# New Hampshire
# Forest Resource Strategies

***A Component of the 2010 Forest Resources Plan***

**Division of Forests and Lands**
**Department of Resources and Economic Development**
**in cooperation with the**
**New Hampshire Forest Advisory Board**
**2010**

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# *2010 Forest Resource Strategies*

## *Overview*

The New Hampshire Forest Resource Plan – which includes both the Statewide Assessment and Resource Strategy documents - is a compilation of the results of the input provided by individuals and groups within the New Hampshire natural resource community and from the public; and review of existing plans and assessments. No sharply divided controversial issues surfaced, apparently the result of the on-going collaboration among the forestry-related people and groups in New Hampshire. There is much common ground, fostered by the open atmosphere, and while there are different perspectives on some issues, the desired outcomes in this plan reflect as much as possible the consensus that was found through the input process.

The USDA Forest Service National Priorities have been used as the basis for organizing the plan. The three Priorities are

**Conserve Working Forest Landscapes:** Conserving and managing working forest landscapes for multiple values and uses.

**Protect Forests from Threats:** Protect forests from threats, including catastrophic storms, flooding, insect or disease outbreak, and invasive species.

**Enhance Public Benefits from Trees and Forests:** Including air and water quality, soil conservation, biological diversity, carbon storage, forest products, forestry related jobs, production of renewable energy, and wildlife.

Issues presented in the New Hampshire input process are organized under each of the Priorities. Strategies are presented for each of the issues. Some strategies may be found to address more than one issue. Strategies that apply to more than one issue are listed under each appropriate issue. Those strategies, which are presented more than once, are noted with an asterisk (*).

The organizations that have been recommended to participate in a strategy are identified in this plan, based upon the results of the participants' suggestions.

A matrix, which summarizes the issues, is included in this document. Each strategy and those groups who are recommended to participate in the implementation of each strategy can be found in the matrix. This provides you an efficient way to view the depth and breadth of the plan and for participants in the implementation to identify their responsibilities.

Strategies that are a part of State Forestry Programs are included among the other strategies to address each issue. A separate section provides a more detailed narrative of the State Forestry Program Areas.

# *Introduction*

The New Hampshire Department of Resources and Economic Development, Division of Forests and Lands has developed the New Hampshire Forest Resource Strategies under the guidance of the New Hampshire Forest Advisory Board.

## *History of Forest Resource Planning in New Hampshire*

Planning is an essential and inescapable part of our lives, whether it is personal, family, career, or business. Every so often, each of us takes stock in where we have been, where we are at the present, and where we think we want to go. This is what planning is all about. The odds are stacked against any achievement of success without reflecting on the past, the present, and the future.

Forestry is no different. New Hampshire officially recognized this fact in 1952, when a group of citizens, appointed by former Governor Sherman Adams, conducted the State's first statewide forest resources planning project. A similar project followed in 1964 under former Governor John King. In 1974, the U.S. Congress gave momentum to forest resources planning with the passage of the Resources Planning Act (RPA). This act provided technical assistance, funding, and coordination to states on a national basis.

The RPA process gave New Hampshire the necessary resources to initiate its current Forest Resource Planning Program, by the passage of the New Hampshire Forest Resource Planning Act, RSA 220, in 1981, requiring resource assessments and periodic plans based on those assessments, with five-year updates and reports to the Legislature. RPA and this new law were the impetus for New Hampshire to undertake its third citizen-based planning project, culminating in 1982 with a document "Forests and Forestry in New Hampshire – Action Program for the Eighties". In 1986, the New Hampshire Division of Forests and Lands published an interim report addressing emerging problems and changing opportunities.

In 1996 the New Hampshire Forest Resource Planning Act, RSA 220 was recodified to RSA 227-I Forest Resources Education, Promotion, and Planning. At about the same time, New Hampshire began its fourth forest resource planning process, a two-year effort involving representation from the forestry community across the spectrum of interests. It looked at how people valued and used New Hampshire's forests and the forest's role in our economy, and the ecological condition of our forests. The 11 objectives that were used in the public input questionnaire for this plan came from those assessment reports. In 2002, an Interim Status Report was prepared to update the 1996 Forest Resource Plan.

The outcome of that effort was the starting point for the development of this document. Continuing the tradition begun in 1952, the *2010 New Hampshire Forest Resource Strategies* presents a set of actions to address the sustainability of New Hampshire's forests, ecosystems, and a healthy forest-based economy.

### *USDA Forest Service Requirements*

The 2008 Farm Bill requires States to complete a Statewide Assessment and Resource Strategy in order to receive cooperative forestry assistance funds. In this way, the USDA Forest Service ensures that funds provided to the state will be used for things designated by the people of New Hampshire in a plan. The State of New Hampshire will look to the Forest Service to approve this document so that support through the New Hampshire Division of Forests and Lands for plan elements will be possible. Knowing that this process was required and that guidelines for the plan would be forthcoming from the Forest Service, the development of this document the New Hampshire Division of Forests and Lands postponed the process beyond the usual 10-year period to accommodate the federal needs. In this way, The Division could meet the state and federal requirements simultaneously, with greater efficiency and with a common purpose.

## *The 2010 Forest Resource Planning Process*

### *Public Input*

New Hampshire Division of Forests and Lands contracted with the Natural Resource Institute, LLC (NRI) to gather statewide public input, compile and document the results within the context of New Hampshire Forest Resource Plan tradition and USDA Forest Service standards. The Division of Forests and Lands also had the NRI garner the forestry agency program plans that will address the identified issues. The New Hampshire Forest Advisory Board served as the overseeing body for the development of this document. Susan Francher, Forest Resource Planner, served as the principal person responsible for the production of this document, working with State Forester, Brad Simpkins, Interim Director, New Hampshire Division of Forests and Lands.

The Division of Forests and Lands thank the following stakeholder groups for their time discussing the New Hampshire Forest Resource Plan and for their input:

Animal and Plant Health Inspection Service
Appalachian Mountain Club
Community Forestry Advisory Council
Forest Legacy Committee
Forest Stewardship Committee
GRANIT - Complex Systems
Granite State Division – Society of American Foresters
Harris Center
Land Conservation and Heritage Investment Program
Land Trusts
Natural Resource Conservation Service
New Hampshire Arborists Association

New Hampshire Association of Conservation Commissions
New Hampshire Association of Conservation Districts
New Hampshire Audubon
New Hampshire Farm Bureau
New Hampshire Fire Chiefs Association
New Hampshire Forest Advisory Board
New Hampshire Landscape Association
New Hampshire Sierra Club
New Hampshire State Conservation Committee
New Hampshire Timber Harvesting Council
New Hampshire Timberland Owners Association
New Hampshire Tree Farm Committee
New Hampshire Wildlife Federation
North Country Council
North Country Resource, Conservation & Development
Northern Forests Center
NRCS / State Technical Committee
Project Learning Tree
Society for the Protection of New Hampshire Forests
Southern New Hampshire Resource, Conservation & Development
Squam Lake Natural Science Center
State of NH Department of Agriculture
State of NH Department of Environmental Services
State of NH Department of Resources & Economic Development
State of NH Department of Revenue Administration
State of NH Department of Transportation
State of NH Division of Economic Development
State of NH Division of Forests and Lands
State of NH Division of Parks & Recreation
State of NH Division of Travel and Tourism
State of NH Fish and Game Department
State of NH Office of Energy and Planning
Statewide Program of Action to Conserve our Environment
The Nature Conservancy of New Hampshire
UNH – Thompson School of Applied Science
UNH Cooperative Extension
UNH Department of Natural Resources & the Environment
US Fish and Wildlife Service
USDA Farm Service Agency
USDA Forest Service – Research
USDA Forest Service - S&PF
USDA Forest Service – WMNF
Wood pellet producer
Wood to energy producers

The goal of the development of this document has been to be inclusive in getting input. Over 50 Stakeholder groups were contacted and more than 100 individuals were personally interviewed. Three open public forums were also held. An online questionnaire was available on the New Hampshire Division of Forests and Lands (NHDFL) website for more than a month to gather additional public input. Based on comments from participants, it appears that the natural resource community network was in place, with people hearing about the call for input from several sources. The idea was to saturate the natural resource community with the message that their input was important and there were several ways to provide comments.

Conservation organizations, public agencies at the state and federal levels, and individuals representing specific interests showed a great interest in presenting their perspectives. Stakeholders who were involved in face-to-face interviews were also asked for written input that would provide well-articulated descriptions of an issue, the desired outcome as they saw it, and who they felt should be involved in the implementation. “Stakeholders”, in this context, refers to the organizations and agencies that are active in the New Hampshire natural resources community. Interviewers emphasized that this is not a plan only for what the New Hampshire Division of Forests and Lands (NHDFL) is to do, but one that encompasses what the actions of the many groups in the New Hampshire’s natural resource community would be doing to implement the plan. Stakeholders were encouraged to include their organizations’ self-interest in their input. They might see an issue or a side of an issue that others may not even realize exists. If they did not express it, there was a chance that the other participants may overlook the issue. If the myriad of stakeholders and other participants each include issues which are serves their own unique interests, then the necessary diversity we were looking for would be present.

In conversations with individuals and groups, participants were encouraged to include “self-serving” issues and desired outcomes. In that way, input would be better able to surface all issues, some which may not be included if the participants who were interviewed left it to others to support their perspectives. With the large number of stakeholders groups and individuals from across the state’s natural resource community personally engaged in conversations, a diversity of issues was assured, even with a call for including “self-serving” input. The objective was to be inclusive of all perspectives.

## *Public Input Questionnaire*

To aid stakeholders and the public with input in the development of the New Hampshire Forest Resource Plan, a questionnaire was developed and distributed. It was provided to stakeholders, along with one-to-one contact. Public meetings were offered, with the questionnaire available as a springboard for discussion. In those conversations, stakeholders and meeting participants were informed about the origins of the questions and given instructions to use the questions as “spark plugs” to ignite their own ideas for what should be addressed in the plan

The public input questionnaire included three components:

- Participants had the opportunity to view the eleven objectives from the 1996 plan and indicate if they are still relevant. Respondents could also provide comments on the issue.

- Questions based upon the USDA Forest Service National Priorities and the related objectives, were presented, asking for a priority ranking of “high”, “medium” or “low”.

- Participants could identify additional issues, desired future outcomes, suggested actions to produce that outcome and could then provide comments on the issue.

The questionnaire was provided online for over 5 weeks, from which public input was received. This input was anonymous. The *Public Input Questionnaire* can be found in the Appendix.

## *Assessment of New Hampshire’s Forests*

In addition to the public input, the process included an assessment of the status of New Hampshire’s forests, as required in RSA 227-I and by the USDA Forest Service (USFS).

## *Related Plans Impacting New Hampshire’s Forests*

The New Hampshire Forest Resource Assessment & Strategies documents include references to other plans such as two previous New Hampshire Forest Resource Plans, the New Hampshire Forest Stewardship Plan, the New Hampshire Urban and Community Forestry Plan, the New Hampshire Wildlife Action Plan (WAP), The New Hampshire Climate Action Plan, The New England Governor’s Conference Commission on Land Conservation Report, Community Wildfire Protection Plans and the Governor’s NH Forest Products Industry Task Force Report.

## *USDA Forest Service Supported Programs*

The plan includes a program component in which the people, who develop, implement, and report on programs supported by the USDA Forest Service (USFS) present their planned strategies to address forest-related issues. The program areas include:

Fire
Forest Legacy
Forest Protection
Forest Stewardship
Urban and Community Forestry

For each of these programs, you will find a program description. This provides the New Hampshire natural resource community, program funders and program clientele, as well as

the USDA Forest Service (USFS), with an overview of how the New Hampshire Division of Forests and Lands (NHDFL) and its partners will implement the program to meet program needs, funding requirements and the desired outcomes identified in this *Forest Resource Strategies* document.

# *Desired Outcomes*

The goal of the New Hampshire Forest Resource Plan process is to engage New Hampshire people to identify issues; state desired outcomes; and develop strategies for the New Hampshire natural resource community to implement to reach their desired outcomes. This section documents the "Desired Outcomes", as voiced during extensive interviews, in an open forum and through on-line input. The contributions from the diverse participants were consolidated into common goals. There was great amount of consistency among the participants. The result is a collective vision for NH's forests. It provides goals to be reached and it provides the natural resources community something upon which they can measure success.

## *Permanent Land Protection*

- Permanently protected lands include working forests, important habitats, significant natural communities, and critical ecosystems and watersheds. Protect the economy, the environment, wildlife, vulnerable native flora and fauna and water resources.

- Public and private funding is available for significant permanent land protection through acquisition and/or conservation easements, including funding for the costs associated with the gifting or sale of property rights, easement monitoring & enforcement, as well as for purchase costs.

- Open space protection through acquisition or conservation easement includes a prioritization based on values expressed in this document, including retaining working forests and protecting critical habitats, significant ecosystems, important natural communities, at-risk native flora and fauna, connectivity and water quality.

## *Data Collection and Inventories*

- A current, continuously updated and readily available state level database that reflects the status and trends in New Hampshire's forestlands and includes a natural resource inventory to identify critical areas and systems to assist in managing and maintaining our forest landscape in a sustainable manner.

- Potential and existing businesses, public decision makers, the forestry community and the public have current data reflecting the capacity of our natural resources in New Hampshire to meet the demands for wood, energy, water and other products of our

forests so they each can make informed decisions about investments, economic development initiatives, ecological integrity and sustainability of the resource.

- A comprehensive inventory of town, county, and other public lands along with the degree of protection, such as conservation easements or Town Forest designation, whereby parcel boundaries are accurately delineated and clearly marked on the ground.

- Updated information about the status of NH's forest industry including sawmills, wood-to-energy facilities and the logging infrastructure is available.

### *Natural Resource Community Collaboration*

- Retain the highly successful and effective collaborative infrastructure and culture of close positive interaction and collaboration among the individuals, organizations and agencies that influence and are influenced by our natural resources.

- Federal programs which support natural resources in New Hampshire recognize the regional differences throughout the United States, including the landscape and culture of New England.

- Strong collaboration across public agencies in the development and implementation of policies and programs to facilitate sustainable forest management.

### *Sustainable Forest-Based Economy*

- Enhance and sustain a favorable business climate for the forest products industry, benefiting businesses, the community and our ability to keep forestlands intact.

- New Hampshire people have the knowledge, incentives and desire to purchase natural resources products locally, including lumber and agro-forestry products to support the local economy, help sustain forests and forest management and to save energy costs associated with transportation.

- New Hampshire's public and private forests serve as a major attraction to support a viable recreation and tourism industry and related businesses.

- New Hampshire's forests support a viable forest industry. Landowners and industry leaders continue to explore opportunities for third-party certification further ensuring the sustainability of NH's forests.

- New Hampshire's forest-based businesses have the information and knowledge necessary to make informed decisions

## *Forest Structure and Landscapes*

- Contiguous blocks of forest remain intact to enhance the economic opportunities for managing and using forestlands, improving the sustainability for forestry employment and improve landscape level ecological sustainability and connectivity for animals and plants.

- Forests become less fragmented, and less vulnerable to fragmentation.

- Conserved and connected travel corridors at multiple scales across the landscape that enable wildlife populations to shift as habitat conditions change, along with a better understanding of what constitutes effective travel corridors for wildlife of various taxonomic groups.

- Future residential and commercial development is well planned in order to avoid destroying or negatively impacting priority green infrastructure[1].

- A well-distributed network of municipal, state, and federally owned and managed forest lands that provides forest products, ecosystem services, and recreational opportunities to New Hampshire residents and visitors.

- New Hampshire's forests are well balanced in forest type, tree age and tree size distribution.

- New Hampshire's forests are able to sustainably provide important ecosystem services, including water resource protection, clean air, carbon storage, biodiversity and valuable habitats for the flora and fauna that depend on our forests.

- Vulnerable important natural communities are protected, restored as appropriate and maintained.

## *Fish and Wildlife*

- Lands supporting important fish and wildlife habitats are managed to ensure their long-term viability.

- The desired outcomes and strategies in the New Hampshire Wildlife Action Plan (WAP) are fully integrated into the desired outcomes and strategies in this document and are implemented.

[1] Green infrastructure is defined as an interconnected network of green space that helps to conserve natural ecosystem values & functions and provides associated benefits to people.

### *Fire*

- Frequency and size of wildfires are kept to a minimum to reduce costs and risks to people and structures and so that forest resources and ecosystem services are not adversely affected by wildfires.

- Homes, structures and communities are “Firewise”, reducing the risk of fires occurring, reducing the impact of fires and addressing accessibility.

- The state continues to have a network of fire lookouts for fire detection and public education.

- Prescribed fire remains a valuable tool for maintaining or restoring fire adapted forest landscapes and natural communities.

- A well-coordinated multi-agency prescribed burn team that can plan for and implement numerous prescribed burns each year to restore and maintain forest and non-forest habitats on both public and private lands.

### *Threats to Forests from Invasive Plants, Insects, and Diseases*

- New Hampshire has in place adequate monitoring, data bases and maps, prevention programs, response plans, suppression programs and mitigation options to minimize the impact of invasive plants, insects and diseases.

- Public decision makers, natural resource professionals, and the public are aware of the threats to our forests from invasive plants, insects and diseases and are able to significantly contribute to detection of threats, adopt practices which reduce the chances of introducing problems into our ecosystems and support programs to limit adverse impacts.

- New Hampshire is part of multi-state and national networks which track and map potential threats from invasive insects and diseases, provide alerts, share information about control practices and provide financial and technical assistance when needed.

- The geographical extent, potential future threat and control options of various exotic and invasive plants, animals and diseases are well understood. Methods for most effectively and efficiently preventing and dealing with exotic invasive plants, animals and diseases are well known and practiced.

### *Water Resources*

- New Hampshire’s State Water Resources Plan provides strategies, practices and guidance for sustaining the positive effects of our forests on water quality and quantity

and the protection of water resources during harvesting and other activities on forestlands.

- Forests contribute to the protection, availability and sustainability of high quality, cost-effective drinking water.

- The public understands and makes informed decisions regarding the role of forestlands to protect water quality and to supply the quantity of water needed for New Hampshire's people and environment.

## *Soil and Mineral Resources*

- Water & soil resources are protected through the use of riparian forest buffers and best management practices.

- Soil productivity is maintained through sustainable forest management practices.

- Aquatic ecosystems, and the flora and fauna they support, are maintained and enhanced by forests and sustainable forest management practices.

- Forest management & mineral resource plans are coordinated to ensure that access roads and harvesting of forest resources would be integrated with planned mining operations to optimize both resources, while at the same time minimizing the footprint of any related disturbances.

## *Urban and Community Forestry*

- Healthy and sustainable urban & community forests support livable, desirable, and ecologically healthy communities; minimizing storm-water runoff, improving air quality, saving energy, abating noise, increasing property values, providing pleasing aesthetics and enhancing the quality of life.

- New Hampshire communities have a supply of trees for replanting to reduce the impact of loss of anticipated increased tree removals and loss of trees damaged from insects and diseases.

- Lands owned by municipalities and counties, including Town Forests and county forests are well managed, providing economic and environmental benefits and serving as an example of good stewardship for private forest owners.

## *Private Forests*

- Tax programs, such as Current Use, local land use decisions, incentives and markets make it practical and cost effective for private landowners to own forestland and to practice sustainable forest management.

- New Hampshire's private forests are well managed to sustainably provide economic, environmental benefits and important ecosystem services.

- Well-trained and experienced foresters, contractors and loggers are readily available who can help private forest landowners manage their forests sustainably.

- The public, public officials and the community understand the value that private lands contribute to their well being, such as environmental quality, taxes, low cost of community services, economic activity, ecosystem services, mitigating climate change, and quality of life.

- Markets for all grades & species of wood are available to support sustainable forest management on private forests.

## *Education and Outreach*

- Landowners have ready access to affordable unbiased outreach and educational programs which can aid them in making informed decisions about their forest land over the term of their ownership.

- Natural resource professionals, including foresters, timber harvesters, arborists and others have access to an on-going continuing education system that will enhance their professional ability, have ready access to research-based, unbiased resource material, have a reliable source to answer specific questions and provide one-to-one assistance when needed and a system that will alert and update them on emerging issues.

- Residents and visitors understand and appreciate the value of New Hampshire's. They are aware of the benefits they receive from the forest; and they understand the relationship between a healthy environment and a healthy, vibrant forest-based and tourism economy.

- Informed decision making by knowledgeable elected officials at the state, county and local level, conservation commissions, planning, zoning boards, natural heritage committees and other community groups.

### *Public Use of Forests*

- Users of New Hampshire's forestlands respect the property, the landowner and the limits placed on public use.

- The tradition of keeping lands open to the public and providing appropriate levels of outdoor recreation is maintained.

- Land managers understand the impact of various recreational uses on the ecological integrity of the forest.

### *Climate Change*

- New scientific information, tools, and technology increase understanding of climate change impacts, adaptation, influences on flora and fauna distribution, mitigation options and risks and uncertainties.

- New Hampshire's forests are managed with an objective that they can best adapt to climate change with minimal adverse environmental and economic impacts.

- Ecosystem services are sustained as forests successfully adapt to changing climate.

- New Hampshire forests contribute to mitigation of global climate change, including serving as a site for carbon storage and sequestration and as an environmental friendly energy source.

# *2010 Forest Resource Strategies*

The “Desired Outcomes” listed in the previous section came directly from stakeholder and public input. The input process also defined issues from which the desired outcomes arose and the strategies to be undertaken that will lead to reaching these outcomes. This section presents the issues and the strategies, as recommended by those who provided input. This set of strategies creates the 2010 New Hampshire Forest Resource Plan, a vision and challenge shared by the natural resource community.

Following each strategy is a listing titled "Key cooperators". This is a partial list of agencies, organizations, groups, or individuals who are recommended to be involved in the implementation of that strategy. The list does not include the New Hampshire Division of Forests and Lands or UNH Cooperative Extension, since they are active participants in the majority of strategies and the reader can automatically consider them to be among those involved in each strategy.

## Priority I - Conserve New Hampshire’s Forested Landscape

Conservation in New Hampshire’s forests begins with good forest stewardship practiced by forest owners and natural resource professionals. With 80 percent[2] of our forests in private hands, it is essential to have knowledgeable landowners with strong forestry ethics. We have many such private landowners who have demonstrated their love of the forest and their willingness to share their forestry experiences with other landowners. It is still a monumental task to help over 80,000 landowners to become aware of the part their lands play in the New Hampshire forested landscape, to provide education about forests so they make informed decisions about their lands and to instill a stewardship ethic that they can pass on beyond their lifetime. Public lands at the federal, state and local level can provide a place where good forestry is practiced, setting an example of good forest practices while showcasing the value of forest ecosystems and working forests.

Often people overlook the forests that are closest to where they live and work. Urban and community forests are environmentally vital for a myriad of benefits. They also can be economically important to residential and commercial property owners, the community as whole and as a tool in water and energy management. It is well-recognized that urban and community forests play a significant role in our New Hampshire way of life, similar to the role forests play in our rural landscapes.

A sustainable forest based economy is important to conserving our forest landscape. A viable forest industry has been a significant part of New Hampshire’s forest history for 350 years.

[2] Miles, P.D. 2009. Forest Inventory EVALIDator web-application version 4.01 beta. St. Paul, MN: U.S. Department of Agriculture, Forest Service, Northern Research Station.

Today, forest businesses are a major contributor to the ability for people to hold land as forestland and to be able to afford to practice good forestry. Some people are questioning the sustainability of our forests in light of new demands for energy, while some people are striving to enhance market opportunities for New Hampshire forest products. Agro-forestry, niche markets and possible new revenue sources related to carbon storage are a part of our forests' future. Sustaining a forest based economy provides economic and environmental benefits and is worthy of our attention.

## *Focus Area A - Good Forest Stewardship of New Hampshire's Forests*

New Hampshire is the second most forested state in the nation, with 84%[3] of the land area of the state forested. Eighty percent (3.6 million acres) is privately owned. This means that two-thirds of the State of New Hampshire is privately held forestlands. This places a large responsibility on private sector forest owners, as well as the public landholders in the state. Good stewardship of forests reflects greatly on what people perceive as the values and qualities of the state as a whole.

Two thirds of the autumn leaves that tourists come to see in New Hampshire are privately produced from tax paying forests. Two thirds of the raindrops that fall on New Hampshire fall on privately held forests. Good stewardship protects this water resource.

Forests have been a part of the economics and culture of the state for over 350 years. They played a significant part in our state's origins and in the struggle for our independence as a nation. New Hampshire's people and state officials have continually recognized the importance of forests for our economy, our environment and our New Hampshire way of life. Having a state requirement for a continuous series of state forest resource plans is just one example of the on-going commitment to good stewardship of New Hampshire's forests.

As people become more disconnected from farms and forests, it is important that landowners, public decision makers, youth and the public understand the need for caring for and using our forests sustainably.

Since the last New Hampshire Forest Resource Plan, we have witnessed considerable changes. In the Great North Woods, large tracts of land held by industrial owners have been sold, sometimes fragmented with long-term management objectives and management plans changing. We have seen the entry of Timber Investment Management Organizations (TIMOs) in land ownership and the emergence of large, well-managed Town Forests. Most of these North Country changes have escaped the predictions of the most seasoned and knowledgeable people in our forestry community. As we look to the future, it sends a message that we may encounter other changes in the next decade that are beyond our ability to foresee. Stable ownerships, permanent land protection, long term stewardship plans and

[3] Ibid

on-going support of the public for forest stewardship are among the tools in our toolbox for sustainable forests.

More predictable than the changes in the Great North Woods has been the effects of increased population growth in the state, causing loss of forestland to permanent conversion, fragmentation, disruption of habitats and loss of connectivity for animals and plants. Over the years since the last Forest Resource Plan, the losses in forestlands were estimated to range from of 12,000 to 20,000 acres per year, about the size of half an average New Hampshire town per year.

The New Hampshire Division of Forests and Lands (NHDFL) in a joint program with the UNH Cooperative Extension (UNHCE) Forestry and Wildlife Program has been providing private forest owners and some public owners with research-based forest stewardship programs which included technical assistance, information, education and access to financial incentives. Forest Stewardship plans and implementation of the state's Wildlife Action Plan (WAP) are encouraged. From the start, these programs have promoted the use of private sector foresters. Licensed foresters in the state now number over 300. UNH Cooperative Extension (UNHCE) provides an unbiased list of licensed foresters offering services to landowners in the state, along with a guide on selecting a forester. As a result, New Hampshire has one of the highest (if not the highest) ratios of foresters offering services to the public per acre of forestland in the nation. This emphasis on consulting foresters has multiplied the availability of foresters to private landowners (by about 30 times) over strictly public programs and has greatly multiplied the opportunity to bring forest stewardship messages to landowners, public decision makers and the public.

The newly revised *Good Forestry in the Granite State* has become the forest stewardship standard for New Hampshire landowners and forest resource professionals, including foresters, timber harvesters and others.

Public lands offer the opportunity to provide models of good forestry for landowners and the public to emulate. Public lands include federal lands, state lands, county lands and lands held by municipalities. Federal lands include the White Mountain National Forest (WMNF), US Fish and Wildlife (USF&W) National Wildlife Refuges and US Army Corps of Engineers lands. State lands include those held by the Department of Resources and Economic Development (NHDRED), the Department of Environmental Services (NHDES), the New Hampshire Fish and Game Department (NHF&G), and the University of New Hampshire. County farms and forestlands are now a significant land base for sustainable forest stewardship practices. Community forests encompass municipal lands of all types, officially designated Town Forests and urban street trees and parks.

New Hampshire has the oldest Town Forest in the nation in Newington, dating from 1710. We are seeing large tracts of officially designated Town Forests being owned by municipalities, such as Randolph, with 10,000 acres and Gorham with 5,000 acres. These are sustainably managed working forests involving natural resource professionals in their stewardship efforts.

Participants in the New Hampshire Forest Resource Plan have supported the idea of encouraging forest stewardship efforts on both private and public lands. They expressed that they value working forests and large contiguous blocks of land for environmental and economic reasons. They have supported demonstrating good forest practices to other owners and to the public who may influence their ability to own and manage forestlands. They have supported programs which recognize people implementing good practices, such as Tree Farmers, certified timber harvesters, licensed foresters and certified wood lands and products.

New Hampshire's forestry culture is a collaborative one, finding common ground regarding forest practices and providing consistent positive messages to the public about forest stewardship. Many have expressed that this is probably the best state in the nation for truly collaborative successful relationships within the forestry community.

## *Issue 1 - Retain successful grassroots collaboration to sustain natural resources and the economy*

Private sector businesses, non-governmental organizations, public agencies and elected officials have created an atmosphere of problem solving and policy making in an open, transparent and inclusive processes. New Hampshire continues a culture of collaboration rather than contentious attitudes among the forestry sectors. Forest-based businesses are a critical component of the forestry community collaboration. The cost of this public participation system is minimal in comparison with the benefit.

New Hampshire has a tradition of cooperative policy development with many examples of people working together to achieve common goals. Continued dialogue between state agencies, organizations, and individuals is essential to successful implementation of the plan.

In July of 1996 the Division of Forests and Lands re-established the NH Forest Advisory Board (FAB). Authorized under RSA 227-I:5, FAB advises the Division of Forests and Lands on "factors affecting the use, ownership, and management of forest resources." The mission of the NH Forest Advisory Board is to advocate implementation of the recommendations of the NH Forest Resources Plan, coordinate forest policy development, facilitate dialogue between diverse interests, assure opportunities for public participation in forest policy development, and to advise the State Forester in the development of state programs and policies. This board provides valuable volunteer input and needed interaction among the stakeholders in New Hampshire's natural resource community.

**Strategy 1:** Continue the system of advisory boards and commissions. State officials need to recognize the contribution to the state by individuals and groups, including volunteers and not-for-profit groups who provide the grassroots input to government for which New Hampshire is noted. State government should support the continuation of advisory boards, commissions and committees that effectively serve and guide New Hampshire's natural resource efforts. Through a collaborative effort involving conservation organizations, agency

personnel, elected officials and the public, this unique-in-the-nation, effective grass roots tradition will continue.

***Key cooperators:*** *New Hampshire Audubon, NH F&G, NHTOA, SPNHF, NHACC, Land Trusts, State Legislature, and TNC*

## *Issue 2 - Conservation Easement Funding & Administration*

The rate of loss of New Hampshire's open space, including forests, is significantly less than the rate of loss during the period since the last New Hampshire Forest Resource Plan however concern regarding forest land conversion and forest fragmentation remains high. Funding to procure conservation easements on forestlands needs to be maintained or enhanced. Funding mechanisms to support monitoring of conservation easements needs to be dramatically increased.

Within the current suite of options available to conserve large blocks of contiguous forest habitat, conservation easements have been a priority by state agencies and conservation organizations alike. The advantages of this form of land conservation is that lands remain in private ownership, open to the general public for some recreational uses, are available for timber management and continue to provide property taxes at current use levels to the local municipality.

Opportunities continue to exist to work with private forestland owners to conserve forests for the myriad of ecological and economic functions they provide. Existing programs such as the Land and Water Conservation Program, Forest Legacy Program and The Land and Community Heritage Investment Program (LCHIP) provide the financial impetus needed to support efforts at the state and local level to purchase conservation easements on privately owned lands.

Over the long term it may become more difficult to retain large land ownerships as economic conditions change. Conservation easements offer an opportunity for private landowners to retain the right to manage and harvest timber while benefiting from the sale of certain other rights through the easement process.

The Forest Legacy Program in particular, has been the most significant program in funding the conservation of large unfragmented, interconnected tracts of forestland in New Hampshire. In recent years many more states have been added to the list of those eligible to compete for Forest Legacy funds. While each state can submit up to three project proposals per year, funding limits make it unlikely that more than one project will be funded per year per state. Opportunities to conserve significant forestland are lost when landowners are not willing or able to wait the several years it seems to take for a project to rise to the top of the state list.

Lastly, the ongoing monitoring and enforcement of easement properties is a great responsibility for the easement holder. As easement age and properties change hands it can

become more costly and time consuming to ensure that the limitations and rights of the grantee and grantor are enforced. Mechanisms should be in place to enable conservation easement funding programs to protect their investment by allowing project expenses to include the costs of enforcement and monitoring.

**Strategy 2*:** a) Advocate for USDA Forest Service (USFS), Forest Legacy Program funding that is at a level that allows for the funding of at least two projects per year in New Hampshire. b) Continue to implement the New Hampshire Forest Legacy Program in accordance with NH's approved Assessment of Need.

***Key cooperators:*** *Land Trusts, New Hampshire Forest Advisory Board, Forest Legacy Committee, and USFS*

**Strategy 3:** *Advocate for additional State, federal, and local funds to support conservation of private forest land through acquisition of conservation easements or use of alternative conservation tools. Programs should includes as allowable costs funding for the legal expenses associated with easement enforcement, land surveys and other costs associated with the gifting or sale of property rights, and long-term monitoring, as well as for purchase costs.

***Key cooperators:*** *Land Trusts, NRCS, State Legislature, TNC, and USFS*

**Strategy 4:** Public agencies holding conservation easements should work together to address public access issues on easement properties.

***Key cooperators:*** *Land Trusts, Local Governments, NRCS, NHF&G, NH Conservation Stewardship Program and USFS*

## *Issue 3 – Implement New Hampshire's Wildlife Action Plan as it relates to forests*

The New Hampshire Wildlife Action Plan (WAP) identifies wildlife species and habitats of greatest conservation concern. Many of these species occur in forests or forest associated habitats. Many of the habitats are matrix forests or smaller scale habitats associated with forests. The WAP includes habitat condition analyses, risk assessments and conservation strategies designed to sustain species and habitats of concern. Some of the strategies are directly related to program areas in the Forest Resources Plan, including forest stewardship, forest health and forest legacy.

An outgrowth of state Wildlife Action Plans was the development of a habitat classification scheme and habitat maps at the regional level. These products will be used by each state in the Northeast, including New Hampshire, in future WAP updates and for the first time will allow neighboring states to collaborate on identifying and prioritizing priority landscapes for conservation, management, and restoration.

