

New Hampshire Everlasting

An Initiative to Conserve Our Quality-of-Life



Working Proposal
Society for the Protection of New Hampshire Forests

September 22, 2001

*I long for wildness... woods where the wood thrush
forever sings, where the hours are early morning ones,
and there is dew on the grass, and the day is forever
unproven... a New Hampshire everlasting and unfallen.*

— Henry David Thoreau

The Society for the Protection of New Hampshire Forests is a non-profit membership organization founded in 1901 that has helped protect over one million acres in the state. The Society has on-going programs in land protection, environmental education, advocacy, research, and sustainable forest management.

This document is available on our website: www.spnhf.org.

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The Challenge

New Hampshire is unusually well endowed with forests and sparkling waters — among states and among nations. Our citizens cherish walking, hunting, and working our lands. Products from the land nourish and shelter us. Open space sustains our economy and our culture.

Yet within the lifetime of a child born today, all this could be lost.

- Population growth and sprawling development are consuming both our natural landscapes and community character
- New Hampshire is the fastest growing state in the northeast
- The population has more than doubled since 1950 and is projected to grow another third from 2000 to 2020 ¹
- Eighty-five percent of this growth will occur in the southeastern third of the state.
- Within fifty to one hundred years, most parts of southeastern and central New Hampshire will be developed. ²

The forest and farmland that we have taken for granted will be gone — diminished to small patches in all but the areas that we have conserved. The decisions we make today will determine whether New Hampshire's children of tomorrow will have access to and be sustained by the natural landscape.

Our Vision

The Society for the Protection of New Hampshire Forests envisions a living landscape where managed woodlands, farms, and wildlands are woven into the fabric of community life. We envision people caring for lands that sustain dynamic communities with clean water and air, employment, forest and agricultural products, habitat for native plants and animals, scenic beauty, and recreational opportunities.

To realize this vision, we need to conserve one million acres of our most significant natural lands within the next 25 years.

The Guiding Principles for Land Conservation

The Society for the Protection of New Hampshire Forests (the Society) is proposing that New Hampshire communities and conservation organizations join together to carefully design and conserve a statewide system of conservation lands.

The selection of these lands should be guided by the following principles:

“Smart conservation” goes hand-in-hand with “smart growth”

The New Hampshire Everlasting Initiative is not a campaign to stop growth. Rather, it is a campaign to guide growth and conservation to those sites that provide the greatest long-term benefits for our quality-of-life and economy. Smart growth and smart conservation can help assure both ecological and economic opportunity. Communities that conserve land are more attractive to businesses and businesses can better retain their employees.

Research has clearly shown that open space-related economic activity directly and indirectly contributes twenty-five percent of New Hampshire’s gross state product.³

Land for people and wildlife

Saving open space means land for hunting, fishing, and hiking; for farming and forestry; and sources for clean drinking water. People who have access to open space often have a deeper relationship with the land and nature.⁴

Decisions based on good science

We can use newly available scientific research about forestry, ecology, and water quality to focus our conservation efforts on those lands that provide the greatest benefits to our communities and are the most sensitive. A conserved area must have the size, location, qualities, and linkages to other conserved areas and communities so that its biological integrity can be sustained, even when the surrounding lands are developed.

Stewardship of conserved land balances use and reservation

Conservation lands should be managed to maintain healthy ecosystems, natural communities, and native species. Land managers should develop plans that call for forestry, agriculture, or recreation for some areas and set aside wild natural areas for others.

How
Is
Land
Conserved

How is land conserved?

Land can be conserved for our communities through a variety of means. Low property taxes, strong markets for forest and farm products, good land-use regulations and planning, and landowners with a strong land ethic all help to keep land open and undeveloped.

The acquisition of land and conservation easements from willing landowners is the most permanent means of conserving land. In the context of this document, permanent land conservation means the acquisition of land or conservation easements by a qualified conservation organization or agency for forests, wildlife, farming, recreation, clean water, and/or scenic beauty.

Most of the tools needed to achieve the goals outlined in this document already exist. The New Hampshire Land and Community Heritage Investment Program, thirty-seven land trusts, local conservation commissions, and other public agencies all can play key roles in implementing these goals.

Increased public and private funding at all levels will be needed. Some of these lands will be publicly owned. Most can be privately owned and managed, protected by conservation easements, and remain on the property tax rolls.

Some lands will provide access to the public for various types of recreation. Public access to some conservation easement properties, farmland, for example, may remain at the discretion of the private landowner.

