, E.H., Widmann, R.H., Alerich, C.L., Barnett, C.J., Lister, A.J., Lister, T.W., & et al, 2004)

<sup>21</sup> Refer to Appendix VI: Top ten species of trees within Connecticut

the second lowest amount of forest land, with only 47 percent forest cover. Nevertheless, both Fairfield and New Haven County have not seen significant decrease in forest land over the years, only small declines (Wharton, E.H., Widmann, R.H., Alerich, C.L., Barnett, C.J., Lister, A.J., Lister, T.W., & et al, 2004).

Significant forest loss occurred in the eastern part of Connecticut in counties such as New London and Windham. Both counties still have more than 60 percent forest cover but have shown 5 to 7 percent recent declines. In the Northwestern portion of the state, the amount of forest land has increased. For example, Hartford County has seen a 23 percent increase in forest in recent years (Wharton, E.H., Widmann, R.H., Alerich, C.L., Barnett, C.J., Lister, A.J., Lister, T.W., & et al, 2004).

- **Fragmentation Trends:** Fragmentation within Connecticut has been caused by the mass movement of urban dwellers to suburban areas. This has required Connecticut to meet the increasing infrastructure demands for new residents. Fragmentation within a forest or other large undeveloped land parcel precipitates several problems such as the altering and contaminating of water resources, reducing forest interior habitat, and increasing site disturbances and esthetics of the landscape, in addition to putting the forest at risk of invasive species (Wharton, E.H., Widmann, R.H., Alerich, C.L., Barnett, C.J., Lister, A.J., Lister, T.W., & et al, 2004).

According to the United States Department of Agriculture, Forest Service Forest Inventory and Analysis, “Connecticut lost more than 88,000 acres of commercial forestland to development between 1985 and 1998 (Borman, 2009).” During this time, the average parcel size decreased, from 17 acres to roughly 13 acres. As large parcels are broken down into sub-parcels, de-forestization continues to be a major problem, not only in Connecticut, but throughout the Northeastern section of the United States.<sup>22</sup>

From the ground Connecticut appears to be forest covered as seen in Figure 1a; aerial photographs, however, show considerable amounts of fragmentation, (figure 1b), including

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<sup>22</sup> In 1998, Connecticut conducted a test to determine fragmentation within the state. This analysis showed the states forest cover, forest patch size, distance to nearest edge, distance to roads, and types of adjoining land use. On average it was found that patch size was between 250 and 1,250 acres. Larger patches were located within Litchfield County and the northeastern part of the state. And the smaller patch sizes were located in the more developed counties located in the southwestern corner of Connecticut. Forest land in close proximity to other land uses, were within an eighth of a mile occurs roughly 68 percent of the time, and approximately nine out of ten acres or 86 percent were located within a quarter mile of another land use. The most common adjacent land use was agricultural land, which occurred in 60 percent of the cases, followed by developed land which occurs in 24 percent of the cases (Hurd, J., Parent, J., Civco, D., Tyrrell, M., & Butler, B., 2009).

“perforated, edge, and patch” forest.<sup>23</sup> A large percentage of Connecticut’s forest is near “non-forested land,” which includes housing, buildings, shopping centers, and other forms of impervious surfaces. Interior forests in Connecticut make up 576,764 acres or 18.1 percent of Connecticut’s forest. Of Connecticut’s forest, 1,309,482 acres or 41.2 percent is considered fragmented.<sup>24</sup> From 1985 to 2002, the state lost 6.3 percent of its interior forest, while experiencing a 5.7 percent increase in perforated, edge, transition and patch fragmentation caused by development (CLEAR, 2009).

Figure 1a

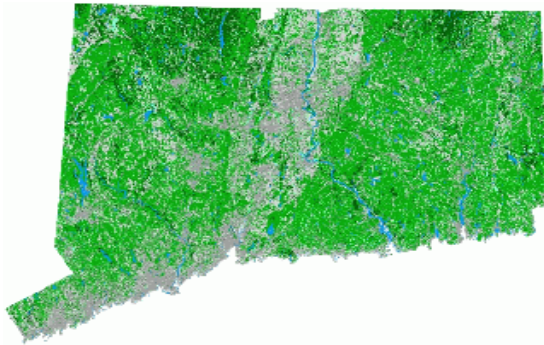


Figure 1b



- Land Ownership:** Currently, private landowners account for 77 percent of Connecticut’s forestland, leaving a large percentage of forest land at risk of not being properly managed due to lack of oversight by the state. Roughly 102,000 individuals or private enterprises possess 84 percent of the forest land within Connecticut. The remaining 16 percent is owned by state, federal, and other public holders. Of the private landowners, three quarters own fewer than 10 acres, or roughly 9 percent of the forest. These small parcels are often used for residential houses, with an accompanying need for roads and infrastructure. Since 1975, the percentage of landowners who own fewer than 50 acres of timberland has increased to 68 percent.

<sup>23</sup> Connecticut comprises 1,886,246 acres of forest land, equivalent to 59.3 percent of the state. Of the percentage of forest within the state, only 576,764 acres or 18.1 percent of the forest is considered to be interior forest. The remaining 41.2 percent of the Connecticut forest is considered fragmented forest land, totaling 1,309,482 acres. Types of forest fragmentation include, perforated forest which occurs along the interior forest edge, this occurs when a continuous track of forest land is broken by a house, or farm while the remaining area continues to be forest. An edge forest occurs along the outside edge of a forest, which includes the forest ends and a farm, town or other non-forest land areas. Patch forest includes small wooded areas surrounded by houses, roads, or other non-forest land (CLEAR, 2009).

<sup>24</sup> Refer to appendix VII: Acre of Forest Land Lost or Fragmented in Connecticut



Sub-division of parcels negatively affects wildlife habitats and plant species,<sup>25</sup> by breaking up continuous tracks of land that serve as a nesting and feeding ground for native species of plants and animals. When parcels are sub-divided, it often results in deforestation for residential uses, leading to lawns that need fertilizers, roads built between animals feeding grounds and nesting areas, and the disturbance of habitat through the installation of infrastructure such as power lines, and waterlines. This results ultimately in native species becoming pests or nuisances to new residents, along with the introduction of non-native species (United States Department of Agriculture, 2009d).

## Health of the Forest

- Maintenance:** The trees within Connecticut's forest are healthy and able to withstand the impacts of the various pest, diseases, and human interaction that have occurred over the years. However, the health of the forest is at risk because the majority of trees are fully mature. The states average stand volume<sup>26</sup> is 2001 ft<sup>3</sup>/ac of forest land which is currently the 10<sup>th</sup> highest in the nation (Martin, 2009). There has also been an increase in the average volume of trees per acre. Connecticut's volume per acre of forestland increased by 40 percent between 1953 and 1998. Even though there has been a decrease in timberland, the cubic volume of trees has increased by 16 percent (United States Department of Agriculture, 2009d).
- Pests:** Various insects, diseases, harsh weathers and fungus threaten the forest. In past years, Connecticut has seen the invasion of hemlock woolly adelgid, gypsy moth caterpillar, chestnut blight, Dutch elm disease, the Asian long horned beetle, and the Japanese cedar long horned beetle. All of these greatly impact the health of the forest. Between 1985 and 1998, the annual mortality averaged more than 16 million ft<sup>3</sup> of forest or 0.58 percent of the standing growing stock in 1998, according to the United States Department of Agriculture (Wharton, E.H., Widmann, R.H., Alerich, C.L., Barnett, C.J., Lister, A.J., Lister, T.W., & et al, 2004).

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<sup>25</sup> *Edge Effect* Large contiguous forests contain less "edge" than several patches of smaller fragmented forests. Fragmented forests exhibit a high percentage of edge habitats that is subject to greater sunlight and wind than core forest which changes the habitat structure of the forest, allowing for the introduction of invasive species and introduction of predators. These intrusions include increased air, water, noise and light pollution; changes in microclimatic conditions due to higher sunlight and wind levels; increased populations of invasive species; and increased frequency of disturbance due to direct contact with humans, human pets and associated rural/suburban pest species... Edge can promote overall biological diversity at the local scale by providing habitat for species dependent upon two or more land cover types. Conversely, the creation of edge conditions often occurs at the expense of interior conditions thereby reducing biodiversity on a larger scale (Natural Resource Committee, 2006)."

<sup>26</sup> The stand size and volume per acre are classified as follows: large (saw timber), medium (pole timber), and small (seedlings and saplings). Since 1972, according to the United States Department of Agriculture) the average diameter at breast height (d.b.h.) "of trees 5 inches in diameter or greater has increased from 8.7 to 9.8 inches." Also during this time the "average number of trees per acre, 5 inches d.b.h. or greater, has increased from 157 to 161." (United States Department of Agriculture, 2009d)

- **Crown Dieback:** Another impact to the forest is the occurrence of crown dieback, which occurs when the leaves of a tree thin or are attacked by pest. Crown dieback is measured by the percent of branch tips that are found dead. The current average dieback within Connecticut is approximately 4 percent, due to the impact of the wooly adelgid on hemlock. If crown dieback is severe, eventually the tree will die (Wharton, E.H., Widmann, R.H., Alerich, C.L., Barnett, C.J., Lister, A.J., Lister, T.W., & et al, 2004).

## Programs for Conserving Forestland

Connecticut has several great programs to help protect, provide ownership, and improve the health of the state's forest so it will not be lost to development. These programs provide education, resources, and funding to the state's residents as an opportunity to protect and conserve Connecticut's forest.

- **Forest Health Protection Program:** The program is designed to monitor invasive pests, to provide early detection and prevent further spread. Various pest species include, Emerald Ash Borer, siren wood wasp, Asian long horned beetle in the urban forest, Hemlock woolly adelgid and the gypsy moth (Martin, 2009).
- **Forest Legacy Program:** This program works to protect important parcels of land that protect water quality within Western Connecticut. Currently, the Skiff Mountain Project, located in Litchfield County has acquired 292 acres on three parcels of land within Kent and Sharon. The area faces intense large lot development, which threatens the habitat of the many wildlife species. The project has recently acquired the conservation easement for 427 additional acres of land. In total the project has acquired a contiguous network of over 7,000 acres of forest land (Forest Legacy Program, 2009).
- **Landowners Assistance Program (which includes the Connecticut Forest Stewardship Program):** The program was established to promote education of woodland landowners and forest managers toward sustainable forest management. Additionally the program works to restore forest ecosystem health within the Connecticut Highlands (Martin, 2009).
- **The Urban and Community Forestry Program:** A program designed to provide hands on experience to young teens within the state. Students who complete "GIS Boot Camp" at Seaside

Park in Bridgeport are given the opportunity to work directly with arborists, to track, map, and record data on trees within the state, through the use of hand held GIS units (Martin, 2009).

## Challenges Facing Connecticut:

Connecticut faces many challenges: sprawl, the lack of connectivity, fragmentation, and the deficit of funds for programs, and the purchase of land. But if Connecticut continues to follow the same path of current land use and economic structure, the state will face devastating changes in its landscape, and it will eventually be too late for conservation efforts. Although there is no quick fix to long term problems, if partner states<sup>27</sup> work as a collaborative unit to address land use and land conservation issues, Connecticut will be able to conserve the state's farm, forest and recreational lands. As stated by the Connecticut Department of Environmental Protection,

“The Connecticut landscape is the essential background for our environment, economy and community. The decisions we make today about how we use land are perhaps the most important environmental issue facing Connecticut. Working together to balance thoughtful and reasoned economic growth and community development with protection of our resources and our landscape will ensure a Connecticut that future generations can enjoy and benefit from as we have (Connecticut Department of Environmental Protection, 2009b).”

## The Challenges

- **Funding for land conservation:** One of the first challenges that needs to be addressed is the current financial status of the state. The current tax structure and the opportunity to provide funds for the acquisition of land for conservation, along with current budget limitations, present barriers to conservation efforts. Collaboration among various government entities, private and nonprofit organization to present a stimulus package that would address financial issues surrounding land conservation would be beneficial for the state.

Tax structure and funding are not the only financial challenges. The state has many programs, sources of funding, and tax breaks for land conservation, such as conservation easements, programs for new farmers to purchase land, and tax breaks for forest and farmland. However, a barrier exists in technology, outreach efforts and the lack of communication to educate and inform land owners about these programs. This ignorance results in the loss of farm,

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<sup>27</sup> Partner states could include of here in the New England Region, and New York.

forest, and recreational land to development due to the current landowner not being able to afford land.

“A core problem with the present system is that it almost requires sprawl, the editor points out. “ Towns have to pay for education and other services, and virtually the only way they can raise revenue is the property tax. So the incentive is to develop all available land whether the development is appropriate or not (Hartford Courant, 2009).”

- **Sprawl:** One of the largest challenges of land conservation is the loss of land to sprawl. Connecticut has seen large parcels of land sub-divided for the use of homes, infrastructure, and roadways. Sprawl often takes place on rural lands, prime agricultural soils and forest rich areas. Sprawl results from homes built at low density, often single housing units, and require the automobile for transportation to and from destinations. Once sprawl has started in an area, it usually continues until all purchasable land is developed, resulting in a sea of homes. The effects of sprawl are overwhelming; it does not only cause environmental degradation and cause the destruction of habitat, but also affects people, both mentally and physically. Eventually, the problem of sprawl looks a lot like the economic problem of the commons<sup>28</sup>.
- **Conservation:** Stewardship is a major challenge within the state. Once land had been acquired it is often left unmaintained, resulting in collection of litter, the lack underbrush removal, and is at risk of invasive species. Over time, plants, trees and vines grow uncontrollably over the land, resulting in land that is useless to visitors, residents and wildlife. As of 2007, through the initiative of The Green Plan, the state has conserved approximately 480,799 acres of land. If large tracts of land such as the ones conserved by the state and its partners are left unmaintained, Connecticut will have a much larger problem, such as the loss of economic base near these areas, the lack of community involvement or use of the area, and the deficiency of ecological management. All of which will detour people and organizations from conserving land or giving money for the conservation of land.

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<sup>28</sup> “Problem of the Commons (or Tragedy of the Commons) An example in game theory which is used to explore problems of resource distribution. The use of commons (publicly available land on which farmers graze their cattle) becomes a problem when one such farmer reasons that he or she can expand his or her herd since this small addition to the total stock will contribute little harm to the available pasture. However, if other farmers reason likewise, these incremental additions to the stock using the land lead to overgrazing and thus the destruction of the resource itself. In other words, if each individual in this situation rationally pursues his or her own short-term interest while disregarding others similarly pursuing theirs, then the long-run consequence is that everyone loses their share in the collective resource (Marshall, 1998).”

- **Connectivity:** The lack of connectivity of farm, forest or open space parcels within the state is a challenge. When planning decisions for development are unplanned, uncontrolled and uneducated this results in the sub-division or loss of connected parcels of land. Once the land is developed, the connection between the other parcels of undeveloped land is lost, resulting in fragmentation.
- **Wildlife Inventories:** Within Connecticut there is a need for a basic comprehensive wildlife inventory, in addition to the Community Resource Inventory (CRI) online site<sup>29</sup>, which would allow locations of high wildlife or prime land to be prioritized and conserved. Currently, organizations that work to conserve land are forced to make decisions quickly, without the proper information to make a well informed, educated decision about the land (Sutherland, 2009).

“a town resource inventory is a critical first step to planning community growth so that it’s protective of natural resources...might want to combine the open space, wetlands, and stream data to get a better handle on priority areas for conservation (Greenwich Post, 2007).”

## Opportunities for Connecticut Land Conservation:

Connecticut has a number of remarkable features, and should not allow its current trends and challenges to hinder its future endeavors in land conservation. If the state uses its current challenges as opportunities for growth in conservation and land use, Connecticut could once again set the pace of land conservation innovations.

### The Opportunities

- **Secure Funding Sources:** During times of economic downturn, funds to purchase land or land easements are often limited or unavailable. However, during these times, land values and prices drop drastically, resulting in the ability for the state and partners to purchase more land from private land owners for less money. If funds were made available or set aside by the government or private funders, for times of economic downturn, the state or partners would be able to buy up large parcels of land compared to times when of economic prosperity. It should be noted that two of the most popular states parks within Connecticut were acquired during times of economic

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<sup>29</sup> The CRI, “Offers access to a series of 14 interactive maps for each of the state’s 169 municipalities, including their roads, utility lines, water supplies, land cover, farmlands, wetlands, and conservation areas (Greenwich Post, 2007).”

downturn: the Rocky Neck State Park (acquired during the Great Depression) and Hammonasset State Park (acquired in 1919) (Sutherland, 2009).

- **Development during times of Economic Downturn:** Although times of economic down turn are bad for individuals, this presents an opportunity to preserve land for all citizens. In times of economic downturn the pressure of development is temporarily lessened, which is good for planning and restructuring. During these times, communities need to review their community resources and strategize ways to secure funding sources for the protection of land (Broderick, 2009).

“When the market collapsed, there was one investment that did not lose any value. In good times and bad, conserved land has always provided a steady return on investment: clean water, fresh food, natural beauty, places to play. This economic crisis is forcing us all to reassess what is really important, and the mountains, rivers, farmland, and forests protected by land trusts help us keep things in perspective, reminding us that we are part of something vast and timeless that the economy cannot take away (Land Trust Alliance, 2009).”

- **Model Program:** Connecticut could be used as a pilot program for the rest of the country in reference to land conservation. Given the state’s expertise and long standing tradition of farming and forestry, Connecticut could position and present itself as a model to funders for the conservation of farm, forest and recreational land, through the use of best management practices. The state could brand itself, and provide a model for other states to follow in regards to land conservation funding and land stewardship. As an initiative Connecticut could work collectively with the other New England states, to preserve the traditional New England landscape.
- **Collaboration of government entities, private, nonprofit organizations:** Connecticut’s various government entities, private, and non-profit organizations need to work together to conserve large parcels of land, and increase accessibility and connectivity of current lands. To do this, the state needs to work with the other New England states to acquire federal funds to purchase large parcels of land throughout the region. Working as a group the New England region could present itself as a model for the rest of the country in terms of regionalism.
- **Planned, Controlled Growth of Towns:** Through the use of Smart Growth development strategies, Connecticut could restructure sprawling towns to make them more accessible and walker friendly. The suburbs are not a lost cause, just one that needs a little tweaking and

restructuring. Examples of Smart Growth implementation include land use policy, transportation policy, and tax restructure.

- **Mass Transit:** The implementation of a public transportation system, in addition to mass transit system would be beneficial to both the residents of the state and prevent the need for additional roadways. A system of mass transit throughout the state and intertwined throughout New England, and New York would reduce the amount of traffic congestion, the need for widening or additional roadways, and decrease the amount of encroachment on farm, forest, and recreational land.

“Americans drive more than any other society, using automobiles for 88 percent of all trips. This is a major reason why we contribute 30 percent of the world's greenhouse gas emissions, which cause global warming... Meanwhile, America has taken almost all of its trolley systems out of use. Subway and light rail services struggle to cope with budget shortfalls, while Amtrak constantly raises prices and while providing passengers with sub-par service. As anti-sprawl author James Howard Kunstler says, “We have a railroad system in America that the Bolivians would be ashamed of. There isn't one thing we could do in this country that would have a greater impact on our oil use than restoring the American rail system to something like a European level of service (Adler, 2007).”

- **Location:** Connecticut’s central location can be used to the state’s advantage. Although its location is currently a challenge, it can be turned into an opportunity by collaborating with New York and the other New England states to create a continuous connection of conserved farm, forest and recreational land. The collaboration amongst these states would create a connection of open space and forested area to decrease fragmentation that often occurs at state borders. Examples of these efforts include the Connecticut River Watershed Council, and the Northern Forest.

“Systematic conservation planning is now conducted at all geographic scales from global to local. Specific conservation goals and objectives vary but the general purpose of such planning is to guide efforts to protect productive ecological systems, conserve native biological diversity and associated ecological and evolutionary processes, and maintain wild species of special interest. Research in systematic conservation planning is concerned with theory and techniques to improve the scientific basis of planning and the cost-effectiveness of conservation actions (Davis, F., Stoms, D., Costello, C., Machado, E., Metz, J., Gerrard, R., et. al., 2003).”

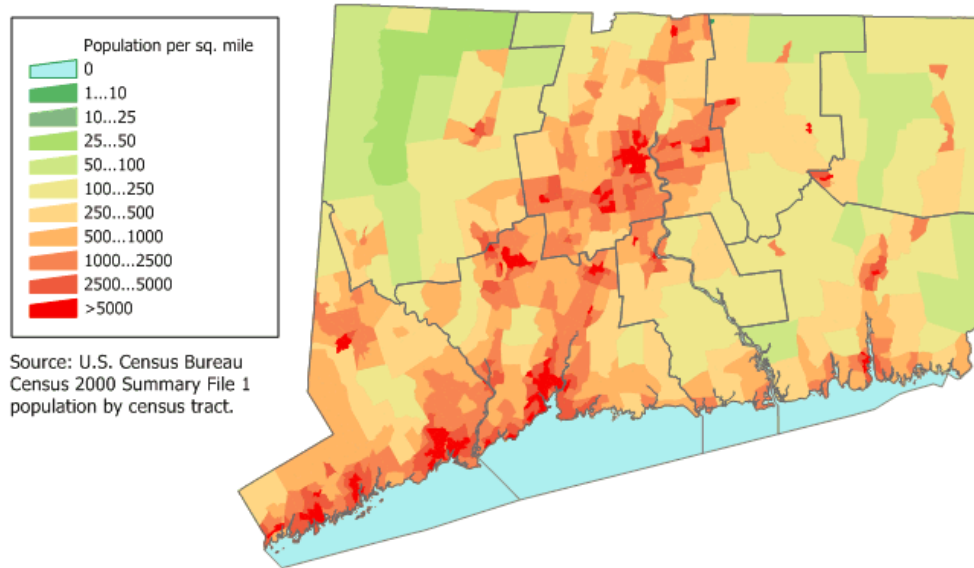
**Conclusion:**

The problems of land use and land conservation in Connecticut and the New England Region are overwhelming, with so many barriers to overcome. If Connecticut uses its imagination, talents and long history of land conservation to help catapult it over times of economic downturn, the challenges of unorganized planning, and the collaboration among government entities, private, and nonprofit organizations. Connecticut will once again be at the forefront of the land conservation field, leading the way for many other states to follow. The state's citizens will benefit greatly in so many ways.




## Connecticut Appendix:

### Appendix I: Connecticut Population



Data source: *Population per sq. mile*. [Photograph]. Retrieved April 11, 2009, from [http://upload.wikimedia.org/wikipedia/commons/d/d3/Connecticut\\_population\\_map.png](http://upload.wikimedia.org/wikipedia/commons/d/d3/Connecticut_population_map.png)

 FIPS <sup>1</sup>	<a href="#">County name</a>	<a href="#">RUC code</a> <sup>2</sup>	<a href="#">Population 1990</a>	<a href="#">Population 2000</a>	<a href="#">Population 2007</a>	<a href="#">Change 1990-2000</a>	<a href="#">Change 2000-07</a>
9001	Fairfield County	2	827,645	882,567	895,015	6.6%	1.4%
9003	Hartford County	1	851,783	857,183	876,824	0.6%	2.3%
9005	Litchfield County	4	174,092	182,212	188,273	4.7%	3.3%
9007	Middlesex County	1	143,196	155,071	164,150	8.3%	5.9%
9009	New Haven County	2	804,219	824,008	845,494	2.5%	2.6%
9011	New London County	2	254,957	259,106	267,376	1.6%	3.2%
9013	Tolland County	1	128,699	136,364	148,139	6.0%	8.6%
9015	Windham County	4	102,525	109,091	117,038	6.4%	7.3%

Source: [U.S. Census Bureau](#), 1990 and 2000 Censuses of Population (corrected), and 2007 county estimate files.  
<http://www.ers.usda.gov/Data/Population/PopList.asp?ST=CT&LongName=Connecticut>

## Appendix II: Change in Connecticut's landscape

Change in Connecticut's landscape between 1985 and 2006

	1985	1990	1995	2002	2006	Percent Change
Developed	16.0%	17.4%	17.8%	18.6%	19.9%	+2.9%
Turf& Grass	6.2%	6.6%	6.9%	7.3%	7.7%	+1.5%
Other Grasses	1.3%	1.4%	1.5%	1.7%	1.7%	+.4%
Agricultural Field	8.6%	8.1%	7.9%	7.5%	7.3%	-1.2%
Deciduous Forest	49.6%	48.5%	47.9%	47.1%	46.4%	-3.2%
Coniferous Forest	9.2%	9.1%	9.0%	9.0%	8.9%	-.3%
Water	3.5%	3.4%	3.3%	3.2%	3.2%	-.2%
Non-Forested Wetland	.4%	.4%	.4%	.4%	.4%	0%
Forested Wetland	3.7%	3.6%	3.5%	3.5%	3.5%	-.2%
Tidal Wetland	.5%	.5%	.5%	.5%	.5%	0%
Barren	.6%	.8%	.9%	1%	1%	+.4%
Utility (Forest)	.4%	.3%	.3%	.3%	.3%	0%

Resource: CLEAR, Connecticut's Changing Landscape. Retrieved on February 27, 2009, from <http://clear.uconn.edu/projects/landscape/statewide.htm#>

## Appendix III: Connecticut's Top Ten Outdoor Recreational Activities

Connecticut's Top Ten Outdoor Recreation Activities

Rank	Activity
1 <sup>st</sup>	Walking, Running, Hiking
2 <sup>nd</sup>	Beach activities
3 <sup>rd</sup>	Visiting historic sites or museums
4 <sup>th</sup>	Swimming in fresh or saltwater
5 <sup>th</sup>	Swimming in a pool
6 <sup>th</sup>	Biking
7 <sup>th</sup>	Bird and wildlife watching
8 <sup>th</sup>	Sledding
9 <sup>th</sup>	Camping
10 <sup>th</sup>	Canoeing/Kayaking/ Tubing

Data source: Connecticut Department of Environmental Protection, 2005

## Appendix IV: Connecticut's Farm Trends

### Connecticut's Farm by Size Between 1992 and 2002

Farm by Size (Percentage)	1992	1997	2002
1-99	70.1	76.6	77
100-499	26.7	21.2	20.2
500-999	2.5	1.5	2.5
1000-1999	.6	.5	.5
2000+	.2	.1	.1

Data Source: United States Department of Agriculture: Retrieved on March 1, 2009, from <http://www.ers.usda.gov/StateFacts/CT.HTM#FC>

## Appendix V: Acre of Forest Land in Connecticut

### Acre of Forest Land in Connecticut

	Interior Forest	Fragment Forest
1985	726,810 acres	1,277,833 acres
1990	664,024 acres	1,284,181 acres
1995	623,264 acres	1,296,837 acres
2002	575,764 acres	1,309,654 acres

Data Source: CLEAR. Retrieved on February 27, 2009, from [http://clear.uconn.edu/projects/landscapeV1/forestfrag/ff\\_results.htm](http://clear.uconn.edu/projects/landscapeV1/forestfrag/ff_results.htm)

## Appendix VI: Top Ten Species of Trees within Connecticut

### Top Ten Tree Species by Statewide Volume Estimate

Rank	Species	Volume of live trees on timberland (1,000,000ft <sup>3</sup> )
1	Red Maple	710.9
2	Northern Red Oak	464.4
3	Eastern White Pine	318.3
4	Black Oak	287.2
5	Black Birch	256.2
6	White Oak	227.2
7	Eastern Hemlock	173.7
8	White Ash	171.8
9	Scarlet Oak	169.1
10	Sugar Maple	130.2

Data Source: United States Department of Agriculture, 2006

## Appendix VII: Acres of Forest Land Lost or Fragmented in Connecticut

### Acres of Forest Land Lost or Fragmented in Connecticut

	Difference of Interior Forest (IF)	Percent Lost or Gained (IF)	Difference of Fragment Forest (FF)	Percent Lost or Gained (FF)	Forest Lost to Development
<b>1985-1990</b>	62,786 acres	-9.46%	6,348 acres	.49%	56,438 acres
<b>1990-1995</b>	40,760 acres	-6.54%	12,656 acres	.96%	28,104 acres
<b>1995-2002</b>	47,500 acres	-8.25%	12,817 acres	.98%	34,683 acres
<b>Total</b>	Loss of 151,046 acres		Gain of 31,821 acres		119,225 acres

Data Source: CLEAR. Retrieved February 27, 2009, from  
[http://clear.uconn.edu/projects/landscapeV1/forestfrag/ff\\_results.htm](http://clear.uconn.edu/projects/landscapeV1/forestfrag/ff_results.htm)

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### Front Cover Pictures:

**Left:** Connecticut Department of Environmental Protection. [Photograph]. Retrieved on April 11, 2009, from [http://www.nochildleftinside.org/images/photos/parks/cttrails\\_subphoto.jpg](http://www.nochildleftinside.org/images/photos/parks/cttrails_subphoto.jpg)

**Right:** Connecticut. [Photograph]. Retrieved April 12, 2009, from Britannica Student Encyclopedia: <http://student.britannica.com/ebi/art-57245>

### Photo within Document:

**Page 10:** CT Trust for Historic Preservation. [Photograph]. Retrieved on March 15, 2009, from [http://www.cttrust.org/IMAGES/davis\\_farm.jpg](http://www.cttrust.org/IMAGES/davis_farm.jpg)

**Page 15:** Yale University [Photograph] Retrieved on April 11, 2009, from <http://opa.yale.edu/images/articles/6159-58394987.jpg>

**Page 16:** CT.Gov, *More Kids Stuff*. [Photograph]. Retrieved on April 11, 2009, from <http://www.kids.ct.gov/kids/cwp/view.asp?a=2574&q=413076>

**Page 21:** Photograph retrieved on April 5, 2009, from <http://www.antropologiavisual.cl/etnograf%E4/etnografia%20ee%20uu/FotosVisual/7.jpg>

**Page 23:** Connecticut FarmLink. [Photograph]. Retrieved on April 12, 2009, from [http://images.google.com/imgres?imgurl=http://www.farmlink.uconn.edu/images/ctgrownlocalflavor\\_001.jpg&imgrefurl=http://www.farmlink.uconn.edu/&usg=\\_\\_0nqQXH8kRP2B21rLeWnL6IKCF8w=&h=691&w=700&sz=56&hl=en&start=4&tbnid=38vGMBc54DXvdM:&tbnh=138&tbnw=140&prev=/images%3Fq%3Dfarmlink%26gbv%3D2%26hl%3Den](http://images.google.com/imgres?imgurl=http://www.farmlink.uconn.edu/images/ctgrownlocalflavor_001.jpg&imgrefurl=http://www.farmlink.uconn.edu/&usg=__0nqQXH8kRP2B21rLeWnL6IKCF8w=&h=691&w=700&sz=56&hl=en&start=4&tbnid=38vGMBc54DXvdM:&tbnh=138&tbnw=140&prev=/images%3Fq%3Dfarmlink%26gbv%3D2%26hl%3Den)

**Page 26:** CLEAR [Photograph]. Retrieved March 15, 2009, from [http://clear.uconn.edu/projects/landscape/forestfrag/ff\\_results.htm](http://clear.uconn.edu/projects/landscape/forestfrag/ff_results.htm)

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Photo by Brett Cole: Logging Road

## **Land Use and Land Conservation in Maine Trends, Challenges, & Opportunities**

**By Andrea Small  
April 2009**

## **EXECUTIVE SUMMARY**

### **Trends in Land Use**

- While the nation's population has been moving towards a more urban population, Maine's population has become more suburban.
- Portland, Maine's biggest job market, lacks enough housing units to support its workforce.
- Maine's landscape remains 90% forested even as timber harvesting and productivity increase.
- The paper industry's dominant ownership of Maine's forestland has been replaced by ownership by Timber Investment Management Organizations (TIMO's) and real estate investment trusts (REIT's).
- The emerging trend for Maine's farms is in "local agriculture", smaller more complex farms that sell goods directly to consumers.
- Maine has seen an increased support of land conservation, which has resulted in \$117 million in funding for the Land for Maine's Future program and much greater private and philanthropic giving.
- Innovative use of easements by land trusts has propelled Maine to landscape-scale conservation amounting to 1.7 million acres of eased lands.
- The state currently has 16% of its lands in some sort of conservation.

### **Challenges for Land Conservation**

- Organizations will have to resist reactive conservation, which scatters small-unconnected parcels that are not functional.
- Practicing sustainable conservation by incorporating social, economic and environmental benefits into each project will be challenging but necessary.
- Managing easements in a way that will protect the investment into the future should become a major focus.

### **Opportunities for Land Conservation**

- Combining the benefits of open-space while fulfilling community needs through conservation-based affordable housing.
- Utilizing technologies such as the Internet and Geographical Information Systems software packages and employing personnel with the capacity to use it.
- Forming innovative partnerships with emerging industries like the clean energy and recreation industries to boost conservation efforts in Maine.

## INTRODUCTION

This paper explores the trends in land use and conservation in Maine for the last half of the twentieth century to the present. There is not much that people do that does not affect the way we use the land. I highlight the trends in population, housing, landscape, forests, farms, and outdoor recreation that have influenced or will influence land conservation. Based upon the trends, challenges and opportunities for the future of land conservation in Maine are identified.

## TRENDS IN LAND USE

### POPULATION

From 1960 to 2000, population of the United States increased 57%, from almost 180-million to over 281-million<sup>30</sup>. New England and Maine had more modest population increases of 32% each. The biggest difference was that 95% of the nation's population growth was added to urban areas while only 5% of Maine's and 40% of New England's new population was in urban areas<sup>31</sup>. The United States and New England both saw steady growth in their urban areas as a percent of their total population. Urban population was 70% of the total U.S. population in 1960, and 79% in 2000<sup>32</sup>. New England's urban population was 76% of their total population in 1960 and 81% in 2000. Meanwhile unlike the US and New England, Maine's urban population decreased as a percent of total population. In 1960, urban population was 51% of Maine's total population, but by 2000 was only 40%<sup>33</sup> (Table 1). US and New England rural populations as a percent of total population decreased, while Maine's increased<sup>34</sup> (Table 2).

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<sup>30</sup> Census 2000 Summary Files, P2 Urban and Rural and Urban and Rural 1960 to 1990

<sup>31</sup> Census 2000 Summary Files, P2 Urban and Rural and Urban and Rural 1960 to 1990

<sup>32</sup> Census 2000 Summary Files, P2 Urban and Rural and Urban and Rural 1960 to 1990

<sup>33</sup> Census 2000 Summary Files, P2 Urban and Rural and Urban and Rural 1960 to 1990

<sup>34</sup> Census 2000 Summary Files, P2 Urban and Rural and Urban and Rural 1960 to 1990

Table 1.

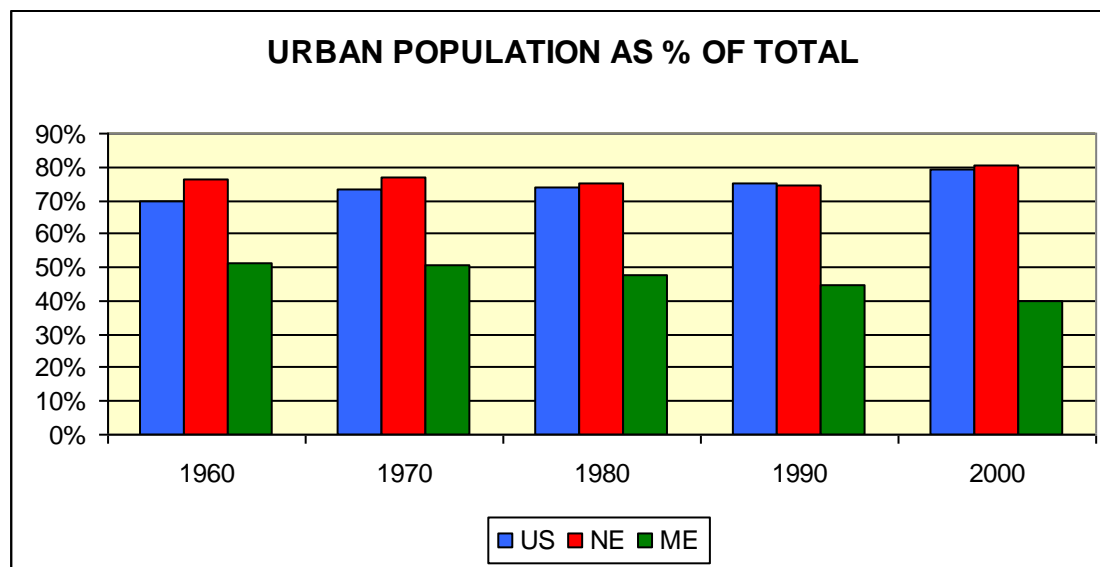
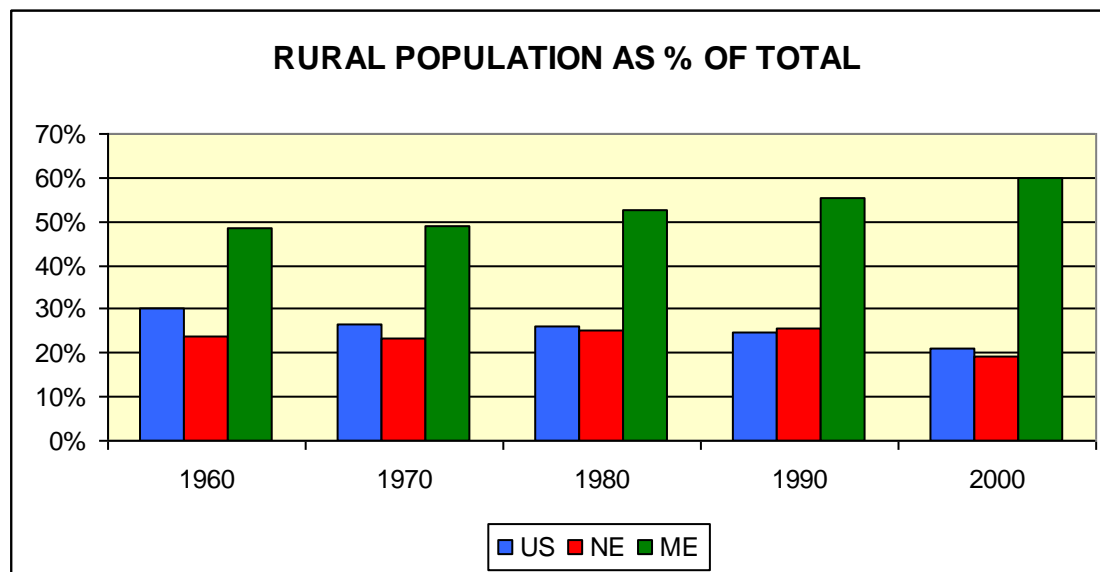


Table 2.

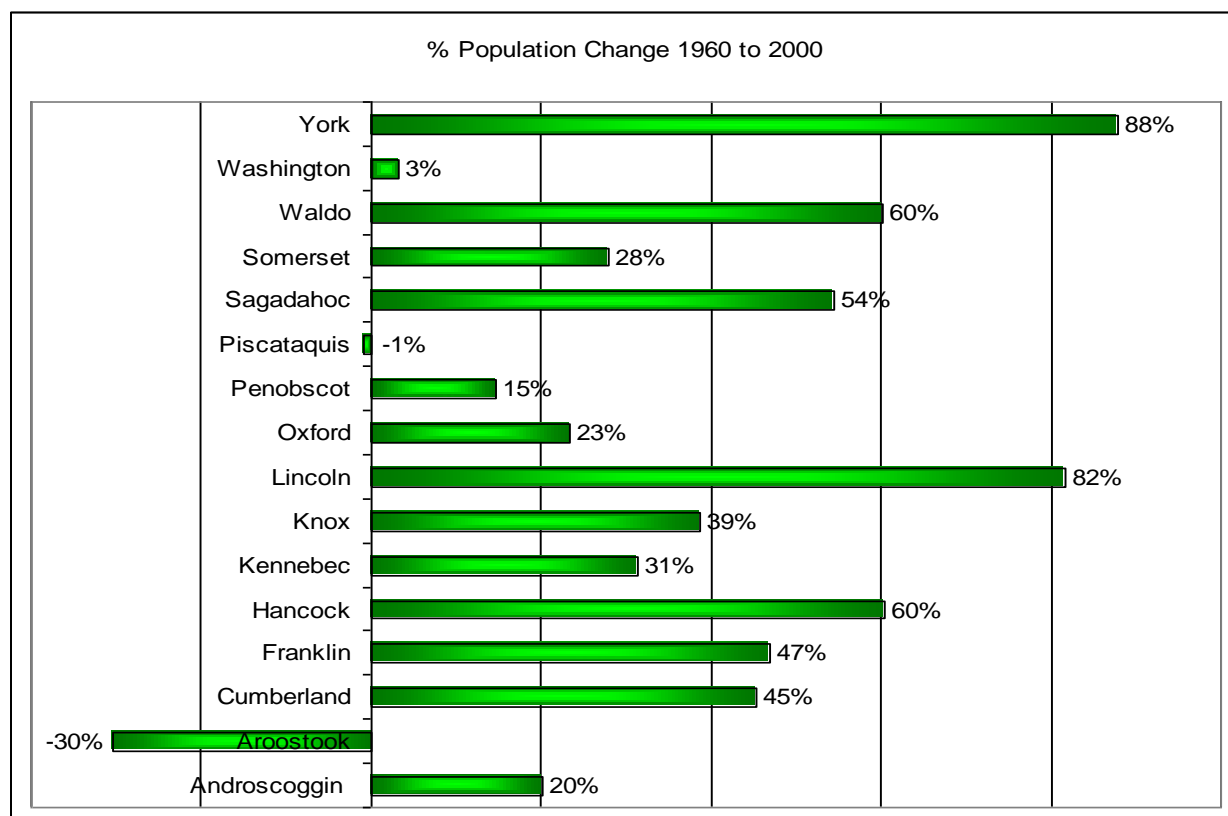


Maine has always been thought of as a rural state but its recent “rural” growth is actually suburbanization. The census bureau does not have a suburban category yet, but the rural category is broken into rural farm and rural non-farm. We can safely interchange rural non-farm with suburban. Sprawl is what Evan Richert coins as the reorganization of rural land use from production to consumption. The role of the landowner on productive land is active when it is farmed, fished, logged, mined, or even held for investment. Suburban land is consumptive when the role of the

landowner is passive<sup>35</sup>. The Census 2000 identifies 58% of our population as rural non-farm<sup>36</sup>. These figures show Maine way ahead of New England and the nation for “sprawl”.