**Strategy 5:** Fully integrate the strategies in the WAP (and subsequent versions) into the outcomes and actions identified in this Forest Resources Plan. New Hampshire Fish and Game (NHF&G) Staff charged with implementing the WAP are involved in committees and initiatives resulting from the Forest Resources Plan so that mutual goals and objectives with stakeholders are achieved. The Northeast Habitat Classification System and maps (Morton et al. 2009) will be used as the basic approach to mapping and prioritizing the state's forest resources and other habitats.

Specifically include in the strategies for the 2010 Forest Resource Strategies document *Conservation Strategies* addressed in Chapter 5 of the New Hampshire Wildlife Action Plan that are associated with forest habitats:

STRATEGY 100 *Intra-Agency Coordination and Policy*
- 103 Objective: Develop protocols for limiting activity in sensitive habitats
- 105 Objective: Minimize OHRV wildlife impacts

STRATEGY 200 *Conservation Planning*
- 204 Objective: Map Landscape Potential for Wildlife Habitat
- 205 Objective: Map Potential Wildlife Corridors and Buffers
- 206 Objective: Produce and Deliver Planning Maps

STRATEGY 300 *Education, Information, and Technical Guidance*
- 301 Objective: Identify actions to address through education, information, and technical guidance
- 302 Objective: Landowner education series
- 305 Objective: Promote sustainable forestry practices
- 306 Objective: Advise town conservation commissions and planning boards
- 307 Objective: Educate recreational users regarding threats to wildlife and natural communities

STRATEGY 400 *Environmental Review*
- 401 Objective: Release Wildlife Maps to the Public
- 403 Objective: Develop guidelines to minimize impacts to endangered, threatened, and special concern species
- 405 Objective: Expand existing protection to include significant wildlife habitats that currently lack protection.
- 406 Objective: Develop stream crossing guidelines and restoration protocols

STRATEGY 500 *Habitat Management*
- 502 Objective: Generate early successional and young forest habitats
- 503 Objective: Restore and maintain late-successional forests
- 505 Objective: Restore rare habitats and natural communities
- 506 Objective: Develop and implement a terrestrial invasive species control program

STRATEGY 600 *Interagency Regulation and Policy*

603 Objective: Promote a Transportation Working Group
604 Objective: Promote a sustainable development working group
605 Objective: Recreation Working Group
606 Objective: Promote reactivation of the Forest Sustainability Work Team

STRATEGY 700 *Land Protection*
701 Objective: Protect riparian/shoreland habitat and other wildlife corridors
702 Objective: Protect unfragmented blocks and other key wildlife habitats
703 Objective: Develop a comprehensive land protection support program

STRATEGY 800 *Landowner Incentives*
801 Objective: Financial and Technical Assistance for Habitat Management and Restoration
802 Objective: Financial Incentives to Maintain Private Land in Open Space
803 Objective: Financial Incentives to Promote Sustainable Forestry Practices
804 Objective: Safe Harbor Agreements to Protect Habitat of Threatened and Endangered Species

STRATEGY 1300 *Local Regulation and Policy*
1301 Objective: Incorporate Habitat Conservation into Local Land Use Planning
1302 Objective: Advise Conservation Commissions and Open Space Committees
1303 Objective: Promote Role of the Regional Planning Commissions in Landscape-Scale Conservation

***Key cooperators:*** *NHF&G staff from both the non-game and endangered wildlife program and NHF&G regional fishery and wildlife biologists, New Hampshire Audubon, New Hampshire Wildlife Federation, and Private Landowners*

## *Issue 4 - Sustaining forest management on private lands*

Conserving private forest landscapes in New Hampshire is integral to conserving the long-term health of New Hampshire's forests and forest-based economy. The parcels of land protected by government, non-profit organizations and conservation easements are not enough to maintain the necessary ecosystem benefits we now realize from our forested landscape. Working private forests are essential to maintain clean water, provide connected wildlife habitat, assure economic stability and provide the scenic backdrop to our state, among many other values. Maintaining a viable working forest landscape requires attention to the economic, tax, land use planning and regulatory framework in local communities and at the State level. For example, small changes to tax laws, may impact the viability of small woodlot operations that then lead to the unintended consequence of liquidation and conversion to non-forestry uses. The lack of a nearby mill or decisions regarding road access can encourage or adversely affect the viability of continued management of private forestland.

**Strategy 6:** Promote "Forest-Friendly" policies and actively encourage the state and local governments to ensure the continued existence of a sustainable working forest landscape.

***Key cooperators:*** *Local Governments, Association of Conservation Commissions, NHTOA, and State Legislature*

**Strategy 7:** Conservation funders, including federal, state and local governments and private foundations and land trusts, provide incentives for the costs associated with permanent land protection, such as legal expenses, surveys, and stewardship monitoring.

***Key cooperators:*** *Land Trusts, Local Governments, Forest Legacy Committee, State Legislature, and TNC*

**Strategy 8:** Encourage forest owners to have stewardship plans. The Natural Resource Conservation Service (NRCS), USDA Forest Service (USFS), New Hampshire Fish and Game Department (NHF&G) and other agencies which provide landowners technical and financial assistance should include professionally developed forest stewardship plans among their offerings.

***Key cooperators:*** *Consulting Foresters, Foresters, Forest Stewardship Committee, and Tree Farm Committee*

**Strategy 9:** Use projects such as the Northwood Meadows Land Management Cooperative as a model to demonstrate the value of landowner communication and cooperation in management of forest land. Allow land management cooperatives to qualify jointly for cost share programs.

***Key cooperators:*** *NRCS, Forest Stewardship Committee, FSA, and USFS*

**Strategy 10:** *Support a strong Current Use Taxation property tax program with the goal to retain open space. The State of New Hampshire and municipalities, along with conservation interests, share responsibility to keeping the program viable.

***Key cooperators:*** *Current Use Advisory Board, NHTOA, SPNHF, State Legislature, and SPACE*

**Strategy 11:** Minimize constraints on forest management activities, including sustainable harvesting operations. Promote awareness of RSA 672:1-III-c, the "Right to Practice Forestry Law," which states that towns shall not unreasonably limit forestry activities by use of municipal planning and zoning powers, among local officials and regional planning organizations. Create awareness among local officials of the positive and negative consequences of their ordinances on the ability of landowners to own and practice good forestry on their lands.

***Key cooperators:*** *Local Governments, Timber Harvesting Council, NHTOA, NHACC, LGC, and Town Planning Boards*

**Strategy 12:** Maintain a cadre of well-trained and experienced licensed foresters and certified loggers to ensure that landowners have the quality resources to practice good forestry.

***Key cooperators:*** *GSD-SAF, New Hampshire Joint Board of Licensure, Timber Harvesting Council, and NHTOA*

**Strategy 13:** Identify opportunities to strengthen existing and develop new markets for all forest-based products. Encourage development of value-added markets.

***Key cooperators:*** *NH Department of Resources and Economic Development, Regional Planning Boards, North Country RC&D, Timber Harvesting Council, and NHTOA*

**Strategy 14:** Continue to support forest industry certification programs, such as SFI and FSC, that include third party audits.

***Key cooperators:*** *NH F&G, NHTOA; SPNHF; NH Natural Heritage Bureau*

## *Issue 5 - Developing technical and financial assistance programs that focuses on collaboration among neighboring landowners*

Providing landowner assistance to multiple landowners will significantly help with sustaining our forest resources in the long term. Programs that target a watershed, a unique natural community, a green belt, or other landscape scale area of special importance consists of several ownerships can provide opportunities that would escape programs with the traditional focus on individual ownerships.

Given that private landowners control the majority of forestland in New Hampshire and the size of the typical ownership is relatively small, it makes sense to proactively engage groups of neighboring landowners in land conservation and stewardship. Given limited resources, an ecosystem based approach that includes identifying high priority forest landscapes, and then proactively reaching out to landowners in those landscapes to foster interest in forest and biodiversity conservation, and fostering collaboration among neighbors should be explored. One example of landowner cooperation is the Northwood Area Land Management Collaborative (NALMC). NALMC is an informal group of private and public neighbors that work together across property boundaries to maintain and enhance the ecological, social, recreational, and economic resources of the local landscape.

A collaboration-based approach could be applied to existing cost-share programs that help fund the development and/or implementation of management plans on private forestlands. Such an approach would likely lead to greater program and conservation achievements than working with scattered individual landowners.

**Strategy 15:** Coordinate educational and cost-share programs to develop and implement stewardship plans for groups of landowners, fostering landscape scale forest management across property ownerships.

***Key cooperators:*** *NRCS, Homeland Security and Emergency Management, FSA, and USFS*

**Strategy 16**: Explore opportunities for collaboration among landowners in land management and product marketing.

***Key cooperators:*** *Regional Planning Boards, North Country RC&D, Timber Harvesting Council, and NHTOA.*

## *Issue 6 - Sustaining forest management on public lands*

The Department of Resources & Economic Development (DRED) owns and manages nearly 190,000 acres of state-owned land for multiple uses from supporting the state's timber industry via the implementation of timber sales, to public recreation, to maintaining the state's biodiversity. Current staffing levels provide for approximately one field worker for every 27,000 acres. The New Hampshire Fish & Game Department (NHF&G) owns and manages approximately 47,000 acres of land primarily to maintain and enhance habitats for wildlife and secondarily to provide opportunities for public recreation. Current staffing levels provide for approximately 1 field worker for every 11,000 acres.

Although private companies and organizations may find it feasible to adequately manage lands at such staffing levels, public lands come with additional responsibilities and time commitments that make current staffing levels inadequate to address many basic stewardship activities. For instance, project planning on state lands requires the completion of a detailed plan that requires input and coordination with many other state agencies including the Division of Forests and Lands (NHDFL) - Natural Heritage Bureau, the Division of Historic Resources (NHDHR), NH Fish & Game, the Department of Environmental Services (NHDES), the Division of Parks and Recreation (NHDPR) - Trails Bureau, and others; notifying and addressing comments from abutters and town officials; detailed contractual requirements; and other processes. It often takes 1.5 – 2 years to go through the state lands process to go from concept to on-the-ground implementation. Current staffing levels barely allow for implementation of projects that meet each agency's primary mission let alone other basic stewardship tasks such as proper boundary line maintenance, maintenance/restoration of access roads and gates, the development of property wide management plans, surveys to identify locations of rare plants and exemplary natural communities, and other stewardship activities.

Since New Hampshire does not have a single natural resources agency, several mechanisms are in place to facilitate communication among state agencies with common management responsibilities and concerns. The Cooperative Land Management Program (CLMP) was formed in the mid 1970's to develop consistent land use policies and provide coordinated

management of the state's natural resources agencies. At the project level, the state land management team (SLMT) provides coordinated, interdisciplinary resource planning and management assistance on state-owned lands.

Federal lands undergo much public scrutiny, during and after public plans are developed. Integrating federal plans with the communities that federal lands impact and the state lands that they abut is important to the needs of local people and protecting water, wildlife, economic activities and other values on a landscape basis.

Counties have a significant acreage of forestlands that serve the needs of the people. Through good stewardship, these lands can contribute to long-term stability for county revenues, economic activities such as harvesting and tourism, watersheds, wildlife habitat, recreation and the quality of life for the people of the county.

Town Forests are becoming increasingly important in the mix of publicly owned forests. In the Great North Woods the well managed Randolph Town Forest and Errol Town Forest serve as prime examples. The NH Forest Legacy Program has played a critical roll in providing funds for the establishment of Town Forests including Kimball Pond in Dunbarton, Freedom Town Forest, as well as the Randolph and Errol Town Forests. Forest stewardship plans; professional forestry oversight and a local commitment to sustainable forestry are critical for town owned forestlands of all sizes.

Community forests within urban areas contribute to the quality of life and provide many other benefits. These forests require professional guidance and an on-going commitment to sustainable care.

**Strategy 17:** *Public officials, community leaders, boards and commissions ensure that lands owned by municipalities and counties, including Town Forests and county forests, are well-managed, providing economic and environmental benefits and serving as an example of good stewardship for private forest owners. This requires a commitment on the part of the people who are accountable for the management of these public lands and the residents they represent. This also requires a commitment to providing and receiving technical assistance, education and information from reliable public and private sources.

***Key cooperators:*** *Local Governments, Association of Conservation Commissions, and New Hampshire Local Government Center*

**Strategy 18:** Public entities at all levels of government develop stewardship plans for their forest lands and other open space lands to provide the people they represent with a sound rationale for decision making, to ensure the optimum benefits from this public asset are received for the long term, to protect the environment and to serve as an example for other forest owners.

***Key cooperators:*** *Local Governments, Forest Stewardship Committee, NHDES, NH F&G, and NHDOT*

**Strategy 19:** Federal, state, county, and local governments share information, data and plans with the people they represent. In many cases, this process is well established. The public being represented will need to have access to education about forests and about these forests in particular, so they can make informed decisions to provide practical and rational input into plan development and evaluation. Public understanding and support of good forestry is essential to long term positive outcomes.

***Key cooperators:*** *GRANIT, State Conservation Committee, RC&Ds, and State Technical Committee*

**Strategy 20:** Include municipalities and counties as eligible participants in landowner incentive programs, such as those provided by the Natural Resource Conservation Service (NRCS), USDA Forest Service (USFS) and the New Hampshire Fish and Game Department (NHF&G). These lands provide an excellent investment as the ownership is shared among local people, these lands have a better chance of long term ownership and consistent management than private lands and, being accessible to everyone, they serve as an example for other landowners

***Key cooperators:*** *Local Governments, NRCS, NHF&G, FSA, RC&D's, and USFS*

**Strategy 21:** Develop a policy to address initiatives to sell public forest lands which are currently managed under long term stewardship plans in order to deal with short term revenue shortfalls.

***Key cooperators:*** *Local Governments, State Legislature, NHDES, Division of Parks and Recreation, and NHF&G*

**Strategy 22:** Public entities consider participating in a third-party forest certification program that will demonstrate a commitment to long-term stewardship, serve as an example for other forest owners and provide certified forest resources to enhance market opportunities for New Hampshire's forest industry.

***Key cooperators:*** *Forest Industry, Local Governments, NHTOA, Tree Farm Committee, and NHDRED*

**Strategy 23:** Towns and counties consider participation in the Tree Farm Program. Under the Current Use Tax law, towns already can recognize private forest owners' participation in the Tree Farm program for the Stewardship Category. Public lands inclusion in the Tree Farm Program serve as an example of good forestry for other landowners.

***Key cooperators:*** *Foresters, GRANIT, Local Governments, Tree Farm Committee, and SPNHF*

**Strategy 24:** Address decreases in funding and staffing for public resource management agencies. Identify levels necessary to fulfill agency missions and adequately address the activities associated with owning and being good stewards of state lands.

***Key cooperators:*** *NH F&L, NH F&G, NHTOA, Conservation Organizations, State Legislature and USFS*

**Strategy 25:** Advocate for implementation of the White Mountain National Forest – Forest Plan.

***Key implementer:*** *GSD/SAF, NHTOA, SPNHF, Forest Industry*

**Strategy 26:** Maintain up-to-date and accurate information about public forest lands.

a. *Conduct desktop analysis and field inventory of state lands to determine natural community and system representation, percent of protected species and community and population condition.
b. Through the State's GIS system – "NH GRANIT", strive to have all public land parcel boundaries accurately mapped and clearly marked on the ground, and to work continuously with town and city assessor offices at up-dating tax maps, all in an effort to have available true lines of ownership across the state's landscape to enhance the ability to perform natural resource planning, help assure economic development "smart growth", and sound management of public use of both private and public lands.

***Key cooperators:*** *NHDES, NHDRED, TNC, UNH, USFS*

## *Issue 7 – Fire as a management tool to sustain forests and wildlife habitat*

Prescribed fire remains a valuable tool for maintaining or restoring fire adapted forest landscapes and natural communities.

A number of barriers have hampered the implementation of controlled burns to restore rare pitch pine barrens, enhance oak regeneration, and maintain other important wildlife habitats on both public and private lands.

Pine barrens are among the most imperiled forest communities in New Hampshire and the world. Pine barrens supports a suite of species that are regionally and globally rare including four globally imperiled and 37 state or federally listed Lepidopteron. Pine barrens also serve a role in the life histories of a number of vertebrates as well. Such species include approximately 50% of northeastern birds, almost 60% of northeastern mammals, and a number of reptiles and amphibians. Increased fire suppression during the last half-century has substantially impacted the habitat quality of pine barrens in New Hampshire and elsewhere. Prescribed burns, implemented by trained personnel can be used to successfully restore habitat elements required to sustain this rare forest community and its associated wildlife (*see Pine Barrens habitat profile in Appendix B of the NH Wildlife Action Plan for more information*).

Prescribed fire has also been found useful for regenerating and improving growth in oak and oak-pine stands that are experiencing competition from shade tolerant and/or well established root stock such as red maple, beech, and birch. Lastly, fire can be an effective and in the long run, an efficient means of maintaining blueberry barrens, warm season grass stands, and old field habitats that are beneficial to wildlife.

Prescribed fire as a management tool in New Hampshire is conducted by a few agencies and organizations including the New Hampshire Division of Forests & Lands (NHDFL), the New Hampshire Fish & Game Department (NHF&G), The Nature Conservancy (TNC), the New Boston Air Force Satellite Tracking Station (NBAFS), and the White Mountain National Forests (WMNF). A few private landowners also conduct prescribed burns on their land with help of municipal fire departments. In order to more safely, efficiently, and effectively use this management tool the New Hampshire Prescribed Fire Council was formed. Members of the Council include state & federal agencies, local fire departments, and private conservation organizations.

**Strategy 27:** Use prescribed fire as a valuable tool for maintaining or restoring fire adapted forest landscapes and natural communities.

***Key cooperators:*** *Consulting Foresters, Fire Chiefs Association, Prescribed Fire Council, TNC, NHF&G, UNH, and USFS*

**Strategy 28:** *Support the activities of the NH Prescribed Fire Council. This multi-agency council was established to promote the safe use of prescribed fire on the New Hampshire landscape by promoting the safe and responsible use of prescribed fire, promoting public understanding of the benefits of prescribed fire, promoting the development and utilization of prescribed fire practices to achieve desired environmental and ecological resource management goals, anticipating prescribed fire issues and concerns and suggesting courses of action, providing a framework for communications related to prescribed fire objectives, techniques and issues, and disseminating technical information on prescribed fire and its application.

***Key cooperators:*** *Consulting Foresters, Fire Chiefs Association, TNC, NHF&G, UNH, and USFS*

## *Issue 8 – Public Use*

New Hampshire has a long tradition of lands open for public use. Public agencies, conservation organizations, sporting clubs and private outdoors people support the development of good landowner/user relations. Public use of private land that is inappropriate or damaging threatens this relationship and puts keeping private lands open at risk.

Increased recreational pressures and changes in the types of recreational uses may have detrimental impacts on forestlands and wildlife habitat.

Millions of dollars have been spent over the last decade to protect large expanses of forestland in the state through the purchase of fee title and conservation easements. These funds have been used to protect the economic, ecological, and recreational values of these lands.

Public and private forestlands in New Hampshire provide opportunity for wide variety of recreational uses to residents and tourists alike. Increased recreational pressure and changes in the types of recreational uses require land managers to be prepared to adjust to the times. Efforts must be made to ensure the ecological integrity of lands that have been protected for their wildlife habitat values remains intact. Studies should be undertaken to increase our understanding of recreational use impacts on ecological functions on these lands. Steps should be taken to balance the intensity of the various uses to best protect the overall integrity of the forest ecosystems.

**Strategy 29:** Encourage private landowners to keep lands open for public use.

***Key cooperators:*** *Consulting Foresters, NHTOA, NH Trails Bureau, New Hampshire Wildlife Federation, and Private Landowners*

**Strategy 30:** Develop and implement programs that educate, inform and encourage the public to increase respect for landowner rights. This understanding – by both residents and visitors - is essential to keeping private lands open for public use.

***Key cooperators:*** *Farm Bureau, Snowmobile Association, NHTOA, New Hampshire Wildlife Federation, and NHF&G*

**Strategy 31:** Work within the forest community and with State government to develop laws, regulations and enforcement to protect landowners' rights, defend the integrity of their property, provide grant liability protection, provide protection from damage such as ATV use, road rutting and unauthorized cutting, and herbicide trail clearing.

***Key cooperators:*** *Local Governments, Snowmobile Association, NHTOA, SPNHF, and State Legislature*

**Strategy 32:** Encourage the NH Division of Parks, Bureau of Trails to work with local clubs and appropriate resource agencies to develop a statewide strategic plan for the development of motorized trails.

***Key cooperators:*** *NH Forests & Lands, NH Parks – Trails Bureau, Conservation Organizations, NH Parks Advisory Committee.*

**Strategy 33:** Through research, outreach and education, increase land managers' understanding of the impact of various recreational uses on the ecological integrity of the forest.

***Key cooperators:*** *Foresters, GSD-SAF, NHTOA, Tree Farm Committee, and UNH*

## *Issue 9 - Supporting New Hampshire's private and public forests through outreach and education*

Public support is essential for the sustainability of good forestry on private lands. New Hampshire has a history of providing education, information and technical assistance to forest landowners and others involved in working with our forest resource. Since 1925, the New Hampshire State Forester's office and the University of New Hampshire that team up in a joint forestry outreach program. This unique-in-the-nation program has been noted as a model for the rest of the nation. Outreach and education is provided by this joint program and by state and federal agencies and private not-for-profit conservation organizations. This effort has been well coordinated though the years through effective collaboration, resulting in common goals and clear messages.

Over the years, financial incentives have helped provide a jump start to forest management practices on private land. Direct service to landowners, such as marking trees, was eliminated from public programs years ago and have been directed to private sector foresters, yielding one of the nation's best ratios of foresters to non-industrial private landowners.

Working through the New Hampshire Association of Conservation Commissions (NHACC), we need to provide local conservation groups with guidance in working within local governments and with local property owners so as to enhance conservation opportunities, rather than to inadvertently create adverse situations.

**Strategy 34:** Engage elected officials, community leaders, youth and the public in programs to increase their appreciation of the many benefits of open space and that private lands provide, including paying property and timber taxes, providing economic activity, protecting water resources, providing wildlife habitat, aesthetics, tourism attraction and the quality of life we enjoy in New Hampshire.

***Key cooperators:*** *NH Forests & Lands, Forest Industry, NHTOA, Tree Farm Committee, SPNHF, and State Legislature*

**Strategy 35:** Provide forest owners with the education and technical assistance so that they are aware of the importance, benefits and methods of permanent land protection. Program topics should include estate planning, methods of protecting land in perpetuity, tax

ramifications, funding sources and technical components, which can be very complicated, and resources to turn to for in-depth assistance.

***Key cooperators:*** *Land Trusts, New Hampshire Audubon, Forest Legacy Committee, NHDOE, NHEE, SPNHF, and TNC*

**Strategy 36:** Encourage forest owners of ten acres or more to participate in the New Hampshire Tree Farm Program and other programs which recognize good forestry, serve as a vehicle for landowners to positively interact, provide a forestry educational source, may provide some property tax benefits and inspire others to practice forest stewardship.

***Key cooperators:*** *GSD-SAF, NHTOA, Tree Farm Committee, and SPNHF*

**Strategy 37:** Provide quality education for natural resource professionals, including foresters, to increase their knowledge and competency and help satisfy continuing education units to meet their license and certification requirements. Programs are to be accessible, geographically available, affordable and of sufficient number to provide an adequate opportunity for professionals to maintain their licenses and/or certification.

***Key cooperators:*** *Foresters, GSD-SAF, New Hampshire Arborists Association, UNH, and USFS*

**Strategy 38:** Support certification and license programs and educational programs of professional associations such as the New Hampshire Certified Logger Program , the Granite State Division - Society of American Foresters (GSD-SAF), and the New Hampshire Arborist Association – Certified Arborist Program.

***Key cooperators:*** *GSD-SAF, New Hampshire Arborists Association, NHTOA, SPNHF, and TSAS*

**Strategy 39:** Support the dissemination of publications such as *Good Forestry in the Granite State,* the *New Hampshire Wildlife Action Plan*, *Erosion Control on Timber Harvesting Operations in New Hampshire*, *Guide to New Hampshire Timber Harvesting Laws, Best Management Practices for Forestry: Protecting New Hampshire's Water Quality* and many other works written to assist natural resource professionals, landowners, land managers, public agencies and public officials in making natural resource decisions. Encourage the adoption of the practices provided by these guides.

***Key cooperators:*** *GSD –SAF, NHTOA, SPNHF, NHDES, and UNH*

**Strategy 40:** Support and implement youth education and youth development programs, such as Project Learning Tree (PLT), New Hampshire Fish and Game's Project Wild and Project Wet, which engage future generations with the knowledge and an environmental stewardship ethic needed to make informed decisions about natural resources.

***Key cooperators:*** *Forest Industry, Forest Stewardship Committee, PLT, SPNHF, and NHF&G*

**Strategy 41:** Support on-going public and private education and outreach programs that enhance informed natural resource stewardship decision-making by the public, natural resource professionals and public officials. Long-term efforts to sustain natural resources require long-term programs to be successful. Maintaining an infrastructure with experienced and credible core staffing is essential for successful natural resource education and information programs.

***Key cooperators:*** *RC&Ds, PLT, SPNHF, and Squam Lake Science Center*

**Strategy 42:** Develop a *Best Management Practices Guide for Conservation Commissions* to guide local conservation efforts in a positive way towards successful outcomes and away from avoidable and unexpected adverse consequences.

***Key cooperators:*** *Local Governments, New Hampshire Association of Conservation Commissions, Conservation Districts, SPNHF, and SPACE*

## *Focus Area B – Enhancing Urban and Community Forestry*

Urban and community trees and forests provide tremendous social, economic and environmental benefits. They make communities more livable and sustainable. Conserving this resource and its benefits requires investments in planning and maintenance. Communities, businesses and residents with sound community forestry programs have found that these investments pay substantial benefits.

Economic, environmental, safety and social benefits of urban and community forestry programs include:

- Storm water management
- Utility maintenance problems and cost reduction
- Improved air quality
- Reduction in heat loads
- Noise abatement
- Reduces energy consumption
- Protects water resources, including municipal watershed and drinking water sources
- Protects biological diversity and wildlife habitats
- Is a component in waste treatment operations
- Enhances property values, e.g. commercial real estate resulting in higher occupancy rates
- Documented therapeutic benefits
- Reduced crime rate (A Manchester example, reduced police calls from 700 to 60 in one year

New Hampshire is becoming more urbanized, resulting in the need to manage our urban environment to handle the increased pressure. Development is increasing, fragmenting our forests and habitats. Invasive insects threaten urban forests as they do forest stands. Exotic plant species planted in urban areas are a concern for both urban environments and surrounding rural areas. Currently, many devastating invasive insects and diseases are threatening New Hampshire. Some have already entered the state and others can be found beyond our borders.

The New Hampshire Division of Forests and Lands (NHDFL) in a joint program with the UNH Cooperative Extension (UNHCE) has been providing assistance to communities, including technical assistance, information and education. The program has brought communities financial assistance through grants and special efforts such as ice storm recovery.

Community Forestry Programs have focused largely on engaging the public though the Community Tree Stewards Program, the Community Forestry Advisory Council (CFAC) and other efforts. Not only have these programs enhanced the environment in several New Hampshire communities, they have been life changing. Lifelong community volunteers have been created and people have changed their work life to include environmental professions.

Professional organizations and businesses contribute to the urban and community tree effort, including the members of the New Hampshire Landscape Association (NHLA), the New Hampshire Arborists Association (NHAA) with their Certified Arborist Program, garden clubs and utilities. Participants in urban and community programs include natural resource professionals, local governments, social groups, neighborhood improvement associations, conservation organizations, tree boards and conservation commissions. Learning experiences include planting the right tree in the right place, proper planting techniques, proper maintenance may be more important than tree planting, doing tree inventories and assessments, recognizing hazard trees to reduce accidents and liability, storm proofing your community, energy saving practices, green roofs, bringing wildlife to your back yard and more.

Participants in the development of this Forest Resource Plan expressed the need for foresters with expertise to provide services to communities. This provides educational challenges for professionals as well as enhanced business opportunities. There is a need to provide forestry resource professionals with high quality educational opportunities and information that can then be used to aid their urban clientele.

With the recent acquisitions of large, well-managed town owned lands designated as Town Forests, particularly in the Great North Woods, the topic of "Community Forests" takes on a greater emphasis relating to sustaining working forests and long-term stewardship objectives. Please see references to "Town Forests" in Priority I - *Conserve New Hampshire's Forested Landscape*, Focus Area A - *Good Forest Stewardship in New Hampshire's Forests* and in other sections of the *2010 New Hampshire Forest Strategies* document.

## *Issue 1 – Sustaining our urban and rural communities*

New Hampshire is becoming more urbanized, resulting in the need to manage our urban environment to handle the increased pressure. Development is increasing, fragmenting our forests and habitats.

**Strategy 43:** *Encourage communities to adopt "Smart Growth" practices that protect forests from being fragmented. Increasing the knowledge of community leaders about the options available will help ensure that future residential and commercial development is well planned in order to avoid destroying or negatively impacting priority green infrastructure.

***Key cooperators:*** *Local Governments, New Hampshire Farm Bureau, New Hampshire Local Government Center, Regional Planning Commissions, and Town Planning Boards*

## *Issue 2 - Managing community forests and ecosystems sustainably*

Lands owned by municipalities and counties, including Town Forests and county forests need to be well managed, providing economic and environmental benefits and serving as an example of good stewardship for private forest owners.

**Strategy 17:** *Public officials, community leaders, boards and commissions ensure that lands owned by municipalities and counties, including Town Forests and county forests, are well-managed, providing economic and environmental benefits and serving as an example of good stewardship for private forest owners. This requires a commitment on the part of the people who are accountable for the management of these public lands and the residents they represent. This also requires a commitment to providing and receiving technical assistance, education and information from reliable public and private sources.

***Key cooperators:*** *Consulting Foresters, Local Governments, Forest Stewardship Committee, Tree Farm Committee, and USFS*

## *Issue 3 - Invasive insects threaten urban forests as they do forest stands*

Several devastating invasive insects and diseases are heading towards New Hampshire as this plan is being written. Some have invaded the state already and others are just beyond our borders and are spreading.

**Strategy 44:** The New Hampshire Division of Forests and Lands (NHDFL), working in concert with the New Hampshire Department of Agriculture (NHDOA), University of New Hampshire (UNH), UDSA Forest Service (USFS), USDA Animal and Plant Health Inspection Service (APHIS), other state and federal agencies and private conservation organizations, provide leadership and coordination to address emergencies and emerging issues within

New Hampshire that impact urban and community forestry, such as climate change, storm damage, invasive species, forest pests, and mortality. Emergency situations will receive immediate response and emerging issues will have long-term responses developed.

***Key cooperators:*** *APHIS, Foresters, Forest Pest Advisory Council, New Hampshire Landscape Association, and USFS*

**Strategy 45:** The New Hampshire Division of Forests and Lands (NHDFL), working with other responders, lead an effort provide education and information in a timely fashion to communities when emergencies occur, mobilize as needed when or if emergencies occur, work with the New Hampshire Homeland Security and Emergency Management (NHEM) and other agencies as appropriate and identify and prioritize emerging issues.

***Key cooperators:*** *Fire Chiefs Association, New Hampshire Local Government Center, Homeland Security and Emergency Management, and Town Planning Boards*

**Strategy 46:** Encourage public and private tree nurseries to develop plans to ensure that New Hampshire communities have a supply of trees for replanting to reduce the impact of loss of anticipated increased tree removals and loss of trees damaged from insects and diseases. Support the New Hampshire State Forest Nursery, tree improvement projects

*Key cooperators: CFAC, ISA, New Hampshire Arborists Association, Conservation Districts, and New Hampshire Landscape Association*

## *Issue 4 – Sustaining an infrastructure to support and guide community forestry*

Within each New Hampshire community, the responsibility for decision making and management of community trees and forests is often fragmented between numerous departments, commissions, committees, and boards, resulting in a piecemeal approach to planning and caring for urban and community forest resources. There is a need for statewide coordination of urban and community programs to maximize the effectiveness of human and financial resources complemented by a statewide program to educate and guide volunteer efforts to maximize benefits to local communities***.***

Conserving this resource and its benefits requires investments in planning and maintenance. Communities need access to foresters with urban forestry expertise who can provide them with forest resource advice and services.

**Strategy 47:** Include natural resource professionals, local governments, social groups, neighborhood improvement associations, conservation organizations, tree boards and conservation commissions as participants in urban and community programs. New Hampshire Division of Forests and Lands (NHDFL), in a joint program with the UNH Cooperative Extension (UNHCE), provide leadership and coordination of this effort, with

guidance from the New Hampshire Community Forestry Advisory Council (CFAC), clientele, USDA Forest Service (USFS) and others in the natural resource community.

***Key cooperators:*** *CFAC, GSD-SAF, Local Governments, New Hampshire Arborists Association, and New Hampshire Landscape Association*

**Strategy 48:** Continue the work of the New Hampshire Community Forestry Advisory Council (CFAC) which is made up of representatives from the UNH Thompson School of Applied Science (TSAS), public utilities, landscape profession, arborists, New Hampshire Division of Forests and Lands (NHDFL), UNH Cooperative Extension (UNHCE), the New Hampshire Department of Transportation (NHDOT) and community organizations. The group has recently completed a comprehensive statewide plan based upon a thorough input process. This plan provides a basis for the program component of this Forest Resources Plan.

***Key cooperators:*** *CFAC, New Hampshire Arborists Association, New Hampshire Landscape Association, NHDOT, and TSAS*

**Strategy 49:** Expand a UNH Cooperative Extension (UNHCE) community conservation assistance program that assists communities with comprehensive natural resource conservation planning projects. Target information and education to the most appropriate decision-makers in communities.

