

*Vermont Forest Legacy Program  
Assessment of Need (AON), February 2010*

APPENDIX C: FOREST LEGACY ASSESSMENT OF NEED

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## FOREST LEGACY: ASSESSMENT OF NEED

A REQUIRED COMPONENT OF THE FOREST LEGACY PROGRAM (PGS. 22 AND 104 IN THE PLAN), THE ASSESSMENT OF NEED (AON) PROCESS DETERMINES AREAS WHERE THE STATE'S MOST VALUABLE FORESTLANDS FACE THE GREATEST THREATS, SOLICITS AND RECEIVES INPUT FROM THE PUBLIC, AND SEEKS APPROVAL OF THESE FOREST LEGACY AREAS FROM THE SECRETARY OF AGRICULTURE. VERMONT'S MOST RECENT AON WAS COMPLETED IN 2010.

**State of Vermont**

**Forest Legacy Program  
Assessment of Need**

<http://www.vtfpr.org/lands/flp.cfm>

**July 2010**

**Vermont Department of Forests, Parks and Recreation  
Waterbury, VT**

*Vermont Forest Legacy Program  
Assessment of Need (AON), February 2010*



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**File Code:** 3360 **Date:** December 13, 2010

**Route To:**

Subject:Reply to Approval of forest Legacy Sections of Statewide Assessment & Strategy Documents

To: Kathryn P. Maloney, Area Director

Thank you for your evaluation of the documents prepared by Maine, New York, Vermont, and Wisconsin, for compliance with Forest Legacy Program. I approve the amendments, updates, and revisions to the Forest Legacy Program which you cite in your letter dated November 3, 2010, for the States of Maine, New York, Vermont, and Wisconsin.

/s/ James E. Hubbard

JAMES E. HUBBARD

Deputy Chief, State and Private Forestry

cc: Ted Beauvais

Macario Herrera

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## **Preface: Executive Summary**

Forested mountains and hillsides and a rural working landscape are essential elements that contribute to Vermont's unique character and its name the "Green Mountain State." Forests cover more than 78 percent of the state and, of particular importance to the Vermont Forest Legacy Program, approximately 81 percent of the forestlands are privately owned. Forests provide a wide array of benefits including timber and wood products, recreational opportunities, wildlife habitat, scenic vistas, clean water, and cultural resources. A number of circumstances in Vermont threaten the conversion of forestlands to other uses, including population increases, changes in landowner attitudes, fragmentation and parcelization of many forested areas, posting of land that discourages certain uses, tax policies, urban sprawl, and resort and second home development. These circumstances affect private forest lands throughout the state and broadly across the landscape.

The Forest Legacy Program (FLP) is a partnership between participating states and the USDA Forest Service to identify and help protect environmentally important privately-owned forestlands from conversion to non forest uses. In order to receive FLP funds, each state must determine areas where the most valuable forestlands face the greatest threats, solicit and receive input from the public, and seek approval of these Forest Legacy Areas from the Secretary of Agriculture. This process is called the Assessment of Need (AON). The Vermont Department of Forests, Parks and Recreation is charged with this task and also administers the program for the state. Once a state's Forest Legacy Area is approved, landowners from towns in the program may then submit tracts or projects to the state to be considered for funding through the FLP.

Vermont's first AON was approved in 1994. By January 2010, 30 projects approaching 66,000 acres were conserved with \$24 million FLP dollars and additional matching funds. Among these was the first approved FLP project in the country at Cow Mountain Pond in the Town of Granby.

In Vermont, conservation easements with willing landowners are the main tool used for protecting these resources, though fee acquisition by the state or a municipality of the state of strategic parcels also occurs.

In 1996 a State Grant Option was offered by the Forest Service, allowing states to purchase in fee or hold the conservation easements on Forest Legacy Lands. Through this option, private lands within the Proclamation Boundary of the Green Mountain National Forest became eligible for the program. The Vermont Forest Legacy Area boundaries proposed in this AON therefore reflect this possibility in some towns.

This 2010 AON was developed using information about Vermont's forests generated over the past decade by improvements in spatial technology capabilities. Spatial technology helps evaluate forestland to determine which areas best meet the Eligibility Criteria for creation of a new Forest Legacy Area.

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The Forest Legacy Area proposed through this AON encompasses approximately the same acreage as the 3.3 million acres designated in 1994 contained in one Forest Legacy Area as opposed to three designated in the 1994 AON. The Forest Legacy Area was determined using large forest blocks, productivity of soils, and fish and wildlife habitat as indicators of forests that best meet the Eligibility Criteria described in Section V, C, page 31.

The threat of conversion of Vermont's private forestlands to non-forest uses is widespread across the state and is considered to apply to virtually every forested parcel. These threats include parcelization and fragmentation of forestland (due to increased state population, changing demographics and state and local regulations favoring open, agricultural land) and loss of public access to privately owned forest land. All areas in the Forest Legacy Area are considered threatened by these conversions.

Development of this AON has been reviewed and supported by the Vermont Forest Stewardship Committee and many of our partner organizations. The public helped determine the boundaries of the Forest Legacy Area through meetings hosted by 11 regional commissions and access to the AON was available on the Department of Forests, Parks and Recreation website.

Each town that was included within the boundary of the Forest Legacy Area, either the entire town or a portion of the town, was contacted via letter to the selectboard to offer those towns the opportunity to opt out of the program.

The following **20** towns and **4** unorganized towns and gores were included in one of three Forest Legacy Areas in the old AON but are not included in the Forest Legacy Area under the new AON. All were sent letters explaining that their towns would not be included in the new AON:

Towns

Barre Town	Barre City	Charleston	Derby
Dover	Dummerston	East Montpelier	Ferrisburgh
Hartland	Holland	Montpelier	Morgan
New Haven	Newport City	Panton	Rutland City
Rutland Town	Waltham	Weybridge	Whitingham

Unorganized Towns and Gores

Avery's Gore	Lewis	Warner's Grant	Warren Gore
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The following **25** towns and **2** unorganized towns were not included in a Forest Legacy Area in either AON:

Towns

Addison	Alburgh	Bridport	Brattleboro
Burlington	Charlotte	Colchester	Cornwall
Franklin	Georgia	Grand Isle	Highgate

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Isle La Mott	Milton	North Hero	St Albans City
St. Albans Town	Shelburne	Sheldon	Shoreham
South Burlington	South Hero	Swanton	Vergennes
Whiting	Winooski		

Unorganized Towns

Glastenbury	Somerset
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The following **4** towns were included in the Forest Legacy Area but asked to be removed from the new Forest Legacy Area:

Fairlee	Hancock	Lincoln	Northfield
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The following **186** towns, **2** unorganized towns and **1** gore (total **189**) are included in the Forest Legacy Area under the new AON:

Towns

Albany	Andover	Arlington	Athens
Bakersfield	Baltimore	Barnard	Barnet
Barton	Belvidere	Bennington	Benson
Berkshire	Berlin	Bethel	Bloomfield
Bolton	Bradford	Braintree	Brandon
Bridgewater	Brighton	Bristol	Brookfield
Brookline	Brownington	Brunswick	Burke
Cabot	Calais	Cambridge	Canaan
Castleton	Cavendish	Chelsea	Chester
Chittenden	Clarendon	Concord	Corinth
Coventry	Craftsbury	Danby	Danville
Dorset	Duxbury	East Haven	Eden
Elmore	Enosburgh	Essex	Fair Haven
Fairfax	Fairfield	Fayston	Fletcher
Glover	Goshen	Grafton	Granby
Greensboro	Groton	Guildhall	Guildford
Halifax	Hardwick	Hartford	Hinesburg
Hubbardton	Huntington	Hyde Park	Ira
Irasburg	Jamaica	Jay	Jericho
Johnson	Killington	Kirby	Landgrove
Leicester	Lemington	Londonderry	Lowell
Ludlow	Lunenburg	Lyndon	Maidstone
Manchester	Marlboro	Marshfield	Mendon
Middlebury	Middlesex	Middletown Sprngs	Monkton
Montgomery	Moretown	Morristown	Mount Holly
Newark	Newbury	Newfane	Newport Town
Norton	Norwich	Orange	Pawlet
Peacham	Pittsfield	Pittsford	Plainfield

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Plymouth	Pomfret	Poultney	Pownal
Putney	Randolph	Reading	Readsboro
Richford	Richmond	Ripton	Rochester
Rockingham	Roxbury	Royalton	Rupert
Ryegate	St. George	St. Johnsbury	Salisbury
Sandgate	Shaftsbury	Sharon	Sheffield
Shrewsbury	Stamford	Stannard	Starksboro
Stockbridge	Stowe	Strafford	Stratton
Sudbury	Sunderland	Sutton	Thetford
Tinmouth	Topsham	Townshend	Troy
Tunbridge	Underhill	Vershire	Victory
Waitsfield	Walden	Wallingford	Wardsboro
Warren	Washington	Waterbury	Waterford
Waterville	Weathersfield	Wells	West Fairlee
West Haven	West Rutland	West Windsor	Westfield
Westford	Westminster	Westmore	Weston
Wheelock	Williston	Wilmington	Windham
Windsor	Winhall	Wolcott	Woodbury
Woodstock	Worcester		

Unorganized Towns and Gore

Averill      Buell's Gore      Ferdinand

The importance of the Forest Legacy Program (FLP) to forest conservation efforts in Vermont cannot be underestimated. Although just one program among many, the FLP funds made available for projects throughout the state have made possible huge strides toward implementing comprehensive conservation strategies across the landscape.

For more information about the Forest Legacy Program and the application process, please see the website <http://www.vtfpr.org/lands/flp.cfm>.

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## **Acknowledgements**

Many individuals, agencies, and organizations deserve special thanks for the time and expertise they contributed towards the production of this Assessment of Need.

The Vermont Forest Stewardship Committee provided advice throughout the entire process of developing this Assessment of Need. The Vermont Forest Stewardship Committee is appointed by the Commissioner of the Department of Forests, Parks and Recreation. Its members, listed in the following table, represent a variety of agencies, organizations, and individuals: USDA Forest Service; Natural Resources Conservation Service; Farm Services Agency; Cooperative State Research, Education and Extension Service; local government; consulting foresters; environmental organizations; forest products industry; forest landowners; land trusts; conservation organizations; Vermont Department of Fish and Wildlife; and others determined appropriate by the Commissioner of Forests, Parks and Recreation. The Vermont Forest Stewardship Committee will continue to advise the department regarding implementation of the program and assist with the evaluation and ranking of proposed tracts.

Members of a steering committee proposed the process and initial contents of this plan. These included Vermont Forest Legacy Program Coordinator Kate Willard, Vermont State Forester Steven Sinclair, Lands Director Mike Fraysier, Fish and Wildlife Operations Director Tom Decker, Forestry District Manager Jay Maciejowski, Administrative Assistant Rebecca Washburn, and Assessment of Need author Linda Henzel. Vermont Forest Stewardship Committee members Thom McEvoy, Sam Miller, and Jim Shallow worked closely with the steering committee on many occasions.

Erik Engstrom and Peter Telep from the Information Technology section of the Vermont Agency of Natural Resources produced the maps.

Rebecca Washburn drafted revisions to the Project (Tract) Selection Criteria.

Other Vermont Agency of Natural Resources staff members who participated in developing the draft document include Robert DeGeus, Jim Horton, and Eric Sorenson.

The 11 regional planning commissions coordinated public meetings to receive feedback on the AON and to determine which towns would participate.

Thank you also to the people who participated in meetings and provided feedback to the draft document. We appreciate your interest and involvement in this process.

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## **I. Introduction**

### **Overview of the Forest Legacy Program and Assessment of Need**

The Forest Legacy Program (FLP) is a partnership between participating states and the USDA Forest Service to identify and help protect environmentally important privately-owned forestlands from conversion to non forest uses. Conservation easements with voluntary landowners are the main tool used for protecting these resources, fee ownership by the State or a municipality of the State is also used.

The purpose of the program, under the Forestry Title of the 1990 U.S. Farm Act, is to **“ascertain and protect environmentally important forest areas that are threatened by conversion to non forest uses and, through the use of conservation easements and other mechanisms, to promote forest land protection and other conservation opportunities.”** Each state defines environmentally important areas, determines the threats to its forests, and develops its own criteria for selecting areas of the state that are most important, referred to as Forest Legacy Areas, solicits and receives input from the public, and seeks approval of these Forest Legacy Areas from the Secretary of Agriculture. This process is called the Assessment of Need (AON). Landowners within approved Forest Legacy Areas may then apply to the state for FLP funds to support projects (tracts) that are selected via a nationally competitive process.

There are many reasons why Vermont participates in the Forest Legacy Program (FLP). The majority of Vermont’s 4,482,500 acres of timberland is privately owned (3.5 million acres or 81 percent). The annual contribution of forest-based manufacturing and forest-related tourism and recreation to the Vermont economy is over \$1.5 billion (North East *State* Foresters Association, 2007). There are many threats to this valuable resource that occur throughout the state and across the landscape. The FLP helps Vermont make progress in minimizing fragmentation and parcelization of private forestlands to benefit the timber and wildlife resources; and towards creating more opportunities for public access for recreation on these lands. Perhaps most importantly, the survival of Vermont’s forestlands and timber and recreation industries depends significantly on our ability to maintain large, contiguous forested areas, and FLP is one of just a few funding sources available to Vermont that can make this possible.

Vermont’s Forest Legacy Program (FLP) was launched formally in 1994 through the approval of its first AON. By the end of June, 2010, 9 fee acquisitions totaling 9,800 acres and 24 conservation easement acquisitions totaling 48,000 acres were completed in the state with Forest Legacy funding. Among these was the first approved FLP project in the country at Cow Mountain Pond in the Town of Granby. An additional 11 fee acquisitions, totaling 1,500 acres, and 9 conservation easement acquisitions, totaling 10,000 acres, were completed on projects used for in-kind match.

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In 2005 the State Forester, the Vermont Forest Stewardship Committee, and staff of the Department of Forests, Parks and Recreation agreed to update the existing AON for Vermont. The goal for the program is as follows:

***The goal of Vermont's Forest Legacy Program is to maintain forestlands at risk for conversion to other uses primarily through the use of conservation easements with willing owners. The overall purpose of the program is to sustain the economic, ecological, and social values of forests, including productive working forests; habitats and natural communities that promote native plants and wildlife; clean water and fish habitat; public recreational opportunities including fishing and hunting; culturally significant resources; and scenic landscapes.***

## **II. Assessment of Uses and Values of Vermont Forests**

### **A. Overview of Vermont's Forest Resources**

The importance of forests to the environmental, economic, and social fabric of the state is demonstrated by the fact that forests cover more than 78 percent of the state. The current amount of forestland is significant as nearly all of the state had been cleared at one time for agriculture by the 1850s. Of particular importance to the Forest Legacy Program, approximately 81 percent of these forestlands are privately owned. The forests provide a wide array of resources including timber and wood products, recreational opportunities, wildlife habitat, scenic vistas, clean water, and cultural resources. These resources are described in more detail in this section.

The degree of forestation varies across the state, ranging from 94 percent forested in the Southern Green Mountains to 40 percent in the Champlain Valley (Vermont Fish and Wildlife, 2005). Overall Vermont's forested lands have been increasing in acreage, number of trees, annual growth, volume, and maturity as well as showing improvements in health for many decades. Vermont's hardwood forests have shown continued improvements since 1985. Ongoing monitoring of sugar maple forests showed that 92 percent of trees on plots surveyed were healthy in 2005. In 1997, 97 percent of over story trees had low dieback, and conifer species were in generally good condition (Vermont Department of Forests, Parks and Recreation, 1999).

Vermont forests provide an economic base for employment, tourism, and recreation, and support a strong forest products industry. The sale of forest products contributes \$1 billion to the state's economy annually. The forest-related recreation and tourism activities in the state contribute nearly \$500 million to the state's economy annually. These industries together employ more than 13,000 people. Forest-based manufacturing represents 11 percent of the statewide value for manufacturing (North East State Foresters Association, 2007). Wood also provides one of the state's most

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significant current and potential sources of renewable energy. The use of wood fuel helps to reduce dependence on imported oil, while providing an economic benefit to communities and reducing greenhouse gas emissions (USDA Forest Service, 2005).

Fish and wildlife based activities such as hunting, fishing, trapping, and watching wildlife, which rely on forest-based habitat, bring over \$386 million into Vermont's economy annually. Vermont is second in the nation only to Alaska in the percentage of its population that participates in these activities (U.S. Fish & Wildlife Service, 2001). These are important contributors to the economy, life style, and culture of the predominantly rural state.

## **B. Timber**

Of Vermont's forested acres, 97 percent (4.5 million acres) are classified as timberland by the USDA Forest Service. Timberland is forest land that is capable of producing commercial crops of timber (Wharton et al., 2003) and is potentially available for harvesting (USDA Forest Service, 2001). Most forest land in Vermont is privately owned by individual owners who sell their trees as "stumpage." In 1997, Vermont's private forest landowners held 85 percent of the state's timberland and represented 80,500 individuals and enterprises (USDA Forest Service, 2001). In 2002 the estimated total sales of stumpage earned by Vermont landowners was \$30 million.

Vermont is recognized for its high quality hardwood lumber, particularly that from sugar maple. Other species of importance for timber in the state are white pine, spruce, white ash, red maple, and birches. The primary timber products are sawlogs, veneer logs, and pulpwood. Overall, hardwood species outnumber softwood species in Vermont by a ratio of 2 to 1. Sugar maple is the most prevalent hardwood species, followed by American beech, red maple, yellow and paper birch, and white ash. Hemlock is the leading softwood species (Wharton et al., 2003).

Records of timber harvest in Vermont have been maintained since 1945. Harvest generally declined from 1961 to 1971, began to increase in 1972, and continued to increase overall through 2002. Annual harvests declined slightly from 2003 to 2006. Historically, cutting pressure has been greater on softwoods, other than hemlock, than on hardwoods. The ratio of growth-to-removals (G/R) varies among species. Species with the most favorable G/R ratios are hemlock, red maple, sugar maple, ash, and the oaks. In Vermont these species have been increasing in the portion of the total resource they represent since 1973, resulting in the overall pattern of forest composition as having fewer species making up more of the inventory. There also appears to be a relatively low proportion of sawlog-sized trees in the population. (Vermont Department of Forests, Parks and Recreation, 1999).