Another population trend identified in Changing Maine is our “Geographic Divergence”<sup>37</sup>. Maine’s overall population has increased but a closer look at the sixteen counties lends merit to questions previously pondered; Are there two Maine’s? and is Southern Maine the suburbs for Boston? Census data from 1960 to 2000 shows the divergence of population of the most northern county, Aroostook, with a 30% decline and the southern most county, York with an increase of 88%<sup>38</sup> (Table 3).

Table 3.



The next fastest growing counties, Lincoln, Waldo and Hancock, are coastal counties that do not have high percentages of population (Table 4). This disparity further pronounces the divergence from higher populated areas to more rural areas.

<sup>35</sup> Richert, 2004

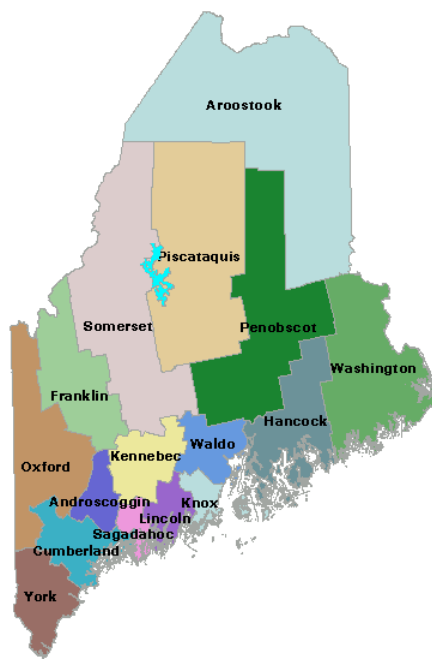
<sup>36</sup> Census 2000

<sup>37</sup> Sherwood and Mageean, 2004

<sup>38</sup> Population of Counties by Decennial Census: 1900 to 1990, Census 2000

Table 4.

Rank	County	% of Total Population as of 2000
1	Cumberland	21%
2	York	15%
3	Penobscot	11%
4	Kennebec	9%
5	Androscoggin	8%
6	Aroostook	6%
7	Oxford	4%
8	Hancock	4%
9	Somerset	4%
10	Knox	3%
11	Waldo	3%
12	Sagadahoc	3%
13	Washington	3%
14	Lincoln	3%
15	Franklin	2%
16	Piscataquis	1%



In the 2000 census, five York county towns had been included as part of the Boston Metropolitan statistical area. The Census Bureau classified these towns according to economic similarities and commuting patterns. The census showed that almost half of the workers in the five towns worked out of Maine and had lived in another state in the previous five-year period<sup>39</sup>. The trend of populations moving into southern Maine from other parts of New England and a population moving further up the coast into more rural areas is another example of divergence.

It is apparent to see why people could think of Maine as being two different states and that they would interpret southern Maine as the Boston suburbs. Population trends have been masked by the sheer size of the state. It is less apparent that the scale is too vast to be one, or even two Maine's but even more characteristic of three; Rim, Coast and Central (RCC).

## HOUSING

According to the Maine Housing Authority, in 2008 63% of Maine households were unable to afford the median home price and 57% were unable to afford the average 2-bedroom rent<sup>40</sup>. Approximately 12% of Maine homeowners and 25% of renters pay over 30% of their income for

<sup>39</sup> Sherwood and Mageean, 2004

<sup>40</sup> Housing Facts, 2008



housing<sup>41</sup>. Portland, the biggest job market in Maine, added 23,000 new jobs during the 90's but only added 3,000 new apartments<sup>42</sup>. According to the Bureau of Economic Analysis, 29% of the states jobs are in Cumberland County<sup>43</sup>. Yet the 2000 census reports that Cumberland County provides only 18% of the state's housing units<sup>44</sup>. This disparity between job and housing locations contributes to sprawl because workers are forced to live outside the employment region.

## **LANDSCAPE**

Maine's landscape is one of vast forests, with occasional breaks for fields and rivers, which flow towards a rocky coastline. Maine's forestation began shortly after receding glaciers deposited rich soils that mixed with the region's moist climate to provide the perfect environment for tree growth. Maine would remain almost completely forested until the days of the first European settlers. Since then, human interaction has produced distinguishing changes on our landscape. During the 1800's, settlers cut the forests to build their homes and fences, to provide warmth, and clear the way for their crops and pastures. As land in the American Mid-West became available, farms and pastures in Maine were abandoned. By the early 1900's, tree growth reclaimed fields and pastures, and by the 1940's Maine was 84% forested<sup>45</sup>. Forestation has remained steady since then and today is 89% forestland. Agricultural uses make up 2.5%, Urban 1.5% and the last 7% is "other" which includes suburban housing, rural transportation uses, wetlands and miscellaneous uses<sup>46</sup>.

## **FORESTLAND**

Our forests have been logged and clear-cut, and are now managed. The largely monoculture of the paper and pulp industry in the mid 1900's has given way to a more diverse, efficient industry. Maine's forests were first cut for timber but by the mid-1900's the pulp and paper industry dominated the forests. The USDA 1995 forest inventory concluded that the spruce budworm outbreak of the 60's and 70's contributed to the decline of the softwoods inventory, which prompted a corresponding increase in hardwood inventory<sup>47</sup>. This shift in inventory also shifted industry output. Hardwood production increased 400% since 1975 and is today the number one source for paper production<sup>48</sup>. Maine remains the number two paper producing state in the U.S.

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<sup>41</sup> O'Hara, 2004

<sup>42</sup> O'Hara, 2004

<sup>43</sup> Regional Economic Profiles, 2008

<sup>44</sup> Census 2000

<sup>45</sup> Brady, 2007

<sup>46</sup> Brady, 2007

<sup>47</sup> Mansius, 1999

<sup>48</sup> Forest Resources, 2007

while industrial production is more diverse. Industry still includes the traditional timber and paper/pulp industry but other segments, like furniture and related products, and biofuels are on the rise<sup>49</sup>.

Industry employment has decreased 32% since 1990<sup>50</sup>. While employment is down, worker productivity, average wage, and capital expenditures have increased. Annual harvests increased 50% from 1968 to 2002<sup>51</sup>. The average wage in 2003 for a paper/sawmill worker was more than \$47,000<sup>52</sup>. Production increases have paralleled an increase in forest management practices. The Forest Practices Act of 1989 was enacted to encourage sustainable harvesting and discourage practices such as clear-cutting, high-grading, and liquidation harvesting<sup>53</sup>. Clear-cutting has been a controversial practice in Maine for decades but there are still no regulations to ban it completely. Clear-cutting practices have been on the decline since the 1980's when clear-cutting accounted for about 18% of harvested acres; today it accounts for less than 5% of harvested acres<sup>54</sup>.

The decline of poor harvesting practices is due in part to programs that educate industry workers. The Maine Certified Loggers program, which trains and certifies loggers in safe, efficient, and environmentally sound harvesting practices is one example, with 3,876 participants in 2000<sup>55</sup>. Maine has the first-in-the-nation Master Logger Program, now with over 100 certified loggers. Maine also leads the nation with the highest percentage of certified forests, 37% and has the first state-owned land certification, Baxter State Park<sup>56</sup>. Our forests are stable and productive and the rise in stewardship shows our appreciation for the resource. Maine is the most heavily forested state in the nation; therefore, it makes sense that we set the standards for sustainable forests.

Changing ownership of the forestlands has been an increasing trend especially in the last decade and a half. A report conducted by the Manomet Center for Conservation Sciences tracking land ownership changes in the Northern Forest concluded that "Maine by far had the greatest degree of forestland sales" with 150 transactions covering 20 million acres over a 15 year period<sup>57</sup>.

The largest single transaction in the Northern Forest happened in Maine. In 1992, Bowater purchased 2.3 million acres that originally belonged to Great Northern Paper Company. Starting in

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<sup>49</sup> Giffen, 2007

<sup>50</sup> Lilieholm, 2007

<sup>51</sup> Lilieholm, 2007

<sup>52</sup> Lilieholm, 2007

<sup>53</sup> Mansius, 1999

<sup>54</sup> Forest Resources, 2007

<sup>55</sup> Giffen, 2007

<sup>56</sup> Forest Certification in Maine, 2008

<sup>57</sup> Hagan, Irland, and Whitman, 2005 p3

1998, Bowater began to split its ownership into 15 different pieces. Twenty-eight percent of the acreage, 800,000 acres, remained in the industry, bought by J.D. Irving. The largest portion, 60%, was sold to financial investors<sup>58</sup>. Some believe the Bowater transaction was “the seminal event leading to the end of industry’s dominant ownership of Maine’s forestland”<sup>59</sup>.

By 2000, Timber Investment Management Organizations (TIMO’s) had surpassed industry owners as the largest landownership group, Maine’s forests were no longer owned by the forest industry<sup>60</sup>. The transformation from timber industry ownership to investor domination took place in just a few short years. Between 1994 and 2005, old-line family ownership of forestlands remained virtually unchanged at 20%, while industrial and investment ownership switched places<sup>61</sup> (Figure 1 and Figure 2).

Figure 1.

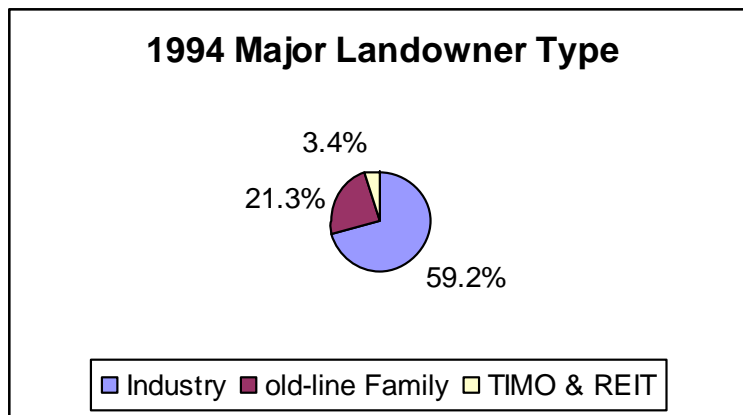
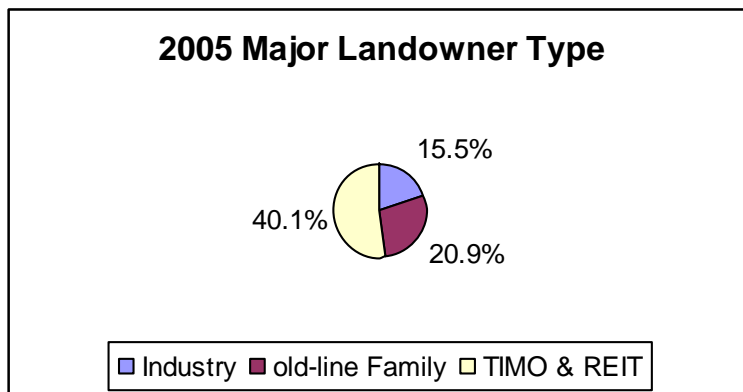


Figure 2.



<sup>58</sup> Hagan, Irland, and Whitman, 2005 p.6

<sup>59</sup> LeVert, Colgan, and Lawton 2008 p9

<sup>60</sup> Wienberg and Larson, 2008

<sup>61</sup> Hagan, Irland, and Whitman, 2005 p9

Forestland transactions accelerated over the last decade, as did the number of landowners. You cannot have more landowners without something changing and what changed was parcel size. The average size of medium parcels decreased from 82 acres in 1982 to 60 acres in 1993, a 27% decrease<sup>62</sup>. From 1994 to 2006, the average size of large parcels, >5000 acres, decreased from 148,000 acres to 118,000 acres, a 20% decrease. Concurrently the number of large landowners increased 30%<sup>63</sup>. Forestlands have changed hands at an increasing rate. These changes have not just been in number of transactions but the type of owners who are buying the forests and how quickly they are being divided.

## **FARMLAND**

For the past century, Maine has followed a pattern typical in the United States. Most of what we see today is due to consolidation, concentration and regional specialization based on agricultural industrialization<sup>64</sup>. Commodity farming grouped together to take advantage of support services and reap the benefits of productivity. This trend is apparent in Maine's top three commodities. Kennebec County specialized to become the "dairy belt", Aroostook County produces the bulk of potatoes, and Hancock and Washington counties the bulk of blueberries. Analysis of Agricultural Census data shows the trend of commodity farming in the increase of average farm size and the decrease in number of farms. In 1900, the average size of a Maine farm was around 100 acres; by 1992, this had more than doubled to an average of 218 acres<sup>65</sup> (table 5). In 1964, Maine had almost 13-thousand farms, but had less than half by 1992, with just fewer than 5,800<sup>66</sup> (table 6).

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<sup>62</sup> Mansius, 1999

<sup>63</sup> Hagan, Irland, and Whitman, 2005 p.11

<sup>64</sup> Smith, 2004 p.397

<sup>65</sup> Census of Agriculture, 2009 Volume 1, Chapter 1, state Maine, Table 1-Historical Highlights

<sup>66</sup> Census of Agriculture, 2009 Volume 1, Chapter 1, state Maine, Table 1-Historical Highlights

Table 5.

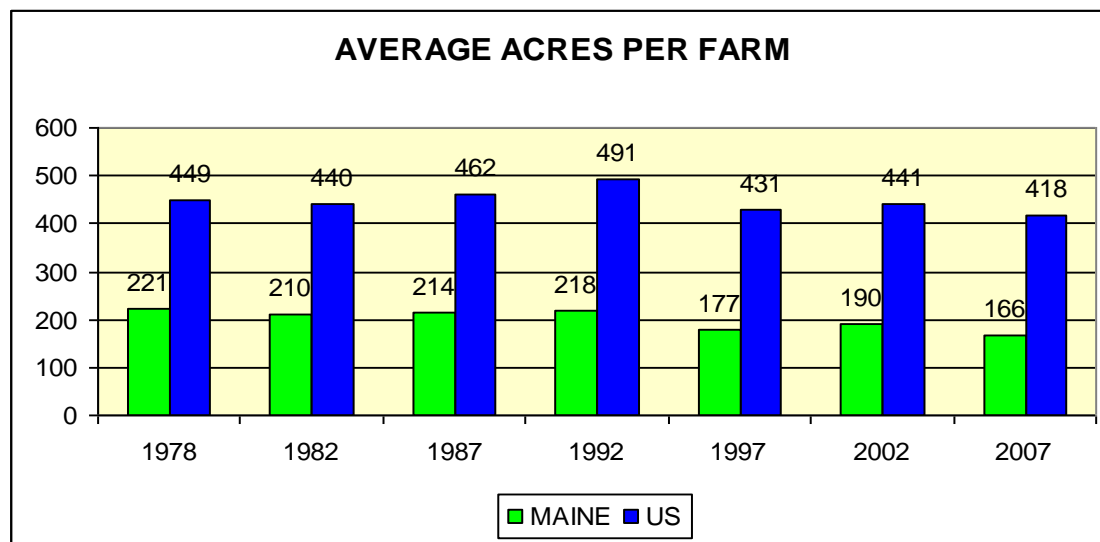
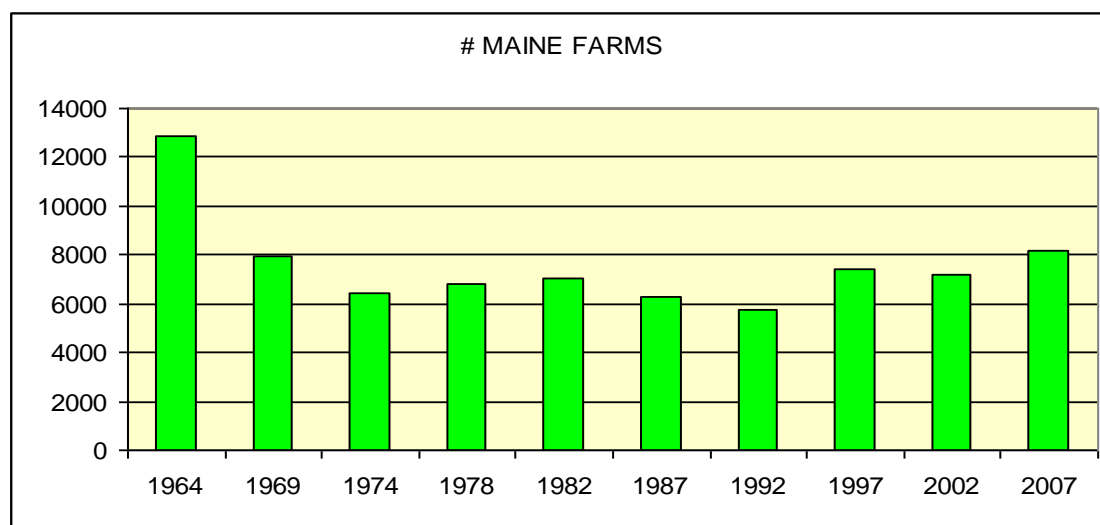


Table 6.



As mentioned earlier, industrialization of agriculture in Maine was trending along with that of the U.S. We were increasing farm size, decreasing number of farms, and losing farmland at about the same rate as the rest of the country. In 1992, Maine stopped emulating the rest of the U.S., as seen in tables 6, 7 and 8<sup>67</sup>.

<sup>67</sup> Census of Agriculture, 2007

Table 7.

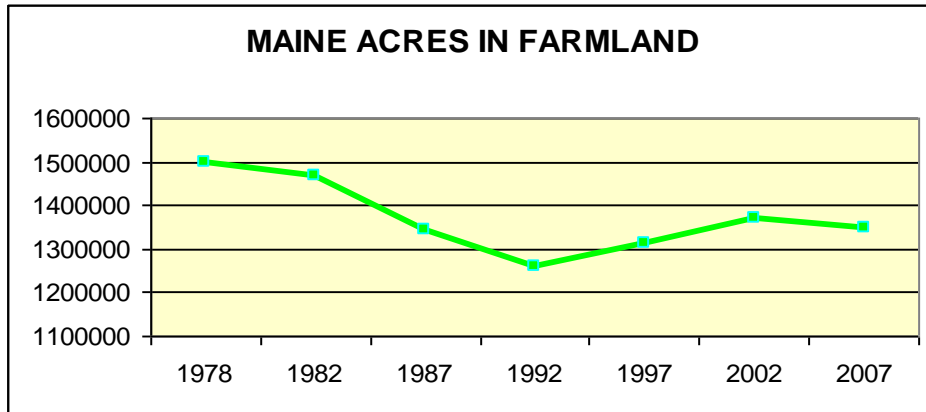
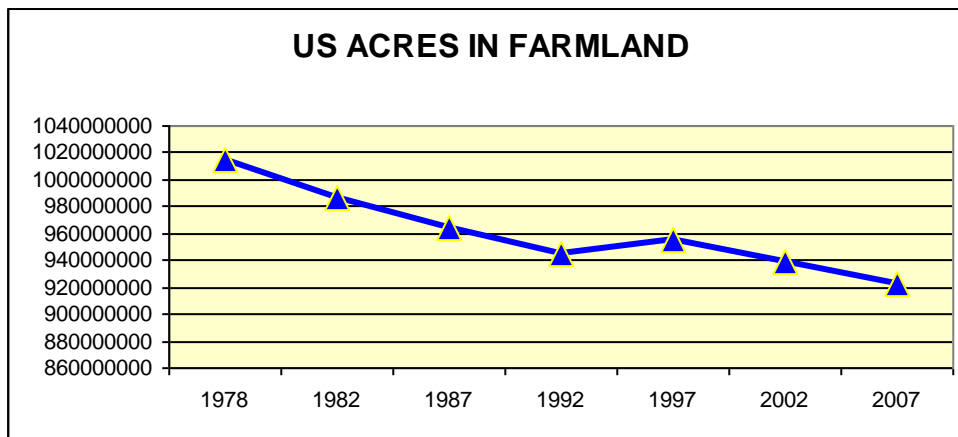


Table 8.



The U.S. and Maine both saw a decline in the number of acres in farmland from 1978 to 1992.

Maine farmland has been recovering; increasing 7% from 1992 to 2007, while the U.S. lost another 2%<sup>68</sup>.

Dr. Stewart Smith, Professor of Sustainable Agricultural Policy at the University of Maine at Orono, portends that Maine's agriculture had come to a fork in the road, placed there by global competition. Unable to keep up with the market, Maine took the road less traveled. He believes the emerging trend is in "Local Agriculture", smaller more complex farms that sell goods directly to the consumer via farm stands, farmers markets and cooperative programs like Consumer Supported Agriculture (CSA's)<sup>69</sup>.

The latest Census of Agriculture supports characteristics of local agriculture. For instance, from 1992 to 2007 the number of medium and large farms in Maine decreased by 3% and 5%,

<sup>68</sup> Census of Agriculture, 2007

<sup>69</sup> Smith, 2004

respectively, while the number of small farms increased by 36% <sup>70</sup>(Table 9). In 1992, when the Department of Agriculture started collecting data on direct sales, Maine had just over one-thousand farms selling goods directly to consumers; that number has increased 69% since then<sup>71</sup> (Table 10). As the number of farms with direct sales increased, income from direct sales did too. Average farm income from direct sales doubled from 1992 to 2007, showing Mainers support locally produced foods (Table 11).

Table 9.

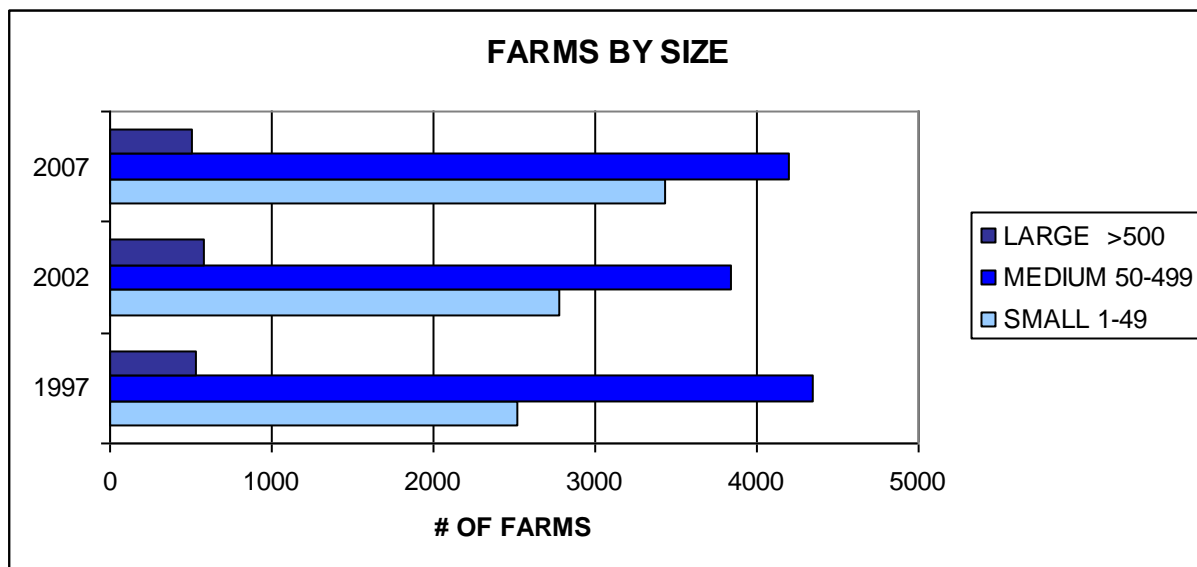
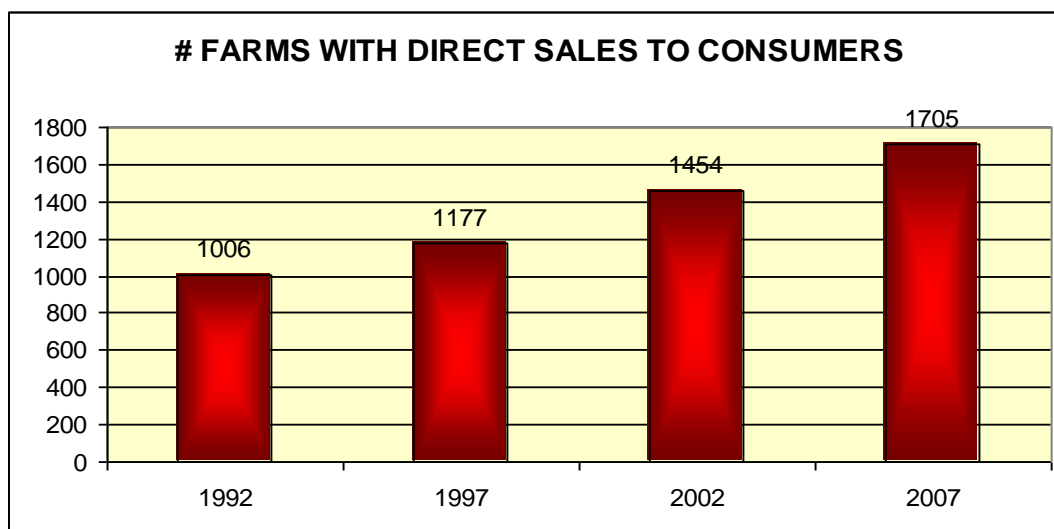


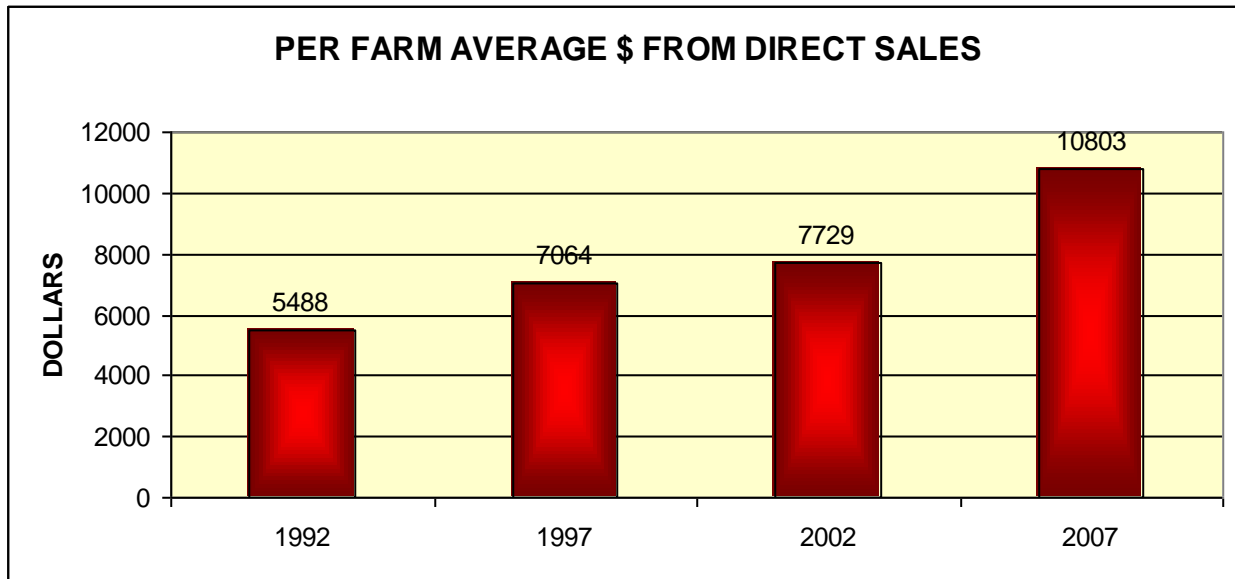
Table 10.



<sup>70</sup> Census of Agriculture, 2007 Volume 1, Chapter 1, state Maine Table1

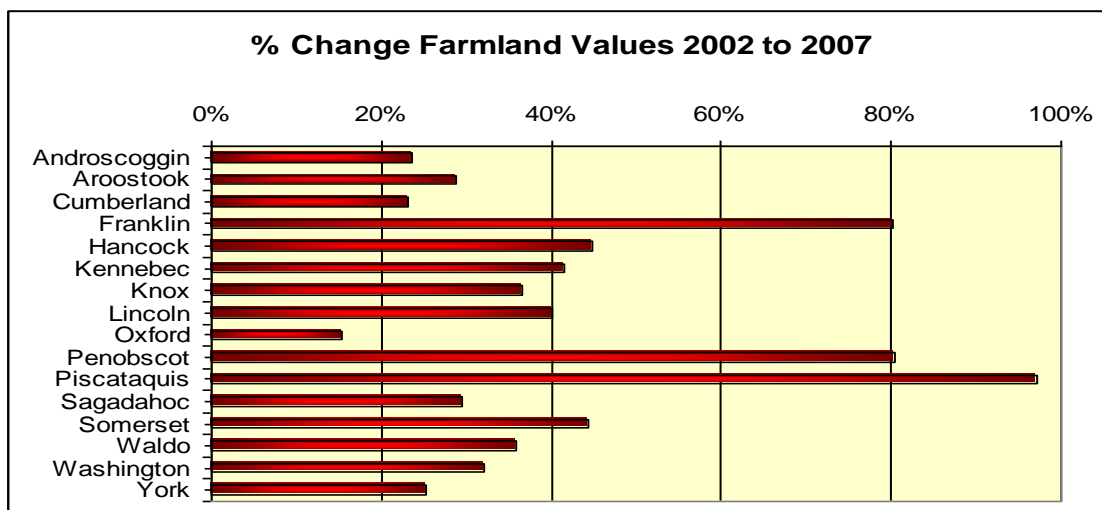
<sup>71</sup> Census of Agriculture, 2007 Volume 1, Chapter 1, state Maine Table1

Table 11.



Another side effect of sprawl is the increasing values of farmland. Analysis of farmland values show that one-third of Maine counties showed a 50% increase in just five years, 2002 to 2007<sup>72</sup>. Fifteen out of the sixteen counties had at least a 20% increase in value during the same period (Table 12). Relating farmland values with population, we can see that our two most populated counties have the highest land values. In Cumberland and York counties, farmland prices are nearly \$5,000 per acre. The next highest priced farmlands are in our Coastal counties (Table 13). These trends are frightening for the future of Maine farms and access to locally produced foods in coastal and southern Maine.

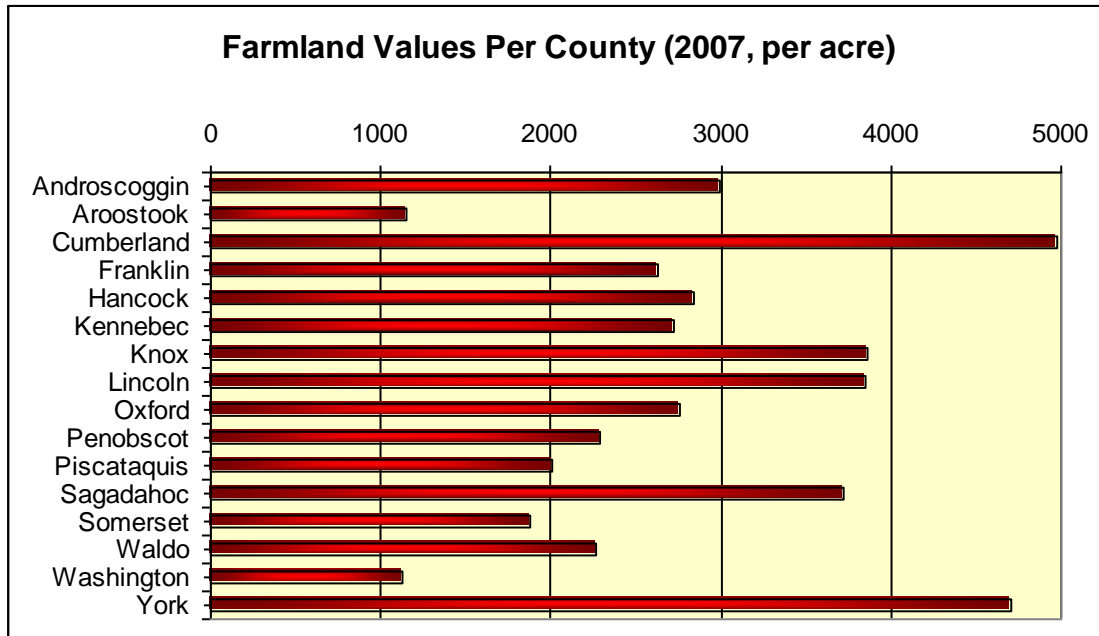
Table 12



<sup>72</sup> Census of Agriculture, 2007 Volume 1, Chapter 2, County level-Maine Table1-county summaries



Table 13



## OUTDOOR RECREATION

The forest industry and outdoor recreation have cohabitated in Maine forests for decades. Logging roads provide access, industry landowners grant leases to sporting camps and access to the rivers that provide the biodiversity for hunting and fishing. By the end of the 19<sup>th</sup> century, the value of the woods as a place for retreat and renewal of the spirit was widely accepted, and growth of the tourism and recreation industries in the region was well underway<sup>73</sup>. Forest recreation includes camping, canoeing, hiking, hunting, downhill skiing, cross-country skiing, snowmobiling, fall foliage viewing, and wildlife viewing. A recent study by the North East State Foresters Association estimated that forest recreation contributed \$900 million in 2000 to Maine's economy, and \$1.15 billion in 2006<sup>74</sup>. Forest recreation not only affords us the life we are accustomed to, but is also an integral part of our economy and heritage. As our desire for recreation increased so did our desire to conserve and protect it

<sup>73</sup> Mansius, 1999

<sup>74</sup> Giffen, 2007

## TRENDS IN CONSERVATION

In the beginning of the 20<sup>th</sup> century, land conservation in Maine was divided by two thoughts. One feeling was that land should be set aside so it could remain as wilderness and the other was that it should be held as public lands for all to enjoy. These two views can be seen in our earliest accomplishments; Baxter State Park, enjoyed for its' wild beauty and Acadia National Park, managed for outdoor recreation. No matter what the reason was behind the conservation, both were pursued by individuals and secured with private funds.

Maine has always been a state dominated by private landownership, where government control is actively challenged. In the late 1960's federal threat to take over river management prompted the Maine legislature to establish the Allagash Wilderness Waterway. The public approved a \$1.5 million dollar bond with matching federal funds, to become the first "state administered project within the National Wild and Scenic Rivers Program"<sup>75</sup>. This gave the state control of 145,000 acres along the waterway and was the beginning of cooperation between private landowners and state agencies to avoid federal control.

Authors like Thoreau romanticized the wilderness and books like Silent Spring inspired public concern for the environment, helping propel an environmental awakening. Attitudes of the general public were changing. With as much skepticism as private landowners had of government, the public had of industry owners' control. The public was not convinced that industry, left to its' own accord, would protect the environment. In 1969, the state established the Land Use Regulatory Commission (LURC) as a land-use guidance system for the unorganized territories, to help protect against development and environmental degradation.

Due to the lack of concerted efforts between private, public and government, conservation in Maine was off to a slow start. Many felt that forest industry ownership and management of the lands was conservation. I agree that it was a form of conservation at the time but there was nothing guaranteeing the permanence of that state of the lands as we have seen with the big industry sell-off of forestlands in the last decade. Until the 80s', deliberate conservation had been largely a collection of small, scattered parcels.

After almost a decade of Reagan Administration cuts of environmental laws and federal programs, private organizations began to form and took over where government left off. The Uniform Conservation Easement Act (UCEA) of 1981 made it possible for non-government bodies

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<sup>75</sup> Urquhart, 2004 p53

to place permanent restrictions on land for conservation and historic preservation purposes. Maine was one of 24 states to adopt the recommendations of the Act. This gave rise to land trusts and conservation easements. The popularity of private land trusts has been escalating in the United States since the UCEA, which increased 32% from 2000 to 2005. Maine had 75 private land trusts in 2000 and that number has increased 40% over the last decade; as of 2009 there are 107 trusts that hold land in fee or easements<sup>76</sup>.

Creation of the federal programs operating under the United States Department of Agriculture and innovative practices by land trusts, propelled conservation in Maine to the “Landscape-scale”. In 1994, the Forest Legacy Program and the Farm and Ranch Lands Protection Program were created to fund conservation easements on environmentally important, privately held lands. Federal funding could be up to 75% of the qualified cost with 25% from state or private funds. The number of easements being used for land conservation has increased exponentially since the early 90’s, mostly due to the creation of these programs<sup>77</sup>. Innovative use of easements by land trusts has increased the size of conservation projects. In March 2001, the New England Forestry Foundation (NEFF) completed the purchase of a conservation easement on 762,192 acres of forestland owned by the Pingree family in Maine, the largest conservation easement in the United States. The Nature Conservancy and Great Northern Paper Company’s 2002 agreement placed an easement on 241,000 acres of forestland around Mt. Katahdin.

Local support in the form of State funding has also helped bring Maine to the forefront of land conservation. In 1987 the state legislature created the Land for Maine’s Future program to secure “the traditional Maine heritage of public access to Maine’s land...”, The program has enjoyed tremendous voter support for protection of lands of statewide significance. Starting in 1987 with a \$35 million bond, 1999 with a \$50 million bond, 2005 with a \$12 million bond, and again in 2007 with a \$22 million bond amounting to \$117 million in funding over the past 20 years<sup>78</sup>. The continued support of the program proves that Mainers are finally willing to pay for conservation. We have learned to cherish and protect our resources and that shows in our decisions to approve bonds, create programs and develop conservation organizations.

Approximately 16% of Maine’s land is under some sort of conservation, 3.67 million acres in conservation and half of which is in easements, 1.7 million acres<sup>79</sup>. The state owns most of the fee-

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<sup>76</sup> Bissett, 2009

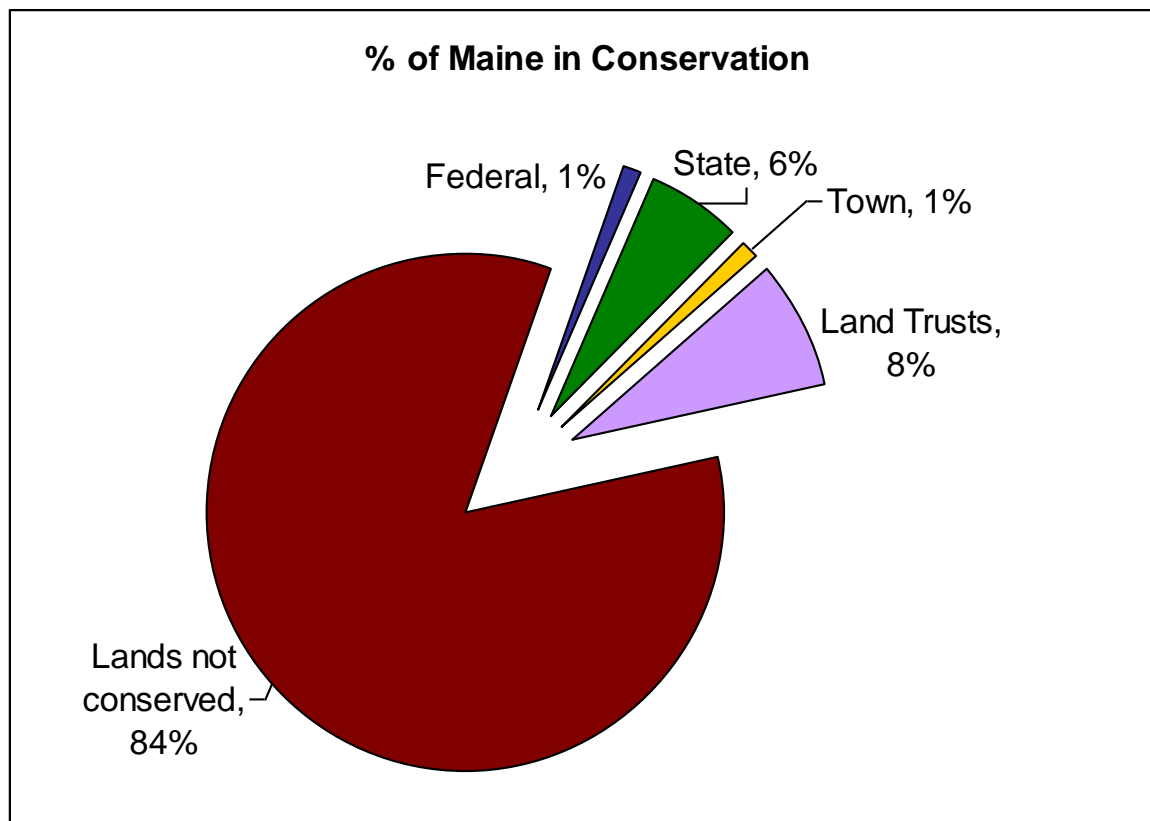
<sup>77</sup> Gattuso, 2008

<sup>78</sup> Glidden, 2008

<sup>79</sup> Cronan, Glidden, and Lilieholm, 2008

owned land while land trusts own most of the eased land. The majority of preserved land, combining fee and eased lands, is held by non-profit land trusts and conservation organizations. The state's share of conserved lands at 6% is the lowest percentage of all the New England states, "For a state that is seeking to maintain its brand identity in competitive tourism markets, this position is tenuous"<sup>80</sup>

Figure 3



<sup>80</sup> 2007 Biennial Report to the Joint Standing Committee on Agriculture, Conservation & Forestry

## CHALLENGES

Challenges for land conservation require us to change perceptions and practices if we are to succeed in the 21<sup>st</sup> Century. Changing perceptions of land conservation, thinking about it in a more holistic manner, and easement reform are issues we will have to overcome.

### CHANGING PERCEPTIONS

A challenge for conservation in the future will be to change how people perceive land conservation. General beliefs are that open space is nice to have but it is not necessary. This can be problematic especially in an economic downturn when funds are only approved for necessities. Educating the public on the benefits can provide a wider audience and sources of funding. Bill Weeks of The Nature Conservancy emphasizes, “the grandest challenge is to complete the task of getting the overwhelming majority of the public to care and act and vote like they care”<sup>81</sup> Broadening the base of supporters will require us to change our perceptions of who can be a supporter. Land conservation should speak to every class, race, and age group in a language they can understand.