***Key cooperators:*** *Land Trusts, Local Governments, Local School Districts, Association of Conservation Commissions, and Regional Planning Commissions*

**Strategy 50:** The New Hampshire Division of Forests and Lands (NHDFL), in a joint program with the UNH Cooperative Extension (UNHCE), strengthen partnerships with others such as regional planning commissions, Office of Energy and Planning (NHOEP), Department of Transportation (NHDOT), Department of Environmental Services (NHDES), The New Hampshire Local Government Center, and the New Hampshire Association of Conservation Commissions (NHACC). The joint program should improve the dissemination and sharing of information through the use of town newsletters, direct mailing to town clerks and town administrators, electronic communications, conferences and other existing newsletters that are distributed to town offices.

***Key cooperators:*** *Association of Conservation Commissions, Tree Farm Committee, NHDES, NHDOT, and Office of Energy and Planning*

**Strategy 51:** Foster and support the creation of community tree committees and tree advocacy groups to ensure that knowledgeable people are making informed decisions about their community's tree selections, plantings, maintenance, hazard trees and effective use of funds.

***Key cooperators:*** *Local Governments, New Hampshire Arborists Association, Association of Conservation Commissions, New Hampshire Landscape Association, and New Hampshire Local Government Center*

**Strategy 52:** The New Hampshire Division of Forests and Lands (NHDFL), in a joint program with the UNH Cooperative Extension (UNHCE), use the Community Tree Steward Program as a primary community forestry outreach mechanism to increase the effectiveness of volunteers conducting urban and community volunteer work. Encourage Community Tree Stewards to interact with town officials and advocate their participation in urban and community forestry programs. Provide on going professional development for existing Community Tree Stewards through continuing education collaborations.

***Key cooperators:*** *Local Governments, New Hampshire Arborists Association, Association of Conservation Commissions, New Hampshire Landscape Association, and New Hampshire Local Government Center*

**Strategy 53:** Provide and promote opportunities to encourage traditional foresters to provide urban and community forestry services that complement rather than compete with other professionals such as landscape architects/designers, planners, ornamental horticulturists, entomologists, arborists, and nursery persons.

*Key cooperators: Consulting Foresters, GSD-SAF, ISA, New Hampshire Board of Foresters, and TSAS*

## *Issue 5 - Supporting New Hampshire's urban and community forests through outreach and education*

Professional organizations and businesses contribute to the urban and community tree effort, including the members of the New Hampshire Landscape Association (NHLA), the New Hampshire Arborists Association (NHAA) with their Certified Arborist Program, garden clubs and utilities.

Participants in urban and community programs include natural resource professionals, local governments, social groups, neighborhood improvement associations, conservation organizations, tree boards and conservation commissions.

Some people living in urban and rural environments are not fully aware of the importance and benefits of caring for and maintaining the natural environment within their community. There is a need to increase the public's awareness of and their involvement in New Hampshire's urban and community forest resources.

Learning experiences include planting the right tree in the right place, proper planting techniques, proper maintenance may be more important than tree planting, doing tree inventories and assessments, recognizing hazard trees to reduce accidents and liability, storm proofing your community, energy saving practices, green roofs, bringing wildlife to your back yard and more. Practices, such as species selection for planting in residential areas, often have unintended consequences for environments beyond the site, causing significant lasting damage to ecosystems, including forests and wetlands.

Communities have a need for a sustained statewide coordinated effort for delivery of urban and community forestry programs in urban and suburban areas, at the urban / wildland interface and in rural areas.

There is a need to provide technical assistance to communities, public decision makers, natural resource professionals, other targeted audiences and the general public.

**Strategy 54:** *Provide natural resource professionals, including foresters, timber harvesters, arborists and others with access to an on-going continuing education system that will enhance their professional ability, have ready access to research-based, unbiased resource material, have a reliable source to answer specific questions and provide one-to-one assistance when needed and a system that will alert and update them on emerging issues.

***Key cooperators:*** *GSD-SAF, ISA, New Hampshire Arborists Association, New Hampshire Landscape Association, and UNH*

**Strategy 55:** Instill and enhance appreciation, knowledge and skills of forest resource conservation among youth, public decision makers, community leaders and the public.

***Key cooperators:*** *State Conservation Committee, NHTOA, PLT, SPNHF, and NHF&G*

**Strategy 56:** Strengthen relationships with community leaders and develop education programs and information targeted toward town conservation commissions, planning boards, zoning boards of adjustment, selectmen, town clerks, road agents and town administrators. Provide education and information about urban and community forestry issues, benefits and opportunities, including the economic value of trees. Engage community leaders to take initiative to do natural resource inventories and assist them with the interpretation of natural resource data. Recognize good leadership.

***Key cooperators:*** *CFAC, Local Governments, Association of Conservation Commissions, Conservation Districts, and New Hampshire Local Government Center*

**Strategy 57:** The New Hampshire Division of Forests and Lands (NHDFL), in a joint program with UNH Cooperative Extension (UNHCE) will work in concert with nurseries, arborists, arborists associations, landscapers, landscape associations and landscape architects, so that people responsible for municipal plantings and maintenance, homeowners community leaders and public officials understand about exotic plant species planted in urban areas that are a concern for both urban environments and surrounding rural areas and have access to information about practices and species selection which will enhance the environment rather than create problems.

***Key cooperators:*** *CFAC, ISA, New Hampshire Arborists Association, New Hampshire Landscape Association, and New Hampshire Local Government Center*

**Strategy 58:** The New Hampshire Division of Forests and Lands (NHDFL), in a joint program with UNH Cooperative Extension (UNHCE) provide statewide leadership, direction, networking, program management, skills, and technical resources for urban and community forestry in New Hampshire. This program will work to achieve the goals of the national urban and community forestry program as stated in the US Forest Service's Strategic Plan "*Urban and Community Forestry: On Course Into the Future*". It will maintain and support the New Hampshire Community Forestry Advisory Council (CFAC) and will develop and implement New Hampshire's Urban and Community Forestry 10-Year Program Plan, and a 5-Year Program Plan Update.

***Key cooperators:*** *CFAC, ISA, New Hampshire Arborists Association, New Hampshire Landscape Association, and TSAS*

**Strategy 59:** The USDA Forest Service (USFS), the Department of Resources and Economic Development (NHDRED) and the University of New Hampshire (UNH), along with public and private partners ensure on-going adequate financial and human resources to effectively implement New Hampshire's Urban and Community Forestry Program.

***Key cooperators:*** *CFAC, Local Governments, State Legislature, and USFS*

**Strategy 60:** The New Hampshire Division of Forests and Lands (NHDFL), in a joint program with UNH Cooperative Extension (UNHCE), provide education about important Urban and Community Forestry issues such as land conservation, natural resource conservation, forest fragmentation, sustainable landscape, water conservation, energy conservation, storm-proofing their community and other conservation topics. The program people will promote the importance of urban and community forestry through demonstration sites and educational programs at the Urban Forestry Center located in Portsmouth, Shieling Forest located in Peterborough, and other appropriate public and private facilities and lands. They will strengthen connections to more effectively communicate key messages between youth education programs including Project Learning Tree (PLT), FFA, 4H, Wonders of Wildlife, and youth gardening clubs.

***Key cooperators:*** *CFAC, Association of Conservation Commissions, Conservation Districts, PLT, and NHF&G*

**Strategy 61:** The New Hampshire Division of Forests and Lands (NHDFL), in a joint program with UNH Cooperative Extension (UNHCE), provide assistance to New Hampshire communities in managing and conserving urban and community forest resources that includes: One-to-one contact with communities, volunteers, natural resource professionals, public decision makers, conservation agencies, and private conservation organizations as well as developing workshops, seminars, publications, fact sheets, website, research reports, and information for the media. They will provide assistance and educational information toward establishing and maintaining community forestry programs that includes long-range planning, policy, budgeting, fundraising, and volunteer management. The programs will

provide training using up to date technology to community officials, community employees, and community volunteers in tree planting, tree maintenance, hazard trees, and community forestry management. Promote and support other entities that provide technical assistance.

***Key cooperators:*** *CFAC, ISA, New Hampshire Arborists Association, and New Hampshire Landscape Association*

**Strategy 62:** Continue efforts to emphasize sustainable communities and an ecosystem-based approach by promoting greenbelts, native species, and watershed management to community leaders and the public.

***Key cooperators:*** *CFAC, Local Governments, Association of Conservation Commissions, New Hampshire Landscape Association, and Regional Planning Commissions*

**Strategy 63:** Highlight best natural resource practices through demonstrations, workshops, the media and other venues. Develop town, county, and school forests and private lands as demonstration areas.

***Key cooperators:*** *Local Governments, Local School Districts, Tree Farm Committee, Squam Lake Science Center, and NHF&G*

**Strategy 64:** Collaborate with USDA Northern Forest Research Station, The New Hampshire Arborists Association (NHAA), International Society of Arboriculture (ISA), Granite State Division - Society of American Foresters (GSD-SAF), and other organizations and professionals in the green industry to conduct continuing education programs. Survey natural resource professionals and communities to determine educational program needs, appropriate content, and optimal meeting locations and scheduling. Evaluate effectiveness of programs based upon survey results. Ensure that courses meet the requirements of accrediting agencies and organizations. Expand the use of distance learning via the web as a means to disseminate information to professionals.

*Key cooperators: CFAC, GSD-SAF, ISA, New Hampshire Arborists Association, and New Hampshire Landscape Association*

# *Focus Area C - Sustainable Forest Based Economy*

## *Issue 1 - Maintaining a healthy forest industry*

The forests of New Hampshire are integral to the economy of the state from both the timber and forest products and recreation/tourism portions of the equation. The value of the combined forest products manufacturing and forest-related recreation industries in NH is $2.6

billion annually[4]. Of this, forest-based manufacturing is $1.7 billion. Over 2 million cords of timber is harvested each year.

There is recognition of the symbiotic relationship between a viable forest industry and keeping forestland as forests for the future. Good forestry, backed by a viable forest-based economy, is a major contributor to solutions for environmental problems as opposed to being an environmental problem.

**Strategy 65:** Address the need for strong, stable markets for all forest products that bring in enough revenue to help landowners maintain ownership and effectively manage their forest holdings though economic development agencies at the State, regional and local level, UNH Cooperative Extension, and others.

***Key cooperators:*** *BIA, Forest Industry, NHFAB, NHTOA, RC&D's, and DRED - Division of Economic Development*

**Strategy 66:** Review and address the opportunities in the state's *Right to Harvest Law* to help the forest industry remain viable in every New Hampshire community.

***Key cooperators:*** *BIA, Forest Industry, NHFAB, NHTOA, and State Legislature*

**Strategy 67:** Address the high costs of health insurance and workers compensation insurance and their impact on the viability of forest businesses, as they do other enterprises.

***Key cooperators:*** *BIA, Forest Industry, NHFAB, NHTOA, and NHDOT*

**Strategy 68:** Develop local and global markets that keep jobs in New Hampshire and addresses energy costs related to transportation.

***Key cooperators:*** *BIA, Forest Industry, NHFAB, and NHTOA*

**Strategy 69:** Increase New Hampshire's capacity for both primary and secondary wood products. Create programming and incentives that result in new secondary manufacturing.

***Key cooperators:*** *BIA, Forest Industry, NHFAB, and NHTOA add RC&D's OBID, local Economic Development Committees and Community Economic Development Committee's.*

**Strategy 70:** Enforce consistently forest related laws, producing a level playing field for those in business.

***Key cooperators:*** *BIA, Forest Industry, NHFAB, NHTOA, and State Legislature*

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[4] Levesque, C. 2006. New Hampshire Forest Resources Plan Revision Assessment Report.

**Strategy 71:** Enhance workforce development programming and job placement at the HS and college levels. HS vocational programs, Community/Technical Colleges and UNH would be listed with this one.

***Key cooperators:*** *BIA, Forest Industry, NHFAB, and NHTOA, and RC&D'*

**Strategy 72:** * Develop a "buy local" promotional program to highlight and promote the use of locally produced wood products.

***Key cooperators:*** *NEFA, Forest Industry, NHFAB, and NHTOA and RC&D's*

## *Issue 2 - Maintain and enhance markets for New Hampshire's forest industry*

Over the years, the character of New Hampshire's forest industry has changed. In the 1980s and 1990s, the loss of secondary wood products industries created job losses. Since then, we have seen fewer sawmills, with some larger operations picking up much of the production. We have seen the decline and loss of our pulp mills. New Hampshire was envied for our abundance of wood-to-energy plants in the 1980s and 1990s, which declined and now is experiencing a resurgence of interest in investments in green energy.

**Strategy 73:** Conduct a study of the costs/benefits of having the lands under the management jurisdiction of the Division of Forests and Lands certified under a third-party certification program such as the Forest Stewardship Council (FSC) or the Sustainable Forestry Initiative (SFI).

***Key cooperators:*** *NHFAB, NH Fish & Game, Forest Stewardship Committee,*

**Strategy 74:** *Promote the NH Native Lumber Law under the Department of Agriculture RSA 434:59 which allows NH registered sawmills to certify their lumber. UNH administers the educational component of the law. UNH Cooperative Extension should establish a communication plan working with the Department of Agriculture to educate local code enforcement officers and sawmills about the legislation and the process to use NH Native Lumber. (Recommendation from the 2008 Forest Products Industry Task Force Report)

***Key cooperators:*** *Forest Industry, Local Governments, NHTOA, NHDRED, and DRED – Division of Travel & Tourism*

## *Issue 3 - Sustaining a forested land base*

Maintaining blocks of contiguous forest is extremely important, both ecologically and economically. When there is one owner, large contiguous forests offer a variety of forest management options not readily present in smaller tracts. Keeping contiguous forest intact provides greater opportunity to manage forests for diverse wildlife habitats and to support ecological processes that foster biological diversity.

So important is the issue of maintaining our natural landscape that in 2008 the New England governor's Conference established a Blue Ribbon Commission on Land Conservation (CLC). At the same time the North East *State* Foresters Association[5] (NEFA) launched an effort to identify methods to maintain the region's forested landscape, increase the quality of stewardship on these lands, and strengthen the rural economy of the region. This initiative became known as *Keeping Forests as Forests*. As a component of their 2009 report to New England's Governors, the CLC adopted the principles set forth in the NEFA initiative and charged the region's State Foresters with developing a regional initiative to "…protect the region's forest land-base and ensure the sustainability of these lands, as a public policy appropriate to all New England; and identify barriers to and opportunities for sustaining forestlands that are in private ownership and expanding forest products production and consumption."

Current Use Taxation, permanent land protection through acquisition and/or conservation easements, estate planning and establishment of Town Forests have been among the tools used to stem the loss of forest lands.

Current Use taxation is often challenged in the New Hampshire legislative process and its affect on the local tax base is often misunderstood at the community level. Permanent protection of working forests provides common ground issue for conservation organizations and forest industry. Tax programs, such as Current Use, local land use decisions, incentives and markets make it practical and cost effective for private forest to own forestland and to practice sustainable forest management. The New Hampshire natural resource community has expressed a strong support for this open space protection program. *Statewide Program of Action to Conserve our Environment* (SPACE) has been the leader in the effort to keep this program intact. Conservation organizations have joined in the effort to ensure that the program remains strong. Individuals, conservation commissions and groups at the local level are expected to continue to contribute to the support of the Current Use Tax system. Educational efforts by Statewide Program of Action to Conserve our Environment (SPACE) and UNH Cooperative Extension (UNHCE) will bring information and education to local officials and the public so they can make informed decisions regarding the support for and implementation of Current Use Tax laws.

[5] NEFA is comprised of the State Foresters of ME, NH, VT, and NY and a member from the US Forest Service, State and Private Forestry.

Working forests on public lands at the federal, state, county and community level support the forest industry and are expected to increase the credibility for the public of the use of good forestry practices as a part of our environmental stewardship.

**Strategy 10:** *Support a strong Current Use Taxation property tax program with the goal to retain open space. The State of New Hampshire and municipalities, along with conservation interests, share responsibility to keeping the program viable.

***Key cooperators:*** *Current Use Advisory Board, NHTOA, SPNHF, State Legislature, and SPACE*

**Strategy 75**: *Support implementation of the recommendations contained in the 2009 Report of the Blue Ribbon Commission on Land Conservation & the New England/New York Keeping Forests as Forests Initiative to establish a regional model/demonstration program to strengthen markets for forest products, improve forest stewardship, and conserve the region's forest landscape for future generations.

***Key cooperators:*** *NHFAB, NHTOA, SPNHF, State Legislature, and SPACE*

**Strategy 76:** Support public and private funding available for significant permanent land protection, through fee acquisition and/or conservation easements, including funding for the costs associated with the gifting or sale of property rights and monitoring, as well as for purchase costs. Support for public programs includes the federal, state and municipal level. Support for private funding includes grant writing, developing relationships with potential conservation funders and making donations to specific projects and to land trusts.

***Key cooperators:*** *LCHIP, Land Trusts, Local Governments, Forest Legacy Committee, and State Legislature*

**Strategy 77:** Public and private entities, such as Land Conservation and Heritage Investment Program (LCHIP), land trusts and local governments should include "conservation of working forests" among the criteria used to prioritize lands to be protected. Funding agencies need to recognize working forests in their cost/benefit analysis when providing funding for land protection.

***Key cooperators:*** *LCHIP, Land Trusts, Local Governments, Forest Legacy Committee, and NHTOA*

**Strategy 78:** Keep contiguous blocks of forest intact to enhance the economic opportunities for managing and using forest lands and improving the sustainability for forestry employment when making permanent land protection decisions.

***Key cooperators:*** *LCHIP, Land Trusts, Local Governments, NHTOA, and Regional Planning Commissions*

**Strategy 43:** *Encourage communities to adopt "Smart Growth" practices that protect forests from being fragmented. Increasing the knowledge of community leaders about the options available will help ensure that future residential and commercial development is well planned in order to avoid destroying or negatively impacting priority green infrastructure.

***Key cooperators:*** *CFAC, Local Governments, Association of Conservation Commissions, Regional Planning Commissions, and Town Planning Boards*

**Strategy 79:** New Hampshire elected officials, public agencies, conservation organizations communities and counties work to maintain a well-distributed network of local, state, and federally owned and managed forest lands that contributes to sustaining resources for New Hampshire's forest-based economy. These working forests should serve as show cases for good forestry, to educate and inspire private forest owners to practice sustainable forestry.

***Key cooperators:*** *Local Governments, State Legislature, NHDRED, NH F&G, WMNF, and US Fish and Wildlife*

**Strategy 80:** Ensure that forests across the state remain well balanced in forest type, tree age and tree size distribution. New Hampshire's public and private forest managers and wildlife biologists gain and share knowledge, along with developing and implementing practices for a common mission to achieve this balance.

***Key cooperators:*** *Foresters, Forest Industry, NHFAB, NH F&G, UNH, and USFS*

**Strategy 81:** *Landowners, forest managers and mining interests coordinate forest management plans and mining plans on state lands and other properties, to ensure that access roads and harvesting of forest resources would be integrated with planned mining operations to optimize both resources, while at the same time minimizing the footprint of any related disturbances.

***Key cooperators:*** *Foresters, Forest Industry, Private Landowners, and NHDES*

**Strategy 82:** *UNH Cooperative Extension (UNHCE), the New Hampshire Division of Forests and Lands (NHDFL), other state agencies and conservation organizations, provide education for the public, public officials and the community to understand the value that forest lands contribute to their well-being, such as environmental quality, taxes, low cost of community services, economic activity, ecosystem services and quality of life. Tax programs, such as Current Use, positive local land use and transportation policies, make it practical and cost effective for private landowners to own forest land and to practice sustainable forest management. Local land use decisions can impede landowners in their community to practice sustainable forestry and create economic activity. Education for community leaders should include practical solutions, knowledge about existing laws and practices that would enhance good forestry opportunities and protect the community's interests.

***Key cooperators:*** *NHTOA, Tree Farm Committee, SPNHF, RC&D, SPACE*

## *Issue 4 – Developing timely data about New Hampshire's forests*

Accurate information about our forests is critical to maintaining the vitality and sustainability of forest based businesses. New Hampshire's natural resource community have expressed concern about the ability of our forests to support the volume of the various products which are considered for harvest, including sawlogs, veneer logs, chips and biomass. With the entry of the new interest in green, renewable wood-to-energy plants, cogeneration, local use of wood chips for school districts energy and the wood pellet industry, many people interviewed have expressed an interest in having new data regarding the amount of wood available to support these enterprises. Power producers are interested in having the infrastructure to support these uses, including a stable timber harvesting force, citing that this may be more of a limiting factor than the wood resource.

**Strategy 83:** Compile, analyze, and distribute the USDA Forest Inventory and Assessment (FIA) data on a timely basis so that it is relevant to decision makers who are accountable for investments and who those who have a responsibility for guiding the sustainability of New Hampshire's forests and forest economy.

***Key cooperators:*** *Forest Industry, GRANIT, NHFAB, NHTOA, and DRED – Division of Economic Development*

**Strategy 84:** Encourage natural resource professionals and landowners who are planning harvests and on-going forest management for forestry-related income to consult the New Hampshire Wildlife Action Plan (WAP) maps, data and strategies.

***Key cooperators:*** *Foresters, Forest Stewardship Committee, Tree Farm Committee, Private Landowners, and NHF&G*

**Strategy 85:** Include timber inventory data, along with the timing of proposed harvests in public lands management plans. These plans should be in place and available for long range planning by the state and by potential buyers of forest products.

***Key cooperators:*** *Foresters, Local Governments, Forest Stewardship Committee, NHDRED, and WMNF*

**Strategy 86:** Maintain continuous forest inventory plots to show trends, especially baseline data in light of predicted climate change impacts.

***Key cooperators:*** *NHDRED, UNH, USFS, NRCS, and WMNF*

**Strategy 87:** Use GRANIT, the geographic information component of the University of New Hampshire (UNH), to aid in determining how much pressure is exerted on New Hampshire

forests due to the forest products industry competing for the resource. With adequate funding, GRANIT can work within the forestry community to develop an ongoing program to map regional industries in the northeast that utilize New Hampshire's forest products. Once mapped, spatial analyses could utilize the data in concert with road network data, topographic data, and other spatial products in order to develop "timbersheds", or forest-based economic impact areas.

***Key cooperators:*** *Forest Industry, GRANIT, NHFAB, NHTOA, and UNH*

**Strategy 88:** Create a state Geographic Information Office (GIO) position, with broad inter-departmental and inter-governmental responsibilities. The functions of this position would include coordinating the acquisition, management, and sharing of geo-spatial assets in the state. Of particular importance, this position would be responsible for representing the state to federal and other external partners, and for pursuing federal funding opportunities.

***Key cooperators:*** *GRANIT, NHFAB, State Legislature, and NHDRED*

**Strategy 89:** Create a program to regularly acquire high-resolution aerial imagery. This is a fundamental data set that provides a general frame of reference for all other mapping. While the New Hampshire Department of Transportation (NHDOT) acquired high resolution (1-foot) imagery in 2005/2006 for the southeast section of the state, there is no comparable imagery available for the balance of New Hampshire.

***Key cooperators:*** *GRANIT, NHDRED, SPACE, USFS Research, and USFS State and Private*

**Strategy 90:** Acquire statewide, high resolution, topographic data, and specifically Light Detection and Ranging (LiDAR) data. The currently available statewide topographic data is a hybrid of 30-meter and 10-meter resolution digital elevation models. These data are inadequate to support New Hampshire's natural resource planning and management requirements.

***Key cooperators:*** *GRANIT, NHDRED, SPACE, USFS Research, and USFS State and Private*

**Strategy 91:** Create a program to collect and manage land ownership/parcel data. This is a key data set that is frequently requested. While the data are typically collected and updated at the local level, a state-level effort to assemble and aggregate the municipal holdings would benefit many applications.

***Key cooperators:*** *GRANIT, NHFAB, NHTOA, and UNH*

## *Issue 5 - Maintain and enhance landowner revenue opportunities*

Incomes from forest products and forest-based activities help landowners hold and manage their lands responsibly.

In addition to the traditional sawn lumber, paper and fuel wood markets, other forest businesses exist, providing jobs and economic activity. People have noted that New Hampshire needs to promote secondary wood products, associated businesses and locally grown markets for forest products.

Maple syrup production has been called "recession proof", as prices have remained strong and the demand outstrips the supply. New England, nearby states and Canada make up the only economically viable maple sugar production region on this planet. Interviewers found a desire for increasing our maple sugaring production capabilities by opening up more leases on public lands, including federal, state and local lands and allowing more flexibility regarding tubing practices on these lands.
"Agro-forestry" is a term to describe a mix of growing other products in forest settings. An example is the shiitake mushroom business.

Tourism has contributed to our rooms and meals tax. Forests are more than just a backdrop for this statewide revenue source. It's a main attraction in the fall and throughout much of the year. Recreation businesses, hunting licenses and fishing licenses are revenue sources that are a result of our forests and wildlife.

Scattered throughout New Hampshire are small businesses in niche markets producing wood products, providing jobs and local economic activity.

New Hampshire needs to be prepared for possible ecosystem benefit revenues for landowners, such as for carbon sequestration, as financial entrepreneurs are currently attempting to establish markets and exchanges for this kind of value.

**Strategy 92:** Increase the availability maple stands on public and private lands to support and enhance a viable New Hampshire maple syrup industry, providing jobs and economic activity.

***Key cooperators:*** *Local Governments, NHDOA, DRED- Division of Economic Development, and WMNF*

**Strategy 72:** *Develop a "buy local" promotional program to highlight and promote the use of locally produced wood products.

***Key cooperators:*** *Forest Industry, NHFAB, and NHTOA and RC&D's*

**Strategy 93:** Explore opportunities for NH landowners to engage in the developing carbon market or other alternative income opportunities, either as individuals or a part of a cooperative.

***Key cooperators:*** *Forest Industry, NHFAB, and NHTOA and RC&D's*

## *Issue 6 - Supporting New Hampshire's wood-based businesses through outreach and education*

As New Hampshire's population continues to increase, fewer residents are connected to the land or have a real understanding of our forest resources. As with past NH Forest Resources Plans, stakeholder input stressed the importance of natural resource outreach and education for the public, elected officials, community leaders and landowners. Collaborative and consistent messages coming from the New Hampshire Division of Economic Development (NHDED), UNH Cooperative Extension (UNHCE), the New Hampshire Timberland Owners Association (NHTOA), the Society for the Protection of New Hampshire's Forests (SPNHF), the Nature Conservancy (TNC), Project Learning Tree (PLT) and many other organizations and agencies will be a key to successful outreach efforts. Messages include the importance of the state's forest industry to meeting local and statewide economic and conservation goals.

**Strategy 54:** *Provide natural resource professionals, including foresters, timber harvesters, arborists and others with an on-going continuing education system that will enhance their professional ability, have ready access to research-based, unbiased resource material, have a reliable source to answer specific questions and provide one-to-one assistance when needed and a system that will alert and update them on emerging issues.

***Key cooperators:*** *GSD-SAF, ISA, New Hampshire Arborists Association, New Hampshire Landscape Association, and NHTOA*

**Strategy 82:** *UNH Cooperative Extension (UNHCE), the New Hampshire Division of Forests and Lands (NHDFL), other state agencies and conservation organizations, provide education for the public, public officials and the community to understand the value that forest lands contribute to their well-being, such as environmental quality, taxes, low cost of community services, economic activity, ecosystem services and quality of life. Tax programs, such as Current Use, positive local land use and transportation policies, make it practical and cost effective for private landowners to own forest land and to practice sustainable forest management. Local land use decisions can impede landowners in their community to practice sustainable forestry and create economic activity. Education for community leaders should include practical solutions, knowledge about existing laws and practices that would enhance good forestry opportunities and protect the community's interests.

***Key cooperators:*** *GSD-SAF, Local Governments, NHTOA, NHF&G, and SPACE*

**Strategy 74:** *Promote the NH Native Lumber Law under the Department of Agriculture RSA 434:59 which allows NH registered sawmills to certify their lumber. UNH administers the educational component of the law. UNH Cooperative Extension should establish a communication plan working with the Department of Agriculture to educate local code enforcement officers and sawmills about the legislation and the process to use NH Native Lumber. (Recommendation from the 2008 Forest Products Industry Task Force Report)

***Key cooperators:*** *Forest Industry, Local Governments, NHTOA, NHDRED, and RC&D's*

**Strategy 94:** Create a NH Wood Products Manufacturing Association that will help develop global markets, conduct training and education to insure that NH wood product manufacturers are on the cutting edge of technology

***Key cooperators:*** *Forest Industry, Local Governments, NHTOA, NHDRED, and RC&D's*

## Priority II - Protect New Hampshire's Forests from Harm

Managing forest ecosystem health has similarities to managing health for humans. We try to avoid harmful circumstances, implement on-going preventive wellness programs and seek help when an accident or illness occurs. In our forests, we seek to identify and minimize threats. Natural resource professionals agree that maintaining healthy forests play a large part in the resiliency of forests and trees and help them adapt to changing conditions, such as climate change. When damage occurs, such as with the 2008 tornado or the recent ice storms, we stand ready to mitigate the adverse affects.

## *Focus Area A - Protect Forest from Threats*

It is the forestry community's collective mission to protect forests from threats. Threats currently facing New Hampshire's forests include insects, diseases, invasive plants and animals, wildfire, conversion to non-forest, destructive forest practices and climate change.

Invasive insects, mostly migrating from south to north, have forestry professionals and the public concerned about the future of some species and the impact of loss of those species on our ecosystem, related species, communities and economic environment. The hemlock woolly adelgid (HWA), already in New Hampshire, threatens forest stands of hemlock, urban hemlocks, deer yards and other species which depend upon hemlocks for habitat. The Asian Longhorned Beetle (ALB) is responsible for a great loss of trees in Massachusetts, expensive from environmental and economic perspectives. Emerald Ash borer has no known control at this time and is feared to result in the end of ash trees growth as we have known it in New Hampshire it in the long run. These are a few, but not all the insect threats that this state is facing.

Forest ecosystems have been harmed by invasive plant species such as Japanese barberry, Oriental bittersweet, Common buckthorn, Glossy buckthorn, Burning bush, Tartarian

honeysuckle, Japanese honeysuckle, Japanese stilt grass, Spotted knapweed, Japanese knotweed, Purple loosestrife, Norway maple, Mile-a-minute weed, Eurasian milfoil, Garlic mustard, Autumn olive, Russian olive, Common reed, Multiflora rose and Black swallow-wort. Regulation, eradication programs and public awareness have been a part of the efforts to reduce the adverse impacts of these plants in New Hampshire.

New Hampshire has an excellent record regarding forest fire suppression. Annually, the state has about 500 wildfires, averaging about a half acre, with few structure losses. People felt that this is the result of the nature of our forestland and the work of the forest fighting force supported by the New Hampshire Division of Forests and Lands (NHDFL). The Division works with local fire departments regarding training, equipment, financial reimbursement and outreach to the public. While the fire impacts have been generally low, there are threats that endanger New Hampshire's forests, structures and the safety of people. The Ossipee Pine Barrens area in Carroll County has conditions more conducive to fire risk than other parts of the state. There is also increasing danger from fire at the urban/rural interface. Houses have been built in woodlands, often uphill, without sufficient defensible fire zones. Narrow, winding roads to these residences often limit fire-fighting access. Human activities, such as outdoor cooking, smoking and out-of-control burning around these houses, increases the risk of starting wildfires. Some communities have taken advantage of program that assists them in developing plans to reduce their risk of wildfire. Community Wildfire Protection Plans (CWPP) can help a community clarify and refine its priorities for the protection of life, property and critical infrastructure in the wildland-urban interface. It also provides communities with a tremendous opportunity to influence where and how federal agencies implement fuel reduction projects on federal lands and how additional federal funds may be distributed for projects on nonfederal lands. New Hampshire has one community designated as a "Firewise Community" and ten New Hampshire communities have developed Community Wildfire Protection Plans.

Conversion from forests to development has been responsible for the loss of 12,000 to 20,000 acres per year of New Hampshire's forests over the past several years. This is considered to be a permanent loss by natural resource professionals. Conversion to other open space uses, such as farmland does not appear to be viewed as a natural resource threat among the forestry community interviewed in the development of this plan.

Current Use Taxation, permanent land protection through acquisition and/or conservation easements, estate planning and establishment of Town Forests have been among the tools used to stem the loss of forest lands. Current Use taxation is often challenged in the New Hampshire legislative process and its affect on the local tax base is often misunderstood at the community level.

Over the past several years since the last New Hampshire Forest Plan was developed, land acquisition and conservation easements have been aggressively pursued at the community level and by not-for profit conservation organizations, with assists on some projects from the federal and state governments. Some people are concerned about when enough land is protected. The Society for the Protection of New Hampshire Forests has a goal that New Hampshire will have a million acres of open space protected by the year 2026. From

interviews in the development of this Forest Resource Plan, it was observed that people felt that the focus should be on lands, landscapes, natural communities, watershed, habitats and ecosystems of importance. That is, the focus of protection should be placed upon areas in which the loss would be significant to ecological and economic well being. It was observed that people felt that costs and benefits of protection should be weighed for projects. It was observed that there was considerable support for protecting "working forests", those forests that play a part in our forest related business economy. The interest in working forest protection came from conservation organizations and agencies as well as from the forest industry sector.

## *Issue 1 – Loss of open space*

**Strategy 10:** *Support a strong Current Use Taxation property tax program with the goal to retain open space. The State of New Hampshire and municipalities, along with other conservation interests, share responsibility to keeping the program viable.

***Key cooperators:*** *NHFAB, NHTOA, SPNHF, State Legislature, and SPACE*

**Strategy 75:** * Support implementation of the recommendations contained in the 2009 Report of the Blue Ribbon Commission on Land Conservation & the New England/New York Keeping Forests as Forests Initiative to establish a regional model/demonstration program to strengthen markets for forest products, improve forest stewardship, and conserve the region's forest landscape for future generations.

