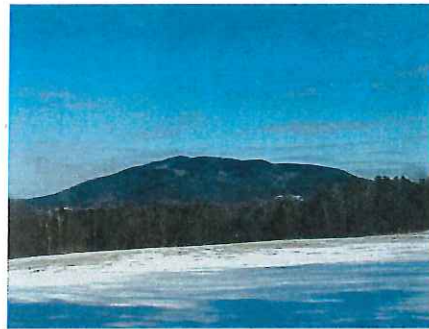


State of Vermont
Agency of Natural Resources
Department of Forests, Parks and Recreation
Department of Fish & Wildlife

Ascutney Management Unit
Long Range Management Plan

Including lands of:
Little Ascutney Wildlife Management Area
Mt. Ascutney State Park
Skitchewaug Wildlife Management Area
Weathersfield Wildlife Management Area
Wilgus State Park



Springfield, Weathersfield, West Windsor, and Windsor, Vermont

4,378 acres

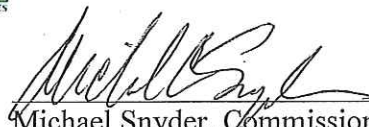


Prepared by: Springfield Stewardship Team

October 31, 2016




Approved by:



Michael Snyder, Commissioner
Department of Forests, Parks & Recreation

12/12/16
Date

Approved by:


Louis Porter, Commissioner,
Fish & Wildlife Department

12/12/16
Date

Approved by:


Deborah Markowitz, Secretary
Agency of Natural Resources

12-12-16
Date

Springfield Stewardship Team

Chris Bernier, Wildlife Biologist

Marie Caduto, Watershed Coordinator

Kenneth Cox, Fisheries Biologist

Melissa Currier, Administrative Assistant

Aaron Hurst, State Lands Forester

Nathan McKeen, Forestry District Manager

Timothy Morton, Stewardship Forester

Ethan Phelps, Parks Regional Manager

Rick White, State Lands Forester

Robert Zaino, Lands Ecologist

Mission Statements

Vermont Agency of Natural Resources

The mission of the Agency of Natural Resources is “to protect, sustain, and enhance Vermont’s natural resources, for the benefit of this and future generations.”

Four agency goals address the following:

- To promote the sustainable use of Vermont’s natural resources;
- To protect and improve the health of Vermont’s people and ecosystems;
- To promote sustainable outdoor recreation; and
- To operate efficiently and effectively to fulfill our mission.

Departments

Vermont Department of Environmental Conservation Mission Statement

To preserve, enhance, restore, and conserve Vermont’s natural resources, and protect human health, for the benefit of this and future generations.

Vermont Fish & Wildlife Department Mission Statement

The mission of the Vermont Fish & Wildlife Department is the conservation of all species of fish, wildlife, and plants and their habitats for the people of Vermont. To accomplish this mission, the integrity, diversity, and vitality of their natural systems must be protected.

Vermont Department of Forests, Parks and Recreation Mission Statement

The mission of the Department of Forests, Parks and Recreation is to practice and encourage high quality stewardship of Vermont’s environment by monitoring and maintaining the health, integrity, and diversity of important species, natural communities, and ecological processes; managing forests for sustainable use; providing and promoting opportunities for compatible outdoor recreation; and furnishing related information, education, and services.

EXECUTIVE SUMMARY

The Ascutney Management Unit (AMU) Long Range Management Plan (LRMP) presents resource summaries, detailed mapping, allocations of land use, and a schedule of management for five parcels in the Connecticut River Valley. Detailed resource assessments are found in AMU Natural Resource Assessment and Analysis, February 2012.

The 4,378-acre Ascutney Management Unit is comprised of five parcels and includes Mt. Ascutney State Park (SP) (3,132 acres), Little Ascutney Wildlife Management Area (WMA) (860 acres), Skitchewaugh WMA (235 acres), Weathersfield WMA (80 acres), and Wilgus SP (89 acres). The five parcels are located in the Southern Vermont Piedmont in the Connecticut River Valley in southeast Windsor County and feature a variety of terrain ranging from the Connecticut River Floodplain to the high peak of Mount Ascutney.

Natural Communities

Thirty-three natural community types (and two variants) were identified and mapped in the AMU, twelve of which are state significant examples of rare or uncommon community types. The community types represent a broad range of types including wetlands, Dry Oak Forests, Northern Hardwood Forest, Hemlock Forest, Montane forest types, white pine types and several outcrop and talus communities. Forested natural communities follow an elevational gradient, with low-elevation forests having a strong component of eastern hemlock (*Tsuga canadensis*), while mixed hardwoods are predominant at mid-elevations. Slope aspect also plays a role, with southern and western facing slopes supporting a higher proportion of oaks and hickories. Shady north facing slopes and sharp stream valleys featured more northern hardwood forest and hemlock forest. Montane forests with red spruce (*Picea rubens*), balsam fir (*Abies balsamea*), and birches cover the highest elevations of Mount Ascutney.

Wildlife and Habitat

Important habitats on the AMU include wild apple orchards, cliff and talus areas, deer wintering areas, mast stands (oak and hickory), and river shore. Several are regionally significant including the mast stands at Mt. Ascutney SP and Little Ascutney WMA and the deer wintering areas on Mount Ascutney. The MU features a diverse mix of plant species and community types while the age class distribution, with 97% of the MU in a mid-succession condition, is limited. There are seven rare, threatened, and endangered plant species mapped, most are dry site herbaceous sedges and herbs. A mammal survey conducted in 2009 located evidence of two uncommon small rodent species and outlined historical evidence of six other rare animal species. Further development of game species habitat and protection of rare, threatened, and endangered species and habitats are a priority on the AMU.

Timber Resource

A lack of truck access and/or inoperable terrain limits the area of manageable land. Forest land that is accessible and operable has a history of managed harvesting, and the high quality and large size of the timber as well as excellent white pine and hardwood regeneration in these areas reflects this. In this management period, improvement of access and development of seedlings and saplings where both are poor or lacking are priorities.

Fisheries and Water Resources

Aquatic habitats located on all subunits of AMU, with exception of Wilgus SP, are limited to first and second order streams, small wetlands, and beaver flowages. Wilgus SP has approximately 3,630' of frontage on the Connecticut River. None of the WMAs or State Parks have standing water habitats (lakes, ponds, swamps, bogs) of any significant size or supportive of any noteworthy fish populations.