### HOLISTIC CONSERVATION

Resist reactive conservation, scattering small-unconnected parcels that are not functional. Sprawl is the haphazard pattern of development; we do not want a haphazard pattern of conservation to cause it to be known as “Crawl”. In contrast to sprawl is sustainable development which includes the three legs of the stool; social, economic, and environmental. The goal of every future conservation project should be to be sustainable and that will require the project to have social, economic, and environmental benefits.

We should not be caught up in playing the numbers game or focus so completely on landscape or regional conservation that we forget the importance of Urban land conservation. Much of our urban population would find it difficult to reach most of our rural preserved lands due to economic or transportation factors. Urban land preservation provides benefits to the urban population beyond just scenic views and open space; it can provide places to exercise and opportunities to grow their own food. Urban land preservation has economic benefits for the city such as filtering run-off and turning vacant lots into parks; it improves the quality of life for people where they live and work.

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<sup>81</sup> Levitt, 2002

Holistic land conservation should connect urban to rural areas, and people to the environment. We should measure our success not by the number of acres we preserve but by the number of people we serve<sup>82</sup>.

## EASEMENTS

Being number one in eased land means, we could be the biggest winner in land conservation or the biggest loser. If eased lands are managed properly Maine could be a role model for the rest of the country; managed poorly we could be an example of how not to do easements.

The National Center for Public Policy Research warns that challenges for the future of easements come in the form of government involvement. Government-encouraged practices such as Prearranged Flips could be viewed as “a non-transparent tool for government to obtain private property without public knowledge or approval”. The Maine Coast Heritage Trust has sold more than 700 of its 850 easements and acquisitions to federal and state agencies<sup>83</sup>. Government funding of land trust transactions has increased greatly over the last five years and now comprises over 20% of the Nature Conservancy’s annual support and revenues. Government funds could subject the transactions to “political pressures”. The National Center suggests easements remain, as they were meant to be, a transaction between the landowner and a private entity<sup>84</sup>.

Jeff Pidot’s research at the Lincoln Institute of Land Policy identified a list of issues that could hamper the success of easements in the future. The issues include variable quality in easement design, no publicly accessible tracking system, lack of guidance for stewardship, lack of standard valuations for taxation, and a lack of transparency in process and public benefits<sup>85</sup>. Maine has over 100 land trusts responsible for their own easement documents. Preparing legitimate, useful easements with limited budgets and expertise is challenging. Without common standards, practices, and accountability Maine’s tax-payers have no way of knowing if the easement holder is capable of stewardship for the long-term or if the easement is accomplishing what it was meant to. If land trusts continue to operate like a governmental department but without public involvement, they run the risk of losing trust and support.

Critics of perpetual easements argue that perpetuity is un-natural and easements cannot be sustained, politically, socially, or ecologically forever. Perpetuity has taken the flexibility out of

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<sup>82</sup> Springer, 2006

<sup>83</sup> Gattuso, 2008

<sup>84</sup> Gattuso, 2008

<sup>85</sup> Pidot, 2005

easements. Our forests are natural evolving places not static points on a map. The traditional static easement does not allow for the ecological changes that are inherent in nature. Easements written specifically to protect river quality or an endangered species do not flex when the river changes course or the species goes extinct<sup>86</sup>. Pidot and other's argue that easement reform is necessary in order for us not to burden future generations with numerous cumbersome easements<sup>87</sup>.

## **OPPORTUNITIES**

One of the single greatest opportunities for land conservation will be our tool kit for addressing the effects of sprawl. Providing conservation-based affordable housing, utilizing the latest technologies, and collaborating with industry could propel land conservation into the 21<sup>st</sup> Century while providing boundaries to uncontrolled development and boosting Maine's economy.

### **CONSERVATION-BASED AFFORDABLE HOUSING**

Land conservation and housing professionals are experiencing unprecedented challenges to both protect places and provide for people. Creating new jobs without fulfilling housing needs pushes people out into surrounding areas, exacerbating sprawl. The need for affordable housing especially in urban areas is essential to the economy and conservation.

Combining skilled leadership from housing organizations, non-profits, and state or local governments could produce innovative solutions to extend limited funding. Conservation-based affordable housing combines the benefits of open space while fulfilling community needs. Innovative partnerships that produce multiple benefits make wise use of limited funds<sup>88</sup>

### **TECHNOLOGY**

Rand Wentworth of the Land Trust Alliance believes that conservationists should use the "tremendous power" of mass marketing to help create a national mandate for land conservation<sup>89</sup>. Many land-trusts already use the Internet to reach and teach. They have assembled databases full of current and potential supporters. They host and promote scholarly articles on their websites. They also use the internet to acknowledge their success with pictures and videos of places they have saved.

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<sup>86</sup> Greene, 2005

<sup>87</sup> Pidot, 2005

<sup>88</sup> Briechele, 2006

<sup>89</sup> Levitt, 2002

GIS can be used to identify and prioritize essential lands, provide important information about environmental change, track trends, and provide a means to analyze those trends and changes. Predictive modeling is used to show build-out for developments, and conservation techniques may be integrated into those models to show people what conservation neighborhoods can look like.

Technology is an important tool and provides real opportunity, but capabilities are useless without the capacity to use it. Employing and training personnel is the key to technology. Employing people who know how to use technology for smart growth is the key to land conservation.

## INDUSTRY PARTNERSHIPS

Maine currently has one of the highest numbers of land trusts in the United States. Land trusts are flexible and in-tune with the needs of the community. They “promote a level of innovation and experimentation in private land conservation efforts that typically is not found in government-controlled land conservation programs”<sup>90</sup>. As outlined in a State Planning Office report on Regional Landscape Conservation, the benefits of local land trusts range from being residents of the area, an earned trust with and by neighbors, knowledge of local landscape, and knowledge of property owners who may be willing to sell or donate land were just a few of the benefits<sup>91</sup>. Encouraging partnerships between industry and land trusts with expertise in their area could be the link between the economy and land conservation.

Land trusts specializing in forestry and farming have used easements to keep thousands of acres of private lands in production. Coastal land trusts have collaborated with the lobster and fishing industry to retain access to working waterfronts. Current partnerships should be fostered and new partnerships encouraged. Keeping our eyes open to new and emerging trends will provide insight into forming new industry partnerships. Land trusts collaborating with the clean energy and outdoor recreation industries should be the next stage of innovation and leadership that we aspire to.

Land trusts are our tool for conservation and industry is the key to a strong economy. Combining the two retains our lands for production and protects them from consumption.

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<sup>90</sup> Gattuson, 2008

<sup>91</sup> Richardson, 2008



## CONCLUSION

In conclusion, Maine's population is diverging from northern counties to southern and coastal counties and from out-of-state into southern Maine. Our rural land consumption has surpassed the rest of New England and the U.S. The affects of sprawl are apparent throughout the state. Forest industry and landownership has drastically changed during the last decade, investment groups now dominate forestland ownership. Working forests, farmland, and waterfronts are under enormous pressure from development and land prices exceed production value. Outdoor recreation is part of Maine's heritage and is of growing importance to its economy. Land conservation has grown in response to sprawl and has made great strides to protect the landscape. Challenges lie in the form of public awareness, haphazard conservation, and long-term easement management. Opportunities abound in conservation-based affordable housing, implementing technologies into daily practice, and by forging industry partnerships.

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Connecticut River through Pioneer Valley

## **Land Use & Land Conservation in Massachusetts:**

### **Trends, Challenges, & Opportunities**

**By Tom Devine**

**April 2009**

## EXECUTIVE SUMMARY

### Trends

- With the decline of the region's agriculture, a historic reforestation has left the majority of the state in forest cover.
- Changing demographics and low-density housing patterns are resulting in deforestation, loss of agriculture land, and fragmentation of open space.
- Roughly 20% of Massachusetts land is permanently protected today through easements and public or nonprofit ownership.
- Land conservation practices are evolving toward increased complexity and the need for collaboration among many parties.

### Challenges

- Development continues to threaten farms and forests, with a concentration of loss in what Massachusetts Audubon calls the "sprawl frontiers" in the western and southeastern edges of metropolitan Boston.
- Current economic challenges may decrease private funding to conservation organizations and jeopardize state government's financial commitment to conservation.
- Conservation efforts are weakened by individual states "going their own way".
- Small land trusts struggle to further their mission and take advantage of helpful technologies.

### Opportunities

- Harvard Forest has put forth a Woodlands and Wildlands vision to increase the total protected land in the state to 50%.
- The state has many ongoing initiatives to support and protect local farms.
- The state has published an ambitious plan to enlarge and integrate its trail network.
- Massachusetts has taken laudable steps to "bring nature close to home" for all residents, as with its Universal Access program to ensure access to nature for people of all abilities.
- The state's governor and legislature are gaining a reputation for supporting land conservation with a continued financial commitment and innovative legislation.
- The current economic climate has reduced development pressure and the cost of land.
- The public's growing awareness of the importance of farms, forests, and access to nature is shown in its increasing support for land conservation.

## INTRODUCTION

Massachusetts has a long history of conserving natural resources. However, shifting demographics and changing development patterns are threatening the state's farms and forests and residents' access to nature. The state government is strongly committed to preserving its resources and works admirably with a robust non-governmental conservation community. Despite a steady pace of current protection that stands to weather economic woes and exploit the current dip in land prices, more needs to be done to meet ambitious goals over the next generation. With the public's increasing awareness of climate change and the importance of protecting natural resources, Massachusetts is positioned to take bold steps to protect vulnerable forests, to ensure the economic viability of its farms and farm communities, and promote every resident's connection with nature.

## TRENDS

### *Background*

At 5.3 million acres, the Commonwealth is small among its peers, ranking 46<sup>th</sup> in total land area.<sup>92</sup> The great majority of this land, 75%, is privately owned. It is a heavily forested state, two-thirds in forest coverage, though this has fluctuated greatly since European settlement. By 1860, 70% of the state had been cleared for farming. The decline of the region's agriculture has led to major reforestation, and the state's forests now contain more wood than it has at any time in two centuries.<sup>93</sup> Loss of agricultural land has slowed in the most recent generation. Massachusetts lost roughly a million acres of farmland between 1950 and 1978, from 1.6 million acres to 617,000 acres, but only approximately 100,000 more acres between 1978 and 2007, to 518,000 acres.<sup>94</sup>

### *Loss*

The state's trend of reforestation may be misleading, for demographic trends and "sprawling" development patterns not unique to Massachusetts have brought a wave of fragmentation and outright deforestation.<sup>95</sup> Massachusetts Audubon Society reports that between 1985 and 1999 over 200,000 acres of land were developed. This amounts to a daily loss of approximately 40 acres of farms and forestland, whereas average daily loss between 1971 and 1985

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<sup>92</sup> Foster, "Environmental Conservation in Massachusetts," 149-150.

<sup>93</sup> Foster, *2008 Update*, 3.

<sup>94</sup> United States Department of Agriculture, "Census of Agriculture - 2007 Census Publications - Volume 1, Chapter 1 : State Level - Massachusetts."

<sup>95</sup> Breunig and Clarke, *Losing Ground*, 4.

was 33 acres, marking a long-term acceleration in the loss of open space in the state. From 1971 to 1999, developed land increased from 17 to 24% of the state, and forestland decreased from 60 to 57%.

Nearly 90% of this development has been residential, two-thirds of which has been on large lots of an acre or more. This housing development is the major force behind the increasing rate of loss.<sup>96</sup> The Commonwealth's average household size decreased 20% between 1970 and 2001, from 3.12 to 2.51 persons,

with the result that developed land has grown faster than population. The average lot size grew a staggering 47%.

Demographic changes are not alone responsible for this increasing residential footprint. Mass Audubon noted in 2000 that nearly one hundred cities and towns had

zoned at least some of their land with a *two-acre* minimum lot size.<sup>97</sup>

Mass Audubon notes the link in Massachusetts between transportation infrastructure and sprawl.<sup>98</sup> Low-density development is clearly facilitated by major highways. However, several of the municipalities ranking in the top twenty for new single-family housing permits between 2000 and 2002 are served by commuter rail. This includes the South Shore/Cape Cod region served by recently restored service along the Old Colony Line's on the Kingston/Plymouth and Middleborough/Lakeville branches (Greenbush branch opened after Mass Audubon's report).

Primary Purpose of Permanently Protected Land, June 2003

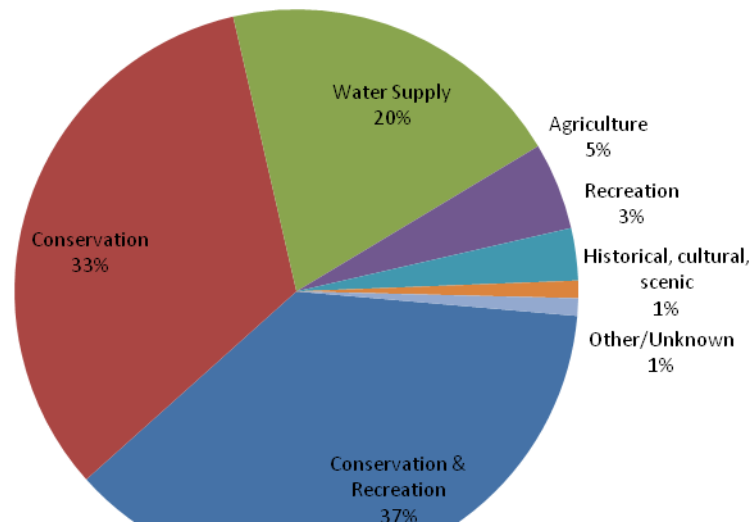


Figure 1

<sup>96</sup> Ibid., 8-9.

<sup>97</sup> Ibid., 11.

<sup>98</sup> Ibid., 12.



Another cluster of sprawl is seen in the Worcester area, to which rail service was also recently restored.

### ***What is Now Protected***

Massachusetts has a long and praiseworthy history of protecting the natural environment from harm.<sup>99</sup> Early settlers enacted laws to regulate timber harvesting and excessive forest burning. Fisheries were regulated early on, and deer season was closed as early as 1694. At present, approximately one million acres, or nearly 20% of the state, are protected permanently, half of which is publicly owned. Of this, the Massachusetts Executive Office of Energy and Environmental Affairs is the largest landowner. Municipalities hold 257,000 acres, about one-third, and the federal government owns the remaining, including the 43,600 acres Cape Cod National Seashore. The remaining land, not publicly owned, is held by land trusts and conservation organizations, or privately held but protected from development by conservation restriction. Uses of this protected land vary.<sup>100</sup> (See Figure 1<sup>101</sup>) Twenty percent of protected space is set aside for water resources, such as the Quabbin Reservoir and surrounding land, and, 61,855 acres of agricultural land are protected from development by agricultural easements.<sup>102</sup>

The Massachusetts Audubon Society has reviewed the pace of adding to the state's bank of protected land.<sup>103</sup> Between 1997 and 2003 the total protected land in the state increased from 17.3 to 18.8%. In this interval, the use of conservation restrictions, public-private partnerships, and increase in state funding marked the period as a time of rapid conservation.

### ***Conservation Changing***

Members of the states' conservation community have noted some major trends in land conservation. Robert Wilbur, Director of Land Acquisition and Protection for Mass Audubon, says that conservation has become smarter and more proactive. "Fifteen years ago," he observes, "most conservation organizations worked in a very much reactive mode, responding to a particular subdivision or random property inheritance. Most organizations are now setting priorities to

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<sup>99</sup> Foster, "Environmental Conservation in Massachusetts," 150.

<sup>100</sup> Breunig and Clarke, *Losing Ground*, 13.

<sup>101</sup> *Ibid.*, 16.

<sup>102</sup> Massachusetts Department of Agricultural Resources, "Agricultural Preservation Restriction Program (APR)."

<sup>103</sup> Breunig and Clarke, *Losing Ground*, 15.

identify the most important lands and working proactively to contact owners of those lands.”<sup>104</sup>

Michael Fleming, Regional Planner at the Department of Conservation and Recreation’s Bureau of Forest Fire Control & Forestry, credits the state’s strong GIS (Geographic Information Systems) capabilities with “allowing us to identify important land.” In addition, “The state’s advanced GIS gives conservation organizations more credibility. Rather than present a simple map of a planned piece of land to protect, technology now allows conservationists to defend the ecological value of land through such things as biomapping and wetlands mapping.”<sup>105</sup>

Leigh Youngblood, Executive Director of the Mount Grace Land Conservation Trust, notes the change in how land is being protected. “I see an increase in the use of conservation restrictions rather than public acquisition. I support this because it cultivates stewardship as the land remains in the owner’s hands.” Mark

Robinson, Executive Director of the Cape Cod Compact, notes another trend: “We have seen a decrease in outright donated land. Ten or fifteen years ago, much of our land was donated. Now it is typical for money to change hands in a deal requiring a partnership of several nonprofits in the same transaction.”<sup>106</sup>

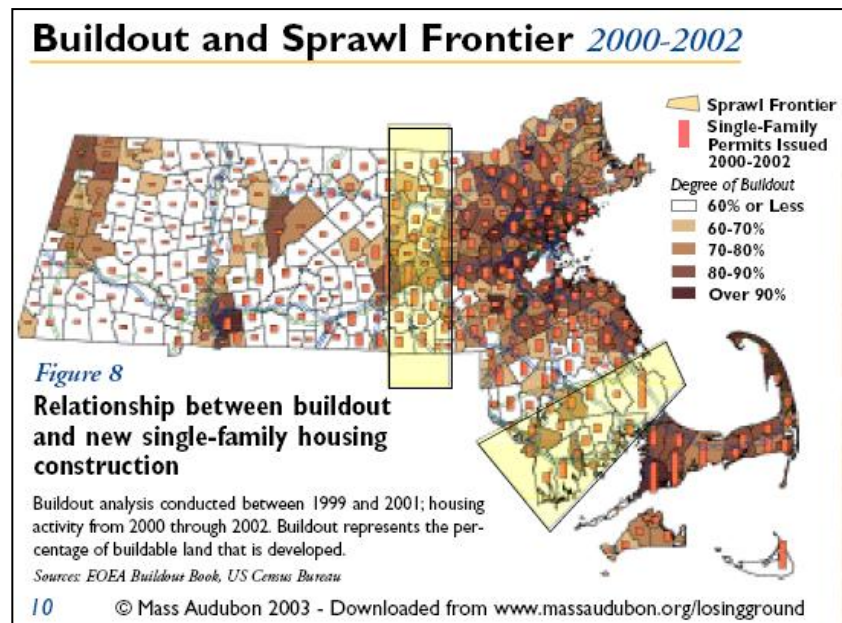


Figure 2

## CHALLENGES

### *Continued Loss*

A major challenge today is the continued loss of forest, farmland, and habitat to low-density residential development. The Massachusetts Audubon Society has used the Executive Office of Environmental Affairs’ statewide buildout analysis to pinpoint areas under the highest threat of

<sup>104</sup> Wilber, interview.

<sup>105</sup> Fleming, interview.

<sup>106</sup> Robinson, interview.

development.<sup>107</sup> It has identified a “Sprawl Frontier” where, relative to other areas, a large number of building permits are being granted and current zoning allows for continued rapid development (See Figure 2<sup>108</sup>). One frontier is approximately the Route 495 area that marks the gradual transition from the developed area of metropolitan Boston to the largely undeveloped western part of the state. A second frontier lies in the southeastern region of the state, between metropolitan Boston and Cape Cod. While approximately one-third of the state is so remote or undevelopable that it is not threatened,<sup>109</sup> these two frontiers account for the some of the highest-risk space.<sup>110</sup>

### ***The Recession***

The conservation community is concerned with the current recession’s impact on conservation. Bill Labich, Regional Woodland Conservationist for Highstead, remarks, “The recession perspective is worrisome. A downturn in membership in addition to a downtrend in funding from private donors will leave land trusts hurting.”<sup>111</sup> Mass Audubon’s Robert Wilbur believes that, “While the Governor and Secretary [of Energy and Environmental Affairs] are working hard to keep up funding, the risk of a decline in this recession persists. State spending primes the pump. When decreased, it halts funding at all other levels.”<sup>112</sup> Keith Ross, Senior Advisor at Real Estate and Conservation Consultant Group, Landvest, highlighted the problem of funding in good times and bad. In the conservation community, “high turnover is a problem. Small grants could be useful for training these civic-minded volunteers.” Ross continues, “incremental protection is too slow. Conservation opportunities must be streamlined, and new forms of income streams are needed.”<sup>113</sup>

### **Regional Conservation**

State borders pose a challenge for regional conservation. Robert Wilbur laments the imperfect communication between states. “Wildlife corridors and habitats do not stop at state lines. State conservation efforts should be woven together across borders.”<sup>114</sup> Clem Clay, Connecticut River Program Director at the Trust for Public Land, is especially concerned with the limitations

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<sup>107</sup> Breunig and Clarke, *Losing Ground*, 12.

<sup>108</sup> *Ibid.*, 10.

<sup>109</sup> The Trustees of Reservations, *Trustees 2017 Strategic Plan*, 5.

<sup>110</sup> Breunig and Clarke, *Losing Ground*, 12.

<sup>111</sup> Labich, interview.

<sup>112</sup> Wilbur, interview.

<sup>113</sup> Ross, interview.

<sup>114</sup> Wilbur, interview.

presented by state borders. “I think that a classic flaw in projects addressing New England is to begin by breaking things down by state, which is important to do for political feasibility, analysis and other reasons, but which I believe should only be one of several analytical paths.” Basing conservation work instead on sub-regions of New England that share natural resource attributes “can be challenging, but also offers the promise of creating sub-brands of the New England identity that residents can actually relate to and that speak to the rest of the nation about our region in new ways, and, not incidentally, helps us compete for federal resources that help with land conservation and other efforts to protect the landscapes and lifestyles we cherish here.”<sup>115</sup>

The tendency of New England states to “go their own way” is one of the region’s deep-seated and most enduring features, according to Charles H.W. Foster.<sup>116</sup> Foster traces this regional characteristic to colonial resistance to the British crown. It was especially manifested during the New Deal’s expansion of the role of federal government, during which New England heartily fought a top-down hydroelectric power initiative. The region has happily accepted financial resources from the federal government under the condition of coequality and after state scrutiny, as with the New England River Basins Commission in 1963 and the New England Regional Commission in 1965. Still, the value each state has historically placed on its sovereignty can be a difficult obstacle to overcome. Our biggest challenges, such as energy and environmental issues, require that the New England states cooperate as “one team” rather than six.<sup>117</sup>

### *Land Trusts*

At the smaller, nongovernmental scale, land trusts and other nonprofit conservation organizations face many challenges. Small organizations can be disorganized and often lack many important tools. Michael Fleming of the Department of Conservation and Recreation says, “now is the time for land trusts to modernize technologically. Microsoft gives software at lower cost to the land trust community,” and this should be taken advantage of.<sup>118</sup> Bill Labich of Highstead adds that, “Land trusts often need help getting certified, to get more organized, and to be able to stand up to IRS scrutiny. It is important that they be well-versed in conservation easements and how to

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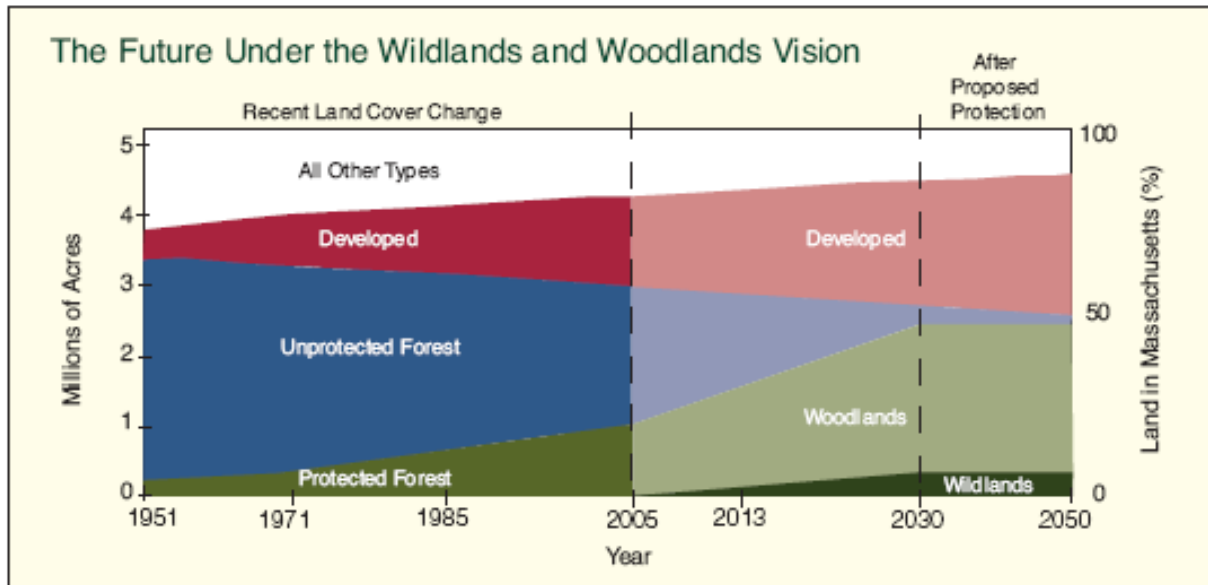
<sup>115</sup> Clay, “New England Governors’ Conference blue ribbon commission on land conservation.”

<sup>116</sup> Foster, “Twentieth-Century New England Land Conservation,” 306-307.

<sup>117</sup> Peirce and Johnson, “Six Teams -- or One?”

<sup>118</sup> Fleming, interview.

Figure 3



document them.”<sup>119</sup> In this regard, organizations such as the Cape Cod Compact that help to facilitate land transactions with smaller land trusts are especially important.

## OPPORTUNITIES

### *Keeping Forests as Forest*

The Audubon Society estimates the total dollar value of non-market ecosystem services in the state at \$6.3 billion annually.<sup>120</sup> It excludes the nearly \$2 billion that timber harvesting and commercial fishing contribute to the state’s gross domestic product, as well as the state’s \$6 billion estimated annual revenue from its agricultural industry.<sup>121</sup> It does include such nonmarket ecosystem services as freshwater regulation and supply, flood mitigation, pollination, waste assimilation, recreation and aesthetics. While human ingenuity offers technological alternatives to some of these services, they are provided by the state’s natural resources for free.

The Harvard Forest’s Wildlands & Woodlands vision provides an opportunity for Massachusetts to lock in the important economic benefits of its ecological resources. This ambitious conservation proposal over the next generation would serve to more than double the state’s protected lands to nearly half of Massachusetts (See Figure 3<sup>122</sup>).<sup>123</sup> While this goal is especially bold, it is carefully nuanced in its proposals for specific tiers of conservation. It is

<sup>119</sup> Labich, interview.

<sup>120</sup> Breunig and Clarke, *Losing Ground*, 19-21.

<sup>121</sup> Massachusetts Department of Agricultural Resources, “Fingertip Facts.”

<sup>122</sup> Foster et al., *Wildlands and Woodlands*, 23.

<sup>123</sup> Foster et al., *Wildlands and Woodlands*.

conservative in a sense, too, that is, the vision specifies only a very small fraction of the state to be strictly protected as unmanaged “wildlands”. Much of the remaining “woodlands” would be managed to serve purposes for the human population such as recreation, sustainable timber harvesting, and clean water resources. The vision notes that, laudable as current conservation efforts are, forestlands remain vulnerable to fragmentation. Massachusetts today has barely 3,000 acres of old growth forest, spread over 25 sites. The Wildlands and Woodlands vision proposes that the state construct a network of wildland reserves within and connected by managed woodlands. These wildlands would be 5,000 to 50,000 acres each and most would be located on existing state land. Human impact would be minimized in these old growth forests. At most, the vision suggests, only passive recreation, education, and science would be allowed in some wildlands; motorized vehicles would be forbidden and roads would eventually be replaced with walking paths. In contrast, much of the over two million acres of protected woodlands would be open to some form of management. These areas can tolerate more active recreation, such as snowmobiling. Finally, the report notes that Massachusetts imports almost all of its timber products and has the resources to reduce dependence on these outside sources.

The Wildlands & Woodlands vision proposes regional woodland councils to facilitate the statewide effort toward the vision’s ambitious goal of doubling the state’s amount of protected land.<sup>124</sup> These councils would be both a resource and a catalyst, energizing efforts among 350 municipalities, scores of land trusts, and other conservation groups. Several such councils or conservation partnerships have been formed since 1998.<sup>125</sup> Particularly notable is the Mass-Conn Sustainable Forest Partnership, bringing together conservation organizations on both sides of the border between north central Connecticut and south central Massachusetts. Bill Labich of Highstead remarks that existing organizations have taken on the responsibilities of the proposed woodland councils, and that it is not important what these groups are called.<sup>126</sup> Keith Ross of Landvest hails these organizations as “valuable local entities that provide educational opportunities for stewardship, introduce business concepts to the local conservation community, and bring together business groups, owners, regulators and land trusts.”<sup>127</sup>

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<sup>124</sup> Ibid., 18.

<sup>125</sup> Foster, *2008 Update*, 7.

<sup>126</sup> Labich, interview.

<sup>127</sup> Ross, interview.

Wildlands & Woodlands is also involved in a pilot “conservation aggregation” program.<sup>128</sup> The New England Natural Resources Center is organizing partnerships to aggregate 21,000 acres of existing, mostly private conservation easements in western Massachusetts. The program involves 129 properties and twelve land trusts. Through aggregation, it is hoped that economies of scale will reduce costs of such things as appraisal, and overcome the fundraising limitations of small land trusts.

Another proposal is the creation of a Berkshire National Forest in Berkshire and Franklin counties in the state’s northwestern corner.<sup>129</sup> Vermont’s Green Mountain National Park ends at the Massachusetts border, where the proposed national forest would be located. The name “national forest” has a cachet that would bring public visibility and tourists to the area.

### *Keeping Farmlands in Farming*

We can hardly expect Massachusetts again to be the agricultural state it once was, but there are opportunities for protecting and strengthening the state’s farms and farm communities. The state is a very competitive producer of cranberries, wild blueberries, squash, maple syrup, and many other locally harvested products.<sup>130</sup> The state sells more farm products directly to consumers than any other New England state.<sup>131</sup> Also, the number of organic farms is increasing, from 129 in 2002 to 295 in 2007.<sup>132</sup> Agriculture enjoys a variety of state supports geared to its needs. First, agricultural easements remove farmland’s development potential and strip it down to its agricultural value for tax purposes. Since beginning in 1979 the state’s Agricultural Protection Restriction Program (APR) has protected 61,855 acres in 725 farms from development.<sup>133</sup>

The state recognizes that farms are more than just land to protect, but businesses that must make money to remain productive. The state’s Farm Viability Program assists in the development and implementation of farm viability plans. Funding for these is offered in exchange for a five or ten year agricultural covenant. Over 300 farms have been assisted by this program and nearly 30,000

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<sup>128</sup> Foster, 2008 *Update*, 5.

<sup>129</sup> “Editorial: A First-Class Forest.”

<sup>130</sup> Massachusetts Department of Agricultural Resources, “Fingertip Facts.”

<sup>131</sup> Massachusetts Department of Agricultural Resources, “Massachusetts Ag Facts and Statistics.”

<sup>132</sup> *Ibid.*

<sup>133</sup> Massachusetts Department of Agricultural Resources, “Agricultural Preservation Restriction Program (APR).”

acres put under covenant.<sup>134</sup> The Agricultural Business Training Program, provides technical assistance to farmers to develop business plans.<sup>135</sup>

Cris Coffin, New England Director of American Farmland Trust, says

Keeping farms profitable is obviously one of the best ways to keep farmland in farming. But more than 60% of Massachusetts' land in farms is managed by farmers age 55 or older. At some point, most of them will retire. And when they retire, many will need to sell part or all of their land to finance retirement. If we don't have the tools to facilitate the transfer of that land to another farmer instead of to the highest bidder, that land remains very vulnerable to development.

There are many things we can do to improve farm profitability. One is to continue to build local markets by focusing on farm-to-institution, direct-to-consumer and renewable energy opportunities. Another is to invest in infrastructure needs, like processing facilities and ways to extend our growing seasons, and to address regulatory barriers on the production and sales of certain foods and farm products. But we can also do more to reduce production costs, especially in the area of energy efficiency.<sup>136</sup>

Coffin notes that the APR program has helped both to improve farm profits and to transfer farmland to a new generation of farmers. "The APR program has allowed farmers to access the equity in their land to make needed improvements and investments in their farm operations. The program is also providing young farmers with access to land that would otherwise be unaffordable." Yet, with less than 13% of the Commonwealth's land in farms permanently protected through the APR program, Coffin sees the need for a larger investment in the APR program, and new farmland protection tools. "As our farms are becoming more diverse, we need to look at a more diverse set of tools to foster and sustain them."<sup>137</sup>

### ***Bringing Nature Close to Home***

A state with such a world-class urban park system as Olmstead's Emerald Necklace around Boston continues to demand high quality public spaces in and around its neighborhoods. However, expanded urban parks are more likely to come in the form of new linear trails, such as the Somerville-to-Bedford Minuteman Path. Built along an abandoned rail right of way, this path winds through suburbs, connects with multiple subway stations, and links congested and dense Somerville with its leafy, suburban neighbors. A final 2.5 mile inbound extension would connect the path

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<sup>134</sup> Massachusetts Department of Agricultural Resources, "Farm Viability Enhancement Program."

<sup>135</sup> Massachusetts Department of Agricultural Resources, "Agricultural Business Training Program (ABTP)."

<sup>136</sup> Ibid.

<sup>137</sup> Ibid.



directly to Boston and the Charles River Path.<sup>138</sup> This pathway may stand as a model if Massachusetts is to implement its “Commonwealth Connections” vision to expand and connect trails across the state.<sup>139</sup>

The Commonwealth Connections vision sets out to bring together the many disconnected trail-building efforts across the state into a single, coordinated and growing trail network, including a cross-state, multi-use trail from Boston to the Berkshires.<sup>140</sup> Such a network would increase community access to nature, link communities to one another, and expand opportunities for alternative transportation.

Kathy Abbott, Executive Vice President of the Trustees of Reservations, believes that “Funding should be restored for federal programs geared toward urban park development, such as Urban Self Help and the Land and Water Conservation Fund.” “Conservation,” she adds, “tends to focus on suburban, if not rural, locations because the goal is often to protect the largest number of acres or a specific habitat of watershed.” In terms of actively connecting people and nature in urban settings, “the Charles River and Neponset trails, as well as converted rail trails, do that effectively.”<sup>141</sup>

Harvard Forest has elaborated on its vision to specify how forest should be preserved in the already developed parts of the state.<sup>142</sup> This vision update designates densely developed areas as an Urban Forest Zone, where 10% of the land area should be protected forest in the form of city parks, trees in private yards along streets, and corridors along streams. Despite their small size, “urban forests...add incalculable beauty to our cities....and touch many people.” A Suburban Forest Zone, with 25% of the land as protected forest, would consist of “town forests, greenways, and other conservation lands.” These forests are already “accessible to most residents of Massachusetts.”

The Massachusetts Department of Conservation and Recreation (DCR) seeks to broaden access to state outdoor facilities through its Universal Access Program.<sup>143</sup> Through “site improvements, specialized adaptive recreation equipment, and accessible recreation programs” the program seeks to give people of all abilities the opportunity to enjoy nature. The DCR promotes specific levels of handicap access at each location, as well as special events on its website and through a twice-yearly newsletter.

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<sup>138</sup> Friends of the Community Paths, “Friends of the Community Paths (Boston Metro, Massachusetts MA USA).”

<sup>139</sup> Massachusetts Department of Environmental Management, *Commonwealth Connections*.

<sup>140</sup> *Ibid.*

<sup>141</sup> Abbott, interview.

<sup>142</sup> Foster, 2008 *Update*.

<sup>143</sup> Massachusetts Department of Conservation and Recreation, “Universal Access Program.”

### *Supportive State Government*

Leigh Youngblood of the Mount Grace Land Conservation Trust says, “Governor Deval Patrick and his reputation for supporting conservation is a great opportunity, and it would be a shame for it to be a missed opportunity.” She continues, “[former EOEI Secretary] Bob Durand was a great advocate but the conservation community was unprepared for having a secretary who supported their ideas.”<sup>144</sup>

Governor Patrick is, indeed, acting in support of land protection. In August of 2008 he signed a five-year energy and environment bond bill that includes a major commitment to land conservation. The bill commits \$344 million to open space programs, including funds toward state land acquisition and conservation restrictions, and purchase of development rights on agricultural land. In terms of ongoing accomplishments, the state claims credit for protection of 13,819 acres in fiscal 2008 through grants, fee acquisition, and conservation and agricultural restrictions, at a cost of \$54.9 million (See Figure 4).

Further solidifying his commitment to conservation, the Governor recently signed a bill to establish a legislative study commission to explore innovative conservation

<b>Figure 4: FY08 State Conservation Expenditures by Type<sup>145</sup></b>				
	<b>Funds</b>	<b>Percent</b>	<b>Acres</b>	<b>Percent</b>
<b>Grants</b>	\$17,598,348	32%	2,222	16%
<b>Restrictions</b>	\$17,368,750	32%	7,052	51%
<b>Fee Acquisitions</b>	\$18,003,300	33%	4,545	33%
<b>Administrative Costs</b>	\$1,913,420	3%	N/A	N/A
<b>TOTAL</b>	<b>\$54,883,818</b>		<b>13,819</b>	

financing. Leigh Youngblood of Mount Grace says that this is encouraging legislation, but hopes that the results of the commission “are not a foregone conclusion that fails to produce new ideas.”<sup>146</sup> In a move to incentivize private conservation, the Governor signed a bill to make land donations to conservation organizations tax deductible within certain criteria. Massachusetts Audubon’s Robert Wilber expressed his concern that a federal tax incentive that allows a deduction for conservation easements is set to expire at the end of 2009. “This incentive has increased the use of conservation restrictions. People are fighting to renew this. And it should not be limited only to conservation easements, but extended to include full fee acquisition of land.”<sup>147</sup>

<sup>144</sup> Youngblood, interview.

<sup>145</sup> 2008 Land Protection Report, 6.

<sup>146</sup> Youngblood, interview.

<sup>147</sup> Wilber, interview.

### ***The Recession***

With strong and consistent support from state government in terms of creative legislation and funding, the pace of conservation is likely to weather current economic challenges. With steady effort, the state's conservation community can take advantage of the opportunities that emerge in a weak economy. Robert Wilber notes that, "Our current economic situation brings both challenges and opportunities. First, there is less competition from developers during a lull in the real estate market. And second, land is cheaper." He notes that he is seeing first-hand the effect of the economy on landowners, and that he is often in a position to benefit them. "I get calls from people who just received a tax bill and don't know what to do. We can buy a conservation easement and keep the land in their family. In this regard, it is a good time to be conserving land."<sup>148</sup>

### ***Growing Public Awareness***

Bernard McHugh of the Massachusetts Land Trust Coalition believes that, "The rapidly growing awareness of climate change is an opportunity for conservation. Land trusts and other nongovernmental organization understand this, and are working to form responses."<sup>149</sup> "The public really gets it," says Robert Wilber of Mass Audubon. "We don't need to sell conservation much to the average person now. The public no longer sees it as an isolated issue of a particular endangered species. They now know about the importance of clean air as a strategy for blunting the asthma epidemic. Carbon sequestration is understood. There is a clear understanding of the importance of recreation for dealing with obesity. People are aware that continued access to clean water must be ensured and want their children to have the chance to experience nature. These broader human values are becoming more well known by the average person and it is leading to a larger support for conservation generally."<sup>150</sup>

## **CONCLUSION**

History shows that Massachusetts can be progressive and innovative in any number of arenas. As Bill Labich of Highstead notes, "Massachusetts is a robust engine of innovation and has a long history of conservation that people want to continue."<sup>151</sup> However, success is never guaranteed. If Massachusetts is to keep forests as forest, keep farmland in farming, and bring nature close to home,

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<sup>148</sup> Ibid.

<sup>149</sup> McHugh, interview.

<sup>150</sup> Wilber, interview.

<sup>151</sup> Labich, interview.

it must exploit the opportunities present. Moreover, the costs of unfettered development are immense. Effective conservation efforts, on the other hand, will yield great benefits, from nonmarket ecosystem services to outright economic returns. The actions taken today will be appreciated enormously by future generations, just as the current generation enjoy the forests, farms, and parks created by previous generations.

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## **INTERVIEWS**

Kathy Abbott, *Executive Vice President, Field Operations, Trustees of Reservations*

Cris Coffin, *New England Director, American Farmland Trust*

Michael J. Fleming, *Regional Planner, Massachusetts Department of Conservation and Recreation*

William Labich, *Regional Conservationist, Highstead*

Bernard McHugh, *Director, Massachusetts Land Trust Coalition*

Mark Robinson, *Executive Director, Cape Cod Compact*

Keith Ross, *Senior Advisor, Landvest*

Robert Wilber, *Director of Land Acquisition and Protection, Massachusetts Audubon Society*

Leigh Youngblood, *Executive Director, Mount Grace Conservation Trust*



## Land Use & Land Conservation in New Hampshire Trends, Challenges, & Opportunities

By: Brittany Howard  
April 2009

## Executive Summary

### Trends

- For more than four decades, New Hampshire has had the greatest increase in population in New England and the Northeast. From 1960 to 2000, NH's population doubled from 606,400 to more than 1.2 million.
- New Hampshire is the second most forested state in the United States. The state is 84% forested or 4.8 million acres. Since 1983, NH has lost 134,500 acres of forested land and now has about the same coverage as it did in 1948.
- NH rapidly loses farmland to developmental pressures, at a rate of five square miles per year.
- New Hampshire has conserved more than 291,000 acres in the past six years. Some 27.7% of the state is now protected, up from 22.3% in 1998. However, 75% of all conservation land is in the northern half of the state. Towns have also begun to increase their percentage of conservation land since 1998. However, 110, or nearly half, still have less than 10% of their land conserved.