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## **C. Carbon Storage**

Although not specifically identified as a traditional forest use in the past, the carbon storage function of Vermont forests and forest products has been significant for many decades. Northeastern forests sequester more carbon than forests in any other part of the U.S. (USDA Forest Service, 2005). The disposition of forest products plays a key role in how forests contribute to environmental carbon budgets. The greater proportion of harvest volume that goes into durable products, the greater total sequestration effect obtained.

It appears likely that the carbon sequestering benefits of forest lands and products will increase in value, both economically and ecologically, to the state in the future. Ecologically, Vermont's extensive forest lands provide a positive contribution toward lowering atmospheric carbon levels and maintaining a livable climate. Economically, a value cannot be placed on the amount of carbon Vermont forests and forest products sequester at this time. However, it is anticipated that, as carbon accounting methods and markets develop, Vermont forests may have significant value in this regard.

## **D. Energy from Wood (Biomass)**

Wood provides one of the state's most significant sources of renewable and environmentally friendly energy. Vermont is a national leader in the research, development, and commercialization of wood energy in the form of clean combustion of wood chips for heat and electricity production. Nearly all of Vermont's wood chip usage comes from mill wastes or sustainably harvested chips from low-quality trees.

At the time of this assessment, about six percent of Vermont's energy to produce electricity comes from wood. This represents an expanded use of wood for energy compared with the past and has increased the opportunity to utilize low quality trees. The potential for deriving additional energy from wood in Vermont in the future, as well as the importance or value of that potential, has not been calculated.

Many of the state's households burn wood as their primary fuel, and wood-using industries in Vermont have long used wood for space heating and drying lumber. Vermont also has two commercial electric generating stations and several industrial sized heating plants using wood chips. Wood chips are used to heat 25 schools around the state, two state office complexes, and several other facilities.

The use of wood fuel helps reduce dependence on fossil fuels, both imported and domestic, while providing an economic benefit to communities and reducing greenhouse gas emissions from fossil fuels. The release of carbon dioxide from the combustion of wood is roughly equivalent to the carbon dioxide sequestered or absorbed by the growing trees. Therefore heat generated from wood burning is considered "carbon neutral," and, when used in the place of fossil fuels, reduces the release of greenhouse gases.

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## **E. Other Forest Products**

The contribution of forest-based manufacturing and forest-related tourism and recreation to the Vermont economy in 2005 totaled more than \$1.5 billion. The aesthetic value of Vermont's forests during the fall foliage season provides a major attraction to both visitors to and residents of the state. Forest-based manufacturing contributed \$1.0 billion in value of shipments to the economy in 2005 or 9.3 percent of Vermont's total manufacturing sales (North East *State* Foresters Association, 2007).

Collection, use, and sale of nontimber products are an important part of traditional rural life in Vermont. Nontimber products include sap for maple syrup, weaving and dyeing materials, berries, mushrooms, bark, burls, cones, foliage and branches, roots, herbs, nuts, seedlings, mosses and lichens. These and other products are collected wild or cultivated in the forest. The economic value of nontimber products to the state is nearly impossible to estimate since much of the material collected or cultivated is either for personal use or is not reported as separate income. Timber management is not by definition in conflict with these nontimber products. Some forest management plans tailor silvicultural prescriptions to support or even favor nontimber products.

## **F. Bedrock and Surficial Geology**

Vermont's landscape represents more than one billion years of geologic history. Vermont rocks formed in a variety of environments, originating as sediment deposited in ocean basins, on beaches and in tidal flats, as lava which flowed and explosively erupted from volcanoes, and as metamorphic rocks, folded and broken as continents collided along ancient plate boundaries. Glacial ice and meltwater sculpted, eroded, and deposited sands and gravels on the underlying hard rock. Water, wind and human actions continue to alter the Vermont landscape.

The following summary of both bedrock and surficial geology in Vermont is adapted from sections of the book *Wetland, Woodland, Wildland: A Guide to the Natural Communities of Vermont* by Thompson and Sorenson. Vermont rocks have been subjected to continental movement, building and wearing down of mountains, and volcanic activity. Surficial deposits of gravels, sands, silts, and clays were made on top of bedrock as a result of glacial activity. In some places, these deposits are so thick they completely mask the effect of the underlying bedrock.

Most of Vermont's bedrock began as sea sediments, many of which were subjected to continental movement. These rocks and others formed through volcanic activity have all been subjected to change (metamorphosis) by the forces of pressure, heat, and/or water. The oldest mountains in Vermont are found in the Southern Green Mountains where some rocks remain from the first known mountain building event of more than a billion years ago. When the continental plates moved apart, basalt and other volcanic rocks poured out. These are visible today in the northern sections of the Green Mountains.

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The valley created from plate movements continued to widen, and the surrounding mountains eroded and deep sediments were deposited in the valley bottoms. The valleys eventually filled with sea water. This set the stage for the deposit of much of Vermont's bedrock. Sandy beach sediments are found in sections of the Green Mountains. Mudstones are found in the Green Mountains and Taconics. Limestones, dolomites, shales and quartzites formed in what is now the Champlain Valley and Vermont Valley. The youngest metamorphosed sedimentary rocks are the limestones and mudstones of eastern Vermont.

When the continents started moving together again, thrust faulting caused rocks to slide on top of each other and displace them. The rocks of today's Taconic Mountains were thrust more than 60 miles and over the top of what are now the Southern Green Mountains and the Berkshires in Massachusetts. This mass of older rock on top of younger rock in the Taconics is world famous. A thrust fault also occurred in the Champlain Valley, creating another famous location in Burlington. Further plate collisions caused subsurface rocks to be heated and moved upward. Large underground domes of molten magma eventually hardened. As rocks on top of them eroded, the domes were exposed as hills of granite in the areas now known as the Groton hills, Barre, and Northeastern Highlands.

The glaciers that covered northern North America for tens of thousands of years had a huge impact on the soils and vegetation in the state. Glaciers reached maximum extent about 20,000 years ago and were gone by about 13, 500 years ago. The ice was a mile thick in places, putting great weight upon the land and scraping everything in its path. When the climate warmed, huge amounts of water were released along with boulders, gravel, sand, silt, and clay that melted out of the ice. Glacial deposits of clay soils, kames, deltas, and eskers are found today in river valleys and lower elevations. Most of the rest of the state is covered with glacial till--unsorted rock fragments left behind by retreating glaciers. Soils derived from till are the most common in the state. Basal till, which was deposited at the base of the ice, is dense and prevents water from moving downward into the soil. Ablation till was carried higher in the ice and was left behind as glaciers receded. The till in any location may be derived from rock miles away and therefore have a different chemical composition from the bedrock beneath it. Where these surficial deposits are particularly deep, they mask the effects of the bedrock and influence the vegetation that grows there.

## **G. Mineral Resources**

The total value of non-fuel mineral production in Vermont, including sand and gravel, was \$73 million in 2003, Land or interest in land is typically not acquired if the mineral rights have been severed. In the case of the mineral rights being held by a third party acquisition may be considered as long as 1. the likelihood of the third party exercising their right to extract minerals is so remote as to be negligible and 2. the severed mineral rights are not listed as an exception to the title insurance policy. rights being Vermont's conservation easement allows landowners to use gravel resources for improvements on the conserved property.



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## **H. Soils**

This section on soils was provided by Thomas Villars, Soil Resource Specialist, USDA Natural Resources Conservation Service. Broad patterns of soil types can be used to understand the differences among forest types in Vermont at a broad scale. The great diversity throughout the state in soil texture, chemistry, and drainage class is partly a reflection of the geologic origin of the soils. Generally speaking, however, soils that develop on bedrock of limestone or marble, and therefore contain more calcium carbonate, may grow more productive forests than those soils with granitic or quartz bedrock. This is partly due to the greater acid neutralizing capacity of the calcium carbonate.

Due to variations in geology, glacial history, elevation and climate, over one hundred and fifty soils are distributed among Vermont's six physiographic regions. The soils in the uplands are all descendants of localized glacial till. Other soils have formed in alluvium, sandy and gravelly outwash, lacustrine sediments, and organic materials.

The soils in the Green Mountains are uniformly acidic and loamy textured. They vary in depth to bedrock and drainage. The Tunbridge series, the State Soil, is well drained and twenty to forty inches deep to bedrock. Other soils are underlain by densely compacted glacial till and have a seasonal high water table. At elevations above 3000 feet, soils are colder and even more acidic, supporting only spruce and fir, or alpine vegetation above treeline. The land is almost entirely wooded and used for recreation, wildlife habitat and forestry.

The Champlain Valley was submerged beneath seawater for a time during the last glacial period. Clayey soils, like the moderately well drained Vergennes and poorly drained Covington series, formed in the marine sediments left behind after the sea eventually drained out the St. Lawrence River. These soils have a relatively high pH, warm temperatures, and gentle slopes. This region is the most active agricultural area in the state. Shallow soils like the Farmington series are on ledgy limestone knolls throughout the region, and sandy soils like the Windsor series are on deltas and terraces along streams.

The Vermont Valley, extending down U.S. Route 7 through Rutland, Manchester, and Bennington, also has soils with relatively high pH, warm temperatures, and gentle slopes. The glacial till soils, derived from limestone and marble, are loamy, rich in calcium, and are great agricultural soils. There are sandy and gravelly soils on terraces and fertile alluvial soils on floodplains that are inundated almost yearly.

The Vermont Piedmont is a hilly, dissected region that is home to many small hill farms and generally productive soils. Because of the presence of thin layers of limestone in the schist and phyllite bedrock that predominates in the region, the soils have some natural fertility, with only moderate acidity levels and loamy textures high in silt content. The deep, seasonally wet Buckland and Cabot soils, formed in dense compacted glacial till, are common in farm fields and wetlands, while shallow Glover soils, less than twenty inches to bedrock, are more typical of wooded sites and poor pastures. Land use is a patchwork of farms, fields, forests, and small villages.

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The Northeast Highlands are similar to the Green Mountains. Soils are very acidic, somewhat coarsely textured, and relatively low in fertility due to the granitic bedrock in the region. Cold, very poorly drained organic soils are in the many bogs scattered throughout the region. The land is almost entirely wooded and used for forestry, hunting, and recreation.

The Taconic Mountains, Vermont's lesser known mountain range, is in the southwestern part of the state. The common soils, like the Duchess, Macomber and Taconic series, are derived from the slate and phyllite bedrock characteristic of the region. They are acidic, somewhat silty in texture, primarily well drained, and vary in depth to bedrock from just a few inches to many feet thick. Above 2500 feet, the soils are colder, more acidic and closely resemble the soils in the Green Mountains in their morphology. Land use is primarily hardwood forest, with small farms and country homes scattered about.

## **I. Wildlife Harvest**

The harvest of Vermont's wildlife under regulated seasons, and regulated manner and method of take, has been conducted in the state for more than 300 years. Over 55 species of wildlife are harvested principally in the fall, winter, and spring under heavily regulated hunting and trapping seasons. From 2001 to 2006, over 2.5 million pounds of meat from white-tailed deer, moose, and black bear were harvested from the forests of Vermont. More than 80,000 households participate in these annual harvests. Surveys show that over 68 percent of these people share harvested meat with their neighbors and others in their communities (e.g. community game suppers). The harvest and utilization of these natural resources as food, fiber, and for other products require a healthy forested landscape.

## **J. Biological Diversity and Wildlife Habitats**

As described in *Conserving Vermont's Natural Heritage* published by Vermont Fish and Wildlife Department and Agency of Natural Resources, Vermont forestlands offer important contributions toward preserving the diversity of life forms and ecological systems in the state and provide a wide array of benefits to wildlife at three different scales: across the landscape; at a natural community level; and at a discrete habitat level for particular species.

### **Landscape Level Features**

Vermont has three major landscape scale forest types—Northern Hardwood, Spruce-Fir-Northern Hardwood, and Oak-Pine-Northern Hardwood. Large, interconnected blocks of these forests are needed to meet the habitat needs of wildlife species that move throughout the landscape including black bear, marten, lynx, river otter, and others that cross forest boundaries (Vermont Fish and Wildlife, 2005).

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Based on Vermont's *Wildlife Action Plan*, Northern Hardwood Forests provide habitat for 14 animal species of greatest conservation need, 22 animal species of medium priority, and 59 plant species. Spruce-Fir-Northern Hardwood Forests provide habitat for 16 animal species of greatest conservation need, 20 animal species of medium priority, and 21 plant species. Oak-Pine-Northern Hardwood Forests provide habitat for 15 animal species of greatest conservation need, 15 animal species of medium priority, and 89 plant species (Vermont Fish and Wildlife, 2005).

The forests of Vermont, New Hampshire, Maine and New York are home to the highest concentration of breeding bird species found in the continental U.S., making this area globally important for bird populations. A century of research has shown that many bird species are sentinels of the planet's health. For many species, a significant percentage of their total population breeds in Northern New England, referred to as the Atlantic Northern Forest (Audubon Vermont, 2005).

### **Community Level Features**

Besides the three major landscape forest types described above, there are many other natural community types and habitats associated with forest lands. These include forested wetlands and vernal pools. Forested wetlands provide a variety of functions including essential habitat for many animal species, flood and erosion protection, nutrient and pollutant filtration, and groundwater recharge. Vernal, or temporary, pools typically occur in small depressions in upland forests but also in depressions of some forested swamps and are well shaded by the surrounding forest canopy. They are best known as important breeding habitat for amphibians and are used by fairy shrimp, fingernail clams, snails, eastern newts, green frogs, American toads, spring peepers, and aquatic insects. In addition, riparian (streambank) habitats are important resources at the community scale. These consist of upland, wetland, and aquatic communities that provide many important ecological functions. Functions include maintaining water quality, providing shade to cool waters, serving as travel corridors for animals, and providing specialized habitats for plants and animals.

### **Species Level Features**

Vermont forestlands provide important habitats for numerous rare and common species of plants, mammals, birds, amphibians, and reptiles. All forest types, including both mature and early successional, provide important habitats. Deer wintering areas provide protection from deep snow, cold temperatures, and wind and are essential for maintaining and managing white-tailed deer in the state. Maternity colonies of bats prefer cavities of older trees and trees with a loose bark structure, such as shagbark hickory, to give birth and raise young during summer months. Streambank (riparian) vegetation provides significant foraging habitat for wood turtles. "Mast" is the term used to describe the seeds of shrubs and trees that are eaten by wildlife. In Vermont, 171 species are known to use beech or oak stands as habitat (DeGraaf et al., 1992). Stands of beech or oak used by black bear are considered as necessary habitat for their survival. Young tree and shrub habitats occur throughout the state in various forms in wet and dry conditions and at mid- and low elevations. The species of plants, mammals, birds, amphibians, and reptiles that require these early successional habitats to survive are declining generally in the Northeast region

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including ruffed grouse, American woodcock, golden-winged warbler, and New England cottontail.

## **K. Water Resources**

Where forested, watersheds produce water in excess of what is used by plants, stored in the soil, or lost by evaporation. The importance of private forestlands to these processes cannot be underestimated. Nearly 90 percent of the people who use water from forested watersheds in the Northeast are served by watersheds on state and private land. So forestlands are a significant source of water for stream flows and aquifer recharge in the state. They also play an important role in influencing the timing, quantity, and quality of water and maintaining streambank (riparian) and in-stream habitats for fish and other aquatic organisms.

Vermont has 17 river basins, representing more than 7000 miles of rivers and streams and over 800 lakes and ponds, which drain into four major watersheds. The Connecticut River, the longest in New England, flows along Vermont's eastern border with New Hampshire; Lake Champlain, the sixth largest fresh water body in the U.S, lies on Vermont's northwestern boundary with New York; Lake Memphremagog, lies on the border with Vermont and Quebec, Canada; finally the Hudson River drains the south western corner of the state. Competing demands for water consumption, recreational use, and habitat needs are making forest lands increasingly important for supplying water to the state.

### L. Flood Resiliency

Add paragraph explaining the value forests contribute to flood resiliency.

## **M.. Outdoor Recreational Opportunities**

The majesty of Vermont's forests provides a scenic backdrop for outdoor recreational activities throughout the state. The aesthetic value of the forests during the fall foliage season provides a major attraction to both visitors and residents of the state. Recreational activities that occur primarily in a forested setting include camping, hunting, fishing, trapping, hiking on trails, dispersed hiking, downhill skiing, cross-country skiing, snowshoeing, snowmobiling, fall foliage viewing, and wildlife viewing.

Private forested lands are a critical component of the outdoor recreation industry. By the state constitution, the public is allowed to recreate on unposted private lands in the state, and much of the state is forested and in private ownership. Privately owned campgrounds, touring businesses, and ski resorts provide recreation in forested settings as their main business. Many private forest landowners, including non-industrial woodland owners, industrial owners, and land investment companies, traditionally have accommodated public recreation.

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The importance of forests to outdoor recreationists in Vermont is further illustrated by increases in participation in these types of activities in Vermont. Membership in the Vermont Association of Snow Travelers (VAST, a snowmobiling group) increased by more than 200 percent from 18,000 in 1993 to more than 45,000 in 2003. Membership in the Green Mountain Club (a hiking group) nearly doubled between 1994 and 2003 from 4,085 in 1994 to 8,125 in 2003. Membership in the Catamount Trail Association (a cross-country skiing group) increased by more than 200 percent between 1994 and 2003, from 532 to 1650. The statewide snowmobile trails system increased from 2,700 to 4,600 miles, about 80 percent of which are on private lands. Other indicators of growing interest in forest-based recreation include increases in miles and focus of other trails such as canoeing and birding trails (Vermont Department of Forests, Parks and Recreation, 2005).

A summary and evaluation of the National Survey on Recreation and the Environment data for Vermont and for the Vermont market region was prepared in 2004 by the Outdoor Recreation and Wilderness Assessment Group of the Southern Research Station of the USDA Forest Service in Athens, Georgia. The Vermont market region consisted of Vermont along with the adjoining states of New York, Massachusetts, and New Hampshire. Nearly all the outdoor recreational activities experienced an increase regionally in participation between 1995 and 2003. Snowmobiling saw an increase of more than 88 percent (970,000 to 1.83 million) and backpacking an increase of 63.8 percent (1.63 to 2.67 million). Activities for which the percent change in participation by people in the Vermont market region between 1995 and 2003 exceeded participation nationally and for which data were available included the following: bird watching, backpacking, primitive camping, and developed camping (USDA Forest Service, 2004).