Summary
of Goals
for
New
Hampshire
Everlasting

The Society proposes five interrelated goals to guide the selection and conservation of lands for communities, forestry, habitat, clean waters, and farming.

The New Hampshire Everlasting Initiative Goals:

1. Support every community in conserving, with partners, at least twenty-five percent of its lands for a network of trails, parks, farms, and forests where people can connect with the natural world.
2. Conserve our share of the world's productive forest and enhance the forest economy so that New Hampshire can sustainably help supply the equivalent of what its residents consume.
3. Conserve enough habitat to sustain healthy ecosystems and ensure the survival of existing native species in each region of the state.
4. Sustain drinking water supplies and healthy aquatic ecosystems by conserving upland buffers along shorelines and lands that feed water to existing and future public water supplies.
5. Conserve the most productive agricultural land and invest in the evolving agricultural economy so that people in every community have the opportunity to grow healthy food and the state can sustain at least its current level of food production.

Unless the people of New Hampshire act swiftly, rapid growth and widely scattered development will engulf our remaining open lands. Their present value for habitat, remote recreation, forestry, farming, and water supplies will be diminished or extinguished.

These goals cannot be achieved by the Society alone

They can be achieved, for example, by individual landowners donating conservation easements on their land; by neighboring municipalities conserving a common river valley; and by state legislators passing a range of policies to promote smart conservation and smart growth.

The great conservation successes of the past have been achieved only through collaboration. It is our hope that these goals will inspire our partners to develop and share their own landscape-scale visions and goals.

Where our goals are shared, we seek partnerships — public and private, local, state, and national — to transform these goals into a collaborative campaign for the conservation of New Hampshire's special lands.

"The Society for the Protection of New Hampshire Forests seeks to perpetuate the forests by their wise use and their complete reservation in places of special scenic beauty."

--SPNHF Annual Report, 1904

Methods

The Society conducted a geographic information systems (GIS) analysis of the land needed to achieve each of the five individual goals. These figures are introduced in the narrative that follows for each of the goals.

The next stage of the GIS analysis was to overlay the land areas needed to achieve the individual goals. The areas that overlap are the areas that provide multiple public benefits and satisfy more than one goal.

This analysis helped us conclude that **in order to conserve the highest priority lands, those that support two or more goals, about one million acres would need to be conserved** .

One million more acres amounts to about seventeen percent of the state's land area.

Goal One:
Conserve
Lands
That
Support
Our
Quality-
Of-Life

Goal One: Conserve Lands That Support A Healthy Quality-Of-Life

Conservation partners support each New Hampshire community in conserving at least twenty-five percent of its land for a network of conservation land and parks. "Smart conservation" is integrated with smart growth to provide such vital assets to the community as:

- a recreational and commuter trail network
- clean drinking water
- village and downtown parks, and outdoor recreation fields
- locally produced food
- town forests and wildlife habitat conservation areas
- lands with scenic beauty and community character

Rationale

Currently, just over 22 percent of New Hampshire or 1.3 million acres, is permanently conserved from development. However, seventy percent of this land is in the northern half of the state where only ten percent of the people live. Only fifty-one of New Hampshire's two hundred and thirty-four municipalities have more than 25 percent of their land conserved, again mostly in the north.

Approximately half of New Hampshire municipalities have less than ten percent of their land permanently set aside for permanent conservation. Unless municipalities have a goal for land conservation that they pursue doggedly, land conservation attention will be diverted to regions where the threat of development is far less pressing.

From urban parks and recreational fields to town forests to greenways, a well-planned network of conservation lands, and trails can bring access to the forest and to downtown for every neighborhood. A well-designed network of ecologically significant areas and wildlife travel corridors is also an important part of a community's system of conservation lands.

Such a "green infrastructure" is vital for human health, the rural economy, and community quality-of-life. The purpose of this goal is to assist communities in securing open lands close to home, to meet their citizens' needs for the future. Land identified in the forestry, habitat, water, and farmland goals later in this document can also contribute to achieving a town's goal of conserving 25 percent of its land area.

Permanent land conservation should be accompanied by good land use planning, both within and between towns. Every municipality should have access to the resources and assistance needed to develop a master plan and innovative land-use regulations to conserve open space. Maintaining the current use assessment program is also vital so that owners are not forced to sell land for development in order to pay property taxes.