### Challenges

- Climate change is difficult to predict and different species of trees and plants will react in different ways. Some species may adapt to temperature rises, while others may sicken, expire, or travel north due to climate changes. It is probable that the structure of New Hampshire forests will be altered.
- New Hampshire's development patterns have produced fragmented lands and loss of important forest lands, wildlife habitat, and other sensitive environmental areas.
- Leapfrog development is an even more inefficient use of land than sprawl because the development leaps over available land and uses up large tracts away from current development. This form of growth, particularly residential, is occurring in many rural towns in NH.
- Due to shortfalls in the state budget of \$250 million, state funding for some conservation efforts has been cut.
- Biodiversity at all levels has already been affected negatively in New Hampshire. 11 species of animals and 13 species of plants have been extirpated from the state.

### Opportunities

- Certain forest areas with specific tree types may benefit from global climate change.
- The Society for the Protection of NH's Forests offers an array of options for land conservation and protection.
- NH has many different funding sources available for land conservation of all kinds.
- Smaller municipalities have been collaborating with Regional Planning Commissions (RPC) to produce Open Space Plans and look at common conservation issues and produce some possible solutions like the following:
  - \* Encouragement of Private Sector Open Space Donations and Planning Assistance
  - \* Creation of a Regional Open Space District
  - \* Continued Encouragement of Inter-Municipal Cooperation in Land Protection
  - \* Promote Public Awareness of Land Protection



## Introduction:

New Hampshire comprises 5,984,000 acres, split into seven unique regions, each as diverse as the next. The Great North Woods, White Mountains, Lakes Region, Dartmouth-Lake Sunapee, Monadnock Region, Merrimack Valley, Seacoast, are all filled with scenic vistas, natural habitats, pristine landscapes, and aspects of traditional New England living.

**Great North Woods** – This region is commonly referred to as the “North Country”. It is north of the White Mountains and is thinly populated. Large tracts of forested land are found here, as well as the third largest lake in the state, Lake Umbagog, and the Lake Umbagog National Wildlife Refuge. Sporting adventures are a way of life, from hunting to fishing, camping, hiking, boating, wildlife watching, and snowmobiling. The region is unique in other ways, too. Close proximity to Canada's Province of Quebec, as well as the Maine and Vermont borders, has resulted in a fascinating mix of cultures and outlooks.<sup>152</sup>

**White Mountains** - If one New Hampshire region is synonymous with recreation, it is the White Mountains. Twenty 4,000-foot peaks are found here, along with the highest mountain in the Northeast, 6,288-foot Mt. Washington; but it is the 800,000-acre White Mountain National Forest that truly shapes the region.

**Lakes Region** – There are 273 lakes and ponds in the Lakes Region, the most well known of which is Lake Winnepesaukee. This region's most popular season is summer but spring brings green hillsides, the fall offers intense foliage colors, and winter covers the region in a blanket of snow, making this region a destination for any season.

**Dartmouth-Lake Sunapee** – The region is named after Hanover's Ivy League College, Dartmouth and Sunapee (the lake, State Park, and mountain). This region includes country roads, farmland, lakes, and is a center for higher education and medicine.

**Monadnock Region** – This region features



New Hampshire Regions. 2008.

<sup>152</sup> About the Regions, 2008.

small villages with white clapboard churches and town halls. There are rolling fields with neatly planted rows that quilt the hillsides, and country roads lined by rock walls invite exploration at a leisurely pace.<sup>153</sup>

**Merrimack Valley** – The Merrimack River Watershed, 180 miles in length, originates in the White Mountains. The river, which has numerous tributaries, flows through Concord, Manchester, Nashua, and 211 other communities in New Hampshire and Massachusetts before it empties into the Atlantic Ocean.

**Seacoast** - New Hampshire's seacoast captures the essence of New England's oceanfront. In just 18 miles of coastline, there are long, sandy beaches, working ports, offshore islands, surf-stung rocks, and popular resort towns and villages that date back nearly four hundred years.<sup>154</sup>

“New Hampshire is home to more than 15,000 species of plants and animals, 100 types of natural communities, and ecosystems as diverse as the Great Bay estuary, the spruce-fir forests of the North Country, the summits of the White Mountains, and the floodplains of the Merrimack and Connecticut Rivers”.<sup>155</sup> This rich biological diversity, which includes not only plants and animals but also the habitats and ecological processes that sustain them, is a living legacy that helps keep our air clean, our water pure, our economy strong, and our quality of life high.<sup>156</sup> Each region has its own land conservation trends, challenges, and opportunities but in order to better understand them, the changes the state is going through need to be looked at as a whole.

## **Major trends in New Hampshire's Land Use & Land Conservation**

### **Population:**

Past & Current Trends - For more than four decades, New Hampshire has had the greatest increase in population in New England and the Northeast. From 1960 to 2000, NH's population doubled from 606,400 to more than 1.2 million. From 1990 to 2004, NH population expanded by more than 13,000 citizens per year, totaling 190,248 new residents. Another way to look at this growth is that

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<sup>153</sup> About the Regions, 2008.

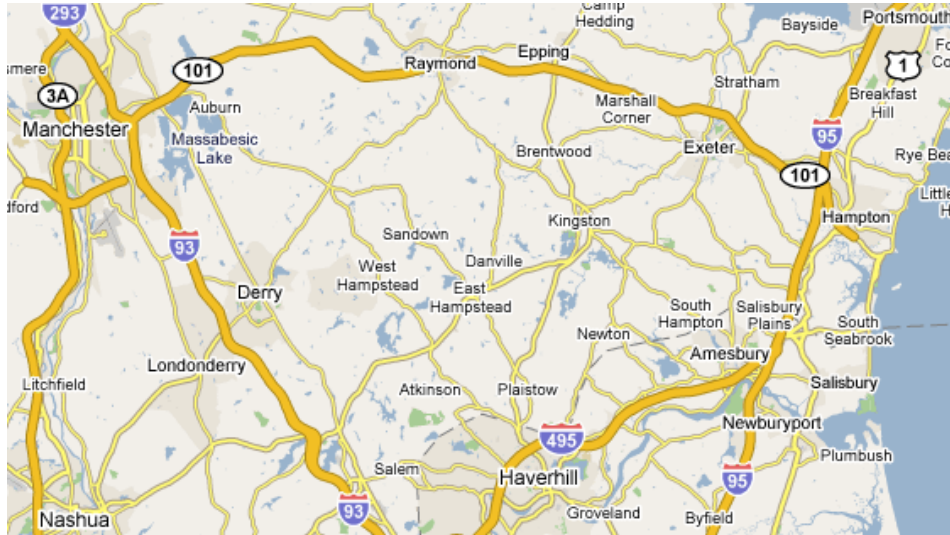
<sup>154</sup> About the Regions, 2008.

<sup>155</sup> NH Living Legacy. 2004.

<sup>156</sup> NH Living Legacy. 2004.

over those 14 years, the population grew by 17.2%, twice as fast as the average for the rest of New England.<sup>157</sup>

With the influx of new residents, houses needed to be built. Residential development expanded north and west along major highway corridors (I-95, I-93, and NH-101).



Google Maps

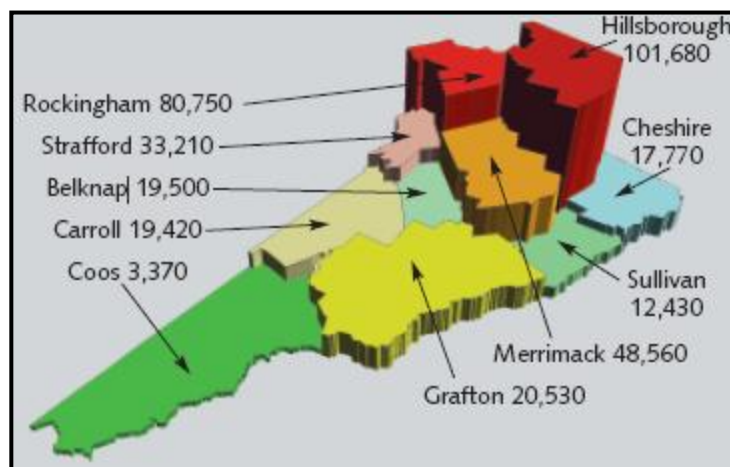
With high demand to live in NH, land prices have risen 61% statewide since 1998, the greatest increases occurring in the fastest developing regions. This development has also changed the character of NH towns. In 1970, only four of New Hampshire's 259 communities were densely populated enough to be categorized as urban; 39 were suburban, 77 were exurban and 139 were rural. Today, with densities increasing throughout the southern half of the state, New Hampshire has 8 municipalities classified as urban, 78 are suburban, 89 are exurban and just 84 are rural.<sup>158</sup> These category shifts mean that communities are becoming more populated and are losing land to development. It also means that some communities are going to have to offer public services that prior population counts did not require such as, a volunteer fire department that has to become fulltime. This creates an added burden on the municipality.

Future Trends - New Hampshire's population is projected to increase by 358,000 residents between 2000 and 2025, more than 28% (the distribution of population growth 2000-2025 is shown in the graph below). This would make NH's population almost 1.6 million in 2025, when 12 municipalities

<sup>157</sup> New Hampshire's Changing Landscape, 2005.

<sup>158</sup> New Hampshire's Changing Landscape, 2005.

will be classified as urban, 89 will be suburban, 86 will be exurban and 72 will be rural.<sup>159</sup> Most of this growth will occur in the four southeastern counties, which comprise about one-third of the state's land base.



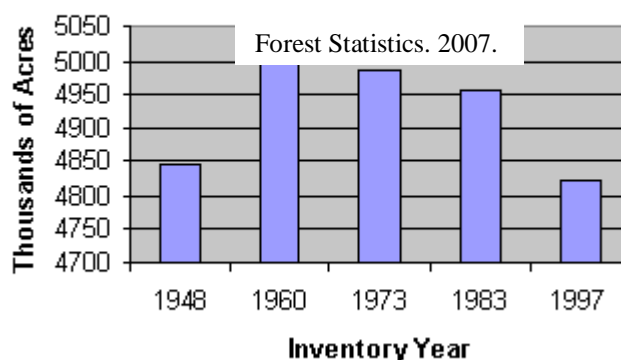
New Hampshire's Changing Landscape, 2005.

## Forests:

Forests – New Hampshire is the second most forested state in the United States.<sup>160</sup> The state is 84% forested or 4.8 million acres. Since 1983, NH has lost 134,500 acres of forested land and now has about the same coverage as it did in 1948.

Every year, New Hampshire loses about 17,500 acres of forestland to development. The large tracts of forests in the White Mountains are protected by the Federal Government, but it is the remaining large forests south of the White Mountains that are in danger. These southern forests have some of the state's best forest soils. However, they are becoming fragmented because they are in the direct path of development.

### New Hampshire Forest Land Area



Forest Cover - Forest clearing in NH began in the 1700's due to European settlement, and changed the landscape. By 1983, NH saw its highest percentage of forested land (87%) since the 1700's. The U.S. Forest Service estimated in 1997 that forest cover in New Hampshire had dropped to 84% of the state's area, a loss of

<sup>159</sup> New Hampshire's Changing Landscape, 2005.

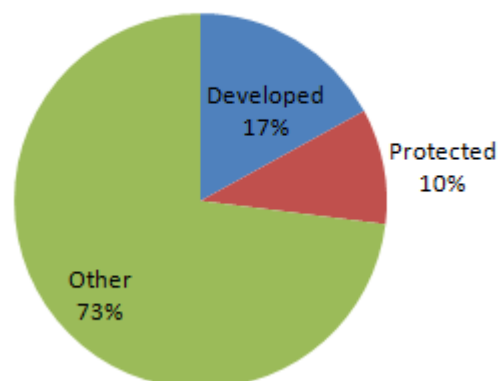
<sup>160</sup> Forest Statistics. 2007.

163,400 acres in 14 years. Estimates based on 2001 satellite data indicate New Hampshire had dropped to 81.1% forested.<sup>161</sup>

Thirteen municipalities located along the main transportation corridors have seen a dramatic change in forest cover and now have less than 50% of land forested.

Future Forest Cover Trends - Due to current population trends, it is predicted that NH's forest cover will decline to 79.1% by 2025. This means that roughly 112,000 acres or 175 square miles of forest cover will be lost. About 85 towns will lose more than 500 acres of forestland by 2025, while 20 towns, all in the southeast and the Lakes Region, will lose more than 1,000 acres.<sup>162</sup> Although NH has regained forest cover since European settlement, today's forests are being converted into buildings and roads, not farmland. This makes it hard to re-forest land without tearing down building and ripping up roads.

### Sandy, Gravelly Soil



Forest Block Size - A “forest block” is a continuous area of forest. The parcel does not have a road through it or house lot scattered around. A 500-acre block is big enough to support significant wildlife habitat, protect water quality, and allow some economic forest management.<sup>163</sup> There are many blocks of this size in NH, but in the Seacoast, Merrimack Valley and Lake Regions, blocks of this size are becoming sparse. Blocks of at least 5,000 acres or more are required for sustainable forest management and ecological significance, and can still be found in the Monadnock Highlands; but the majority are in the White Mountains and Coos County, which have low population densities.

Important Forest Soils – Forest soils are vital to productive forests. NH's top forest soils are largely unprotected in all regions of the state. Most of the best forest soils are found in the southeastern part of the state, specifically in the lower Merrimack River Valley, the Seacoast, and along the Route 16 corridor.<sup>164</sup> This part of the state is also developing fastest. Each year, half of NH's sawlogs produced are white pine (worth about \$20 million) and the most productive white pine stands are on

<sup>161</sup> New Hampshire's Changing Landscape, 2005.

<sup>162</sup> New Hampshire's Changing Landscape, 2005.

<sup>163</sup> New Hampshire's Changing Landscape, 2005.

<sup>164</sup> New Hampshire's Changing Landscape, 2005.

sandy, gravelly soils. Sandy gravelly soils are only 5% of the state's land area; 17% of these soils are already developed and only 10% are protected.<sup>165</sup>

Timber - New Hampshire's timberland has a variety of owners. The majority of NH's timberland is privately owned (3.58 million acres or 77%) by business concerns or family forest owners. Local, State, and Federal governments own just over 22% or 1.08 million acres of New Hampshire's forest.<sup>166</sup>

New Hampshire's forest-based manufacturing consists of timber harvesting and associated trucking, and primary and secondary manufacturing. Timber is harvested and made into veneer logs, sawlogs, pulpwood, firewood, or processed into wood chips or other products. Another primary manufacturer is the wood energy industry which takes whole tree wood chips or residues such as chips and sawdust from sawmills and burns the wood material in a boiler to produce steam and then electricity.<sup>167</sup>

The sawmill and wood energy industries are the primary users of timber in NH, although this was not always the case. The pulp and paper industry once used to dominate the timber industry. In 2000, International Paper (IP) purchased the state's largest landowner, Champion International. IP promptly entered into negotiations with Lyme Timber Company and the State on a huge transaction that would end up with close to 150,000 acres of working forests under easement with the NH Division of Forests and Lands, and 25,000 acres owned in fee by the state's Department of Fish and Game – a natural, forever-wild tract secured by The Nature Conservancy and the Trust for Public Land.<sup>168</sup> This helped keep forested lands forested while at the same time keeping large tracts of land whole.

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<sup>165</sup> New Hampshire's Changing Landscape, 2005.

<sup>166</sup> The Economic Importance and Wood Flows from New Hampshire's Forests, 2007.

<sup>167</sup> The Economic Importance and Wood Flows from New Hampshire's Forests, 2007.

<sup>168</sup> Foster, Charles, 2009.

## Farmland:

Although New Hampshire farmers have been innovative in ways to maintain the farm (farmers' markets, pick your own), NH continues to lose farmland to developmental pressures, at a rate of five square miles per year. In just five years (1997–2002), Rockingham County lost 1/3 of its productive cropland and the number of farms in the state dropped 14% to 3,363.<sup>169</sup> From 1997 to 2002, farmland dropped from 463,383 acres to 445,000 acres.

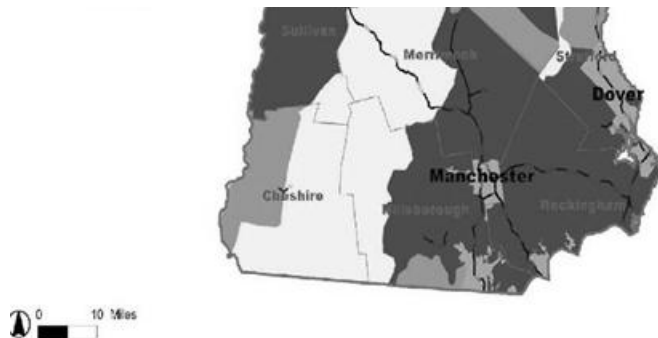
Although total acreage is down, the average size of a farm is on the rise; between 1997 and 2002 it went from 118 to 132 acres (12% difference). Market Value of Production went down 7% from \$155,698,000 in 1997 to \$144,835,000 in 2002. However, market value of production per farm went up 9% to \$43,067 in 2002, from \$39,638 in 1997.

NH's best farmland is unprotected. Prime agricultural soils are a precious commodity in New Hampshire, comprising only about 5.6% of the state, and are mostly limited to the Connecticut and Merrimack River Valleys and the Seacoast (where development is the highest).<sup>170</sup> Cropland conversion was the highest in Rockingham County (34%) and significant in Cheshire, Hillsborough and Sullivan Counties (19%). This loss totaled almost 11,000 acres in only over five years. Most regions with prime agricultural soils have the smallest amount of farmland protection.

This graph shows the diverse crops NH can produce, on its limited agriculture lands.



Cultivating Success on New Hampshire Farms. 2006.



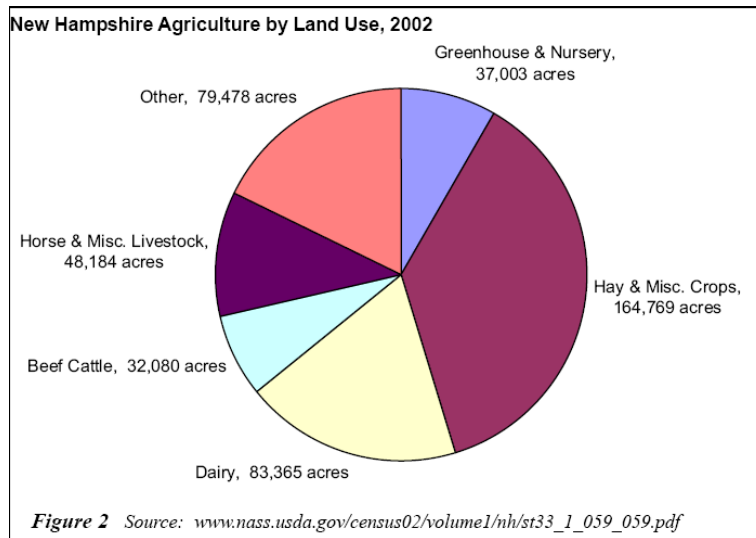
<sup>169</sup> New Hampshire's Changing Landscape, 2005.

<sup>170</sup> New Hampshire's Changing Landscape, 2005.



## Nature Close to Home:

State Parks and Forests - State Parks are found throughout New Hampshire. Every acre of state parks and forests is classified into one of four major land use categories: (1) agricultural lands, (2) conservation easements, (3) forestry lands, and (4) recreation lands.<sup>171</sup> From here forested lands are



Cultivating Success on New Hampshire Farms. Fall 2006

further classified into key resource areas, these can vary from natural values or dominant features such as mountain tops, key sources of wildlife food and cover, scenic areas, cultural and natural heritage features, and water resources. This further classification of forested lands is a way to conserve the highest and best forestland values for public benefit.

These parks and forests allow visitors to partake in the following activities swimming, hiking, camping, picnicking, and hunting but some may also allow timber management, water resource protection and wildlife habitat management. Also, State Forests are used for demonstrations of sound forestry practices, public access for forest-based recreation, protection of threatened and endangered species, preservation of historic resources and rural culture, and conservation of biological diversity.<sup>172</sup> An example of the diverse uses of states land is Bear Brook State Park, in the towns of Allenstown, Deerfield, Candia and, Hooksett. The park offers developed and undeveloped recreation (e.g. woods roads and skid trails for hiking), wildlife and natural preserves, and timber management areas.

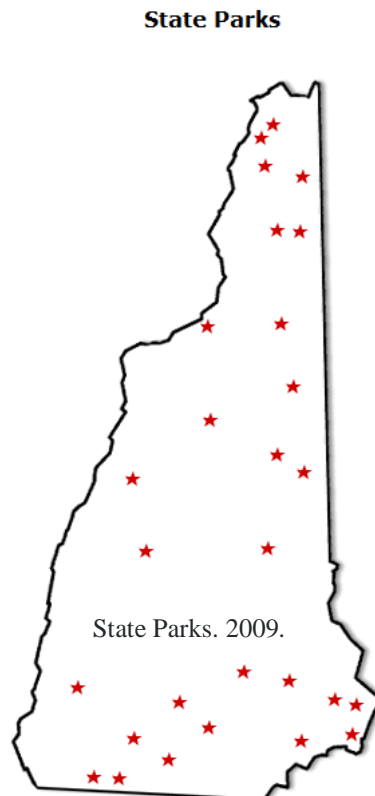
<sup>171</sup> State Owned Reservations. 2007.

<sup>172</sup> State Owned Reservations. 2007.



There are 72 state parks, campgrounds, waysides and natural areas, and historic sites scattered throughout the state. (The map below shows some locations)

Bureau of Trails (BOT) – The BOT manages motorized trails for snowmobiling and ATV use, and non-motorized trails for hiking, biking, cross-country skiing, dog sledding, and equestrian use. They



also supervise the management of Jericho Mountain State Park and help organizations and municipalities with the creation of trails on both public and private lands. The BOT manages 250 miles of wheeled off-highway recreational vehicle trails, over 300 miles of state owned rail-trails, and 6,830 miles of snowmobile trails.<sup>173</sup>

#### State Owned Reservations

State lands under the jurisdiction of the Department of Resources and Economic Development (D.R.E.D.) are referred to as "reservations".<sup>174</sup> Reservations are defined as state forest, state park, natural area, historic site, geologic site, recreation trail, memorial area, fire tower, wayside

<sup>173</sup> About the Bureau of Trails. 2007.

<sup>174</sup> State Owned Reservations. 2007.

area, heritage park, resource center, agricultural area, state forest nursery, fish pier, administrative facility, information center, demonstration forest, certain islands, and lands under lease to the department. There a total of 201,513 acres of land in reservation status, 221 properties in 145 towns distributed throughout the state and the average size is 772 acres.

## **Land Conservation:**

Since 1998, New Hampshire has conserved nearly 300,000 acres. State, municipal and nonprofit protected lands have all increased, while federal holdings have remained essentially the same.<sup>175</sup> The majority of the conservation has taken place in the northern part of that state where the White Mountain National Forest is located. This National Forest is 46% of all protected land in the NH, totaling 727,621 acres. A total of 36% of the North Country is non-federal, up from 18% in 1998.

Since 1998, NH has protected 290,029 acres. NH now has 1,568,033 acres of protected land. In other terms, 27.7% of the state's land area is now protected, up from 22.3% in 1998. One project, the Connecticut Headwaters in Coos County contributed to the protection of 171,326 acres, or about 62% of the increased protected acreage.<sup>176</sup>

The southern half of the state has had about 56,285 acres protected since 1998. Compare this to the northern half of the state where 75% of all protected land (1.16 million acres) is located, more work needs to be done in the southern area.

Towns have also begun to increase their percentage of conservation land since 1998. However, 110, or nearly half of all of NHs towns, still have less than 10% of their land conserved.

## **Land Use & Land Conservation - Challenges**

### **Climate Change**

Climate change is difficult to predict and different species of trees and plants will react in different ways. Some species may adapt to temperature rises, while others may sicken, expire, or

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<sup>175</sup> New Hampshire's Changing Landscape, 2005.

<sup>176</sup> New Hampshire's Changing Landscape, 2005.

travel north due to climate changes. It is probable that structure of New Hampshire forests will be altered.

In general, ecological models predict that warmer temperatures and extreme weather events associated with climate change would move optimal conditions for the growth of northern hardwood forest species northwards by at least 100-300 miles by the end of the next century.<sup>177</sup> If the magnitude of climate change that is predicted comes to fruition, species of trees will be altered and widespread mortality will occur in the forests of the White Mountains. Also, there will be an increase of pest and pathogen outbreaks, flooding, and wind damage. These can/will kill a large number of trees and forests.

Extreme events - periods of winter thaw followed by intense cold, spring and summer drought, and summer heat stress - have been associated with diebacks and declines in several northern hardwood species in New England in the last 100 years.<sup>178</sup> Severe weather events can harm many species of trees, especially sugar maple, ash and yellow birch, and all northern hardwoods. These species may decline rapidly or even die-out. Industries that are dependent on these trees like maple syrup industry (\$3 - 3.5 million industry), may collapse. Forest products are the fourth largest employer in New Hampshire and third in terms of revenue.<sup>179</sup> If these industries falter, the gross revenue for the state will be affected.

Sugar maples, a source of brilliant fall leaf colors, may sicken, decline and disappear, or their geographic distribution may migrate north.<sup>180</sup> As trees sicken or die off, radiant fall colors will dull and become browner, trees will drop leaves early, and other less colorful southern species move north.

## Land Fragmentation

New Hampshire's development patterns have produced fragmented lands and loss of important forest lands, wildlife habitat, and other sensitive environmental areas. Many New Hampshire communities have found it is difficult to address the problems of land fragmentation through changes in a master plan or land use regulations.<sup>181</sup>

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<sup>177</sup> Global Climate Change and its Impact on New Hampshire's Forests and Timber Industry. 2008.

<sup>178</sup> Global Climate Change and its Impact on New Hampshire's Forests and Timber Industry. 2008.

<sup>179</sup> Global Climate Change and its Impact on New Hampshire's Forests and Timber Industry. 2008.

<sup>180</sup> Global Climate Change and its Impact on New Hampshire's Forests and Timber Industry. 2008.

<sup>181</sup> Merrill, Lorraine, ed. 2000.

## Leapfrog Development

Leapfrog development is usually defined as rapid growth, usually residential, that occurs in rural areas adjacent to major roadways, especially interstate highways.<sup>182</sup> Leapfrog development is an even more inefficient use of land than sprawl because the development leaps over available land and uses up large tracts away from current development. It moves to distant and isolated areas because the land is cheaper. This form of growth, particularly residential, is occurring in many rural towns in NH. It raises concerns about the community's ability to provide municipal services (e.g., police, fire, roadway maintenance, education), as well as cope with the possible impacts on the environment and the character of the community.<sup>183</sup>

## Funding

The New Hampshire Land and Community Heritage Investment Program (LCHIP) makes matching grants to NH communities and non-profits to conserve and preserve New Hampshire's most important natural, cultural and historic resources. The December 1, 2008 grant round was suspended until further notice due to shortfalls in the state budget of \$250 million due to the economy. LCHIP will have to return a portion of the money in its grant-making fund to help the state fill that gap in the budget.<sup>184</sup>

This is just one program that had to cut its grants, but there are more out there that are not going to receive funding to continue the land conservation efforts. However many organizations keep a positive outlook, the NH chapter of the Nature Conservancy thinks that,

It is safe to assume that there will never be sufficient funding for land protection strategies to acquire conservation easements or ownership for all 150,000 acres of unprotected Conservation Focus Areas (areas that are prime for conservation). Given growth trends, it is also a reasonable assumption that unprotected areas in the coastal watersheds will face development pressure in the near future. An important component to this Plan's implementation strategy, therefore, is to provide guidance and tools to limit the impacts of development that does occur in Conservation Focus Areas, with the goal of maintaining important conservation values.<sup>185</sup>

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<sup>182</sup> Merrill, Lorraine, ed. 2000.

<sup>183</sup> Merrill, Lorraine, ed. 2000.

<sup>184</sup> Turcott, Deborah. 2008.

<sup>185</sup> A Land Conservation Plan for New Hampshire's Coastal Watershed. 2006.

They have specific area where they would like to focus conservation but do realize that these areas may not be all saved. They do however want to be proactive and limit the number of negative impacts that may occur in these areas do to development.

**Biodiversity** - The biodiversity of New Hampshire is vulnerable to degradation due to ongoing development. For example:

- Biodiversity at all levels has already been affected negatively in New Hampshire. 11 species of animals and 13 species of plants have been extirpated from the state.<sup>186</sup> Pine barrens, which is a natural community, have been declining. Of four pine barrens that were found in the state, only one remains.<sup>187</sup> NH has been going through a reforestation period since colonial settlement but areas of undisturbed habitats including grasslands, mature forests, and wetlands are lacking.
- Of the top 10 environmental risks ranked by the New Hampshire Comparative Risk Project, 6 risks are related to loss, degradation, or alteration of land or water habitats.<sup>188</sup> This is particularly alarming because the study was very broad and was not aimed at biodiversity, land conservation, or water health.
- There are 22 plant species, 30 animal species, and 25 natural community types in New Hampshire that are considered globally rare or imperiled.<sup>189</sup>
- Undisturbed aquatic ecosystems in the state are very rare. Aquatic ecosystems are under particular pressure due to ongoing hydrologic alteration and shoreline development.<sup>190</sup>

The threats to biodiversity vary throughout New Hampshire. Some features are relatively secure and others are severely and immediately endanger. Reflecting a pattern common throughout the United States, many of the areas in New Hampshire that contain the greatest concentrations of rare species and natural communities are also the most vulnerable to development and habitat alteration.<sup>191</sup> Conservation can help stop the destruction of these natural communities, if it is done correctly.

Though conservation lands compose approximately 20% of the land area in New Hampshire, the current system of conservation lands in New Hampshire does not appear to provide comprehensive, long-term protection of biodiversity at the species, natural community, or landscape

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<sup>186</sup> NH Living Legacy. 2004.

<sup>187</sup> NH Living Legacy. 2004.

<sup>188</sup> NH Living Legacy. 2004.

<sup>189</sup> NH Living Legacy. 2004.

<sup>190</sup> NH Living Legacy. 2004.

<sup>191</sup> NH Living Legacy. 2004.

levels.<sup>192</sup> “Land should be evaluated and conserved if it meets certain criteria and should contribute to the existing ecosystem. As a way to evaluate the effectiveness of the current system of conservation lands, we used existing databases housed at the Natural Heritage Inventory and the Fish and Game Department to determine what portion of known occurrences of rare species and natural communities occur on conservation lands.”<sup>193</sup> The results for conserved lands where as follows:

Close to 60% percent of classified rare natural communities

Nearly three-quarters of known rare plants

Over three-quarters of known rare vertebrate species

Over 90% of known rare invertebrate species

While not all conservation lands or groups of species have been completely surveyed and the databases do not contain all existing information, these results suggest a serious and immediate need to enhance biodiversity conservation practices in the state.<sup>194</sup> Most plants, animals, or natural communities will not be able to survive if there are only two documented occurrences. A conserved parcel of land needs to have more sightings for a species to survive and procreate.

There are conserved areas that do contain many species, natural communities, and landscape types. There are however large portions of densely forested lands that are encountering low population growth levels. The establishment of a system of ecological reserves, in concert with good management of commercial timberlands, wildlife populations, and watersheds, is a vital step in protecting the biological diversity of New Hampshire over the long term.<sup>195</sup> However, these tools need to be implemented.

## **Land Use & Land Conservation - Opportunities**

### **Climate Change**

Certain forest areas with specific tree types may benefit from global climate change. Certain trees and forests may flourish due to longer growing seasons, more abundant carbon dioxide, and

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<sup>192</sup> NH Living Legacy. 2004.

<sup>193</sup> NH Living Legacy. 2004.

<sup>194</sup> NH Living Legacy. 2004.

<sup>195</sup> NH Living Legacy. 2004.

wet summers.<sup>196</sup> Some trees like the white pine, red oak (two very profitable timber species in New Hampshire), and some other species may thrive and see a population increase.

## Conservation Options for NH Landowners

The Society for the Protection of NH's Forests offers an array of options for land conservation and protection.

### **If you wish to relinquish ownership of your land while protecting it for future generations, your options include:**

- Gift of Land – The easiest way to protect your land is by giving in to the Forest Society, a land trust, or conservation commission. This method offers long-term protection for the land while relieving you of all responsibilities of ownership, including property taxes and management.<sup>197</sup> Wildlife habitat, watershed protection, public use, timber production and scenic value are some of the ways in which these lands are managed.
- Gift by Will - You may continue to own, manage and enjoy your land during your lifetime, while ensuring the conservation of the property thereafter.<sup>198</sup> It is advised to discuss this with the agency that will be receiving the land, so that they will be expecting it.
- Gift of Remainder Interest -This type of conveyance, sometimes called “life rights” allows you to donate your property to the conservation agency, but continue to use it during your lifetime with peace of mind knowing that it will be permanently protected.<sup>199</sup>

### **If you wish to retain ownership of your land and protect it for future generations, your options include:**

- Conservation Easements - A conservation easement is a permanent legally binding agreement between a landowner and a conservation organization that restricts the use of the land to protect its significant natural features.<sup>200</sup> When a conservation easement is in place, it can still be used for agriculture, forestry, recreation, and wildlife habitat. It cannot be used for development or commercial and industrial activities. Property taxes must still be paid by the landowner. The easement stays with the land forever, even when it is bequeathed or sold. The easement is custom-tailored between the landowner and the conservation organization and may allow you to build and maintain certain roads or structures that serve uses allowed by the easement.<sup>201</sup> The organization the hold the easement has the right to come and view the land to ensure the terms of the easement is being upheld.

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<sup>196</sup> Global Climate Change and its Impact on New Hampshire's Forests and Timber Industry. 2008

<sup>197</sup> Protecting Your Land. 2007.

<sup>198</sup> Protecting Your Land. 2007.

<sup>199</sup> Protecting Your Land. 2007.

<sup>200</sup> Protecting Your Land. 2007.

<sup>201</sup> Protecting Your Land. 2007.

- **Stewardship in Perpetuity** - As a holder of the conservation easement, the conservation organization agrees to monitor and enforce the terms of the easement to ensure that the conservation values are protected in perpetuity.<sup>202</sup> When the land is first placed under the easement, a staff member will come and survey the land, so they know what is currently on the land. The land will then be checked annually for IRS purposes.
- **Stewardship Funds** – Creating and preserving positive relationships and communication is key to preventing problems. Every time the Forest Society acquires a conservation easement, it seeks a one-time financial contribution to add to the stewardship fund that enables the Society to fulfill its perpetual stewardship responsibilities.<sup>203</sup>

**If you plan to retain ownership of your land and want to consider permanent conservation, your options include:**

- **Deed Restrictions** - A deed restriction can limit or prohibit future uses of the property, for example, construction of new buildings.<sup>204</sup> Compared to conservation easements, deed restrictions can be easier and less time consuming but sometimes the restrictions can be forgotten or ignored overtime.
- **Mutual Covenants** - Covenants are not a permanent means of conservation since they run out, and they can be nullified by subsequent agreements of all owners or by the landowners' failure to enforce the covenants.<sup>205</sup> The landowner and surrounding neighbors may want to protect unique or special features of the neighborhood by swapping mutual covenants. The covenant (a deed restriction) can be enforced by choice of current or future landowners and only for a set time period.
- **Current Use Assessment** - If a piece of property meets the required criteria, the landowner can qualify for reduced property tax under the Current Use Tax Assessment Program under NH RSA 79-A.<sup>206</sup> Some of the required criteria are undeveloped parcels of field, farm, forest and wetland of 10 acres or more, and certain smaller parcels. This is a property tax adjustment that encourages landowners to keep their land undeveloped but it is not permanent.

The current use program in New Hampshire is a proactive way for land conservation. It makes keeping land undeveloped easier for landowner because they are being taxed as a wood lot or farm instead of at real estate value. It is a voluntary program that allows landowners to register land that is ten acres or larger by applying to the municipal assessor by April 30th. This program may make it affordable for the landowner to keep the land in productive forest, farm, or other open space. Today, nearly 3 million acres (almost 60% of the state's taxable private land) are enrolled in the program by some 27,000 landowners; and contrary to popular notions, the average family with land in current use has below the average median household income.<sup>207</sup>

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<sup>202</sup> Protecting Your Land. 2007.

<sup>203</sup> Protecting Your Land. 2007.

<sup>204</sup> Protecting Your Land. 2007.

<sup>205</sup> Protecting Your Land. 2007.

<sup>206</sup> Protecting Your Land. 2007.

<sup>207</sup> Frequently Asked Questions - Current Use. 2009



- Option to Purchase – This allows a conservation organization the right to buy your land or conservation easement but gives the organization time to raise the money. When the option is in place, the landowner cannot sell to another buyer unless the organization does not raise the money to purchase the land by the set date.
- Right of First Refusal – If a landowner places a right to first refusal on the land; it allows the conservation organization to match any offers on the property. When a landowner gets an offer, the conservation organization has the right to match the price and purchase the land.
- Tax Advantages – When land is protected, there are many income and estate tax benefits. The landowner should consult with your own qualified legal and financial advisors to determine what benefits you would receive.<sup>208</sup>

## Funding Sources for Land Conservation

NH has many different funding sources available for land conservation of all kinds and here are a few:

### Open Space Conservation – general

NH Land and Community Heritage Investment Program (LCHIP)

Land and Water Conservation Fund

NH Dept. of Transportation, Transportation Enhancement Program

National Fish and Wildlife Foundation

### Coastal Land

NH Coastal Program Competitive Grants

Gulf of Maine Council

Coastal and Estuarine Land Conservation Program

### Forest Land

Forest Legacy Program

National Forests Foundation

### Agricultural Land

Farm and Ranchland Protection Program

Grassland Reserve Program

(A complete list can be viewed at this website: <http://clca.forestsociety.org/pdf/funding-sources.pdf>)

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<sup>208</sup> Protecting Your Land. 2007.

## Regional Planning Commissions

Smaller municipalities have been collaborating with Regional Planning Commissions (RPCs) to produce Open Space Plans. These plans located and categorize existing open spaces and protected lands in the community. From there, they analyze current undeveloped land and establish their priority for open space preservation. Areas of interest include some of the following: sensitive plant and animal habitats, wetlands, water resources, potential sources of pollution, unfragmented lands, and historic features, among many others.

### Encouragement of Private Sector Open Space Donations and Planning Assistance

The attainment of open space in New England has come about with the increasing assistance of private-public partnerships. These partnerships should be encouraged as well as an invested interest in land donation from the private sector. In regards to continued donations, landowners should be notified of the benefits that come with land donations (i.e. reductions in a variety of federal, state and local taxes).<sup>209</sup> Fee simple, less than fee simple, donation with a reserved real estate, donation of an undivided interest in the land and donation by bequest are the five most common methods of donation.

Local Conservation Commissions should continue to work with non-profit organizations and private sector groups to encourage land donations or conservation easements.<sup>210</sup> The Society for the Protection of New Hampshire Forests maintains everlasting ownership and management for multiple conservation benefits on the land that is gifted to them. As mentioned above, conservation easements are a popular method of land protection but rights to exercise more intensive uses such as residential, commercial development or mining are given up when the easement takes effect. The Society, Conservation Commissions, and Regional Planning Commissions should work with the public and private spheres to raise the awareness of these options.

### Creation of a Regional Open Space District

A collaborative Regional Open Space District (ROSD) can be created when towns look beyond their borders to create open space; the concept is similar to watershed districts. They could be incorporated with various efforts of towns, counties and voters. Joint funding, staff representation, and implementation should be explored for towns that share multi-municipal open

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<sup>209</sup> The Nashua Regional Open Space Strategy. 2005.

<sup>210</sup> The Nashua Regional Open Space Strategy. 2005.

space as well as for the ROSD in general. This would help conserve open space and look at biodiversity across regions rather than just inside town boundaries.

Regional Planning Commissions should work with local Conservation Commissions, municipalities, and private entities to cultivate a Regional Open Space District. They could also work with the Conservation Commissions in attempting to solicit funds from state sources where available. Land grants and gifts should also be accepted in these Districts if possible.<sup>211</sup> The Districts may have to utilize land conservation trusts services in order to obtain open space.

#### Continued Encouragement of Inter-Municipal Cooperation in Land Protection

Many towns work outside their boundaries without thinking about it. There are a number of current river corridors, watershed, and regional studies being conducted over these boundaries so it is not a far stretch to look at open space and land conservation the same way. It is vital that those municipalities with interests in land protection work together to accomplish those goals.<sup>212</sup>

A new inter-community relationship along with a regional sense of ownership can be created if multi-municipal parcels are recognized and obtained. When looking into the future to create plans for land conservation, municipalities should contact their neighboring towns, the RPC, and the local Conservation Commissions.

#### Promote Public Awareness of Land Protection

Citizens must be able to comprehend the benefits of land protection in order to gather local and regional support for protection efforts and plans. Public education is a key factor in the sound management and protection of natural resource acquisition and protection plans.<sup>213</sup> In order to have, educated public, they need to know about local and regional natural and historic resources, current efforts of the Conservation Commissions, and the importance that surrounds a of sensible resource management plan.

The Regional Planning Commissions, Conservation Commissions and municipalities should collaborate to hold educational public meetings concerning the benefits for now and future generations of land protection and open space in the region. Identify and develop strategic partnerships with the following: recreational, educational, health and environmental organizations as

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<sup>211</sup> The Nashua Regional Open Space Strategy. 2005.

<sup>212</sup> The Nashua Regional Open Space Strategy. 2005.

<sup>213</sup> The Nashua Regional Open Space Strategy. 2005.

well as major landowners.<sup>214</sup> This would help establish a good relationship with the constituents of the region and encourage a supportive environment surrounding land conservation and protection.



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<sup>214</sup> The Nashua Regional Open Space Strategy. 2005.