Four of the five management units addressed by this plan drain to tributaries of or directly to the Connecticut River. Little Ascutney WMA drains to the North Branch of the Black River.

All waters within the AMU are classified as Class B which are managed to achieve and maintain a level of quality and fully supports aquatic biota and habitat, swimming, fishing, boat, irrigation of crops, and public water supply with treatment.

Invasive Exotic Species

Limited but significant populations of invasive exotic shrubs exist on every parcel of the AMU. The most prevalent species are Morrow's honeysuckle, glossy buckthorn, and Japanese barberry. Control of these populations and limits to their spread are important objectives. Additional planning and funding are needed before concerted efforts can begin.

Historic Resources

The five parcels comprising the AMU are primarily oriented along the Connecticut River, one of Vermont's principal north-south Native American travel corridors. One Native American site has been identified within the AMU, site VT-WN-39, located in Wilgus SP. Archeological sensitivity analysis was conducted for Mt. Ascutney SP, Little Ascutney WMA, and Skitchewaug WMA by the University of Vermont's Consulting Archeological Program (UVM CAP). One area of archeological sensitivity was identified within Mt. Ascutney SP. Two sensitive areas were identified within Little Ascutney WMA. Historic homestead sites are found on several parcels. The most significant historic sites on the MU are the steam donkey used for logging on the upper slopes of Mt Ascutney in the early 1900s and the Norcross Quarry on the north face of Ascutney off the Brownsville trail as well as the infrastructure completed by the CCC at Mt. Ascutney SP and along the mountain road.

Recreational Users

Mt. Ascutney SP is one of the most popular outdoor recreation sites in southern Vermont. Important features include a campground, four hiking trails to the summit, an observation platform, a paved road to a parking area just below the summit, and two official hang gliding launch sites. Wilgus SP, a few miles south, includes a campground and trails and hosts one of the few public access points to the Connecticut River in the region. The three WMAs are popular hunting sites, particularly Little Ascutney which has the best access and has seen the most intensive habitat management. Both Skitchewaug WMA and Little Ascutney WMA host snowmobile trails, with the trail at Little Ascutney WMA seeing the most use. Winter recreation is on the increase and includes snowshoeing, skiing, and ice climbing especially on Mount Ascutney. Demand for winter parking is expected to increase beyond current capacity. If provided, capital and maintenance needs will increase due to the need to construct or reconstruct facilities for year-round use, and the cost of plowing and sanding. Annual maintenance will also increase due to springtime surface damage.

Infrastructure and Access

Infrastructure features include open access roads, gated interior roads, parking lots, signs, kiosks and park buildings, utilities, and facilities within the developed portions of the two state parks.

The most popular infrastructure feature on the AMU, the Mount Ascutney Parkway, is in need of a significant amount of maintenance and reconstruction work to keep it viable and safe as a public resource for the coming decades.

Forest management access is limited on portions of Mt. Ascutney SP, Little Ascutney WMA, Skitchewaugh WMA, and Wilgus SP. Determination of needed improvements will be made in anticipation of specific vegetative management projects in these areas. Public access to Skitchewaugh WMA is limited with no reasonable opportunities for improvement. Good public access to Weathersfield WMA is located at the end of Roberts Road although no formal designation with signage or parking has been constructed. Management and public access at Little Ascutney WMA is good on the western portion but difficult on the eastern side. Improvement of a class 4 road is a possible remedy.

Management Classification

After completion of inventories and assessments the lands, resources, and facilities held by the Vermont Agency of Natural Resources (ANR) are evaluated and assigned to appropriate Agency Land Management Classification categories based upon knowledge and understanding of resources and appropriate levels of management. The four categories as applied to AMU are Sensitive Management (37%), Special Management (48%), General Management (6%), and Intensive Management (2%). This enables land managers to allocate use and management by area minimizing conflicts between competing objectives and facilitating a common understanding of the overall use or type of management to occur in particular areas of the AMU. A portion of three parcels (308 acres) were not classified because management rights are held by other owners (7%).

Management goals for the Ascutney Management Unit include strategies to:

- Protect or enhance rare, threatened, and endangered species and their habitat.
- Maintain or enhance the quality of State Significant Natural Communities and wetlands.
- Enhance wildlife habitat through management of all seral stages; creation of early successional growth; improvement of deer wintering areas and mast production; and protection of unique habitats.
- Enhance opportunities for dispersed non-motorized activities for wildlife-based recreation in general, focusing on hunting, trapping, and wildlife viewing on WMAs.
- Maintain and improve public and management access.
- Provide safe, well-managed outdoor recreation opportunities across all parcels in keeping with division-specific goals and funding sources.
- Protect the historic significance of key sites.
- Provide sustainable, periodic timber harvesting in appropriate areas to promote forest productivity and the improvement in the quality of timber grown and harvested.

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**Detailed assessments for most resources are found in “Ascutney Management Unit Natural Resource Assessment and Analysis”. Springfield Stewardship Team February 2, 2012. Resource assessments that were added to the content protocol after this document was completed appear here as complete assessments.*

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LIST OF ABBREVIATIONS

AA	Access Area
AMU	Ascutney Management Unit
ANR	Agency of Natural Resources
AOT	Agency of Transportation
ATA	Ascutney Trails Association
ATV	All-Terrain Vehicle
CCC	Civilian Conservation Corps
DWA	Deer Wintering Area
FPR	Department of Forests, Parks & Recreation
FWD	Fish & Wildlife Department
GIS	Geographic Information System
GMP	Green Mountain Power
GPS	Global Positioning System
LARC	Land Acquisition Review Committee
LAWMA	Little Ascutney Wildlife Management Area
LRMP	Long Range Management Plan
LUC	Land Use Classification
LWCF	Land and Water Conservation Fund
MASP	Mt. Ascutney State Park
MSD	Mean Stand Diameter
NET&T	New England Telephone & Telegraph Company
PR	Pittman-Robertson Act
ROW	Right-of-way
RT&E	Rare, Threatened & Endangered
RMZ	Riparian Management Zone
SF	State Forest
SGCN	Species of Greatest Conservation Need
SKWMA	Skitchewaug Wildlife Management Area
SP	State Park
STAB	Sports Trails of the Ascutney Basin
USFWS	U.S. Fish & Wildlife Service
UVLT	Upper Valley Land Trust
UVM CAP	University of Vermont Consulting Archaeology Program
VAST	Vermont Association of Snowmobile Travelers
VBBA	Vermont Breeding Bird Atlas
VELCO	Vermont Electric Cooperative Company
VFBMP	Vermont Forest Bird Monitoring Program
VHCB	Vermont Housing & Conservation Board
VMBA	Vermont Mountain Bike Association
VPSB	Vermont Public Service Board
VPT	Vermont Public Television
VSA	Vermont Statutes Annotated
WMA	Wildlife Management Area
WSP	Wilgus State Park
WWMA	Weathersfield Wildlife Management Area