**Goal One:
Conserve
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Trails

Trails for walking, hiking, nature viewing, bicycling, and snowmobiling can connect neighborhoods to schools, parks, libraries, and civic and commercial centers. Long distance trails such as the Appalachian Trail, the Heritage Trail, and snowmobile trails can span a town, a ridgeline, a valley, or even the state. Trails that are both accessible and beautiful encourage people to exercise. Physical activity is enormously important for the physical and mental health of children and adults in our increasingly sedentary society. Use of trails also reduces the pollution from motor vehicles that aggravate asthma and other respiratory diseases.

Drinking water lands

Lands that feed water to wells and reservoirs are in urgent need of protection from potentially contaminating land uses (*see clean water goal*). Now is the time for communities to plan ahead and set aside land to keep their citizens healthy and supply water for future economic growth.

Community parks

Public parks and outdoor recreation fields are vital for children. Children need safe places to play and explore. Moreover, if adequate parks are not set aside now, scarce conservation lands may eventually be converted for this purpose. Today we recognize another health and economic benefit of urban trees and parkland — they can moderate ambient temperatures ten degrees Fahrenheit in the summer and buffer severe winter winds.⁵

Village and urban parks are vital public spaces for meeting neighbors, holding community events, and encouraging quiet reflection. It is notable that New York City has dedicated twenty-seven percent of its land area to permanent parks and open space. Boston, at fifteen percent and other large cities have more permanent open space and parks than many New Hampshire communities.⁶ Through good planning, New Hampshire communities can create their own open space legacies for the future.

Community agriculture

Every community should have the opportunity to have at least one farm or community garden. Local farmers' markets, farm stands, and pick-your-own operations are thriving as never before. This is an indication of people's desire for local, healthy food, and for a personal connection with the land and the people farming it. (*See farmland goal.*)

Town forests and conservation areas

New Hampshire has a proud tradition of town forests. Through municipal ownership and management, town officials and residents gain direct experience with natural history and forest management. The town can demonstrate model land stewardship, and the forests can be used to encourage other forest owners in the community to adopt sustainable forestry practices. In a 500-acre forest, people can recreate all day in a setting remote from development, roads, and traffic. Five hundred acres is also a

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significant threshold for supporting many types of wildlife.⁷ In communities where a 500-acre forest is not feasible in one location, several smaller conservation areas or forests could be acquired.

Scenic beauty and community character

Every community has landmarks that are cherished by its citizens. They are icons of the local culture — a prominent mountain, a sweeping view of a lake or pond, a valley farm cradled by forested hills, a quiet fishing hole on a meandering stream. They give a community more than physical sustenance; they give it character and an identity. These places are integral to our community culture and history. The land creates the setting for the historic meeting house, the July 4th parade ground, and the apple orchard where families and school groups look forward to a fall visit.

How can this be accomplished?

Communities can seek assistance in achieving their goals from a variety of natural resource conservation organizations and agencies. Well-planned, livable communities attract and retain businesses and residents and relieve development pressure on more rural areas. Conserved lands and easements can be held by the municipality, by private land conservation organizations, or by the state, depending on the circumstances and the desire of the municipality to take on stewardship responsibilities.

If all towns had the goal conserving at least twenty-five percent of their land area, this would total an additional 730,000 acres of conserved land. This is roughly equivalent to the current acreage of the White Mountain National Forest in New Hampshire.

Open Space Pays Its Way

Extensive research conducted by University of New Hampshire Cooperative Extension and communities documents that open space — forests, farmland, wetlands, and wildlands — is good for the municipal bottom line. Tax revenues from open space, even when it is in current use, exceed the costs of municipal services for that open space. In contrast, residential development almost always is a net financial drain for the community.⁸

All but a couple of our largest cities are still at least twenty-five percent undeveloped. In fact, all but twenty municipalities have at least twenty-five percent of their land area in undeveloped forests of at least 500 acres in size. Our municipalities have the potential to achieve this goal — if they act soon.

“A positive act of land conservation is one that strengthens the relationship between people and the land and the values taught by that relationship.”

— Peter Forbes

**Goal Two:
Conserve
Our Share
Of The
World's
Managed
Forests**

Goal Two: Conserve Our Share Of The World's Managed Forests

Permanently conserve enough productive forestland to ensure that New Hampshire's working forests can:

- grow more wood than is harvested over time
- yield more harvested wood annually than its population can be anticipated to consume, while at the same time maintaining the health and productive capacity of forest soils and ecosystems

Enhance the forest economy to:

- maintain forest infrastructure, labor force, mills, and manufacturers so that they have the capacity to process the equivalent of New Hampshire's annual harvest
- support a diverse and evolving forestry economy

Rationale

Our vanishing forests

Our forests provide habitat, clean water and air, wood products, carbon storage, scenery, and recreational opportunities.