## **N. Cultural Values**

According to the Vermont Division for Historic Preservation (Peebles, 1989), cultural resources provide an important connection to past interactions of people with the land. For nearly 12,000 years since the last glaciers receded, evidence of past activities has been left behind on the Vermont landscape. Although Native American (pre-European contact) people focused their activities close to river and lake basins, upland areas were exploited on a seasonal basis for specific food resources and raw materials. Furthermore, the present landscape does not reflect the past as many river valleys have been downcut and other changes have occurred to many river channels, floodplains, and wetlands.

Many episodes of life in the historic period of settlement (post-European contact), such as farming, commerce, industry, and transportation, exist today only as archeological sites. Evidence of these types of activities are typically contained within upper layers of soil or buried within floodplain deposits. Entire communities and thousands of isolated farmsteads lie abandoned throughout the state. The most noticeable remnants of these are often cellar holes and stone walls. These sites are fragile and nonrenewable resources and are often our only source of information regarding how people adapted to various changes. Due to the predominance of private lands in

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Vermont, a great deal of this pre-contact and historic information is held on forested private lands.

## **O. Scenic Values**

Forests surround all of the state's cities and towns from which scenic views appear around nearly every corner. For most Vermont residents, these forests provide a backdrop to their daily lives, and tourists also are able to experience easily the presence of the forests. Travelers enjoy scenic views of forested hills and mountains, including many high peaks, via some specific opportunities including the following: Vermont's six Scenic Byways representing more than 300 miles; two interstate highways that bisect the state; local byways and forest roads; local and interstate railroad lines; and ferries that cross Lake Champlain from New York State. The Appalachian National Scenic Trail and other trails as mentioned in the recreation section provide forested viewsheds for recreationists.

### **III. Assessment of Threats to Vermont Forests**

A number of circumstances are threatening the conversion of Vermont's forestlands to other uses. These circumstances affect private forest lands throughout the state and broadly across the landscape and include the following: increases in population and forest-based recreational pursuits; how land is valued; state and local tax policies; zoning regulations; aging of landowners; and changes in social values and landowner attitudes. In a variety of ways, these factors may exert pressure toward converting forests to other uses. Other concerns include challenges in managing inappropriate recreational behaviors and natural, climatic, and forest pest-initiated stressors to forest health.

#### **A. Changing Demographics**

Census data indicate that the number of people living in Vermont has increased steadily for the past 60 years. Four counties (Grand Isle, Chittenden, Franklin, and Lamoille) showed double digit percentage increases between 1990 and 2000. The overall increase in the state of 8.2 percent between 1990 and 2000 was evenly split between in-migration and natural population increase. As demand for land grows, land prices, property taxes, and estate taxes rise. These factors may pressure owners to sell their land. Forest management goals of successive landowners often differ from one another. Therefore, when change in land ownership occurs in forested areas, the forests across the landscape may be changed or no longer remain forested.

The demographics of forest ownership will undergo a big shift in the next two decades. Many children of landowners over the age of 60 will inherit forested properties in Vermont. Due to changing values, fewer of the heirs share their parent's commitment to managing the land as forests. The heirs are more likely to sell or develop the land.

#### **B. Tax Policies and Zoning Regulations**

Vermont's existing tax policies exert economic pressure on forest landowners to develop their lands. In an agrarian society, a fair measure of wealth is the amount of land owned. Local towns in Vermont and other states have continued to generate revenue by taxing land as a measure of wealth, as opposed to income, for example. Most recently, land values in Vermont have been based on the land use that offers the greatest value for the owner, i.e. development. So, overall, property taxes are assessed on this "highest and best" use or fair market value. Vermont's Use Value Appraisal (UVA) Program (known as Current Use) enables landowners to be taxed on the value of the land for forestry or agriculture instead of the fair market value. Although not a permanent solution for keeping land forested, the UVA Program has been effective at discouraging landowners from developing their properties.

The zoning regulations of many Vermont towns contribute to development patterns that threaten forestlands. Extensive low density development is occurring in Vermont outside compact urban and village centers along highways and in the rural

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countryside, including forested areas and ridgelines. Zones of low-density housing favor small, unconnected parcels of fewer than ten acres. Other factors that lead to development in rural and forested areas include higher costs of development in town centers; a shortage of affordable housing in town centers; lower land prices in more remote areas; and the desire by many for larger homesteads that are closely connected to the natural world and located in a safe environment (Keller, 2002).

### **C. Development Resulting in Parcelization and Fragmentation**

In general, small forest parcels are less conducive to efficient and economic management for forest products. As pressure to place more houses increases in private forests, forest parcel size tends to decrease in these areas. Development in more remote areas of the state is causing fragmentation of forestlands, and the growing numbers of forest owners with smaller holdings results in greater parcelization of forestlands. Currently, the rate of development in Vermont is estimated to be 2.5 times greater than the rate of population growth (Vermont Smart Growth Collaborative, 2003). The U.S. Forest Service report *Forests on the Edge* (Stein *et al.*, 2005) predicts that private forests in many watersheds throughout Vermont are at risk for increases in housing density over the next 20 years.

#### **Parcelization**

Parcelization is the division of large tracts of land into smaller tracts and multiple ownerships. In general, as the number of forest owners increases, the size of parcels decreases. Forest parcelization is viewed frequently as the first step leading to forest fragmentation.

Parcelization of timberland into smaller holdings makes it more difficult for the forest to be used in traditional ways. Landowners with small holdings are less likely to manage their forests for timber products. Forestland ownership patterns have been changing in Vermont. Between 1983 and 2003 in Vermont, the number of forestland owners with fewer than 50 acres of timberland nearly doubled, while the amount of acreage owned by industry dropped to one-fifth of the 1983 total (USDA Forest Service, 2003). These trends challenge the long-term sustainability of private forest management in Vermont by decreasing the profitability and feasibility of timber production due to higher costs of management.

#### **Fragmentation**

Fragmentation is the division of a large forested area into smaller patches that are separated by areas converted to other land uses. Many of Vermont's blocks of contiguous forestland have become broken into smaller and smaller units as forests are fragmented by construction of housing, commercial buildings, and roads. The availability of large blocks of contiguous forestland varies across the state, with the Northeast Highlands and Green Mountains having the most.

Fragmentation of large forest blocks alters many ecological processes. It can render important wildlife habitats inaccessible, isolate wildlife populations, and degrade remaining habitat patches through edge effects that favor edge-tolerant species



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including invasive exotics. Other impacts may include increased predation, increased mortality, reduced mobility, and changes in habitat micro-climates. There is concern that several wide-ranging wildlife species will not persist or become re-established in Vermont without forested linkages to other states and Canada.

## **D. Challenges Due to Recreational Use**

The long-standing Vermont tradition for private landowners to allow the public access to their land for hunting, trapping, and fishing is in jeopardy. Since its adoption in 1793, Vermont's constitution gives people the right to hunt and fish on unposted land throughout the state. A general, although not steady, trend over the past 30 years is that more landowners are posting their land, thereby placing at risk recreational access by the public (Vermont Property Owners Report, 2005).

Vermont's population is growing partly due to in-migration from other states. With increased populating comes a corresponding increased demand for public access to private lands. Some reasons why landowners post their land include the following:

Many landowners are concerned about the public's lack of respect for their property. As the number of owners of forested parcels increases and the average parcel size decreases, landowners are more likely to have home sites on their parcels. Many landowners want more privacy and may be reluctant to share their property with others.

Irresponsible recreationists are angering neighbors and landowners. In many cases landowners must spend their own money to repair damage.

The need for more law enforcement to handle complaints is well documented.

Landowners may be concerned about the number of users of their property or object to certain types of use. Even though many landowners are willing to allow some uses, existing laws do not support posting against particular uses.

Some landowners feel that recreational uses they allow could become institutionalized and result in restrictions to their right to do what they wish on their land, such as cut timber, farm the land, or derive income from other uses or from the sale or development of their property.

Landowners are concerned about the impacts that recreational uses might have on their property and whether user groups will be reliable in taking care of problem areas.

Some landowners are concerned about their potential liability for injuries sustained by users of their property.

Access for recreation by the public on private lands is enormously important to the economy of the state and to the quality of life of those who are able to use those lands.

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Any decrease in private lands available for public recreational use in Vermont results in more pressure for use on other private and public lands. This, in turn, increases the likelihood that more landowners will refuse to allow public access on their lands.

Besides the risk of fewer lands being made available to the public, unmanaged recreational behaviors are causing negative impacts to forest soils, water, vegetation, and wildlife. Impacts include increased erosion, sedimentation, and habitat destruction. This situation in many places may be creating an unintended conversion of use.

Another concern is the net decline of both resident and non-resident hunting license sales since 1994. These sales provide the primary source of revenue and match dollars for the Vermont Department of Fish and Wildlife. Continued declines in license revenues will result in fewer resources available for conserving wildlife habitats and managing the populations of various wildlife species.

## **IV. Existing Programs and Partnerships that Help Conserve Vermont's Forest Resource**

Vermont's Forest Legacy Program plays an important role within the mix of the many programs that offer a variety of ways to conserve Vermont's forest land. About 20 percent of the land in Vermont is permanently conserved in a number of ways, including public lands held in-fee and as easements and other non-fee methods by federal, state, and local governments as well as private lands held in similar ways. By 2004, about 1.5 million acres of private forestlands were enrolled in the Use Value Appraisal Program (UVA). The UVA Program discourages owners from developing their land by offering property tax incentives to manage the land for timber crops.

Many of these programs are briefly described in this section. Some programs are offered through government sources, while others are provided through private means, such as land trusts and The Nature Conservancy. When these programs are able to be coordinated with Forest Legacy projects, the result is an increased ability to implement comprehensive conservation strategies across the landscape.

### **A. Public Conservation Programs**

The following are many of the state and federal programs that assist landowners in protecting and enhancing their forest resources in a variety of ways.

#### **Vermont Use Value Appraisal (UVA) Program**

Often referred to as "Current Use," Vermont's Use Value Appraisal (UVA) Program enables landowners who practice long-term forest management to have their enrolled land appraised for property taxes based on its value for forestry, rather than its fair market value. As of 2004, 1.5 million acres, represented by more than 10,000 parcels, were being managed in Vermont under this program. According to the Vermont Property Valuation and Review (PVR) reports, more than 40 percent of eligible parcels are enrolled. Agricultural lands also are enrolled, making UVA the most widespread land conservation program in the state.

#### **Forest Management Assistance**

The Vermont Department of Forests, Parks and Recreation provides forest management assistance free-of-charge to landowners. Services of field foresters (by county) include education, consultation, and planning for inventory, timber sales, and tree planting. Management strategies include products such as lumber, fuel wood, Christmas trees, and maple sugar; wildlife habitat; and recreational opportunities. Spurred on in part by Vermont's UVA Program, more than 100 private consulting foresters provide on-the-ground forest management services for a fee.

#### **Fire Protection and Management**

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Vermont has regional and local procedures in place for control of forest fires when they occur. However, historical information suggests that naturally ignited fires have been rare in this landscape over the past 250 years. From the 44 years that Vermont data were collected between the years of 1913 and 1998, there was an average of six lightning-caused fires per year in Vermont, each burning an average of nine acres. Human induced fires are likely to occur at completely different frequencies and times. Reports to the State Fire Marshall and the Department of Forests, Parks and Recreation indicate that an average of 200 to 400 acres of Vermont forest lands burn each year.

**Forest Stewardship Program**

This USDA Forest Service program began in 1990 and is administered by the Vermont Department of Forests, Parks and Recreation. Through this program, landowners receive technical assistance and educational support. In addition, landowners who prepare Landowner Forest Stewardship Plans receive priority for funding from cost-share funds when available.

**Land and Water Conservation Fund**

The Land and Water Conservation Fund, administered by the Vermont Department of Forests, Parks and Recreation, provides money to federal, state and local governments to purchase land, water and wetlands.

**Silvio O. Conte National Wildlife Refuge**

The Conte Refuge covers 7.2 million acres across the four-state Connecticut River watershed. The refuge works with many partners to acquire key parcels, to provide conservation leadership, and to educate the watershed citizens about important habitat issues.

**Pittman-Robertson Wildlife Restoration Act**

The Pittman-Robertson Wildlife Restoration Act provides federal aid to the states for the management and restoration of wildlife. The aid, funded through an excise tax on sporting arms and ammunition, may be used to support a variety of wildlife projects, including acquisition and improvement of wildlife habitat.

**Migratory Waterfowl Fund**

Vermont's Migratory Waterfowl Fund was established with the receipts from the sale of the stamps and prints and is administered by the Vermont Department of Fish and Wildlife. Interest earned from the Waterfowl Fund is earmarked for wetland acquisition and enhancement projects. So far, monies generated by the fund have funded 51 projects in 34 locations; purchased 4,439 acres of wetland and adjacent uplands; protected 921 acres of important habitat through conservation easements; and enhanced 1,412 acres of habitat.

**North American Waterfowl Management**

The North American Wetlands Conservation Council recommends wetlands conservation projects to the Migratory Bird Conservation Commission based on

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consideration of: the extent to which the wetlands conservation project fulfills the purposes of the Act, the Plan or the Agreement; and the availability of sufficient non-federal moneys to carry out any wetlands conservation project and to match federal contributions.

**Cost-Share Assistance Programs**

A number of cost-share programs are available to forest landowners. These encourage certain management practices that may help conserve forest lands including tree planting, natural regeneration, forest improvements, livestock exclusion, and a variety of stream protection and wildlife habitat improvement practices.

**Wildlife Habitat Incentive Program (WHIP)**

Through its Wildlife Habitat Incentive Program, USDA's Natural Resources Conservation Service provides both technical assistance and up to 75 percent cost-share assistance to establish and improve fish and wildlife habitat.

**Environmental Quality Incentives Program (EQIP)**

The Environmental Quality Incentives Program (EQIP) provides a voluntary conservation program for farmers and ranchers that promotes agricultural production and environmental quality. EQIP offers financial and technical help to assist eligible participants install or implement structural and management practices on eligible agricultural land. Expansion of this program to include forestry practices is expected in the years to come.

**Landowner Incentive Program**

Administered by the Vermont Department of Fish and Wildlife, the Landowner Incentive Program provides grants to establish or supplement landowner incentive programs that protect and restore habitats on private lands; to benefit federally listed, proposed or candidate species or other species determined to be at-risk; and provide technical and financial assistance to private landowners for habitat protection and restoration.

**Clean and Clear Action Plan**

The State of Vermont's Clean and Clear Action Plan provides leadership, financial resources, and a sustained commitment to meeting Vermont's water quality standards by curbing phosphorus in the runoff from urban areas, homes, eroding streams, and construction sites and farms. Wetlands in Vermont will be preserved through purchase of easements and restored through the Wetlands Protection and Restoration Program to improve water quality in Lake Champlain.

**Vermont Housing and Conservation Board**

The Vermont Housing and Conservation Board is an independent, state-supported funding agency providing grants, loans and technical assistance to nonprofit organizations, municipalities, and state agencies for the development of perpetually

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affordable housing and for the conservation of important agricultural land, recreational land, natural areas and historic properties in Vermont.

## **B. Private Conservation Programs**

The following not-for-profit organizations are examples of many organizations that are conserving forested lands for a variety of purposes.

### **Land Trusts**

Land trusts are not-for-profit corporations whose general purpose is to conserve land. They operate primarily by acquiring land and interests in land. The Vermont Land Trust is a statewide nonprofit organization that has worked with individuals, organizations, and communities for the past three decades to conserve farmland and productive forestlands. There are more than 30 other nonprofit land trust organizations involved in land conservation in various areas of service throughout the state. The primary method of conservation by land trusts in Vermont has been through easements, as opposed to fee-simple acquisition.

### **Tree Farm Program**

The American Tree Farm System (ATFS) is a non-profit organization dedicated to the concept of the working forest and the promotion of excellent forest stewardship on parcels of private land. ATFS has established standards and guidelines for property owners to meet to become a certified Tree Farm. In Vermont the Tree Farm Program is administered by the Vermont Woodlands Association. It recognizes landowners who actively manage their forest land.

### **The Conservation Fund**

The Conservation Fund forges partnerships to conserve America's legacy of land and water resources. Through land acquisition, sustainable programs and leadership training, the Fund and its partners demonstrate balanced conservation solutions that emphasize the integration of economic and environmental goals.

### **Vermont Chapter of The Nature Conservancy**

The Nature Conservancy works with private landowners to protect and conserve natural lands, including many forest lands, through acquisitions, conservation easements, and voluntary agreements.

### **Trust for Public Land**

The Trust for Public Land (TPL) is a national, nonprofit, land conservation organization that conserves land for people to enjoy as parks, community gardens, historic sites, rural lands, and other natural places, ensuring livable communities for generations to come.

## **V. Vermont Forest Legacy Program (FLP)**

### **A. History and Accomplishments of the FLP in Vermont**

In 1992 the State of Vermont was proud to lead the nation by establishing the first Forest Legacy project in April, 1993—the Cow Mountain Pond area in the Town of Granby. Vermont’s Forest Legacy Program was formally launched two years later in 1994 through the approval of its first Assessment of Need (AON). The Vermont Department of Forests, Parks and Recreation administers the program. The VT Forest Stewardship Committee advises the department regarding implementation of the program and assists with the evaluation and ranking of proposed tracts.

As of the end of 2006, Vermont’s Forest Legacy Program had conserved 17 tracts of land exceeding 50,000 acres through the administration of 13 projects either completed or underway. Refer to the Vermont Department of Forests, Parks and Recreation website [vtfpr.org/lands/flp.cfm](http://vtfpr.org/lands/flp.cfm) for the most up-to-date information. More than \$4.5 million was leveraged from other sources to be used as match for the nearly \$10 million in Forest Legacy funds that were provided to the state. This is well above the required 25 percent match. In addition, Forest Legacy funds have been invested in half the counties falling within the Forest Legacy Areas designated in the 1994 AON.

The preferred tool for conservation for Vermont’s Forest Legacy Program has been the working forest conservation easement. With a predominance of privately owned forestland in the state, projects representing thousands of acres of productive forestland with a long history of sound stewardship have been conserved. For example, conservation easements have succeeded in connecting the north and south units of the Green Mountain National Forest thereby protecting the designated Green Mountain Bear Corridor.