I. PARCEL DESCRIPTION

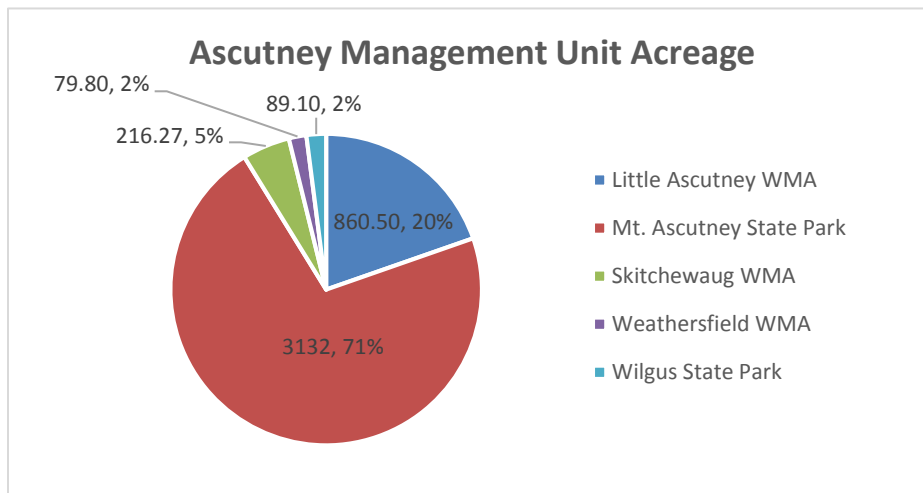
A. Parcel Description

The Ascutney Management Unit is located in the Connecticut River Valley in southeastern Windsor County. All of the five parcels that make up the AMU are found within six miles of the Connecticut River (Figure 1). All five parcels are located in the biophysical region known as the Southern Piedmont (Figure 2).

The 4,378-acre Ascutney Management Unit (Table 1) includes Little Ascutney WMA (860 acres) (Figure 3), Mt. Ascutney SP (3,132 acres) (Figure 4), Skitchewaugh WMA (235 acres) (Figures 5 and 6), Weathersfield WMA (80 acres) (Figure 7), and Wilgus SP (89 acres) (Figure 8). Two departments in the Vermont Agency of Natural Resources oversee these lands. The Fish & Wildlife Department has primary responsibility for the three Wildlife Management Areas and the Department of Forests, Parks and Recreation has primary responsibility for the two State Parks and associated lands. The Parks Division manages the campgrounds and grounds at Wilgus and Mt. Ascutney while the lands of Mt. Ascutney and Wilgus are the responsibility of the Forestry Division.

Table 1: Ascutney Management Unit Acreage

Parcel	Town	Acres
Little Ascutney Wildlife Management Area (LAWMA) (209 acres hunting rights only)	Weathersfield	848.50
	West Windsor	12.00
		(860.50)
Mt. Ascutney State Park (MASP)	Windsor	2,639.00
	Weathersfield	493.00
		(3,132.00)
Skitchewaugh Wildlife Management Area (SKWMA) (41 acres timber rights held by others)	Springfield	216.27
Weathersfield Wildlife Management Area (WWMA) (timber rights held by others)	Weathersfield	79.80
Wilgus State Park (WSP)	Weathersfield	89.10
		4,377.67



B. Purpose of Ownership

State Forests are managed by the Vermont Department of Forests, Parks and Recreation to meet a variety of conservation and management goals.

Management goals for the Ascutney Management Unit include strategies to:

- Protect or enhance rare, threatened, and endangered species and their habitat.
- Maintain or enhance the quality of State Significant Natural Communities and wetlands.
- Enhance wildlife habitat through management of all seral stages; creation of early successional growth; improvement of deer wintering areas and mast production; and protection of unique habitats.
- Enhance opportunities for dispersed non-motorized activities for wildlife-based recreation in general, focusing on hunting, trapping, and wildlife viewing on WMAs.
- Maintain and improve public and management access.
- Provide safe, well-managed outdoor recreation opportunities across all parcels in keeping with division-specific goals and funding sources.
- Protect the historic significance of key sites.
- Provide sustainable, periodic timber harvesting in appropriate areas to promote forest productivity and improve the quality of timber grown and harvested.

More specifically, WMAs are managed by the Vermont Fish & Wildlife Department to meet a variety of wildlife-based goals. Wildlife management objectives include game species such as white-tailed deer, eastern wild turkey, and ruffed grouse as well as nongame species such as songbirds, small mammals, amphibians, and birds of prey. Multiple objectives are accomplished by a combination of commercial and non-commercial vegetative management practices applied over time in a manner that protects unique habitats.

C. History of Acquisition

The original acquisitions that formed Mt. Ascutney SP were specifically for the creation of a park and campground (see Appendix 4). The work of the CCC here in the 1930s focused on that goal.

Acquisition in the 1950s and 1960s at Mt. Ascutney SP and Skitchewaugh WMA were related to federal land purchases along the route of I-91. Lands not necessary for highway constructions were often turned over to the Vermont Agency of Natural Resources.

The land and hunting rights to Weathersfield WMA were attached to the purchase of the same rights on the lands of the Atkinson-Davis Corp. (Tri-State Timber) in Reading now known as Arthur Davis Wildlife Management Area.

Acquisitions in this era of highway construction often had the purpose of maintaining land open to hunting and game management. Vermonters' feared I-91 would lead to dramatic increases in out-of-state ownership and posting.

Later acquisition projects in the late 1980s and 1990s at Little Ascutney WMA and Mt. Ascutney SP were driven by an overall interest in land conservation and public access to large blocks of land for recreation. Maintaining a large block of land for wildlife habitat and movement as well as the view of Mount Ascutney slopes from the valley were also key drivers in this period of acquisitions.