New Hampshire's forests blanket 4.8 million acres or 84 percent of the state's land area, making our state the second most forested in the nation. We are fortunate that our forests regenerate naturally and vigorously when well managed. Yet, there are many threats to the economic viability of sustainable forestry. The state's forest cover is declining at a rate of about 13,000 acres (or half a town) per year.

In the southeast, unprotected forests that are viable for forest management may be gone within about fifty-five years.⁹

Statewide, the average size of a private forest ownership has declined to thirty-seven acres, a size where the economies of scale make responsible forest management less and less profitable for landowners. Also eroding the profitability of forestry is the loss of the most productive soils and sites for forestry since these are being developed more rapidly than the steeper, rocky, and remote sites.¹⁰

Growing our share

Despite forestland development, the overall volume of wood in our forests continues to grow, thanks to the maturing forest. The state's net annual growth is about 10 percent greater than the amount of wood that we are currently harvesting.¹¹

Land managers need to reserve some of this land from timber harvesting so that species, biological processes, and aesthetic values dependent on old growth conditions can become established (*see habitat goal*). Averaged over several decades, the growth of our forests (on lands available for harvest) should not exceed harvests.

**Goal Two:
Conserve
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Of The
World's
Managed
Forests**

It is estimated that approximately 1.7 million cords of wood are harvested annually from New Hampshire's forests. This is about 20 percent more than the equivalent in forest products that residents currently consume (1.15 cords per person per year).¹²

Today, we do grow and harvest "our share." However, if current trends continue, by 2020 we will no longer have this distinction.

If we continue to lose New Hampshire's working forests, we will shift our demand to other states and countries. We cannot be assured that widespread, sustainable forestry will be practiced in the forests of Siberia, Southeast Asia, Latin America, and elsewhere.

In addition, these forests are under great population pressure for conversion to agriculture and development. Does it make sense for a place like New Hampshire, with four acres of forest per person, to pave over this advantage and expect to be supplied by a world with an average of scarcely 1.5 acres of forest per person? Conserving our forests so that we can "grow our share" is in our interest as New Hampshire residents.

Productive forest soils and historically well-managed forests should receive high priority for conservation. The more productive sites for forest management comprise about two thirds of our forested area. Forest blocks and parcels of sufficient productivity, accessibility, size, configuration, proximity to markets and geographic distribution need to be conserved to sustain management that is both economically and ecologically sound.

We must leave options open for future generations.

Keeping the forest economy healthy

The forest economy rests upon a complex infrastructure of loggers, foresters, equipment dealers, extension and university educators, truckers, mills, millworkers, landowners, and forests. In turn, a critical mass of forestland and harvesting activity is necessary to support this infrastructure.

New Hampshire's current status as a net exporter of manufactured forest products is an important part of our identity as well as our economy. The forest economy is based on a renewable resource, predominantly held by local landowners. The market for raw forest products is regional and increasingly global, however, and New Hampshire could rely upon out-of-state mills. However, when all other factors are the same, long-distance trucking to distant mills hurts the profitability of forestry. In addition, the loss of many local mills can result in less competition and certainty for landowners about the availability and diversity of markets in the long term.

Having manufacturers to process the high-grade and low-grade forest products that we harvest adds tremendous value to the economy. The forest products that we harvest are worth \$37 million in stumpage value to landowners but \$1.5 billion to the state's economy when manufactured into paper, lumber, furniture, fuel, etc.¹³

**Goal Two:
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Forestry directly and indirectly generates income equivalent to 12 percent of New Hampshire's gross state product. Open-space activities, many of which are forest dependent, directly or indirectly support sixteen percent of our jobs. ¹⁴

Tourism, hunting, fishing, and other forms of outdoor recreation will remain important contributors to our economy and way of life if the forests endure.

Finally, many landowners need a vibrant, profitable forestry economy to enable them to practice forestry, pay their taxes, and retain their land as forestland. Landowners should have this opportunity to practice forestry and retain their land throughout the state, not just in the north.

How can this be accomplished?

Methods to retain our forests include: keeping forestry profitable for landowners; retaining current use assessment; and practicing good land use planning and zoning. In other cases, where development pressure is high and landowners want to sell their land, permanent conservation through the acquisition of land and easements will be necessary.

There are many factors that will determine whether we will continue to grow our share of wood:

What amount of wood products will we consume as individuals?

Can we increase the productivity of our forests through good management practices and by reducing air pollution?