Through the use of conservation easements acquired under Vermont’s Forest Legacy Program, the land remains in private ownership and may continue to be actively managed. The landowner is given compensation for not developing the land while protecting the public interest in certain values of the property. In addition, certain tracts of land may be acquired outright (in fee, instead of through an easement, which pertains only to particular rights), again on a willing-seller basis only.

The need to provide more public access for a variety of recreational activities has increased in importance over the last decade. Besides conservation easements that have assured the continuation of public access on private forestlands, fee acquisitions by the state have conserved Green River Reservoir State Park and several in-holdings in the Northeast Kingdom.

Large blocks of forestland previously owned and managed by industrial landowners have been sold and subdivided in the state in the last few decades. In response to this trend, the first of Vermont’s Forest Legacy projects conserved large tracts of industrial forestland. For example, in 1996 a conservation easement was placed on a 31,000-acre block owned by the Hancock Insurance Company.

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More recently the state has taken a new approach toward conserving blocks of forest on a landscape scale. While in the past the conservation of large tracts of industrial forest lands protected regionally important forests, now smaller forest landowners are grouping together their parcels of land to conserve them. An example of this approach is the Chittenden County Uplands Conservation Project, a conservation effort of a broad array of organizations and funding sources, including the Vermont Forest Legacy Program. The project conserved more than 15,000 acres, representing nearly two dozen properties. This effort has been essential for protecting the ecological integrity and rural character of a remaining section of the working forest landscape and important watershed in Chittenden County, which is the most populated in the state.

## **B. Vermont Forest Legacy Program Goal**

The goal of Vermont's Forest Legacy Program is to maintain forestlands at risk of conversion to other uses primarily through the use of conservation easements with willing owners. The overall purpose of the program is to sustain the economic, ecological, and social values of forests, including productive working forests; habitats and natural communities for native plants and wildlife; clean water and fish habitat; public recreational opportunities including fishing and hunting; culturally significant resources; and scenic landscapes.

## **C. Vermont's Forest Legacy Area**

### **1. Eligibility Criteria used for Designation of the Forest Legacy Area**

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The Forest Legacy Area is the geographical region where the program will be applied. Landowners within this area are eligible to apply for Forest Legacy Program funding. The forestlands selected for this Forest Legacy Area were found to hold the highest potential for the forest values deemed most important through this assessment. The "Eligibility Criteria" used to define Vermont's Forest Legacy Area are as follows:

1. Must provide opportunities for the continuation of traditional forest uses, such as forest management and outdoor recreation, as defined by the State Forester and the Forest Legacy Committee;
2. Must be threatened by conversion to non-forest uses;
3. Must possess one or more of the following important public values:
  - a. Public recreation opportunities
  - b. Riparian (streamside, riverside) areas;
  - c. Fish and wildlife habitat



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- d. Threatened and endangered species
- e. Cultural resources
- f. Other ecological values
- g. Scenic resources (if one or more additional values above are also present);

4. Must have local and regional community support.

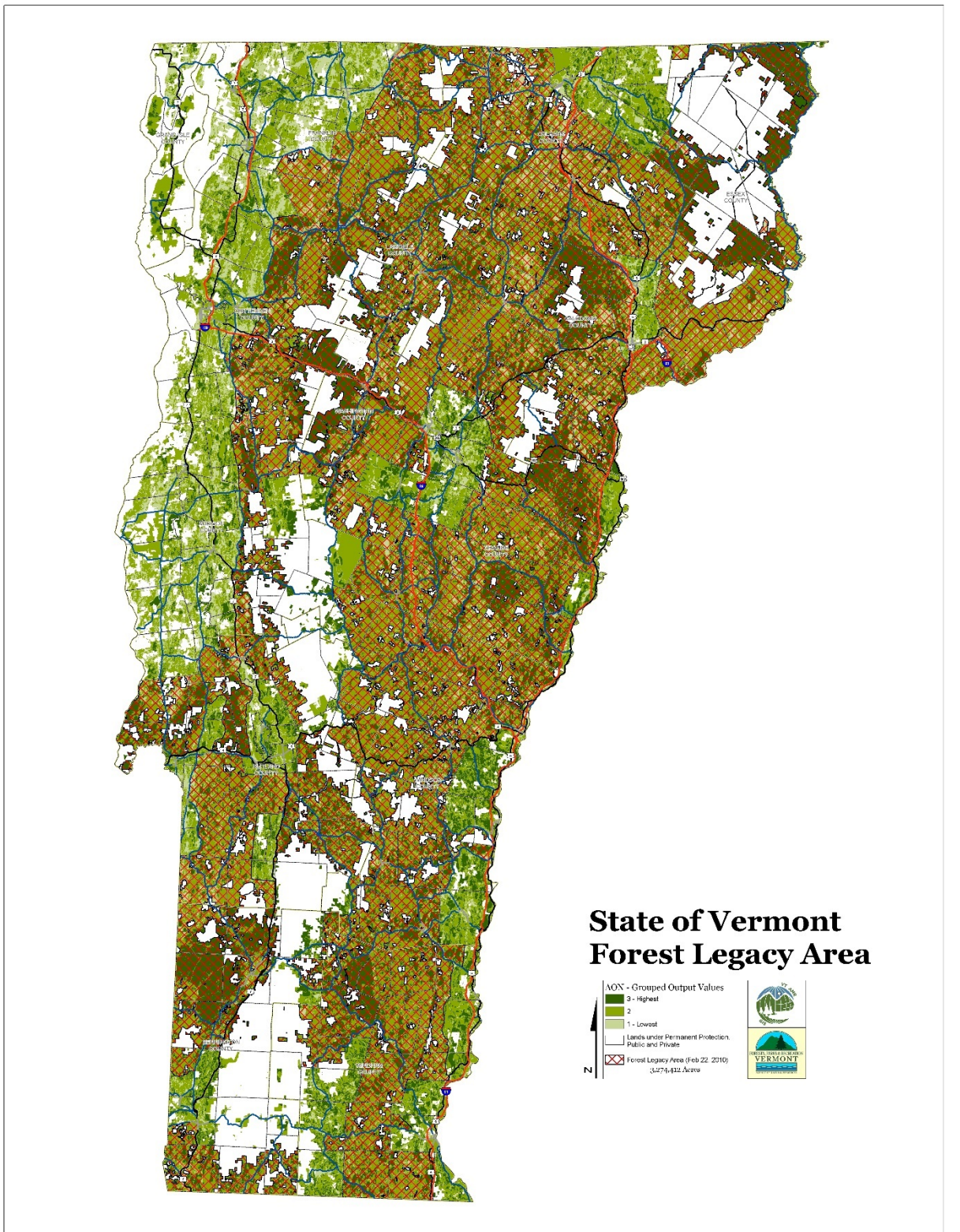
The forested areas best suited for meeting these Eligibility Criteria are those that; A. have large blocks of un-fragmented forest; B. have highly productive soils and; C. contain important fish and wildlife habitats. The Forest Legacy Area was determined by applying these three factors across the landscape of the state. Individual projects are recommended for the program using a more detailed analysis. Once proposals meet the Eligibility Criteria and the Minimum Project Selection Criteria, as explained in the next section, they are compared with each other using dozens of factors on more local and regional scale.

The current proposed Forest Legacy Area is shown on the next page. It encompasses approximately 3.3 million acres, similar to the acreage designated in the 1994 AON, in a single Forest Legacy Area.

In 1996, the lands within the Green Mountain National Forest Proclamation Boundary were no longer excluded from eligibility in the program. The State Grant Option was offered by the Forest Service, allowing states to purchase in fee or hold the conservation easements on private Lands. The Vermont Forest Legacy Area boundaries proposed in this AON therefore reflect this possibility in some towns.

A list of towns and counties upon approval of the proposed Forest Legacy Area that will be eligible to submit projects for the Forest Legacy Program is found in **Appendix A**. The written description of the boundary is found in **Appendix B**.

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## **2. Process Used for Designating Vermont's Forest Legacy Area**

This section explains the steps that were taken to determine the Forest Legacy Area (FLA) boundaries for this Assessment of Need (AON).

In 2005, the Vermont Department of Forests, Parks and Recreation in cooperation with the Fish and Wildlife Department, began the process of updating the existing AON adopted in 1994 for Vermont's Forest Legacy Program. In consultation with the Vermont Forest Stewardship Committee, a small group reviewed the FLA Eligibility Criteria from the existing AON to determine whether they still adequately addressed the goal of protecting the values of and threats to Vermont's forest resources. The group then looked for existing statewide data that best captured those values and threats. The consensus was that the following data captured the information needed to identify areas of the state where Vermont can achieve its Forest Legacy Program goals:

- Forested lands were selected from the National Land Cover Dataset 1992 (NLCD 1992). Then lands in the Conserved Lands Database (CLD) of the University of Vermont's Spatial Analysis were masked out. The CONSPRI layer of the CLD was used because it contains conserved land holdings by both public and private owners. Private lands in CONSPRI are owned by organizations dedicated to conserving land or other resources, or they are private lands encumbered with conservation easements or other legal protection mechanisms.
  
- A forest patch size of a minimum of 200 acres was selected. This size reflects the fact that larger, contiguous forest patches are, on average, more ecologically and economically viable than smaller and less connected forest patches. Then road buffers were applied to these lands, as follows: 100 feet for class 3 roads; 300 feet for state highways; 600 feet for interstate highways; and none for class 4, private, and forest roads. **See map on page 36.**
  
- Forest productivity in Vermont was represented by selecting certain soils. The three most productive soil layers were selected from the Top 20 Tables, as determined by the Soil Potential Index of Forest Values Group, for each county. Due to lack of data, Essex County was the exception. For this county the two most carbonate-rich rock layers were selected from the state's generalized bedrock geology map. **See map on page 37.**
  
- Various natural community and wildlife data layers were used to represent ecological values and were combined into a composite map as follows: towns with occurrences of rare, threatened, endangered, and special concern species and state significant natural communities; important forest matrix communities; priority aquatic features; and deer wintering areas. **See map on page 38.**

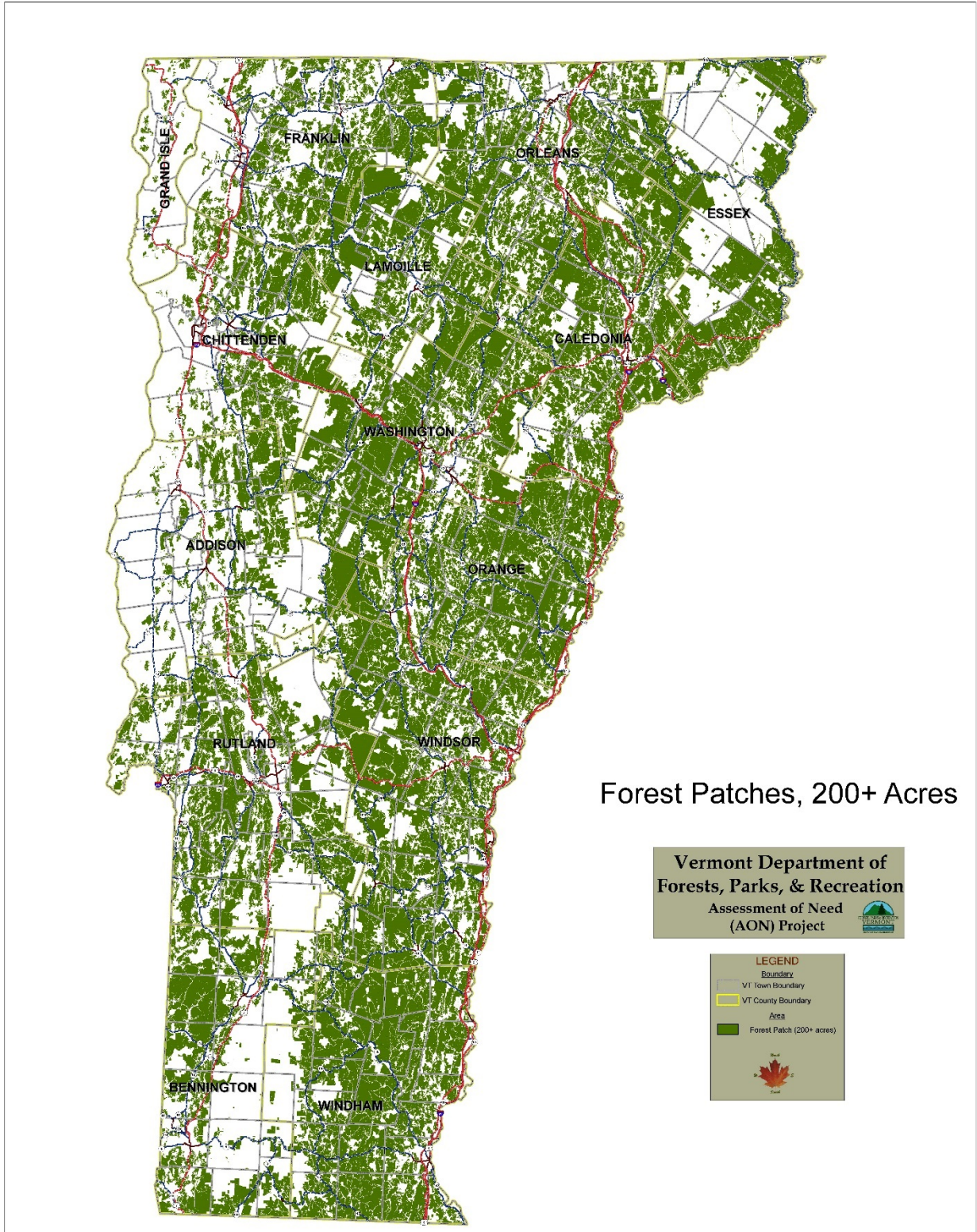
A preliminary working map was created by summing the layers mentioned above in 30-meter square grids. This exercise did not produce areas that clearly delineated Forest Legacy Area boundaries and that also would satisfy USDA Forest Service

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requirements. After further discussion, it was determined that an even stronger emphasis on size of forested blocks would enable Vermont to identify lands most suitable for the Forest Legacy Program. Another analysis was done by selecting contiguous blocks of 2500 acres or greater. This resulted in a map that could be refined more easily and better reflected the goals of the program. **See map on page 39.**



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Forest Patches, 200+ Acres

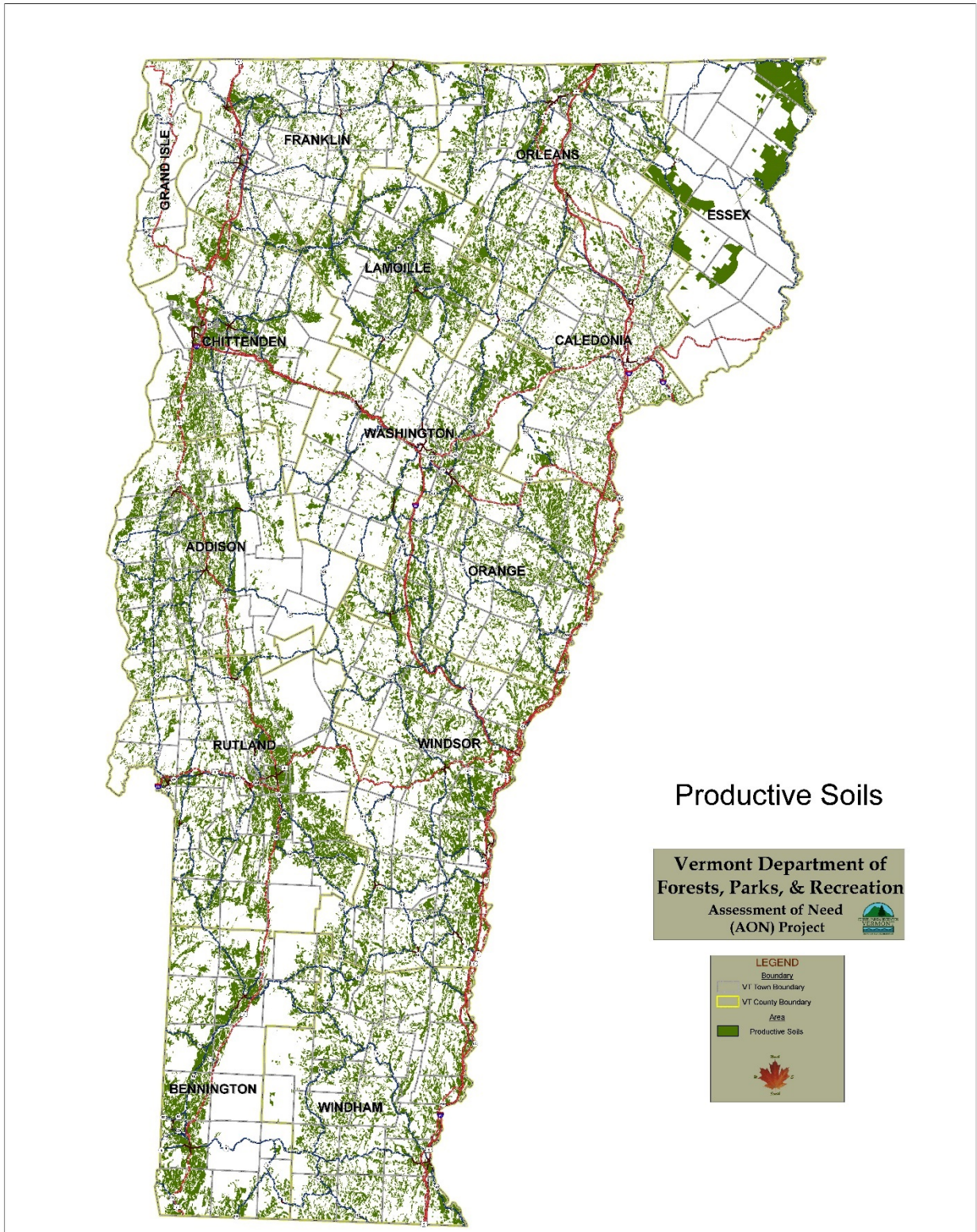
Vermont Department of  
Forests, Parks, & Recreation  
Assessment of Need  
(AON) Project