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Mountain/Lake:

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### Final Picture

Lake Massabesic:

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# **Land Use & Conservation in Rhode Island**

## **Trends, Challenges, & Opportunities**

**by Brett Richardson**

**April 2009**



## EXECUTIVE SUMMARY

### Trends

- Low-density development and the loss of open space (“sprawl”) occurred rapidly in Rhode Island from the 1970s through the mid-2000s. Rhode Islanders responded by successfully doubling the pace of land conservation in the last 15 years.
- Rhode Islanders have increased organizational capacity through grassroots land trusts and statewide non-profit organizations to advance conservation; collaboration among Rhode Island’s state agencies, non-profit organizations, land trusts, and municipalities is an established and ongoing tradition.
- Since 2000, Rhode Islanders have approved state and municipal conservation bond initiatives totaling more than \$170 million, which have effectively leveraged federal and private monies.
- Over the last two decades, state agencies and municipal governments have expanded, improved, and integrated conservation planning and investment policies.
- Development pressure on Rhode Island’s open spaces has decreased for the short term, with the economic downturn and real estate market slump of 2007-2009.

### Challenges

- The future use of approximately 361,000 undeveloped acres in Rhode Island remains uncertain.
- The State of Rhode Island currently has a budget deficit and state agencies face reduced staff and operating resources, while private funding is likely to decrease in the short term for non-profit conservation organizations and land trusts.
- As of 2008, more than 145,000 acres have been conserved in Rhode Island by state and federal agencies, non-profit organizations, land trusts, and municipalities; but only fledging efforts exist to date among the varied landowners to coordinate and integrate management strategies for the state’s patchwork of open spaces.
- The effects of global climate change will complicate management of Rhode Island’s conservation lands for ecological, economic, and social benefits.

### Opportunities

- The current economic downturn has reduced the market value of land, and open space can generally be acquired at the lowest prices in some years.
- Building on the successful Historic Tax Credit, the opportunity exists for the State of Rhode Island to incentivize new growth on lands prioritized for development in the State Land Use Plan of 2006; target state infrastructure investments to urban places; and give preference for state grants to municipalities whose land use policies and ordinances direct future growth to already-developed areas.
- Collaboration among Rhode Island’s conservation entities may be further institutionalized to leverage expertise and organizational capacity, make the best use of scarce funds, and integrate management strategies for the state’s open spaces and working lands.
- The State of Rhode Island should undertake renewed green infrastructure planning that, building from the 1994 Greenways Plan, establishes long term goals for forest, farm, and recreation land conservation within the state’s remaining 361,000 acres of undeveloped land, and emphasizes input from and collaboration with private and non-profit partners.
- Collaborative management of interstate resources, such as Narragansett Bay, Blackstone River Valley, and the “Borderlands” forest resource, and development of an interconnected open space and trail network throughout New England, afford Rhode Island an important role in any regional conservation strategy.



## INTRODUCTION

Land conservation has increased in Rhode Island during the last 15 years in response to threats to the state's forest, farms, and public open spaces. Looking forward, priorities to expand conservation in Rhode Island include keeping forests as forests, keeping farmland in farms, bringing nature close to home, and expanding interstate collaboration. This paper describes Rhode Island land use and conservation trends in recent decades and identifies current conservation challenges. Opportunities to expand land conservation are then framed within five strategies:

- 1) Advance municipal land use planning;
- 2) Renew state greenways planning and investment;
- 3) Institutionalize regional collaboration among state agencies and private organizations;
- 4) Engage Rhode Island's youth in the outdoors; and
- 5) Enhance interstate cooperation.

Implementing these strategies will enhance the ecological, economic, and social benefits that Rhode Island's working lands and public open spaces provide, and secure the state's natural heritage for future generations.

Rhode Island is the smallest of the United States, and contains approximately 1,200 square miles of land, or roughly 770,000 acres. In 2005, approximately 205,200 acres were developed.<sup>215</sup> By 2006, 141,500 acres were permanently conserved through fee acquisition or conservation easements. The future use of 361,000 undeveloped acres in Rhode Island, or roughly 47 percent of its land area, remains uncertain.<sup>216</sup>

Roughly 60 percent of Rhode Island, or 401,280 acres, is forested.<sup>217</sup> This diverse and valuable resource includes the "Borderlands" forest which stretches over Rhode Island's western border with Connecticut and forms the *largest* forested system between Boston and Washington, D.C.<sup>218</sup> Tree canopy covers roughly one third of Rhode Island's urban areas.<sup>219</sup> Another 60,000 acres in Rhode Island are productive agricultural lands.<sup>220</sup>

Rhode Island's borders also contain approximately 137 square miles of inland surface water.<sup>221</sup> The Blackstone River, which flows from Massachusetts to its mouth in Providence, is an

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<sup>215</sup> Rhode Island Department of Administration 2006

<sup>216</sup> Ibid

<sup>217</sup> Rhode Island Department of Environmental Management 2008

<sup>218</sup> The Nature Conservancy: <http://www.nature.org/wherewework/northamerica/states/rhodeisland>

<sup>219</sup> Nowak and Greenfield 2008

<sup>220</sup> USDA National Agriculture Statistics Service 2007

<sup>221</sup> DEM Forestry Asset Plan 2001

important resource with interstate and federal management objectives. The state's Atlantic shoreline stretches 420 miles, including offshore Islands.<sup>222</sup> Narragansett Bay forms a portion of Rhode Island's border with Massachusetts and juts inland for 28 miles. The state also contains 90,000 acres of federal and state regulated wetlands.

Rhode Island is the smallest state in the U.S. geographically, and it boasts the second highest population density nationwide, with 1,003 persons per square mile.<sup>223</sup> According to the State of Rhode Island's State Land Use Plan, *Land Use 2025*, "75 percent of the population resides in a 40-mile long urban/suburban corridor along the shores of Narragansett Bay and in the valleys of the Blackstone and Pawtuxet rivers. This corridor contains nearly all of the public infrastructure, major transportation routes, and institutional and cultural centers."<sup>224</sup>

While not as wealthy as the nearby New England states of Connecticut, Massachusetts, and New York, Rhode Island's per capita income places it as one of the more affluent states in the U.S. Rhode Island has ranked 19<sup>th</sup> or higher in per capita income since 1990, and 17<sup>th</sup> of 50 in 2007. Rhode Islanders have generously invested in conservation.

Rhode Island's citizenry responded to the rapid development of the state's forests, farms, and open spaces in recent decades by developing human and organizational conservation capacity. Current conservation challenges include protecting prime agricultural soils, forested landscapes, and recreation areas; managing conservation lands for multiple uses and benefits; and creating greenways that link the state's urban and rural conservation lands into an interconnected system. Strategic planning, collaboration, and investment within and beyond state borders will enable Rhode Islanders to seize continuing conservation opportunities.

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<sup>222</sup> Rhode Island Department of Administration and Department of Environmental Management 2003

<sup>223</sup> U.S. Census: [www.factfinder.census.gov](http://www.factfinder.census.gov)

<sup>224</sup> Rhode Island Department of Administration 2006

## MULTIPLE BENEFITS OF RHODE ISLAND CONSERVATION LANDS

Rhode Island's forest, farm, and recreation lands afford ecological, economic, and social benefits. The state's working lands and public open spaces protect Rhode Island's wildlife habitat, water quality, and air quality, benefit the state's economy and natural resource-based livelihoods, and promote active lifestyles, public health, and quality of place.

**Ecological:** Rhode Island's working and public lands provide habitat for a diversity of wildlife, fish, and plant species. Forty-five common species of mammals, 165 nesting bird species, and 36 species of native freshwater fish are common in the state. Migrating and wintering waterfowl, neo-tropical migrants, butterflies, dragonflies, and fish are found seasonally in Rhode Island. The state includes habitat for rare plants, and diverse forest communities that include hardwood species and pitch-pine stands.<sup>225</sup>

Rhode Island's forests and open spaces protect the state's water quality and air quality. The state's water quality is closely related to its land use patterns. As developed areas and impervious surfaces expand, water quality is degraded. Forests and wetlands filter Rhode Island's lakes and streams, and provide groundwater recharge to refill its aquifers.<sup>226</sup>

Rhode Island's forests also filter air pollution, and help sequester greenhouse gasses to mitigate global climate change. Rhode Island's urban forest canopy alone contains 17.5 million trees, which store about 3.3 million metric tons of carbon. The urban forest resource removes approximately 110,000 metric tons of carbon annually, and 2,660 tons of air pollution.<sup>227</sup>

**Economic:** Rhode Island's working and recreation lands contribute to the state's economic vitality. The agricultural sector is valued at over \$100 million.<sup>228</sup> According to the DEM's Division of Agriculture, "Rhode Island agricultural revenue has risen from \$38 million in 1980 to \$141 million in 1993. This increase has a still greater impact when considering multiplier effects throughout the economy."<sup>229</sup> The number of farms in Rhode Island has stabilized at around 850 farms totaling 60,000 acres.<sup>230</sup>

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<sup>225</sup> Rhode Island Department of Administration and Department of Environmental Management 2003

<sup>226</sup> Rhode Island Department of Administration and Rhode Island Department of Environmental Management 2005

<sup>227</sup> Nowak and Greenfield 2008

<sup>228</sup> Rhode Island Department of Environmental Management 2008

<sup>229</sup> Rhode Island Department of Environmental Management, Division of Agriculture:  
<http://www.dem.ri.gov/programs/bnatres/agricult/index.htm>

<sup>230</sup> U.S. Department of Agriculture National Agriculture Statistics Service 2007

The economic value of the forestry sector in Rhode Island has grown over the last two decades. The state's annual timber payroll and the value of timber and allied products in Rhode Island increased from approximately \$69.9 million in 1985 to \$118.8 million in 2000.<sup>231</sup> Rhode Island's forest products industry employs more than 2,000 persons, or 2.7 percent of the state's manufacturing workforce, with a payroll of \$60 million.<sup>232</sup>

In addition to natural-resource based livelihoods, outdoor recreation and related tourism revenues contribute to Rhode Island's economy. Six million visitors recreate in Rhode Island annually, including many out-of-state visitors who support local businesses. The economic value of tourism in Rhode Island is estimated at \$1.7 billion annually. A 1985 study estimated that visitors to Rhode Island for fishing, hunting, and non-consumptive wildlife recreational activities contributed roughly \$52.5 million to the state's economy.

**Social:** Rhode Island's forest, farm, and public open spaces provide its citizens an opportunity to connect with the natural world, and protect the state's unique character and quality of life. Outdoor recreation is an important benefit of conservation lands, and according to the State Greenway's Plan, Rhode Islanders engage in 200 million outdoor "activity occasions--nearly one recreational activity every other day per resident." A continuing opportunity for Rhode Island's youth to cultivate a connection to the natural world through outdoor recreation is an important social benefit of public open spaces, both large tracts and urban pocket parks.<sup>233</sup>

Recreation lands promote public health and reduce illnesses such as obesity and depression, particularly among young people.<sup>234</sup> Seventy-five percent of Rhode Islanders depend on surface water for their drinking supply, which forest lands and open spaces help maintain, minimizing social costs for municipal filtration systems. Protecting farmland supports local agriculture, and provides healthy food for Rhode Island residents. The "local food movement" is growing in the state.<sup>235</sup> Farmland conservation will help mitigate future food security issues for Rhode Islanders, who currently subsist largely on food transported from distant regions of the U.S.

Rhode Island's conservation lands protect the state's quality of place, defined by the unique relationship between the state's dense and historic downtowns, and the surrounding pastoral farmlands and scenic rural open spaces. Formal conservation of rural lands is an important strategy

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<sup>231</sup> Keller, J., Tosches, J., and Mycroft, J. 2001

<sup>232</sup> Ibid

<sup>233</sup> Louv 2005, Outdoor Foundation 2008

<sup>234</sup> Ibid

<sup>235</sup> Lord 2008

for directing new development to existing downtown centers, while state and municipal policies that encourage growth in existing urban areas will help protect rural working lands and open space.<sup>236</sup>

## TRENDS

Dispersed development and accelerated land consumption have changed the Rhode Island landscape over the last three decades. Low-density residential and commercial construction occurred outside the state's historic downtowns and consumed forest and farm lands at an unprecedented rate. In response, Rhode Islanders developed organizational capacity, created land use plans and policies, and devoted funding from state, municipal, and private sources to conserve working lands and recreation open space.

**Low-density development and the loss of open space occurred rapidly in Rhode Island from the 1970s through the mid-2000s.** From 1970 to 1995, land development increased nine times faster than population growth in Rhode Island.<sup>237</sup> Developed land swelled from approximately 143,000 acres to 205,200 acres, an unprecedented rate of 43 percent.<sup>238</sup>

This dramatic trend was driven in part by a 40 percent rise in the number of households.<sup>239</sup> Many of Rhode Island's growing number of households located outside traditional urban neighborhoods, and much of the state's new development occurred in rural and suburbanizing areas. By 1995, the average rural housing unit consumed .85 acres, compared with an average of .14 acres in urban areas.<sup>240</sup> From 1961 to 1995, Rhode Island saw a 54 percent increase in developed urban land, while the outlying countryside absorbed a 205 percent increase in developed land.<sup>241</sup> In 1960, 71 percent of all housing in Rhode Island was located in urban places, and by 1995 that figure had decreased to just 59 percent.

Development pressure threatened Rhode Island's forestlands, and the livelihoods, aesthetic values, water quality, and wildlife habitat they provide. Between 1985 and 1998, forestland in Rhode Island decreased from 411,000 acres to 393,000 acres,<sup>242</sup> and from 1988 and 1995, more than 12,000

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<sup>236</sup> Daniels and Lapping 2005

<sup>237</sup> Nelson, K., G. Beiser, J., and O'Brien. 2000

<sup>238</sup> Ibid

<sup>239</sup> Rhode Island Department of Administration 2006

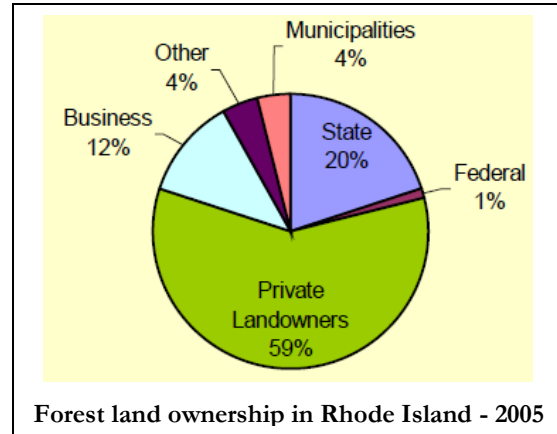
<sup>240</sup> Ibid

<sup>241</sup> H.C. Planning Consultants, Inc., and Planimetrics, LLP. 1999

<sup>242</sup> Ibid

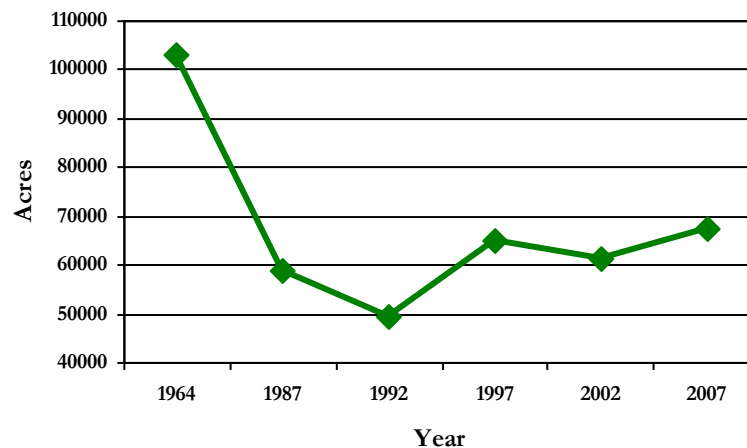
acres of forest and farm land were developed, a total land area roughly the size of the City of Providence.<sup>243</sup>

Some 75 percent of Rhode Island's forest land is privately owned, and forest parcels became increasingly fragmented. From 1973 to 1993, the average forest parcel decreased from 26 acres to 13 acres, and the number of forest land owners jumped from approximately 12,000 in the early 1960s to 27,000 in 2002.<sup>244</sup>



The boom in low-density, suburban housing also had a dramatic impact on Rhode Island's farming sector during the late 1980s and early 1990s, though in recent years state investments and policies have helped stabilize the agricultural land base. Between 1964 and 1997, the USDA estimates that Rhode Island's farmland was roughly halved, from 103,801 acres to 55,256 acres.<sup>245</sup> The number of working farms in Rhode Island reached a low of 649 in 1992, when 49,601<sup>246</sup> acres were in production, compared to just five years earlier, when 58,685 acres were in production on 701 farms.<sup>247</sup>

**Rhode Island Farmland: 1964 - 2007**



<sup>243</sup> Keller, J., Tosches, J., and Mycroft, J. 2001

<sup>244</sup> U.S. Forest Service, Northeastern Research Station 2002

<sup>245</sup> U.S. Department of Agriculture National Agriculture Statistics Service 1999

<sup>246</sup> USDA Census of Agriculture 2002

<sup>247</sup> Ibid

Through the *Agricultural Land Preservation Program*, the State of Rhode Island has purchased the development rights to nearly 4,000 acres of farmland.<sup>248</sup> More than 28,600 acres of farmland have been enrolled in the state *Farm, Forest, and Open Space Program*, which offers preferential taxation based on current use. These programs, in addition to growing consumer demand for locally-produced food items, provide opportunities to keep farmland as farms by removing development pressure and the associated tax burdens that rise with speculative development values. By 1997, acres in production had risen to 65,083 acres on 994 farms.<sup>249</sup> Rhode Island's agricultural land base remained stable through 2007, when 67,819 acres were maintained as working open space on 1,219 farms.<sup>250</sup>

Rapid land consumption continued in Rhode Island between 1995 and 2005. On average, about 30 percent of Rhode Island land identified as open space in 1995 was developed during the ten-year period. In the state's most rapidly developing communities, these trends consumed as much as 75 percent of the developable land identified as vacant a decade earlier.<sup>251</sup>

**Rhode Islanders responded to rapid development by successfully doubling the pace of land conservation during the most recent 15-year period.** Between 1960 and 1993, public open space grew in Rhode Island from around 50,000 acres to 80,000 acres.<sup>252</sup> During that 33-year period, roughly 900 acres on average were conserved per year. More recently, approximately 25,000 acres were preserved between 1994 and 2007, or roughly 2000 acres per year, roughly double the preceding 30-year average.<sup>253</sup>

In 2007, more than 141,500 acres had been conserved in Rhode Island as open space and working lands for agriculture, forestry, and recreation.<sup>254</sup> This represents approximately 20 percent of the state's total acreage, and includes state, federal, municipal, and land trust properties.

The 1994 Rhode Island State Greenway Plan had established a goal of conserving 17,850 acres of land through State programs by 2019, and the goal was achieved in 2008. State of Rhode Island conservation lands include State Forests, Parks, beaches, trails, and bike paths. State Forests

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<sup>248</sup> Rhode Island Department of Environmental Management. 2007

<sup>249</sup> U.S. Department of Agriculture National Agriculture Statistics Service 2007

<sup>250</sup> Ibid

<sup>251</sup> Rhode Island Department of Administration 2006

<sup>252</sup> Rhode Island Department of Administration 1994

<sup>253</sup> Rhode Island Department of Environmental Management 2007

<sup>254</sup> Ibid

total roughly 45,000 acres and are divided into 23 management areas.<sup>255</sup> Public investments have secured access to state forest lands with 138 miles of auto roads and 81 miles of foot trails.<sup>256</sup>

State Parks, beaches, trails, and bike paths total approximately 15,000 acres. Recreational trails and bike paths are developed by the Rhode Island Department of Environmental Management (DEM) and Department of Transportation (DOT), in partnership with municipalities and non-profit organizations. State bikeways and greenways total more than 37 miles with another 31 miles moving towards construction. DEM and DOT jointly design bike trails, and DOT constructs them with Federal Highway Administration funding.<sup>257</sup>

Federal lands in Rhode Island include 2,109 acres owned and managed by the U.S. Fish and Wildlife Service and 4.5 acres owned and managed by the National Park Service.<sup>258</sup> Municipalities have conserved more than 13,000 acres in the state. Private organizations, water suppliers, and land trusts have preserved an additional 64,400 acres of forestland in Rhode Island.<sup>259</sup>

**Since 2000, Rhode Islanders have approved state and municipal conservation bond initiatives totaling more than \$170 million, which have effectively leveraged federal and private monies.** Rhode Island voters have demonstrated strong support for land conservation during the last decade, and devoted substantial public finances to preserve forest, farm, and recreation lands. State and local funds have been matched with federal funds from the Land and Water Conservation Fund and U.S. Department of Agriculture, while Rhode Island's land trusts and statewide conservation organizations have garnered private donations and foundation grants.

Since 2000, three statewide ballot initiatives totaling \$106.5 million have passed by comfortable margins. The 2000 *Environmental Management* bond of \$34 million was supported by 73.1 percent of Rhode Island voters. In 2004, 70.8 percent of Rhode Island voters supported the \$70 million *Open Space, Recreation, Bay and Watershed Protection* bond. Despite the recent economic downturn and state budget deficits, 68 percent of Rhode Islanders voted in 2008 to tax themselves and provide an additional \$2.5 million to secure open space and recreation lands.<sup>260</sup>

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<sup>255</sup> Keller, J., Tosches, J., and Mycroft, J. 2001

<sup>256</sup> Ibid

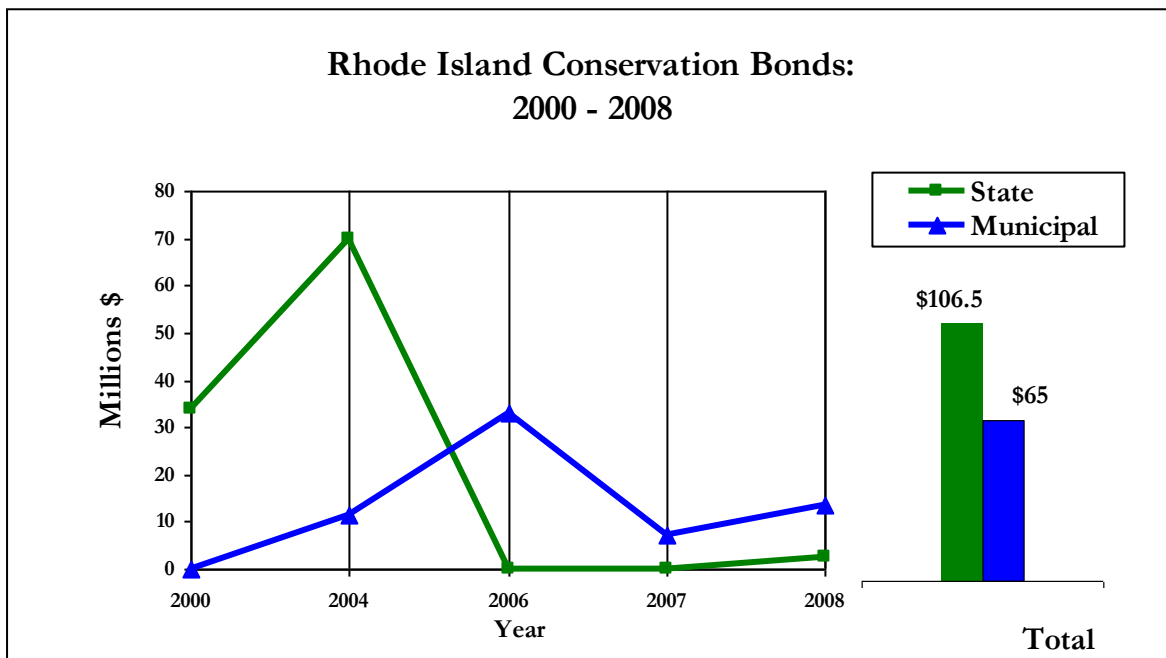
<sup>257</sup> Rhode Island Department of Administration and Department of Environmental Management 2003

<sup>258</sup> Ibid

<sup>259</sup> Rhode Island Department of Administration and Rhode Island Department of Environmental Management 2005

<sup>260</sup> Rhode Island Land Trust Council 2008a





Since 2004, Rhode Island communities have approved over \$65 million in municipal bonds to supplement state, federal, and private conservation funding.<sup>261</sup> This municipal funding represents a current trend toward greater local funding to supplement smaller state bonds during the latter half of the current decade. Of the state's 39 municipalities, 17 have approved conservation bonds. In the last four years, the residents of Middleton approved three bonds totaling \$6 million, while South Kingstown voters approved two bonds totaling \$5 million. Most recently, the residents of Scituate appropriated \$5 million by a 95 percent approval rate in October 2008.<sup>262</sup>

Federal funding has been leveraged with state, local, and private monies to advance conservation in Rhode Island. Since the federal *Land and Water Conservation Fund* (LWCF) was established in 1964 through 2003, \$44 million has been invested to protect open space in Rhode Island.<sup>263</sup> The LWCF receives revenues from offshore oil drilling fees and provides funds to establish federal conservation lands and matching funds to states and municipalities for local

<sup>261</sup> Rhode Island Land Trust Council 2008b.

<sup>262</sup> Ibid

<sup>263</sup> Northern Forest Alliance 2003

conservation and recreation projects. In addition, \$7,057,900 in federal *Forest Legacy Program* funds has leveraged \$21,080,200 in Rhode Island to conserve 3,392 acres of priority forest lands.<sup>264</sup>

Private foundations have been an important source of funding for land conservation in Rhode Island. Foundation grants have supported land acquisition and, in some cases, enabled Rhode Island's largely volunteer land trusts to hire staff and enhance organizational capacity. TNC's strong relationship with the Champlin Foundations, based in Rhode Island, provides one prominent example.<sup>265</sup> Since 1983, the Champlin Foundations have granted nearly \$48 million to TNC<sup>266</sup>, which has leveraged state, municipal, and federal funds. The Champlin Foundations provided \$2.5 million to TNC for land acquisition in 2007<sup>267</sup>, and more than \$2 million in 2008<sup>268</sup>.

**Rhode Islanders have developed organizational capacity through grassroots land trusts and statewide non-profit organizations to advance conservation.** Land trusts champion conservation at the local level in Rhode Island and have played an important role in the state's conservation success over the last three decades.

The Rhode Island Land Trust Council (RILTC) promotes coordinated action among and advocates for land trusts at the state legislature. Two major statewide non-profit organizations, the Audubon Society of Rhode Island (ASRI) and the Rhode Island Chapter of The Nature Conservancy (TNC), are large conservation landowners and leverage organizational capacity with local, state, and federal partners.

Forty land trusts now operate in Rhode Island, with the greatest growth during the 1990s. The state's first were formed in 1972, the Sakonnet Preservation Association and Block Island Conservancy, and today all but five of the state's 39 municipalities are served by a land trust. Municipalities have founded 17 land trusts through charter or ordinance.<sup>269</sup> Six of Rhode Island's land trusts employ staff, and the remaining 34 depend on the donated time, effort, and talents of volunteers. The Aquidneck Land Trust features a staff of seven, and, similar to the Maine Coast Heritage Trust and Vermont Land Trust, provides conservation expertise and capacity that benefits

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<sup>264</sup> U.S. Forest Service, U.S. Department of Agriculture 2009

<sup>265</sup> Rhode Island Department of Administration and Rhode Island Department of Environmental Management 2003

<sup>266</sup> Pina, Tatiana 2007

<sup>267</sup> Ibid

<sup>268</sup> The Foundation Center: [http://foundationcenter.org/grantmaker/champlin/2008\\_grants.pdf](http://foundationcenter.org/grantmaker/champlin/2008_grants.pdf)

<sup>269</sup> Rhode Island Land Trust Council: [www.rilandtrust.org](http://www.rilandtrust.org)

the state's land trust community.<sup>270</sup> The ALT has conserved 2,263 acres of open space and agricultural lands.<sup>271</sup>

Founded in 1897, ASRI is the state's oldest conservation organization, largest private land owner, and a leader in connecting the state's youth to the natural world. ASRI boasts 17,000 members statewide, and owns and manages 9,500 acres of forest and coastal preserves. ASRI's education programs seek to create a new generation of conservationists, and reaches 33,000 Rhode Island youth annually.<sup>272</sup>

TNC has acquired and manages more than 4,300 acres in Rhode Island,<sup>273</sup> and contributes scientific, fundraising, and land acquisition capacity to the Rhode Island conservation community. The Rhode Island Chapter of TNC has raised significant funding from private foundations, which are then leveraged with local and state conservation monies.<sup>274</sup> TNC also enhances the effectiveness of local land trusts by providing natural resource inventories and negotiating conservation deals with landowners.<sup>275</sup>

**Collaboration among Rhode Island's state agencies, non-profit organizations, land trusts, and municipalities is an established and ongoing tradition within the state's conservation community.** Multi-level partnerships have played an important role in the dramatic increase in land conservation over the last 15 years. Collaboration allows the Rhode Island conservation community to leverage organizational capacities, develop shared conservation priorities, and build public support.

The successful achievement, ten years ahead of schedule, of the statewide conservation goals established in 1994 demonstrates the value of conservation partnerships in Rhode Island. Significant private and non-profit resources, leveraged with state resources, helped make this accomplishment possible. For example, as of 2008, TNC leveraged Champlin Foundation funds with more than 50 partners to create \$168.7 million and conserve more than 25,000 acres in Rhode Island.<sup>276</sup>

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<sup>270</sup> Edward Sortwell Clement, personal communication

<sup>271</sup> Aquidneck Land Trust: [www.ailt.org](http://www.ailt.org)

<sup>272</sup> Audubon Society of Rhode Island: [www.asri.org](http://www.asri.org)

<sup>273</sup> Rhode Island Chapter of The Nature Conservancy: <http://www.nature.org/wherework/northamerica/states/rhodeisland/preserves/>

<sup>274</sup> Lawrence J. F. Taft, personal communication

<sup>275</sup> Rhode Island Department of Administration and Department of Environmental Management 2003

<sup>276</sup> Corkery, Michael 2001

Both public and private partners contribute unique assets to advance conservation in Rhode Island. State agencies provide scientific expertise, planning, and funding.<sup>277</sup> Statewide non-profit organizations contribute scientific, fundraising, and acquisition expertise.<sup>278</sup> Land trusts provide a vehicle for local conservation champions to build community support and social networks with local officials and private landowners.<sup>279</sup> Municipalities contribute local land use planning, and in some cases have established municipally-enabled land trusts.<sup>280</sup> State policies and funding programs target grants to lands prioritized for conservation in state and local land use plans, which have motivated private conservation organizations to integrate private investments with public goals.

**Over the last two decades, state agencies and municipal governments have expanded, improved, and integrated conservation planning and investment policies.** The State of Rhode Island has adopted a State Land Use Plan and a State Greenways Plan to guide land use and conservation investments. The State of Rhode Island has also adopted preferential taxation programs, the *Farm, Forest, and Open Space Program* and *Historic Tax Credit*, to incentivize working lands protection and private investment in downtown redevelopment. Passed in 1988, Rhode Island's Comprehensive Planning and Land Use Regulation Act seeks to integrate municipal land use plans with state plans.

Rhode Island's State Land Use Plan 2006, *Land Use 2025* (SLUP), builds on two earlier efforts and asserts a stronger state role in land use planning. The SLUP identifies 361,000 developable acres in Rhode Island whose future use is uncertain.<sup>281</sup> The SLUP seeks to enhance the traditional relationship between Rhode Island's dense urban service and residential centers, and the state's scenic and productive rural working landscapes. The SLUP identifies lands within the uncommitted acreage best suited for working lands, such as prime forestry and agricultural soils, and open space, such as large, contiguous tracts of undeveloped land. The SLUP also identifies areas near developed downtowns that are best suited to accommodate future growth, and establishes an Urban Services Boundary to target state infrastructure investments to those areas.<sup>282</sup>

The Rhode Island State Greenways Plan of 1994, *A Greener Path: Greenspace and Greenways for Rhode Island's Future*, established a state goal to conserve 17,850 acres of land through State programs

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<sup>277</sup> Michelle Sheehan, personal communication

<sup>278</sup> Lawrence J.F. Taft, personal communication

<sup>279</sup> Edward Sortwell Clement, Jr., Esq., Clarke Collins, Rupert Friday, personal communication

<sup>280</sup> Clarke Collins, personal communication

<sup>281</sup> Rhode Island Department of Administration 2006

<sup>282</sup> Ibid

by 2019. The Greenways plan prioritized lands for conservation to create an integrated system of conservation lands that protect forest, farm, and recreation lands; and provided a guiding framework to target state funding and resources to create the greatest ecological, economic, and social benefits.<sup>283</sup> As of 2008, the state conservation goal was achieved and surpassed by 1,313 acres, a full decade earlier than the target date.<sup>284</sup>

All 39 Rhode Island municipalities have locally-adopted Comprehensive Community Plans. As of 2002, 31 have received State approval, indicating consistency between state and local policies.<sup>285</sup> Related to land conservation, State of Rhode Island law requires local plans to include *Land Use*, *Natural and Cultural Resources*, and *Open Space and Recreation* elements,<sup>286</sup> and to be updated regularly. Over the past decade, community plans have been formally incorporated into much of Rhode Island's planning, policy and practice. Plan approval status and consistency with the State Guide Plan are increasingly criteria for state project approvals and grant funding.”<sup>287</sup>

The State of Rhode Island has linked state conservation funding to adopted land use plans, to ensure that land conservation occurs in an integrated and strategic fashion, and to protect the highest priority working and recreation lands. State conservation bond funds are distributed through the DEM's *Land Conservation Program*. Projects that are consistent with SLUP, State Greenways Plan, and municipal land use plans receive preference for funding.

Since 1985, the State of Rhode Island's *Farm, Forest, and Open Space Program* (FFOS) has been effective at slowing the development of working lands and open space. The FFOS offers lower tax assessment based on the land's current use as forest or farm, in return for assurance that the landowner will not develop the land for a 15-year period. As of 2003, 3,600 properties were enrolled in the FFOS, including 29,345 acres of forest land, and 28,614 acres of farmland.<sup>288</sup>

The State of Rhode Island's *Historic Tax Credit* (HTC) has successfully incentivized growth in Rhode Island's existing downtowns and provided a greater than three-to-one return on the State's investment. Passed by the Rhode Island legislature in 2002, the HTC invests state resources to cover 30 percent of eligible expenses accrued by private owners to restore and enhance historic

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<sup>283</sup> Rhode Island Department of Administration 1994

<sup>284</sup> Rhode Island Department of Environmental Management 2008

<sup>285</sup> Rhode Island Department of Administration and Rhode Island Department of Environmental Management 2003

<sup>286</sup> Rhode Island Statewide Planning Program 2003

<sup>287</sup> Rhode Island Department of Administration and Rhode Island Department of Environmental Management 2003

<sup>288</sup> Rhode Island State Conservation Committee 2003

properties.<sup>289</sup> As of 2007, 150 projects in Rhode Island have been completed with tax credits, and leveraged \$535,247,020 in private investment from \$160,574,106 in state and federal tax rebates.<sup>290</sup>

**Development pressure on Rhode Island's open spaces has decreased for the short term with the economic downturn and real estate market slump of 2007-2009.** Mirroring trends across the six New England states and the nation, new residential and commercial development has subsided in Rhode Island during the last two years. With a 31 percent decline in new housing starts since October 2008, and 52 percent drop since October 2007, the Northeast experienced the sharpest reduction in the U.S.<sup>291</sup>

Since the early 1990s, Rhode Island municipalities have issued greater than 1,000 new housing permits annually. In 1999, permits granted for single-family homes peaked at 2,639. The number of permits declined to 1,458 in 2007, before falling dramatically to just 431 permits for the first half of 2008. New housing development was on pace to fall below 1,000 new homes for the first time in over a decade.<sup>292</sup>

## CHALLENGES

Despite the dramatic strides Rhode Islanders have taken to increase the pace of land conservation over the last decade, and the current slowdown in low-density development pressure on the state's forest, farm, and recreation lands, significant challenges remain for the future of the state's working lands and open space. Roughly 46 percent of the state is undeveloped land that is vulnerable to low-density residential development. State conservation agency budgets have shrunk and non-profit conservation organizations will likely face decreased funding due to the current economic downturn. Even as conservation budgets shrink, resources required to manage Rhode Island's patchwork of conservation lands for economic, ecological, and recreational values is growing. The effects of global climate change will likely alter Rhode Island's natural ecosystems and create new management challenges for the state's conservation community, woodlot owners, and farmers.

**The future use of approximately 361,000 undeveloped acres in Rhode Island remains uncertain.** The vast majority of the 361,000 acres is vulnerable to new development. Fully ninety-

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<sup>289</sup> Lipman Frizzell & Mitchell LLC 2007

<sup>290</sup> Ibid

<sup>291</sup> Baird, Susan, November 19, 2008

<sup>292</sup> Mooney, Tom, October 18, 2008

one percent is planned and zoned for low-density development of one housing unit or less per acre.<sup>293</sup> Projected land consumption, according to analysis conducted prior to the economic downturn of 2007-2009, “leaves open the possibility that the state could exhaust its entire developable land base by 2050-2060.”<sup>294</sup>

Low-density development throughout the 361,000 acres would have a dramatic negative impact on Rhode Island’s working lands and open space. Based on growth trends through 2005, a report in the *Journal of Forestry* found that 48.2 percent of the state’s existing woodlands would be

lost, and 70.5 percent of Rhode Island land would be effectively urbanized and suburbanized.<sup>295</sup> While the recent slump in new housing starts has reduced this risk in the short term, long range planning is needed.

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<sup>293</sup> Rhode Island Department of Administration 2006

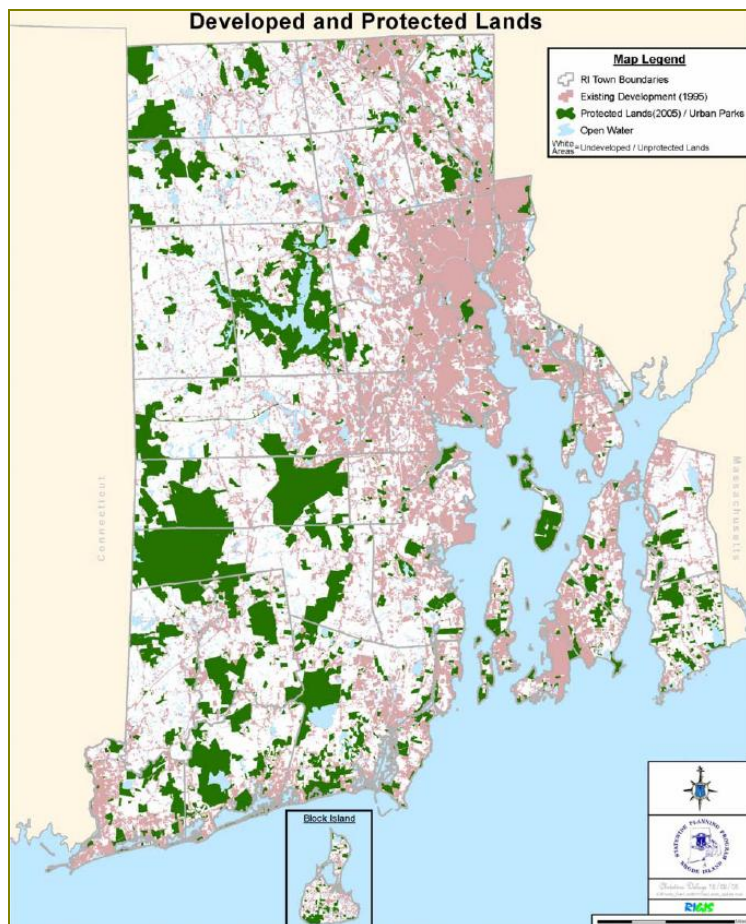
<sup>294</sup> Rhode Island Department of Administration 2006

<sup>295</sup> Ibid

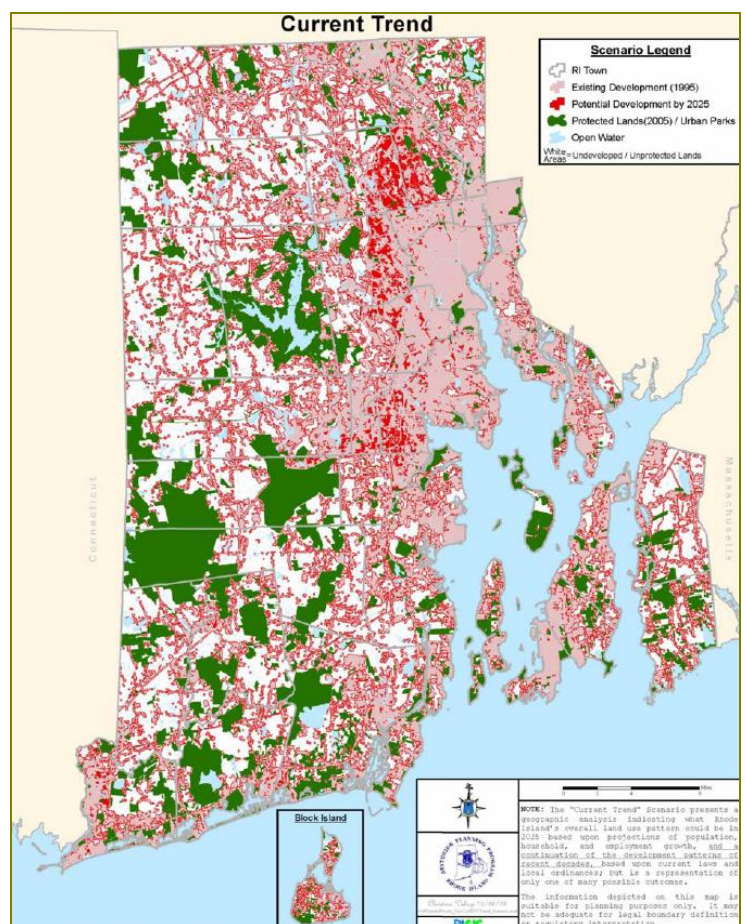


## Rhode Island Land Use

2005



Projected for 2025

*Rhode Island Department of Administration 2006*

The State of Rhode Island currently has a budget deficit and state agencies face reduced staff and operating budgets, while private funding is likely to decrease in the short run for **non-profit conservation organizations and land trusts**. The State of Rhode Island budget deficit for fiscal year 2009 is \$384 million.<sup>296</sup> The Department of Environmental Management (DEM) will face increased budget constraints, despite the fact that its budget for more than a decade has been inadequate to manage effectively existing conservation lands.