Will families have more than two children?

Can we plan and build more compact neighborhoods and communities that consume less land?

How much of our productive forestlands can we conserve and manage according to ecosystem-based principles?

Many of these are personal decisions, others are community decisions, and still others are business decisions. If we can make positive decisions in all of these areas, we can remain a state where forestry has a strong future.

Priority should be placed upon conserving the most productive soils and sites for forestry and upon the forestland that best supports the other four goals in this document.

Goal
Three:
Conserve
Habitat
for
Native
Species

Goal Three: Conserve Habitat For Native Species

Permanently conserve enough forestland and associated wetlands, shoreline, and other areas to sustain healthy ecosystems and ensure the long-term viability of populations of all presently occurring native species in each region of the state.

Rationale

Healthy ecosystems benefit us all

There are many reasons why it is important to conserve the diversity of native species and healthy ecosystems. Our ecosystems provide us with clean water, clean air, wetlands that mitigate floods and assimilate wastes, and nutrients for plant growth. Native species supply us with the genetic stock for the plants and animals that we harvest, hunt, fish, eat, and transform into medicines. We can use new scientific findings to identify the lands that are most important to conserve in order to achieve this goal.

We know that most of these critical habitat lands are not yet conserved. Less than one quarter of the state's rare plant and animal species are adequately protected by existing conservation areas.¹⁵

Act before species become rare

The New Hampshire Ecological Reserve Project recommends the protection of three or more sites in each of the state's nine eco-regions where rare species, exemplary natural communities, critical wildlife habitats, and ecological linkages occur.¹⁶

The Nature Conservancy's eco-regional planning effort is identifying large contiguous areas of "matrix" forest whose size and natural condition allow for the maintenance of dynamic ecological processes, viable forest communities, embedded large and small "patch" natural communities, and populations of rare and common species. These large areas are also capable of sustaining certain ecosystem functions and processes that are often scarce or absent in New Hampshire, such as the development of old-growth forests.

These projects, along with the state's Natural Heritage Inventory¹⁷, provide key information for setting conservation objectives to achieve this goal. Further research will be needed to more accurately design conservation areas, including acreage goals, management plans, and linkages for each species and population.

Many of these areas can be working forests that also support the other goals. However, some species cannot tolerate harvests and other human disturbances or the earlier successional conditions of younger forests. Therefore, some forests will be reserved as wildlands or natural areas to allow "old-growth" species and ecological processes to be established.

Currently, New Hampshire has only about 15,000 acres of old-growth forest. Prior to colonization, perhaps fifty-five to sixty percent of New Hampshire's forests exceeded one hundred fifty years of age at any one time — before they were blown down or burned and the cycle began anew.¹⁸

**Goal
Three:
Conserve
Habitat
for
Native
Species**

Today, only two percent of the state is designated wilderness, and will eventually revert to this cycle of old growth and regeneration. Although we can never approach pre-colonial conditions, we do need to increase the extent of our wildlands in the state using the latest science to guide us.

How can this be accomplished?

We are fortunate in New Hampshire that we still have the opportunity to conserve habitat for populations of common species like songbirds, moose, and bear so that they do not become rare. Using a methodology developed by The Nature Conservancy, large and relatively unfragmented forested areas have been identified as important for supporting minimum viable populations of common species. In addition, these large forest areas are selected to maximize the protection of exemplary natural communities, ecosystem processes, and rare species.

The extent of these habitat-rich, large forest blocks that is already protected is forty-two percent. The amount that is undeveloped and would benefit from protection is approximately 930,000 acres.

Much of this land could also support good forestry and the achievement of the other goals in this document, although more research is needed to determine what types of management should be practiced and where.

Many of these areas needing conservation are in the north and are more remote from development pressure. However, some are in central and southern New Hampshire. Priority must be given to these vulnerable areas if this goal of conserving habitat for native species is to be achieved in all regions of the state.

**Goal
Four:
Conserve
Lands
that
Keep Our
Water
Clean**

Goal Four: Conserve Lands that Keep our Water Clean

Protect water quality and aquatic ecosystems by:

- conserving remaining undeveloped source lands for existing public drinking-water systems and new lands necessary to supply the anticipated population many generations from now
- buffering water courses and wetlands from development with natural vegetation
- preventing development of more than ten to twenty percent of each watershed with pavement and buildings

Rationale

Our streams, rivers, wetlands, ponds, and groundwater are connected surrounding uplands through complex ecological processes. The health of our aquatic ecosystems depends upon how the surrounding upland is used. Providing connections between these upland and aquatic habitats is essential for many kinds of animals.