**LEGEND**

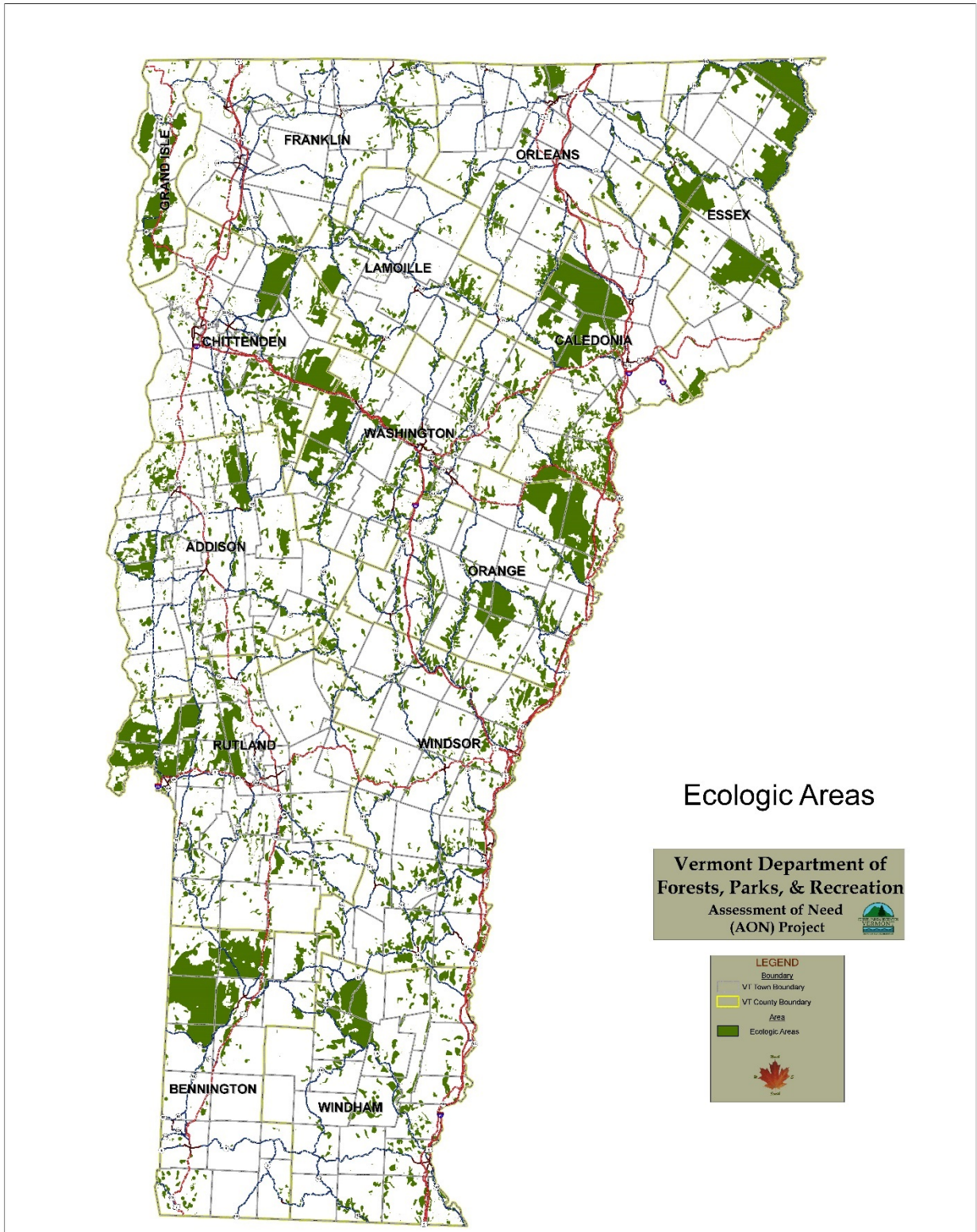
- Boundary
- VT town Boundary
- VT County Boundary
- Area
- Forest Patch (200+ acres)



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Application of the 2500-acre block size resulted in a map that more closely reflected the important forest values of the program. However, many adjustments were needed so that some smaller areas, and especially those with particularly suitable soils, could be included in the area. The boundaries were adjusted to follow town and county lines, roads, and water courses.

Draft boundaries of the Area were presented at public meetings hosted by regional commissions throughout the state. Feedback received as a result of these meetings and from stakeholder groups resulted in further refinements of the boundary. The written description of the boundary is found in **Appendix B**.

### **3. Important Environmental Values of Vermont's Forest Legacy Area**

The overall goal of Vermont's Forest Legacy Program is to sustain the economic, ecological and social values of forests including;

- Productive working forests
- Habitats and communities that promote native plants and wildlife
- Clean water and fish habitat
- Water retention to increase flood resiliency
- Public recreational opportunities including fishing and hunting
- Culturally significant resources
- Scenic landscapes

### **4. Means for Protection**

A. Acquisition of full-fee for either state or municipal ownership where appropriate  
B. Acquisition of a Grant of Development, Conservation Restrictions and Public Access Easement on privately owned property that allows the protected property to be used for forestry, protection of critical wildlife habitats, education, non-commercial recreation, and open space purposes. The following are restricted and allowed activities on a conserved property. Any deviation from these means for protection will be approved by the Vermont Forest Stewardship Committee:

1. **General:** A conserved property may be used for forestry, protection of critical wildlife habitats, educational, non-commercial recreational, and open space purposes .
2. **Excavation:** The easement prohibits filling, excavation, removal of topsoil, sand, gravel, rocks, or minerals, or any change to topography unless the change is

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necessary to carry out the uses otherwise permitted by the conservation easement. Surface mining is expressly prohibited except for extraction of gravel to be used on the protected property.

3. **Water quality:** The manipulation of natural water courses, marshes, or other water bodies is not allowed under the easement, nor are activities that would cause adverse effects to water purity, or to the natural water levels or flow, unless necessary to carry out the objectives of the easement.
4. **Subdivision:** Subdivision of the protected property is generally prohibited but may be allowed under certain circumstances with Grantee approval.
5. **General Clause:** The easement includes a general clause, which ensures that no uses will be made of the protected properties that are inconsistent with the Objectives of the easement.
6. **Forest Management:** The landowner may perform maple sugaring operations, other forest management activities, and harvest timber, firewood, other wood products and non-timber forest products and may also maintain necessary access for motor vehicles provided all such activities are conducted in conformance with a Forest Stewardship Plan (FSP) developed and approved on the basis of the requirements of the easement and all such activities are conducted under the supervision of a professional forester, or other FP&R-approved land manager.
7. **Structures:** The landowner may construct and maintain sugar houses, or similar forestry structures or facilities, together with necessary access drives and utilities if they are used in support of forestry conducted on the property. Additional structures may be allowed that are considered consistent with traditional forest uses such as seasonal camps.
8. **Public Access:** The landowner will permit access by the public for non-commercial, non-motorized, non-mechanized, non-equestrian, dispersed recreational purposes (such as hunting, fishing, bird-watching, walking, snowshoeing and cross-country skiing), provided such access does not interfere with forestry activities and is consistent with the purposes of the easement
9. **Accessory Uses:** The right to engage in accessory uses of the Protected Property; *provided, however*, that such accessory uses are (a) related to the principal educational, forestry or recreational uses of the Protected Property, and (b) in the aggregate subordinate and customarily incidental to those principal uses.

## **D. Criteria and Process for Evaluating Projects (Tracts)**

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On an annual cycle, projects that meet the minimum criteria are submitted to the Vermont Department of Forests, Parks and Recreation. These projects are reviewed by Agency of Natural Resources staff, and their comments are shared with the Vermont Forest Stewardship Committee. The committee evaluates and ranks the projects and sends final recommendations for prioritized projects to the regional office of the USDA Forest Service.

The minimum required criteria and the project (tract) selection criteria presented next represent the types of values and considerations that will be used by the Vermont Forest Stewardship Committee in ranking and recommending projects for funding.

## **1. Minimum Required Criteria**

The following five criteria must be met in order for an application for funding by the Forest Legacy Program to be considered further:

- The project must be within Vermont's Forest Legacy Area.
- The project must have local community and regional support.
- Projects must contain a minimum of 100 acres. However, parcels of this small size are mostly likely to be considered when they are part of a larger area that has strong potential for being conserved. Special consideration may be given by the Forest Stewardship Committee for projects of less than 100 acres only if they are determined to contain significant values based on the criteria below. Tract(s) or projects with less than 10 percent of land in compatible non-forest uses and impractical to exclude from project area (i.e. interior meadow land) may be considered.
- Landowner(s) must guarantee dispersed pedestrian public access on the property.
- Landowner(s) must be willing to complete a Forest Stewardship Plan to be approved by the State Forester.

## **2. Project/Tract Selection Criteria**

The following types of criteria will be used to rank proposed projects or tracts that have met the minimum requirements. The criteria are presented here in no particular order of importance. The Vermont Forest Stewardship Committee may choose to consider some criteria more heavily than others. However, the results of their deliberations should reflect the primary goals of Vermont's Forest Legacy Program--productive working forests and protection of fish, wildlife, and plant habitats.

### **a. Forest Values**

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Forest values are the environmental, social, and economic public benefits gained from the protection and management of the property(s). These criteria reflect the ecological assets and the economic and social values supported by the project and the degree of interest in its protection.

**Primary Purposes**

(1) Forestry

- (a) Condition of forest (health, size, age)
- (b) Parcel has the potential to enhance existing timber-based economy for a community or region
- (c) Productive forest soils (Class I, II, III)
- (d) Landowner demonstrates history of sustainable forest management practices

(2) Fish, Wildlife, & Plant Habitat

- (a) Contains one or more of the following necessary critical habitats: deer yards, mast stands, vernal pools, wetland bear feeding, heron rookeries, Bicknell's thrush habitat, wildlife travel corridors, and wetlands with other significant value such as forested swamps and deep brush swamps
- (b) Contains known populations and/or habitat for federal or state designated rare, threatened, and endangered (RTE) species
- (c) Site provides suitable habitat for reoccupation by RTE species--either naturally or through relocation
- (d) Provides for habitat connectivity and/or wildlife corridors
- (e) Provides habitat for Species of Greatest Conservation Need
- (f) Contains State Significant Natural Communities
- (g) Contains outstanding habitat for forest inhabiting mammals, reptiles, invertebrates, and amphibians
- (h) Forested protection of waters containing significant or important fish populations and/or aquatic species of concern
- (i) Site is, or is part of, a large block of contiguous forest

**Secondary Purposes**

(3) Scenic Resources

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- (a) The site is located within a viewshed of a formally designated state or federal scenic feature or area, such as a trail, river, or highway
- (b) Includes locally important and/or easily accessible scenic resources as identified in a local or regional plan where development would significantly alter the appearance of the landscape

(4) Riparian/Hydrologic

- (a) Protection of a public water supply
- (b) Contribution to increased flood resiliency
- (c) Includes Class A or ORW waters
- (d) Contains streams, ponds, rivers, lakes, and/or wetlands, with special consideration for priority watersheds and imperiled waters
- (d) Includes undeveloped shorelines
- (f) Includes unique water features such as gorges, waterfalls, and cascades

(5) Cultural & Historic Resources

- (a) Contains state or federally recognized significant cultural resources
- (b) Contains known pre-contact archaeological site(s)
- (c) Contains a National Historic Landmark site(s)

(6) Existing or Potential Public Recreation

- (a) Secures pedestrian public access to regionally and/or locally important recreation area(s) such as rock climbing, a trail system, swimming hole, and exceptional natural features
- (b) Parcel has the potential to enhance existing recreational opportunities through linkages or additional trail development

**b. Threats**

These criteria estimate the likelihood for forestland to be converted to other uses and consider the nature and imminence of threats to the values of the forest. The higher the likelihood for conversion, such as land on the open market, subdivision plans, and aging landowners, the greater consideration will be given.

(1) Type of Threat of Conversion to Non-Forest Uses

- (a) Adjacent land use changes

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- (b) Parcelization of land leading to fragmentation of traditional uses
- (c) Protects public access with an imminent risk of closure
- (d) Land speculation

(2) Degree of Threat of Conversion to Non-Forest Uses

**Imminent Threat**

- (a) Currently on the market and/or listed by a realtor
- (b) Landowner has subdivided and sold portions of his/her property
- (c) Landowner has a subdivision plan for the property(s)
- (d) Property is in a family trust and future use of property by heirs is uncertain
- (e) Owned by a company or group undergoing take-over, bankruptcy, or down-sizing

**Likely Conversion in 1-5 years**

- (f) Landowner has received purchase offers
- (g) Parcel(s) has high rate of change in ownership

**Potential for Conversion in 5-10 years**

- (h) High rate of increase in households in project area
- (i) Residential infrastructure easily accessible from project area (e.g. roads, power, good water percolation rate)

**c. Strategic Considerations**

These criteria take into consideration the project's relevance to conservation efforts on a broader scale. They include how the project relates to other conservation plans, strategies, or initiatives as designated by either a government or non-governmental entity.

- (1) Located within an organized national or multi-state conservation effort
- (2) Complements prior federal, state, regional, or local investment(s) in conservation
- (3) Project area or characteristics have been identified in a formally developed state or regional plan or focused protection area (e.g. scenic

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viewsheds, Northern Forest Lands Study, Wildlife Action Plan, and Statewide Comprehensive Outdoor Recreation Plan)

- (4) Within close proximity to other public or private conserved lands
- (5) Success of project will lead to additional conservation action locally
- (6) Located within a targeted watershed that is vulnerable to flooding that is likely to damage community infrastructure.

#### **d. Project Readiness**

Project readiness represents the degree to which applicants have prepared all requirements and the certainty that a project can move forward quickly.

- (1) Preliminary appraisal completed
- (2) Landowner and easement holder agree to easement or fee acquisition conditions
- (3) Stewardship plan approved
- (4) Cost share commitment received from a specified source
- (5) Signed option or purchase and sales agreement held by the state or at the request of the state, or easement or fee title held by a third party has been obtained
- (6) Title search completed
- (7) Other complications of legal transactions are able to be minimized

#### **E. Application Process**

In the 1994 AON, the process for applications was set up to occur in two steps. Since then, a single application process has been adopted and is available at the Vermont Forests, Parks and Recreation website. [vtfpr.org/lands/flp.cfm](http://vtfpr.org/lands/flp.cfm)

Applications are accepted once per year, usually toward the end of July. The Vermont Forest Stewardship Committee reviews and ranks the applications and submits selected applications to the USDA Forest Service regional office toward the end of September. By the following January, regional offices submit their compiled project list to the Washington, D.C. office to be evaluated and ranked against applications

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nationwide. A national list is submitted to the President's Administration to be considered for the President's proposed budget. Congress discusses the list and passes an appropriation for the fiscal year's budget.



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## **VI. Public Involvement**

This section describes the requirements for and the process used to involve the public in the Forest Legacy Program. This ranges from the public helping determine the boundaries of the Forest Legacy Area to the Vermont Forest Stewardship Committee's annual meetings to rank projects proposed for the program.

### **Vermont Forest Stewardship Committee**

Under Forest Legacy Assessment of Need (AON) guidelines, each state is required to have a State Forest Stewardship Coordinating Committee (SFSCC) whose duties are defined in Sect. 19(b) of the CFAA (16 USC 2113). The SFSCC makes recommendations to the state lead agency regarding the AON, amendments to the AON, and determination of Forest Legacy project priorities.

The Vermont Forest Stewardship Committee (FSC) serves as the official SFSCC. Its members include partners or individuals/organizations that either have land conservation programs, have complementary natural resource and forestry backgrounds, or have useful local knowledge and contacts. Three members of the FSC joined the core group of Agency of Natural Resources staff in the summer of 2006 to help determine boundaries of the proposed Forest Legacy Area and advise on revisions to the project selection criteria and program guidelines. The other committee members later endorsed the process and results.

### **Regional Planning Commissions**

The 11 regional commissions coordinated and hosted public meetings and recorded comments by attendees. These commissions notified every town of the draft AON and the proposed Forest Legacy Areas and offered them the opportunity to give feedback and, for those towns that are able, to sign onto the program.

### **Towns**

Towns that were proposed for inclusion in this Forest Legacy Area, as well as towns that were included in the past but are no longer, were invited to public meetings sponsored by the regional commissions.

### **Stakeholder Groups**

Representatives of many groups with interest in private forestlands conservation were invited to regional commission meetings and asked to comment on the AON written document.

### **General Public**

The Forest Legacy Area proposed for this AON and other documentation was posted on the agency website from June 2008 to October 2009.

### **Responses to Comments**

Responses to the many comments received from the public, stakeholder groups, and other agencies are found in Appendix D.