Originally, the leased North Springfield State Park was part of the AMU. The 25-year lease for this parcel of U.S. Army Corps of Engineers land, later known as North Springfield State Park, was accepted by the Department of Forests, Parks and Recreation in 1986 as a means to keep an important local recreation area intact during a period of federal disposal of lands deemed 'surplus'. This lease expired in 2012, and the U.S. Army Corps of Engineers chose to reintegrate the parcel into their holdings at North Springfield Reservoir.

Wilgus SP lands were donated to the State for the purpose of building a state park along the river and practicing forest management.

Figure 1: AMU Conserved Lands Map

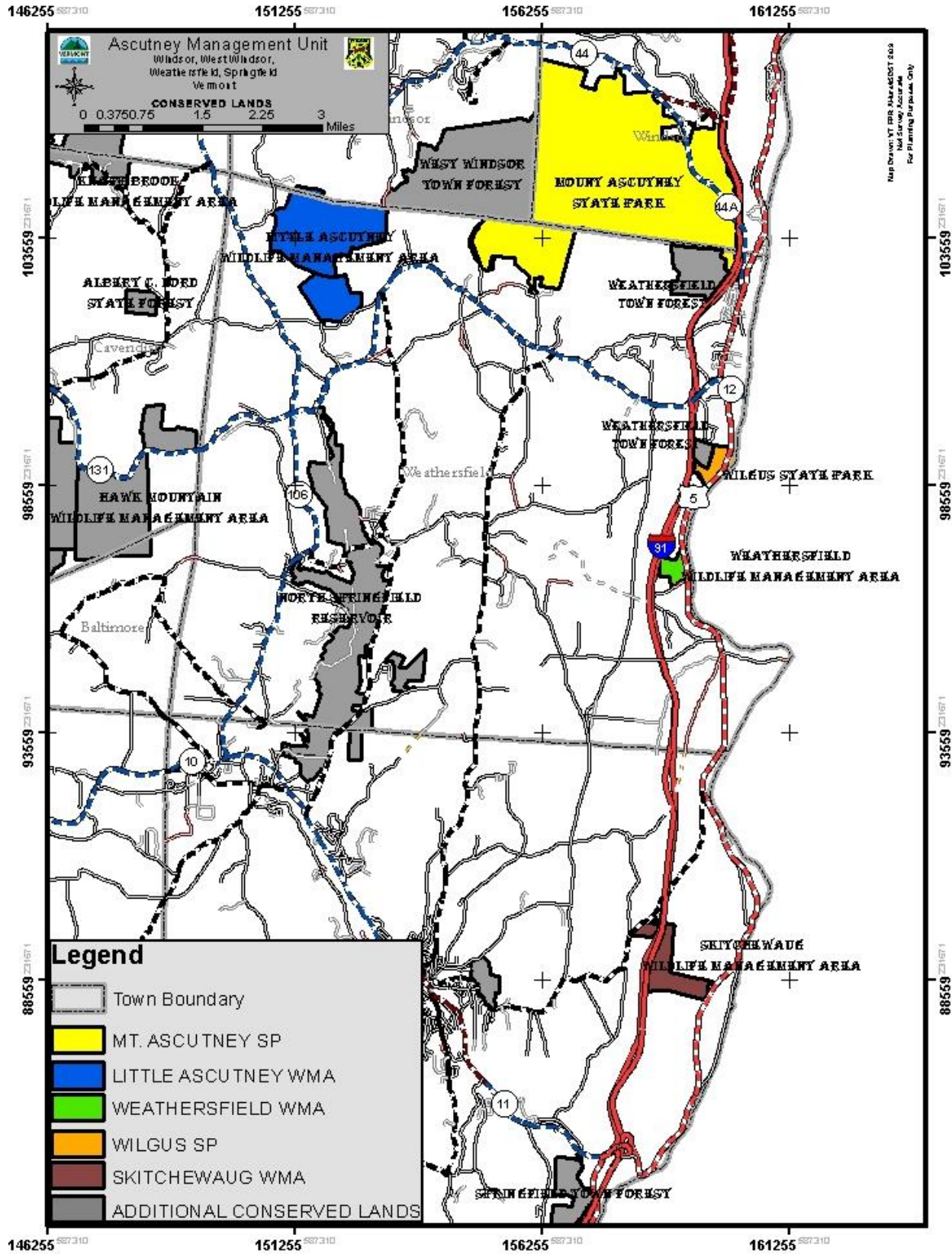