***Key cooperators:*** *NEFA, Land Trusts, State & Federal Agencies, State Legislature, Conservation Organizations*

**Strategy 2:** *a) Advocate for USDA Forest Service (USFS), Forest Legacy Program funding that is at a level that allows for the funding of at least two projects per year in New Hampshire. b) Continue to implement the New Hampshire Forest Legacy Program in accordance with NH's approved Assessment of Need.

***Key cooperators:*** *Land Trusts, New Hampshire Forest Advisory Board, Forest Legacy Committee, and USFS*

**Strategy 3:** *Advocate for additional State, federal, and local funds to support conservation of private forest land through acquisition of conservation easements or use of alternative conservation tools. Programs should includes as allowable costs funding for the legal expenses associated with easement enforcement, land surveys and other costs associated with the gifting or sale of property rights, and long-term monitoring, as well as for purchase costs.

***Key cooperators:*** *Land Trusts, NRCS, State Legislature, TNC, and USFS*

## *Issue 2 - Threats to forests from invasive plants, insects, and diseases*

The health of New Hampshire's forest is defined by its ability to maintain native biological diversity and remain vigorous while sustaining its role in the environment and socioeconomic world. One of the biggest threats to the health of our forests is the introduction of non-native plants, insects, and diseases. In 1900, there were a handful of exotic insects and diseases in North America. Today, there are more than 500 exotic, invasive insects and diseases feed on forests of the U.S.[6] The number of exotic invasive pests moving toward New Hampshire's forests, threatening many of our valuable tree species, continues to grow. It is important that we have in place adequate monitoring, data bases and maps, prevention programs, response plans, suppression programs and mitigation options to minimize the impact of invasive plants, insects and diseases.

**Strategy 95:** *Detect, monitor, and evaluate forest pests and forest health conditions.

***Key cooperators:*** *APHIS, ISA, New Hampshire Arborists Association, USFS-S&PF, New Hampshire Landscape Association, and NHDOA*

**Strategy 96:** Maintain and enhance strong partnerships between agencies to combat forest pests. The New Hampshire Department of Agriculture (NHDOA) partners with others where they are the lead agency for Cooperative Forest Health. When the New Hampshire Division of Forests and Lands (NHDFL) or another other agencies is leading the effort, the New Hampshire Department of Agriculture is a key stakeholder, as most States share pest management responsibilities between agriculture and forestry agencies.

***Key cooperators:*** *APHIS, Forest Pest Advisory Council, NHDOA, USFS – S&PF*

**Strategy 97:** *Collaborate regionally and nationally, as pest impacts extend beyond state boundaries. Collect forest health data that is compatible with other states. Continue to have New Hampshire a participant in multi-state and national networks which track and map potential threats from invasive insects and diseases, provide alerts, share information about control practices and provide financial and technical assistance when needed.

***Key cooperators:*** *APHIS, Forest Pest Advisory Council, NHDOA, USFS – S&PF*

**Strategy 98:** *Reduce damage through effective pest management, including suppression and/or eradication.

***Key cooperators:*** *APHIS, Forest Pest Advisory Council, NHDOA, USFS – S&PF*

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[6] Levesque, C. 2006. New Hampshire Forest Resources Plan Revision Assessment Report. New Hampshire Department of Resources and Economic Development, Division of Forests and Lands.

**Strategy 99:** *Develop flexibility to respond to emerging situations that threaten forest health, such as new insect or disease outbreaks or introductions of invasive species.

***Key cooperators:*** *APHIS, Forest Pest Advisory Council, NHDOA, USFS – S&PF*

## *Issue 3 – Fire as a danger to forests, ecosystems, and people*

Frequency and size of wildfires are kept to a minimum to reduce costs and risks to people and structures and so that forest resources and ecosystem services are not adversely affected by wildfires.

**Strategy 100:** Engage homeowners and communities in adopting "Firewise" practices, reducing the risk of fires occurring, reducing the impact of fires and addressing accessibility. Encourage development of Community Wildfire Protection Plans with Regional Planning Commissions and Rural Fire Water Resource Plans with RC&D's.

***Key cooperators:*** *CFAC, Fire Chiefs Association, North Country Council, RC&D's, Regional Planning Commissions, and Town Planning Boards*

**Strategy 101:** Maintain network of fire lookouts for fire detection and public education.

***Key cooperators:*** *Fire Chiefs Association, NHFAB, NHTOA, State Legislature, and NHDRED*

**Strategy 28:** *Support the activities of the NH Prescribed Fire Council. This multi-agency council was established to promote the safe use of prescribed fire on the New Hampshire landscape by promoting the safe and responsible use of prescribed fire, promoting public understanding of the benefits of prescribed fire, promoting the development and utilization of prescribed fire practices to achieve desired environmental and ecological resource management goals, anticipating prescribed fire issues and concerns and suggesting courses of action, providing a framework for communications related to prescribed fire objectives, techniques and issues, and disseminating technical information on prescribed fire and its application

***Key cooperators:*** *NHDRED, NHF&G, UNH, USFS – State and Private, and WMNF*

## *Issue 4 – Soil, water, and mineral threats*

New Hampshire's *State Water Resources Plan* provides strategies, practices and guidance for sustaining the positive effects of our forests on water quality and quantity and the protection of water resources during harvesting and other activities on forestlands. Soil resources can be protected through the use of riparian forest buffers and best management

practices. Soil productivity can be maintained through sustainable forest management practices. Well managed forests are able to contribute to the protection, availability and sustainability of high quality, cost effective drinking water. Aquatic ecosystems, and the flora and fauna they support, can be maintained and enhanced through the use of sustainable forest management practices.

**Strategy 81:** *Landowners, forest managers and mining interests coordinate forest management plans and mining plans on state lands and other properties, to ensure that access roads and harvesting of forest resources would be integrated with planned mining operations to optimize both resources, while at the same time minimizing the footprint of any related disturbances.

***Key cooperators:*** *Consulting Foresters, Private Landowners, and NHDES*

### *Issue 5 - Supporting New Hampshire's forest protection efforts through outreach and education*

**Strategy 102:** Engage in an aggressive education program for public decision makers, natural resource professionals and the public to increase awareness of the threats to our forests from invasive plants, insects and diseases so they are able and willing to significantly contribute to detection of threats, adopt practices which reduce the chances of introducing problems into our ecosystems and support programs to limit adverse impacts. Include targeted education efforts where needed, such as the "do not move firewood" campaign to limit the spread of invasive insects.

***Key cooperators****: Fire Chiefs Association, NHFAB, NCRC&D, and SRC&D*

## *Focus Area B - Maintain Ecosystem Health*

Maintaining forest ecosystem health requires a commitment to monitoring, evaluating continuously changing conditions, sharing the results and providing recommendations. Monitoring begins with the identification of key indicators. The list if targets this series of actions include threatened and endangered species, stresses, invasive species, forest stand structure with regard to age and size classes, forest fragmentation, loss of forest land, biodiversity, the functionality of ecosystems, affects of climate, consequences of our forest management practices and more, including impacts that we haven't yet considered. Research by academic institutions, public agencies such as the USDA Forest Service (USFS) and the New Hampshire Division of Forests and Lands - Natural Heritage Bureau, private not-for-profits and the industry is critical to understanding and properly addressing forest health changes.

Education efforts communicate awareness of concerns, understanding of the complexities of problems and knowledge of techniques and practices to help people make informed decisions. Public and private organizations throughout the natural resource community in

New Hampshire engage in educational outreach to some degree. Such programs target natural resource professionals, landowners, public decision makers, communities, the public and youth. The publication, *Good Forestry in the Granite State*, is an example of a collective educational effort to address forest health issues.
Incentives have been among the New Hampshire's tools used for encouraging good forest practices. Sources of incentive funds have been disappearing or changing.

New Hampshire's approach to forest-related regulation has generally been to be cautious, to include stakeholders in the development of regulations, to encourage enforcement of current regulations over creating new regulations and to encourage a level playing field among those being regulated.

Implementation of recommended practices is not the end of the road to forest health management. Evaluation of the success of effects of the treatments is critical to the decision making in the future. Evaluation needs to include identification of unintended consequences of our actions. For example, control of spruce budworm through management of the age of spruce stands has resulted in the reduced spruce budworm damage. But also, there is a reduction in the population of thrushes that feed on the budworm. This adds to the level of knowledge and complexity of management decision making.

Maintaining forest health includes mitigation after catastrophic events such as windstorms, ice storms, insect or disease infestations, proliferation of invasive species or drought. Research, monitoring, using practices and evaluation of results are components of a successful mitigation endeavor.

## *Issue 1 – Knowing about our forests and threats*

Maintaining forest ecosystem health requires a commitment to monitoring, evaluating continuously changing conditions, sharing the results and providing recommendations. Monitoring begins with the identification of key indicators. The list of targets this series of actions include threatened and endangered species, stresses, invasive species, forest stand structure with regard to age and size classes, forest fragmentation, loss of forest land, biodiversity, the functionality of ecosystems, affects of climate, consequences of our forest management practices and more, including impacts that we haven't yet considered. Research by academic institutions, public agencies such as the USDA Forest Service (USFS) and the New Hampshire Division of Forests and Lands - Natural Heritage Bureau, private not-for-profits and the industry is critical to understanding and properly addressing forest health changes.

**Strategy 95:** *Detect, monitor, and evaluate forest pests and forest health conditions.

***Key cooperators:*** *APHIS, Forest Pest Advisory Council, NHDOA, USFS – S&PF*

**Strategy 103:** Conduct activities to maintain and improve forest health conditions and sustainability.

***Key cooperators:*** *Consulting Foresters, Foresters, Forest Pest Advisory Council, Conservation Districts, and NHDOA*

**Strategy 104:** *Conduct monitoring projects for damaging pests in high risk communities.

***Key cooperators:*** *APHIS, Foresters, Forest Pest Advisory Council, UNH, and USFS - Research*

**Strategy 105:** Encourage private landowners to have biological inventories conducted on their land. Provide incentives through cost-share programs or allowing tax reductions.

***Key cooperators:*** *NH Natural Heritage Bureau, TNC, Foresters,UNH, and USFS - Research*

**Strategy 26:** *Conduct desktop analysis and field inventory of state lands to determine natural community and system representation, percent of protected species and community and population condition.

***Key cooperators:*** *NH Natural Heritage Bureau, TNC, Foresters,UNH, and USFS - Research*

## *Issue 2 – Being prepared for climate change*

People interviewed for the 2010 Forest Resource Strategies development indicated, with few exceptions, that we must be prepared for the impacts of global climate change on New Hampshire's forests. People expressed the need for us to determine the potential effects of climate change and develop adaptation mechanisms as needed.

In March, 2009 the NH Climate Change Policy Task Force released the Climate Action Plan which is aimed at achieving the greatest feasible reductions in greenhouse gas emissions while also providing the greatest possible long-term economic benefits to the citizens of New Hampshire.[7] The plan recognizes the importance of preserving our working forests and avoiding conversion of forests to other uses to the success of the NH's Climate Action Plan. Recommendations contained in the Climate Action Plan that are applicable to the NH Forest Resource Strategy should be integrated into this document.

**Strategy 106:** Fully integrate the strategies contained in the New Hampshire Climate Action Plan. Specifically include actions contained in "*Overarching Strategy 7: Protect Natural Resources (Land, Water, and Wildlife) to Maintain the Amount of Carbon fixed and*

[7] New Hampshire Department of Environmental Services. 2009. *2009 New Hampshire Climate Action Plan for New Hampshire's Energy, Environmental and Economic Development Future.*

*Sequestered*" and *"Overarching Strategy 9: Plan for How to Address Existing and Potential Climate Change Impacts"*. Actions include:

- Invest in Forests to Maximize carbon Storage and to Avoid Net Forest Land conversion (AWF Action 1.2)
- Promote Durable Wood Products (AWF Action 1.3)
- Optimize Availability of Biomass for Electricity and Heating within Sustainable Limits (AWF 2.2)
- Strengthen the Protection of NH's Natural Systems (ADP Action 4)

***Key cooperators:*** *NH Climate Change Policy Task Force, Forest Stewardship Committee, UNH, and USFS - Research*

**Strategy 107:** Review existing climate change models to determine best and worse case changes in temperature, precipitation, and water levels; develop management strategies that promote adaptations and increase resilience of species and ecosystems to climate change.

***Key cooperators:*** *Foresters, Forest Pest Advisory Council, Forest Stewardship Committee, UNH, and USFS - Research*

## *Issue 3 - Enhancing relationships with private landowners to effect protection and conservation of native plants*

New Hampshire's approach to forest-related regulation has generally been to be cautious, to include stakeholders in the development of regulations, to encourage enforcement of current regulations over creating new regulations and to encourage a level playing field among those being regulated. The forest resource planning processes have consistently reveled a New Hampshire tradition which puts education and outreach as the priority for accomplishing changes in public attitudes and practices, followed by incentives, with regulations being a less popular option. There have been some areas in which public perception of the regulatory intent and powers of the state have inhibited public natural resource professionals in their efforts to protect at-risk species and natural communities.

**Strategy 108:** *Increase educational efforts to educate landowners about importance of protecting and conserving native plants and to share effective management practices. This may include increasing the number of workshops, publications, media activity and partnering with conservation groups.

***Key cooperators:*** *GSD-SAF, New Hampshire Audubon, State Conservation Committee, SPNHF, and NHDOA*

**Strategy 109:** Develop and enhance relationships with landowners that encourage native plant protection and conservation practices, compatible with individual land management goals.

***Key cooperators:*** *Consulting Foresters, Association of Conservation Commissions, Forest Stewardship Committee, Private Landowners, and SPNHF*

**Strategy 110:** Eliminate disincentives associated with cooperating with the NH Division of Forests and Land's Natural Heritage Bureau. Identify natural areas and promote New Hampshire's natural heritage as an integral part of forest planning.

***Key cooperators:*** *Consulting Foresters, NHTOA, Forest Advisory Board, Farm Bureau, State Legislature*

### *Issue 4 - Supporting maintaining New Hampshire's ecosystem health through outreach and education*

**Strategy 111:** Provide the public with information and education about invasive plants, insects and diseases to enlist their help in detection, prevention, control and eradication through recommended practices. Workshops and working with media, nurseries, landscapers, arborists, foresters, garden clubs and others are some of the methods of engaging the public in reducing the adverse impact.

***Key cooperators:*** *Forest Pest Advisory Council, Association of Conservation Commissions, Conservation Districts, New Hampshire Audubon, and Forest Stewardship Committee*

## *Focus Area C - Response to Forest Damage*

Emergency management professionals categorize components of response to catastrophic events into the following set of actions: mitigation, preparedness, response and recovery. "Mitigation" relates to prevention or avoiding problems, such as "Don't build in a flood zone". "Response" refers to the work of first responders, such as police and fire personnel. "Recovery" refers to the long-term work that needs to occur to bring the situation to a stable desired outcome.

Examples of avoiding adverse situations with trees and forests include quarantines on uninspected hemlocks coming into New Hampshire to avoid hemlock wooly adelgid (HWA), maintaining forest health to improve resistance and adaptability, removal of hazard trees in urban areas, using Best Management Practices to reduce the possibility of erosion, bans on selling invasive species at nurseries in the state, the *Storm Proofing Your Community* Program, and Current Use Taxation to avoid loss of forest land.

Since the last New Hampshire Forest Resource Plan, we have witnessed first responders in action several times since the wake of ices storms, severe floods, fires and wind events, including a tornado. The New Hampshire Division of Forests and Lands (NHDFL), working with the Office of Emergency Management (NHOEM), organizes well-trained and immediately available, fire fighting crews for rapid assistance to help bring dangerous situations under control.

Changes in weather patterns lead experts to believe that we will see a continence of adverse events requiring a ready-for-action cadre of people who can respond quickly in natural disasters affecting trees and forests.

Being addressed is a prepared response by the Multistate and Canada Fire Compact, the New Hampshire Forest Pest Advisory Board, Forest Health Coordinators in every state, the New Hampshire Office of Emergency Management (NHOEM) and many others. The State has organized a system that brings the resources of communities together for rapid response for disasters, with an incident command system, infrastructure, communications and equipment.

In New Hampshire forest situations, often the disaster comes in the form of a long-term threat such as invasive species or insect infestations, as opposed to a single event catastrophe such as fire, ice storm or wind damage. Response and recovery are can be long-term practices. Decisions to save or salvage trees and forest stands need to be made within a reasonable time frame based upon the extent of damage and the landowner's objectives. Many times recovery requires a revised stewardship plan and implementation of practices. Providing sound information, education and technical assistance is an important key to successful recovery programs across a damaged forest landscape.

## *Issue 1 - Threats to forests from invasive plants, insects and, diseases:*

New Hampshire is part of multi-state and national networks which track and map potential threats from invasive insects and diseases, provide alerts, share information about control practices and provide financial and technical assistance when needed. We expect that New Hampshire will have in place adequate monitoring, data bases and maps, prevention programs, response plans, suppression programs and mitigation options to minimize the impact of invasive plants, insects and diseases. We need to ensure that public decision makers, natural resource professionals, and the public are aware of the imminent threats to our forests from invasive plants, insects or diseases that are upon us and ready, willing and able to be able to significantly contribute to support programs to limit adverse impacts.

**Strategy 112:** Minimize introductions of damaging exotic organisms.

***Key cooperators:*** *APHIS, Forest Pest Advisory Council, Farm Bureau, NH F&G, NH Natural Heritage Bureau, New Hampshire Landscape Association, and NHDOA*

**Strategy 113:** Discover infestations when they are small and early in the epizootic cycle.

***Key cooperators:*** *APHIS, Foresters, Forest Pest Advisory Council, NHDOA, and USFS - Research*

**Strategy 98:** *Reduce damage through effective pest management, including suppression and/or eradication.

***Key cooperators:*** *APHIS, Foresters, Forest Pest Advisory Council, NHDOA, and USFS – S&PF*

**Strategy 99:** *Develop flexibility to respond to emerging situations that threaten forest health, such as new insect or disease outbreaks or introductions of invasive species.

***Key cooperators:*** *APHIS, Foresters, Forest Pest Advisory Council, NHDOA, and USFS – S&PF*

**Strategy 97:** *Collaborate regionally and nationally, as pest impacts extend beyond state boundaries. Collect forest health data that is compatible with other states. Continue to have New Hampshire a participant in multi-state and national networks which track and map potential threats from invasive insects and diseases, provide alerts, share information about control practices and provide financial and technical assistance when needed.

***Key cooperators:*** *APHIS, Forest Pest Advisory Council, NHDOA, UNH, and USFS – S&PF*

**Strategy 114:** Develop contingency and quarantine plans to ensure immediate response to disease and pest threats. Continue collaborative efforts to address threats across jurisdictional boundaries.

***Key cooperators:*** *APHIS, Forest Pest Advisory Council, NHDOA, UNH, and USFS - Research*

**Strategy 115:** Revise stewardship plans requirements to include the need to address the control of invasive plants, insects and diseases and response to potential forest damage.

***Key cooperators:*** *Consulting Foresters, Forest Pest Advisory Council, NH F&G, NH Natural Heritage Bureau, Forest Stewardship Committee, NHTOA, and SPNHF*

**Strategy 116:** Communities should devleop practices to address the impacts of invasive plants, insects and diseases, including providing education and information for the public, working with natural resource professionals on eradication and control programs and assessing and reducing hazard tree situations.

***Key cooperators:*** *Consulting Foresters, ISA, Local Governments, New Hampshire Arborists Association, and New Hampshire Landscape Association*

## *Issue 2 - Responding to catastrophic events*

The frequency and size of wildfires must be kept to a minimum to reduce costs and risks to people and structures and so that forest resources and ecosystem services are not adversely affected by wildfires.

We are in a period of more intense natural disasters than we have experienced in decades. Floods and wind events, including a devastating tornado, have presented rapid response challenges for the New Hampshire Division of Forests and Lands and other first responders.

**Strategy 117:** Continue to support the Northeast Area Compact and continue to share New Hampshire qualified and certified trained firefighters with others within the state, nationally and internationally as needed to respond to emergencies.

***Key cooperators:*** *ISA, New Hampshire Arborists Association, Fire Chiefs Association, Forest Stewardship Committee, and Homeland Security and Emergency Management*

**Strategy 118:** The New Hampshire Division of Forests and Lands (NHDFL) & New Hampshire Division of Homeland Security and Emergency Management, continue to work in cooperation to provide rapid response in natural resource related emergencies.

***Key cooperators:*** *Local Governments, Fire Chiefs Association, and Homeland Security and Emergency Management*

**Strategy 119:** Maintain capacity to provide support to communities for suppression of wildland fires through technical assistance, specialized equipment, fire prevention, fire investigation and law enforcement through the New Hampshire Division of Forests and Lands.

***Key cooperators:*** *Local Governments, Fire Chiefs Association, and Homeland Security and Emergency Management*

## *Issue 3 - Tracking, documenting, and inventory and assessment*

**Strategy 120:** Work with the New Hampshire Division of Homeland Security and Emergency Management to assess & mitigate the damages created by an event or incident. Participate in post-event review to evaluate efficiency and effectiveness of actions regarding public safety, immediate and long term response, decisions regarding emergency declarations and disaster relief funding.

***Key cooperators:*** *Local Governments, New Hampshire Arborists Association, Fire Chiefs Association, State Technical Committee, and Homeland Security and Emergency Management*

**Strategy 121:** Initiate an improved reporting system regarding fire and other disasters, including using GIS overlays to record disasters and response, to use for planning for future emergencies.

***Key cooperators:*** *GRANIT, Local Governments, Fire Chiefs Association, and Homeland Security and Emergency Management*

**Strategy 122:** Provide current resource data pertaining to any major forest damage causing agent or forest health incident in New Hampshire.

***Key cooperators:*** *Local Governments, Fire Chiefs Association, and Homeland Security and Emergency Management*

**Strategy 123:** Maintain statewide data sets pertaining to annual aerial and ground survey data.

***Key cooperators:*** *Foresters, GRANIT, Local Governments, Fire Chiefs Association, and Homeland Security and Emergency Management*

**Strategy 104:** *Conduct monitoring projects for damaging pests in high risk communities.

***Key cooperators:*** *APHIS, Forest Pest Advisory Council, NHDOA, UNH, and USFS – Research*

## *Issues 4 - Responding to climate change*

New scientific information, tools, and technology will be needed so we can increase our understanding of climate change impacts, adaptation, influences on flora and fauna distribution, mitigation options and risks and uncertainties. As the changes occur, we must know how to adapt our management practices so forests can best adapt to climate change with minimal adverse environmental and economic impacts and ecosystem services are sustained.

**Strategy 124:** Develop, fund and implement research that is needed to provide the knowledge and practices that will enable natural resource professionals to manage forests as the climate changes and we enter a new climate era.

***Key cooperators:*** *APHIS, Forest Pest Advisory Council, State Legislature, NHDOA, and USFS - Research*

## *Issue 5 - Supporting New Hampshire's response to forest damage through outreach and education*

Engaging the public is essential in any successful program to control invasive plants, insects and diseases that spread without regards to political boundaries or property lines. We have witnessed the success of educational outreach efforts resulting in early detection of the hemlock woolly adelgid in New Hampshire. We have learned from catastrophic events such

as ice storms and wind events that we need to caution the public as they respond to the disaster around them. Education and outreach also helps inspire people to protect the environment in which they live.

**Strategy 125:** Include safety in educational messages in response to catastrophic events and other areas in which the public's reactions to problems may trigger fast and careless action. Promote getting professional assistance, such as hiring a responsible arborist following a windstorm or ice storm. Provide ongoing messages to communities and property owners about hazard trees and particularly when there is imminent danger, such as a major occurrence of tree mortality.

***Key cooperators:*** *Foresters, ISA, New Hampshire Arborists Association, Fire Chiefs Association, and Timber Harvesting Council*

**Strategy 108:** *Increase educational efforts to educate landowners about importance of protecting and conserving native plants and to share effective management practices. This may include increasing the number of workshops, publications, media activity and partnering with conservation groups.

***Key cooperators:*** *Consulting Foresters, Forest Pest Advisory Council, Association of Conservation Commissions, NHTOA, and Private Landowners*

## Priority III - Enhance Benefits from New Hampshire's Trees & Forests

The public and natural resource professionals agree that forests provide a tremendous amount of benefits to society and our planet's ecological well-being. This plan addresses ecological and economic benefits through the document. Some of the values of our forests have been recognized and nurtured for centuries, such as forest products, fish and wildlife and fuel wood. The combined positive impact on our state's economy, according to New Hampshire's forest assessment is $2.6 billion annually. We are just beginning to understand more complex issues in New Hampshire's forests and how to manage forests to sustain forest benefits. Issues such as air quality impacts, climate change and carbon storage are challenges that we are gaining new information about and are developing mechanisms and practices that will provide long term sustainability of forest values.

### *Focus Area A - Sustaining Economic Benefits from New Hampshire's Forests*

New Hampshire's forests grow jobs as well as trees. For over 300 years, New Hampshire has had a thriving forest-related economy. The rivers in colonial days powered sawmills, while large white pines were used for ships' masts. Pulp mills were active through much of the

1900s, dependent upon large tracts of land owned by the pulp companies. The number of sawmills have declined over time. Despite fewer mills the capacity of the remaining mills to saw more lumber is greater: we have fewer but larger mills. Pulp mills using pulpwood and/or chips have disappeared since the last New Hampshire Forest Resource Plan was written. In addition to NH's robust wood-to-energy industry, new wood-based alternative markets are emerging. Maple syrup production has been resilient to the bad economic times of early 2000s, with demand outstripping production and good prices. New Hampshire, along with nearby states and Canada, is one of the few places in this world where the production of maple sugar products are produced in significant quantities.

Liquidation harvests and land clearing for development are often confused with forestry and reflect poorly on New Hampshire's forest industry. Changing ownerships, such as the loss of the large industry lands, and new ownerships by people without a traditional forest connection add to the uncertainty of wood sources, wood availability and stable jobs

Economic benefits of sustaining a healthy forest industry are also provided in the section of this document under "Conserve New Hampshire's Forested Landscapes".

Recreation and tourism have been important economic benefits of forests. Forest-related recreation have provided revenue to New Hampshire's recreation businesses and associated businesses. New Hampshire's forest assessment shows that recreation and tourism contributes $940 million dollars annually to our economy. The rooms and meals tax funds a substantial portion of New Hampshire's state government largely as a result of our the attraction of our forests. While we think of fall foliage season as the draw, the backdrop for much of our year round tourism is our forests. Most of these forests are privately held lands, providing benefits far beyond the tax dollars that they produce. Forest aesthetics are benefits enjoyed by residents, landowners, neighbors and communities as well as those who travel to our state from away. The US Fish and Wildlife Services' 2001 National Survey of Fishing, Hunting and Wildlife-Related Recreation determined expenditures for these activities to be nearly $579 million in New Hampshire[8]. In order to make informed decisions regarding New Hampshire's forests and communities, the public needs to be aware of the many benefits provided by our forests beyond timber products, including wildlife, clean and plentiful water, air quality, and recreation. Forests, both rural and urban are valued for their positive effects on the quality of life in New Hampshire.

Other opportunities are on the horizon which main help sustain ownerships and good forest practices on forestlands in New Hampshire.

## *Issue 1 – Sustain the economic benefits that now come from New Hampshire's forests*

**Strategy 126:** Enhance and sustain a favorable business climate for the forest products industry, benefiting businesses, the community and our ability to keep forestlands intact.

[8] NH Fish & Game Department. 2005. New Hampshire Wildlife Action Plan

***Key cooperators:*** *Forest Industry, Farm Bureau, NHTOA, State Legislature, RC&D's, and DRED – Division of Economic Development*

**Strategy 127:** Maintain an infrastructure of primary and secondary manufacturing mills and other markets, support services, certified loggers, certified foresters and licensed foresters.

***Key cooperators:*** *Forest Industry, GSD –SAF, New Hampshire Board of Foresters, NHTOA, and DRED – Division of Economic Development*

**Strategy 128:** Review and address the problem of inconsistent local regulations that may inhibit forest management and forestry.

***Key cooperators:*** *Consulting Foresters, Local Governments, New Hampshire Board of Foresters, Timber Harvesting Council, and NHTOA*

**Strategy 129:** Assist local wood manufacturers to market their products locally, regionally, nationally, and internationally.

***Key cooperators:*** *Consulting Foresters, Local Governments, NHTOA, NCRC&D, and NHDOA*

**Strategy 81:** *Landowners, forest managers, and mining interests coordinate forest management plans and mining plans on state lands and other properties, to ensure that access roads and harvesting of forest resources would be integrated with planned mining operations to optimize both resources, while at the same time minimizing the footprint of any related disturbances.

***Key cooperators:*** *Consulting Foresters, Forest Industry, Private Landowners, and NHDES*

## *Issue 2 – Encouraging new economic opportunities to support forestry in New Hampshire*

**Strategy 130:** Encourage new opportunities for supporting forest management, including researching and developing markets for underutilized tree species in abundance, collaboration with other states on wood R&D activities and agro-forestry. This will require research-based education and information and an entrepreneurial spirit on the part of investors and potential producers.

***Key cooperators:*** *Consulting Foresters, NHTOA, Private Landowners, NHDOA, and DRED – Division of Economic Development*

**Strategy 131:** The forestry community should be prepared to have landowners take advantage of possible revenues from ecosystem services, such as dollars for carbon sequestration. There are signs that opportunities for payments for ecosystem services such as carbon sequestration sold on exchanges may become reality for some entities. Monitoring emerging market opportunities as climate change concerns increase economic initiatives may prove valuable over time.

***Key cooperators:*** *Consulting Foresters, NHTOA, Private Landowners, NHDOA, and DRED – Division of Economic Development*

## *Issue 3 - Keeping forest lands available for recreation and tourism*

**Strategy 132:** *Support the recommendations contained in the New England Governor's Conference 2009 *Report of the Blue Ribbon Commission on Land Conservation* to help curb the rate of loss of New Hampshire's open space. The commission offered 5 recommendation areas: Keep Forests as Forests, Keep Farmlands in Farming, Connect People to the Outdoors, Protect Wildlife Habitat, and Safeguard Coastal and Estuarine Lands.

***Key cooperators:*** *LCHIP, Land Trusts, Local Governments, Forest Legacy Committee, and State Legislature*

**Strategy 133:** Continue the tradition of keeping lands open to the public by supporting continuation of the Current Use Program 20% recreational discount for landowners who allow public use of their open space land for hunting, hiking, skiing, snowshoeing, fishing and nature observation.

***Key cooperators:*** *AMC, Snowmobile Association, NHTOA, New Hampshire Wildlife Federation, SPACE, Current Use Board, and NHF&G*

**Strategy 134:** Engage law enforcement and the justice system in addressing abusers of private and public lands to reduce damage to the environment and to encourage public and private lands to remain open for public use. Practical protective regulations may be needed to support the efforts of law enforcement and the courts.

***Key cooperators:*** *Snowmobile Association, NHTOA, New Hampshire Wildlife Federation, Private Landowners, and NHF&G*

## *Issue 4 – Protect and enhancing recreation and tourism through education and outreach*

As new technology and equipment enters the market, new uses and users of forestlands enter the forest. The numbers of users of our forests is expected to grow as our population grows and transportation advances make forested lands more accessible. We need to continually monitor, research the impact and share the results of various recreational activities in our forest environment.

**Strategy 135:** Target education efforts to increase land managers' understanding of the impact of various recreational uses on the ecological integrity of the forest.

***Key cooperators:*** *Foresters, GSD-SAF, Snowmobile Association, Private Landowners, and UNH*

**Strategy 136:** Support education efforts to increase the public understanding of who owns the forests they use and enjoy so they can support public land management and understand that private forest owners provide the majority of New Hampshire's scenery and provide recreation and tourism opportunities while bearing the cost of holding these lands. An understanding of the public benefits of private land ownerships in New Hampshire is essential to providing support for positive policies, such as Current Use Taxation, education and outreach such as through UNH Cooperative Extension (UNHCE) and landowner incentives for practicing good forestry.

***Key cooperators:*** *NHTOA, North Country Council, Northern Forest Center, DRED – Division of Travel and Tourism, and SPACE*

**Strategy 137:** The users of forestlands, particularly those using private lands, respect the property, the landowner and the limits placed on public use. Recent abuses have accelerated the actions of some landowners to limit use or close their lands to public use. Public education is needed to increase an understanding by users, increase peer pressure by responsible users to influence abusers and to engage the public in curtailing through monitoring and reporting the abuses by irresponsible persons.

***Key cooperators:*** *Harris Center, Snowmobile Association, NHTOA, NH F&G, New Hampshire Wildlife Federation, and Private Landowners*

**Strategy 138:** Market New Hampshire's forests aggressively to in-state and out-of-state audiences to enhance tourism revenues for New Hampshire businesses and for taxes derived directly from recreation ad tourism, such as the rooms and meals tax. Such marketing will not only result in increased revenues, but also an increased appreciation of the value of forests for the economy and way of life in New Hampshire for the people who live here. With appreciation comes support for sustaining our forests.

***Key cooperators:*** *APHIS, State Conservation Committee, North Country Council, Northern Forest Center, and DRED – Division of Travel and Tourism*

**Strategy 139:** Teach the public, local public officials and community leaders about the difference between liquidation harvests and development cuts, which are often confused with forestry and reflect poorly on New Hampshire's forest industry. It is an opportunity to show good forestry as a solution to sustaining the environment, rather than a contributor to forest destruction.

***Key cooperators:*** *Forest Industry, GSD-SAF, Association of Conservation Commissions, NHTOA, and Private Landowners*

## *Focus Area B - Sustaining Environmental Services from New Hampshire's Forests*

Respondents to the plan development felt that a key way to look at the public benefits of trees and forests is to consider them from the aspect of the environmental services they provide that support a healthy environment and backdrop to our everyday life and to the unique character of New Hampshire. Continuing research from academia, the USDA Forest Service research and others continue to show that healthy and diverse forest landscapes add measurably to the quality of life. Whether this is from clean plentiful water to air quality, wildlife, wood products or other economic uses our forested landscape provides innumerable benefits.