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## **VIII. Appendices**

**A. List of Counties and Towns Eligible for the Vermont Forest Legacy Program**

**B. Description of Boundaries of the Vermont Forest Legacy Area**

**C. Metadata for the Map of Vermont's Forest Legacy Area**

**D. Responses to Public Comments (Responsiveness Summary)**

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## **APPENDIX A.**

### **Counties and Towns Eligible for the Vermont Forest Legacy Program**

**ADDISON**  
**8 TOWNS**

BRISTOL  
GOSHEN  
LEICESTER  
MIDDLEBURY  
MONKTON  
RIPTON  
SALISBURY  
STARKSBORO

**BENNINGTON**  
**13 TOWNS**

ARLINGTON  
BENNINGTON  
DORSET  
LANDGROVE  
MANCHESTER  
POWNA  
READSBORO  
RUPERT  
SANDGATE  
SHAFTSBURY  
STAMFORD  
SUNDERLAND  
WINHALL

**CALEDONIA**  
**17 TOWNS**

BARNET  
BURKE  
DANVILLE  
GROTON  
HARDWICK  
KIRBY  
LYNDON  
NEWARK  
PEACHAM  
RYGATE  
SAINT JOHNSBURY  
SHEFFIELD  
STANNARD

SUTTON  
WALDEN  
WATERFORD  
WHELOCK

**CHITTENDEN**  
**11 TOWNS**

BOLTON  
BUELLS GORE  
ESSEX  
HINESBURG  
HUNTINGTON  
JERICHO  
RICHMOND  
ST GEORGE  
UNDERHILL  
WESTFORD  
WILLISTON

**ESSEX**  
**15 TOWNS**

AVERILL  
BRIGHTON  
BLOOMFIELD  
BRUNSWICK  
CANAAN  
CONCORD  
EAST HAVEN  
FERDINAND  
GRANBY  
GUILDHALL  
LEMINGTON  
LUNENBURG  
MAIDSTONE  
NORTON  
VICTORY

**FRANKLIN**  
**8 TOWNS**

BAKERSFIELD  
BERKSHIRE

ENOSBURGH  
FAIRFAX  
FAIRFIELD  
FLETCHER  
MONTGOMERY  
RICHFORD

**LAMOILLE**  
**10 TOWNS**

BELVIDERE  
CAMBRIDGE  
EDEN  
ELMORE  
HYDE PARK  
JOHNSON  
MORRISTOWN  
STOWE  
WATERVILLE  
WOLCOTT

**ORANGE**  
**15 TOWNS**

BRADFORD  
BRAINTREE  
BROOKFIELD  
CHELSEA  
CORINTH  
NEWBURY  
ORANGE  
RANDOLPH  
STRAFFORD  
THETFORD  
TOPSHAM  
TUNBRIDGE  
VERSHIRE  
WASHINGTON  
WEST FAIRLEE

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**ORLEANS**  
**14 TOWNS**

ALBANY  
BARTON  
BROWNINGTON  
COVENTRY  
CRAFTSBURY  
GREENSBORO  
GLOVER  
IRASBURG  
JAY  
LOWELL  
NEWPORT TOWN  
TROY  
WESTFIELD  
WESTMORE

**RUTLAND**  
**24 TOWNS**

BENSON  
BRANDON  
CASTLETON  
CHITTENDEN  
CLARENDON  
DANBY  
FAIR HAVEN  
HUBBARDTON  
IRA  
KILLINGTON  
MENDON  
MIDDLETOWN SPRINGS  
MOUNT HOLLY  
PAWLET  
PITTSFIELD  
PITTSFORD  
POULTNEY  
SHREWSBURY  
SUDBURY  
TINMOUTH  
WALLINGFORD  
WELLS  
WEST HAVEN  
WEST RUTLAND

**WASHINGTON**  
**15 TOWNS**

BERLIN  
CABOT  
CALAIS

DUXBURY  
FAYSTON  
MARSHFIELD  
MIDDLESEX  
MORETOWN  
PLAINFIELD  
ROXBURY  
WAITSFIELD  
WARREN  
WATERBURY  
WORCESTER  
WOODBURY

**WINDSOR**  
**22 TOWNS**

ANDOVER  
BALTIMORE  
BARNARD  
BETHEL  
BRIDGEWATER  
CAVENDISH  
CHESTER  
HARTFORD  
LUDLOW  
NORWICH  
PLYMOUTH  
POMFRET  
READING  
ROCHESTER  
ROYALTON  
SHARON  
STOCKBRIDGE  
WEATHERSFIELD  
WESTON  
WEST WINDSOR  
WINDSOR  
WOODSTOCK

**WINDHAM**  
**17 TOWNS**

ATHENS  
BROOKLINE  
HALIFAX  
GRAFTON  
GUILFORD  
JAMAICA  
LONDONDERRY  
MARLBORO  
NEWFANE  
PUTNEY

ROCKINGHAM  
STRATTON  
TOWNSHEND  
WARDSBORO  
WESTMINSTER  
WILMINGTON  
WINDHAM

## **APPENDIX B.**

### **Forest Legacy Area Boundary**

#### **Vermont Forest Legacy Area Boundary Description**

#### **Vermont Forest Legacy Area Boundary Description**

##### **External Boundary Description**

Beginning at the point where VT Route 105A (Glenn Sutton Road) crosses the Vermont/Quebec border (US/Canada International Boundary) in the town of Richford.

Proceed through the town of Richford:

Southerly along VT Route 105A (Glenn Sutton Rd) to the intersection with VT Route 105 (Jay Road),

Southwesterly and Northerly along VT Route 105 (Jay Rd) until it becomes TH# 1 (Troy Street),

Northerly along TH# 1 (Troy Street) to the intersection with TH# 1 (Main Street),

Southerly along TH# 1 (Main Street) until it becomes TH# 1 (South Main Street),

Southerly along TH# 1 (South Main Street) until it becomes VT Route 105 (St Albans Road),

Southerly along VT Route 105 (St Albans Road) to the Richford/Berkshire town line;

Proceed through the town of Berkshire:

Southerly along VT Route 105 (East Berkshire Road) to the intersection with VT Route 118 (Montgomery Road),

Southeasterly along VT Route 118 (Montgomery Road) to the intersection with Town Highway #44 (Perley Road),

Southwesterly along Town Highway #44 (Perley Road) to Berkshire/Enosberg town line;

Proceed through the town of Enosberg:

Southwesterly along Town Highway #1 (Perley Road) to the intersection with Town Highway #22 (Nichols Road);

Westerly along Town Highway #22 (Nichols Road) to the intersection with Town Highway #2 (Boston Post Road);

Southerly along Town Highway #2 (Boston Post Road) to the Enosburg/Bakersfield town line;

Proceed Westerly along the Enosburg/Bakersfield town line to the intersection with the east line of the town of Fairfield;



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Proceed Southerly along the Fairfield/Bakersfield town line to the intersection with VT Route 36;

Proceed through the town of Fairfield:

Westerly along Route 36 to the intersection with Town Highway #58, (West Street);

Southerly along Town Highway #58 (West Street) to the intersection with Town Highway #57 (Bradley Road) and Town Highway #59 (West Street);

Southerly along Town Highway #59 (West Street) to the Fairfield/Fairfax town line;

Proceed Easterly along the Fairfield/Fairfax town line to a corner of the town of Fletcher;

Proceed Southerly along the Fletcher/Fairfax town line to the intersection with Town Highway #2 (Fletcher Road);

Proceed through the town of Fairfax:

Westerly along Town Highway # 2 (Fletcher Road) to the intersection with VT Route 104 (Main Street);

Southerly along VT Route 104 (Main Street) to the intersection with VT Route 128 (Browns River Road);

Southerly VT Route 128 (Browns River Road) to the Fairfax/Westford town line;

Proceed through the town of Westford:

Southerly along VT Route 128 (Browns River Road) to the Westford/Essex town line;

Proceed through the town of Essex:

Southerly along VT Route 128 (Browns River Road) to the intersection with VT Route 15 (Center Road);

Southwesterly along with VT Route 15 (Center Road) to the intersection with Town Highway #2 (Old Stage Road);

Southwesterly along with VT Route 15 (Upper Main Street) to the intersection with VT Route 289;

Southeasterly along VT Route 289 to VT to the intersection with VT Route 117 (River Road);

Easterly along VT Route 117 (River Road) to Town Highway #1 (North Williston Road);

Southerly along Town Highway #1 (North Williston Road) to the Essex/Williston town line;

Proceed through the town of Williston:

Southerly along Town Highway #1 (North Williston Road) to the intersection with US Route 2;

Southerly along Town Highway #1 (Oak Hill Road) to the intersection with US I89;

Westerly along US I89 to the intersection with VT Route 2A (St George Road);

Southerly along Route 2A (St George Road) to the Williston/St. George town line;

Proceed through the town of St. George:

Southerly along VT Route 2A to the intersection with VT Route 116;

Southerly along VT Route 116 to the St. George/Hinesburg town line;

Proceed through the town of Hinesburg:

Southerly along VT Route 116 to the intersection with Town Highway #4, (Silver Street);

Southerly along Town Highway #4, (Silver Street) to the Hinesburg/Monkton town line;

Proceed through the town of Monkton:

Southerly along Town Highway #1, (Silver Street) to the intersection with Town Highway #1, (Monkton Ridge Road);

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Southerly along Town Highway #1, (Monkton Ridge Road) to the intersection with Town Highway #3, (Bristol Road);

Southerly along Town Highway #3, (Bristol Road) to the Monkton/Bristol town line;  
Proceed through the town of Bristol:

Southerly along Town Highway #4, (Monkton Road) to the intersection with Town Highway #6, (Burpee Road);

Southerly along Town Highway #6, (Burpee Road) to the intersection with VT Route 17 (Stoney Hill Road) and VT Route 116 (S. 116 Road);

Southerly along 116 (S. 116 Road) to the Bristol/Middlebury town line;  
Proceed through the town of Bristol:

Southerly along VT Route 116 (Case Road) to the intersection with VT Route 125 (E. Main Street);

Southerly along VT Route 116 (Church Street) to the intersection with VT Route 116 (Ossie Street);

Westerly along VT Route 116 (Ossie Street) to the intersection with US Route 7 (Route 7 S. Road);

Southerly along US Route 7 (Route 7 S. Road) Middlebury/Leicester town line;  
Proceed through the town of Salisbury:

Southerly along US Route 7 (Route 7 Road) to the Salisbury/Leicester town line;

Proceed through the town of Leicester:

Southerly along US Route 7 (Route 7 Road) to the Leicester/Brandon town line;

Westerly along the Leicester/Brandon town line to the east line of the town of Whiting;

Southerly along the Leicester/Brandon town line to the northeast corner of the town of Sudbury;

Southerly along the Brandon/Sudbury town line to VT Route 73 (Route 73E);

Proceed through the town of Sudbury:

Westerly along VT Route 73 (Route 73E) to the intersect with VT Route 30 (Route 30 Road);

Southerly along VT Route 30 (Route 30 Road) to the intersection with VT Route 73 (Route 73W);

Westerly along VT Route 73 (Route 73 W) to the Sudbury/Orwell town line;

Southerly and then Westerly along the Sudbury/Orwell town line to the northeast corner of the town of Benson;

Westerly along the Orwell/Benson town line to the Vermont/New York state line;

Southerly along the Vermont/New York state line to US Route 4 (Route 4 East) in Fair Haven;

Proceed through the town of Fair Haven:

Easterly along US Route 4 (Route 4 East) to the VT Route 4A Exit Ramp;

Southeasterly along VT Route 4A Exit Ramp to the intersection with VT Route 4A (Prospect Street);

Easterly along VT Route 4A (Prospect Street) to the intersection with VT Route 4A (North Main Street);

Northerly along VT Route 4A (North Main Street) to the intersection with VT Route 4A (Capitol Hill Street);

Easterly along VT Route 4A (Capitol Hill Street) to VT Route 4A (VT Route 4A E);

Easterly along VT Route 4A (VT Route 4A E) to the Fair Haven/Castleton town line;

Proceed through the town of Castleton:

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Easterly along VT Route 4A (VT Route 4A W) to the intersection with VT Route 30 (Route 30 S);

Southerly along VT Route 30 (Route 30 S) to the Castleton/Poultney town line;

Proceed through the town of Poultney:

Southerly along VT Route 30 (Route 30 N) to Town Highway #1 (Beaman Street);

Southerly along Town Highway #1 (Beaman Street) to Town Highway #1 (Grove Street);

Southerly along Town Highway #1 (Grove Street) to Town Highway #1 (Furnace Street);

Easterly along Town Highway #1 (Furnace Street) to Town Highway #1 (Lake Road);

Southerly along Town Highway #1 (Lake Road) to VT Route 30 (Route 30 S);

Southerly along VT Route 30 (Route 30 S) to the Poultney/Wells town line;

Proceed through the town of Wells:

Southerly along VT Route 30 (Route 30) to the Wells/Pawlet town line;

Proceed through the town of Pawlet:

Southerly along VT Route 30 (Route 30) to the intersection with VT Route 149 (Route 149);

Westerly along VT Route 149 (Route 149) to the Vermont/New York state line;

Southerly along the Vermont/New York state line to the southwest corner of the state of Vermont;

Easterly along the Vermont/New York state line and the Vermont/Massachusetts state line to the intersection with US Route 5 (Coolidge Highway) in the town of Guilford;

Proceed through the town of Guilford:

Northerly along US Route 5 (Coolidge Highway) to the Guilford/Brattleboro town line;

Westerly along the Guilford/Brattleboro town line;

Northerly along the Brattleboro/Marlboro town line and the Marlboro/Dummerston town line;

Easterly and Northerly along the Dummerston/Newfane town line;

Easterly along the Dummerston/Brookline and along the Dummerston/Putney town line to the intersection with US Route 5 (Main Street);

Proceed through the town of Putney:

Northerly along US Route 5 to the intersection with Town Highway #1 (Kimball Hill Road);

Northwesterly along Town Highway #1 (Kimball Hill Road) to the intersection with Town Highway #38 (Signal Pine Road);

Northerly along Town Highway #1 (Westminster Road) to the Putney/Westminster town line;

Proceed through the town of Westminster:

Northerly along Town Highway #2 (Westminster W Road) to the Westminster/Rockingham Town line;

Proceed through the town of Rockingham:

Northeasterly along Town Highway #3 (Westminster West Road) to the intersection with Town Highway #3 (Westminster Street);

Northerly along Town Highway #3 (Westminster Street) to the intersection with Town Highway #1 (Main Street);

Westerly along Town Highway #1 (Main Street) to the intersection with Town Highway #2 (Pleasant Valley Road);

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Northerly along Town Highway #2 (Pleasant Valley Road) to the intersection with VT Route 103 (Rockingham Road);

Easterly along VT Route 103 to the intersection with Town Highway #6 (Parker Hill Road);

Northerly along Town Highway #6 (Parker Hill Road) to the intersection with Town Highway #6 (Obrien Road) and Town Highway #7 (Parker Hill Road);

Northerly along Town Highway #7 (Parker Hill Road) to the Rockingham/Springfield town line;

Westerly along the Rockingham/Springfield town line;

Northerly along the Springfield/Chester town line to VT Route 10 (Route 10);

Proceed through the town of Springfield:

Easterly along VT Route 10 (Route 10) to the intersection with VT Route 106 (Route 106);

Northerly along VT Route 106 (Route 106) to the Springfield/Weathersfield town line;

Proceed through the town of Weathersfield:

Northerly along VT Route 106 (Route 106) to the intersection with VT Route 131 (Route 131);

Easterly along with VT Route 131 (Route 131) to the intersection with US Route 5 (Route 5);

Northerly along US Route 5 to the intersection with VT Route 44A (Back Mountain Road);

Northerly along VT Route 44A (Back Mountain Road) to the Weathersfield/Windsor town line;

Proceed through the town of Windsor:

Northwesterly along Route 44A (Back Mountain Road) to the intersection with VT Route 44 (Route 44);

Westerly along VT Route 44 (Route 44) to the Windsor/West Windsor town line;

Proceed through the town of West Windsor:

Westerly along VT Route 44 (Route 44) to the West Windsor/Reading town line;

Northerly along the West Windsor/Reading town line;

Easterly along West Windsor/Woodstock town line;

Northerly along Woodstock/Hartland town line to US Route 4 (Route 4);

Proceed through the town of Hartland:

Easterly and Northerly along US Route 4 (Route 4) to the Hartland/Hartford town line;

Proceed through the town of Hartford:

Northerly and Easterly along US Route 4 (Woodstock Road) to the intersection with US Route 5 (North Main Street);

Easterly along US Route 5 (North Main Street) to the intersection with US Route 5 (Hartford Avenue);

Northerly along US Route 5 (Hartford Avenue) to the intersection with US Route 5 (Christian Street);

Northerly along US Route 5 (Christian Street) to the Hartford/Norwich town line;

Proceed through the town of Norwich:

Northerly along US Route 5 (Route 5 S) to the intersection with US Route 5 (Main Street);

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Northwesterly along US Route 5 (Main Street) to the intersection with US Route 5 (Church Street);

Easterly along US Route 5 (Church Street) to the intersection with US Route 5 (Route 5 N);

Northerly along US Route 5 (Route 5 N) to the Norwich/Thetford town line:

Proceed through the town of Thetford:

Northerly along US Route 5 (Route 5) to the Thetford/Fairlee town line:

Proceed through the town of Fairlee:

Northerly along US Route 5 (Route 5 S) to the intersection with Fairlee State Highway (Lake Morey Road);

Northerly along US Route 5 (Route 5 N) to the Fairlee/Bradford town line:

Proceed through the town of Bradford:

Northerly along US Route 5 (Lower Plain Road) to US Route 5 (Main Street);

Northerly along US Route 5 (Main Street) to US Route 5 (N Main Street);

Northerly along US Route 5 (N Main Street) to US Route 5 (Upper Plain Road);

Northerly along US Route 5 (Upper Plain Road) to the Bradford/Newbury town line;

Proceed through the town of Newbury:

Northerly along US Route 5 (Route 5 S) to US Route 5 (Main Street S);

Northerly along US Route 5 (Main Street S) to US Route 5 (Main Street N);

Northerly along US Route 5 (Main Street N) to US Route 5 (Route 5 N);

Northerly along US Route 5 (Route 5 N) to US Route 5 (Main Street N);

Northerly along US Route 5 (Main Street N) to intersection with US Route 5 (Water Street);

Easterly and Northerly along US Route 5 (Water Street) to the Newbury/Ryegate town line;

Proceed through the town of Ryegate:

Northerly along US Route 5 (Ryegate Road) to the Ryegate/Barnet town line;

Easterly along the Ryegate/Barnet town line to the Vermont/New Hampshire state line;

Northerly along the Vermont/New Hampshire state line, also being the easterly lines of the towns of Barnet, Waterford, Concord, Lunenburg and Guildhall, to Town Highway #2 (Bridge Street);

Proceed through the town of Guildhall:

Westerly along Town Highway #2 (Bridge Street) to the intersection with VT Route 102 (Route 102);

Northerly along VT Route 102 (Route 102) to the Guildhall/Maidstone town line:

Proceed through the towns of Maidstone, Brunswick, Bloomfield and Lemington:

Northerly along VT Route 102 (Route 102) to the Lemington/Canaan town line;

Proceed through the town of Canaan:

Northerly along VT Route 102 (Route 102) to the intersection with VT Route 114 (Gale Street) and VT

Route 253 (Christian Hill Street);

Northerly along VT Route 253 (Christian Hill Street) to VT Route 253 (Route 253);

Northerly along VT Route 253 (Route 253) to the Vermont/Quebec line (US/Canada International Boundary);

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Westerly along the Vermont/Quebec line (US/Canada International Boundary) to the Norton/Holland town line;  
Southerly along the Norton/Holland town line, the Holland/Warner's Grant town line, and the Morgan/Warner's Grant town line;  
Southeasterly along the Morgan/Warner's Grant town line and the Morgan/Warren Gore town line;  
Southwesterly along the Morgan/Brighton town line and the Charleston/Brighton town line;  
Northwesterly along the Charleston/Westmore town line, the Charleston/Brownington town line, the Derby/Brownington town line, the Derby/Coventry town line, and the Newport City/Coventry town line;  
Northerly along the Newport City/ Newport Town town line;  
Northerly along the Newport Town/Derby town line to the Vermont/Quebec line (US/Canada International Boundary);  
Westerly along the Vermont/Quebec border (US/Canada International Boundary), and being along the towns of Newport Town, Troy, Jay and in part along the town of Richford to the Point of Beginning.