<sup>296</sup> Rhode Island State Government: <http://www.ri.gov/press/view.php?id=5795>



State budget constraints have an adverse affect on the state's working lands and public infrastructure. DEM state funded forestry staff declined by 58 percent during the 1990's, the worst staff decline in Rhode Island. As of 2001, a \$5,837,082 backlog existed for needed repairs to State Management Area assets.

Conservation organizations and land trusts are experiencing impacts from the current economic recession. Funding for land acquisition and staffing has decreased. Both the TNC and ASRI have reduced staff by 20 percent in 2009.<sup>297</sup>

**As of 2008, more than 145,000 acres have been conserved in Rhode Island by state and federal agencies, non-profit organizations, land trusts, and municipalities, but only fledgling efforts exist to date among the varied landowners to integrate management strategies for the state's patchwork of open spaces.** Effective management of Rhode Island's conservation lands will include protecting the state's natural plant communities and the wildlife habitat they provide, maintaining and improving recreational infrastructure to facilitate public access, and enforcing the legal terms of conservation easements. Increased coordination, funding, and staff are required to achieve these goals.

Currently, limited coordination among Rhode Island's many conservation owners hampers an integrated approach to habitat management, interconnected recreation infrastructure, such as regional trail networks, and enforcement of conservation easements.<sup>298</sup> There are more than 50 conservation landowners in Rhode Island, including public and private entities.<sup>299</sup> The Rhode Island Conservation Stewardship Council (RICSC) was created to address these challenges and includes representatives from the state's prominent conservation groups. While the RICSC has successfully initiating a dialogue among the relevant actors, the Council's work to date is only the first step towards achieving coordinated regional and statewide approaches.

Improving Rhode Island's recreation infrastructure and enforcing conservation easement terms, will require dedicated long-term funding and human capacity. The State of Rhode Island, through the DEM and DOT, provides funding for trail development, parking lots, and other needs. Municipalities and conservation organizations have also invested resources to develop recreational amenities. These resources, however, are inadequate to implement a long-term greenways vision for

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<sup>297</sup> Janet Coit, personal communication

<sup>298</sup> Edward Sortwell Clement, Jr., Esq, Clarke Collins, Rupert Friday, personal communication

<sup>299</sup> Michelle Sheehan, personal communication

Rhode Island. State and private easement holders currently monitor and enforce conservation easement terms as staff and volunteer resources allow. These resources are also inadequate, and a long-term strategy is needed to ensure that easements are maintained in perpetuity.<sup>300</sup>

**The effects of global climate change will complicate management of Rhode Island's conservation lands for ecological, economic, and social benefits.** The earth's warming climate will cause Rhode Island to experience longer summers and growing seasons, shorter winters, increased precipitation, higher variability in stream flows, rising sea levels and more frequent coastal flooding, and other impacts.<sup>301</sup> The changes will amplify the current challenges to effective management of Rhode Island's conservation lands.

Rhode Island's warming climate will likely result in the in-migration of invasive species, such as the gypsy moth invasion that defoliated 8,000 acres of forestland in 2001.<sup>302</sup> New species will alter Rhode Island's plant communities, and the wildlife habitat they provide. Longer growing seasons will create new adaptation challenges for the state's farmers.<sup>303</sup>

Changing precipitation patterns may mean that the state's stormwater infrastructure is undersized by more than one third, resulting in more frequent sewage overflow events and degraded water quality.<sup>304</sup> Longer, warmer summers could result in lower in-stream flows during late summer, negatively impacting native aquatic species in Rhode Island's rivers and lakes.<sup>305</sup> Evolving coastal weather patterns are likely to diminish estuarine species diversity and abundance in estuarine habitats.<sup>306</sup>

Additional resources and new expertise will be required to address these issues and effectively manage Rhode Island's conservation lands.

## OPPORTUNITIES

The State of Rhode Island and its residents enjoy abundant natural resources and open space, and a continuing opportunity to secure and enhance the state's aesthetic, recreational, forestry, and

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<sup>300</sup> Rupert Friday, personal communication

<sup>301</sup> Frumhoff et al 2007

<sup>302</sup> U.S. Forest Service Northeastern Research Station 2002

<sup>303</sup> Frumhoff et al 2006

<sup>304</sup> Rhode Island Bays, Rivers, and Watersheds Coordination Team 2008

<sup>305</sup> Frumhoff et al 2006

<sup>306</sup> Rhode Island Bays, Rivers, and Watersheds Coordination Team 2008

agricultural assets for future generations. Conserving the prime forest, farm, and recreation assets within the remaining 361,000 acres of undeveloped land, and managing effectively the state's existing conservation lands, should be the top priorities.

- The current economic downturn has reduced the market value for land, and open space can generally be acquired at the lowest prices in decades.
- The opportunity exists for the State of Rhode Island to continue and expand funding incentives that promote the preservation of rural working lands and open space, while directing new development to existing downtowns.
- Collaboration among Rhode Island's conservation entities may be further institutionalized to leverage expertise and organizational capacity, to make the best use of scarce funds, and to integrate management strategies for the state's open spaces and working lands.
- The State of Rhode Island should renew green infrastructure planning that, building from the 1994 Greenways Plan, establishes long term goals for forest, farm, and recreation land conservation within the state's remaining 361,000 acres of undeveloped land, and emphasizes input from and collaboration with private and non-profit partners.
- Collaborative management of interstate resources, such as Narragansett Bay, Blackstone River Valley, and the "Borderlands" forest resource, and development of an interconnected open space and trail network throughout New England, afford Rhode Island an important role in any regional conservation strategy.

The opportunities identified above to conserve working lands and public open spaces are addressed below within five implementation strategies:

- 1) Advance municipal land use planning;
- 2) Renew state greenways planning and investment;
- 3) Institutionalize regional collaboration among state agencies and private organizations;
- 4) Engage Rhode Island's youth in the outdoors; and
- 5) Enhance interstate cooperation.

## IMPLEMENTATION STRATEGIES

**1) Advance municipal planning.** The State of Rhode Island could develop planning resources, particularly for mapping, and leverage the power of the state purse to advance strategic land use planning in local communities. Municipal planning will be essential to achieve the goals of the 2006 State Land Use Plan (SLUP), and make the best use of Rhode Island's remaining 361,000 acres of undeveloped land.

**Build-Out Analysis:** The State of Rhode Island should facilitate strategic partnerships between universities and communities to develop build-out analyses based on current zoning. Build-out analysis is an important scenario mapping tool that assists municipal policy makers and residents to understand the amount and type of development that local zoning ordinances allow, and the potential impacts on forest, farm, and recreation lands. More than 328,000 acres, or 91 percent, of Rhode Island's undeveloped and unprotected land is planned and zoned for low-density development.<sup>307</sup> Build-out analyses will educate and motivate communities to protect their natural assets through proactive land use regulation. Universities would benefit from such partnerships by providing GIS, planning, and natural resource students with practical project experience.

**Funding Incentives:** Building on the successful Historic Tax Credit, the State of Rhode Island to incentivize new growth on lands prioritized for development in the SLUP; to target state infrastructure investments to urban areas; and to give preference for state grants to municipalities whose land use policies and ordinances direct future growth to already developed areas.

**Model Zoning Ordinances:** The State of Rhode Island should develop innovative ordinances that municipalities can readily adopt to preserve public open spaces in urbanizing places, and rural lands prioritized for conservation in the SLUP. Model cluster sub-division ordinances which require mandatory open space and trail corridors in new developments can provide access to nature in close proximity to where people live. Conservation zoning for large forest blocks can protect high-quality wildlife habitats and future forestry products livelihoods. Model ordinances could allow limited development but stipulate mitigation funding to conserve adjacent open space. Agricultural zoning overlays to preclude low-density sprawl can protect prime farmlands vulnerable to residential development. The state should consider linking the adoption of model ordinances to the funding incentives identified above.

**2) Renew State greenways planning and investment.** Following the successful achievement of the 1994 state conservation goals, the State of Rhode Island should undertake a new greenway planning process that is integrated with the 2006 SLUP and identifies corridors to connect the state's conservation lands. Due to the significant conservation lands owned by private land trusts and statewide non-profit organizations, and the essential role these partners must play to implement a statewide greenways agenda, input from key stakeholders should be prioritized. In addition,

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<sup>307</sup> Rhode Island Department of Administration 2006

dedicated funding should be established for state agencies charged with developing, managing, and maintaining recreational assets and public access amenities.

Statewide Trail Network: Renewed greenway planning should target conservation investments to link Rhode Island's lands into a connected system of recreational trails. A well-designed statewide trail system will link population and service centers to rural public open spaces, and connect to New England-wide and national trail systems. A trail system that links the urban corridor along Narragansett Bay with the Acadia State Management Area (SMA) in the Borderlands Region, and the George Washington SMA in the northwestern portion of the state, would capture this opportunity. The East Coast Greenway (ECG), a national trail planned along the Atlantic Coast from Florida to Maine, could provide the urban hub of Rhode Island's statewide network. The ECG hub would link Rhode Island trails to Massachusetts, while a spur from the Acadia SMA could provide connectivity with Connecticut trails.

Dedicated Funding for DEM and DOT: The maintenance of Rhode Island's existing conservation lands, trails, and public infrastructure for multiple benefits will require new and stable funding for state agencies. DEM's budget shortfalls undercut the agencies capacity to manage conservation lands effectively, and additional resources must be generated and directed to DOT to expand public trails. The State of Rhode Island's "Osprey License Plate" is a tool that generates funding to support the Audubon Society of Rhode Island's youth environmental education programming. The State of Minnesota generates 80 percent of funding for non-game wildlife conservation programs by allowing residents to make dedicated donations when filing state income or property tax returns.<sup>308</sup> Since 1984, the State of Missouri has earmarked 1/8 percent of its sales tax to state parks and soil conservation programs, generating \$82 million annually.<sup>309</sup> The State of Rhode Island could develop similar programs that funnel funds to outdoor recreation investments.

### **3) Institutionalize regional collaboration among Rhode Island conservation groups.**

Collaboration among state agencies, land trusts, and statewide non-profit organizations has accelerated Rhode Island land conservation in recent decades. Despite this ongoing tradition, greater cooperation will enable the state's conservation community to integrate management of existing conservation lands, and strategically protect priority assets within the 361,000 acre opportunity.

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<sup>308</sup> Minnesota Department of Natural Resources: <http://news.dnr.state.mn.us/index.php/2009/02/26/>

<sup>309</sup> Missouri Votes Conservation: <http://movotesconservation.org/Home.aspx?ContentID=16>

Regional Conservation Councils: The establishment of Regional Conservation Councils to plan collaboratively and leverage investments will advance the implementation of a statewide greenways plan, and integrated management of conservation lands. These regional working groups could be convened under the auspices of the Rhode Island Conservation Districts (RICD), which provide an organizational structure and established relationships with private landowners. The councils could develop regional priority maps that identify recreational, working land, and aesthetic assets. The RICDs, with support from the regional partners, could host shared equipment banks, provide technical assistance, and promote knowledge sharing for integrated management of regional assets.

**4) Engage youth in the outdoors.** Fostering Rhode Island youth's connection with the natural world will benefit their health and well-being,<sup>310</sup> while allowing the conservation community to cultivate a new generation of stewards and champions. The development and adoption of hands-on school curricula provides the opportunity to educate students about practical ecology, while partnerships with the state's land trusts, statewide non-profit organizations, and Community Supported Agriculture farms (CSA) can provide learning opportunities in outdoor classrooms.

School Curricula: Rhode Island Public Schools have an essential role to play in engaging the state's youth in the outdoors. Programs that "green" local school grounds provide the opportunity to enhance natural resource and ecology lessons. Green school grounds provide natural habitat for children and wildlife. One example of a new curriculum could be seasonal bird counts conducted by students. The students would gain a better understanding of the species that inhabit Rhode Island, and over time, could help monitor new species migrating to the state because of global climate change.

Community Partnerships: Collaboration between schools and community conservation partners hold promise for mutual benefit. The Audubon Society of Rhode Island has established successful education programming, and provides a useful model for local expansion. Land trusts provide school groups with access to natural places in close proximity to where youth live, while Rhode Island's CSAs provide opportunities for students to experience and understand the value of local farms. Student groups could assist these partners to manage their lands by removing invasive species or assisting with trail building projects.

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<sup>310</sup> Louv 2005

**5) Expand Interstate Cooperation.** Collaborative conservation planning and management of shared natural resources that transcend state borders provides the opportunity to enhance the ecological, economic, and social values of Rhode Island's conservation lands. The development and implementation of a New England-wide conservation vision will assist Rhode Island and neighboring states to attract federal funding, and market its unique resources to national and international tourists. Creating connectivity between conservation lands maximizes the benefits of each respective parcel, and linking open spaces across state borders makes the best use of scarce resources.

Cross-boundary Conservation Mapping: The identification of conservation opportunities and threats will advance interstate collaboration in New England. Priority working lands and open spaces, overlaid with development pressures, will inform and prioritize conservation investments. Regional mapping will also assist the six states to link recreational trails and wildlife corridors into a New England-wide green infrastructure system.

Regional Knowledge Repository: As Rhode Island addresses new land management challenges related to global climate change, so will neighboring states. A regional repository for technical information and innovative stewardship techniques will foster knowledge sharing across state lines, and enhance the capacity of state agencies, land trusts, non-profit organizations, forest owners and farmers to adapt and thrive.

Collaborative Marketing: A shared vision for New England's unique natural resources, and cultural links to the region's landscape, will assist the six states to market their shared assets to the broader nation. Shared natural resources and common interests link the region, and the New England Governors and conservation community could endorse a collective vision. Collaborative marketing will attract tourists to the region, and bolster the economic benefits of cooperative interstate conservation.

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- Clarke Collins, *Land Management and Volunteer Manager, South Kingstown Land Trust*
- Rupert Friday, *Director, Rhode Island Land Trust Council*
- Peter Lord, *Environmental Reporter, Providence Journal*
- Michelle Sheehan, *Assistant, Rhode Island Department of Environmental Management, State Land Conservation and Acquisition Program, Division of Planning and Development*
- [Lawrence J. F. Taft](#), *Executive Director, Audubon Society of Rhode Island*



(Image Source: Backroads Photography)

## **Land Use & Land Conservation in Vermont Trends, Challenges, & Opportunities**

**By Stephanie Dulac  
April 2009**

## Executive Summary

### Trends

- The completion of the Interstate Highway System opened Vermont to a thriving tourist economy and significantly accelerated development in the state.
- Population exploded the second half of the twentieth century, increasing by over 30% between 1965 and 1990. In addition, 45% of the Vermont housing stock was built between 1960 and 1989.
- In the late 1800s approximately 20-30% of Vermont was forested. In 1997 78% of the state was forested.
- The Green Mountain National Forest, created in 1932, consists of over 400,000 acres and provides a variety of outdoor recreation opportunities for the region.
- The State of Vermont owns over 300,000 acres of forests and operates over 52 parks.
- According to the 2007 Census of Agriculture, Vermont has a total of 6,984 farms on 1.3 million acres. The largest commodity in the state is dairy.

### Challenges

- The fragmented nature of the current development pattern is self-perpetuating and inhibits the conservation of large tracts of land that support large mammal habitat and mobility.
- Vermont farmers are aging and the fate of the farmlands they currently own and operate is an unknown.
- Vermont forests lack diversity which make them more susceptible to pests and disease.
- Land stewardship will be a challenge in the future as climate change supports the spread of invasive pests and plant species.
- State funding for land conservation has been steadily decreasing over the past few years.

### Opportunities

- Vermont State Government has enacted progressive permitting and tax policies to direct development away from sensitive areas and to maintain a compact urban core.
- Vermont linked land conservation and affordable housing in the 1980s by creating the Vermont Housing and Conservation Trust Fund which utilizes monies collected from the real estate transfer tax on such projects.
- Vermont has ninety private land trusts operating in the state representing a variety of diverse interests such as farming, forestry, wildlife habitat, recreation, and tourism. Collectively, the groups have conserved nearly 600,000 acres.
- The economic recession has given community leaders, as well as land conservationists, an opportunity to slow down and strategically plan where they want to direct growth and where they want to conserve land.

## Introduction

What comes to mind when you hear the name, Vermont? For me, I visualize a cascade of images like the rolling Green Mountains, bright fall foliage, tapped maple trees, dairy cows out to pasture, and ski chalets blanketed in fresh snow. Vermont is a truly unique place that occupies a spot in the hearts of many Americans who value the tradition and heritage that the state has come to represent. Thankfully, its residents recognize how meaningful their shared identity is and they have worked very diligently in the face of nearly constant development pressure to protect this legacy and their homeland. Vermonters have undeniably done an outstanding job at preserving their way of life and the landscape that supports it. However, as we move forward into the twenty-first century, along with each advancement in land conservation there will come a distinct set of challenges and opportunities to improve.

Setting the stage for a long future in environmentalism for the state, native Vermonter and 19<sup>th</sup> century congressman George Perkins Marsh was one of the country's first pioneers of conservationism. For many, Marsh's book *Man and Nature* was instrumental in the formation of modern-day conservation.

Marsh's 1864 treatise provided the foundation upon which the modern field of ecology has been built, principally that nature's systems are intricately linked through a labyrinthine structure with nearly invisible bonds. Equally important, humanity is part of—not separate from—that overarching ecology and, through misstep, is capable of irreversibly altering nature's complex dynamics to the detriment of all forms of life.... Marsh warned that earth's resources are not inexhaustible and that without perpetual stewardship by humans, nature will not regain its equilibrium.<sup>311</sup>

Marsh's teachings and legacy has spurred a populous devoted to protecting the natural beauty of Vermont and preserving their sense of place. Today there are two notable monuments dedicated to Marsh in Vermont. The first is the Billings library at the University of Vermont in Burlington that houses Marsh's extensive book collection. The library is named after Frederick Billings who was Marsh's primary benefactor. The second is the Marsh-Billings-Rockefeller National Historic Park located at Marsh's boyhood home and family land in Woodstock. The land has been maintained as a model of sustainable forestry with the home serving as an interpretation center<sup>312</sup>.

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<sup>311</sup> McCullough, Ginger & Baumflek, 2009.

<sup>312</sup> Ibid

## Development Trends

Vermonters have a long history of promoting their state's natural beauty through the tourism industry. As early as the 1890s both the private and public sectors marketed Vermont to urban dwellers as an unspoiled landscape of picturesque farms, forests, and rolling mountains. "Railroad companies, for example, became skilled at marketing tourism, helping to promote leisure as a type of middle-class product and selling landscape as a backdrop for these recreational activities."<sup>313</sup> In addition to attracting short-term visitors, private businesses and public entities throughout this period began to market Vermont as a good place to purchase a summer vacation home. The Central Vermont Railroad produced a publication entitled *Summer Homes Among the Green Hills of Vermont and Along the Shores of Lake Champlain* (1892). The campaign worked, and many residents of southern New England and New York began to summer in Vermont.<sup>314</sup>

The advent of the automobile further encouraged tourism and growth throughout the state. As in so many other rural areas across the country, the development of the Interstate Highway System in particular changed the accessibility, population, and settlement patterns of Vermont.<sup>315</sup> By the time the highways were completed in the state in the mid-1970s, Vermont was experiencing radical increases in population growth, tourism, and the subsequent development. This was especially true in Chittenden County where Burlington, Vermont's largest city, is located<sup>316</sup>.

Whereas the population had remained relatively stable between 300,000 and 400,000 in the century prior to 1960, it rose by over 30% throughout the next 35 years to almost 600,000 by 1995. Most of this growth is attributable to people moving into the state. For example, in 1960, 72 percent of Vermonters were born in the state, compared to only 60 percent in 1980.<sup>317</sup> This change in demographics has created a division and distinction between native Vermonters and people from away, commonly referred to as "flatlanders."

An important indicator of the amount of growth that occurred in the state from the 1960s through the 1980s is the number of housing units that were built. From the data collected in the 2000 U.S. Census, one finds that 45% of all of Vermont's housing was built between 1960 and 1989. Just 41% of the 2000 housing stock was built before 1959.<sup>318</sup> From these figures we can glean that

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<sup>313</sup> Ibid

<sup>314</sup> Ibid

<sup>315</sup> Klyza 1999.

<sup>316</sup> Ibid

<sup>317</sup> Ibid

<sup>318</sup> U.S. Census Bureau: <http://www.census.gov/>

Vermont more than doubled their housing stock in 30 years. Unfortunately much of this development occurred in a sprawling manner with little regard to the natural environment.

The construction of the highways in Vermont also permitted the tourism industry to flourish. Prior to their development dirt roads were still prevalent throughout the state. Once the highways were complete, suddenly city dwellers from Boston or Manhattan could escape to Vermont for a long weekend with relative ease.<sup>319</sup> They came, and continue to come, to enjoy the state's scenic beauty and to reconnect with the natural environment. The rural landscape has always been the draw for people to visit Vermont. References to Vermont as "unspoiled" can be found in 1915 publications from the Bureau of Publicity up through the 1930's and beyond, in pamphlets published by organizations such as the Chamber of Commerce.<sup>320</sup> The dynamic, authentic, and functional countryside is what makes this state so unique.

Tourism in Vermont presents a bit of a dilemma for residents and conservationists. On the one hand, it is an important driver of the state economy. In 2007, tourism dollars directly and indirectly supported 12% of all Vermont jobs. In addition, tax and fee revenues from visitor spending comprised 9.10% of the states' education, transportation, and general funds.<sup>321</sup> Moreover, in many instances tourism is the impetus behind protecting some of the state's most beautiful lands. However, by creating such demand, tourists put a lot of pressure on, and have the capability of destroying those same natural resources that they come to enjoy.

One direct consequence of the tourism industry that has had a negative environmental effect is the proliferation of vacation homes found in some of the most ecologically sensitive areas. The primary market for second homes in the state is either abutting a water body or close to one of the many ski areas. Both locales are environmentally unique and sensitive. Extensive building in either leads to soil erosion and sediment build-up in fresh water sources such as lakes, rivers, and mountainside streams. Developing mountain ski areas has the added consequence of fragmenting the already diminishing large mammal habitat.

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<sup>319</sup> Klyza 1999

<sup>320</sup> Ibid

<sup>321</sup> VT Dept. of Tourism and Marketing 2007

## Policy Response

Due to the intense development Vermont was experiencing in the 1960s, the legislature enacted a ground-breaking land-use regulation law titled Act 250. This law allows municipalities and regions to slow the rapid onslaught of growth, so that community leaders may plan for it.

It was not so much the new residents as the temporary ones that served as the catalyst for Act 250, Vermont's land-use regulatory law. Second-home developments near ski areas in southern Vermont were overwhelming local town resources. In addition, some were built on steep slopes, leading to erosion and water-pollution problems.<sup>322</sup>

The permitting process involved with Act 250 allows local citizens to maintain at least a small degree of control in the growth of their towns and regions. Initially the state was supposed to develop a statewide plan to help direct growth; but that hasn't happened, so citizens have to rely on the permitting process to guide growth appropriately. Through Act 250's regulation Vermonters have been able to protect some of their unique natural, untouched areas.

Act 250 permits are issued by the region's District Commission and the Natural Resources Board. These permits are required in addition to compliance with local zoning, conducting environmental assessments or environmental impact statements, and obtaining subdivision approval for certain projects. Projects that require an Act 250 permit are:

- Construction for commercial or industrial purposes on more than 10 acres (farming and forestry are exempt)
- Construction of ten or more housing units within five years
- The subdivision of land into six or more lots within five years in a town without zoning and subdivision regulations
- The subdivision of land into ten or more lots within five years
- Construction that would substantially change or expand a pre-1970 development that would require a permit today
- Construction for governmental purposes that disturbs ten or more acres or is part of a larger project that will eventually disturb ten or more acres of land
- Construction of a communication or broadcasting structure that is fifty feet tall or higher
- Construction above twenty-five hundred feet in elevation
- Exploration, extraction or processing of fissionable source materials

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<sup>322</sup> Klyza 1999



- The drilling of oil or gas
- The sale of any interest in a tract of land divided for the purpose of resale into five or more lots within a radius of five miles within a continuous period of ten years<sup>323</sup>

There are several important impacts that the District Commission has to consider in order to approve a permit application. The proposed development will:

- Not cause undue water or air pollution
- Have a sufficient water supply
- Not cause an unreasonable burden on the existing water supply
- Not cause excessive soil erosion and stormwater runoff
- Not result in extreme traffic congestion
- Not cause an unreasonable burden on educational services
- Not cause an unreasonable burden on other municipal services
- Not have an unwarranted adverse effect on scenic beauty, aesthetics, historic sites, rare and/or irreplaceable natural areas
- Not destroy crucial wildlife habitat especially that of an endangered species
- Conform to local and regional plans or capital programs<sup>324</sup>

### **Tax Policy**

Both to protect the Vermont that its residents love, and in part to maintain tourism, Vermont has been very proactive in its tax structure in an effort to protect farmland, forestland, and conservation lands. Many programs have been developed to protect these lands and residents' way of life. One of the more significant programs is the Use Value Appraisal Program. The program was first implemented in 1978 as development pressure grew and farmers and forest owners felt the squeeze of increasing land values and consequent property taxes. The program allows long-term farmers and forest owners to be taxed according to the value of the property's current use, rather than what the value would be should the land be developed to "highest and best use." Once in the program, there is a lien placed on the land so that a fee is paid if the land is developed. This saves

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<sup>323</sup> Argentine 1998

<sup>324</sup> Ibid

the landowner a significant amount of money and thereby helps keep these rural occupations profitable. Since the program commenced it has been amended to include conserved lands and farm buildings. As of 2009, roughly one third of all the land in Vermont is enrolled in the Use Value Appraisal Program.<sup>325</sup>

It's important to note that this program focuses on keeping the farmers and forest owners in business. Often planners and policy makers attempt to preserve farmland through zoning or other regulatory manners. This approach has historically not been effective in preserving these rural industries. It's all well and good to write plans that assert the town, region or state's intention of protecting rural character; however, if there isn't someone willing to keep the land productive and operational, then inevitably that land will be subdivided and developed.

In order to prevent land speculation in the state, which has the tendency to drive up prices and lead to more large-scale development, Vermont began imposing a land gains tax in 1973. The tax deters speculators by imposing high taxes on the sale of land that was held for a short period of time and sold for a large profit. The tax is only in effect concerning sales of land held for less than six years.<sup>326</sup>

In the mid 1980's many Vermonters were concerned that the pace of growth throughout the state would eventually lead to a loss of the state's beloved rural character and way of life. Despite prior efforts like the use value appraisal program, Act 250, and the capital gains tax, the surge of development throughout the previous twenty years had made land and housing unaffordable to native Vermonters and began to fragment the state's remaining natural areas. In order to address these concerns, affordable housing, conservation, and historic preservation advocates went to the state legislature and demanded response.<sup>327</sup>

In 1987 the legislature passed the Vermont Housing and Conservation Trust Fund Act, a mechanism for directing funds to affordable housing and historical and land conservation projects. The Vermont Housing and Conservation Board was created to administer these funds to the appropriate groups completing projects of this nature. The funds to support the Board are gathered from the real estate transfer tax, which is paid by land purchasers when the deed is transferred over to them.<sup>328</sup> It's interesting to note the collaboration and the relationship that emerged between the

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<sup>325</sup> VT Dept. of Taxes

<sup>326</sup> Ibid

<sup>327</sup> VT Housing and Conservation Board

<sup>328</sup> Ibid

housing and conservation groups. The recognition of their interrelation is something that was relatively unique to Vermont at the time.

The Vermont Housing and Conservation Board is made up of nine members: five citizens appointed by the governor, to include an advocate for low income residents and a farmer, the commissioners of the state agencies of Agriculture, Housing and Community Development, and Natural Resources, and the Executive Director of the Vermont Housing Finance Agency. The mission of the board is simple:

In the best interests of all of its citizens and in order to improve the quality of life for Vermonters and to maintain for the benefit of future generations the essential characteristics of the Vermont countryside, Vermont should encourage and assist in creating affordable housing and in preserving the state's agricultural land, historic properties, important natural areas and recreational lands. 10 V.S.A Chapter 15<sup>329</sup>

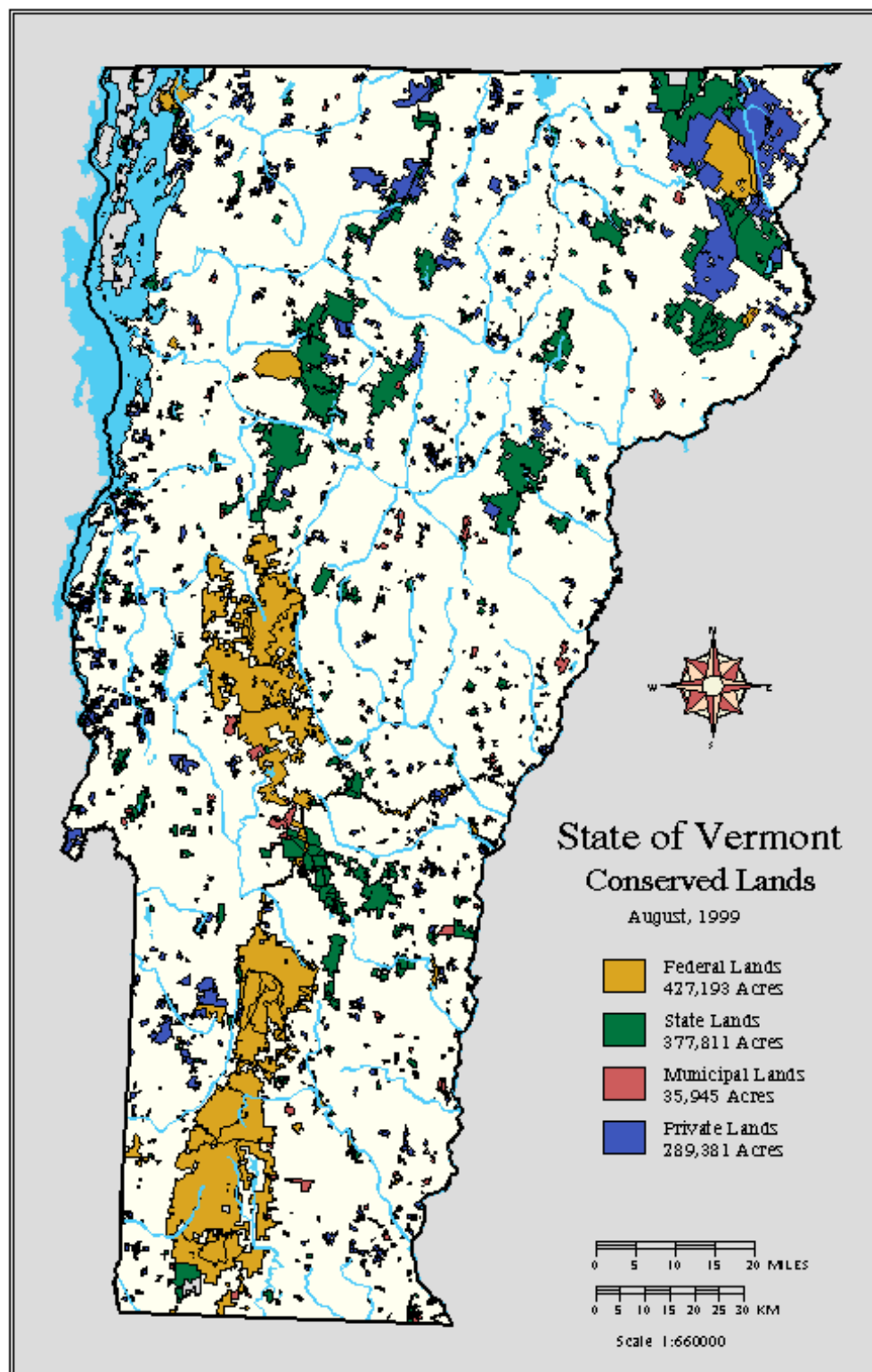
To date, the board has distributed nearly \$200 million to various nonprofit groups, municipalities, and state agencies to develop more than 1200 projects in 220 towns. That investment has resulted in the creation of 8,500 units of affordable housing and the conservation of more than 368,500 acres of agricultural, recreational and wild lands.<sup>330</sup>

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<sup>329</sup> Ibid

<sup>330</sup> Ibid

## Land Conservation Trends



## Nature Close to Home

As mentioned previously, many people who visit or move to Vermont do so in order to get closer to nature. Vermont hosts an abundance of public parks, forests and trails available for people to reconnect with some of the state's most beautiful places. In addition to offering an opportunity for people to reconnect to the natural environment, these spaces provide much needed habitat for native wildlife and vegetation and help sustain the local ecosystem. Most of these areas are very accessible for Vermont residents living in the most populous regions of the state.

The Green Mountain National Forest was created in Vermont in 1932. At the time, much of the state's forests had been depleted by unconstrained logging which in turn led to flooding, soil erosion, and drinking water contamination. The national forest today consists of over 400,000 acres and stretches along nearly two thirds the length of Vermont. The website for the Green Mountain National Forest (GMNF) boasts that it is "within a day's drive of 70 million people," making it very accessible to not only Vermonters but people living in other northeastern states, as well. The forest is accessible not simply because of its proximity to major population centers but also due to the wide range of activities and services it provides. "The GMNF signifies a multiple-use ethic through its role of providing ecological and science-based forestry stewardship, clean water, diverse vegetation, high-value, high-quality forest products, economical and educational contributions, and trail-based backcountry recreation".<sup>331</sup> The forestlands truly are beloved by people of many different interests and backgrounds.

In addition to the national forest, the state also has over 300,000 acres of state-owned forestland and 52 state parks.<sup>332</sup> These parks are scattered across the state and are a popular destination for anyone looking to get outdoors. The parks offer a wide range of activities like swimming in Lake Champlain at Sand Bar State Park, hiking Mount Philo for a great view of the sunset over New York's Adirondack Mountains, or cross-country skiing along the trails of Thetford Hill State Park. "State parks promote, operate and maintain a large and complex system of conserved lands and historic and modern facilities enjoyed by well over half a million visitors every year."<sup>333</sup> The extensive state park system in Vermont provides residents and visitors a great opportunity to get outdoors, breathe in the fresh air, and partake in any number of physical activities.

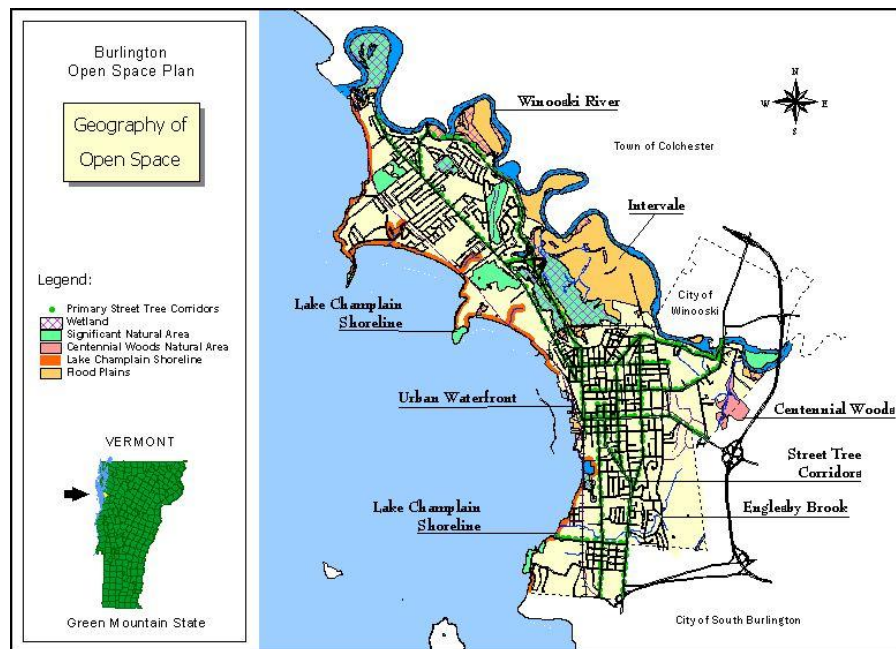
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<sup>331</sup> USDA Forest Service: Green Mountain National Forest

<sup>332</sup> VT Dept. of Forests, Parks and Recreation

<sup>333</sup> Ibid

On a smaller scale, there is also a relatively new movement occurring across the country to take inventory and ensure access to green space for city residents. Due to the intense growth Burlington, Vermont, has experienced in the last fifty years, much of the city's open spaces had disappeared, replaced with residential and commercial developments. In 1997 the Burlington City Council responded by passing a resolution dictating the creation of "a plan to protect important natural areas and open spaces."<sup>334</sup>



In 2000 an Open Space Protection Plan was passed in Burlington. The four goals of the plan are as follows:

1. Protect and preserve natural areas and open spaces of local, regional and statewide significance for the benefit of future generations.
2. Maintain and improve the integrity of natural and recreational systems within the City.
3. Guide development into the city center and neighborhood activity centers.
4. Ensure long-term stewardship and appropriate public access to natural areas and open space, including improved opportunities for pedestrian access and interaction throughout the City.<sup>335</sup>

The plan is very rational and methodical in addressing the need to direct growth to appropriate areas while protecting the city's most valuable natural areas. The plan also makes a point of

<sup>334</sup> City of Burlington, VT 2000

<sup>335</sup> Ibid

recognizing the benefits of access to nature for not only residents but visitors, property-owners, and businesses as well. One of the sub-goals of the plan is to “Increase the number and quality of small urban open spaces, especially in underserved neighborhoods of the city.”<sup>336</sup> This objective is noteworthy as it connotes equity-planning and is effective in bringing nature to those who may not be able to travel to it.

### **Private Land Conservation Groups**

In addition to the protected public lands scattered throughout the state, there are a large number of private non-profit land conservation groups that have become a major force in Vermont. Non-profit land trusts represent a variety of diverse interests, implying that there are many objectives to land conservation. There are groups devoted to protect land for farming, forestry, wildlife habitat, recreation, and even tourism.

One of the most well-known and influential state-wide groups is the Vermont Land Trust. On their website they have compiled a list of land conservation organizations throughout Vermont, and as of spring of 2008 the number of groups was up to ninety.<sup>337</sup> Some of these groups are national organizations operating in the state, like The Nature Conservancy, some are state-wide groups like the Vermont Land Trust, while others are more regional or local in nature. According to the Land Trust Alliance, a national organization, the number of land trusts operating in Vermont increased 40% between 2000 and 2005, and had conserved a total of nearly 600,000 acres.<sup>338</sup> The non-profit land conservation group movement has gained immense influence in recent years, and is a force to be reckoned with when considering land-use issues.

At this point most of the lands available for conservation are relatively smaller parcels versus large tracts. There simply are not many large tracts of undeveloped land left in Vermont. The largest, recent conservation project in Vermont was the protection of the Champion Lands in the Northeast Kingdom in 1999. The project was a collaboration between the federal and state governments and some private groups including the Essex Timber Company, the Nature Conservancy, and the Vermont Land Trust. The site is a whopping 132,803 acres, with Essex Timber controlling around 84,000 acres, the state operating about 22,000 acres, and 26,000 acres going to the Silvio O. Conte National Wildlife Refuge.<sup>339</sup>

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<sup>336</sup> Ibid

<sup>337</sup> Vermont Land Trust

<sup>338</sup> Land Trust Alliance

<sup>339</sup> Vermont Land Trust

There are different methods employed in order to conserve land. Depending on the type of land in question, the landowner's intent, and the amount of money a land trust has available for its conservation, the organization may choose to either purchase the land outright or place a conservation easement on it. Conservation easements basically are a restriction of certain land-uses in order to maintain the parcel in its current form of farmland, forestland, or open space. By placing a conservation easement on the land, the non-profit organization purchases the development rights from the landowner. The land trust retains the development rights even as land ownership changes, as the restrictions on development are written into the deed. Conservation easements are commonly used for farmlands and forestlands, whereas land acquisition is normally used for recreation lands or wildlife preservation.

### **Farmland**

Though the state has developed and changed dramatically throughout the past fifty years, farming has remained an important industry for the people of Vermont. Approximately 20 percent of the total land in the state is used for farming and the industry employs roughly sixty thousand people. Dairy has remained the top agricultural commodity in the state representing 77% of the total agricultural cash receipts.<sup>340</sup> The dairy industry in Vermont is the largest in New England, and since over 90% of what's produced is exported, it supports the region's dairy needs.<sup>341</sup> Farming plays a major role in any large-scale land use decision.

In the United States Department of Agriculture's Census of Agriculture, the definition of farmland encompasses croplands, pastureland and woodlands, "any place from which \$1,000 or more of agricultural products were produced or sold, or normally would have been sold, during the census year."<sup>342</sup> Therefore, the following data aggregates these various forms of farmland. In the 2007 Census, Vermont had a total of 6,984 farms on 1.23 million acres. This number increased from the 2002 Census, when there were 6,571 farms, but decreased significantly from the 1997 Census when there were 7,063. The amount of farmland in production has also been decreasing steadily, as there were 1.24 million acres in 2002 and 1.32 million acres in 1997. The amount of farmland in the state equates to 20% of Vermont's total land area. The average farm size varied slightly from 186 acres in 1997, to 189 acres in 2002, and to 177 acres in 2007.<sup>343</sup>

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<sup>340</sup> USDA Economic Research Service

<sup>341</sup> VT Dairy

<sup>342</sup> USDA Economic Research Service

<sup>343</sup> Ibid



When viewed from this ten year period, the sizes of Vermont farms are shrinking. There are a number of reasons as to why this could be happening. Some of Vermont's larger farms could have been skewing the average and when they were sold or partitioned off it brought the average back down. Financially depressed farmers could have sold off some housing lots off the edge of their property to stay afloat. Or, as has been happening for the past 70 or 80 years, farmers could have continued to become more specialized thereby decreasing their need for large tracts of land.