Figure 2: AMU Biophysical Regions of Vermont Map

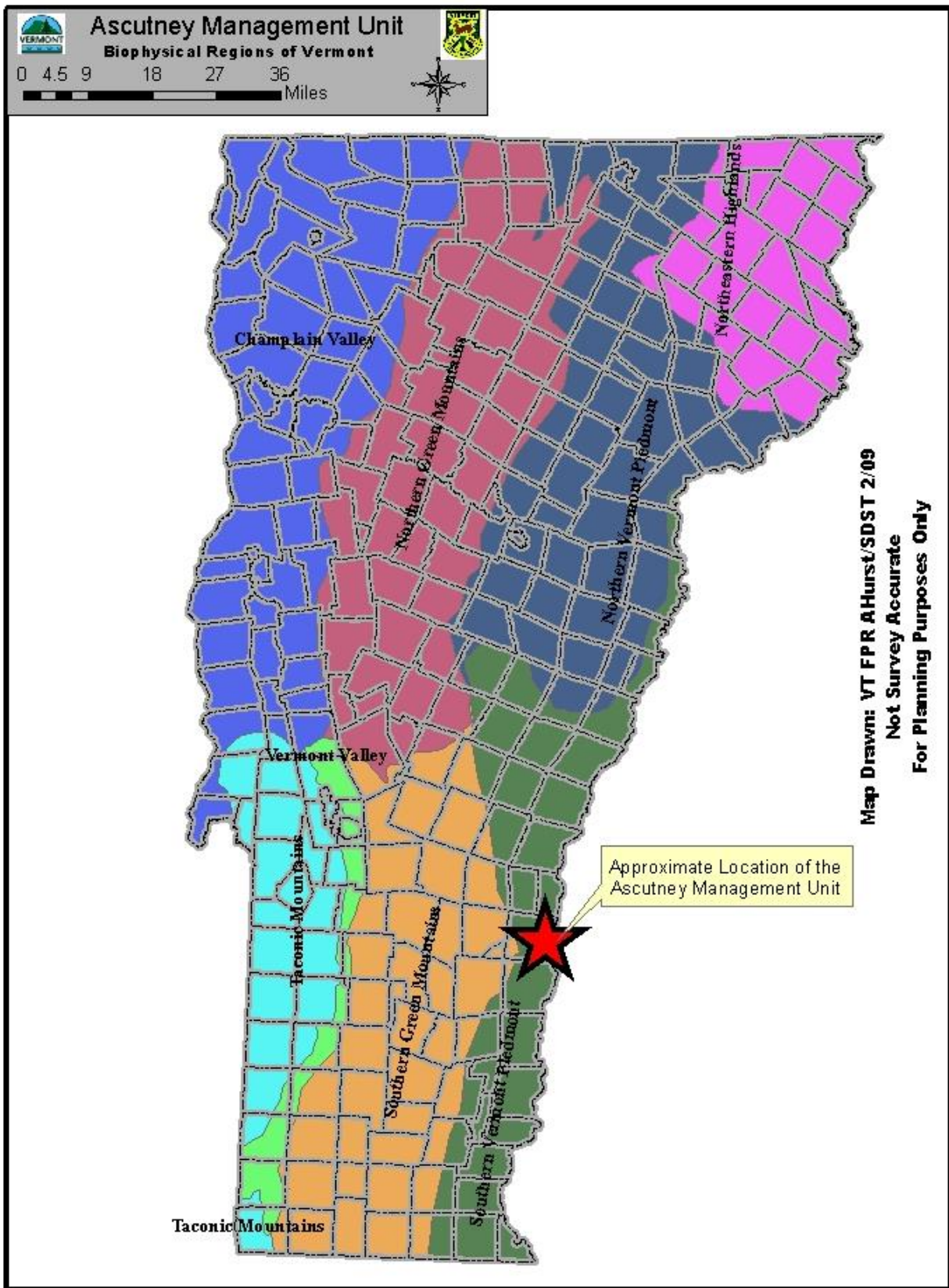


Figure 3: Little Ascutney WMA Base Map

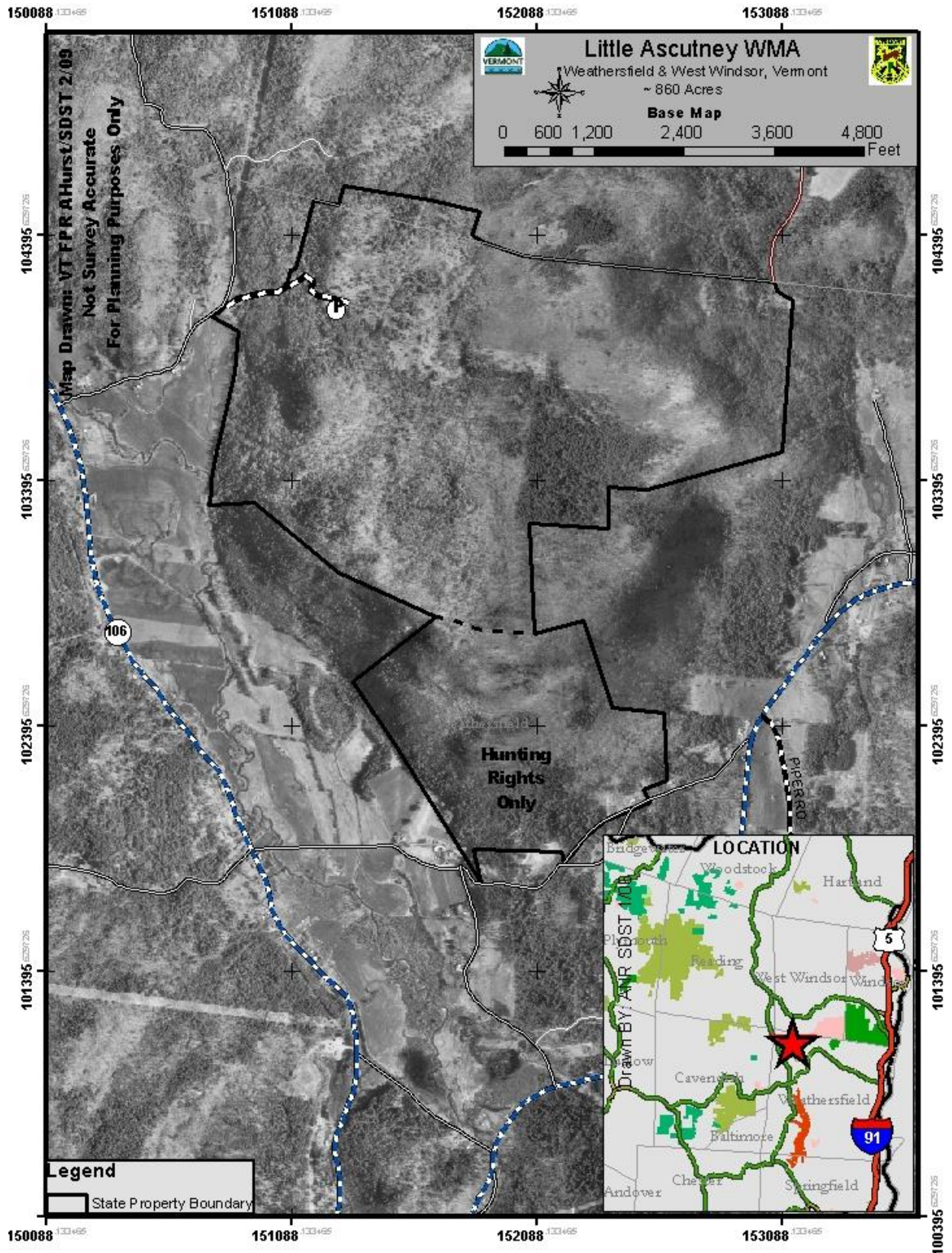


Figure 4: Mt. Ascutney State Park Base Map

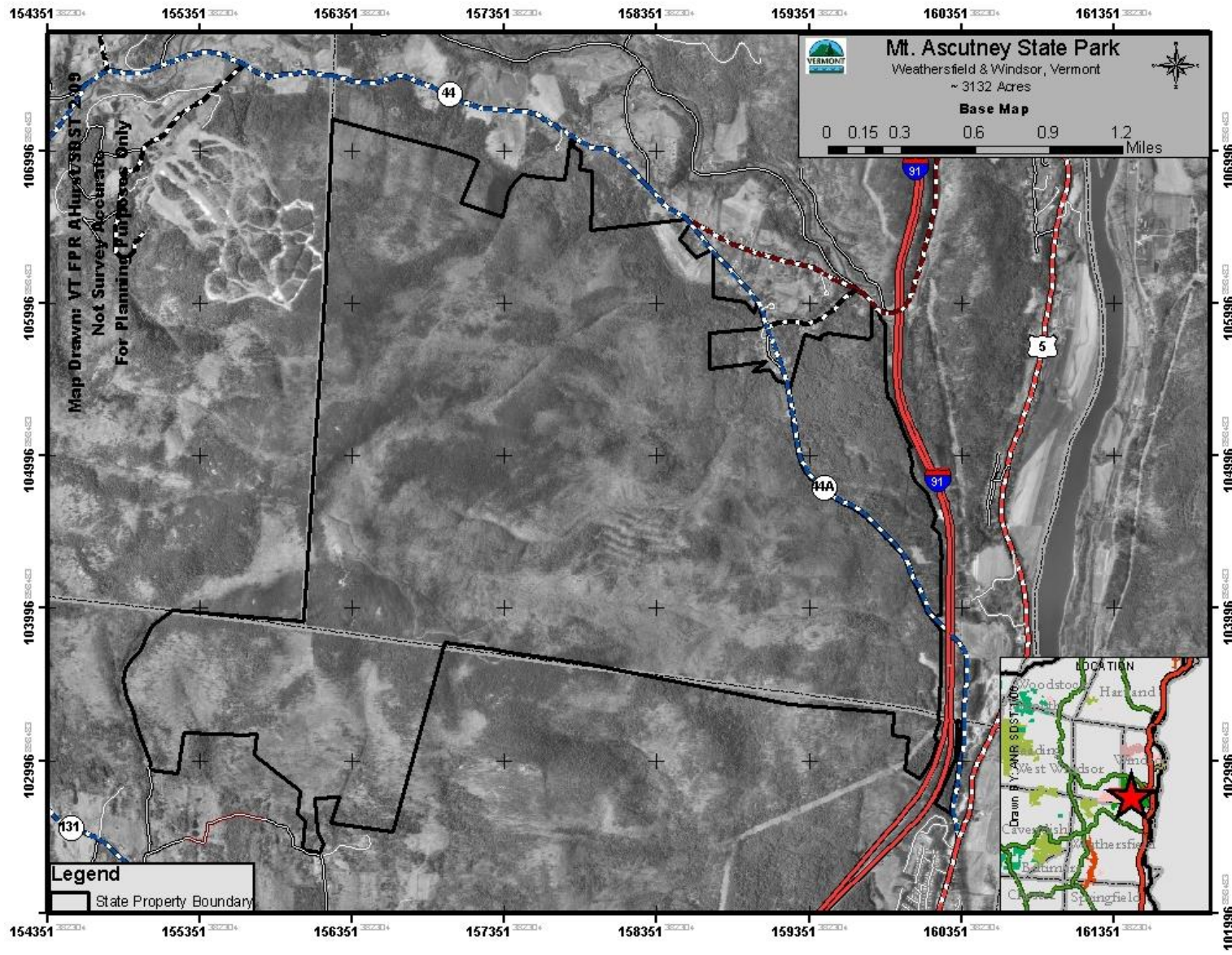


Figure 5: Skitchewaug WMA Mountain Block Base Map

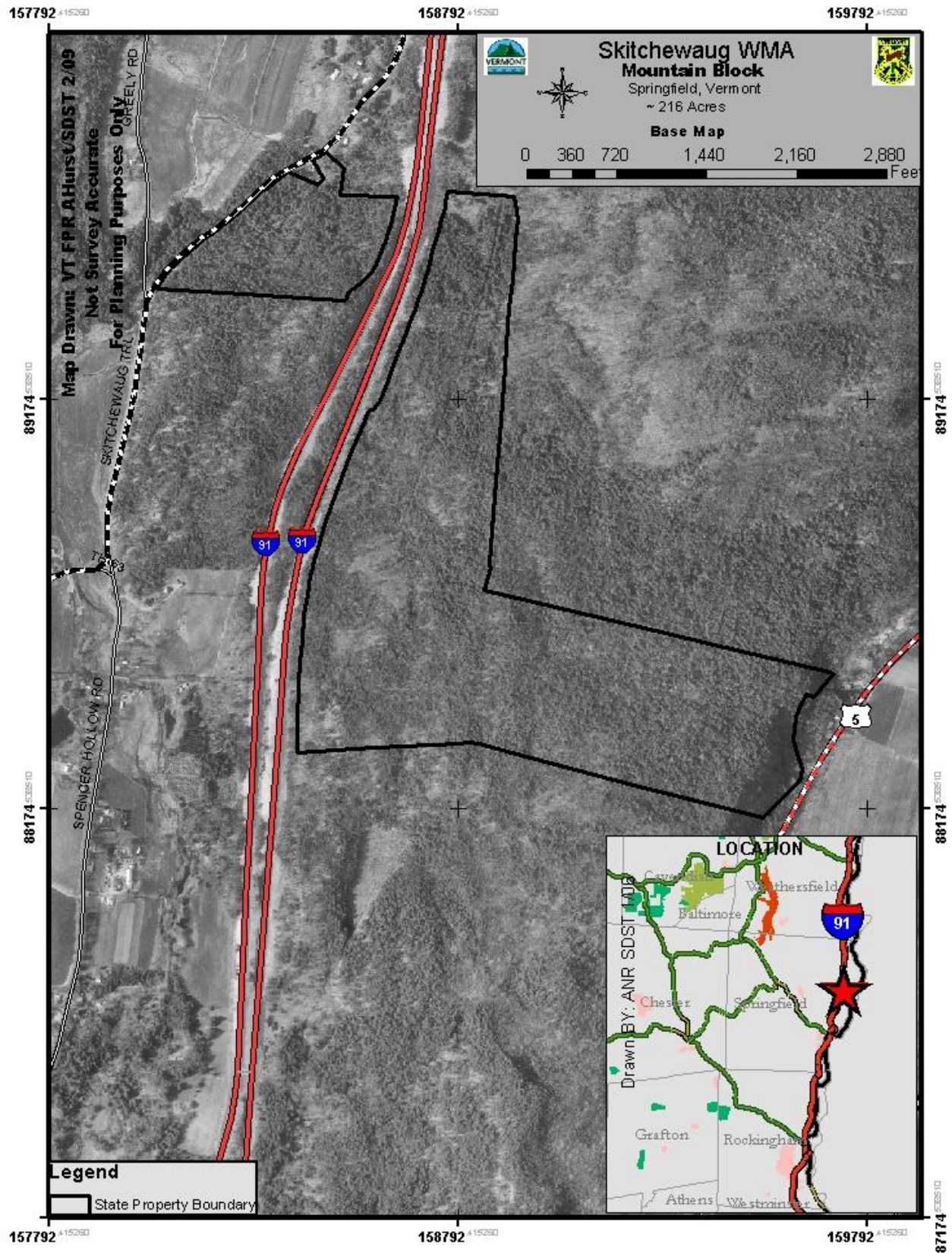


Figure 6: Skitchewaug WMA Spencer Brook Block Base Map