Healthy forests, Clean water

Clean water and healthy forests are New Hampshire's two great natural advantages. Ground and surface waters are abundant and high quality. Yet, accidents and incompatible land uses have contaminated hundreds of public water supplies in New Hampshire. We can no longer take these clean water supplies for granted.

Approximately five percent of the state consists of critical source lands for existing public drinking-water supplies. (Most of our businesses and nearly seventy percent of our residential population relies on public water supplies.) Another five percent of the state overlay high-yield aquifers that hold the greatest promise for future water supplies to meet the demands of our growing population. Water-supply lands also provide important habitat. This use is usually compatible with forest management and recreational use.

Conserved land minimizes the health risks and the high costs of contamination. In addition, clean source water costs much less to purify in treatment plants.

Already, ten percent of New Hampshire's critical water supply lands are developed. Only twelve percent of our water supply lands are permanently protected from development and potential contamination.¹⁹

This goal calls for the permanent conservation of our existing and future water supply lands. Priority should be placed upon the water systems that serve larger populations.

Buffer water from contamination sources

Massive investments over the past three decades have reduced pollution from factories, municipal sewage treatment plants, and other "point" sources. Today, the greatest threat to water quality comes from roads and development that create "impervi-

**Goal
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Clean**

ous surfaces” and “non-point” pollution runoff . These sources create ninety percent of the surface water-quality problems in New Hampshire. ²⁰

Hard surfaces collect and convey bacteria, nitrogen, phosphorous, toxic materials, and sediments to our waters.

The closer development is to water, the greater the damage it can cause. A minimum buffer of three hundred feet of natural vegetation is recommended along major wetlands and shorelines to protect water quality, aquatic ecosystems, and upland wildlife habitat. ²¹

A shrub and tree-lined buffer can dramatically reduce nutrient runoff, sedimentation, and transport of toxic substances into the water. The buffer prevents temperature increases and oxygen depletion that can be harmful to native aquatic organisms. Within this buffer area, sensitive forest management can occur. Trails and some types of farming can also occur with a smaller setback from the water.

This goal can be achieved, in part, with well-designed land-use regulations that require setback buffers from water and promote groundwater infiltration and erosion and sediment control.

Currently, eighty-four percent of the state is forested, but forest cover is steadily declining. In nineteen seacoast towns, thirty-two percent of the land is already developed. ²² About half of this area is impervious. ²³ The state as a whole is approximately two percent covered by roads, pavement, and buildings. ²⁴

Research shows that stream and wetland water quality and aquatic life begin to deteriorate once a watershed is more than ten to twenty percent covered by impervious surfaces such as pavement, hard-packed gravel, and buildings. Degradation is serious at a level of twenty to thirty percent impervious surface cover.

Imperviousness decreases groundwater infiltration and aquifer recharge. It increases peak water flows and erosion during rainstorms and snowmelt. ²⁵

Currently, nine of three hundred and twenty watersheds in New Hampshire have more than ten percent hard or “impervious” surfaces. None exceed twenty percent, although Manchester is close to this threshold.

Well-designed development can mitigate the effects of impervious surfaces. Urban areas that plant and retain forty percent of their tree cover can slow storm water runoff rates by sixty percent over those with no tree cover. ²⁶

Neighborhood and urban tree cover also safeguard aquatic ecosystems and help meet this goal. Finally, land uses and water withdrawals need to be monitored so that minimum water levels necessary for aquatic life are sustained in our water-courses and wetlands.

**Goal
Four:
Conserve
Lands
that
Keep Our
Water
Clean**

How can this be accomplished?

It is feasible to conserve a large portion of New Hampshire's remaining undeveloped drinking-water supply lands.

Approximately 260,000 acres are within the "drinking-water protection areas" for existing wells and reservoirs, as defined by New Hampshire Department of Environmental Services (this area is not "protected" as the name implies). This is the land area most important to the quality of the water.

Another 259,000 acres overlie high-yield sand and gravel aquifers, which are anticipated to be the best sites for high-yielding wells in the future.

Buffering streams and rivers from development to a width of three hundred feet on either side would require 238,000 acres. A similar buffer around ponds and lakes would comprise 71,000 acres. Large, intact wetlands (over fifty acres in size) cover 90,000 acres. Many of these different types of water resource lands overlap, so the sum of the areas needing protection is less than the individual components.

In addition many of these water supply lands are also the significant community lands, productive forests, and significant habitat that satisfy the other goals in this document.