In 2007, 84% of all farms were owned by an individual farmer or family. Non-family corporations owned just 5 % of all Vermont farms. The average age of the principal farm operator has been steadily increasing from 53 in 1997 to 54 in 2002 to 57 in 2007.<sup>344</sup> This data is significant in a couple of ways. First of all, the image Vermonters have of their farming heritage is true, in that the industry is primarily made up of small-scale family-owned farms. This is a legacy that has been passed on for generations and is still strong in the Vermont culture. The second implication of this data is that the principal farmers are aging and many will be looking to retire in the next 5-10 years. The fate of the farmland that they work worries farmland conservationists in the state, as there is a great deal of uncertainty as to the future of farming in Vermont.

## Forests

Forestlands play a unique and vital role in maintaining a healthy environment for community members. The trees and shrubs that make up a forest provide wildlife habitat, food and fuel for human consumption, and an abundance of recreational opportunities. Trees also produce oxygen, sequester carbon dioxide, filter air pollutants, and can significantly lower air temperature. Forests are also essential for maintaining a healthy water supply; their root systems soak up rainwater runoff and prevent soil erosion; their shade keeps waters cool for aquatic species; and their leaf litter is an indispensable component in the natural food chain of aquatic species.

In the late 1800s, approximately 20% to 30% of Vermont was forested.<sup>345</sup> When Vermont was first settled by early colonists, much of the land was cleared for lumber extraction and farming. This led to issues such as resource depletion, soil erosion and contaminated water supplies. However, as farming moved to the Midwest where the lands are arable, flat, and less rocky, many farms in Vermont were abandoned and the land reverted back to forest. "The availability of land and a growing awareness and concern of water quality management led to the state and federal

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<sup>344</sup> Ibid

<sup>345</sup> VT Agency of Natural Resources

governments' acquiring forestland for conservation. The objective behind these publicly-owned lands is to protect watersheds and timber resources while serving as a model for sustainable forestry."<sup>346</sup> This government-led initiative helped to shape the way people think about the value of forestland, and ignited a movement to protect the state's forest resources. The forest products industry now provides over eight thousand jobs to Vermonters including those in furniture making and other finished wood products which are very profitable, value-added industries.<sup>347</sup>

Sustainable forestry practices have allowed the industry to develop and prosper despite the fact that there was so little forestland at the start of the twentieth century. The state government in Vermont has been a leader in promoting forestry methods that protect the local watersheds. They offer educational programs to loggers and forestland owners so that the resource is harvested in a sustainable manner that does not adversely affect the state's water sources. Part of the program is an established set of rules called the Acceptable Management Practices for Maintaining Water Quality on Logging Jobs in Vermont. These practices specifically prevent mud, petroleum products, and woody debris from entering public waterways.<sup>348</sup> This collaborative approach to overseeing the forestry industry is cost effective and leads to a more open dialog between state officials and private landowners.

As of 1997 there were 701,992 acres of publicly owned forestland, held by federal, state, and local governments.<sup>349</sup> At the same time, there were 3,906,354 acres of privately owned forestland. In 1998 the U.S. Forest Service conducted a forestland inventory of the state and found that it is now 78% forested.<sup>350</sup> From the inventory we can see that unfortunately there is not a lot of diversity in the tree species that make up Vermont's forests. About 33% of all the trees are maples, 18% are spruce and fir, 13 % are hemlock and 10% are birch.<sup>351</sup> This lack of species diversity leaves the forests susceptible to disease and infestation.

## Challenges

The future of land conservation in Vermont faces both short-term and long-term challenges. Even though the long-term challenges can be just as damaging as the short-term issues, they naturally are not addressed accordingly.

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<sup>346</sup> Klyza 2001

<sup>347</sup> Ibid

<sup>348</sup> VT Dept. of Parks, Forests and Recreation

<sup>349</sup> VT Agency of Natural Resources

<sup>350</sup> Ibid

<sup>351</sup> Ibid

The most urgent issue today is obtaining adequate funding for land conservation. The funding for the Vermont Housing and Conservation Board has been gradually diminishing as the state government has directed those monies elsewhere. This year in particular is worrisome, as Vermont's Governor Jim Davis has proposed cutting the funding for the Board completely.<sup>352</sup> Of course, balancing the state budget is no easy task this year due to the economic recession; but the implication of halting all state funding for land conservation will be tri-fold, as those funds are used to leverage private donations and federal matching grants. Cutting funding for land conservation is not a standard Vermont environmentalists want to see set. In an email interview with John Roe, the Vice President for Land Conservation with the Vermont Land Trust, he strongly indicated that if we allow the human resource infrastructure in the land conservation field to crumble, it would not be an easy task to rebuild it back to where we are today. A lack of funding and political support unfortunately does have the capacity to break down the intricate network of conservation groups throughout the state.

Maintaining conserved lands so that they may prosper in perpetuity is a very important component to land conservation. Land that is unmanaged can easily become dominated with non-native invasive species, especially as vegetation first begins to grow in the soil. Unfortunately however, even though this work is just as important as conserving the land itself, it is not funded at the same level. People making donations to land conservation groups are inspired at the prospect of preserving a meaningful parcel. Making a donation to fund an invasive species removal program is not always as inspiring. This challenge has been exacerbated by global climate change as an effect of that is an increase of pests and non-native species. Hence, funding for stewardship activities is strained as the control of exotic, invasive species becomes more prolific and intensive.

Like much of New England in recent decades, Vermont has developed its landscape in a very fragmented manner, parcel by parcel, and all of a sudden much of the landscape is filled with low density development. Unfortunately this is a sign of the times, as many Americans want a 2 acre lot in a subdivision on the outskirts of town. These homes are considered safe and good for families. Until the sentiment changes and people start desiring homes in the designated growth area on a quarter acre lot, low density development will continue, leading to a fragmented mosaic of conserved lands.

Moving forward, a key challenge for land conservation groups is ensuring that their lands will provide adequate habitat for native wildlife. The connectivity and strategic planning of

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<sup>352</sup> Vermont Land Trust

conserved lands is integral to meeting this challenge. Large mammals such as black bear need interior or core habitat for foraging, breeding, and hibernating. Interior habitat only begins to develop for these species at about 150 feet from the edge of the forest. Therefore large tracts of land are needed in order to keep native wildlife and the natural biodiversity of the ecosystem healthy and viable. Land conservation groups and agencies need to maintain a sense of how connected their protected lands are so that wildlife can thrive and remain mobile.<sup>353</sup>

## Opportunities

The landscape in Vermont for the most part is still designed according to a traditional settlement pattern. The towns have a compact center with the hinterlands devoted to farming, forestry and wild land conservation. This is in part thanks to the state's regional planning format. Large scale developments that require an Act 250 permit are reviewed by the regional district commission. The state is also divided up into eleven regional planning commissions. Besides offering planning services to their member municipalities they also develop regional plans that guide the local planning process.<sup>354</sup> Making some land use decisions at the regional level helps to ensure fluidity of landscape and also reduces inefficient redundancies. Land conservation in Vermont is supported in this structure as it helps to link protected areas across the state.

Perhaps it is because of all the natural beauty surrounding them, but Vermonters have a very strong land conservation ethic. Even in the face of a proposed halt to conservation spending in the current state budget, Vermonters are gathering together and voicing their support of conservation projects. In January 2009, the Vermont Housing and Conservation Commission gathered at the State House and launched a public campaign called "Conservation Can't Wait: Vermonters speak out for continued public investment in critical conservation efforts."<sup>355</sup> The campaign has brought together groups from many different sectors including hunting and fishing, recreation and tourism, farming and forestry in addition to classic environmental groups.

One positive factor of the current economic recession is that the slow-down in development gives local, regional and state leaders time to stop and reflect on the Vermont's future path. Economic slow-downs give policymakers, planners and public officials the opportunity to determine how they will direct growth when the economy picks back up again. This can also be an opportunity

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<sup>353</sup> Randolph 2004

<sup>354</sup> VT Association of Planning and Development Agencies

<sup>355</sup> Vermont Land Trust

for land conservationists to think strategically about where they want to direct their resources in the future.

## **Conclusion**

The state of Vermont has certainly been a leader in the field of land conservation for states within the region as well as those across the country. Their development of progressive regulatory and tax policies to protect their natural and cultural heritage in the face of nearly constant development pressure can serve as a model for regions facing similar challenges. Vermont is still widely recognized as a rural state with much of the population depending on the land's natural resources for sustenance. People visit and move to Vermont to step back in time and enjoy a quieter lifestyle with nature at their doorstep.

Although Vermont has invested a lot of energy in conserving their most unique and sensitive lands, there is still much work to do as we move forward into the future. Land conservationists face the challenges of developing adequate funding sources, strategically conserving viable parcels of land to maintain connectivity in the midst of a fragmented landscape, and stewarding conserved lands as they are threatened with the proliferation of invasive species due to global warming. These challenges can be daunting but they can also give conservationists a new focus in their mission.

Fortunately, Vermont's long history of conserving their most unique and valued lands has spawned a populace devoted to continuing that work. As land conservationists in the state move forward, they can rest assured that they have strong community support and the public and private infrastructure available to act strategically and regionally in their upcoming conservation efforts. Hopefully the silver lining in the current economic downturn will be to allow both the state's conservationists and community leaders the time to carefully consider how they want Vermont's future to be.

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## Evaluation of the Process

The CLC and its organizers are to be commended for navigating a complex and challenging, collaborative process to address a key issue at a unique time in New England history. The CLC successfully prepared a concise report identifying 4 key priorities to advance land conservation in the region and are progressively working toward a comprehensive report that will have the attention of all six New England governors.

Through their process, the CLC commissioners have created and have been working through a ground-breaking collaborative approach to developing and implementing regional-scale conservation efforts. As in any interstate partnership, an inherent tension exists between an inclusive, participatory process and political and practical expediency. For the sake of their project, the CLC has had to work within a very narrow timeframe. Their report is due, complete with recommendations, at the NEGC meeting in September 2009. This is not a lot of time to work with and gather input from such a diverse group of stakeholders.

Due to the inherent expediency of the project, all throughout the process the CLC has had to continue to press forward even though not every state was fully supportive of the project and therefore their interests may not be fully represented in the final report. There are also a number of stakeholder groups that were underrepresented such as developers, affordable housing advocates, hunters and anglers and the general public. In a perfect world, with an infinite amount of money, time, and interest, all of these groups would have been present at the CLC meetings.

Looking back, we, as Muskie School of Public Service graduate students, would like to have had a greater role in this undertaking. We also recognize that there is an additional opportunity for graduate students from throughout the region to participate and lend their skills to the CLC. The relationship between graduate students and working professional relationship can be mutually beneficial and is something that we think should be further enhanced in ventures such as this one. We are grateful for the role that we did play within the CLC's process. Through the meetings we attended and the insight Dick Barringer imparted, we have gained invaluable experience and knowledge concerning this collaborative approach to land conservation. This experience will help us to navigate our future endeavors in consensus-building, land use planning, and general policy-making in a highly political environment.



<b>Topic:</b>	<b>Strengths</b>	<b>Weakness</b>	<b>Opportunity</b>
<b>CLC: Development of Process</b>	NE governors endorsed the effort and will receive the report as an official public document  Commission interactions were positive, productive, and cordial	Process, participants, and resources were not entirely secured in advance of the January CLC meeting	Provide a model of collaboration for other multi-state or intrastate regions to replicate  Establish needed resources in advance of the process
<b>CLC: Representation</b>	Commission members included regional experts about conservation issues	Certain interest groups and states were better represented than others; debate was influenced by the specific interests of the attendees	Ensure that all states have multifaceted commissioners in place and a process is established that will incorporate all views of diverse stakeholders
<b>CLC: Documentation</b>	The CLC produced informative and concise documents that effectively moved the process forward	CLC documents sometimes did not reflect the land conservation issues voiced at meetings	Identify drafting teams that have a representative from each key constituency with longer review periods for the commission at-large
<b>CLC: Outreach Efforts</b>	Select representatives participated throughout and provided a core work group that sustained momentum and shaped the CLC's priorities	Commission lacked strong representation from key constituents including hunter and anglers, developers, public housing, urban development, municipalities, etc	Ensure that the process is all-inclusive by conducting a thorough stakeholder analysis that addresses all pertinent interests, and tools for soliciting broad input
<b>State Government</b>	There was strong political momentum in early phases from all states	Political momentum faltered in some states as efforts began, and was inconsistent among the six states	The commissioners should communicate regularly with status updates to ensure all states advance outreach efforts, are engaged in the process, and share feedback from their constituents
<b>University Students</b>	There is a plethora of free resources through New England's superior network of universities and colleges	The work of the commission has been placed on a few, very busy individuals with other work obligations	Identify research and technical needs of the commission in advance and partner with universities and colleges to provide human resources – GIS, background research, facilitators, etc.
<b>Timing: The Economy</b>	Land prices have dropped, making land acquisition more affordable  Great land conservation efforts in the past have occurred during times of economic hardship resulting in the protection of the regions national and state parks and forests	Economic downturns cause organizations to focus on budget cuts and prohibits them from actively participating in large scale land conservation efforts	Use times of economic hardships to restructure and refocus on conservation issues that will provide a foundation to build on for future years

## Appendix A

### **Appendix A: CLC Documents**

-September 16, 2008 New England Governors' Conference	Page 165
-January 9, 2009 Meeting Agenda	Page 169
-NEGC/CLC Timeline	Page 171
-January 9, 2009 Meeting Notes	Page 172
-January 28, 2009 White Paper: Forest as Forests	Page 178
-February 9, 2009 Conference Call Notes	Page 182
-March 3, 2009 NEGC/CLC White Paper	Page 184
-March 23, 2009 Teleconference Notes	Page 188
-May 1, 2009 Meeting Agenda	Page 191
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September 16, 2008

**To:** New England Governors

**From:** John E. Baldacci  
 Governor of Maine  
 Chairman

**Subject:** 100<sup>th</sup> Anniversary of the November 1908 Meeting of the New England Governors

A hundred years ago this November, the six governors of the New England states met in Boston, Massachusetts to discuss regional cooperation on conservation and preserving our natural places. This historic meeting led to numerous major conservation initiatives as well as a unique heritage of regional coordination on conservation in New England.

The history of this regional cooperation on conservation is documented 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. I've attached the cover and a list of the authors and editors from each of our states of this important work. I would like to make special note of the lifetime of contributions to conservation and environmental protection by the book's editor-in-chief, Dr. Charles 'Hank' Foster, currently with the Kennedy School of Government at Harvard University.

A resolution is attached for your review and adoption that recognizes the historic governors' meeting in 1908 and proposes further action on regional conservation issues.

Governor  
 JOHN E. BALDACCI  
 Maine  
 CHAIRMAN

Governor  
 DEVAL PATRICK  
 Massachusetts  
 VICE CHAIRMAN

Governor  
 M. JODI RELL  
 Connecticut

Governor  
 JOHN LYNCH  
 New Hampshire

Governor  
 DONALD L. CARCIERI  
 Rhode Island

Governor  
 JAMES H. DOUGLAS  
 Vermont

## NEW ENGLAND GOVERNORS RESOLUTION

### ***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; and

**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 meeting of the New England Governors' Conference, Inc. in Bar Harbor, Maine on September 16, 2008.***

### 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.

### A Centennial Celebration, 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 conservation 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 of 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 to:

- 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;

- to 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
- to set the stage for possible joint initiatives and action through coordinated planning, priorities, means of funding, and methods of implementation.

## NEW ENGLAND LAND CONSERVATION MEETING

*First convening of the New England Governors Blue Ribbon Commission on Land Conservation (CLC)*

Friday, January 9, 2009

Lincoln Institute of Land Policy  
Cambridge, Massachusetts

### **Agenda**

9:00 a.m. **Welcome**

- Introductions & Opening Remarks (Richard Barringer, Chair)
- The NEGC Resolve and charge (see attached)
- Goal of this meeting: To answer the questions -
  1. How did we get here?
  2. How do we get there?Five Questions for CLC to answer  
State events and timelines  
Fill out CLC and AP memberships  
Administrative Needs  
Funding the effort

9:30 a.m. **Panel Discussion: How Did We Get Here?** (Hank Foster, Moderator)

- *The 1986 New England Land Conservation Strategy*  
Gordon Abbott, Jr., author and former director of The Trustees of Reservations
- *Twentieth-Century New England Land Conservation: A Heritage of Civic Engagement*  
Charles H.W. Foster, co-author and editor
- *Thoughts for the Future*  
Armando Carbonell, Senior Fellow & Chair, Dept. of Planning and Urban Form,  
Lincoln Institute of Land Policy

10:15 a.m. **Break**

10:30 a.m. **Refining the CLC's Questions** (Jack Kartez, Facilitator)

*Five (draft) questions the CLC will seek to answer:*

1. *What are the major trends, challenges, and opportunities today and over the next 10-20 years in N. E. land use and land conservation?*

2. *Is there a shared vision for land conservation that the six New England governors might embrace?*
3. *What might the six governors do collaboratively to ensure that land conservation continues to go forward in New England?*
4. *How may additional funds be secured in support of New England land conservation efforts?*
5. *What roles might the US Congress and the federal Executive Branch play in helping advance New England land conservation?*

11:00 a.m. **Facilitated Discussion: How Do We Get There?**

*1. Events and Timeline*

Commission Meetings, State Events, Regional Conference, Final Report

Caucus by State and Report: options for state meetings –

- Do it ourselves (with state Advisory Panel)
- Stakeholder meeting of 12-15 persons
- Invitational forum for a larger group
- Other

12:00 p.m. **Working Lunch**

12:30 p.m. **Facilitated Discussion: How Do We Get There?** (cont.)

*2. Organizational & Administrative Needs*

Filling out the CLC Membership (12)

Filling out the Advisory Panel (AP)

- Sectors to be represented for each state: scientific/academic – business – philanthropic – nonprofit – local government, plus federal representatives of NPS and USFS

*3. Funding the Effort*

How Much Money is Needed?

- Funding concept draft
- Where to Go?
- Who Proposes?

*4. Press relations*

Press/public notice of intentions

Press contact in each state?

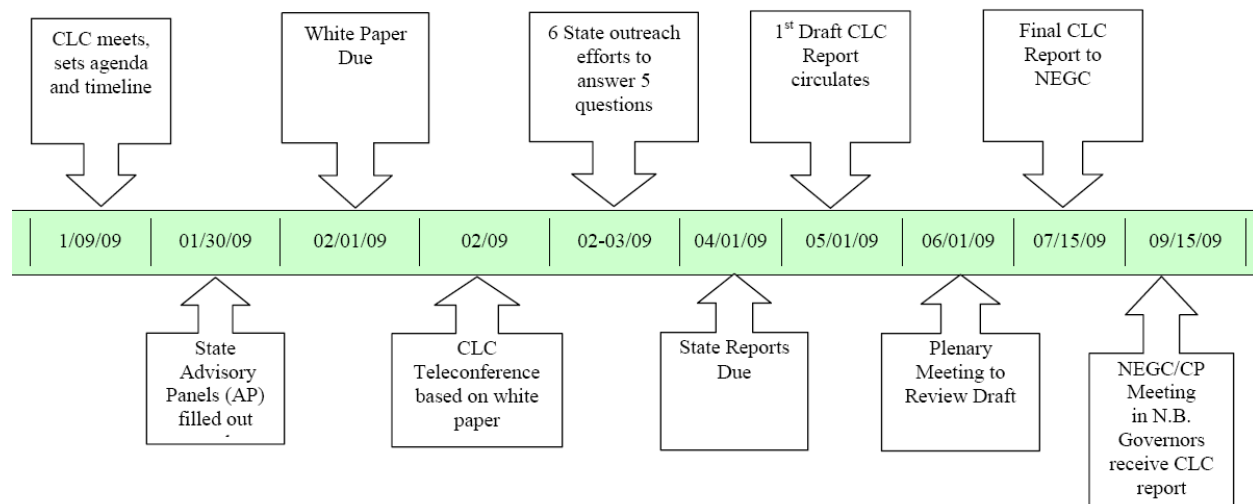
2:30 p.m. **Next Steps** (Richard Barringer, Chair)

- Concept proposal for funding (what, to whom, by whom)
- Follow-up memorandum with roles, responsibilities, timelines
- Next CLC meeting (by conference call?)
- Other?

3:30 p.m. **Adjourn**



## NEGC Commission on Land Conservation Timeline



# New England Governors Land Conservation Commission (CLC)

Notes of First Meeting, Friday, January 9, 2009

Lincoln Institute of Land Policy, Cambridge, Massachusetts

**Attendees:** CLC Members Richard Barringer (Chair), David Leff, Janet Coit, Lisa Primiano (on behalf of W. Michael Sullivan), Jane Difley, Dorrie Pizzella, Susan Francher, Alec Giffen (on behalf of Patrick McGowan); Presenters & Facilitators: Charles H.W. Foster, Armando Carbonell, Gordon Abbott, Jr., Jack Kartez; Staff: Amanda Loomis, Barbara Ives, Brett Richardson; Interested Observers: James Levitt, Nora Mitchell (on behalf of Bob McIntosh), Emily Russell-Roy, Charles Tretter, Lynn Lyford, Jane Lafoir, Bernard McHugh, Bob O'Connor, Peter Lord, David Foster, Alice Chamberlin, Terry Sullivan; NEGC: John Shea.

## Big Ideas Generally Agreed To:

- That the CLC recommend one or two **big** ideas to the governors, rather than a laundry list;
- That it is now insufficient to view land conservation as a “good” in and of itself, for its natural benefits; it must today be linked directly with economic and social benefits;
- That whatever the governors may ask of the federal government, it must be expressed in terms of our advancing the national interest, and proposed as a pilot project for the nation; and
- The CLC will recommend to the Governors a process to guide and monitor implementation of the recommendations beyond the September 2009 report.

## Decisions & Timelines

### Schedule:

- *Late January:* Finalize State Advisory Panels (AP) of approx. 5 members each
- *Early February:* CLC meets (via teleconference) to refine goals, issues, questions, based on a white paper to be distributed in advance
- *Mid-February:* Meeting of federal agencies with CLC representatives, to discuss issues, themes, and opportunities
- *February 22:* NE governors winter meeting
- *Feb. – March:* State-by state outreach to constituencies
- *Early April:* State reports due on responses to the questions posed
- *Early May:* CLC meets to discuss state reports and outline regional response

- *Early June*: Draft report available, possible plenary meeting of CLC and State Advisory Panels
- *July*: Finalize report, deliver to NEGC
- *Sept. 15*: governors receive CLC report

### Fundraising Strategy

- Each state will be responsible for funding its respective AP meetings and outreach process.
- The Commission will make a coordinated ask to New England's community foundations for shared administrative and logistical functions
- Lincoln Institute of Land Policy will be asked to fund publication of the CLC report as a LILP publication.

### White Paper

- To be developed by early February, based on today's conversation; drafting committee: John Shea, Dick Barringer, Alec Giffen, Janet Coit, Jane Difley, David Leff

### Meeting Summary

**1. Welcome.** Dick Barringer called the meeting to order at 9:15, thanked all for attending, and introduced Greg Ingram, President of the Lincoln Institute of Land Policy (LILP). Ingram welcomed members of the CLC and guests, and described the history of LILP's role in advancing land conservation in New England. He made especial note of the 1980s effort, the *Lincoln Institute Land Conservation in New England Study Group*, that met regularly to discuss opportunities to advance land conservation. Ingram wished the Commission a productive day.

Barringer recognized the recent death of Perry Hagenstein, devoted contributor to New England land conservation efforts, and asked a moment of silence in his memory. Barringer then described the impetus for the CLC, walked through the day's agenda, and introduced Charles H.W. (Hank) Foster, moderator of the morning's panel discussion.

**2. Panel Discussion: How Did We Get Here?** Foster thanked all for their attendance and commitment to the CLC, described the morning's panel "as a short walk through history," and introduced the other discussants, Armando Carbonell and Gordon Abbott, Jr.

Carbonell described the important contributions that the LILP has made in developing land conservation policies and building capacity, beginning with the *Land Conservation in New England Study Group* in the 1980s. He described more recent conservation efforts involving collaboration between state agency and non-profit staff in identifying and addressing issues and opportunities for conservation in the region, and closed by emphasizing the importance of good urban development and the relationship between urban and rural landscapes.

Abbott described the important role LILP has played in generating dialogue among land conservationists and presented the differences between 1986, when an earlier New England Land Conservation Strategy was developed, and the present. In 1986 the big issue was suburban sprawl, the impacts of which were felt in rising property values, loss of town character, and loss of agricultural lands and open space. Conservation has come a long way since the 1980s, he indicated:

the number of land trusts has expanded dramatically; mapping of natural resources has improved significantly; the Maine Coast Heritage Trust successfully raised \$100 million in 2006; marketing and outreach have improved with the growth in youth education programs; and model regional projects are being developed that champion landscape-scale conservation.

Foster introduced his new book, *20<sup>th</sup> Century Land Conservation in New England*, and shared nuggets from it, concluding that the era of projects advanced by individual organizations on their own is perhaps over. *Partnerships* are the future, because funding is tight and the next phase of conservation will occur at the landscape-scale. Foster emphasized that conservation is more about people than land, and that projects linked with a “sense of place” are most effective. The current generation of conservationists is aging, and a new generation of conservationists must be cultivated. Young people and diverse segments of society must be connected to the land. The Civilian Conservation Corps is one model that New England used in the past and may be useful again, and New England’s conservation practices may be positioned as a pilot model for the nation.

The CLC then discussed the need to promote and distribute 20<sup>th</sup> Century Land Conservation in New England. Foster welcomed ideas for promotion and noted that the Cabot Foundation has provided a grant to offer the book to 500 public libraries. The CLC paused for a break at 10:30.

**3. Refining the CLC’s Questions.** Barringer re-called the meeting to order at 10:45 and introduced facilitator Jack Kartez, Professor of Community Planning and Development at the Muskie School of Public Service, who asked the CLC members and guests to offer comments and insights about the CLC’s five questions.

Question One: The CLC’s first question generated lengthy discussion of the major trends, challenges, and opportunities for New England land conservation. Key issues cited include the creation of a regional network of connected conservation lands, and passing the baton to the next generation of conservation leaders. Other important considerations included: the current economic downturn offers great opportunities and fundraising challenges; New Englanders strongly support environmental issues, and partnerships between state agencies and non-profits are well-established; conservation must today be linked with economic and social benefits; and the CLC may need an online resource center where members can review current reports and information from the six states.

Question Two: The CLC agreed on the need to emphasize implementation in addition to vision in question two, re-stated as, “What are the shared vision and tools for New England land conservation that the six state’s governors might embrace?”

Question Four: Question four was expanded beyond “additional funds” to “additional resources,” or “funding across the public, private and non-profit sectors” to avoid placing the onus entirely on state and federal governments in tough budget times. Foster suggested that the CLC needs to identify and hew in its recommendations to the federal interest in New England land conservation. A strong case must be developed upon which New England can make any request for federal funding.

Question Five. Question 5 was restated as, “What national interests may NE land conservation advance?”, with the suggestion that any New England conservation effort be articulated as a pilot for similar efforts in other regions of the U.S.

The five re-drafted questions to guide the CLC’s deliberations are at the bottom of these Notes.

**4. How Do We Get There?** Barringer stated that implementation will require broad public and congressional support. He then shared the Maine’s intended process for engaging diverse stakeholders to develop Maine’s responses to the questions posed. In Maine, some 2 dozen key conservation constituencies (including the Maine AP) will be invited to participate in a day-long session to answer them through a facilitated process. The questions will be distributed in advance for consideration, and the meeting will include small group sessions in the morning to brainstorm the questions, followed by an afternoon discussion to attempt consensus on key themes and the responses.

The CLC’s working timeline identifies late February through March for an outreach effort in each state. April 1 is identified as the goal to receive each state report on its outreach. (The CLC’s work must be finished by mid-July in time for it to be included in the briefing books for the September NEGC meeting.)

A facilitated discussion followed to identify an appropriate group timeline and effective state processes. The CLC broke for lunch at noon.

**5. How Do We Get There? (cont’d.)** Barringer called the meeting back to order at 12:45. John Shea stated that the CLC must meet the September deadline for its report, but that its work may continue beyond this if it is the governors’ pleasure, allowing further recommendations to them.

CLC Membership: Kartez observed that Massachusetts and Vermont have open seats on the CLC. Dorrie Pizzella reported that Massachusetts is actively seeking to fill the vacant seat. Vermont’s representatives were unable to attend today’s meeting.

Filling out the state Advisory Panels: The CLC discussed filling out the state AP’s. At least five important sectors need to be represented on each, to include the business, philanthropic, nonprofit, local government, and scientific/academic sectors. The Chair emphasized the importance of selecting AP members who will effectively represent their interests and have leverage with the Governor’s Office to gain support. The CLC’s timeline calls for each state’s Advisory Panel to be established by the end of January 2009.

The question of federal agency representation was raised, and it was agreed that the NPS and USFS should be invited to join the CLC in an advisory capacity. Bob McIntosh of the NPS has agreed to serve. Alec Giffen will contact Sally Collins and Gail Kimball of the USFS for their interest. Nora Mitchell shared that National Park Service staff are seeking new ways to work with state governments. The CLC agreed that a meeting in Boston with federal agencies might help generate ideas for the CLC, and Nora agreed to organize this meeting.

Funding the effort. A brief, draft statement of the CLC’s goals, timeline, and funding needs was shared; and the CLC discussed opportunities to replace money needs with in-kind contributions for

meeting space, food, refreshments, etc. Jane Difley offered to host a CLC meeting at the Society for the Preservation of New Hampshire Forests facilities in Concord. Linda Lyford also offered to host a CLC meeting in Littleton, Mass.

After discussion, the CLC agreed that: each state will be responsible for funding its own Advisory Panel meetings and outreach process; the CLC will make a coordinated ask to New England's three community foundations for the remainder (CLC administration, report preparation, etc.); and the Lincoln Institute of Land Policy will be approached for publication of the CLC report as a LILP publication.

The CLC agreed that the final report should be a high-quality publication, broadly promoted and distributed, and that adequate funding for design and printing should be prioritized. Difley and Barringer will develop a fundraising proposal for the community foundations.

Press Relations: The CLC then turned to the issue of press relations and the challenges of coordinating public communications among the CLC partners.

John Shea stated that the NEGC will generally leave press matters to the discretion of each state. CLC representatives stated that their participation as either state agency or 501(c)3 staff made the CLC meeting open to the public record. Tretter emphasized that each state should keep the NEGC's state coordinators apprised of any public communications.

The CLC agreed that a joint statement articulating what the CLC is about will be drafted (by John Shea) and shared with Gov.'s offices and all Advisory Panel members; each state should consider identifying a single spokesperson for CLC matters; communication among affected stakeholders is important if the CLC's work is discussed publicly, to be shared with the respective Governor's office, NEGC staff, relevant state agency staff, and other CLC members, as necessary.

Barringer stated that his goals as a CLC member in this regard are to support his governor, to keep the NEGC front and center, and to focus on what the six New England states share in common respecting land conservation. The CLC supported this summary as a good working framework for press relations.

**6. Moving Forward.** The CLC agreed that a meeting to be scheduled for early February will be a CLC member meeting only, not a full convening of state Advisory Panel members; and organized by teleconference to minimize demands on CLC members' time; an in-person meeting will be held afterward, if needed. A brief white paper setting forth options for the CLC (based on today's discussion) will be circulated in advance; a drafting committee includes Dick Barringer, Alec Giffen, Janet Coit, Jane Difley, and David Leff.

It was agreed that the proposed federal agency meeting might best be held in early February, so that each state may incorporate the outcome in its respective outreach effort. Barringer will follow up with Nora Mitchell to ask that the federal meeting be held in early February, if possible.

The draft white paper will be distributed for review in the next few weeks; and today's meeting notes and timeline will be shared with the CLC and distributed to each state Advisory Panel member.

Barringer stated that the CLC's report to the governors should reflect the latest research, and encouraged Commission members to forward published sources to him for compilation. Shea thanked the Commission members and guests, the LILP, Dick, Jack, and Hank on behalf of the NEGC.

The meeting adjourned at 3:00p.m.

**The re-drafted 5 Questions to guide the CLC's deliberations are:**

1. What are the major trends, challenges, and opportunities today and over the next decades in N.E. land use and land conservation?
2. Is there a shared vision and new set of tools for land conservation that the six N.E. governors might embrace and advocate?
3. What might the six governors do collaboratively to ensure that land conservation continues to go forward in N.E.?
4. How might additional resources be made available from the public, private, and philanthropic sectors in support of N.E. land conservation?
5. What national interests might land conservation in N. E. advance, and by what means?

## White Paper on Keeping the Northern Forests as Forests

January 28, 2009

With the signing of the Memorandum of Understanding among the Forest Service, Natural Resources Conservation Service (NRCS), and State Foresters, we are ready to get underway with efforts to keep the Northern Forest as forest. In light of other related activities already underway within the region, there are at least three courses of action available to us in pursuing our objectives. These range from adopting a wait-and-see attitude to pursuing an independent project on keeping the Northern Forest as forest that we had outlined earlier. At this point, we need to choose among these courses of action which will be described in greater detail below. Before getting into this detail however, it is important to be aware of other activities and influences already underway, or likely to emerge in the near future. There are several of these – they are as follows:

### The Regional Context

- **Maine’s efforts on keeping forests as forests.** Under the leadership of Bruce Wiersma of the University of Maine, and in cooperation with the Governor’s Office, Maine initiated an effort to develop recommendations for keeping the state’s forests as forests over a year ago. The Maine Group is made up of 17 members, representing virtually all of the constituencies that care about keeping forests as forests in Maine. These range from corporate landowners to nonprofit conservation groups, and state agencies. Work thus far, has included identification of issues important to the stakeholder group, and presentations on a number of these issues. Information on the work of this group can be obtained by contacting Summer E. Allen, Communications & Development Coordinator Center for Research on Sustainable Forests, University of Maine ([summer.e.allen@umit.maine.edu](mailto:summer.e.allen@umit.maine.edu)). The group is ready now to start discussing recommendations that it believes could help further the goal of keeping forests as forests. The group hopes to complete its work late spring of this year.
- **Massachusetts efforts to establish the “Berkshire National Forest.”** For the last several years, the state of Massachusetts, in collaboration with other forestry interests, has been exploring the possibility of establishing a National Forest in western Massachusetts. The central idea is that an area, as yet to be defined, in the Berkshires could be called a National Forest, even if the lands involved continue to be privately owned and are subject to a Conservation Easement held by the state. The Massachusetts State Forester, James DiMaio, reports that they will be discussing this issue with the public in the area that would be affected, and that their commitment is to pursue this effort if the public is supportive. I understand that these meetings will be taking place shortly.
- **New England Governors’ Conference (NEGC) Commission on Land Conservation.** In the Fall of 2008, the NEGC established a Commission on Land Conservation. The Commission was established to celebrate and build upon 100 years of land conservation efforts in New England and the centennial of a 1908 meeting of New England’s Governors that contributed to the establishment of the White Mountain National Forest



and Acadia National Park. The Commission is made up of two persons designated by each governor. The representatives of each state will be further advised by state committees of their choosing, who represent the diversity of interests affected and who care about land conservation in their state. The themes that emerged from the first meeting of the Commission, held in January 2009, were: 1) the idea of “saving the stage” – that is, keeping undeveloped land, at both the community and landscape level, available for conservation and recreational purposes; and 2) the idea of developing a New England Pilot Project effort. The National Park Service is represented on the group, and Abigail Kimbell, Chief of the USDA Forest Service, to participate through the offices of the regional forester as well. The Commission has been called upon by the governors to report by September 2009 on their recommendations for how enhancing the prospects for land conservation in New England. Given this schedule, the Commission plans to complete the substance of its work by July 2009.

- **Follow-up to the work of the Northern Forest Lands Council.** North East State Foresters Association (NEFA) collaborated with a variety of other interests on the 10<sup>th</sup> anniversary of the report from the Northern Forest Lands Council to assess the progress that had been made in implementing the recommendations of the Council, and to identify those actions that needed to be taken to carry on this work. The collaborative effort resulted in a report entitled “*Northern Forest Lands Council 10<sup>th</sup> Anniversary Forum: Recommendations for the Conservation of the Northern Forest.*”. This report included four recommendations – the first of which was to “develop and implement community and economic development strategies across the region to reinvigorate the rural economies of the Northern Forest.” Other recommendations included continuing public and private investment in conservation and forest stewardship efforts; supporting private forest landowners, and creating a regional collaborative effort to improve coordination in these efforts across the region. The Northern Forest Center secured to funding to implement the development of a Sustainable Economy Initiative to follow-up on the first of these recommendations. The Sustainable Economy Initiative recognizes keeping the region’s forests as forests as fundamentally important to the region’s economic prosperity. The Northern Forest Center has recently been informed by the U.S. Endowment for Forestry & Communities that they have been selected as potential recipients of up to \$2 million from the Endowment to further their work.
- **The Northern Border Commission.** The 2008 Farm Bill created a new institution for the Northern Forest – the Northern Border Commission. The Northern Border Commission is made up of the governors of each of the four Northern Forest states and a federal representative. The Northern Border Commission may play a role in land conservation in the Northern Forest area – although its principle focus is on improving the region’s economic vitality. The Commission was authorized to receive \$30 million/year by the Farm Bill, but as yet no funds have been appropriated to it.
- **Federal legislation on a carbon cap-and-trade program.** This session of Congress will, like the last session, be considering legislation to establish a national cap-and-trade program for greenhouse gases. While legislation was not adopted by the last session of Congress, proponents were pleasantly surprised by the progress that they made. With the election of an administration committed to effective action on climate change legislation,

it is expected that cap-and-trade legislation will be adopted by Congress sometime within the next two years. This legislation could provide for two types of activities that could provide incentives for keeping forests as forests. The first of these are forestry carbon offset projects which could be allowed under a cap-and-trade program as an alternative way for emitters to meet the caps requirements. Offsets are projects, while they involve activities outside of the sectors where emissions are capped by the program, still achieve reductions in atmospheric greenhouse gases, potentially at less cost than straight emission reductions at the stack. Forestry offsets could be allowed, but are not guaranteed to be included in a national program. In addition to offset projects, the proceeds from the sale of allowances under a cap-and-trade program could be allocated, in part, to programs which will keep forests as forests (e.g., the acquisition of easements under the Forest Legacy Program), and/or promote management which sequesters more carbon than would otherwise be the case. These latter types of programs could be modeled after conventional National Resources Conservation Service programs, such as the Conservation Reserve Program or the Environmental Quality Incentives Program, which compensate landowners for particular management practices which have conservation values – in this case, the sequestration of carbon. Because gains under these programs are not necessary to meet the caps on greenhouse gas emissions established in the legislation, such programmatic efforts to keep forests as forests, or promote carbon-friendly management, need not meet the same rigorous requirements as offset projects. Hence, they are likely to be more attractive to landowners as transaction costs may be greatly reduced.

## The Alternative Courses of Action

Given all of this, it seems that at least three major courses of action are possible:

1. **Wait and see.** Under this course of action, we could defer initiating our efforts on keeping the Northern Forests as forests, and wait to see how the other efforts outlined above play themselves out, taking action when they either fail to achieve our objectives, or we can see a useful role in complementing these efforts.
2. **Contribute to the New England Governors' Conference (NEGEC) efforts with particular ideas on the Northern Forest.** This course of action would require us to get underway quickly, as the New England Governors' Conference is calling for a report from its Commission on Land Conservation by September 2009. The NEGEC Commission on Land Conservation has indicated an interest in hearing from us on this topic, and could provide a ready forum already endorsed by the governors for considering any ideas we may have. For example, we could undertake to define a Pilot Project for the Northern Forest that would fit in with NEGEC's efforts for the broader region. I understand that the USDA Forest Service may be willing to provide some funding for our efforts in this regard.
3. **Initiate an independent effort aimed strictly at the Northern Forest as we had outlined in our original project proposal.** As you may recall, this was a two year effort which, among other things, would have us establishing our own set of constituency groups that would help us shape the outcome.

## **Conclusion**

Among these alternatives, complementing the efforts of the NEGC seems the most likely to be productive. To do so, we need to get underway as soon as possible; and, among other things, we need to engage persons who care about the future of the Northern Forest in a dialogue as to what course of action would be broadly supported, and is likely to be effective. To make this possible, we would have to secure funds to support whatever efforts are needed to contribute effectively by defining tangible and specific proposals for action.

Attachments: NEGC CLC Resolution

## **Record of Discussion**

Conference Call of the NEGC Conservation Commission  
February 9, 2009  
10:30 – 11:15 AM

On Monday, January 9<sup>th</sup>, the NEGC Commission on Land Conservation conducted a conference call to discuss the draft “White Paper” prepared by a drafting committee of Alec Giffen (ME), David Leff (CT), Jane Difley (NH), John Shea (NEGC), and Richard Barringer (ME). The goal of the White Paper is to provide a common framework of understanding of the CLC’s work to this point, and to guide discussion of the CLC’s 5 Questions and several “Big Ideas” with each state’s Advisory Panel and in its public outreach efforts.

### Participants in the call:

Dick Barringer, Chair	Maine
Pat MacGowan	Maine
Alec Giffen	Maine
David Leff	Connecticut
Dorrie Pizzella	Massachusetts
Lynn Lyford	Massachusetts
Jane Coit	Rhode Island
Lisa Primiano	Rhode Island
Jonathan Wood	Vermont
Bob MacIntosh	National Park Service
John Shea	New England Governors’ Conference, Inc.

### **1. Review of the Draft White Paper**

After the call to order, CLC Chair Dick Barringer (ME) summarized the draft White Paper and opened the floor to comment. Overall reaction to the draft White Paper and its three “Big Ideas” was highly positive.

CLC members indicated that issues may be raised in their deliberations that reflect specific state/administration concerns and policies, such as windpower goals (MA), habitat issues (CT), coastal and water resource issues (RI and MA), local self-sufficiency in forest products (MA and VT), forest sustainability (ME and VT), etc. *All were encouraged to forward any suggested wording changes to John and Dick, who will do their best to incorporate these.*

David Leff (CT) cautioned that the three “Big Ideas” are broad and complex concepts; and that while the CLC’s report to the Governors must be in concise language and summary form, its proposals will need to be spelled out in detail prior to implementation. Strong agreement followed to David’s point, as well as to the necessity of sticking to a few Big Ideas. Dick Barringer noted that this provides added impetus to the earlier suggestion that the CLC submit a

plan to follow-up on any of its recommendations that are adopted by the NEGC in September 2009.