**EXCLUDED FROM THE DESCRIPTION ABOVE ARE THE FOLLOWING AREAS:**

**Exclusion #1**

Beginning at the northwest corner of the town of Lyndon;  
Southerly along Lyndon/Wheelock town line to US I91;  
Proceed through the towns of Lyndon and St. Johnsbury:  
Southerly along US I91 to the St. Johnsbury/Waterford town line;  
Northeasterly along the St. Johnsbury/Waterford town line;  
Northwesterly along the St. Johnsbury/Kirby town line;  
Northerly along the Lyndon/Kirby and Lyndon/Burke town lines;  
Westerly along the Lyndon/Burke and Lyndon/Sutton town lines to the point of beginning

Meaning to exclude portions of the towns of Lyndon and St. Johnsbury.

**Exclusion #2**

Beginning at the northwest corner of the town of East Montpelier;  
Proceed Southerly along East Montpelier/Middlesex and Montpelier/Middlesex town lines;  
Southeasterly along the Montpelier/Berlin town line to US I89;  
Proceed through the town of Berlin:  
Easterly along US I89 to the Montpelier/Berlin town line;  
Southerly and Easterly along the Montpelier/Berlin town line to US I89;

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Proceed through the town of Berlin:

- Southerly along US I89 to the Berlin/Williamston town line;
- Westerly along the Berlin/Williamston, the Berlin/Northfield, and the Northfield/Moretown town lines;
- Southerly along the Northfield/Waitsfield town line;
- Easterly along the Northfield/Warren, the Northfield/Roxbury, the Northfield/Brookfield, the Williamstown/Brookfield, and Williamstown/Chelsea town lines;
- Northerly along the Williamstown/Washington town line;
- Easterly along the Barre Town/ Washington town line;
- Northerly along the Barre Town/Orange town line;
- Easterly along the Plainfield/Orange town line to Town Highway #2 (Brook Road);

Proceed through the town of Plainfield:

- Northerly along Town Highway #2 (Brook Road) to the intersection with Town Highway #1 (Mill Street);
- Northerly along Town Highway #1 (Mill Street) to the intersection with Town Highway #3 (Main Street);
- Westerly along Town Highway #3 (Main Street) to the intersection with US Route 2 (School Street);
- Northeasterly along US Route 2 (School Street) to the Plainfield/Marshfield town line;
- Northwesterly along the Plainfield/Marshfield town line;
- Northeasterly and Northwesterly along the East Montpelier/Marshfield town line;
- Northwesterly along the East Montpelier/Calais town line to the Point of Beginning.

Meaning to exclude the entire towns of Barre City, Barre Town, East Montpelier, Montpelier, Northfield and Williamstown and portions of the towns of Berlin and Plainfield

**Exclusion #3**

Beginning at the northwest corner of the town of Lincoln:

- Proceed Southerly, Westerly and Southerly along the Lincoln/Bristol town line;
- Southerly and Easterly along the Lincoln/Ripton town line;
  - Southerly along the Ripton/Granville town line;
  - Northwesterly and Southwesterly along the Hancock/Ripton town line;
  - Southwesterly and Southeasterly along the Hancock/Goshen town line;
  - Southerly along the Goshen/Rochester town line;
  - Southwesterly along the Goshen/Chittenden town line to the Green Mountain National Forest boundary;

Proceed through the town of Chittenden:

- Southerly along the Green Mountain National Forest boundary to the Mendon town line;
- Proceed Westerly along the Chittenden/Mendon town line;
- Northerly along the Mendon/Rutland Town town line;
  - Westerly along the Rutland Town /Pittsford town line to US Route 7 (Route 7);

Proceed through the town of Pittsford:

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Northerly along US Route 7 (Route 7) to Pittsford/Brandon town line;  
Proceed through the town of Brandon:  
Northerly along US Route 7 (Franklin Street);  
Northwesterly along Town Highway #1 (Franklin Street);  
Westerly along Town Highway #1 (Park Street);  
Northerly along Town Highway #1 (Center Street);  
Westerly along Town Highway #1 (Conant Square) to the intersection with Town Highway #4 (Pearl Street);  
Southerly along Town Highway #4 (Pearl Street) to the intersection of Town Highway #78 (Maple Street);  
Southeasterly along Town Highway #78 (Maple Street) to the intersection of Town Highway #5 (Union Street);  
Southerly along Town Highway #5 (Union Street) to the intersection of Town Highway #5 (Florence Road);  
Southerly along Town Highway #5 (Florence Road) to the Brandon/Pittsford town line;  
Proceed through the town of Pittsford:  
Southerly along Town Highway #1 (West Creek Road) to the intersection of Town Highway #8 (Whipple Hollow Road);  
Southerly along Town Highway #8 (Whipple Hollow Road) to the Pittsford/West Rutland town line;  
Proceed through the town of West Rutland:  
Southerly along Town Highway #3 (Whipple Hollow Road) to the intersection with Town Highway #3 (Pleasant Street);  
Southerly along Town Highway #4 (Whipple Hollow Road) to the intersection with VT Route 4A (Castleton Road);  
Westerly along VT Route 4A (Castleton Road) West Rutland/Ira town line;  
Proceed Southerly and Easterly along the West Rutland/Ira town line;  
Proceed Easterly along the West Rutland/Clarendon and Rutland Town/Clarendon town lines ;  
Proceed Northerly along the Rutland Town/Mendon town line to US Route 4 (Route 4);  
Proceed through the town of Mendon:  
Easterly along US Route 4 (Route 4) to the Mendon/Killington town line;  
Proceed through the town of Killington:  
Easterly along US Route 4 (Route 4) to the intersection with VT Route 100 (Route 100 N);  
Northerly along VT Route 100 (Route 100 N) to the Killington/Pittsfield town line;  
Proceed through the town of Pittsfield:  
Northerly along VT Route 100 (Route 100) to the Pittsfield/Stockbridge town line;  
Proceed through the town of Stockbridge:  
Easterly and Northwesterly along VT Route 100 (Route 100) to the Stockbridge/Rochester town line;  
Proceed through the town of Rochester:  
Northerly along VT Route 100 (Route 100 S);  
Northerly along VT Route 100 (South Main Street);  
Northerly along VT Route 100 (North Main Street);  
Northerly along VT Route 100 (Route 100 N) to the Rochester/Hancock town line;



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Proceed through the town of Hancock:

Northerly along VT Route 100 (Route 100) to the Hancock/Granville town line;  
Proceed Southeasterly along the Granville/Hancock and Granville/Rochester town lines;  
Proceed Northeasterly along the Granville/Rochester and Granville/Braintree town lines;  
Proceed Northwesterly along the Granville/Roxbury and Granville/Warren town lines to VT  
Route 100 (Route 100);

Proceed through the town of Warren:

Northerly along VT Route 100 (Route 100) to the Warren/Waitsfield town line;  
Proceed Westerly along the Warren/Waitsfield town line;  
Proceed Westerly, Northerly and Westerly along the Warren/Fayston town line;  
Proceed Westerly along the Lincoln/Fayston town line;  
Proceed Westerly and Northerly along the Lincoln/Starksboro;  
Proceed Westerly along the Lincoln/Bristol town lines to the Point of Beginning.

Meaning to exclude the entire towns of Granville, Lincoln, Proctor, Rutland City and Rutland  
Town, and portions of the towns of Brandon, Chittenden, Hancock, Killington, Mendon,  
Pittsfield, Pittsford, Rochester, Stockbridge, Warren and West Rutland

**Exclusion #4**

Beginning at the point where US Route 7 crosses the Wallingford/Clarendon town line;  
Proceed Westerly, Southerly and Westerly along the Wallingford/Clarendon town line;  
Proceed Westerly along the Clarendon/Tinmouth town line to Town Highway #7 (East Road N);  
Proceed through the town of Tinmouth:

Southerly along Town Highway #7 (East Road N) to the intersection with Town  
Highway #1 (Route 140);

Southerly along Town Highway #1 (Route 140) to the intersection with Town Highway  
#3 (East Road);

Southerly along Town Highway #3 (East Road) to the intersection with Town Highway  
#2 (East Road);

Southerly along Town Highway #2 (East Road) to the Tinmouth/Danby town line;

Proceed through the town of Danby:

Southerly along Town Highway #2 (Tinmouth Road) to the intersection with Town  
Highway #1 (Brook Road);

Southerly and Easterly along Town Highway #1 (Brook Road) to the intersection with  
Town Highway #1 (South Main Street);

Southerly along Town Highway #1 (South Main Street) to the intersection with Town  
Highway #1 (Mount Tabor Avenue);

Easterly along Town Highway #1 (Mount Tabor Avenue) to the Danby/Mount Tabor  
town line;

Proceed through the town of Mount Tabor:

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Easterly along Town Highway #1 (Mount Tabor Avenue) to the intersection with US Route 7 (Route 7);  
Southerly along US Route 7 (Route 7) to the Mount Tabor/Dorset town line;  
Proceed Easterly, Southerly and Easterly along the Mount Tabor/Dorset town line;  
Proceed Southerly along the Dorset/Peru town line;  
Proceed Westerly along the Dorset/Winhall town line;  
Proceed Southerly along the Manchester/Winhall town line;  
Proceed Easterly along the Winhall/Sunderland town line;  
Proceed Northerly and Easterly along the Winhall/Stratton town line;  
Proceed Northerly along the Winhall/Jamaica town line To VT Route 30 (Route 30);  
Proceed through the town of Winhall:  
Westerly and Northerly along VT Route 30 (Route 30) to the intersection with VT Route 11 (Route 11);  
Easterly along VT Route 11 (Route 11) to the Winhall/Peru town line;  
Proceed Easterly along the Winhall/Peru town line;  
Proceed Northerly along the Peru/Landgrove town line;  
Proceed Easterly and Southerly along the Landgrove/Weston town line to Town Highway #2 (Landgrove Road);  
Proceed through the town of Weston:  
Easterly along Town Highway #2 (Landgrove Road) to Town Highway #2 (Lawrence Hill Road);  
Easterly along Town Highway #2 (Lawrence Hill Road) to the intersection with VT Route 100 (Main Street);  
Northerly along VT Route 100 (Main Street) to VT Route 100 (Route 100);  
Northerly along VT Route 100 (Route 100) to VT Route 155 (Route 155);  
Northerly along 155 (Route 155) to the Weston/Mount Holly town line;  
Proceed Northwesterly, Southerly and Westerly along the Weston/Mount Holly town line;  
Proceed Northerly and Westerly along the Mount Holly/Mount Tabor town line;  
Proceed Westerly along the Wallingford/Mount Tabor and Wallingford/Danby town lines to US Route 7 (Route 7 S);  
Proceed through the town of Wallingford:  
Northerly along US Route 7 (Route 7 S) to US Route 7 (South Main Street);  
Northerly along US Route 7 (South Main Street) to US Route 7 (North Main Street);  
Northerly along US Route 7 (North Main Street) to the Point of Beginning.

Meaning to exclude the entire towns of Mt. Tabor and Peru and portions of the towns of Danby, Tinnmouth, Wallingford, Weston and Winhall.

**Exclusion #5**

Beginning at the point where VT Route 7A crosses the Arlington/Shafsbury town line;  
Proceed through the town of Shafsbury:  
Southerly along VT Route 7A (Route 7A) to the intersection with Town Highway #54 (West Mountain Road);

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Westerly and Southwesterly along Town Highway #54 (West Mountain Road) to the intersection with Town Highway #64 (Laclair Road);  
Westerly along Town Highway #64 (Laclair Road) to the intersection with Town Highway #9 (Murphy Hill Road);  
Northwesterly along Town Highway #9 (Murphy Hill Road) to the intersection with Town Highway #13 (Sally Gannon Road);  
Westerly along Town Highway #13 (Sally Gannon Road) to the Vermont/New York state line;

Proceed Southerly along the Vermont/New York state line to VT Route 9 (West Road);  
Proceed through the town of Bennington:  
Easterly along VT Route 9 (West Road) to Town Highway #1 (West Road);  
Easterly and Northerly along Town Highway #1 (West Road) to the intersection with Town Highway #1 (Main Street);  
Easterly along Town Highway #1 (Main Street) to Town Highway #2 (Main Street);  
Southeasterly along Town Highway #2 (Main Street) to the intersection with Town Highway #1 (South Street);  
Southerly along Town Highway #1 (South Street) to the Bennington/Pownal town line;

Proceed Easterly along the Bennington/Pownal, Woodford/Pownal, Woodford/Stamford and Woodford/Readsboro town lines;

Proceed Northerly along the Woodford/Readsboro and Woodford/Searsburg town lines;

Proceed Easterly along the Searsburg/Somerset town line;

Proceed Southerly along the Searsburg/Wilmington, Readsboro/Wilmington and Readsboro/Whitingham town lines to the Vermont/Massachusetts state line;

Proceed Easterly along the Vermont/Massachusetts state line to the southeast corner of the town of Whitingham;

Proceed Northerly along the Whitingham/Halifax town line;

Proceed Westerly along the Whitingham/Wilmington town line to VT Route 100 (Route 100 S);

Proceed through the town of Wilmington:  
Northerly along VT Route 100 (Route 100 S) to the intersection with VT Route 9 (Route 9 E);  
Easterly along VT Route 9 (Route 9 E) to the Wilmington/Marlboro town line;

Proceed Northerly along the Wilmington/Marlboro town line;

Proceed Easterly and Northerly along the Marlboro/Dover town line;

Proceed Northerly along the Dover/Newfane, Wardsboro/Newfane and Wardsboro/Townshend town lines;

Proceed Westerly along the Wardsboro/Jamaica town line to VT Route 100;

Proceed through the town of Wardsboro:  
Southerly along VT Route 100 (Route 100) to the intersection with Town Highway #2 (South Wardsboro Road);  
Southerly along Town Highway #2 (South Wardsboro Road) to the intersection with Town Highway #2 (Newfane Road);  
Easterly along Town Highway #2 (Newfane Road) to the intersection with Town Highway #4 (East Dover Road);  
Southerly along Town Highway #4 (East Dover Road) to the Wardsboro/Dover town line;

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Proceed Easterly along the Wardsboro/Dover and Dover/Stratton town lines;  
Proceed Northerly and Westerly along the Stratton/Somerset town line;  
Proceed Westerly and Southerly along the Sunderland/Somerset town line;  
Proceed Westerly along the Sunderland/Glastenbury and Arlington/Shaftsbury town lines to the Point of Beginning.

Meaning to exclude the entire towns of Dover, Glastenbury, Searsburg, Somerset, Whitingham and Woodford and portions of the towns of Bennington, Shaftsbury, Wardsboro, Weston and Wilmington.

The towns of Fairlee, Granville, Lincoln and Northfield were included in the original Forest Legacy Area but they opted to not participate.

## **APPENDIX C.**

### **Model Process (Metadata) for Vermont's Forest Legacy Area Boundary**

This document outlines the processes that were used to determine the boundaries of the Forest Legacy Area. The Forest Legacy Area is the geographical region where the program will be applied. The forestlands selected for the area were found to hold the highest potential for the forest values deemed most important through this assessment. In descending order, these “Eligibility Criteria” are as follows: the (large) size of a forest block; highly productive soils; and important fish and wildlife habitats.

A working group convened many times to determine the area boundaries. Many discussions were needed to clarify the steps that eventually led to the final model. The first map was modified a number of times by the working group and also as a result of feedback from public meetings, stakeholder groups, and other agencies.

The first model was engineered to yield forest patches greater than 200 acres in size.

- **Forest Patch Model (RUN FIRST)** –  
All analysis was performed using a 30x30 meter cell resolution based on the grid cell size of the National Land Cover Dataset 1992 (NLCD).
  - Biophysical regions were used to break up the state into 5 tiles or sections to facilitate the process of determining forest patches by region.
  - Fragmentation was represented by roads with the following buffer sizes:
    - *Interstates – 600' (each side)*
    - *US Highways – 300' (each side)*
    - *State Highways – 300' (each side)*
    - *Town Roads – 100' (each side)*
  - Forested lands were selected by extracting forest cover from the NLCD 1992. This is a lands classification based on the Landsat Thematic Mapper 30-meter satellite imagery from 1992-93. This process excluded open water and most urban areas. Classes selected were deciduous, coniferous, mixed, shrubland, non-natural woody such as orchards, woody wetlands, and emergent herbaceous wetlands.
  - Roads were subtracted from the forested NLCD (to produce fragmentation).
  - Forested NLCD cells were grouped to create forested “patches.”
  - Areas were calculated for the patches.
  - Patches with an area less than 200 acres were discarded, yielding forest patches greater than 200 acres.
  - After the Forest Patch Model was run, a biophysical region extent was set on the corresponding forest patch. A raster calculation was performed to exclude extraneous data from the rectangular extents.

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The second model created a composite raster map that summarized criteria into a rasterized/grid cell format through various geo-processing steps. Inputs to the model were weighted by an integer scale, and the output yielded values that best meet the Eligibility Criteria.

- **AON Forest Model (RUN SECOND)** –

All analysis was performed using a 30x30 meter cell resolution.

**Private Lands**

- Using the University of Vermont’s Spatial Analysis Lab’s Conserved Public Lands Layer ([CONSPUB](#)) of December 2004, public lands were masked out so that calculations could be done only on privately owned lands.