Conserving our fish and wildlife resources protects our ecological and economic benefits. There is a strong relationship in New Hampshire in agencies and programs that sustain ecosystems and provide hunting, fishing and tourism revenues. The Wildlife Action Plan (WAP) addresses issues and provides strategies relating to fish and wildlife, including non-game species.

Healthy and sustainable urban/community forests support livable, desirable, and ecologically fit places of residence for New Hampshire citizens by contributing significantly to minimizing storm-water runoff, improving air quality, saving energy, abating noise, increasing property values, providing pleasing aesthetics and enhancing the quality of life in populated areas.

### *Issue 1 - Sustaining environmental benefits by sustaining well-managed forest lands*

We are loosing forestlands in New Hampshire, mostly to permanent conversion to development. Environmental from forests benefits are lost. Saving land is not enough. Lands must be cared for in a sustainable way that ecosystem attributes remain intact. New Hampshire's forests must be able to sustainably provide important ecosystem services, including water resource protection, clean air, carbon storage, biodiversity and valuable habitats for the flora and fauna that depend on our forests.

**Strategy 140:** Manage New Hampshire's private and public forests to sustainably provide economic, environmental benefits and important ecosystem services. Following practices in *Good Forestry in the Granite State* will significantly protect and sustain the environmental benefits that we receive from our forests.

***Key cooperators:*** *Consulting Foresters, GSD-SAF, NRCS, New Hampshire Audubon, and Forest Stewardship Committee*

**Strategy 141:** Prioritize open space protection through acquisition or conservation easement based on values expressed in this document, including retaining working forests and protecting critical habitats, significant ecosystems, important natural communities, at-risk native flora and fauna, connectivity and water quality.

***Key cooperators:*** *LCHIP, Land Trusts, Local Governments, Forest Legacy Committee, and NHTOA*

**Strategy 142:** Manage lands supporting important fish and wildlife habitats to ensure their long-term viability. Fully integrate the desired outcomes and strategies in the New Hampshire Wildlife Action Plan (WAP) into the strategies in this document and ensure they are implemented.

***Key cooperators:*** *Consulting Foresters, New Hampshire Wildlife Federation, Private Landowners, NHF&G, and US Fish and Wildlife Service*

**Strategy 132:** *Support the recommendations contained in the New England Governor's Conference 2009 *Report of the Blue Ribbon Commission on Land Conservation* to help curb the rate of loss of New Hampshire's open space. The commission offered 5 recommendation areas: Keep Forests as Forests, Keep Farmlands in Farming, Connect People to the Outdoors, Protect Wildlife Habitat, and Safeguard Coastal and Estuarine Lands.
***Key cooperators:*** *Land Trusts, Local Governments, Farm Bureau, Forest Legacy Committee, and State Legislature, NH F&G*

## *Issue 2 – Sustaining environmental benefits in the face of climate change*

**Strategy 143:** Prepare to meet the predicted future impacts of climate change. Act now to pursue new scientific information, tools, and technology that can lead to an increase in understanding of climate change impacts, adaptation, influences on flora and fauna distribution, mitigation options and risks and uncertainties.

***Key cooperators:*** *GSD-SAF, New Hampshire Sierra Club, State Conservation Committee, UNH, and USFS - Research*

**Strategy 144:** Manage New Hampshire's forests with an objective that forests will be best able to adapt to climate change with minimal adverse environmental and economic impacts.

***Key cooperators:*** *Consulting Foresters, GSD-SAF, Forest Stewardship Committee, Private Landowners, and NHDOA*

### *Issue 3 - Sustaining environmental benefits through education and outreach*

**Strategy 145:** Public education, youth education and targeted education is required to bring the appreciation of forest benefits to a level that results in support for policies that protect and enhance forestry in New Hampshire.

a. Educate and inform public decision makers, elected officials, community leaders, youth and the public so they will value the environmental benefits that we all derive from forests.
b. Support the development of a NH Environmental Literacy Plan

***Key cooperators:*** *CFAC, Forest Stewardship Committee, NHTOA, PLT, NHEE and SPNHF*

# NEW HAMPSHIRE
# FOREST RESOURCE STRATEGIES
# MATRIX

# NEW HAMPSHIRE FOREST RESOURCE STRATEGIES MATRIX

## LEGEND - COLUMN A – PRIORITY LANDSCAPE AREA(S)

| Code | Description |
|---|---|
| WFPA | Working Forest Priority Area |
| PBPA | Public Benefits Priority Area |
| TPA | Threats Priority Area (Protect Forests from Harm) |
| UPA | Urban Priority Area |

## LEGEND - COLUMN B – SECONDARY ISSUE ADDRESSED

| Code | Description |
|---|---|
| III / A / 2 | Priority / Focus Area / Secondary Issue Addressed |
| | |

## LEGEND - COLUMN C – PROGRAMS THAT CONTRIBUTE

| Code | Description |
|---|---|
| F | Fire |
| FH | Forest Health |
| FL | Forest Legacy |
| FS | Forest Stewardship |
| UF | Urban & Community Forestry |
| NH | Natural Heritage |
| SL | State Lands Management |
| CE | Conservation Education |

**NEW HAMPSHIRE FOREST RESOURCE STRATEGIES MATRIX**
**LEGEND - COLUMN D – KEY COOPERATORS**

| Code | Cooperator | Code | Cooperator |
|---|---|---|---|
| 1 | Animal and Plant Health Inspection Service - APHIS | 28 | New Hampshire Forest Stewardship Committee |
| 2 | Appalachian Mountain Club - AMC | 29 | New Hampshire Landscape Association |
| 3 | Business and Industry Association - BIA | 30 | New Hampshire Local Government Center |
| 4 | Community Forestry Advisory Council - CFAC | 31 | New Hampshire Sierra Club |
| 5 | Consulting Foresters - CF | 32 | New Hampshire Snowmobile Association |
| 6 | Current Use Board - CUB | 33 | New Hampshire State Conservation Committee |
| 7 | Foresters | 34 | New Hampshire Timber Harvesting Council |
| 8 | Forest Industry | 35 | New Hampshire Timberland Owners Association - NHTOA |
| 9 | Forest Pest Advisory Council - FPAC | 36 | New Hampshire Tree Farm Committee |
| 10 | GRANIT - Complex Systems | 37 | New Hampshire Wildlife Federation - NHWF |
| 11 | Granite State – Society of American Foresters - GSD/SAF | 38 | North Country Council - NCC |
| 12 | Harris Center | 39 | North Country Resource, Conservation & Development – NCRC&D |
| 13 | International Society of Arboriculture - ISA | 40 | Northern Forests Center |
| 14 | Land Conservation and Heritage Investment Program - LCHIP | 41 | NRCS / State Technical Committee |
| 15 | Land Trusts | 42 | Private Landowners |
| 16 | Local Governments | 43 | Project Learning Tree - PLT |
| 17 | Local School Districts | 44 | Regional Planning Commissions |
| 18 | Natural Resource Conservation Service - NRCS | 45 | Society for the Protection of New Hampshire Forests - SPNHF |
| 19 | New Hampshire Arborists Association - NHAA | 46 | Southern NH Resource, Conservation & Development – Southern RC&D |
| 20 | New Hampshire Association of Conservation Commissions - NHACC | 47 | Squam Lakes Natural Science Center |
| 21 | New Hampshire Association of Conservation Districts | 48 | State Legislature |
| 22 | New Hampshire Audubon | 49 | State of NH Department of Agriculture - NHDOA |

| Code | Cooperator | Code | Cooperator |
|---|---|---|---|
| 23 | New Hampshire Board of Foresters | 50 | State of NH Department of Environmental Services |
| 24 | New Hampshire Farm Bureau | 51 | State of NH Department of Resources & Economic Development - DRED |
| 25 | New Hampshire Fire Chiefs Association | 52 | State of NH Department of Transportation - DOT |
| 26 | New Hampshire Forest Advisory Board - NHFAB | 53 | State of NH Division of Economic Development |
| 27 | New Hampshire Forest Legacy Committee - NHFLG | 54 | State of NH Division of Forests and Lands - DFL |
| 55 | State of NH Division of Parks & Recreation | 64 | UNH Cooperative Extension |
| 56 | State of NH Division of Travel and Tourism | 65 | UNH Department of Natural Resources & the Environment |
| 57 | State of NH Fish and Game Department – NHF&G | 66 | USDA Farm Service Agency - FSA |
| 58 | State of NH Homeland Security & Emergency Mgt. | 67 | USDA Forest Service - USFS |
| 59 | State of NH Office of Energy and Planning - OEP | 68 | USDA Forest Service – Research |
| 60 | Statewide Program of Action to Conserve our Environment - SPACE | 69 | USDA Forest Service - S&PF |
| 61 | The Nature Conservancy of New Hampshire - TNC | 70 | USDA Forest Service – WMNF |
| 62 | Town Planning Boards | 71 | US Fish and Wildlife Service – USF&W |
| 63 | UNH – Thompson School of Applied Science | 72 | NH Environmental Educators – NHEE |
| | | 72 | NH State of NH Department of Education - DOE |

The list includes the New Hampshire Division of Forests and Lands (62) and UNH Cooperative Extension (73), but since they are active participants in the majority of strategies, the reader can automatically consider them to be among those involved in the implementation of each strategy.

## NEW HAMPSHIRE FOREST RESOURCE STRATEGIES MATRIX

## LEGEND - COLUMN E – RESOURCES AVAILABLE / NEEDED TO IMPLEMENT*

| Code | Description |
|---|---|
| FR | **Fire Program Resources**<br><br>● USDA State Fire Assistance (SFA)<br>● State of New Hampshire General funds<br>● USDA Volunteer Fire Assistance Program (VFA)<br>● USDA Federal Excess Personal Property (FEPP)<br>● USDA DOD Fire Fighter Property (FFP) program reporting<br>● New Hampshire Office of Homeland Security and Emergency Management<br>● Northeast Forest Fire Supervisors and the Chiefs, Managers, Supervisors (CMS) information sharing<br>● Partnerships with local fire departments<br>● New Hampshire Fire Chiefs Association<br>● USDA Federal grant projects<br>• Northeast Forest Fire Protection Compact |
| FHR | **Forest Health Program Resources**<br><br>● Partnerships with others in the natural resources community, including UNH Cooperative Extension, U.S Department of Animal and Plant Health Inspection Service and conservation organizations<br>● NH Department of Agriculture, Foods and Markets Agency transfers<br>● USDA NA Cooperative Lands formula grants<br>● State of New Hampshire General funds<br>● USDA competitive grants |
| FLR | **Forest Legacy Program Resources**<br><br>• Forest Legacy Program Acquisition Funds<br>• Forest Legacy Program Administrative Funds<br>• Project partner funds<br>• Donations of lands or interests in lands<br>• State General funds |
| FSR | **Forest Stewardship Program Resources**<br><br>● New Hampshire County Governments |

| | |
|---|---|
| | ● State of New Hampshire General funds<br>● University of New Hampshire<br>● USDA CSREES – the nationwide Cooperative Extension agency, including RREA funding as well as other financial and information/educational networking resources<br>● USDA Forest Service, State and Private<br>● New Hampshire Fish and Game Department<br>● USDA Natural Resource Conservation Service (NRCS)<br>● New Hampshire Forest Stewardship Committee<br>● Other public and private funding sources, including conservation organizations environmentally active charitable foundations and contracts.<br>● Volunteers, including Coverts Volunteers (*Volunteers Working for Wildlife*)<br>● Timber Harvesting Council/ NHTOA<br>● UNH Thompson School of Applied Science partnership<br>● Partnerships and co-sponsoring, including the NH Tree Farm System and Granite State Division - Society of American Foresters<br>● Partnerships with private sector individuals and groups, such as foresters, industry, loggers |
| UFR | **Urban and Community Program Forestry Resources**<br><br>● Urban Forestry Center – John Elwyn Stone Trust<br>● Shieling Forest – Shieling Trust<br>● New Hampshire County Governments<br>● State of New Hampshire General funds<br>● University of New Hampshire<br>● USDA CSREES – the nationwide Cooperative Extension agency, including RREA funding.<br>● New Hampshire Community Forestry Advisory Council<br>● Volunteers, including Community Tree Stewards<br>● USDA Forest Service, State and Private<br>● Other public and private funding sources. |
| EdPR | **Education Program Resources**<br><br>• State DOE general funds<br>• USDA Forest Service – State and Private<br>• Non-profit funds (PLT, Squam Lakes Science Center)<br>• School district funds |

*** Within each "Program Resources" group is a variety of funding sources including federal, state, other public, and private. Agency capacity to implement the recommended strategies is limited due to insufficient state and federal program funding.**

## NEW HAMPSHIRE FOREST RESOURCE STRATEGIES MATRIX

## LEGEND F – SUPPORTS NATIONAL OBJECTIVE

| Code | Description |
|---|---|
| 1.0 | Supports Priority I – Conserve Working Forest Landscapes. |
| 1.1 | Identify and conserve high priority forest ecosystems and landscapes. |
| 1.2 | Actively and sustainably manage forests. |
| 2.0 | Supports Priority II – Protect Forests from Harm. |
| 2.1 | Restore fire-adapted lands and reduce risk of wildfire impacts. |
| 2.2 | Identify, manage and reduce threats to forest and ecosystem health. |
| 3.0 | Supports Priority III – Enhance Public Benefits from Trees and Forests. |
| 3.1 | Protect and enhance water quality and quantity. |
| 3.2 | Improve air quality and conserve energy. |
| 3.3 | Assist communities in planning for and reducing wildfire risks. |
| 3.4 | Maintain and enhance the economic benefits and values of trees and forests. |
| 3.5 | Protect, conserve, and enhance wildlife and fish habitat. |
| 3.6 | Connect people to trees and forests, and engage them in environmental stewardship activities. |
| 3.7 | Manage and restore trees and forests to mitigate and adapt to global climate change. |

| NEW HAMPSHIRE FOREST RESOURCES STRATEGIES MATRIX | | | | | | |
|---|---|---|---|---|---|---|
| **Priority I: Conserve New Hampshire's Forested Landscape** | | | | | | |
| **Focus Area A: Good Forest Stewardship in New Hampshire's Forests (1 of 3)** | | | | | | |
| | | | | | | |
| **Long-Term Strategy** | **A Priority Landscape Area(s)** | **B Secondary Issue Addressed** | **C Programs That Contribute** | **D Key Cooperators** | **E Resources Available/Needed to Implement** | **F Supports National Objective** |
| **Issue #1:** | **Retain successful grassroots collaboration to sustain natural resources and the economy** | | | | | |
| **1** | Statewide | | FH, FS, UF | 22, 35, 45, 48, 61 | | 1.0, 3.6 |
| | | | | | | |
| **Issue #2:** | **Conservation Easement Funding & Administration** | | | | | |
| **2** | WFPA/PBPA | II / A / 1 | FL, FS | 15, 26, 27, 69 | FLR, FSR | 1.1, 3.1, 3.5 |
| **3.** | WFPA/PBPA | II / A / 1 | FL, FS | 15, 18, 48, 61, 67 | FLR, FSR | 1.1, 3.1, 3.5 |
| **4.** | WFPA/PBPA | | FL, FS | 15, 16, 18, 57, 67 | FLR, FSR | 1.0, 3.4, 3.6 |
| | | | | | | |
| **Issue #3:** | **Implement New Hampshire's Wildlife Action Plan as it relates to forests** | | | | | |
| **5.** | Statewide | | All | 22, 37, 42, 57 | All | 1.1, 1.2, 3.1, 3.5 |
| | | | | | | |
| **Issue #4:** | **Sustaining forest management on private lands** | | | | | |
| **6.** | WFPA/PBPA | | FS, UF | 16, 20, 35, 48 | FSR, UFR | 1.1, 1.2, 3.4 |
| **7.** | WFPA/PBPA | | FL, FS | 15, 42, 45, 61 | FLR, FSR | 1.1, 3.1, 3.5 |
| **8.** | WFPA/PBPA | | FL, FS | 15, 16, 27, 48, 61 | FLR, FSR | 1.1, 3.1, 3.5 |
| **9.** | WFPA/PBPA | | FS | 5, 7, 28, 36 | FSR | 1.1, 1.2, 3.4, 3.7 |
| **10.** | WFPA/PBPA | | FS | 18, 28, 66, 69 | FSR | 1.0, 3.0 |
| **11.** | WFPA/PBPA | II / A / 1 | FS | 6, 35, 45, 48, 60 | FSR | 1.0 |
| **12.** | Statewide | | FS | 16, 34, 35, 62 | FSR | 1.2, 3.6 |
| **13.** | WFPA/PBPA | | | | | |
| **14.** | WFPA/PBPA | | FS, NH | 11, 23, 34, 35 | FSR | 1.0, 2.0, 3.0 |

| NEW HAMPSHIRE FOREST RESOURCES STRATEGIES MATRIX | | | | | | |
|---|---|---|---|---|---|---|
| **Priority I: Conserve New Hampshire's Forested Landscape** | | | | | | |
| **Focus Area A: Good Forest Stewardship in New Hampshire's Forests (2 of 3)** | | | | | | |
| | | | | | | |
| **Long-Term Strategy** | **A Priority Landscape Area(s)** | **B Secondary Issue Addressed** | **C Programs That Contribute** | **D Key Cooperators** | **E Resources Available/Needed to Implement** | **F Supports National Objective** |
| **Issue #5:** | **Developing technical and financial assistance programs that focuses on collaboration among neighboring landowners** | | | | | |
| **15.** | WFPA/PBPA/TPA | | FS | 18, 58, 66, 69 | FSR | 1.0, 3.0 |
| **16.** | WFPA/PBPA/TPA | | FS, FL, UF, FH | 16,18,35,39,57,61 | FSR, UFR, | 1.2, 3.4 |
| | | | | | | |
| **Issue #6:** | **Sustaining forest management on public lands** | | | | | |
| **17.** | Statewide | I / B / 2 | FS, UF | 16, 20, 30 | FSR, UFR | 1.2, 2.2, 3.0 |
| **18.** | WFPA/PBPA/TPA | | FS, UF | 16, 28, 50, 51, 52 | FSR, UFR | 1.2, 2.2, 3.0 |
| **19.** | Statewide | | FS | 10, 33, 39, 41, 46 | FSR | 1.0, 2.0 |
| **20.** | WFPA/PBPA | | FS | 16, 18, 57, 66, 69 | FSR | 1.0 |
| **21.** | Statewide | | FS | 16, 48, 50, 55, 57 | FSR | 1.0 |
| **22.** | WFPA/PBPA/TPA | | FS, SL | 8, 16, 35, 36, 51 | FSR | 1.1, 1.2, 3.0 |
| **23.** | WFPA/PBPA | | FS | 7, 10, 16, 36, 45 | FSR | 1.2, 3.6 |
| **24.** | Statewide | | FS, UF | 48, 69 | FSR, UFR | 1.0, 2.0, 3.0 |
| **25.** | WFPA/PBPA | | FS,SL,CE | 5,8,26,35,16,70 | FSR, | 1.2,2.0,3.0 |
| **26.** | WFPA/PBPA | II / B / 1 | FS,UF,FH,F,SL,NH | 50,54,61,64,65 | FSR,FHR,FR, | 1.1,2.2,3.5,3.7 |
| | | | | | | |
| **Issue #7:** | **Fire as a management tool to sustain forests and wildlife habitat** | | | | | |
| **27.** | WFPA/PBPA | | FS | 5, 25, 57, 65, 68 | FSR | 1.2, 2.0 |
| **28.** | WFPA/PBPA | II / A / 3 | FS | 5, 25, 57, 65, 68 | FSR | 1.2, 2.0 |

| NEW HAMPSHIRE FOREST RESOURCES STRATEGIES MATRIX | | | | | | |
|---|---|---|---|---|---|---|
| **Priority I: Conserve New Hampshire's Forested Landscape** | | | | | | |
| **Focus Area A: Good Forest Stewardship in New Hampshire's Forests (3 of 3)** | | | | | | |
| | | | | | | |
| **Long-Term Strategy** | **A Priority Landscape Area(s)** | **B Secondary Issue Addressed** | **C Programs That Contribute** | **D Key Cooperators** | **E Resources Available/Needed to Implement** | **F Supports National Objective** |
| **Issue #8: Public Use** | | | | | | |
| **29.** | WFPA/PBPA | | FS, UF | 5, 35, 37, 42 | FSR, UFR | 1.0, 3.4, 3.6 |
| **30.** | WFPA/PBPA | | FS | 24, 32, 35, 37, 57 | FSR | 1.0, 3.6 |
| **31.** | WFPA/PBPA | | FS | 16, 32, 35, 45, 48 | FSR | 1.0, 3.6 |
| **32.** | WFPA/PBPA | | | | | |
| **33.** | WFPA/PBPA/TPA | | FS | 7, 11, 35, 36, 65 | FSR | 1.2, 3.6 |
| | | | | | | |
| **Issue #9: Supporting New Hampshire's private and public forests through outreach and education** | | | | | | |
| **34.** | Statewide | | FS | 8, 35, 36, 45, 48, 72, 73 | FSR | 1.0, 3.6 |
| **35.** | Statewide | | FS | 15, 22, 27, 45, 61 | FSR | 1.0 |
| **36.** | WFPA/PBPA/TPA | | FS | 11, 35, 36, 45 | FSR, EdPR | 1.2, 3.6 |
| **37.** | Statewide | | FS | 7, 11, 19, 65, 69 | FSR | 1.2 |
| **38.** | Statewide | | FS | 11, 19, 35, 45, 63 | FSR | 1.2 |
| **39.** | Statewide | | FS | 11, 35, 45, 50, 65 | FSR | 1.2 |
| **40.** | Statewide | | FS, UF | 8, 28, 43, 45, 57 | FSR, UFR | 1.0, 3.6 |
| **41.** | Statewide | | FS, UF | 39, 43, 45, 46, 47 | FSR, UFR | 1.2 |
| **42.** | Statewide | | FS, UF | 16, 20, 21, 45, 60 | FSR, UFR | 1.0, 3.6 |

| NEW HAMPSHIRE FOREST RESOURCES STRATEGIES MATRIX | | | | | | |
|---|---|---|---|---|---|---|
| **Priority I: Conserve New Hampshire's Forested Landscape** | | | | | | |
| **Focus Area B: Enhancing Urban and Community Forestry (1 of 2)** | | | | | | |
| | | | | | | |
| **Long-Term Strategy** | **A Priority Landscape Area(s)** | **B Secondary Issue Addressed** | **C Programs That Contribute** | **D Key Cooperators** | **E Resources Available/Needed to Implement** | **F Supports National Objective** |
| **Issue #1:** | **Sustaining urban and rural communities** | | | | | |
| **43.** | WFPA/UPA | I / C / 3 | FS, UF | 16, 24, 30, 44, 62 | FSR, UFR | 1.1, 3.0 |
| | | | | | | |
| **Issue #2:** | **Managing community forests and ecosystems sustainably** | | | | | |
| **17.** | Statewide | I / A / 6 | FS, UF | 5, 16, 28, 36, 67 | FSR, UFR | 1.2, 3.6 |
| | | | | | | |
| **Issue #3:** | **Invasive insects threaten urban forests as they do forest stands** | | | | | |
| **44.** | Statewide | | UF | 1, 7, 9, 29, 68 | UFR | 1.0, 2.0 |
| **45.** | Statewide | | UF | 25, 30, 58, 62 | UFR | 1.0, 2.0 |
| **46.** | Statewide | | UF | 4, 13, 19, 21, 29 | UFR | 1.0, 3.7 |
| | | | | | | |
| **Issue #4:** | **Sustaining an infrastructure to support and guide community forestry** | | | | | |
| **47.** | Statewide | | UF | 4, 11, 16, 19, 29 | UFR | 1.0, 3.6 |
| **48.** | Statewide | | UF | 4, 19, 29, 52, 63 | UFR | 1.0, 3.6 |
| **49** | Statewide | | FS, UF | 15, 16, 17, 20, 44 | FSR, UFR | 1.0, 3.0 |
| **50.** | Statewide | | UF | 20, 36, 50, 52, 59 | UFR | 1.0, 3.6 |
| **51.** | Statewide | | UF | 16, 19, 20, 29, 30 | UFR | 1.0, 3.6 |
| **52.** | Statewide | | UF | 16, 19, 20, 29, 30 | UFR | 1.0, 3.6 |
| **53.** | Statewide | | UF | 5, 11, 13, 23, 63 | UFR | 1.2, 2.0, 3.7 |

| NEW HAMPSHIRE FOREST RESOURCES STRATEGIES MATRIX | | | | | | |
|---|---|---|---|---|---|---|
| **Priority I: Conserve New Hampshire's Forested Landscape** | | | | | | |
| **Focus Area B: Enhancing Urban and Community Forestry (2 of 2)** | | | | | | |
| | | | | | | |
| **Long-Term Strategy** | **A Priority Landscape Area(s)** | **B Secondary Issue Addressed** | **C Programs That Contribute** | **D Key Cooperators** | **E Resources Available/Needed to Implement** | **F Supports National Objective** |
| **Issue #5: Supporting New Hampshire's urban and community forests through outreach and education** | | | | | | |
| **54.** | Statewide | I / C / 6 | UF | 11, 13, 19, 29, 65 | UFR | 1.2, 2.0, 3.0 |
| **55.** | UPA | | FS, UF | 33, 35, 43, 45, 57 | FSR, UFR | 1.0, 3.6 |
| **56.** | UPA | | UF | 4, 16, 20, 21, 30 | UFR | 1.0, 3.6 |
| **57.** | UPA | | UF | 4, 13, 19, 29, 30 | UFR | 1.0, 2.0, 3.6, 3.7 |
| **58.** | Statewide | | UF | 4, 13, 19, 29, 63 | UFR | 1.0 |
| **59.** | Statewide | | UF | 4, 16, 48, 69 | UFR | 1.0, 2.0, 3.0 |
| **60.** | Statewide | | UF | 4, 20, 21, 43, 57 | UFR | 1.0, 3.6 |
| **61.** | Statewide | | UF | 4, 13, 19, 29 | UFR | 1.0, 3.6 |
| **62.** | WFPA/PBPA | | UF/FS | 4, 16, 20, 29, 44 | UFR | 1.0, 2.0, 3.0 |
| **63.** | Statewide | | UF/FS | 16, 17, 36, 47, 57 | UFR | 1.0, 3.6 |
| **64.** | Statewide | | UF | 4, 11, 13, 19, 29 | UFR | 1.2 |

| Priority I: Conserve New Hampshire's Forested Landscape | | | | | | |
|---|---|---|---|---|---|---|
| Focus Area C: Sustainable Forest Based Economy (1 of 2) | | | | | | |
| | | | | | | |
| **Long-Term Strategy** | **A Priority Landscape Area(s)** | **B Secondary Issue Addressed** | **C Programs That Contribute** | **D Key Cooperators** | **E Resources Available/Needed to Implement** | **F Supports National Objective** |
| **Issue #1:** | **Maintaining a healthy forest industry** | | | | | |
| **65** | WFPA/PBPA | | FS | 3, 8, 26, 35, 53 | FSR | 1.0, 3.4 |
| **66** | Statewide | | FS | 3, 8, 26, 35, 53 | FSR | 1.0, 3.4 |
| **67** | Statewide | | FS | 3, 8, 26, 35, 48 | FSR | 1.0, 3.4 |
| **68** | WFPA | | FS | 3, 8, 26, 35, 52 | FSR | 1.0, 3.4 |
| **69** | WFPA | | FS | 3, 8, 26, 35 | FSR | 1.0, 3.4 |
| **70** | Statewide | | FS | 8, 16, 26, 35, 48 | FSR | 1.0, 3.4 |
| **71** | Statewide | | FS | 8, 16, 26, 35, 48 | FSR | |
| **72** | Statewide | I / C/ 5 | FS | 8, 16, 26, 35, 48 | FSR | |
| | | | | | | |
| **Issue #2:** | **Maintain and enhance markets for New Hampshire's forest industry** | | | | | |
| **73** | WFPA | | FS | 26, 57 | FSR | 1.1, 1.2, 3.4 |
| **74** | WFPA | | FS | 8, 16, 35, 51, 56 | FSR | 1.0, 3.4 |
| | | | | | | |
| **Issue #3:** | **Sustaining a forested land base** | | | | | |
| **10** | WFPA/PBPA | I / A/ 4 | FS | 8, 16, 27, 35, 60 | FSR | 1.0, 1.2, 3.5 |
| **75** | WFPA/PBPA | 1/A/4 | FS, FL, FH | 8, 15, 16 | FSR, FLR | 1.0, 1.2, 3.5 |
| **76** | WFPA/PBPA | | FS | 14, 15, 16, 27, 48 | FSR | 1.0, 1.2, 3.5 |
| **77** | WFPA/PBPA | | FS | 14, 15, 16, 27, 35 | FSR | 1.0, 1.2, 3.5 |
| **78** | WFPA/PBPA | | FS | 14, 15, 16, 35, 44 | FSR | 1.0, 1.2, 3.5 |
| **43** | Statewide | I / B / 1 | FS | 4, 16, 20, 44, 62 | FSR | 1.0, 3.0 |
| **79** | Statewide | | FS | 16, 48, 51, 70, 71 | FSR | 1.0, 3.4 |
| **80** | WFPA/PBPA | | FS | 7, 8, 26, 65, 69 | FSR | 1.2, 2.2, 3.4 |
| **81** | WFPA/PBPA | II/A/4 & III/A/1 | FS | 7, 8, 42, 50 | FSR | 1.2, 3.4 |
| **82** | Statewide | I / C / 6 | FS | 35, 39, 45, 46, 60 | FSR | 1.2, 3.4, 3.6 |