Local land use regulations are well suited to protect water resources, including:

- adequate setbacks for clearing, buildings, and septic systems
- low density overlay districts for drinking-water lands, aquifers, and buffer areas
- open space subdivision ordinances that require clustering development away from lands that are critical to water quality

It is feasible to conserve these lands through a combination of good land use planning and strategic land and easement acquisition.

**Goal Five:
Conserve
Productive
Agricultural
Land and
the Farm
Economy**

**Goal Five:
Conserve Productive Agricultural Land and the Farm Economy**

Permanently conserve the remaining “prime” and “statewide importance” farm soils and enough other agricultural lands so that:

- the agricultural infrastructure can be sustained or strengthened
- every community has land for growing healthy food, whether it be victory gardens, flowers and landscape plants, market gardens, or dairy farms
- New Hampshire can sustain its current level of per capita food production using environmentally sound methods.

Rationale

Productive farmland is particularly precious in the Granite State where so much of the land mass is given to either rugged mountains, or to the rapidly urbanizing population centers of the southern tier. Only four percent of the state is in pasture or cultivation.²⁷

Yet, this small slice of farmland is treasured by residents for so many reasons—fresh produce at the local farm stand, school field trips to the dairy farm, scenic views to the hillsides and mountains, and a connection with the elemental endeavor of sustaining human life.

Farmers are stewards of over 450,000 acres of New Hampshire land, including much of the state’s very best soils, plus aquifer recharge areas, wildlife habitat, and recreational resources.

Farmland is under great development pressure. Between 1982 and 1997, eighteen percent of the state’s farmland was lost, primarily to development.²⁸

Contrary to popular perception, the number of farms is on the increase. Many farms are smaller than in the recent past. Farmers are diversifying and connecting with consumers that value local produce.

Productive farm soils

Although limited in acreage, New Hampshire’s agricultural lands include soils of world-class productivity, especially in the Connecticut River Valley. Soil scientists classify soils that are most productive and conducive to agriculture as “prime” and a secondary category as soils of “statewide importance.”

These soils are precious and should be permanently conserved. Not all of these soils are being actively farmed today, but in many areas, farmers compete for the limited acres available. While they may cycle in and out of active farms and tree cover, the potential for agriculture should always remain.

Only seven percent of these soils have been permanently conserved statewide.

**Goal Five:
Conserve
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the Farm
Economy**

Farm economy

The agricultural economy, like forestry, both relies on and supports the complex infrastructure of our food system, as well as the ornamental and recreational horticultural industries. Strong University of New Hampshire research, education, and Cooperative Extension programs are vital to a dynamic and profitable future for agriculture and forestry.

Rural culture

Our farms are an important part of our rural economy, tourism, and quality-of-life. They play an honored and vital role in our landscape, cultural heritage, and communities.

Every community should maintain or enhance connections between people, their agricultural heritage, and their food supply. The diversity of New Hampshire agriculture is one of its strengths.

This goal embraces conserving communities' traditional dairy farms and apple orchards, as well as market gardens and farm stands, pick-your-own berry operations, "community-supported agriculture" farms, community gardens, and other farming enterprises.

Local food production and more

New Hampshire has a proud tradition of self-sufficiency, ingenuity, and independence. Much of this culture was founded upon the farming and forestry heritage of our people. As recently as the 1970s, the state raised one-third of its food needs, but food production has not kept pace with the increase in population since then.²⁹ Many residents value the freshness, high quality, and dependability of locally and regionally produced dairy products, fruits, and vegetables.

Working agriculture contributes many other values to our state's environmental, social, and economic well being, increasing the pressing need to make sure agriculture survives and thrives in New Hampshire. Farming contributes over \$450 million to our economy each year. Agriculture also directly and indirectly supports the tourism and recreation industries.

Our meadows and farms open the scenic vistas so essential to our enjoyment of New Hampshire's landscape, which is created by the close proximity of fields and pastures, farmsteads, forests, and the built environment of villages and towns. This interspersed of farmland, forest, and wetland also provides rich and diverse habitat for wildlife.

How can this goal be accomplished?

Statewide, 272,000 acres of undeveloped agricultural soils are classified as prime or of statewide significance and are the highest priority for conservation acquisition. These lands are under great development pressure. As with the other goals, current use assessment and favorable land use regulations are necessary methods for conserving farmland.³⁰ It will only be feasible to achieve this goal if we act soon.

In
Conclusion

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During the next twenty-five years, the decisions about where we develop and where we conserve land will have an enduring influence on New Hampshire's quality of life for centuries to come.