**Forest Patches** (from first model above)

- Forest patches were reclassified to Binary. 0=no patch 1=patch.
  - *Patches were then given a weighting factor of 5 as determined by the Forest Legacy Area working group.*

**Productive Soils**

- Forest Value Group (FVG) Data were used to represent Soil Productivity. For all counties except Essex, soils of FVG’s 1-3 were classified into 1 = exists, or 0 = does not exist (Binary). Because Essex County lacks soils GIS data, the Bedrock data layer was used. Rocks rich in carbonate material were selected as being beneficial for forest productivity.
  - *Soils were grouped together in Binary and were reclassified and given a weighting factor of 3.*

**Ecologic Data**

- Rare, Threatened, and Endangered Species and Natural Community occurrences, from the Nongame and Natural Heritage Program in the Vermont Fish and Wildlife Department, were classified into Binary.
- Priority Aquatic Features identified for the Vermont Biodiversity Project were classified into Binary.
- The Nature Conservancy’s Tier 1 Forest Matrix (dominant forest types) Blocks were classified into Binary.
- Deer Wintering Areas, supplied by the Vermont Department of Fish and Wildlife, were classified into Binary.
  - *All ecological data were grouped together in Binary and were reclassified and given a weighting factor of 2.*

**Final Calculations**

- The weighted integers were then summed in a raster calculation to yield a raster composite map ranging in values from 0 (no conditions met at one point on the map) – 10 (all conditions are met at one point of the map).
- The summed raster layer was then reclassified into the following three groups:
  - Group/Value 1 = 0 - 1’s
  - Group/Value 2 = 2 - 5’s
  - Group/Value 3 = 7 - 10’s

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Once the values were classified into 3 groups, they were assigned to their respective town and identified in a table. This was done by using the “Tabulate Area” tool in the Spatial Analyst toolbox. The table was exported to Microsoft Access where a query was developed to calculate the percentage of area each value represents in each particular town. The table was then joined to the Town Boundary layer and symbolized as necessary.

The Forest Legacy Area working group determined that, due to the difficulty in discerning areas that best met the Eligibility Criteria, another analysis was needed to place greater emphasis on large contiguous blocks of forest. Using the areas selected from the previous calculations, forest patches of 2500 acres or greater were selected.

Additional refinements to the Forest Legacy Area were done by eliminating developed and agricultural lands, and the boundaries were adjusted to follow town lines, roads, and waterways. Feedback received as a result of public meetings and from stakeholder groups and other agencies resulted in additional lands being included in the Area.

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## **APPENDIX D.**

### **Responses to Public Comments (Responsiveness Summary)**

This document consists of responses to comments received regarding the draft *Assessment of Need* (AON) for the Vermont Forest Legacy Program. The Vermont Department of Forests, Parks and Recreation appreciates the efforts of those who read and commented on the draft AON. Thanks to all who shared insightful comments which resulted in additions and corrections to the AON.

Many comments were received from meetings designed to make people aware of the program and the AON and to seek their input. Each regional commission sponsored a public meeting in the spring of 2008. Besides members of the Vermont Forest Stewardship Committee and the regional commissions, comments were received from many individuals and from representatives of the following entities:

Audubon Vermont  
Green Mountain National Forest  
Northern Forest Alliance  
The Conservation Fund  
The Nature Conservancy  
The Wilderness Society  
Town of Charlotte  
Town of Hinesburg  
Town of Richmond  
Town of Westford  
Trust for Public Land  
University of Vermont  
Vermont Coverts  
Vermont Department of Environmental Conservation  
Vermont Department of Fish and Wildlife  
Vermont Department of Forests, Parks and Recreation County Foresters and Managers  
Vermont Forest Products Association  
Vermont Forest Roundtable  
Vermont Housing and Conservation Board  
Vermont Land Trust  
Vermont Natural Resources Council  
Vermont Woodlands Association

Not all comments received are responded to in this document and can be explained as follows:

- Comments that were incorporated into the final AON generally are not responded to in this document and are considered to be self-evident;



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- Comments received that pertain to policy decisions and requirements of the federal program received separate replies;
- Comments regarding administration of the program and not related directly to the AON received separate replies; and
- Similar comments received have been grouped into a few categories and then summarized and re-phrased. The categories are as follows: The Area Boundary; Project Selection Criteria; and Other Comments. The intent here, for the sake of brevity, was to preserve the sentiment of each comment received and minimize any distortion that could result by taking it out of its context.

It is important to note that the designation of the Forest Legacy Area boundary and the process for selecting parcels for the program are related but distinct. The Forest Legacy Area is the land from which projects can emanate and was determined by applying three broad Eligibility Criteria across the landscape of the state. These criteria are: 1) the (large) size of a forest block; 2) highly productive soils; and 3) important fish and wildlife habitats.

With regard to individual parcels of land being chosen for the program, landowners must follow these guidelines in order to apply to the program:

- Their lands must be located within the Forest Legacy Area boundary; and
- Their lands must meet four other minimum criteria.

Once initial eligibility has been determined, an application can be made to the program. Then selection of the applications that are recommended to the U.S. Forest Service for the program is done using a more detailed analysis. The applications are compared with each other using dozens of factors--the Project Selection Criteria--on a more local and regional scale.

For more information about the Forest Legacy Program and the application process, please see the website <http://www.vtfpr.org/lands/flp.cfm>.

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## **The Area Boundary**

### **Maintain the Largest Possible Forest Legacy Area Acreage**

#### **Summary of Comments**

The Forest Legacy Area should encompass as many acres as possible to take advantage of conservation opportunities in Vermont. If the lands eligible for Forest Legacy conservation are reduced from the current level, Vermont will potentially miss out on important conservation opportunities, and the AON will indirectly suggest that development pressures in Vermont are not as great as in 1994. It is helpful to look at other states in the Northern Forest region to support the case for a larger Forest Legacy area in Vermont. The following statistics highlight the precedent for including a higher percentage of unconserved land in Vermont's Forest Legacy Area than that proposed in the draft AON.

- NH FL area = 3,760,258 unconserved acres, out of 4,227,668 unconserved acres in the state of New Hampshire = 89% of unconserved lands in the state are within the FL Area
- ME FL area = 13,190,209 unconserved acres, out of a total of 17,688,850 unconserved acres in the state of Maine = 74.6% of unconserved lands in the state are within the FL Area
- VT FL area = 2,677,253.9 unconserved acres, out of a total of 4,812,996 unconserved acres in the state of Vermont = 55.6% of unconserved lands in the state are within the draft AON's proposed FL Area

#### **Response**

*We appreciate the work that was done to produce this comparison, and we have increased the acreage in the Area for the final AON. However, the U.S. Forest Service imposed on Vermont the requirement that the new Area not exceed the acreage of the existing three Forest Legacy Areas in the state. This was a difficult task as the initial approach taken was that all private forest lands in the state should be included in the Area and therefore eligible for application to the program.*

### **Using Threats to Forests to Determine the Area Boundary**

#### **Summary of Comments**

The Forest Legacy Program should recognize that almost all of the forestland in Vermont is potentially under some degree of threat. Vermont as a whole is threatened from regional pressures that, over time, will further parcelization and fragmentation and lead to the loss of forestlands and the values they provide. We recommend that the boundaries of the FLA take into consideration areas of greatest conversion threat.

#### **Response**

*The AON section "Designation of the Forest Legacy Area Threats" explains why distinctions between levels of threat were not used to develop the Area boundaries: "Conversion of forests to other uses and other forest values is considered to be a concern throughout the entire state and broadly across the landscape. Evidence and degree of*

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*these threats on regional and local scales will be considered on a case-by-case basis for individual project applications as they are evaluated to receive Forest Legacy funds.”*

## **Change the Forest Legacy Area Boundaries**

### **Summary of General Comments**

- The AON priorities seem to run contrary to efforts associated with reducing parcelization and supporting the timber industry’s role in the state’s economy. We need to encourage conservation of the large, somewhat remote blocks now so that a future “development--loss of habitat--loss of industry scenario” is not the unintended outcome of conserving lands that are unlikely to remain functional forested blocks.
- While forest blocks in some areas of the state may be smaller in size, they may have other values important to the Forest Legacy Program, including highly productive forest soils, recreational opportunities, soil and water quality protection, and wildlife habitat. Where we have the forest cover, we should protect it to meet the other purposes of the AON: public access and water quality protection. If wood becomes an important fuel, it would also be nice to have areas protected for tree harvesting close to the users.
- Change the Area boundaries entirely to reflect only a greenbelt surrounding the most populated areas of Chittenden County and remove the remainder of the state. These are the lands most at-risk and are destined to be taken out of forest products production either by development or by conversion to parklands. By concentrating forest management and production efforts closest to the state’s densest population center, we can ensure this isolated urban population is exposed to the working forest landscape.
- Forest Legacy is one of the few tools we have to conserve small (100-500 acres) forested parcels that ensure continued woodlot management, contiguous habitat and biodiversity.

### **Response**

*We approached the delineation of the Forest Legacy Area boundary by considering foremost the goals for the program in Vermont. This results in a programmatic bias generally favoring larger parcels. However, on a project-by-project basis, smaller parcels that protect a wide variety of and/or particular values in many areas of the state are able to be considered for the program.*

### **Summary of Specific Requests for Inclusion in the Forest Legacy Area**

The lands shown on the following list were not able to be included in the Forest Legacy Area.

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- Parts of Warren, Ripton, Hancock, Rochester, Pittsfield, Chittenden, and Mendon, particularly inholdings and lands adjoining the Green Mountain National Forest (GMNF)
- Charlotte--clayplains and forested wetlands
- Milton--areas with calcareous-based soils, sandplains, and some forestlands of interest
- Westford—lands in common with Milton, Colchester, and Essex known as “Hidden Swamp”
- North side of Malletts Bay, the buffer along the Lamoille River in the same area, Malletts head on the south side of the bay, parts of Georgia
- More western sections of Monkton where lands serve as valuable wildlife corridors for amphibians, bobcat, bear, and other mammals.
- Williamstown faces development threats.
- Windham and Windsor Counties--The Connecticut River Watershed has been identified by the U.S. Forest Service as the area where housing density on private forests is projected to increase the most (as much as 20-40 percent) by 2030. West Windsor, Windsor, and Hartland should be included.
- Southwest Hubbardton, Northwest Castleton--forest blocks and patches in northwestern Rutland Co.—north of Rte. 4 and west of the north/south finger of lands included in the proposed Area. This is a critical “pinch point” for habitat connectivity--the southern Champlain Valley linking the Green Mountains and northern Taconics to the Adirondacks. Existing and predicted future development here could convert wildlife habitat and block wide-ranging animal movement and possibly gene flow among populations.
- Orwell contains part of the ecoregionally significant unfragmented habitat linkage between the Adirondacks and the Green Mountains highlighted by the Two Countries, One Forest scientific coalition, the State of Vermont, and The Nature Conservancy, especially for wide-ranging animals.
- Pittsford contains a relatively constricted area of undeveloped forest cover that is likely an important linkage area for the inter-regional movement of wide ranging mammals across the Route 7 corridor--east-west movement--in central Vermont.
- Poultney and the Rest of Wells are important for east-west habitat corridor connectivity. Additionally there are threats to the upland forested areas from wind power incursions that would convert working forest and habitat along the north-south ridges.

**Response**

*The Forest Service required that the Vermont Forest Legacy Area be within a specific acreage limit, and difficult choices needed to be made to meet that limit. These lands*

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*were among the thousands of acres considered for inclusion in the area. However, despite their importance, these lands were considered a lower priority for the program than other lands when ranked according to the goals of the Forest Legacy Program and Eligibility Criteria for Vermont at this time. Many of these lands may be eligible to apply for other funding opportunities.*

**Need to Exclude Certain Areas**

**Comment**

All of Pawlet was included in the proposed Area. The town has an industrial zone within which the best use for the land is quarrying.

**Response**

*We recognize there may be areas of towns within the Forest Legacy Area that do not contain important forestland. However, due to the need for clarity of boundaries for landowners when they apply to the program, we chose to use recognizable features on the ground, such as political boundaries and roads, for determining the Forest Legacy Area.*

**Future Expansion of the Area Boundary**

**Comment**

If property owners expressed a willingness to participate in the program, would this be a factor in changing the AON boundaries?

**Response**

*In general, owners of land not within the Forest Legacy Area boundary cannot apply to the program. Minor adjustments can be made to accommodate a landowner, for example, if the property straddles the boundary. Revisions to the boundary of the area may be done periodically, but a formal application by Vermont to the U.S. Forest Service along with public involvement will be needed to do so.*

**Project Selection Criteria**

**Minimum Parcel Size**

**Comments**

- The notion of a size threshold makes sense. However, the 100-acre minimum implies that forest management is not as effective on parcels less than 100 acres in size. The average size parcel the county foresters help manage throughout the state is 40 acres. It is important to convey a consistent message about the value of forest management as most forestry in Vermont happens on less than 100 acres.
- It is critical that, if a minimum parcel size is as low as 100 acres, there also be the requirement that the smaller parcel be contained within or adjacent to a larger block of forestland--perhaps 2000-5000 acres? If a landowner simply

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reads the criteria now, he/she may think they have a chance of their project being accepted if they have 100 acres.

**Response**

*The comments reflect different perspectives of the significance of both large and smaller forest blocks. We changed the language of Chapter V, Section D, Criteria and Process for Evaluating Projects (Tracts) to indicate that for purposes of applying to the Forest Legacy Program, smaller parcel owners should be considering their lands in the context of the larger landscape. “Parcels of this small size are mostly likely to be considered when they are part of a larger area that has strong potential for being conserved. Special consideration may be given by the Forest Stewardship Committee for projects of less than 100 acres only if they are determined to contain significant values based on the [project selection] criteria.”*

**Scoring of Criteria to Select Projects**

**Comment**

The draft AON indicates that the Vermont Forest Stewardship Committee may weigh some criteria more heavily than others when recommending projects for the program. It is important that criteria and their weightings be known in advance to help inform decisions of landowners and others on whether or not to apply to the program. The AON should at a minimum rank the relative criteria beyond the indicated primary and secondary purposes. We propose that a point system be used with a total score of 80 points for primary purposes and 60 for secondary purposes.

**Response**

*The Vermont Forest Stewardship Committee uses an informal scoring system when ranking projects each year. Applicants work closely with state administrators to prepare their proposals. At this time, the level of funding for the program and the relatively few applications don't warrant a more sophisticated evaluation method, but this could be helpful in the future.*

**Comment**

More specific questions about ranking projects include the following: Should there be different degrees of emphasis between the primary and other criteria? To what extent should the degree of importance of threat of conversion and project readiness be taken into account? How should “competing uses: be handled in the rankings? How should resource values of competing parcels be compared?

**Response**

*The Vermont Forest Stewardship Committee thoroughly considers the range of values of the projects it reviews in the context of the complexities of the national ranking system for the Forest Legacy Program. The structure of the committee and its deliberations of all the criteria assure that their recommendations of projects for the program are not arbitrary.*

**Comment**

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“Demonstrating a history of sustainable forest management practices” should be considered more heavily than “imminent threat” as a compelling reason for lands to be conserved. If this isn’t so, then landowners who have remained committed to sound stewardship could be penalized. It is important to acknowledge those who have kept their lands producing timber for generations vs. parcels that have high ownership turnover, etc.

**Response**

*In reality, when reviewing and ranking project applications for participation in the Forest Legacy Program, the Vermont Forest Stewardship Committee has placed a higher emphasis on sustainable management than imminent threat.*

**Other Project Criteria**

**Comment**

Consider local zoning and the potential for development when developing the list of priority projects.

**Response**

*Consideration of local zoning with regard to Forest Legacy projects is accomplished through the Strategic Considerations criteria. Consideration for the potential for development is accomplished through the Threats criteria. Applicants are asked to include local zoning information and perceived threat in their application.*

**Comment**

With regard to criteria 1a. Forest Value--condition of forest (health, size and age), is the size reference to acreage or stems? Should one assume that properties with more mature stocking will rank higher than parcels with higher proportions of pole timber and seedlings? If this is about timber, then should stem quality be a consideration as well?

**Response**

*Forest value involves an evaluation of a number of criteria including forest health, size, and age along with the potential for productivity based on soil site class. A parcel with more mature stocking will not necessarily rank higher than one with higher proportions of pole timber and seedlings. That will likely be a consideration when comparing projects to each other. Stem quality is often considered by the Vermont Forest Stewardship Committee because staff members visit and report on these types of parcel conditions for the review and ranking process.*

**Other Comments**

**Comment**

Each town in the state should be sent of copy of the proposed map and be given the opportunity to comment, whether or not the town is proposed for inclusion in the Forest Legacy Area. Without this opportunity, towns not proposed for inclusion are denied the same treatment.

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**Response**

*Each town's regional commissioner was invited to attend an informational meeting about the AON and the Forest Legacy Program sponsored by the regional commission in his/her area. On an ongoing basis, materials about the process were made available and the website was maintained.*

**Comment**

What work is created for a town that participates in the program?

**Response**

*The town will be informed of a Forest Legacy easement being proposed for land in the town and will be asked to support it. If the project gets done, the town clerk will need to record the transaction in the land records.*

**Comment**

Can someone be kicked out of the program?

**Response**

*Landowners who do not implement the agreed to forest stewardship plan or who violate the restrictions in the conservation easement may be required to remedy the problem or potentially face enforcement consistent with the terms of the easement. Since the easement is intended to be in effect in perpetuity, there really is no ability to kick someone out of the program.*

**Comment**

Can the easements ever revert back?

**Response**

*No. Through the granting of an easement, the landowner has sold a partial ownership of the property for a cash payment. A landowner may sell the remaining ownership interest, but the state will continue to hold an easement on the property in perpetuity.*

**Comment**

Can a landowner restrict or allow certain uses on the land under a Forest Legacy easement?

**Response**

*Forest Legacy easements contain language that determines permitted and restricted uses. A landowner's ability to restrict or allow uses depends on the easement. In Vermont, Forest Legacy participants are required to allow pedestrian public access but are not required to allow motorized access.*

**Comment**

The high value placed by the AON on large blocks of woodland is understandable, and many farms include a sizeable section of woodland. However, there are landowners who are clearing sizeable pieces of woodland for agricultural use. Some landowners would like to keep as much land open as possible or even expand agricultural use



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back into re-grown areas that were previously fields. In addition, the general impression from the wildlife/forestry view has been to locate development out of wildlife migration pathways regardless of agricultural land value. These different perspectives regarding land use suggests there should be a more inclusive and balanced approach to land conservation in Vermont.

**Response**

*The Forest Legacy Program is just one of many funding sources available to landowners to conserve land. Other programs aim to conserve land for different purposes. They all have a role to play. There is no doubt that Vermonters and agencies can improve their communications regarding land use and conservation priorities. However, the Forest Legacy Program should not be singled out as being more exclusive than other programs. In reference to agricultural concerns, the Vermont Forest Stewardship Committee includes a representative from the Natural Resource Conservation Service and the Northern Vermont Resource Conservation and Development Program.*

**Comment**

Private forestry consultants must become aware of the program and become ambassadors for it. More and better efforts are needed to get the word out to landowners of large tracts of forest land.

**Response**

*We will continue efforts to keep the website updated and network with those who work with potentially eligible landowners.*