# NEW HAMPSHIRE FOREST RESOURCES STRATEGIES MATRIX

## Priority I: Conserve New Hampshire's Forested Landscape

### Focus Area C: Sustainable Forest Based Economy (2 of 2)

| Long-Term Strategy | A Priority Landscape Area(s) | B Secondary Issue Addressed | C Programs That Contribute | D Key Cooperators | E Resources Available/Needed to Implement | F Supports National Objective |
|---|---|---|---|---|---|---|
| **Issue #4:** | **Developing timely data about New Hampshire's forests** | | | | | |
| **83** | Statewide | | FS | 8, 10, 26, 35, 53 | FSR | 1.0, 3.4 |
| **84** | Statewide | | FS | 7, 28, 36, 42, 57 | FSR | 1.0, 3.5 |
| **85** | WFPA/PBPA/TPA | | FS, SL | 7, 16, 28, 51, 70 | FSR | 1.0, 3.4 |
| **86** | WFPA/PBPA/TPA | | FS | 51, 65, 68, 70 | FSR | 1.2, 2.2, 3.4 |
| **87** | Statewide | | FS | 8, 10, 26, 35, 65 | FSR | 1.0, 3.4 |
| **88** | Statewide | | FS | 10, 26, 48, 51 | FSR | 1.0, 3.4 |
| **89** | Statewide | | FS | 10, 51, 60, 68, 69 | FSR | 1.0, 2.0, 3.4 |
| **90** | Statewide | | FS | 10, 51, 60, 68, 69 | FSR | 1.0, 2.0, 3.4 |
| **91** | Statewide | | FS | 10, 26, 35, 65 | FSR | 1.0, 3.4 |
| **Issue #5:** | **Maintain and enhance landowner revenue opportunities** | | | | | |
| **92** | WFPA/PBPA/TPA | | FS | 16, 49, 51, 53, 70 | FSR | 1.0, 3.4 |
| **72** | WFPA | I/C/1 | FS | 8,26,28,35,36 | FSR | 1.0, 3.4 |
| **93** | WFPA/PBPA | | FS/FH | 8,26,50,54,59,69 | FSR/FHR | 1.0, 3.4, 3.7 |
| **Issue #6:** | **Supporting New Hampshire's forest-based businesses through outreach and education** | | | | | |
| **54** | Statewide | I / B / 5 | FS | 11, 13, 19, 29, 35 | FSR | 1.2, 2.0, 3.0 |
| **82** | Statewide | I / C / 3 | FS | 11, 16, 35, 57, 60 | FSR | 2.0, 3.6 |
| **74** | WFPA | I/C/2 | FS | 8,16,35,51,56 | FSR | 1.0, 3.4 |
| **94** | Statewide | | FS | 8,35,51,56 | FSR | 1.0, 3.4 |

| NEW HAMPSHIRE FOREST RESOURCES STRATEGIES MATRIX | | | | | | |
|---|---|---|---|---|---|---|
| **Priority II: Protect New Hampshire's Forests from Harm** | | | | | | |
| **Focus Area A: Protect Forests from Threats (1 of 1)** | | | | | | |
| | | | | | | |
| **Long-Term Strategy** | **A Priority Landscape Area(s)** | **B Secondary Issue Addressed** | **C Programs That Contribute** | **D Key Cooperators** | **E Resources Available/Needed to Implement** | **F Supports National Objective** |
| **Issue #1: Loss of open space** | | | | | | |
| **10** | WFPA/PBPA | I / A / 4 | FS | 26, 35, 45, 48, 60 | FSR | 2.0, 3.1, 3.5 |
| **75** | WFPA/PBPA | I / C /3 | FS | 8,15,16 | FSR, FLR | 1.0, 1.2, 3.5 |
| **2** | WFPA/PBPA | I / A / 2 | FS | 15, 26, 27, 69 | FLR, SFR | 1.1, 3.1, 3.5 |
| **3** | WFPA/PBPA | I / A / 2 | FS | 14,15, 18, 27, 41 | FSR | 2.0, 3.1, 3.5 |
| | | | | | | |
| **Issue #2: Threats to forests from invasive plants, insects, and diseases** | | | | | | |
| **95** | TPA/WFPA | II / B / 1 | FH | 1, 13, 19, 29, 49, 69 | FHR | 2.2 |
| **96** | TPA/WFPA | | FH | 1, 9, 49, 69 | FHR | 2.2 |
| **97** | TPA/WFPA | II / C / 1 | FH | 1, 9, 49, 69 | FHR | 2.2 |
| **98** | TPA/WFPA | II / C / 1 | FH | 1, 9, 49, 69 | FHR | 2.2 |
| **99** | TPA/WFPA | II / C / 1 | FH | 1, 9, 49, 69 | FHR | 2.2 |
| | | | | | | |
| **Issue #3: Fire as a danger to forests, ecosystems, and people** | | | | | | |
| **100** | TPA/WFPA | | F, UF | 4, 25, 38, 46, 62 | FR, UFR | 2.1, 3.3, 3.6 |
| **101** | TPA/WFPA | | F | 25, 26, 35, 48, 51 | FR | 2.1, 2.2, 3.6 |
| **28** | TPA/WFPA | I / A / 7 | F | 51, 57, 65, 69, 70 | FR | 1.2, 2.0 |
| | | | | | | |
| **Issue #4: Soil, water, and mineral threats** | | | | | | |
| **81** | WFPA/PBPA | I / C/ 3 | F | 5, 42, 50 | FR | 1.2, 3.4 |
| | | | | | | |
| **Issue #5: Supporting New Hampshire's forest protection efforts through outreach and education** | | | | | | |
| **102** | Statewide | | FH, NH | 25, 26, 39, 46 | FHR | 2.0, 3.6 |

| NEW HAMPSHIRE FOREST RESOURCES STRATEGIES MATRIX | | | | | | |
|---|---|---|---|---|---|---|
| **Priority II: Protect New Hampshire's Forests from Harm** | | | | | | |
| **Focus Area B: Maintain Ecosystem Health (1 of 1)** | | | | | | |
| | | | | | | |
| **Long-Term Strategy** | **A Priority Landscape Area(s)** | **B Secondary Issue Addressed** | **C Programs That Contribute** | **D Key Cooperators** | **E Resources Available/Needed to Implement** | **F Supports National Objective** |
| **Issue #1:** | **Knowing about our forests and threats** | | | | | |
| **95** | TPA/WFPA | II / A / 2 | FH | 1, 9, 49, 69 | FHR | 2.2 |
| **103** | TPA/WFPA | | FH | 5, 7, 9, 21, 49 | FHR | 1.2, 2.0 |
| **104** | TPA | II / C / 3 | FH | 1, 7, 9, 65, 68 | FHR | 2.2 |
| **105** | TPA/WFPA/PBPA | | FH, NH | 1, 7, 9, 65, 68 | FHR | 1.1, 1.2, 2.2, 3.5 |
| **26** | WFPA/PBPA | I / A / 7 | FH, NH | 1, 9, 10, 51, 68 | FHR | 1.1, 1.2, 2.0, 3.5 |
| | | | | | | |
| **Issue #2:** | **Being prepared for climate change** | | | | | |
| **106** | TPA/WFPA/PBPA | | FH, FS | 7, 9, 28, 65, 68 | FHR, FSR | 1.2, 2.2, 3.7 |
| **107** | TPA/WFPA/PBPA | | | | | |
| | | | | | | |
| **Issue #3:** | **Enhancing relationships with private landowners to effect protection and conservation of native plants** | | | | | |
| **108** | TPA/WFPA | II / C / 5 | FH, FS | 11, 22, 33, 45, 49 | FHR, FSR | 1.2, 2.0, 3.6 |
| **109** | TPA/WFPA | | FH | 5, 20, 28, 42, 45 | FHR | 1.2, 2.0, 3.6 |
| **110** | TPA/WFPA | | FH, NH | 5, 24, 35, 48, 51 | FHR | |
| | | | | | | |
| **Issue #4:** | **Supporting maintaining New Hampshire's ecosystem health through outreach and education** | | | | | |
| **111** | Statewide | | FH, FS, UF | 9, 20, 21, 22, 28 | FHR, FSR, UFR | 2.2, 3.6 |

| NEW HAMPSHIRE FOREST RESOURCES STRATEGIES MATRIX | | | | | | |
|---|---|---|---|---|---|---|
| **Priority II: Protect New Hampshire's Forests from Harm** | | | | | | |
| **Focus Area C: Response to Forest Damage (1 of 1)** | | | | | | |
| | | | | | | |
| **Long-Term Strategy** | **A Priority Landscape Area(s)** | **B Secondary Issue Addressed** | **C Programs That Contribute** | **D Key Cooperators** | **E Resources Available/Needed to Implement** | **F Supports National Objective** |
| **Issue #1: Threats to forests from invasive plants, insects, and diseases** | | | | | | |
| **112** | TPA/WFPA/PBPA | | FH, NH | 1, 9, 24, 29, 49 | FHR | 1.2, 2.2 |
| **113** | TPA/WFPA/PBPA | | FH | 1, 7, 9, 49, 68 | FHR | 1.2, 2.2, 3.6 |
| **98** | TPA/WFPA | II / A / 2 | FH | 1, 7, 9, 49, 69 | FHR | 1.2, 2.2 |
| **99** | TPA/WFPA | II / A / 2 | FH | 1, 7, 9, 49, 69 | FHR | 1.2, 2.2 |
| **97** | TPA/WFPA | II / A / 2 | FH | 1, 9, 49, 65, 69 | FHR | 2.0 |
| **114** | Statewide | | FH | 1, 9, 49, 65, 68 | FHR | 2.0 |
| **115** | WFPA | | FH, FS, NH | 5, 9, 28, 35, 45 | FHR, FSR | 1.2, 2.0 |
| **116** | Statewide | | FH, UF | 5, 13, 16, 19, 29 | FHR, UFR | 1.2, 2.2, 3.5, 3.6 |
| | | | | | | |
| **Issue #2: Responding to catastrophic events** | | | | | | |
| **117** | Statewide | | F, FS, UF | 13, 19, 25, 28, 58 | FR, FSR, UFR | 2.0 |
| **118** | Statewide | | F | 16, 25, 58 | FR | 2.0, 3.3 |
| **119** | Statewide | | F | 16, 25, 58 | FR | 2.0, 3.3, 3.6 |
| | | | | | | |
| **Issue #3: Tracking, documenting, and inventory and assessment** | | | | | | |
| **120** | Statewide | | F | 16, 19, 25, 41, 58 | FR | 2.0 |
| **121** | TPA/WFPA | | F | 10, 16, 25, 58 | FR | 2.2 |
| **122** | TPA/WFPA/PBPA | | F | 16, 25, 58 | FR | 2.2 |
| **123** | Statewide | | F | 7, 10, 16, 25, 58 | FR | 2.2 |
| **104** | TPA | II / B / 1 | FH | 1, 9, 49, 65, 68 | FHR | 2.2 |
| | | | | | | |
| **Issue #4: Responding to climate change** | | | | | | |
| **124** | Statewide | | FH | 1, 9, 48, 49, 68 | FHR | 1.2, 2.0, 3.7 |
| | | | | | | |
| **Issue #5: Supporting New Hampshire's response to forest damage through outreach and education** | | | | | | |
| **125** | Statewide | | F, FS, UF | 7, 13, 19, 25, 34 | FR, FSR, UFR | 2.2, 3.3 |
| **108** | WFPA/TPA | II / B / 3 | FH, FS | 5, 9, 20, 35, 42 | FHR, FSR | 1.2, 2.0, 3.6 |

| NEW HAMPSHIRE FOREST RESOURCES STRATEGIES MATRIX | | | | | | |
|---|---|---|---|---|---|---|
| **Priority III: Enhance Benefits from New Hampshire's Tress and Forests** | | | | | | |
| **Focus Area A: Sustaining Economic Benefits from New Hampshire's Forests (1 of 1)** | | | | | | |
| | | | | | | |
| **Long-Term Strategy** | **A Priority Landscape Area(s)** | **B Secondary Issue Addressed** | **C Programs That Contribute** | **D Key Cooperators** | **E Resources Available/Needed to Implement** | **F Supports National Objective** |
| **Issue #1: Sustain the economic benefits that now come from New Hampshire's forests** | | | | | | |
| **126** | WFPA | | FS | 8, 24, 35, 48, 53 | FSR | 3.2, 3.4 |
| **127** | WFPA | | FS | 8, 11, 23, 35, 53 | FSR | 3.4 |
| **128** | Statewide | | FS | 5, 16, 23, 34, 35 | FSR | 1.2, 3.4 |
| **129** | Statewide | | FS | 5, 16, 35, 39, 49 | FSR | 3.4 |
| **81** | WFPA/PBPA | I / C / 3, II/A/4 | FS | 5, 8, 42, 50 | FSR | 1.2, 3.4 |
| | | | | | | |
| **Issue #2: Encouraging new economic opportunities to support forestry in New Hampshire** | | | | | | |
| **130** | WFPA/PBPA | | FS | 5, 35, 42, 49, 53 | FSR | 3.4 |
| **131** | Statewide | | FS | 5, 35, 42, 49, 53 | FSR | 3.4, 3.7 |
| | | | | | | |
| **Issue #3: Keeping forestlands available for recreation and tourism** | | | | | | |
| **132** | WFPA/PBPA/UPA | III / B / 1 | FS | 14, 15, 16, 27, 48, 72 | FSR, EdPR | 1.0, 3.2, 3.4 |
| **133** | WFPA/PBPA/UPA | | FS | 2, 32, 35, 37, 57 | FSR | 3.4, 3.6 |
| **134** | WFPA/PBPA/UPA | | FS | 32, 35, 37, 42, 57 | FSR | 1.2, 3.4, 3.6 |
| | | | | | | |
| **Issue #4: Protect and enhancing recreation and tourism through education and outreach** | | | | | | |
| **135** | Statewide | | FS | 7, 11, 32, 42, 65 | FSR | 1.2, 3.4 |
| **136** | Statewide | | FS | 35, 38, 40, 56, 60 | FSR | 3.6 |
| **137** | Statewide | | FS | 12, 32, 35, 37, 42 | FSR | 3.6 |
| **138** | Statewide | | FS | 1, 33, 38, 40, 56 | FSR | 3.4, 3.6 |
| **139** | Statewide | | FS | 8, 11, 20, 35, 42 | FSR | 3.4, 3.6 |

| NEW HAMPSHIRE FOREST RESOURCES STRATEGIES MATRIX | | | | | | |
|---|---|---|---|---|---|---|
| **Priority III: Enhance Benefits from New Hampshire's Tress and Forests** | | | | | | |
| **Focus Area B: Sustaining Environmental Services from New Hampshire's Forests (1 of 1)** | | | | | | |
| | | | | | | |
| **Long-Term Strategy** | **A Priority Landscape Area(s)** | **B Secondary Issue Addressed** | **C Programs That Contribute** | **D Key Cooperators** | **E Resources Available/Needed to Implement** | **F Supports National Objective** |
| **Issue #1: Sustaining environmental benefits by sustaining well-managed forestlands** | | | | | | |
| **140** | WFPA | | FS, SL | 5, 11, 18, 22, 28 | FSR | 1.2, 3.0 |
| **141** | WFPA/PBPA | | FS | 14, 15, 16, 27, 35 | FSR | 1.1, 3.1, 3.5 |
| **142** | WFPA/PBPA | | FS, SL | 5, 37, 42, 57, 71, 72 | FSR, EdPR | 3.5 |
| **132** | WFPA/PBPA | III / A / 3 | FS | 15, 16, 24, 27, 48 | FSR | 1.0, 3.0 |
| | | | | | | |
| **Issue #2: Sustaining environmental benefits in the face of climate change** | | | | | | |
| **143** | Statewide | | FH, FS | 11, 31, 33, 65, 68 | FHR, FSR | 1.2, 2.2, 3.7 |
| **144** | WFPA/PBPA | | FS, SL | 5, 11, 28, 42, 49 | FSR | 1.2, 2.2, 3.7 |
| | | | | | | |
| **Issue #3: Sustaining environmental benefits through education and outreach** | | | | | | |
| **145** | Statewide | | FS | 4, 28, 35, 43, 45 | FSR | 3.6 |

# *State Forestry Programs to support the 2010 New Hampshire Forest Resource Plan*

The Division of Forests and Lands, in the New Hampshire Department of Resources and Economic Development, has the primary responsibility to develop and implement State Forestry Programs approved by and funded by the USDA Forest Service. State Forestry Programs are led by the Director of the Division of Forests and Lands, also known as the "New Hampshire State Forester".

The USDA Forest Service related State Forestry Programs include:

- Fire
- Forest Health
- Forest Legacy
- Forest Stewardship
- Urban and Community Forestry

Program initiatives within each of the State Forestry Program Areas were designed to meet the issues identified in the plan in the development process. These program plans have been integrated into the set of strategies that the New Hampshire natural resource community is adopting in the State Forest Resource Plan.

New Hampshire is unique in the nation in the delivery of Forest Service State and Private Forestry programs. Since 1925, the state forestry agency has had a joint program with the University of New Hampshire to bring forestry programs to the people of the state. This has been a highly successful program because it brings the human and financial resources from the state forestry agency network and the Forest Service together with the nationwide Cooperative Extension system. Pooling of staff, funding sources, partners, techniques and supporters has strengthened all of the participants and enhanced the sustained contribution to positive conservation outcomes. The program is well known and well respected throughout all communities, rural and urban, in the state. UNH Cooperative Extension's Forestry and Wildlife program has at least one Extension Educator in each county. Known as the "County Forester", each of the county forestry professionals is backed by Extension Specialists at the University and New Hampshire Division of Forests and Lands personnel at the state level. The joint program ensures that programs reach the intended audience through education, information technical assistance in the most practical, efficient and cost effective way.

The New Hampshire Division of Forests and Lands and the UNH Cooperative Extension work through a large network of private and public sector partners, sharing human and financial resources. It is the collaborative nature of the New Hampshire forestry community, bringing together partners, volunteers and diverse ideas that gives the forestry in New Hampshire its

real strength and ability to make a positive difference in New Hampshire's natural resource future.

New Hampshire's program development, implementation and evaluation will be enhanced by federal programs that recognize the regional differences across the United States. The qualities that have made New Hampshire's programs productive, efficient, and successful have been in large part because of the collaborative culture, volunteerism, and a close association of its people to the land. Cultures and landscapes vary across the nation, providing strength in diversity. Recognizing and supporting this diversity is integral to the success of Federal programs.

# *Process for obtaining program initiatives that address the New Hampshire Forest Resource Strategies*

Program initiatives within the New Hampshire Division of Forests and Lands and UNH Cooperative Extension were designed to meet the issues identified in the New Hampshire Forest Resources Plan during the development process. These program specific plans have been integrated into the set of strategies that the New Hampshire natural resource community is adopting for the next decade. The Forest Resource Plan shows the actions anticipated to be undertaken by the entire natural resource community. Since the New Hampshire Division of Forests and Lands and the University of New Hampshire Forestry and Wildlife Program have the major responsibilities in the implementation of the New Hampshire Forest Resource Plan, a narrative of the State Forestry Programs has been included as a separate section. The New Hampshire Division of Forests and Lands has specific accountability to the USDA Forest Service for the approval of this plan in anticipation of funding for the State Forestry Programs. Having a separate section for these programs enhances the ability for program cooperators, funding agencies, the forestry community and the public to view, monitor and evaluate the state-led programs.

# *New Hampshire's Fire Management Program*

The State Fire Assistance Program is authorized by the Cooperative Forestry Assistance Act of 1978 (P.L. 95-313) as amended by the Forest Stewardship Act of 1990 (P.L. 101-624), also known as the 1990 Farm Bill. New Hampshire Division of Forests and Lands, in the State Forester's Office within the Department of Resources and Economic Development has the responsibility to lead the state's wildland fire management program.

The purpose of the State Fire Assistance (SFA) Program is to provide financial, technical and related assistance to State Foresters or equivalent State officials and through them to other agencies and individuals. Funding provided through State Fire Assistance is focused to address critical preparedness needs and hazard mitigation. Critical preparedness needs include firefighter safety, fire planning, firefighter training, increased initial attack capability, and mobilization readiness for the efficient suppression and prevention of wildfires on non-Federal forestlands and other non-Federal lands. Hazard mitigation activities should focus on hazard fuels reduction, Community Wildfire Protection Plans (CWPPs), prevention and mitigation education, Firewise programming and community hazard mitigation. State Fire Assistance (SFA) funding promotes sustainable economic development, both traditional and non-traditional partnerships and service excellence.

The New Hampshire Fire Management Program is more than suppression. The fire management strategy includes preparedness, assistance to communities, suppression/support, equipment, training of fire personnel and volunteers, community mitigation, prescribed burns, hazardous fuels reduction law enforcement and education.

The frequency and size of wildfires must be kept to a minimum to reduce costs and risks to people and structures and so that forest resources and ecosystem services are not adversely affected by wildfires.

We are in a period of more intense natural disasters than we have experienced in decades. In recent years, floods and wind events, including a devastating tornado, have presented rapid response challenges for the New Hampshire Division of Forests and Lands and other first responders.

## *Critical preparedness*

Critical preparedness includes firefighter safety, fire planning, firefighter training, increased initial attack capability, and mobilization readiness for the efficient suppression and prevention of wildfires on private and public lands throughout New Hampshire. Included in critical preparedness is the support and partnership with the structural fire community utilizing the Federal Excess Personal Property (FEPP) and the DOD Fire Fighter Property (FFP) programs.

The New Hampshire Division of Forests and Lands will initiate an improved reporting system regarding fire and other disasters, including using GIS overlays to record disasters and response, to use for planning for future emergencies.

## *Available to respond to all catastrophic events*

The New Hampshire Division of Forests and Lands, working closely with the New Hampshire Division of Homeland Security and Emergency Management, provides active rapid response in emergencies in which its resources and expertise is valuable, such as fires, wind events and floods. The Division staff is present during disasters in the Homeland Security and Emergency Management center, along with other agencies. The Division coordinates qualified certified responders as needed to meet emergency needs anywhere in the state.

## *In-state and out-of-state partnerships*

New Hampshire Division of Forests and Lands will continue to provide technical assistance, specialized equipment, fire investigation and law enforcement in response to wildland fires in New Hampshire through the Division.

New Hampshire Division of Forests and Lands provides wildfire training to the structural fire community in New Hampshire. This helps structural firefighters meet certification for the wildland component of their standards.

The Division continues to work with several partners in the development of CWPP's. The approach is working with the State's Division of Homeland Security and Emergency Management, White Mountain National Forest (WMNF), North Country Resource Conservation Development District and North Country Council in adding wildfire-specific addendums to a community's all-risk hazard mitigation plan. These plans look at such issues as natural cover type (and its flammability), aspect, slope, wildland-urban interface areas, roads/access, and fire history.

New Hampshire Division of Forests and Lands will continue to support the Northeastern Forest Fire Protection Compact and continue to share New Hampshire qualified and certified trained firefighters with others within the state, nationally and internationally as needed to respond to emergencies. Wardens, Deputy Wardens, and casual hires make up the trained fire fighting force that the Division assembles to meet disaster needs.

The State Fire Supervisor for New Hampshire will continue to participate in regional and national fire management meetings such as the Northeast Forest Fire Supervisors and the Chiefs, Managers, Supervisors (CMS) meeting held biennially. SFA funds will be used to provide travel costs to attend these meetings.

The New Hampshire Division of Forests and Lands is committed to working in concert with federal agencies, including the White Mountain National Forest (WMNF), for suppression activities on Federal lands. New Hampshire has a long standing partnership with the White Mountain National Forest.

The New Hampshire Division of Forests and Lands will work closely with the White Mountain National Forest (WMNF) to identify areas of the forest that abut non-federal ownerships where fuel mitigation activities would be prudent. Examples are condominiums near some of the ski areas that are directly abutting areas of the White Mountain National Forest (WMNF) which are full of dense spruce-fir. Since there is a mixture of public and private ownership in these areas it will require close coordination with the USDA Forest Service (USFS).

## *Assistance to New Hampshire Communities*

The New Hampshire Division of Forests and Lands provides technical assistance, specialized equipment, fire investigation and law enforcement in response to wildland fires in New Hampshire.

Throughout the state, Wardens and Deputy Wardens extend the resources of federal and state programs to communities. These are certified trained volunteers who are appointed by the State Forester.

The New Hampshire Division of Forests and Lands intends to continue using the network of fire lookouts for fire detection and public education. Fire records have shown that the towers are a successful tool for quickly locating fires in New Hampshire.

The New Hampshire Division of Forests and Lands provides education and training for communities. It is a conduit for cost sharing through the Volunteer Fire Assistance Program (VFA), bringing federal resources to communities. The Federal Excess Personal Property (FEPP) and the DOD Fire Fighter Property (FFP) programs are coordinated through the Division to assist communities. It has been able to bring $2 million worth of assistance to 100 New Hampshire communities annually.

### *Rules, regulations, compliance and law enforcement*

The New Hampshire Division of Forests and Lands provides fire investigation as well as law enforcement. The Division leads a coordinated effort for compliance with fire and forestry laws, including mandatory fire permits, slash laws, and Best Management Practices (BMPs).

The local issuance of fire permits continues to be one of the best tools for prevention of wildfires. The New Hampshire Division of Forests and Lands has produced and disseminates informational brochures to landowners who conduct open burning, and will continue to do so. SFA funds will be used for the printing costs associated with permits and brochures. In addition, the Division is embarking on a pilot project for an on-line permitting system.

### *Education and Outreach*

New Hampshire has a very active wildfire prevention program. These wildland fire prevention and related hazard mitigation programs are disseminated through local communities, schools, media outlets, publications, Smokey Bear programs, and civic organizations to increase awareness of wildfire risk and provide guidance on hazard mitigation though appropriate local oversight and planning.

Working with UNH Cooperative Extension, communities and others, the New Hampshire Division of Forests and Lands will engage homeowners and communities in adopting “Firewise” practices, reducing the risk of fires occurring, reducing the impact of fires and addressing accessibility. “Firewise” programming, and community hazard mitigation is expected to be a worthwhile investment to protect structures as well as wildlands.

The New Hampshire Division of Forests and Land’s plan is to air paid commercial messages to get prime time television viewing. In the past, the Division has relied more on no-cost public service announcements, often shown at a time when there were few viewers. The Division plans to target the 6:00 PM news for the most effective time to reach homeowners to protect homes and wildlands. Adequate funding will be necessary to implement this high impact education, in addition to the on-going lower cost initiatives.

The New Hampshire Division of Forests and Lands will continue to use the traditional Smokey campaign, but will increase its presence at large audience events such as NASCAR, football and baseball games.

The New Hampshire Division of Forests and Lands, along with UNH Cooperative Extension and others will include safety in educational messages in response to catastrophic events and other areas in which the public's reactions to problems may trigger fast and careless action. They will promote getting professional assistance, such as homeowners hiring a responsible arborist following a windstorm or ice storm. They will provide ongoing messages to communities and property owners about hazard trees and particularly when there is an imminent danger, such as a major occurrence of tree mortality.

## *Training*

Funds received through the VFA-National Fire Plan will be used to augment New Hampshire's wildland fire training capabilities statewide for the rural communities, and to support the acquisition of FEPP equipment. Each year the New Hampshire Division of Forests and Lands sets up a weekend training to simulate a large fire event in New Hampshire. This training generally attracts in excess of 100 firefighters from primarily rural communities across the state. Training topics include portable pumps and water usage on wildland fires; safe and effective chainsaw usage; use of global positioning systems (GPS), map and compass; incident command system training and use of hand tools and line construction. This training benefits the towns by providing hands-on experience in the tools and equipment they would normally use while suppressing wildland fires in their respective communities. In addition, the Division works collaboratively on this training with other support agencies such as New Hampshire Division of Homeland Security and Emergency Management, The American Red Cross, and the New Hampshire National Guard. The federal funds will be used to purchase materials and supplies to support the weekend training. In order to meet the training needs of rural, often volunteer fire departments, forest rangers work nights and weekends to instruct these firefighters.

The state Division of Forests and Lands will provide training to local firefighters and cooperators through several NWCG and state-developed courses in or near our identified communities at risk. VFA funds will be used to produce or purchase training equipment, materials and supplies. Firefighter safety is included in training programs.

The New Hampshire Division of Forests and Lands works very closely with the New Hampshire State Fire Academy to plan and present wildland fire trainings. A continued focus will be to take these trainings off campus and out to the rural communities. Since many of these rural communities are protected through volunteer fire departments, much of the training involved is on nights and weekends to accommodate their timeframes. Federal funds will be used to pay for the overtime incurred by the Forest Rangers to serve as instructors for the fire departments. Monies will also be spent on such things as student workbooks. In addition, the Division will continue to maintain the FEPP wildland training engine that the State Fire Academy uses to transport wildland fire training materials out to the rural

communities. VFA funds will also be used to purchase personal protective equipment (PPE) "door prizes" that can be distributed at no cost to the participants of our trainings. This not only gets more PPE out into the wildland fire community, but also acts as an incentive to attend the trainings. The state will match these federal funds by paying for the majority of the qualified instructors to teach these courses.

## *Prescribed burns, hazardous fuels reduction*

Prescribed burning will continue to be a component in fire hazard mitigation, ecosystem maintenance/restoration, control of invasive species, wildlife habitat improvement, silvicultural practices including site preparation and oak regeneration, management activities for rare, threatened, and endangered species; watershed management and forest health practices.

Prescribed fire has been found useful for regenerating and improving growth in oak and oak-pine stands that are experiencing competition from shade tolerant and/or well established root stock such as red maple, beech, and birch. Fire can be an effective and in the long run, an efficient means of maintaining blueberry barrens, warm season grass stands, and old field habitats that are beneficial to wildlife.

The forestry community in New Hampshire recognizes prescribed fire as a valuable tool for maintaining or restoring fire adapted forest landscapes and natural communities. The implementation of prescribed fire in New Hampshire is conducted by a few agencies/organizations including the New Hampshire Division of Forests and Lands, New Hampshire Fish & Game Department (NHF&G), The Nature Conservancy (TNC), the New Boston Air Force Station, and the White Mountain National Forests (WMNF). A few private landowners also conduct prescribed burns on their land with help of municipal fire departments. In order to more safely, efficiently, and effectively use this management tool the New Hampshire Prescribed Fire Council was formed. This multi-agency council was established to promote the safe use of prescribed fire on the New Hampshire landscape by promoting the safe and responsible use of prescribed fire, promoting public understanding of the benefits of prescribed fire, promoting the development and utilization of prescribed fire practices to achieve desired environmental and ecological resource management goals, anticipating prescribed fire issues and concerns and suggesting courses of action, providing a framework for communications related to prescribed fire objectives, techniques and issues, and disseminating technical information on prescribed fire and its application. Members of the Council include state & federal agencies, local fire departments, and private conservation organizations.

The New Hampshire Division of Forests and Lands conducts prescribed burns on several state forests, some state parks, and works with the New Hampshire Fish and Game Department (NHF&G) and the National Guard in conducting prescribed burns on their properties. These burns are used for fuel reduction (as in the case of the pitch pine barrens) as well as wildlife and silvicultural purposes (as in the case with blueberry burns). Prescribed burns are conducted specifically for habitat development for the federally endangered Karner Blue Butterfly.

# *New Hampshire's Forest Health Program*

The Forest Health Program is a component of the Forest Protection Bureau within the New Hampshire Division of Forests and Lands. Legal mandates and governance comes from chapter 227-K (Forest health) of Title XIX-A (Forestry) in New Hampshire Statute. The purpose of the program is to detect and reduce the incidences and severity of forest damage causing agents. To accomplish this purpose program activities are broken into several areas. Those program areas are; quarantines, technical assistance, aerial survey, ground survey, trapping, suppression, and outreach.

The Forest Health Section within the Division of Forests and Lands - Forest Protection Bureau monitors the condition of the State's 4.8 million acres of forest. The program was established as the "white pine blister rust control program" in 1917. In 1965 the WPBR control program was expanded into a more general "Forest Insect and Disease Program". In 1997 the forest insect and disease program was again broadened to the current title "Forest Health Section" to reflect the increased scope of forest health issues beyond just insects and diseases.

New Hampshire Native Plant Protection Act (RSA 217-A) directs the Natural Heritage Bureau within the New Hampshire Division of Forests and Lands, to protect and conserve native plants through investigation and research, production of a natural heritage inventory, development of conservation programs, and provision of resource information. State agencies are required to assist and cooperate with the Commissioner of the Department of Resources and Economic Development (NHDRED) to carry out the purposes of the Native Plant Protection Act. To the extent possible, actions funded or carried out by state agencies shall not jeopardize the continued existence of protected plant species.

The health of New Hampshire's forest is defined by its ability to maintain native biological diversity and remain vigorous while sustaining its role in the environment and socioeconomic world. A myriad of factors such as air pollution, urban sprawl, introduced insects and diseases, catastrophic weather events, demand for wood products, and wildlife populations continuously affect the health of forests in New Hampshire. It's a testament to good soils, adequate rainfall, and dedicated landowners that New Hampshire is the second most forested state (by percent of total area) in the union. However, our forests look very different from the forests found here centuries ago, and the current forests are not in perfect health. New Hampshire's forests require constant monitoring and management to stay ahead of the current and potential threats.

It is the forestry community's collective mission to protect forests from threats. Threats currently facing New Hampshire's forests include insects, diseases, invasive plants and animals, wildfire, conversion to non-forest, destructive forest practices and climate change.

In addition to insect and disease threats, New Hampshire's forest ecosystems have been harmed by invasive plant species such as Japanese barbary, Oriental bittersweet, Common buckthorn, Glossy buckthorn, Burning bush, Tartarian honeysuckle, Japanese Honeysuckle, Japanese stilt grass, Spotted knapweed, Japanese knotweed, Purple loosestrife, Norway maple, Mile-a-minute weed, Eurasian milfoil, Garlic mustard, Autumn olive, Russian olive, Common reed, Multiflora rose and Black swallow-wort. Regulation, eradication programs and public awareness have been a part of the efforts to reduce the adverse impacts of these plants in New Hampshire.

## *Program Priority Areas*

Priorities are set in response to annual risk assessments. Those pests with the highest likelihood of doing major damage are given high priority. Actions taken then depend on pest biology, host distribution, likely vectors, efficacy of control options, public interest and funding.

The current high priority pests are known to start infestations in urban forests and this has shifted our activities to urban landscapes for surveys, outreach and suppression.

## *Leadership*

It is a part of New Hampshire's collaborative nature to develop and enhance strong partnerships between agencies to combat forest pests. When the New Hampshire Department of Agriculture (NHDOA) is the lead agency for Cooperative Forest Health, it partners with other agencies, including the Division of Forests and Lands. When the New Hampshire Division of Forests and Lands is leading the effort, the New Hampshire Department of Agriculture is involved as a key stakeholder, as most States share pest management responsibilities between agriculture and forestry agencies.

The New Hampshire Division of Forests and Lands - Forest Health Section represents forest entomology and pathology expertise within the state.

The New Hampshire Division of Forests and Lands - Natural Heritage Bureau represents natural heritage expertise within the state.

It is the function of the New Hampshire Division of Forest and Lands to:

- Provide leadership in forest pest problems, keeping current through systematic detection programs and close liaison with other sources of information.

- Provide and maintain forest and tree pest control programs in coordination with other state and federal agencies.

- Provide detection, identification, evaluation and assessment of forest pest problems on a statewide basis.

- Maintain close contact with all segments of the forestry profession in forest insect and disease matters.

- Provide service for identification of forest pests cooperating in this regard with the UNH Cooperative Extension, New Hampshire Department of Agriculture (NHDOA), Animal and Plant Health Inspection Service (APHIS), and the U.S Forest Service (USFS).

- Assist and coordinate in the control of forest insects and diseases, cooperating with the U.S Forest Service (USFS), New Hampshire Department of Agriculture (NHDOA), and the New Hampshire landowners and landowner associations.

- Provide leadership and education to private and professional clientele.

The Forest Health Section addresses insects and diseases and the impact they have on forest resources. Several devastating invasive insects and diseases are threatening New Hampshire's forests as this plan is being written. Some have been found in the state already and others are just beyond New Hampshire's borders and are spreading.

The Natural Heritage Bureau addresses invasive plant species. The Bureau's effort on invasive plant control includes protecting the federally endangered Jesup's milk vetch. Most of Natural Heritage Bureau's efforts are directed at determining status, trends, and condition of native plants and natural communities. Data management is central to fulfillment of the Native Plant Protection Act through capturing knowledge obtained from investigation and research and conservation programs, and disseminating this information to the Natural Heritage inventory and information resource programs. In addition, data management informs the investigation and research and conservation programs. Environmental reviews are the element of the information resource program that most frequently interfaces with state agencies and the public. Interns and volunteers are used to assist with data entry/management.

## *Prevention*

A goal of the New Hampshire Division of Forests and Lands forestry programs is to minimize introductions of damaging exotic organisms. It includes education efforts where needed, such as the "do not move firewood" campaign to limit the spread of invasive insects. Quarantines are established and enforced as exterior quarantines to prevent infested material from entering the state or interior quarantines to prevent spread of infestations within the state.

## *Monitoring*

The New Hampshire Division of Forests and Lands detects, monitors, and evaluates forest pests and forest health conditions. New Hampshire has in place monitoring, data bases and

maps, prevention programs, response plans, suppression programs and mitigation options to minimize the impact of invasive plants, insects and diseases.

The New Hampshire Division of Forests and Lands will conduct activities to maintain and improve forest health conditions and sustainability. The mission is to discover infestations when they are small and early in the epizootic cycle. It will conduct monitoring projects for damaging pests in high risk communities.

Aerial surveys are performed over approximately four million acres of non-Federal lands in New Hampshire. Digital equipment is used to aid in delineating any major forest damage throughout the state on an annual basis. Ground surveys are performed across the state as needed to delineate outbreaks, monitor for new infestations, and determine what mitigating efforts are needed. Trapping programs for various pests include pheromone traps, lure traps, and light traps to determine the size and density of a pest population.

The New Hampshire Division of Forests and Lands maintains statewide data sets pertaining to annual aerial and ground survey data.