Using newly emerging science, we can identify those interconnected lands that are essential to sustaining the fabric of our ecosystems, our open space economy, and our quality of life. The Society's analysis of the latest research tells us that a minimum of one million more acres of conservation land is needed to sustain our communities' quality of life.

We can draw upon the conservation partnerships and methods that have worked so well during the past century. Upon that foundation, we invite communities, the dozens of land conservation organizations, and the hundreds of businesses that call New Hampshire home to join together in this initiative.

Our time is short. If we are to make a difference in the communities where most of New Hampshire's residents live, we must act now. Over the next year, with partners, we will develop a comprehensive plan to implement these goals within the next generation.

Please join us in New Hampshire Everlasting.

Endnotes

- 1 US Census Bureau, Census data summaries, 1950-2000.
- 2 Thorne, Sarah and Dan Sundquist, *New Hampshire's Vanishing Forests: Conversion, Fragmentation and Parcelization in the Granite State*, SPNHF, 2001, available at www.spnhf.org.
- 3 Resource Systems Group, *The Economic Impact of Open Space in New Hampshire*, prepared for the Society for the Protection of New Hampshire Forests, January 1999.
- 4 See Peter Forbes, *The Great Remembering*, published by the Trust for Public Land, San Francisco, 2001.
- 5 "America's Urban Forests: Growing," *American Forests*, Autumn, 1997.
- 6 Harnick, Peter, *Inside City Parks*, published by Trust for Public Land, no date.
- 7 *Designing Communities to Protect Wildlife Habitat and Accommodate Development, Report of the Patterns of Development Task Force*, Maine Environmental Priorities Project, July 1997.
- 8 *New Hampshire's Land and Community Heritage At Risk*, Citizens for NH Land and Community Heritage, February 1999.
- 9 Thorne, Sarah and Dan Sundquist, *New Hampshire's Vanishing Forests: Conversion, Fragmentation and Parcelization in the Granite State*, SPNHF, 2001.
- 10 Ibid.
- 11 *The Granite State's Forests: Trends in the Resource*, US Forest Service Northeastern Research Station NE-INF-141-00, and Department of Resources and Economic Development, 2000.
- 12 *The Economic Importance of New Hampshire's Forests*, published by the Northeast State Foresters Association, 2001.
- 13 Ibid.
- 14 Resource Systems Group, Op Cit.
- 15 *An Assessment of the Biodiversity of New Hampshire with Recommendations for Conservation Action*, published by the Scientific Advisory Group of the New Hampshire Ecological Reserve System Project.
- 16 New Hampshire Ecological Reserve Project, criteria for reserve selection, 2000.
- 17 Located at the NH Division of Forests and Lands, Dept. of Resources and Economic Development.
- 18 Davis, Mary Bird, ed. *Eastern Old-Growth Forests: Prospects for Rediscovery and Recovery*, Island Press, Washington D.C., 1996.
- 19 *Recommended Water Supply Land Conservation Plan for New Hampshire*, SPNHF, 1998.
- 20 NH Department of Environmental Services quoted in Chase, Jim and Lorraine Merrill, the State of New Hampshire's Estuaries, NH Estuaries Project, November, 2000.
- 21 Chase, V.P. Deming, L.S. and Latawiec, F. *Buffers for Wetlands and Surface Waters: A Guidebook for New Hampshire Municipalities*, Audubon Society of NH, Concord, NH 1995.
- 22 Chase, Jim and Lorraine Merrill, *The State of New Hampshire's Estuaries*, NH Estuaries Project, November, 2000.
- 23 *Estimate of Impervious Surface Coverage by Town*, New Hampshire Estuaries Project, prepared by Complex Systems Research Center, UNH, February, 1998.
- 24 Sundquist, Daniel and Michael Stevens, *New Hampshire's Changing Landscape*, SPNHF and The Nature Conservancy, November, 1999.
- 25 Arnold, Chester and C. James Gibbons, "Impervious Surface Coverage," *American Planning Journal*, Spring, 1996.
- 26 "America's Urban Forests: Growing," *American Forests*, Autumn, 1997.
- 27 US DANational Resource Inventory website (1997 data), August, 2001
- 28 Ibid.
- 29 Richard Unkles, Department of Agriculture, personal communication, 2001.
- 30 See *Preserving Rural Character through Agriculture: A Resource Kit for Planners*, published by the NH Coalition for Sustaining Agriculture, 2000. <http://coopext1.unh.edu>