Bob McIntosh (NPS) indicated that Nora Mitchell (NPS) is leading an effort among NE federal agencies, with the assistance of the Lincoln Institute, to provide guidance to the CLC from their several perspectives. This effort should be completed by early March, in time to be useful to the several states in their outreach efforts. Dick Barringer asked Bob and Nora to let him know how the CLC members might be of help in this regard.

## **2. State Outreach Meetings**

Dick Barringer described Maine's planned outreach effort<sup>356</sup> and invited CLC members to discuss their own, all of which are in various stages of development. Each state agreed that the end-of-March deadline for reports on outreach is financially feasible and do-able.

## **3. Advisory Panel Follow-up**

The size of state Advisory Panels and scale of outreach efforts will vary by state, to reflect stakeholder complexity. John Shea (NEGC) asked that each state provide him with the contact information for its Advisory Panel members as soon as this is available.

## **4. Schedule**

The CLC adopted a tentative near-term schedule, as follows:

<b>Early March</b>	Federal Agency Outreach Report Due
<b>Monday, March 23</b>	CLC members teleconference @ 10:30 AM
<b>End of March:</b>	State Reports on Outreach Sessions Submitted
<b>Friday, May 1</b>	CLC members meet in Littleton MA, review 1 <sup>st</sup> regional draft

Dick Barringer adjourned the call with thanks to all for their energetic participation and good work.

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<sup>356</sup> On March 11 some 3 dozen stakeholders, including the Maine Advisory Panel, will convene in Augusta for a facilitated, day-long discussion of the CLC's 5 Questions and several Big Ideas. Maine's CLC members and its Advisory Panel will take this information and fashion a Maine report to the full CLC by the end of March.

## NEGC/CLC White Paper – Draft 03.03.09

*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 to address the status of land conservation in the region and recommend new initiatives to advance and strengthen regional land conservation efforts. This Commission on Land Conservation (CLC), composed of two representatives from each state – one, a senior state policy official and the other a private conservation leader – will augment its discussions with input from an advisory panel reflecting a range of interested stakeholders and organizations, as well as with public input as deemed appropriate for each state process.*

*The CLC will present its report to the NEGC at the 33<sup>rd</sup> Conference of New England Governors and Eastern Canadian Premiers in Saint John, New Brunswick, in September 2009. The report will include guidance from the Commission on a process to implement, monitor, and report on the progress of the Commission's recommendations after their adoption by the Governors.*

**Purpose.** *The purpose of this white paper is to provide a common context for each state's respective outreach and consultation process with its stakeholders and the public. By introducing the same questions and ideas to each state's deliberations, a regional consensus may be constructed by the CLC reflecting its charge to develop a collaborative New England path moving forward on land conservation issues.*

**A. Findings.** The first meeting of the CLC in Cambridge MA on January 9, 2009, established a high consensus about a number of findings that will inform the several state-level discussions and outreach efforts:

1. 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 should be no different;
2. Every few decades, an opportunity presents itself – a political and economic window – to revisit this vision and renew it. This is such a time;
3. Persistence in achieving this vision is needed. The ideas of the Regional Planning Association of America in another era of change, the 1930s, remains relevant today. How may we bring the country to the city in a way that better ties our communities and region together?
4. Innovation in land conservation, such as the invention of the land trust, has long been part of the NE tradition. The same should be striven for now;
5. While each state has somewhat different needs and possibilities, the region is closely knit ecologically, culturally, and economically. All will profit from presentation of a strong and early vision for land conservation to the new federal administration;
6. Finally, this is a crucial time to engage the next generation of leaders in NE who will care about and act to steward our precious landscape resource and its quality of place. A lost

generation in this work will prove detrimental to the public health and well-being of the region. Access to the land remains the crucial element in keeping the next generation connected, and innovations promoting that connection are needed.

**B. The Challenge: *Saving the Stage*.** Beyond the sprawling development patterns that took root after World War II and reached what may be their peak in this decade, land conservation in NE and the U.S. faces unprecedented challenges in the coming decades – historic changes whose effects we may observe and whose outcomes are unknown:

1. *Climate Change*. Changes in precipitation, temperature, storm patterns, and sea level will cause dislocation of native wildlife; affect habitats and plant communities; open the way for new invasive species; and force human communities to adapt in ways that may create additional impacts on natural communities;
2. *Demographic Change*. Changes in the distribution and diversity of national, ethnic, and racial groups mean that people will want to use the land in new ways for recreation, agriculture, and other activities. As Scandinavian immigrants introduced ice-fishing and Nordic skiing, and English settlers brought the cross-country hunt, so will growing and changing communities of Asians, Latinos, and others create different land use traditions; and
3. *Cultural Change*. Changes in living patterns and technology create more emphasis on indoor recreation; the loss of access to private land reduces opportunities for hunting and fishing; summer camps and outdoor education programs are succumbing to financial and legal constraints and the pressure from second-home development.
4. *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 NE but not exclusively; and structural changes in the region's economy continue to affect both available job opportunities and their location, even as the current global recession creates new challenges and opportunities for land conservation.

In this dynamic setting, each of the changes presents new opportunities for the way we think about land conservation, even while it presents different aspects in different states and communities. There is no single, universal solution to be found, although the challenges do have a strong common bond: they envision a changing set of players who will require different interactions with the land.

All four of the new challenges – as well as those of “sprawl” – are usefully framed within the unifying concept of “*saving the stage*” – that is, preserving the landscape and the underlying land base, knowing that the players and scenarios we see today will be very different 25 and 50 year from now. In this way, detailed solutions may be tailored to individual states and communities, while undergirded by a common philosophy and approach to land conservation.

**C. Principles Established.** In this context, the CLC has agreed to abide the following, as it approaches its task:

1. That the CLC will recommend just two or three ***big ideas*** to the governors, rather than present a laundry list of recommendations;

2. That 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;
3. That multi-state collaboration toward NE land conservation, to protect and preserve this important natural legacy at a regional scale, is a matter of national interest and, therefore, deserving of federal support.
4. That whatever the governors may together ask of the federal government, it will be expressed in terms of advancing the national interest and, perhaps, proposed as a pilot project for the nation; and
5. The CLC will further suggest to the Governors a process to guide and monitor implementation of its recommendations beyond the September 2009 report.

**D. Questions for Consideration.** The CLC has formulated the set of questions below to guide its deliberations and outreach efforts. Each state will respond to these questions after careful consideration and outreach, and the several responses will then form the basis for the CLC’s report and recommendations to the governors:

6. *What are the major trends, challenges, and opportunities today and over the next decades in N.E. land use and land conservation?*
7. *Is there a shared vision and new set of tools for land conservation that the six N.E. governors might embrace and advocate?*
8. *What might the six governors do collaboratively to ensure that land conservation continues to go forward in N.E.?*
9. *How might additional resources be made available from the public, private, and philanthropic sectors in support of N.E. land conservation?*
10. *What national interests might land conservation in N. E. advance, and by what means?*

**E. The Three *Big Ideas*.** At least initially, the CLC offers the following as the core of its recommendations, to be elaborated upon in discussion with its several state constituencies:

1. ***Keeping Forests as Forest.*** Forests are among the region’s signature and most important natural resources. They are a principal reason the region was first settled, and remain today the economic engines of the region’s rural economies, providing a renewable source of energy, an array of wood products from building materials to paper, access to nature and unsurpassed recreational opportunities, and habitat for thousands of plant and animal species. They produce millions of gallons of clean water, cleanse the air, absorb atmospheric greenhouse gases and, so mitigate global warming. Swift action is needed if we are to maintain the forests’ diverse and plentiful values for future generations of New Englanders. Over the past two decades, fully two-thirds of the northern forest area has changed hands and long-term ownership interests; tens of thousands of acres have been converted to



development uses; parcel size is diminishing, and the climate is changing such that within 100 years widespread stands of spruce-fir and sugar maple may well be a thing of the past.

2. ***Keeping Farmlands in Farming.*** From maple syrup and potatoes to cranberries and cigar wrappers, New England is blessed with a rich heritage of agricultural soils, products, and by-products, not least of which is open landscape. As Washington State has taught us, there is no more effective deterrent or antidote to sprawling development patterns than a vibrant agriculture. For a variety of reasons that are now widely understood – the protection of groundwater resources, to support “local agriculture” in its own right and as a hedge against national and international transport costs for foodstuffs, the control of greenhouse gas emissions and the fiscal impacts of sprawl, and for its historical and cultural centrality to the region’s identity – preservation of New England’s most productive farmlands is a matter of national importance.
3. ***Bringing Nature Close to Home.*** We need to protect and promote key parcels in neighborhoods that, wherever possible, form a network of green spaces. No New Englander should be more than 15 minutes away from a walk in a natural area. This idea embodies the 19th century ideal of New England native Frederick Law Olmsted, in the winding woodland paths he created along the Emerald Necklace that graces our largest city, Boston. These places offer people the opportunity to invigorate the body and refresh the spirit, offering all refuge and respite from the demands of daily life. They invite the curiosity of children and furnish the accidental natural habitats of the young. As Connecticut resident and former Sierra Club President Susan Merrow observes, they “connect the places we live with the place we love.” Close to home, these parcels will inspire their users with a love of nature and the outdoors, becoming a nursery of conservationists who think on a regional, national, and global scale.

The CLC sees these not as separate initiatives, but as the three legs of an integrated strategy for NE land conservation, and a possible demonstration model for the nation. Means for implementation are suggested by an expanded Forest Legacy Program and a revitalized LAWCON program from offshore oil and gas leases. . . . *(to be developed further)*

## **RECORD OF DISCUSSION**

### Teleconference of the NEGC Commission on Land Conservation

Monday, March 23, 2009

**Note: The next meeting of the CLC will be held at the New England Forestry Center in Littleton MA, Friday, May 1, 9:00 a.m**

#### *Participating:*

Richard Barringer (chair)	Maine
Pat McGowan	Maine
Alec Giffen	Maine
Matt Fritz	Connecticut
David Leff	Connecticut
Dorrie Pizzella	Massachusetts
Lynn Lyford	Massachusetts
Lisa Primiano	Rhode Island
Janet Coit	Rhode Island
Ed O'Leary	Vermont
Nora Mitchell	National Park Service
John Shea	New England Governors' Conference, Inc.

Dick Barringer, chair of the NEGC Commission on Land Conservation (CLC), opened the teleconference with a review of the agenda:

- I. Status of State Outreach Efforts
- II. Advisory Committee Appointments
- III. Interaction with the Governors' Offices
- IV. Agenda for May 1<sup>st</sup> CLC Meeting
- V. Other Issues
- VI. Next Steps and Workplan

#### **Status of State Outreach Efforts**

Maine. Dick Barringer described a day-long outreach meeting at the Pine State Arboretum on March 11<sup>th</sup>, where three dozen leading members of Maine's land conservation community came together to advise the Maine members of the CLC and their 5-person Advisory Panel on the response to the CLC's charge, the 5 Questions, and the 3 Big Ideas. Maine will have a full report of the meeting available to the CLC by the end of March.

Participants identified two overarching challenges at this time: the fragmentation and degradation of natural features and assets that have historically defined Maine and New England;

and a related challenge, the looming and profound impacts of *climate change* on our landscapes, wildlife, and built environment.

Strong sentiment was expressed for (1) *integrated conservation planning and priority-setting* across sectors (public and private), state jurisdictions (state boundaries), and region-wide; (2) *a new model for the funding* and governance of land conservation efforts that builds a true federal, state, local, and private partnership appropriate to the region's circumstances and traditions; (3) a 4<sup>th</sup> Big Idea for the CLC, namely, "*Conserving Coastal and Riverine Resources*"; and (4) the need to pursue this regional land conservation agenda over an extended period of time.

Massachusetts. Dorrie Pizzella described a similarly successful event that Massachusetts held on March 13<sup>th</sup> at the Doyle Conservation Center. About twenty participants from a broad range of stakeholder groups – land trusts, political leaders, NGO's, forestry and conservation agencies – met in a three and half-hour session to identify key state and regional land conservation issues and potential 'big ideas' and recommendations for the Governors. Massachusetts intends to have a draft report of their outreach meeting available in early-April.

Among the issues identified by the group were forest/habitat loss and fragmentation and the impacts of climate change. Some potential solutions discussed included utilizing land conservation policies as a response to climate change, better articulating forestry and farmland conservation issues, coordination among the six state wildlife action plans and lobbying for a more consistent federal funding mechanism (such as a portion of federal cap-and-trade revenues for carbon).

Connecticut. Connecticut has held preliminary, small meetings with various government and non-government stakeholders to identify key issues; and is considering a larger stakeholder meeting to obtain additional input.

Rhode Island. Rhode Island has established an advisory group of six members, including municipal leaders, to examine Rhode Island's perspectives on regional land conservation. The group identified linking conservation with economic development, potentially 'economic conservation zones', as a possible paradigm for moving forward. Stressing the uniqueness of New England's communities and ecosystems and the economic opportunities of our natural environment could spur 'green development' and programs that transcend state boundaries. Rhode Island summed up their 'big idea' as "bridging the divide between land conservation and economic development".

Vermont. Ed O'Leary noted the economic strains under which Vermont, and the other states, currently operate and the new environment this creates for land conservation initiatives. However, Vermont is actively pursuing a number of conservation programs and initiatives that will feed into the CLC process, including a forest resources assessment, a Centennial program on forest stewardship, and a Quadri-centennial celebration of Lake Champlain's discovery.

New Hampshire. New Hampshire has not yet completed its outreach effort and may be conducting a meeting or teleconference in the coming weeks.

**Advisory Panel Appointments**

The group was reminded to prepare a list of their Advisory Panels for submission to the NEGC. These may be supplemented with or augmented by any number of persons with whom each state wishes to consult. Maine and Massachusetts have submitted their lists. The state Advisory Panels will be invited to attend the June “plenary meeting” with the CLC members, to assess the draft regional CLC report; accordingly, each state is urged to keep this list as short as practicable.

**Interaction with Governors’ Offices**

Dick Barringer reminded folks of the importance of keeping their governors’ offices and related department heads and commissioners timely updated on the work and schedule of the CLC. The note on CLC meetings may be helpful in this regard.

**Other Issues**

Alec Giffen briefed the CLC on ongoing efforts in Maine and among the State Foresters of the six New England states and New York to “Keep Forests as Forest.” Alec reports they are making good progress and will try to develop recommendations in time to be considered for the CLC draft report in early June.

**Agenda for Next CLC Meeting (May 1<sup>st</sup>, Littleton MA)**

Commission member Lynn Lyford, Director of the New England Forestry Center in Littleton, MA, generously offered space to the CLC for its next meeting on May 1, 9:00a.m. The meeting will focus on a draft regional CLC report, to be based on the individual state submissions on their state outreach efforts. The CLC discussed moving the date out, to provide more time for the state representatives to complete their outreach. It was decided that, given the CLC’s end-of-June deadline for completing its draft report, and the plan to do a plenary meeting in June, the May 1<sup>st</sup> meeting date should not slip further.

**Next Steps and Workplan.**

The states that have conducted outreach initiatives were asked to submit their draft reports to Dick Barringer and John Shea by early-April. A drafting group of Dick Barringer, Janet Coit, Jane Difley, David Leff, Alec Giffen, and John Shea will attempt to reduce the several state outreach reports to a draft consensus report for review by the CLC at its meeting on May 1<sup>st</sup>. The drafting committee will work with any state submissions they have by the second week of April, and attempt to incorporate any late submissions prior to the May 1<sup>st</sup> meeting.

New England Governors Conference  
Commission on Land Conservation

DRAFT AGENDA

New England Forestry Foundation, Littleton MA  
May 1, 2009

- 9:00 a.m. Welcome and Introductions (Dick Barringer, John Shea)  
Purpose of Status Report Received Prior to Meeting  
(\*\*\* To be delivered next mid-week; please read before meeting \*\*\*)
- 9:30 a.m. Break Into Work Groups to Develop Specific Proposals for Action  
(Jack Kartez)
1. Forested Lands
  2. Agricultural Lands
  3. Urban Conservation/Open Space Lands
- 11:30 a.m. Lunch
- 12:15 p.m. Review and Closure on Ideas from Morning Discussions (Jack Kartez)
1. Forested Lands Proposals
  2. Agricultural Lands Proposals
  3. Urban Conservation/Open Space Lands Proposals
- 2:15 p.m. Break
- 2:30 p.m. Discussion and Closure on a Draft Letter Regarding  
Pending Carbon-Trade Legislation (Alec Giffen)
- 3:00 p.m. Discussion and Closure on Recommended Continuity of CLC Effort  
(John Shea)
- 3:30 p.m. Adjourn

# New England Governors Land Conservation Commission (CLC)

Notes of Second Meeting, Friday, May 1, 2009  
New England Forestry Foundation, Littleton, Massachusetts

## Participant List

Anne Archie	US Forest Service
Richard Barringer	Muskie School of Public Service
Jerry Bley	Creative Conservation, LLC
Alice Chamberlin	Two Countries, One Forest
Janet Coit	The Nature Conservancy
Kent Connaughton	US Forest Service
Stephanie Dulac	Muskie School of Public Service
Jane Difley	Society for the Protection of New Hampshire Forests
David Foster	Harvard Forest
Susan Francher	NH Forests & Lands
Alec Giffen	Maine Forest Service
Barbara Ives	Muskie School of Public Service
Jack Kartez	Muskie School of Public Service
David Leff	Connecticut CLC member
Amanda Loomis	Muskie School of Public Service
Lynn Lyford	New England Forestry Foundation
Patrick McGowan	Maine Dept of Conservation
Bob McIntosh	National Park Service
Ed O'Leary	Vermont Agency of Natural Resources
Dorrie Pizzella	Massachusetts Office of Environmental Affairs
Lisa Primiano	Rhode Island Dept of Environmental Management
John Shea	New England Governors Council
Andrea Small	Muskie School of Public Service

Meeting called to order by Dick Barringer, 9:15 a.m. with thanks to the New England Forestry Foundation for providing the beautiful accommodations. He reminded the group of its tight timeline.

- A summary of the meeting follows, with action items identified by this bullet, with **people responsible** in bold.

The intention of the CLC is to develop a three-part product, a “final repository of best current thinking” – best, most transformative, critically needed actions to take *now*, with regards to conservation in New England.” If matters proceed as usual, the governors will receive in their briefing books:

1. A cover letter, *written by Governor Baldacci*, chair, briefly describing the process & outcome of the CLC meetings, and recommending the resolution.
2. A brief statement for the governors to sign – “Be it resolved...,” (“to develop a conservation strategy to increase/provide economic opportunity” was suggested) followed by 3-6 specifics, “whereas...” About 1 ½ pages long.
3. Appendix: an extensive report by the CLC, with concrete recommendations.

**The NEGC fall agenda will include the following:**

- Economic stimulus & funding
- Energy blueprint
- This CLC report

The goal for this day is to process the current material and winnow it down, to provide focus to the next draft of the CLC report.

At 10:00 a.m., break-out groups discussed Forests and Urban issues in two different spaces. These groups met; lunch followed at 11:45 a.m., and at 12:45 p.m., the meeting reconvened for summaries of the groups' work.

**"Keeping Forests as Forest" group summary**

Four themes emerged from the ensuing discussion:

1. The value of the forest. Need for the eventual document to make a stronger case about the threat, in language that is better understood by the layman. Need for a strong vision of the forests across the entire region. Make this idea palatable to the governors, not to feel like a financial burden.
2. Need to add to the incentives that support stewardship and protection. Forest management that stores carbon better connects incentives to #4, Carbon (below). However, Jane noted that we should seek funding from more than carbon-related sources as well. Kent noted that protecting forests is also related to protecting water, something that is often overlooked and is at least equally important.
3. Markets. The market for traditional forest products is departing; our statement needs to promote/support diverse and viable markets. "Landscape scale vision requires diverse, robust markets."
4. Carbon. There is a need to identify the importance of forests with regards to carbon sequestration, storage, etc., especially with regards to cap and trade, RGGI, other GHG-related issues, including as a means of raising revenues to support sustainable forestry and conservation—Alec Giffen was explicit in raising the need to not propose carbon sequestration revenues from NE forests without directly tying it to the need for resources to sustain the region's forests.

It was agreed without specific delegation to a person, that somewhere, somehow, the idea will be expressed that we're NOT proposing federal acquisition of land. Several expressed concern that federal funds for forestry management are often "raided" for dealing with forest fires – particularly out West – which is not a management issue, but an emergency. This was felt to disadvantage eastern states. Connected to this apparent conflict of interest is the idea – also stated by more than one person – of having the western and eastern governors express, *together*, how important forests are, which collective voice would be very persuasive nationally.

Also repeated by several people in several ways was that we are in a period of environmental and social uncertainty and change. "How we view forests ought to be clearly connected to the changes we need to make in our fundamental attitude or relationship toward/how we use/treat our environment." This would apply to "urban forestry" as well. We wish to promote land conservation that supports development and economic growth.

Kent suggested we advocate for a new model that runs "cross sectors." Dick suggested a "new distribution of federal and philanthropic focus, beyond one state at a time." A model for this would be a federal or philanthropic group that identifies a priority rather than a region.

Alec emphasized the need for more resources, dependably available; the need to be strategic rather than opportunistic. For the Keeping Forests as Forests proposals, Alec Giffen with Jerry Bley's help will compile the parts of the revised 4-part framework into one document. Jane and possibly Kent will address the topic of developing markets for forest products as broadly conceived (topic 2). David Foster will provide the topic on incentives (topic 3), which will reference funds from carbon markets (which is dealt with exclusively in topic 4) but concentrate on other funding sources from Forest Legacy to federal tax incentives to landowners. All will forward these notes to Alec.

*Funding mechanisms suggested:*

- Federal carbon tax credit to support stewardship & protection
- Make existing tax credits permanent
- Plan a project for landscape scale conservation (below)
- Seek existing funders that address broad principles, integrating state, private, and federal funds
- Suggest that New England governors convene a funders symposium to talk about a mutual agenda for public and private funders
- LTA 2010 Rally is in Hartford, Connecticut. Suggest that a Funders session be organized (task not delegated to anyone)

**“Urban/Open Space” group summary**

The group started its discussion by suggesting the name of this ‘big idea’ be changed to “Connecting People to the Outdoors”. In the Basis for Action section, language reflecting the positive benefits of greater citizen involvement and awareness of the natural environment was added: *Healthy urban community forests will have energy conservation, climate change mitigation, tourism, quality of life, aesthetic and other benefits.*

*The group decided to consolidate the 11 initially proposed actions to 5:*

- Incorporate conservation principles in school curriculums.
- Propose a New England-wide network of trails and greenways to link urban areas to natural places.
- Encourage federal policies that promote a number of smart-growth principles.
- Call for an Urban Conservation Corps, based on the CCC idea.
- Raise awareness – “make conservation matter to an increasingly urban population:”
  - Phrases of note: “Americans are fundamentally estranged from the environment;” “environmental literacy;” “environmental ethics.” Pass these concepts *up* to President Obama.

*Funding mechanisms suggested:*

- Advocating for trust funds
- Seek cap and trade for urban trees
- Permanent tax incentives for conservation easements
- 2008 Farm Bill

Bob McIntosh distributed data about federal funding sources to everyone at the table at this point.



Bob also mentioned that the Secretary of the Interior is very focused on landscape scale conservation at this time, and has created several roundtable think-tanks on the subject. The timing for this resolution couldn't be better for getting a hearing at the federal level, and money may result.

- Patrick McGowan said that we should have a project ready when this money becomes available. All agreed. There is a meeting in Wisconsin this June for the largest funders. Should NEGC send an emissary? Jack suggested that **John** and **Dick** ought to look into this idea. Peter Stein's name was mentioned as an advisor.

### Forest Extra, Alec Giffen

Right now, the Waxman/Markey plan is being developed in the Congress, relating to cap & trade legislation. Alec provided a draft of a letter. He proposed that it be used as a model letter to be sent by each state's governor to its congressional delegation, recommending that a portion of the proceeds from cap & trade go beyond offsets to management of forestry and farming, for carbon sequestration and storage. Revisions to the text of Alec's letter were discussed.

- Each state's delegation will decide whether and how to respond to this particular issue.

### Continuity of this effort

Alice proposed language changing from a "new plan" to a "coordinated/collaborative/regional vision/priorities for implementation." However this language is resolved, it ties in with the question of if and how to propose that the CLC be made into a standing commission of the NEGC. The current draft title for this proposal is "Building Connections," indicating extended work at every level, meaning institutional, sectoral, jurisdictional, etc.

### Conclusions

*June Plenary Meeting, June 19 at the New England Center in Durham, New Hampshire:*

- New Hampshire Charitable Foundation has agreed to pay for the meeting. Make sure this is acknowledged where appropriate.
- States who opt to bring more than 5 local advisors (e.g., in Maine, our Advisory Panel) will have to pay for additional participants' food. *(Up to 90 people can be accommodated in the reserved space, but our funds provide for 60.)*
- At the end of the day, the date of **June 19** was agreed upon, with the exact time to be confirmed later.

### Deadlines:

- Folks writing language for the resolution and/or report need to have them to John and Dick by **May 22**.
  - **David Foster** will provide the topic on incentives (topic 3, forests), which will reference funds from carbon markets (which is dealt with exclusively in topic 4) but concentrate on other funding sources from Forest Legacy to federal tax incentives to landowners.
  - **Kent Connaughton** and **Jane Difley** will address the topic of developing markets as broadly conceived (topic 2, forests).
  - **Janet Coit** and **Alec Giffen** will identify how carbon trade ideas could/should incorporate forest management.
  - **Janet Coit**, **Kent Connaughton**, and **Alec Giffen** further agreed to write language about eastern states lining up with western governors to express how important forests are.
  - All the above groups will forward their notes to **Alec Giffen**. He and **Jerry Bley** will compile the parts of the revised 4-part framework into one document.
  - **Janet Coit** will provide the framework from her flipchart notes.

- Due to a lack of time, the statement regarding agricultural land conservation was not reviewed at today's meeting. **Janet Coit** and **David Leff**, therefore, agreed to work with their specialists in RI and CT to pursue a more elaborate statement. **Dick Barringer** will ask Stephanie Gilbert of Maine to review their draft for further input. **Dorrie Pizzella** will help with this.
- **David Leff** and **Janet Coit** agreed to draft additional language for the paper, relating to Coastal issues. **Dick Barringer** proposed to pass their draft by Kathleen Leyden of Maine, for her help.
- "Bringing nature closer to home" or "Connecting people to the outdoors" were catchphrases discussed in the Urban group. **Bob McIntosh** agreed to draft language around this concept.
- **John Shea** will draft "Building Connections," the proposal to continue this body's work beyond September.
- A draft of the white paper and resolutions will be distributed to all participants of the state outreach efforts in time for them to offer comments before the June 19 meeting.
- **John** will develop a list of invitees from each state, with a reasonably accurate head-count by **June 12**. **Barbi Ives** and **John Shea** will make arrangements with the New England Center for the June 19 meeting logistics.

*Respectfully submitted,  
Barbara Ives; May 6, 2009*

## Appendix B

### Appendix-B: Capstone Presentation

- Capstone Presentation was held on May 15, 2009 at 1:00pm in the Wishcamper Center, at the University of Southern Maine.

#### **Overview of the Presentation:**

Land Use & Land Conservation in New England: trends, challenges, and opportunities presentation was presented on May 14, 2009, at 1:00 in the Wishcamper Center to professional planners, academic faculty, students and to the general public. The presentation addressed the trends, challenges, and opportunities commonly found within the six New England States. Each of the capstone participants took turns speaking about various aspects of the projects as a whole. Talking points within the presentation include the history of land conservation within New England, the Commission on Land Conservation, Review of the CLC process, Muskie student involvement, and the learning experience. In addition to these important points of the project, trends, challenges, and opportunities commonly seen in the states were discussed as referenced in the executive summary. During this portion of the presentation each student was assigned one topic within the trends, challenges, and opportunities that was best represented by state's land use and land conservation structure. Overall the presentation was well accepted, in addition to an excellent discussion between the presenters and the attendees of the presentation.

# Land Conservation and Land Use in New England

Trends, Challenges  
& Opportunities



Andrea Small, Amanda Loomis, Stephanie Dulac,  
Brittany Howard, Tom Devine, Brett Richardson

## Overview

- History
- Commission on Land Conservation (CLC)
- Review of CLC Process
- Muskie Student Involvement
- Trends, Challenges, and Opportunities
- Learning Experience



## New England Land Conservation History

- November 1908 – The First New England Governors' Conference
- Charles H. Foster team of experts
  - *Twentieth Century New England Land Conservation: A History Civic Engagement*





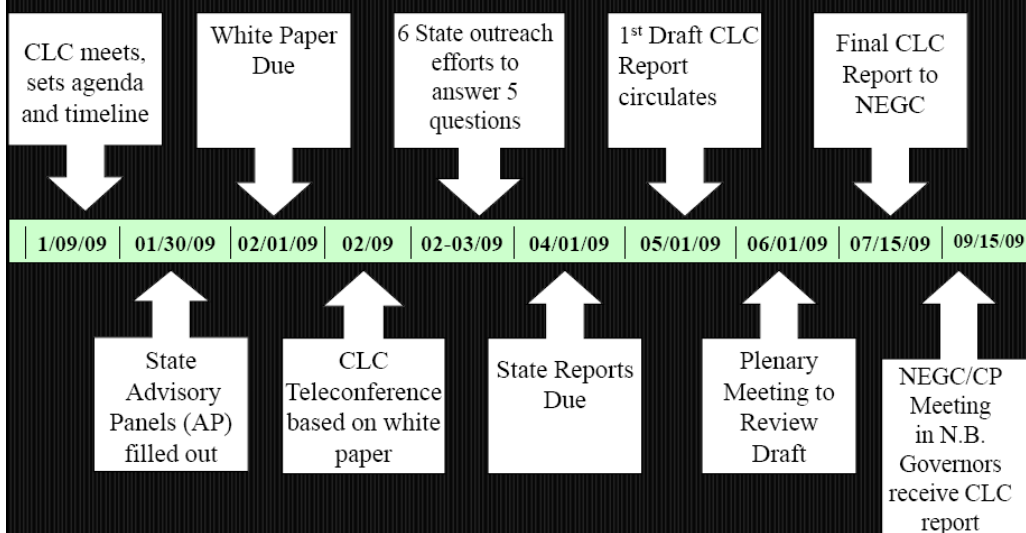
## Establishment of the Commission on Land Conservation

- September 2008, the governors established the CLC, to consist of two members from each state with Richard Barringer as chair
- January 2009 – First CLC meeting - recommendations for the six governors on regional conservation priorities



## The CLC Process

### NEGC Commission on Land Conservation Timeline



## Review of the Process

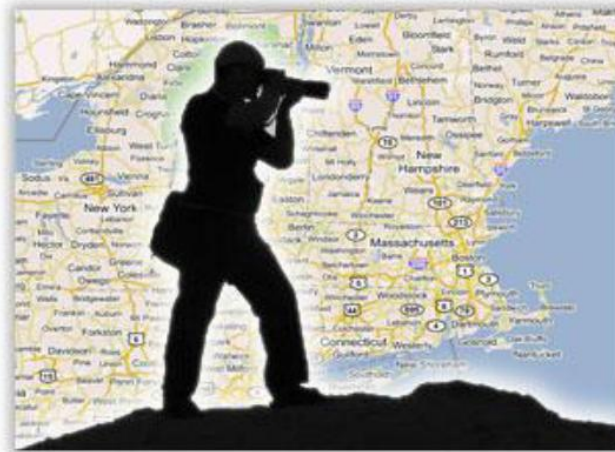
### Key Strengths



## Capstone Task and Methology

- Muskie students researched and identified for each state:
  - Trends in land use and conservation
  - Current challenges
  - Land conservation opportunities
- Methods:
  - Reviewed reports from state, federal, non-profit, and private sources
  - Interviewed and corresponded personally with conservation leaders in each of the states

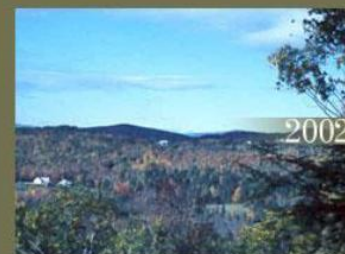
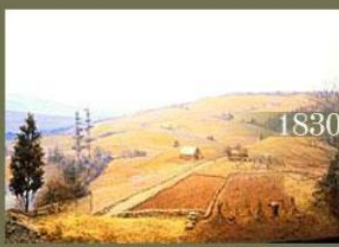
# Trends



## Trends

### New England Landscape

#### Maine



1830- Agriculture dominated 80% of the lands.

#### Farming Declines

The civil war, migration to better land in the Midwest, and the need for trees as a source of building materials all contribute to the decline in farming

Today 90% of Maine's Landscape is forested



## Trends

## Threat of Sprawl

### Connecticut

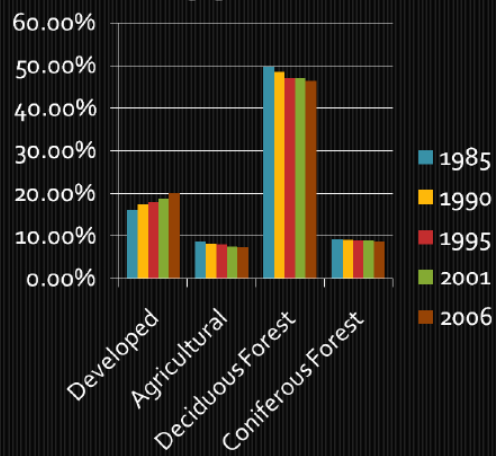


Urbanized land  
grew by 102  
percent



Connecticut's  
population grew by  
only 12 percent

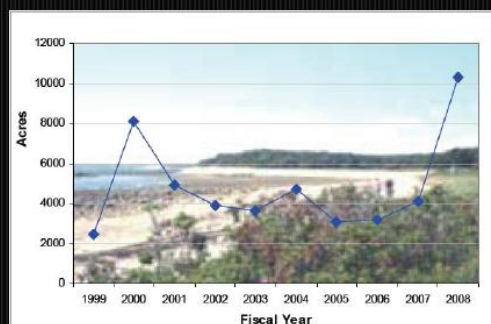
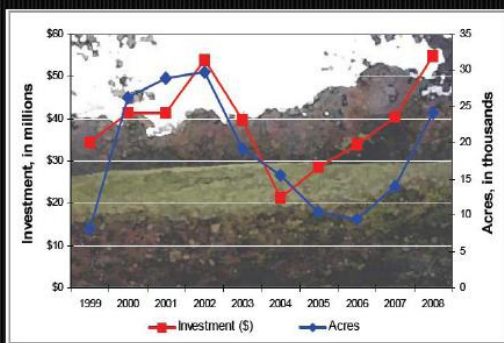
Change in Connecticut's landscape between  
1985 and 2006



## Trends

## Public and Private Funding

### Massachusetts investment trends



EEA-Approved Conservation Restrictions:  
Acres Protected by Fiscal Year

## Trends

## Organizational Capacity &amp; Collaboration

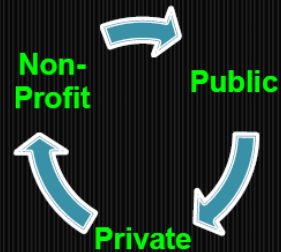
## Rhode Island

## Capacity

- Grassroots land trusts
  - Land trusts invented in the region
  - RI has more land trusts than towns
- State & National Organizations

## Collaboration

- Established tradition
- Leveraged resources

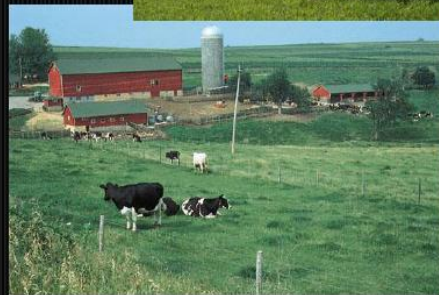


## Trends

## Rise of Local Agriculture

## Vermont

- Vermont Housing and Conservation Trust Fund Act
- Use Value Appraisal
- Vermont Land Trust



## Challenges



### Challenges

## Fragmented Development Patterns

### Connecticut

- Urban flight trends cause the largest decline in forest land since the 19<sup>th</sup> century
- Access to open space
  - Rural: 4,164 acres per 10,000 residents
  - Suburban: 949 acres per 10,000 residents
  - Urban: 122 acres per 10,000 residents

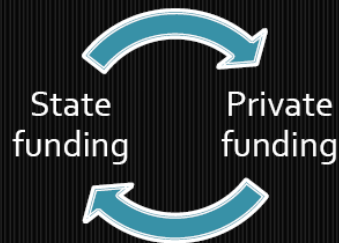


## Challenges

## Economic Challenges

## Massachusetts

- Concerns from Massachusetts conservation community
- State conservation funding weathering recession



## Challenges

## Stewardship

## Rhode Island

## Challenges

- Habitat (invasive species)
- Infrastructure and public access
- Monitoring of conservation easements

## Needs

- Funding
- Innovative practices
- Coordination among landowners

## Challenges

## Climate Change

## New Hampshire

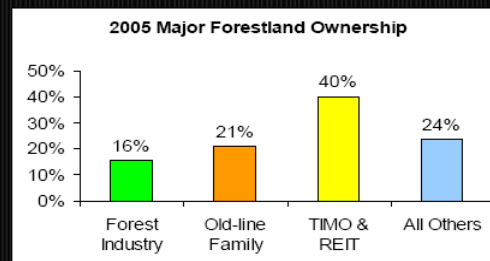
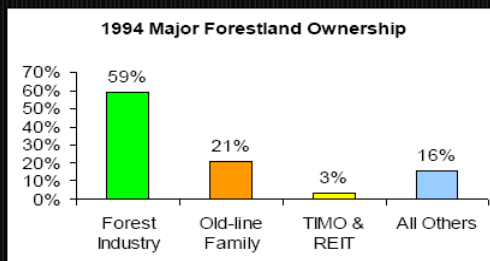
- Severe weather events can harm many species of trees – sugar maple, ash, yellow birch, and northern hardwoods
- Forest Products – 4<sup>th</sup> largest employer & 3<sup>rd</sup> in terms of revenue



## Challenges

## Changing Ownership and Fragmentation

## Maine



- 1982 to 1993- Parcel size decreased 27%
- 1994 to 2006- Parcel size decreased 20%
- # of Land Owners increased 30%

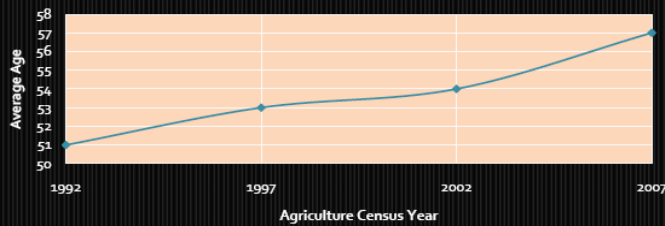


## Challenges

### Agricultural Threats

#### Vermont

Average Age of Farm Operators



35% of Farm Operators have to supplement their earnings with a second job

## Opportunities



## Opportunities

### Strong Public Support

#### Massachusetts

- Optimism among Massachusetts conservation community



## Opportunities

### Strategic Planning

#### Vermont

Land is More Affordable for Conservation Projects  
Market-driven Development Pressure has Subsided



Examples of Great Planning and Conservation Accomplishments During the Great Depression  
Green Mountain National Forest – 1932  
Civilian Conservation Corps – 1933  
Tennessee Valley Authority – 1933

## Opportunities

### Regional Collaboration

#### Connecticut

- **Model Program**
  - Preserve the traditional New England landscape
- **New England: Expertise and long standing tradition of farming and forestry**
  - Model to funders for the conservation
    - Land conservation funding
    - Land stewardship



## Opportunities

### Local Planning

#### New Hampshire

- Watersheds & rescue services are looked at regionally and some towns share the responsibilities surrounding these issues.





## Opportunities

## Planning &amp; Preferential Tax Policies

## Rhode Island

## Goals

- Direct growth to urban areas
- Protect sensitive resources and working lands

## Tools

- Historic Tax Credit
- Preference for state conservation grants



## Opportunities

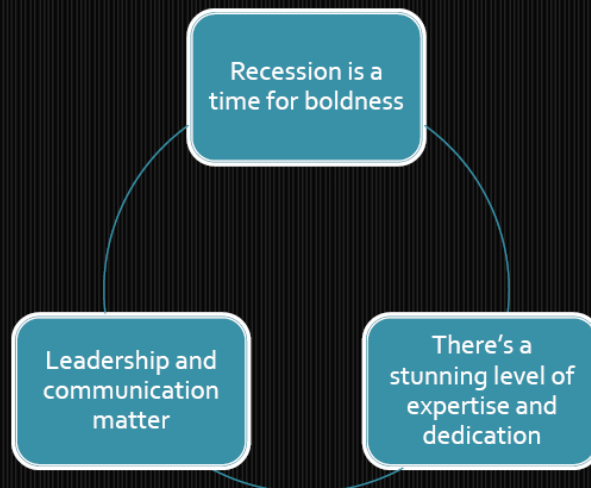


## Youth Education and Outreach



- Cultivation a new generation
- Education is a key
- UNH Cooperative Extension, 4-H, etc.



**Opportunities****Carbon Sequestration****Maine****Proposed Carbon Cap  
& Trade Program****Lessons Learned**



Cover page photo references:

Picture on the Left

The Republican Newsroom , November 12, 2008. Viewed on June 1, 2009, from  
[http://www.masslive.com/news/index.ssf/2008/11/photo\\_contest\\_presents\\_joy\\_of.html](http://www.masslive.com/news/index.ssf/2008/11/photo_contest_presents_joy_of.html)

Picture on the Right

The Coastal Villages of Farm Coast New England. Viewed on June 1, 2009, from  
<http://www.farmcoastnewengland.com>