## *Response*

Suppression activities can either be through technical assistance or direct action. Direct actions include pesticides, burnings, and bio-controls. The mission is to reduce damage through effective pest management, including suppression and/or eradication.
The New Hampshire Division of Forests and Lands will provide current resource data pertaining to any major forest damage causing agent or forest health incident in New Hampshire.

The Forest Health Program includes flexibility to respond to emerging situations that threaten forest health, such as new insect/disease outbreaks or introductions.

The New Hampshire Division of Forests and Lands, working in concert with UNH Cooperative Extension, other agencies and conservation organizations, provides outreach to owners and managers on private and public lands. Natural resource professionals can help them control invasive plants, insects and diseases and to address the impacts of forest damage they cause.

Forest health problems come in the form of long term threats, such as invasive species or insect infestations, or as a result a single event catastrophe, such as fire, ice storm or wind damage. Response and recovery are can require long-term practices. Decisions to save or salvage trees and forest stands need to be made within a reasonable time frame based upon the extent of damage and the landowner's objectives. Many times recovery requires a revised stewardship plan and implementation of practices. The New Hampshire Division of Forests and Lands, working with UNH Cooperative Extension, the USDA Forest Service (USFS) and others will provide sound information, education and technical assistance as an important step to successful recovery programs.

The New Hampshire Division of Forests and Lands will consider for its own nursery and encourage private tree nurseries to develop plans to ensure that New Hampshire communities have a supply of trees for replanting to reduce the impact of loss of anticipated increased tree removals and loss of trees damaged from insects, diseases and other catastrophes.

The Natural Heritage Bureau determines which native plants require special protection, and, after consulting stakeholders, lists these plants in Rule. In addition, the Bureau's statute has a provision for convening the Natural Areas Council to exchange information and discuss protection priorities for natural areas.

## *In-state and out-of-state partnerships*

Major partners that cooperate on various aspects of the program within New Hampshire include the NH Department of Agriculture (NHDOA), UNH Cooperative Extension Service, The Nature Conservancy (TNC), USDA Forest Service State and Private Forestry (USFS), USFS White Mountain National Forest (WMNF), and The Society for the Protection of New Hampshire's Forest (SPNHF). Partners involved at the regional and national level both financially and programmatically include the USDA Animal and Plant Health Inspection Service (APHIS), USDA Forest Service (USFS), the Maine Forest Service, the Vermont Department of Forests, New Hampshire Division of Parks and Recreation (NHP&R) and all members of the Northeast Forest Pest Council.

The New Hampshire Division of Forests and Lands, working in concert with the New Hampshire Department of Agriculture (NHDOA), University of New Hampshire (UNH), UDSA Forest Service (USFS), USDA APHIS, other state and federal agencies and private conservation organizations, provides leadership and coordination to address emergencies and emerging issues within New Hampshire that impact urban and community forestry, such as climate change, storm damage, invasive species, forest pests, and mortality. Emergency situations will receive immediate response and emerging issues will have long-term responses developed.

The New Hampshire Division of Forests and Lands, in conjunction with key partners, have an active strategy in place to combat forest pests, including the development of contingency and quarantine plans. It will continue collaborative efforts such as the New Hampshire Division of Forests and Lands' cooperation with the UDSA Forest Service (USFS) efforts to address threats across jurisdictional boundaries.

The New Hampshire Division of Forests and Lands will collaborate regionally and nationally, as pest impacts extend beyond state boundaries. It will collect forest health data that is compatible with other states.

New Hampshire is part of multi-state and national networks which track and map potential threats from invasive insects and diseases, provide alerts, share information about control practices and provide financial and technical assistance when needed.

The State, in conjunction with key partners, has an active strategy in place to combat known forest threats, including the development of contingency and quarantine plans as necessary.

## *Climate Change*

The New Hampshire Division of Forests and Lands will stay abreast of new scientific information, tools, and technology leading to an increase in understanding of climate change impacts, adaptation, influences on flora and fauna distribution, mitigation options and risks and uncertainties. The New Hampshire Division of Forests and Lands will encourage the development, funding and implementation of research that is needed to provide the knowledge and practices that will enable natural resource professionals to manage forests as the climate changes and we enter a new climate era. It will provide information, education and technical assistance to help New Hampshire's natural resource community manage forests with an objective that they can best adapt to climate change with minimal adverse environmental and economic impacts.

The Natural Heritage Bureau, in conjunction with New Hampshire Fish & Game Department (NHF&G), is engaged in a process to assess risk and develop strategies to safeguard ecosystems and wildlife. The process involves multiple stakeholders, and is congruent with the recently completed state climate change policy.

## *Education and outreach*

Technical assistance entails working with landowners requesting service or advice to improve tree health or remove infestations.

Outreach activities are performed to increase the knowledge and awareness of forest pests within the general public and professional groups. Activities include presentations, mailings, brochures, pest alerts, displays, and posters.

The New Hampshire Division of Forests and Lands will ensure that public decision makers, natural resource professionals, and the public are aware of the imminent threats to our forests from invasive plants, insects or diseases that are upon us and ready, willing and able to be able to significantly contribute to support programs to limit adverse impacts.

The New Hampshire Division of Forests and Lands, working with other responders, leads efforts to provide education and information in a timely fashion to communities when emergencies occur, mobilize as needed when or if emergencies occur. It works with the Office of Emergency Management and other agencies as appropriate and identify and prioritize emerging issues.

The New Hampshire Division of Forests and Lands, working in concert with UNH Cooperative Extension, other agencies and conservation organizations, help communities implement practices to address the impacts of invasive plants, insects and diseases. This includes providing education and information for the public, working with natural resource professionals on eradication and control programs and assessing and reducing hazard tree situations.

Engaging the public is essential in any successful program to control invasive plants, insects and diseases that spread without regards to political boundaries or property lines. We have witnessed the success of educational outreach efforts resulting in early detection of the hemlock woolly adelgid in New Hampshire. We have learned from catastrophic events such as ice storms and wind events that we need to caution the public as they respond to the disaster around them. Education and outreach also helps inspire people to protect the environment in which they live.

The New Hampshire Division of Forests and Lands includes safety in educational messages in response to catastrophic events and other areas in which the public's reactions to problems may trigger fast and careless action. It promotes getting professional assistance, such as hiring a responsible arborist following a windstorm or ice storm. It provides ongoing messages to communities and property owners about hazard trees and particularly when there is an imminent danger, such as a major occurrence of tree mortality.

The New Hampshire Division of Forests and Lands plans to increase educational efforts to educate landowners about importance of protecting and conserving native plants and to share effective management practices. This may include increasing the number of workshops, publications, media activity and partnering with conservation groups.

The Natural Heritage Bureau will increase educational efforts to educate landowners about importance of protecting and conserving native plants and to share effective management practices. This may include increasing the number of workshops, publications, media activity and partnering with conservation groups. It will develop and enhance relationships with landowners that encourage native plant protection and conservation practices, compatible with individual land management goals. The New Hampshire Division of Forests and Lands expects to eliminate existing regulatory penalties that result from cooperating with its Natural Heritage Bureau.

# *New Hampshire's Forest Legacy Program*

As part of the 1990 Farm Bill, Congress created the Forest Legacy Program to help protect environmentally important private forestlands threatened with conversion to non-forest uses. The Secretary of Agriculture is responsible for the development and administration of the Forest Legacy Program. The US Forest Service in cooperation with States and other units of government is responsible for the implementation of the program. States have been granted the authority to establish criteria for their programs within the framework of the national program to help address specific needs and goals of their state, which are described in an *Assessment of Need*.

To help maintain the integrity and traditional uses of private forest lands, the New Hampshire Forest Legacy Program promotes the use of conservation easements, legally binding agreements transferring a negotiated set of property rights from one party to another.

The New Hampshire Forest Legacy Program will be implemented according the New Hampshire Forest Legacy Program (FLP) Assessment of Need (AON), which was approved by the Secretary of Agriculture on February 11, 1994 and an Amendment to the New Hampshire Forest Legacy Program (FLP) Assessment of Need (AON), which was approved by the Secretary of Agriculture on February 29, 2000. The AONs include the approved Eligibility Criteria for the Forest Legacy Areas (FLA), the Approved FLAs, specific goals and objectives to be accomplished by the New Hampshire FLP and the process by which the State Lead Agency will evaluate and prioritize projects to be considered for inclusion in the FLP. A copy of the State Lead Agency designation letter, the AON & AON Amendment approval letters, and a summary of the AON's can be found in Appendix A. Full copies of the AONs are on file at the New Hampshire Department of Resources and Economic Development, Division of Forests and Lands Headquarters in Concord, NH.

# *New Hampshire's Forest Stewardship Program*

The Forest Stewardship Program will work to attain the desired outcomes and to participate in the strategies as recommended in the 2010 New Hampshire Forest Resource Strategies. The following provides more information about the work that will be carried out by the New Hampshire Forest Stewardship Program. The Program is a function of the New Hampshire Division of Forests and Lands, in a joint effort with UNH Cooperative Extension, with the guidance of the New Hampshire Forest Stewardship Committee and the USDA Forest Service.

Eighty-four percent of New Hampshire is forested, with 80 percent of the state's forestland in private ownership. This means that two-thirds of the State of New Hampshire is privately held forestlands. Forest stewardship practices on private lands in the state have a tremendous impact on the state's economy, wildlife, ecosystems, water supply and way of life.

With increased demands and pressures, comprehensive planning and management for the future are critical to maintain the resource base and the benefits it provides. Through the Forest Stewardship Program, federal, state and private natural resource agencies and organizations are working together, encouraging landowners to develop written forest stewardship plans and fostering public awareness of the value of our forest resources.

New Hampshire has a long history of providing education, information and technical assistance to forest landowners and others involved in working with our forest resource. Since 1925, the New Hampshire State Forester's office and UNH Cooperative Extension have worked together in a joint forestry outreach program. This unique-in-the-nation program has been noted as a model for the rest of the nation.

A core principle of the New Hampshire Forest Stewardship Program is supporting private sector foresters greatly multiplies the cadre of on-the-ground foresters promoting forest stewardship through the state. Forester licensing in New Hampshire has enhanced the effectiveness of this approach. This joint program augmented through the participation of state and federal agencies and private not-for-profit conservation organizations provides outreach and education. This effort has been well coordinated though the years through effective collaboration, resulting in common goals and clear messages.

The New Hampshire Forest Stewardship Program began in 1990 with the creation of the New Hampshire Forest Stewardship Committee, which includes representatives from a diversity of natural resource agencies and organizations. This statewide committee provides guidance and encourages long term comprehensive planning and management on private forestlands.

The New Hampshire Forest Stewardship Program encourages landowners to voluntarily adopt a sound stewardship ethic that will sustain the resources on their land for the benefit of themselves and others, today and in the future. Several agencies and organizations within New Hampshire's forestry community provide technical and educational assistance to

landowners through workshops, publications and site visits. Close working relationships within the forestry community ensures common messages, sharing of resources, mutual support of goals and creditability with target audiences.

New Hampshire's approach is to inspire landowners to care for their land, provide them with information about long term stewardship of natural resources, and encourage them to develop and implement stewardship plans and management activities under the guidance of private licensed foresters. It has been a major strategy of the New Hampshire Forest Stewardship Program from its inception to reach landowners through private sector foresters. As a result New Hampshire has exceeded the USDA Forest Service (USFS) target of one forester available for each 25,000 acres of non-industrial privately held acres. New Hampshire's ratio is one forester available for each 18,000 acres New Hampshire's program multiplies the expertise on-the-ground for private by about 20 times over the use of public foresters alone. Licensing foresters has provided standards for public confidence and has created a system of continuing education that has brought New Hampshire's private forestry consultants to a high standard of excellence.

Stewardship planning includes identifying and evaluating the entire array of forest-related resources on individual properties. These include wildlife habitat, soil and water, recreational opportunities, wetlands, timber, unique natural communities, and historic values. Addressing all these resources in the planning process enhances the potential for forest health, beauty and productivity for future generations.

The Forest Stewardship Program provides leadership in the public marketing for *Good Forestry in the Granite State* publication. This document has gained great importance within New Hampshire, being the result of in-depth natural resource community collaboration. It will serve a primary guide to voluntary forest practices in the state. The Forest Stewardship Program's objective is to raise awareness about the revised document and ensure its widespread distribution in the natural resource community.

## *Goals*

The New Hampshire Division of Forests and Lands and UNH Cooperative Extension will use Forest Stewardship and Forest Resource Management funds in furtherance of the following goals:

- Provide technical assistance to forest landowners
- Provide educational programming to forest landowners
- Develop written forest stewardship plans
- Provide an ongoing program of training for natural resource professionals
- Increase the public's awareness and understanding of forest resources
- Protect watersheds & wildlife habitat through land protection, partnerships and education
- Provide a comprehensive training program for Coverts Cooperator volunteers
- Demonstrate program impacts by implementing the forest stewardship plan monitoring protocol and by updating the Spatial Analysis Project (SAP) maps and database

### *Outreach, education and technical assistance for landowners*

The Forest Stewardship Program engages elected officials, community leaders, youth and the public in programs to increase their appreciation of the many benefits private lands provide, including paying property and timber taxes, providing economic activity, protecting water resources, providing wildlife habitat, aesthetics, tourism attraction and the quality of life we enjoy in New Hampshire. Public support is essential for the sustainability of good forestry on private lands in New Hampshire.

The Forest Stewardship Program provides forest owners with the education and technical assistance so that they are aware of the importance, benefits and methods of permanent land protection. Education will include estate-planning, methods of protecting land in perpetuity, tax ramifications, funding sources, technical components and resources for in-depth assistance.

On-site technical and educational assistance is provided to forest landowners to increase their ability to make informed decisions regarding their land. When appropriate, landowners will be encouraged to develop a forest stewardship plan, preferably written by private-sector foresters. In some cases the UNH Cooperative Extension forester will write guidelines that meet the minimum Forest Stewardship Program standards.

Workshops will be offered to forest landowners on stewardship related topics such as current use taxation, estate planning, conservation easements, forest stewardship planning, wildlife habitat, water resources, invasives, and sustainable utilization of forest resources including ecosystem services, management options, and other topics.

The Forest Stewardship Program works to engage forest owners of ten acres or more in the New Hampshire Tree Farm Program and other programs that recognize good forestry, serve as a vehicle for landowners to positively interact with each other, provide a forestry educational source, and may provide some property tax benefits and inspire others to practice forest stewardship.

The Forest Stewardship Program engages landowners, watershed groups, lake and river associations and the public in watershed protection. The Program provides education, information, technical assistance and inspiration about the value and threats to water quality and water quantity. Water related topics such as riparian buffers, permanent land protection and Best Management Practices are presented.

The New Hampshire Division of Forests and Lands staff, UNH Cooperative Extension Educators and others will provide educational programs at the Urban Forestry Center, Shieling Forest, the Taylor Mill at Ballard State Park, Weeks State Park, Fox State Forest, and at other locations around the state.

To further the aims of the Conservation Education Program, the Forest Stewardship Program supports youth education and youth development programs, such as Project Learning Tree, 4-H environmental efforts, New Hampshire Fish and Game's Project Wild and Project Wet, which engage future generations with the knowledge and an environmental stewardship ethic needed to make informed decisions about natural resources.

The Forest Stewardship Program supports on-going public and private education and outreach programs, which enhance informed natural resource stewardship decision-making by the public, natural resource professionals and public officials. Long-term efforts to sustain natural resources require long term programs to be successful. Maintaining an infrastructure with experienced and credible core staffing is essential for successful natural resource education and information programs.

## *Ongoing program of training for natural resource professionals*

The Forest Stewardship Program provides quality education for natural resource professionals, including foresters, to increase their knowledge and competency and to provide the vehicle for continuing education units to meet their license and certification requirements. Such programs are accessible, geographically available, affordable and of sufficient number to provide an adequate opportunity for professionals to maintain their licenses and/or certification.

The Forest Stewardship Program supports certification and license programs and provides educational programs through professional associations such as the New Hampshire Professional Loggers Program and the Granite State Division of the Society of American Foresters.

Training in forest stewardship topics will be provided to private sector foresters, loggers, and other natural resource professionals who influence the management of New Hampshire's forests. Knowledgeable private sector foresters developing and implementing stewardship plans and practices on private lands will multiply New Hampshire's accomplishments of good stewardship.

The Forest Stewardship Program disseminates of publications such as *Good Forestry in the Granite State, the New Hampshire Wildlife Action Plan, Erosion Control on Timber Harvesting Operations in New Hampshire, Guide to New Hampshire Timber Harvesting Laws, Best Management Practices for Forestry: Protecting New Hampshire's Water Quality* and many other works written to assist natural resource professionals, landowners, land managers, public agencies and public officials in making natural resource decisions. The Forest Stewardship Program works encourages the adoption of the practices provided by these guides.

## *Sustaining forest management on private lands*

Working private forests are essential to maintain clean water, provide connected wildlife habitat, assure economic stability and provide the scenic backdrop to our communities, among many other values. Maintaining a viable working forest landscape requires attention to the economic, tax, land use planning and regulatory framework in local communities and at the State level.

So they consider open space protection, the Forest Stewardship Program works with private forest owners, especially those whose lands support priorities expressed in this document such as retaining working forests and protecting critical habitats, significant ecosystems, important natural communities, at-risk native flora and fauna, habitat connectivity and water quality. The natural resources community, including land trusts, conservation organizations, natural resource agencies and the University of New Hampshire (UNH) will need to provide information, education and technical assistance to landowners, as the process can be complicated and has many consequences and opportunities.

The Forest Stewardship Program works with the New Hampshire Fish and Game Department (NHF&G) and supports them in implementing the New Hampshire Wildlife Action Plan. The Forest Stewardship Program works with the New Hampshire Department of Environmental Services (NHDES) and other state agencies to help develop, promote, implement and sustain programs with environmental benefits on private lands.

The Forest Stewardship Program works with municipalities and county governments to promote forest stewardship on their public lands. While some financial assistance opportunities may not be available for these public lands, forest stewardship plans and other sustainable forestry practices are encouraged.

The Forest Stewardship Program works with conservation funders, including federal, state and local governments and private foundations and land trusts, to provide incentives for the costs associated with permanent land protection, such as legal expenses, surveys and monitoring.

The Forest Stewardship Program encourages forest owners to have stewardship plans. The Natural Resource Conservation Service (NRCS), USDA Forest Service (USFS), New Hampshire Fish and Game Department (NHF&G) and other agencies which provide landowners incentives for natural resources are encouraged to include professionally developed forest stewardship plans among their offerings.

The Forest Stewardship Program works to coordinate financial assistance programs to develop and implement stewardship plans and management activities for groups of landowners, fostering landscape scale forest management across property ownerships.

To minimize constraints on forest management activities, including sustainable harvesting operations, local officials are made aware of the positive and negative consequences of their ordinances on the ability of landowners to own and practice good forestry on their lands.

The Forest Stewardship Program works to maintain a cadre of licensed foresters and certified loggers to ensure that landowners have the quality resources to practice good forestry.

### *Develop and implement written forest stewardship plans*

Private sector foresters using cost share funds in the Environmental Quality Incentives Program (EQIP) write Forest stewardship plans. New Hampshire's EQIP program has a Forest Management Conservation Activity Plan practice that uses the standards and specifications developed by the New Hampshire Forest Stewardship Program. UNH Cooperative Extension works with the Natural Resources Conservation Service (NRCS) to provide technical assistance to landowners enabling them to qualify for these EQIP funds and also supplies technical assistance to the Natural Resource Conservation Service to insure plans meet program standards.

UNH Cooperative Extension provides technical assistance to landowners and the Natural Resource Conservation Service (NRCS) to implement practices that implement these and other qualifying plans through the EQIP and Wildlife Habitat Improvement Program (WHIP). Extension also works with New Hampshire Fish and Game Department (NHF&G) to implement plans using the small grants program.

To insure continued use of EQIP and WHIP funds in New Hampshire forests, UNH Cooperative Extension participates in the State Technical Committee and will produce and distribute printed information and provide information on the web regarding financial assistance opportunities and options.

### *Develop technical and financial assistance programs that focuses on collaboration among neighboring landowners*

Providing landowner assistance to multiple landowners will significantly help with sustaining our forest resources in the long term. Programs that target a watershed, a unique natural community, a green belt, or other landscape scale area of special importance consists of several ownerships can provide opportunities that would escape programs with the traditional focus on individual ownerships.

Given that private landowners control the majority of forestland in New Hampshire and the size of the typical ownership is relatively small, it makes sense to proactively engage groups of neighboring landowners in land conservation and stewardship. Given limited resources, an ecosystem based approach that includes identifying high priority forest landscapes, and then proactively reaching out to landowners in those landscapes to foster interest in forest and biodiversity conservation, and fostering collaboration among neighbors should be explored.

This same approach could be applied to existing cost-share programs that help fund the development and/or implementation of management plans on private forestlands. Such an

approach would likely lead to greater program and conservation achievements than working with scattered individual landowners.

### *Increase the public's awareness and understanding of forest resources*

The highest priority goal in Extension's guiding document, *The Forestry and Wildlife Program's Role in the New Hampshire Forest Resources Plan* is to increase the public's awareness of the importance of New Hampshire's forest resources, enhance their connections to the forest, and increase their support of forestry.

A web site (nhwoods.org) will be maintained and updated as needed to provide information to the natural resource community, the public-at-large and other stakeholders. This site offers publications which can be downloaded at no charge, a calendar of events listing educational offerings around the state, and links to other natural resource web sites. Other web-based tools such as wikis and social marketing tools will be used to expand the effectiveness of the outreach and marketing of the program.

A Forestry Information Center, managed by the Forest Stewardship Coordinator, provides educational materials and assistance about forest stewardship topics to landowner and general public inquiries.

County and statewide newsletters, news releases, radio spots, and television materials addressing resource values and management options will be developed and distributed.

A display will be presented at the NH Farm and Forest Expo, which attracts approximately 7,000 people each year, including public decision makers, foresters and landowners. The display and the staff on-site will encourage forest stewardship actions. It will be used at other fairs, expositions and forums throughout the year.

### *Comprehensive training program for Coverts Cooperator volunteers*

Twenty-five new volunteers will be trained annually in forest stewardship and wildlife habitat improvement through the New Hampshire Coverts Project, with the tag line, *"Volunteers working for Wildlife".* There are nearly 300 active Coverts Cooperators. These individuals multiply efforts to raise awareness and encourage others to practice good forest stewardship.

### *Coordination with specific USDA Forest Service programs*

The Forest Stewardship Program will demonstrate program impacts by implementing the forest stewardship plan monitoring protocol and by annually updating the SAP maps and database.

As called for in the National Stewardship Program Guidelines, selected properties will be visited and assessed to verify that current forest conditions are consistent with landowner stewardship objectives and the result of sustainable management, as defined in the landowner's Forest Stewardship Management Plan. Visits to properties will yield a

percentage of total acres visited that are being managed sustainably. This percentage will be used as an indication of overall accomplishment in terms of acres managed.

The New Hampshire Forest Stewardship Program will participate in the Northeast Area Forest Stewardship Project designed to develop new delivery mechanisms for the program.

## *Work with Land Trusts and Conservation Organizations*

Landowners and communities receive assistance on permanent land protection through a variety of methods including the Community Conservation Assistance Program (CCAP) and Taking Action for Wildlife. CCAP assists New Hampshire communities and conservation groups with land and water conservation planning projects, such as natural resources inventories, conservation planning, land protection, public outreach, and building public support. UNH Cooperative Extension will provide one-on-one technical assistance and education through workshops and other group forums on natural resource inventories, estate planning and permanent land protection to landowners and community members.

Forestry and Wildlife Program staff provides technical assistance to local land trusts and conservation organizations through participation on boards and technical committees assisting them to permanently protect working forests.

## *Work with Community Decision-Makers*

UNH Cooperative Extension, the New Hampshire Division of Forests and Lands, other state agencies and conservation organizations, provides education for the public, public officials and the community to understand the value that forest lands contribute to their well-being, such as environmental quality, taxes, low cost of community services, economic activity, ecosystem services and quality of life. Tax programs, such as Current Use, positive local land use and transportation policies, make it practical and cost effective for private landowners to own forest land and to practice sustainable forest management. Local land use decisions can impede landowners in their community to practice sustainable forestry and create economic activity. Education for community leaders will include practical solutions and knowledge about existing laws and practices that would enhance good forestry opportunities and protect the community's interests.

## *Forest utilization and marketing programs support Forest Stewardship*

The forest industry is a significant economic resource for the state's economy. It has been estimated that the forest products industry contributes $1.7 billion to the state's economy. Over 2 million cords of timber is harvested each year. There is recognition of the symbiotic relationship between a viable forest industry and keeping forestland as forests for the future.

UNH Cooperative Extension's Utilization and Marketing component addresses the need for strong, stable markets enabling landowners to effectively manage their forest holdings.

The Utilization and Marketing component of UNH Cooperative Extension, in concert with others, will promote local products and help remove constraints from the use of locally produced forest products, such as lumber. The goal is that New Hampshire people have the knowledge, incentives and desire to purchase natural resources products locally, including lumber and agroforestry products to support the local economy, help sustain forests and forest management and to save energy costs associated with transportation.

Working forests on public lands at the federal, state, county and community level support the forest industry and are expected to increase the credibility for the public of the use of good forestry practices as a part of our environmental stewardship. The State of New Hampshire, led by the Division of Forests and Lands, will consider having some State owned lands certified under a program, such as the Forest Stewardship Council's program, in order that New Hampshire's forest industry will have a source of certified wood material. This will enable New Hampshire's forest industry to enter some markets that they currently do not have available.

Participants in the development of these Forest Resource Strategies supported efforts to permanently conserve working forests in large contiguous blocks, which are more economically viable and can be a more stable and sustainable wood source. The forest community in New Hampshire, as encouraged by the Division of Forests and Lands and UNH Cooperative Extension, will consider keeping contiguous blocks of forest intact to enhance the economic opportunities for managing and using forest lands and improving the sustainability for forestry employment when making permanent land protection decisions.

The New Hampshire Forest Stewardship Program encourages elected officials, public agencies, conservation organizations communities and counties to develop a well-distributed network of local, state, and federally owned and managed forest lands that contributes to sustaining resources for New Hampshire's forest-based economy. These working forests serve as show cases for good forestry, to educate and inspire private forest owners to practice sustainable forestry.

The New Hampshire Forest Stewardship Program works to ensure that forests across the state remain well balanced in forest type, tree age and tree size distribution. New Hampshire's public and private forest managers and wildlife biologists gain and share knowledge, along with developing and implementing practices for a common mission to achieve this balance.

The New Hampshire Forest Stewardship Program will work to encourage landowners, forest managers and mining interests coordinate forest management plans and mining plans on state lands and other properties, to ensure that access roads and harvesting of forest resources would be integrated with planned mining operations to optimize both resources, while at the same time minimizing the footprint of any related disturbances.

UNH Cooperative Extension has a long and successful history of working with New Hampshire's forest based businesses. Extension works in concert with the Division of Economic Development with the New Hampshire Department of Resources and Economic Development (NHDRED). New Hampshire is fortunate to have economic development and its forestry agency in the same department.

The philosophy in New Hampshire has been to retain existing businesses, expand those businesses, develop and support associated businesses and to secure new enterprises, in that priority order. State government and the forestry community and local communities have been supportive of forest industry. The natural resource community, including agencies and conservation organizations, understand that keeping New Hampshire's forests intact and well managed requires a viable forest industry.

Efforts include

- Assisting the private sector in developing and sustaining markets for forest products.
- Asking the private sector what their needs are and helping them attain solutions, such as linking them with energy audits, employee assistance programs and new market opportunities.
- Developing and maintaining creditability within the forest industry.
- Supporting efforts to conserve working forests, including large contiguous blocks of land.
- Participating in NAASF Forest Utilization Committee activities, participating in multi-state networks, such as Cooperative Extension and industry organizations.
- Monitoring and sharing information regarding availability of the wood resource available for industrial use, including energy.
- Actively participating in educational programs that support the industry, such as safety programs, Professional Loggers Programs and business topics.
- Assisting with the organization of industry programs and efforts.
- Working in confidence with businesses looking to enter the state, expand or deal with survival.
- Bringing expertise to businesses as needed, such as from the USDA Forest Service Laboratory.
- Providing training for public officials regarding the forest industry, such as workshops for municipal officials regarding forestry and timber harvesting.
- Promoting the benefits of good forestry and sustainable forest based businesses to public officials, community leaders and the public.
- Monitor and share information about emerging or potential markets, such as those related to energy and ecosystem benefits.
- Supporting the New Hampshire Tree Farm Program.
- Securing on-going and grant funding to support forest based business assistance.
- Identifying existing and future opportunities for third party green certification.

## *State Lands Management*

State-owned forests play an important role in the Forest Stewardship picture. They benefit the environment, the economy, and society. They are a place to demonstrate sustainable forestry practices. They can provide significant blocks of protected land and contiguous forest for forest products, carbon storage, wildlife habitat, tourism, dispersed recreation and water resources. State lands can potentially provide a steady stream of wood to the marketplace.

New Hampshire will consider certifying some of its forestlands. Certified lands are becoming increasingly more important as both the social license to manage public lands and as an entrance certain markets.

State lands are an important component in the mosaic of public and private ownerships in the state. Forest managers throughout the forestry community are looking at a landscape approach to managing forests and ecosystem. The forest industry benefits from this coordinated approach.

## *Conservation Education supports forest Stewardship*

New Hampshire's Forest Stewardship Program has been the primary home for Conservation Education Programs although conservation education is a component of each of the state's USDA Forest Service (USFS) supported programs. Education has traditionally been a priority in New Hampshire's Forest Resource Plans over the decades.

The long-term partnership between the New Hampshire Division of Forests and Lands and the University of New Hampshire Cooperative Extension serves conservation education programs well. With such as creditable educational institution as a partner, the State Forester's programs have valid educational expertise, credentials and enter into classrooms, youth organizations and other venues. Extension is known for its development, implementation and evaluation of quality programs. Knowledge and adherence to equal opportunity and affirmative action requirements are a regular part of Extension's programming.

UNH Cooperative Extension also includes 4-H Youth Development. It partners with Project Learning Tree and others. These groups are aware of the opportunities that may come from the *No Child Left Inside Act*. They are aware that, in order to receive environmental education funds through, State departments of education would be required to have an environmental literacy plan in place which includes input from State environmental agencies. They are attentive to the issues regarding components to be included in the State's environmental literacy plan.

New Hampshire Conservation Education Programs include more than youth programs and the general public. They are also targeted to public officials, community leaders, educators, landowners, business people and others as needed to secure a positive outcome to address our serious natural resource issues.

# *New Hampshire's Urban and Community Forestry Program*

New Hampshire's communities are fortunate to have both the State Forester's Office and the Land Grant University's Extension staff tackling urban and community forestry issues. This close relationship between the New Hampshire Division of Forests and Lands and the University of New Hampshire is quite unique in the country. The joint delivery of US Forest Service - State and Private Forestry programs began in 1925 and has demonstrated the advantages of having a strong mix of outreach, technical assistance, education, and local involvement programs. Both organizations work together to provide a cohesive program of public awareness, community networking, volunteerism, and resource professionals for the entire state.

The New Hampshire Division of Forests and Lands provides leadership through a full-time Community Forestry Coordinator who presents information and educational programs on community forestry issues, assists with the training and implementation of the Community Tree Steward Program, and furnishes technical assistance and training to natural resource professionals and communities. In addition there is the Urban Forestry Center located in Portsmouth and the Shieling Forest located in Peterborough. Each facility includes forests, fields, trails, gardens, urban forestry demonstration areas, as well as a conference center. Informational and educational programs, workshops, and conferences are regularly available to the public and resource professionals.

The UNH Cooperative Extension is an educational network connecting University knowledge and research to people throughout New Hampshire. Extension Specialists based in Durham and Extension Educators in each of the 10 counties of the state offer both scientific information and technical assistance to communities. Each of these Extension Educators is well-known and connected in their communities. They are recognized as a source of unbiased information and education on the full range of urban and community topics. Each of these individuals has continuing professional development to strengthen their knowledge base of community forestry issues. They all have Community Forestry in their work plans.

UNH Cooperative Extension provides a Community Forestry Educator who is strategically placed in the most urban part of the state. A third of the people of New Hampshire reside in the county where this full time person is located. Her office is located at UNH Manchester, in the state's largest city. There are Extension Specialists and Program Assistants in the Extension Forestry and Wildlife Program who contribute significantly to the Urban and Community Forestry Program. In addition, the Extension connection brings with it a large staff of well-qualified professionals in agriculture resources, family programs and youth programs.

The close relationship between the New Hampshire Division of Forests and Lands and UNH Cooperative Extension is anchored in New Hampshire statute and is kept alive by a

memorandum of understanding, renewed periodically. This relationship can serve as a model for other states to best coordinate, utilize and focus the resources in their state.

In this document, the term the "New Hampshire Urban and Community Forestry Program" refers to the joint New Hampshire Division of Forests and Lands and UNH Cooperative Extension Urban and Community Forestry Program, carried out with the guidance of the New Hampshire Community Forestry Advisory Council.

## *Mission*

The New Hampshire Urban and Community Forestry Program will:

- Protect and enhance urban tree canopy cover
- Improve air quality
- Reduce in heat loads and energy consumption
- Manage and protect forests in urban growth areas and during development activities
- Mitigate climate change through targeted tree planting and maintenance efforts
- Support and create green jobs, such as the establishment of green roofs
- Address exotic invasive pest species that typically affect urban forests
- Protect against the occurrence and impacts of wildland interface fires
- Protect water resources, including municipal watershed and drinking water sources
- Protect biological diversity and wildlife habitats
- Work within communities to solve problems using urban forestry expertise, such as in waste treatment operations
- Enhance property values, such as commercial real estate resulting in higher occupancy rates
- Reduce utility maintenance problems and costs
- Abate noise
- Manage storm water
- Promote the importance of trees, forests, and forestry to urban residents
- Assist communities in making informed decisions about natural resources
- Encourage communities to conserve urban natural resources and its benefits requires by making investments in planning and maintenance
- Increase therapeutic benefits

## *Sustaining an Urban and Community Forestry Program*

Communities have a need for a sustained statewide coordinated effort for delivery of urban and community forestry programs in urban and suburban areas, at the urban / wildland interface and in rural areas.

The New Hampshire Urban and Community Forestry Program will continue the work of the New Hampshire Community Forestry Advisory Council (CFAC) is made up of representatives from the UNH Thompson School of Applied Science (TSAS), public utilities, landscape

profession, arborists, New Hampshire Division of Forests and Lands, UNH Cooperative Extension (UNHCE), the New Hampshire Department of Transportation (NHDOT) and community organizations. The group has recently completed a comprehensive statewide plan based upon a thorough input process. This plan provides a basis for the program component of this Forest Resources Plan.

The New Hampshire Urban and Community Forestry Program will provide statewide delivery of urban and community forestry support to local communities and interested groups using the following strategies:

- Provide statewide leadership, direction, networking, program management, skills, and technical resources for urban and community forestry in New Hampshire.

- Work to achieve the goals of the national urban and community forestry program as stated in the US Forest Service's Strategic Plan *"Urban and Community Forestry: On Course Into the Future".*

- Develop and implement New Hampshire's Urban and Community Forestry 10-Year Program Plan, and develop a 5-Year Program Plan Update.

- Prepare a yearly report on program accomplishments using the current Forest Service reporting system.

- Develop a strategy to fund long-term programs.

- Maintain a full-time position of State Community Forestry Coordinator.

- Maintain a full-time position of Community Forestry Volunteer Coordinator.

Some people living in urban and rural environments are not fully aware of the importance and benefits of caring for and maintaining the natural environment within their community. The New Hampshire Urban and Community Forestry Program will work to increase the public's awareness of and their involvement in New Hampshire's urban and community forest resources.

- Provide education about important Urban and Community Forestry issues.

- Enhance the ability of the Community Forestry Advisory Council to effectively reach the public with key messages.

- Strengthen connections between existing volunteer programs: Backyard Tree Farm, Coverts Project, Community Tree Steward, and others to more effectively spread key messages.

- Foster the observance of Arbor Day on a continuing basis.

- Advocate the partnership with Tree City USA.

- Consider collaboration with regional partners.

- Improve the use of media: television, radio, newspapers, websites, toll free numbers, brochures, signs, and business sponsors to promote community forestry.

- Provide talking points to key leaders, and encourage them to actively disseminate urban and community forestry messages.

- Promote the importance of urban and community forestry through demonstration sites and educational programs at the Urban Forestry Center, Shieling Forest, and other appropriate public and private facilities and lands.

- Strengthen connections to more effectively communicate key messages between youth education programs including Project Learning Tree, FFA, 4H, Wonders of Wildlife, and youth gardening clubs.

### *Community decision-making*

Within each New Hampshire community, the responsibility for decision making and management of community trees and forests is fragmented between numerous departments, commissions, committees, and boards resulting in a piecemeal approach to planning and caring for urban and community forest resources. A goal of the program is to have New Hampshire communities adopt "Smart Growth" practices which protect forests from being fragmented. Increasing the knowledge of community leaders about the options available will help ensure that future residential and commercial development is well planned in order to avoid destroying or negatively impacting priority green infrastructure.

The program will include natural resource professionals, local governments, social groups, neighborhood improvement associations, conservation organizations, tree boards and conservation commissions as participants in urban and community programs. New Hampshire Division of Forests and Lands, in a joint program with the UNH Cooperative Extension, will provide leadership and coordination of this effort, with guidance from CFAC, clientele, USDA Forest Service (USFS) and others in the natural resource community.

The New Hampshire Urban and Community Forestry Program will work with public officials, community leaders, boards and commissions to ensure that lands owned by municipalities and counties, including Town Forests and county forests, are well-managed, providing economic and environmental benefits and serving as an example of good stewardship for private forest owners. This requires a commitment on the part of the people who are accountable for the management of these public lands and the residents they represent. This also requires a commitment to providing and receiving technical assistance, education and information from reliable public and private sources.

Foster and support the creation of community tree committees and tree advocacy groups to ensure that knowledgeable people are making informed decisions about their community's tree selections, plantings maintenance hazard trees ad effective use of funds.
The New Hampshire Urban and Community Forestry Program will expand the UNH Cooperative Extension Community Conservation Assistance Program that assists communities with comprehensive natural resource conservation planning projects. It will target information and education to the most appropriate decision-makers in communities.

The New Hampshire Urban and Community Forestry Program will work to instill and enhance appreciation, knowledge and skills of forest resource conservation among youth, public decision makers, community leaders and the public.

The New Hampshire Urban and Community Forestry Program will strengthen relationships with community leaders and develop education programs and information targeted toward town conservation commissions, planning boards, zoning boards of adjustment, selectmen, town clerks, road agents and town administrators. It will provide education and information about urban and community forestry issues, benefits and opportunities, including the economic value of trees. It will engage community leaders to take initiative to do natural resource inventories and assist them with the interpretation of natural resource data. The program will recognize good leadership.

The New Hampshire Division of Forests and Lands, in a joint program with UNH Cooperative Extension will work in concert with nurseries, arborists, arborists associations, landscapers, landscape associations, landscape architects, so that people responsible for municipal plantings and maintenance, homeowners community leaders and public officials understand about exotic plant species planted in urban areas that are a concern for both urban environments and surrounding rural areas and have access to information about practices and species selection which will enhance the environment rather than create problems.

The New Hampshire Urban and Community Forestry Program will work to increase the interest and knowledge of community decision-makers in urban and community forest resources, using the following strategies:

- Expand a community conservation assistance program that assists communities with comprehensive natural resource conservation planning projects. Target information and education to the most appropriate decision-makers in communities.

- Continue efforts to emphasize sustainable communities and an ecosystem-based approach by promoting greenbelts, native species, and watershed management.

- Highlight best natural resource practices through demonstration etc. Develop town, county, and school forests and private lands as demonstration areas.

- Encourage community leaders to take initiative to do natural resource inventories, and assist them with the interpretation of natural resource data.

- Recognize good leadership and educate community leaders about the economic value of trees. Strengthen relationships with community leaders and develop education programs and information targeted toward town conservation commissions, planning boards, zoning boards of adjustment, selectmen, town clerks, town administrators, and road agents.
- Strengthen partnerships with others such as regional planning commissions, Office of Energy and Planning, Department of Transportation (NHDOT), Department of Environmental Services (NHDES), The New Hampshire Local Government Center, and the New Hampshire Association of Conservation Commissions.
- Improve the dissemination and sharing of information through the use of town newsletters, direct mailing to town clerks and town administrators, electronic communications, conferences, newsletters that town officials receive, and collaboration with the Division of Forests and Lands Forest Rangers, and the New Hampshire Federation of Garden Clubs.

- Participate in Community Planning Forums and become aware of communities' natural resource issues and identify appropriate follow-through.

- Foster and support the creation of community tree committees and tree advocacy groups.

## *Engaging forestry professionals*

The New Hampshire Urban and Community Forestry Program will provide and promote opportunities to encourage traditional foresters to provide urban and community forestry services that complement rather than compete with other professionals such as landscape architects/designers, planners, ornamental horticulturists, entomologists, arborists, and nursery persons.

There is a need to provide forestry resource professionals with high quality educational opportunities and information that can then be used to aid their clientele. The New Hampshire Urban and Community Forestry Program The New Hampshire Urban and Community Forestry Program will work to increase research-based skills and knowledge about urban and community forest resources of natural resource professionals, including arborists, foresters, landscape architects / designers, ornamental horticulturists, entomologists, nursery professionals, biologists, soil and water scientists, planners and researchers. The New Hampshire Urban and Community Forestry Program will provide natural resource professionals, including foresters, timber harvesters, arborists and others with access to an on-going continuing education system that will enhance their professional ability, have ready access to research-based, unbiased resource material, have a reliable source to answer specific questions and provide one-to-one assistance when needed and a system that will alert and update them on emerging issues. It will:

- Provide and promote opportunities to encourage traditional foresters to provide urban and community forestry services that complement rather than compete with other professionals such as landscape architects/designers, planners, ornamental horticulturists, entomologists, arborists, and nursery persons.

- Collaborate with USDA Northern Research Station, The New Hampshire Arborists Association, International Society of Arboriculture, Society of American Foresters, and other organizations and professionals in the green industry to conduct continuing education programs.

- Survey natural resource professionals and communities to determine educational program needs, appropriate content, and optimal meeting location and scheduling. Evaluate effectiveness of programs based upon survey results.

- Ensure that courses meet the requirements of accrediting agencies and organizations.

- Expand the use of distance learning via the web as a means to disseminate information to professionals.

## *Volunteer Coordination*

The New Hampshire Division of Forests and Lands, in a joint program with the University of New Hampshire Cooperative Extension, will use the Community Tree Steward Program as a primary community forestry outreach mechanism to increase the effectiveness of volunteers conducting urban and community volunteer work. It will encourage Community Tree Stewards to interact with town officials and advocate their participation in urban and community forestry programs. The Community Tree Steward Program will work to provide on going professional development for existing Community Tree Stewards through continuing education collaborations.

The New Hampshire Urban and Community Forestry Program will educate and guide volunteer efforts to maximize community benefits and to increase the effectiveness of volunteers conducting urban and community volunteer work. The New Hampshire Urban and Community Forestry Program will consider the expansion of the Community Tree Steward program. It will encourage Community Tree Stewards to interact with town officials and advocate their participation in urban and community forestry programs. It will provide on going professional development for existing Community Tree Stewards through continuing education collaborations.

The New Hampshire Urban and Community Forestry Program will continue focus areas in the Merrimack River corridor of Hillsborough County and the highly developed counties of Strafford and Rockingham, and parts of Merrimack. The Program will work to increase the number of communities and affected populations achieving ‘developing’ and ‘managing’ status in the USDA reporting system.

## *Education, outreach and technical assistance*

The New Hampshire Division of Forests and Lands, in a joint program with UNH Cooperative Extension will provide statewide leadership, direction, networking, program management, skills, and technical resources for urban and community forestry in New Hampshire. This program will work to achieve the goals of the national urban and community forestry program as stated in the US Forest Service's Strategic Plan *"Urban and Community Forestry: On Course Into the Future"*. It will maintain and support a New Hampshire Community Forestry Advisory Council and will develop and implement New Hampshire's Urban and Community Forestry 10-Year Program Plan, and a 5-Year Program Plan Update.

The USDA Forest Service, the Department of Resources and Economic Development (NHDRED) and the University of New Hampshire (UNH), along with public and private partners ensure on-going adequate financial and human resources to effectively implement New Hampshire's Urban and Community Forestry Program.

The New Hampshire Division of Forests and Lands, in a joint program with UNH Cooperative Extension, provide education about important Urban and Community Forestry issues such as land conservation, natural resource conservation, forest fragmentation, sustainable landscape, water conservation, energy conservation, storm-proofing their community and other conservation topics. The program people will promote the importance of urban and community forestry through demonstration sites and educational programs at the Urban Forestry Center, Shieling Forest, and other appropriate public and private facilities and lands. They will strengthen connections to more effectively communicate key messages between youth education programs including Project Learning Tree, FFA, 4H, Wonders of Wildlife, and youth gardening clubs.

The New Hampshire Division of Forests and Lands, in a joint program with the University of New Hampshire Cooperative Extension, strengthen partnerships with others such as regional planning commissions, Office of Energy and Planning, Department of Transportation (NHDOT), Department of Environmental Services (NHDES), The New Hampshire Local Government Center, and the New Hampshire Association of Conservation Commissions. The joint program should improve the dissemination and sharing of information through the use of town newsletters, direct mailing to town clerks and town administrators, electronic communications, conferences, newsletters that town officials receive, and collaboration with the Division of Forests and Lands Forest Rangers, and the New Hampshire Federation of Garden Clubs.

The Division of Forests and Lands, in a joint program with UNH Cooperative Extension, provide assistance to New Hampshire communities in managing and conserving urban and community forest resources that includes: One-to-one contact with communities, volunteers, natural resource professionals, public decision makers, conservation agencies, and private conservation organizations as well as developing workshops, seminars, publications, fact sheets, website, research reports, and information for the media. They will provide assistance

and educational information toward establishing and maintaining community forestry programs that includes long-range planning, policy, budgeting, fundraising, and volunteer management. The programs will provide training using up to date technology to community officials, community employees, and community volunteers in tree planting, tree maintenance, hazard trees, and community forestry management. It will promote and support other entities that provide technical assistance.

The Program will continue efforts to emphasize sustainable communities and an ecosystem-based approach by promoting greenbelts, native species, and watershed management to community leaders and the public. It will highlight best natural resource practices through demonstrations, workshops, the media and other venues. It will encourage and assist to develop town, county, and school forests and private lands as demonstration areas.

The New Hampshire Urban and Community Forestry Program will collaborate with USDA Northern Research Station, The New Hampshire Arborists Association (NHAA), International Society of Arboriculture (ISA), Granite State Division - Society of American Foresters (GSD-SAF), and other organizations and professionals in the green industry to conduct continuing education programs. It will survey natural resource professionals and communities to determine educational program needs, appropriate content, and optimal meeting locations and scheduling. Cooperators will evaluate effectiveness of programs based upon survey results. Program developers will ensure that courses meet the requirements of accrediting agencies and organizations. They will expand the use of distance learning via the web as a means to disseminate information to professionals.

There is a need to provide technical assistance to communities, public decision makers, natural resource professionals, other targeted audiences and the general public. The New Hampshire Urban and Community Forestry Program will provide assistance to New Hampshire communities in managing and conserving urban and community forest resources that includes: one-to-one contact with communities, volunteers, natural resource professionals, public decision makers, conservation agencies, and private conservation organizations as well as developing workshops, seminars, publications, fact sheets, website, research reports, and information for the media. The New Hampshire Urban and Community Forestry Program will:

- Provide assistance and educational information toward establishing and maintaining community forestry programs that includes long-range planning, policy, budgeting, fundraising, and volunteer management.

- Provide training using up to date technology to community officials, community employees, and community volunteers in tree planting, tree maintenance, hazard trees, and community forestry management.

- Promote and support other entities that provide technical assistance.

### *Being prepared to address catastrophic events and emerging issues*

Emergencies and emerging issues that impact urban and community forestry include climate change, storm damage, invasive species, forest pests, fire and mortality must be recognized. Emergency situations will receive immediate response and emerging issues will have long-term responses developed. Several devastating invasive insects and diseases are heading towards New Hampshire as this plan is being written. Some have invaded the state already and others are just beyond our borders and are spreading.

The New Hampshire Division of Forests and Lands, working in concert with the New Hampshire Department of Agriculture (NHDOA), University of New Hampshire (UNH), UDSA Forest Service (USFS), Animal and Plant Health Inspection Service (APHIS), other state and federal agencies and private conservation organizations, will provide leadership and coordination to address emergencies and emerging issues within New Hampshire that impact urban and community forestry, such as climate change, storm damage, invasive species, forest pests, and mortality. Emergency situations will receive immediate response and emerging issues will have long-term responses developed.

The New Hampshire Division of Forests and Lands, working with other responders, will lead an effort to provide education and information in a timely fashion to communities when emergencies occur, mobilize as needed when or if emergencies occur, work with the Division of Homeland Security and Emergency Management and other agencies as appropriate and identify and prioritize emerging issues.

New Hampshire Urban and Community Forestry Program will assist public and private tree nurseries as they develop plans to ensure that New Hampshire communities have a supply of trees for replanting to reduce the impact of loss of anticipated increased tree removals and loss of trees damaged from insects and diseases.

# *APPENDIX - A*

**New Hampshire Forest Legacy Program**
**Assessment of Need – Summary**

## Background

As part of the 1990 Farm Bill, congress created the Forest Legacy Program to help protect environmentally important private forestlands threatened with conversion to non-forest uses. The Secretary of Agriculture is responsible for the development and administration of the Program. The US Forest Service in cooperation with States and other units of government is responsible for implementation of the Program. In 1991 then Governor Judd Gregg designated the Division of Forests and Lands as the State lead agency for the New Hampshire Forest Legacy Program. To help maintain the integrity and traditional uses of private forest lands, the New Hampshire Forest Legacy Program promotes the use of conservation easements, legally binding agreements transferring a negotiated set of property rights from one party to another.

States have been granted the authority to establish criteria for their programs within the framework of the national program to help address specific needs and goals of their states, through development of a state Assessment of Need (AON). New Hampshire completed its first AON in 1993, which was approved by the Secretary of Agriculture on February 11, 1994. The initial AON identified Coos, Grafton, and Carroll Counties as the Northern Forest Legacy Area. In 1999 New Hampshire completed an AON Amendment which was approved by the Secretary of Agriculture on February 29, 2000. The AON Amendment identified 3 additional Forest Legacy Areas (FLAs), the Connecticut River Valley FLA, the Monadnock/Merrimack Uplands FLA, and the Pawtuckaway and Lakes Coastal Plains FLA.

## Approved Criteria

1. Large blocks of forest land
2. Proximity to core forest areas or other permanently protected lands
3. Threat of conversion
4. Consistent with the objectives in the NH State Forest Resources Plan

## New Hampshire Forest Legacy Program Project Selection & Ranking

Overall goal: Projects taken together should display a variety of sizes, forest values to be protected, and conservation techniques.

Primary Criteria (parcels must satisfy all):

1. Must provide for the continuation of traditional forest uses including forest management and public access for outdoor recreation.

2. Must be threatened by conversion to non-forest uses.

3. Must possess one or more of the following important public values: (not in priority ranking)
   a. Recreation opportunities
   b. Waterfront and riparian areas
   c. Fish and wildlife habitat
   d. Threatened and endangered species and natural communities
   e. Cultural resources
   f. Other ecological values and scenic resources
   g. Productive viable timber resource

Additional Considerations

1. What is the manner and degree of threat of conversion to non-forest uses?
2. What are the administrative costs?
3. Is there documentation of its importance in an existing local, regional, or statewide planning document?
4. How do the resource values of this parcel compare with those of competing parcels?
5. What are the economic and environmental implications of the proposed conservation action?
6. Does the project complement existing protected lands?

## Range of Criteria Values for NH Forest Legacy Tracts

The following is the scoring system for NH's Forest Legacy Program. It is intended only as a rough approximation of the relative eligibility among applications and not as an absolute measure. The final recommendations of the New Hampshire Forest Legacy Committee will depend upon all relevant aspects of each application and all of the surrounding circumstances.

I. Level of Significance

| | | |
|---|---|---|
| A. | Local Significance | 10 |
| B. | Regional Significance | 15 |
| C. | Statewide Significance | 20 |

II. Multiple Resource Values

Refer to list on page 1. One point for each present.
0 – 7

III Treat to Conversion

| | | |
|---|---|---|
| A. | Imminent | 20 |
| B. | Probable in near future (w/in 5 years) | 10 |
| C. | Possible in distant future (beyond 5 yrs) | 5 |

IV Maintenance of Traditional Uses

| | | |
|---|---|---|
| A. | Fully Maintained | 20 |
| B. | Most can be maintained | 10 |
| C. | Some Maintained, some lost | 5 |

**Threat of Conversion – Defined**

Forestland will be considered threatened by conversion if there is either an imminent or a future likelihood of a sale or transfer of significant forest land areas that will result in an overall loss of forest or significant parcelization/fragmentation; and where the forest continuity index (FCI) is low.

**Important Forests – Defined**

For the purposes of the FLP, environmentally important forests in New Hampshire are those containing either unique or critical aspects of one, or significant features of two or more, of the following attributes:

1. Presence of or access to significant scenic or recreation features.
2. Potential or existing capacity to support critical wildlife or fish habitat.
3. Meets the criteria for enhancement or maintenance of biodiversity as outlined in the recommendations of the Scientific Advisory Group, NH Ecological Reserves System Project.
4. Significant capacity to produce timber or other forest products, in proximity to wood-manufacturing facilities.
5. Significant watershed, riparian or groundwater protection features.
6. The presence of outstanding historic or cultural resources.

**Description of NH Forest Legacy Areas**

Northern Forest Legacy Area

This FLA includes the states 3 northern counties and is the most heavily forested part of New Hampshire. Historically this area was where most the state's forest industry lands were located. While no industry ownerships remain in NH, this area continues to be the core of the state's forest-based economy. Northern Hardwoods dominate the southern portion of the FLA and Spruce/Fir dominates the Coos County portion of the FLA. The White Mountain National Forest and Umbagog National Wildlife Refuge are contained within this FLA.

While some of the last wild, pristine land in populous New England can be found here, the area is within an eight hour drive of 70 million people. The area is easily accessed via interstate highway and is well known for its mountain and lake recreational opportunities making it ideal for second home development.

Connecticut River Valley Forest Legacy Area

This FLA includes 10 municipalities located along the main stem of the Connecticut River from Plainfield at the northern end and Hinsdale at the southern end. The area is the western boundary of the Vermont-New Hampshire Upland Ecoregion.

Forests in this area contain ecologically important floodplain communities as well as a high incidence of rare, threatened and endangered plant species. Scenic values are high, associated with the forested nature of the upland hillsides juxtaposed with the highly productive farmland of the river floodplain and terraces. The Connecticut River Valley is also the site of the Silvio Conte National Wildlife Refuge.

Monadnock/Merrimack Uplands Forest Legacy Area

This region comprises the uplands east of the Connecticut River Corridor, east to the Merrimack River (excluding the urbanized communities of Manchester, Bedford, Merrimack, Litchfield, and Hudson). It contains portions of Merrimack, Hillsborough, Cheshire and Sullivan counties. The principal geographic feature of the region is known as the Monadnock Highlands, a hilly region refining the watershed boundary between the Connecticut River and Merrimack River watersheds. The area contains the majority of the Vermont-New Hampshire Upland Ecoregion.

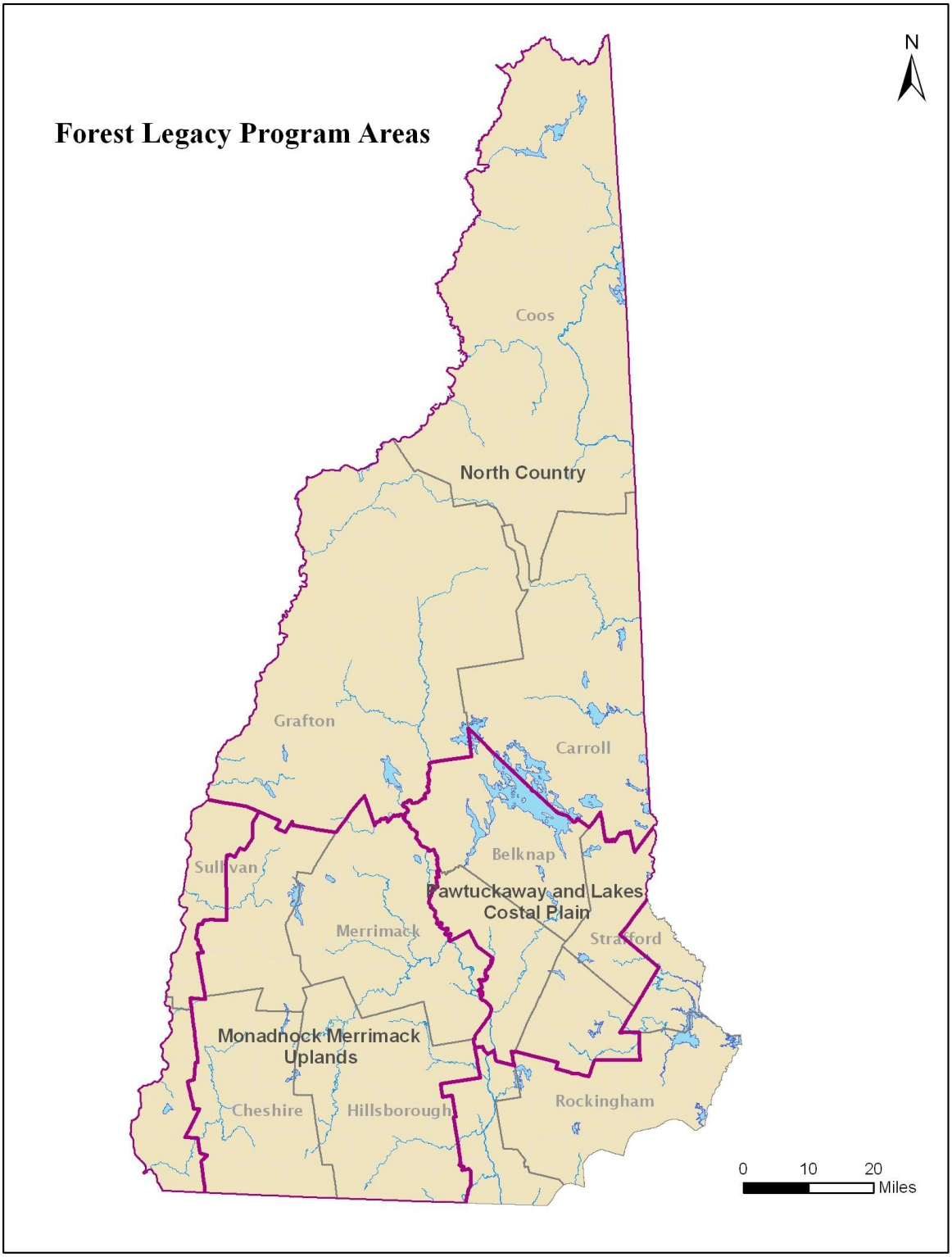
There are large areas of unfragmented forest blocks in this area. It also contains very large blocks of contiguous public and private protected forestland. This area also contains a number of the state's major sawmills and forest product manufacturers.

Pawtuckaway and Lakes Coastal Plain Forest Legacy Area

This FLA comprises the southern portion of NH's Lakes region, a highly popular recreation area, and the hills east of Concord and south to the northern edge of the highly fragmented towns of Rockingham County. This area comprises the majority of the Southern New England Coastal Hills and Plain Ecoregion.

This area contains important scenic and recreation lands. The presence of the large number of lakes brings significant numbers of seasonal vacationers to the area, and the forests of the area ensure continued high water quality in these lakes. The southern portions of the area are known to contain significant numbers of rare, threatened and endangered plants, including the majoring of the worldwide sites for *Isotria medioloides* (small-whorled pagonia), a federally listed threatened plant. This area also contains much of the states most productive forest soils, especially those best suited to the growth of white pine and red oak, the two most commercially valuable species in the region. Two of the state's most popular State Parks, Bear Brook and Pawtuckaway, are in this area.

## New Hampshire Forest Legacy Area - Map



## AON Approval Letter - 1994

**AON Approval Letter – 2000**

## State Lead Agency Designation Letter – 1991

# *APPENDIX - B*

The following is the ***Public Input Survey for the 2010 New Hampshire Forest Resource Plan*****,** which was used in interviews with stakeholders, for face-to-face discussions with the public and for the on-line request for input. It is shown here as it was presented to the public, with the responses to the multiple choice questions in percentage form.

# *Critical Issues Facing New Hampshire's Forests*

Public Input Survey for the 2010 New Hampshire's Forest Resource Plan

You have the opportunity to provide your perspective on the future of New Hampshire's forests. The New Hampshire Division of Forests and Lands is seeking public input in regard to the issues affecting the forests and natural resources of the state. Once the issues have been identified and prioritized, a comprehensive strategy will be developed to effectively address the issues. As part of a national effort to be completed by the summer of 2010, all state forestry agencies are completing a Forest Resource Assessment and Resource Strategy.

The forests of New Hampshire provide many benefits that are enjoyed by all citizens of the Granite State. From clean air and water to jobs made possible by the state's abundant forest resource, New Hampshire's forests and associated natural resources support a quality of life enjoyed by the people who call New Hampshire home.

Your input on developing the 2010 New Hampshire Resource Plan is valued. We need to know the issues, ideas, concerns, and suggested actions from a cross section of the state's residents who are interested in the future of New Hampshire's trees and forests.

The New Hampshire Division of Forests and Lands is seeking input through one-to-one contacts, Online Public Input Survey, and Public Input Sessions around the state. You are invited to participate.

# *The Current Forest Resource Plan*

In 1996, people from throughout New Hampshire's forestry community, state agencies, conservation organizations, academia, municipalities, landowners, and elected officials worked together to produce a Forest Resource Plan which resulted in identifying the following priority issues.

**In your opinion, are these issues still relevant?**

**A-1 Creating a favorable business climate for the forest products industry.**

**92% Yes 8% No** Comments _____

**A-2 Keeping contiguous blocks of forest intact and under consistent management.**

**99% Yes 1% No** Comments _____

**A-3 Developing mechanisms for sustaining managed forests.**

**98% Yes 2% No** Comments _____

**A-4 Addressing the impact of local land use decisions on the ability to practice forestry and sustain healthy forests.**

**98% Yes 2% No** Comments _____

**A-5 Conserving New Hampshire's biological diversity.**

**98% Yes 2% No** Comments _____

**A-6 Continuing the tradition of keeping lands open to the public and providing appropriate levels of outdoor recreation to support the state's tourism industry.**

**97% Yes 3% No** Comments _____

**A-7 Providing timely collection of data about forests and assessment of information necessary to meet the goal of sustaining forest ecosystems.**

**99% Yes 1% No** Comments _____

**A-8 Instilling or enhancing appreciation, knowledge and skills of forest resource conservation among youth, adults and forest resource professionals.**

**99% Yes 1% No** Comments _____

**A-9 Acquiring and managing lands and easements for which there is a public interest and that complement the benefits provided on private forest lands.**

**98% Yes 2% No** Comments _____

**A-10 Enhancing awareness of the importance of conserving community forests for their ecological and social values.**

**97% Yes 3% No** Comments _____

**A-11 Developing forest policy collaboratively and organizing agencies to facilitate sustainable forest management.**

**98% Yes 2% No** Comments _____

The following are issues being considered for the 2010 New Hampshire Forest Resource Plan. Your comments are welcome. **Please indicate their priority to you and suggest what actions you recommend to:**

# *Conserve Working Forest Landscapes:*

## *Conserving and managing working forest landscapes for multiple values and uses.*

**B-1 Encourage good forest management on New Hampshire's private forestlands?**

**Priority: 83% High 16% Medium 1% Low**

Comment / Suggested Action_____

**B-2 Encourage good forest management on New Hampshire's county and municipal forestlands?**

**Priority: 81% High 16% Medium 3% Low**

Comment / Suggested Action_____

**B-3 Encourage good forest management on New Hampshire's state owned forestlands?**

**Priority: 84% High 13% Medium 3% Low**

Comment / Suggested Action_____

**B-4 Identify and conserve important forest ecosystems and landscapes in New Hampshire?**

**Priority: 84% High 15% Medium 1% Low**

Comment / Suggested Action_____

# *Protect Forests From Harm:*

***Protect forests from threats, including catastrophic storms, flooding, insect or disease outbreak, and invasive species.***

**C-1 Reduce the risk of adverse wildfire impact on New Hampshire's forests?**

**Priority: 27% High 47% Medium 28% Low**

Comment / Suggested Action_____

**C-2 Assist communities in planning for and reducing wildfire risks?**

**Priority: 35% High 50% Medium 15% Low**

Comment / Suggested Action_____

**C-3 Reduce threats to New Hampshire's forests and ecosystems?**

**Priority: 84% High 15% Medium 1% Low**

Comment / Suggested Action_____

# *Enhance Public Benefits from Trees & Forests:*

***Including air and water quality, soil conservation, biological diversity, carbon storage, forest products, forestry related jobs, production of renewable energy, and wildlife.***

**D-1 Protect New Hampshire's water quality and quantity?**

**Priority: 94% High 6% Medium 0% Low**

Comment / Suggested Action_____

**D-2 Improve New Hampshire's air quality and conserve energy?**

**Priority: 87% High 10% Medium 3% Low**

Comment / Suggested Action_____

**D-3 Maintain and enhance the economic benefits and value of New Hampshire's trees and forests?**

**Priority: 83% High 13% Medium 4% Low**

Comment / Suggested Action_____

**D-4 Protect, conserve, and enhance New Hampshire's wildlife and fish habitat?**

**Priority: 94% High 6% Medium 0% Low**

Comment / Suggested Action_____

**D-5 Help community leaders, public decision makers, and the public make informed decisions regarding New Hampshire's trees and forests?**

**Priority: 96% High 4% Medium 0% Low**

Comment / Suggested Action_____

**D-6 Engage community leaders, public decision makers, and the public in environmental stewardship activities?**

**Priority: 77% High 20% Medium 3% Low**

Comment / Suggested Action_____

**D-7 Deal with global climate change as it relates to New Hampshire's trees and forests?**

**Priority: 70% High 20% Medium 10% Low**

Comment / Suggested Action_____

## *What Other Issues Do You Think Should be Included in the 2010 New Hampshire Forest Resource Plan?*

**Identify the issue(s), the desired future outcome(s), and your suggested action(s) to produce that outcome.**

Issue

_____

Desired Future Outcome

_____

Suggested Action

_____

Issue

_____

Desired Future Outcome

_____

Suggested Action

_____

# *APPENDIX - C*

## *Contracted Services for the 2010 Forest Resource Strategies*

Natural Resource Institute, LLC, 35 Parker Mountain Road, Strafford. New Hampshire, worked with the New Hampshire Division of Forests and Lands to lead and document the public input process for the *2010 New Hampshire Forest Resource Strategies.* Natural Resource Institute's co-founders, JB Cullen and Robert Lee Edmonds, have had in-depth and long experience with the development, implementation and evaluation of previous New Hampshire Forest Resource Plans. Both are New Hampshire Licensed Foresters. Edmonds is a Certified Forester with the Society of American Foresters. Cullen is a Fellow in the Society of American Foresters. Both have had successful facilitation experience and are well known for their expertise in group facilitation, public input, strategic plan writing, forest resource planning, development and implementation of forestry programs. With over eighty years combined forestry experience, each is well known in New Hampshire's natural resource community. They are familiar with the stakeholders within the State of New Hampshire and within the USDA Forest Service.