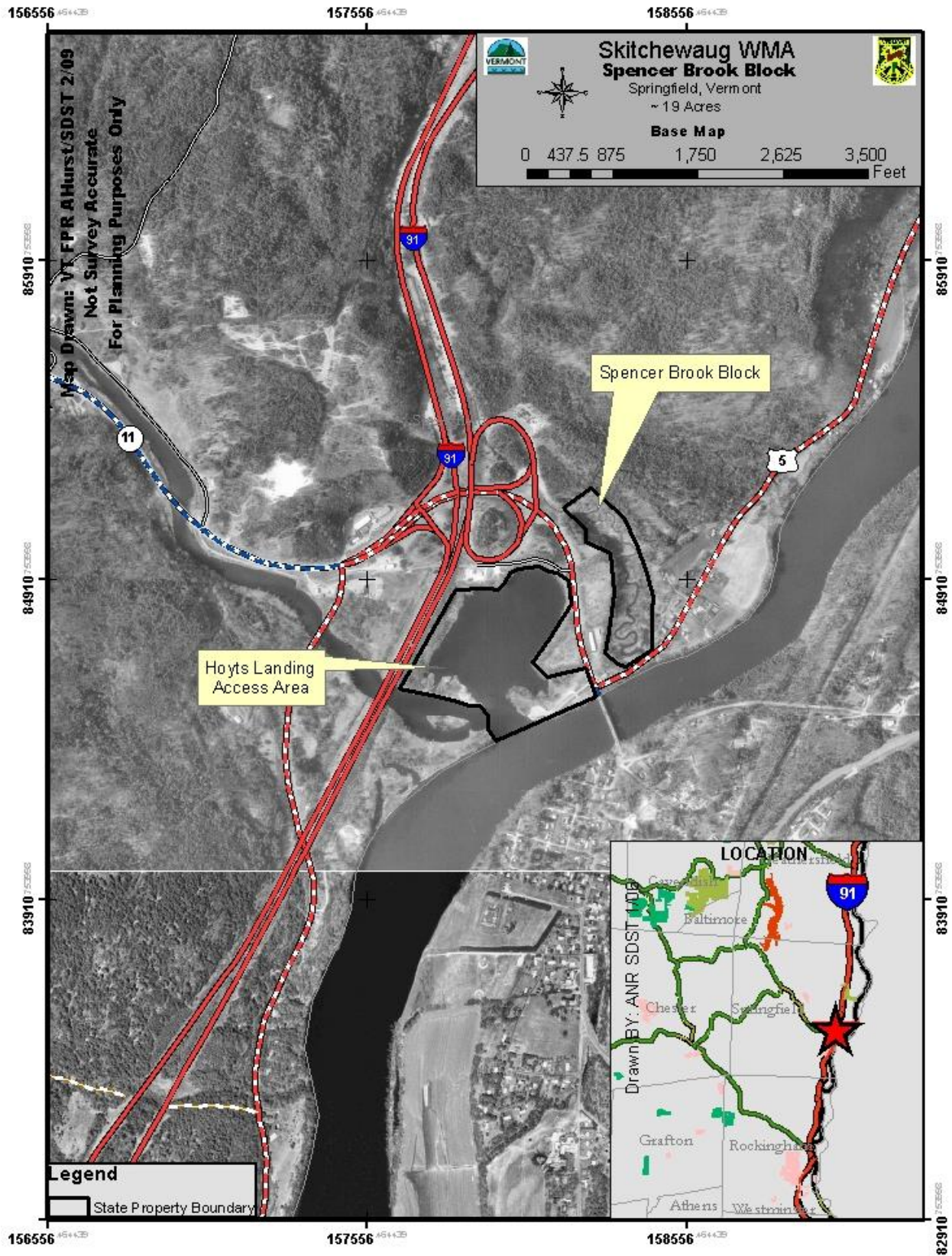


Figure 7: Weathersfield WMA Base Map

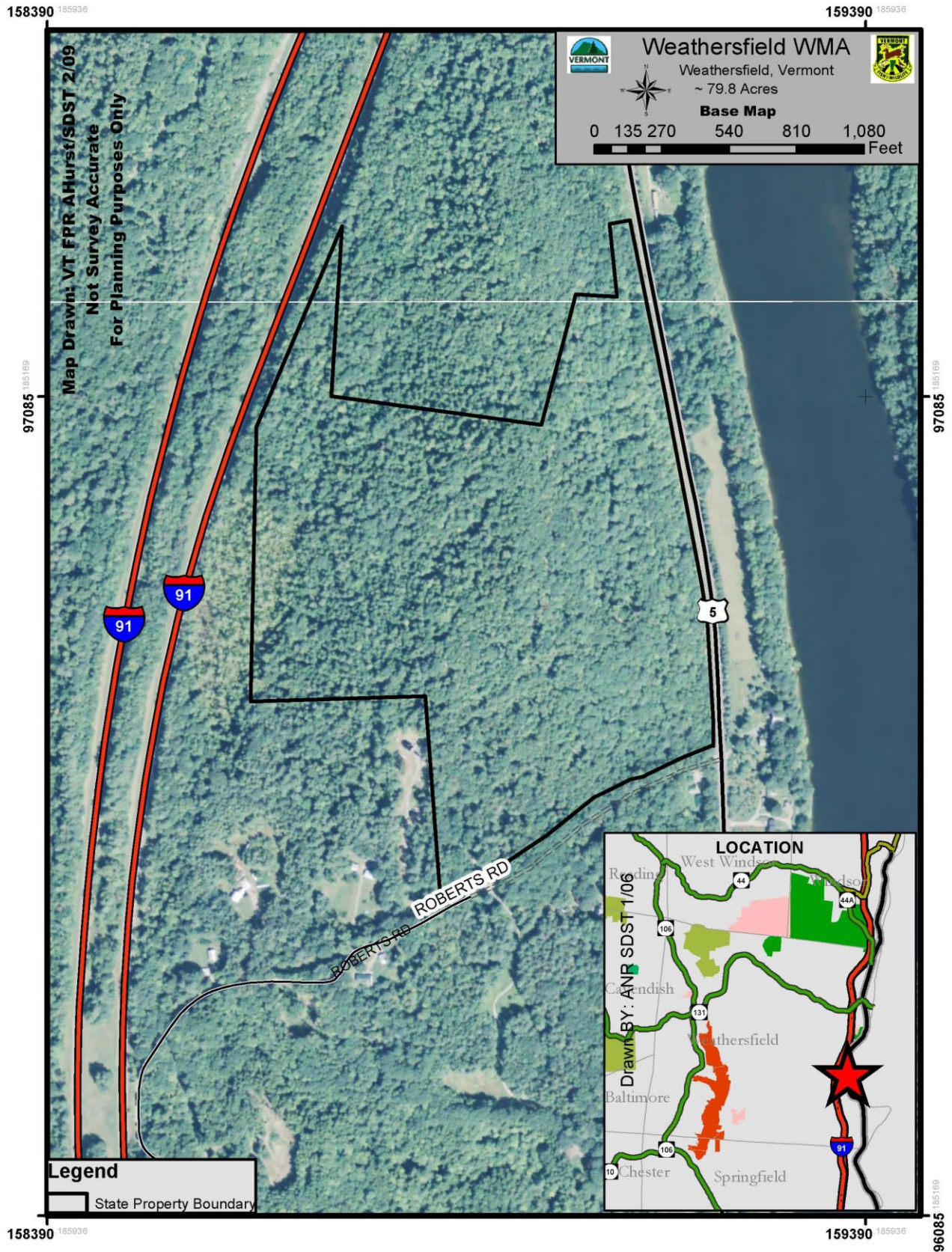
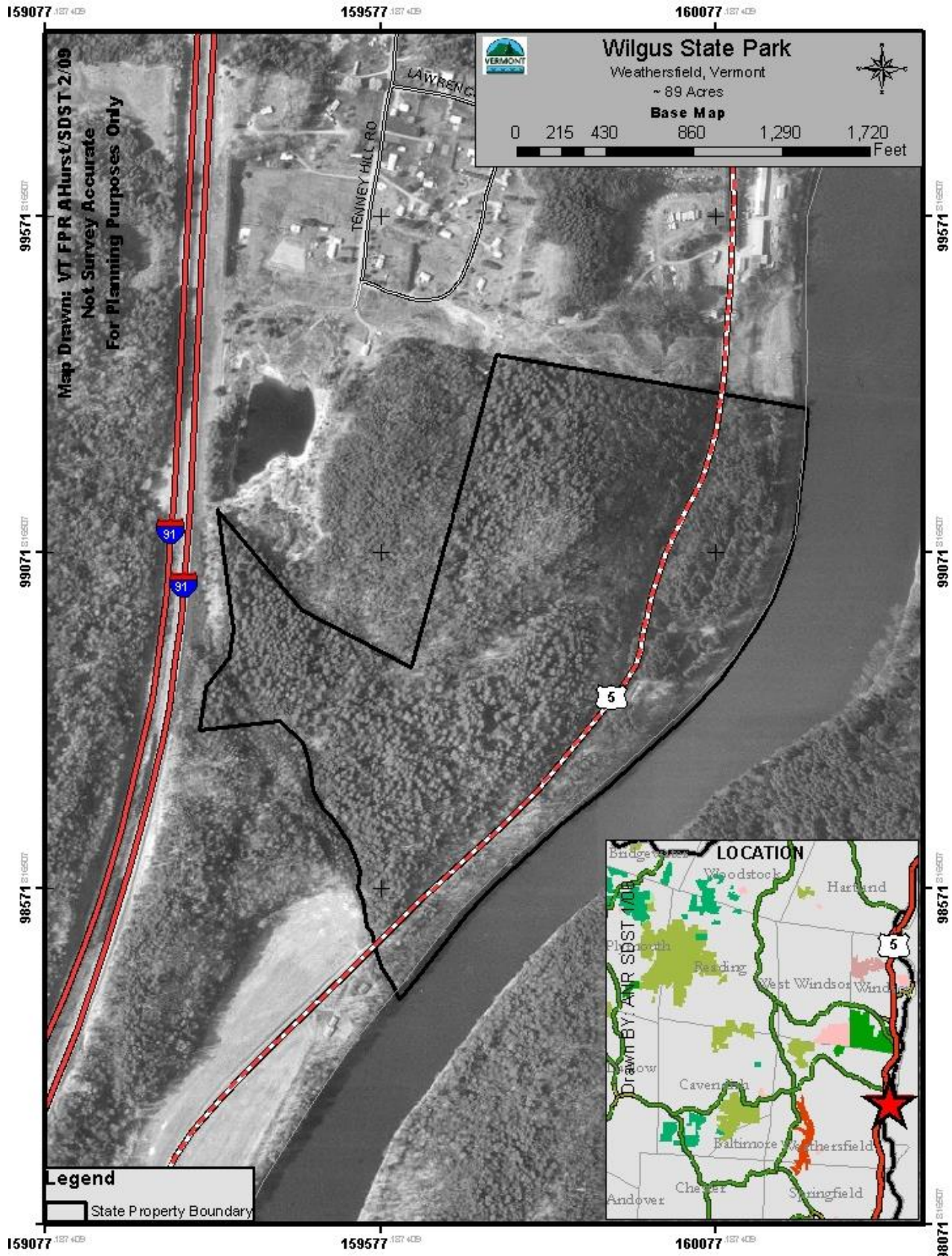


Figure 8: Wilgus State Park Base Map



D. Land Use History

The steeper slopes at Mt. Ascutney SP, Little Ascutney WMA, and Skitchewaugh WMA have been forested for many years and have historically seen timber harvest on even the steepest ground.

Old homestead and farm site cellar holes with associated reforested pastures and apple orchards can be found at Wilgus SP (portions lost to I-91) and Little Ascutney WMA. Lower slopes and flat areas of Mt. Ascutney SP, Skitchewaugh WMA, and Weathersfield WMA likely provided pasture and woodlots for nearby farms with little historical evidence.

Mt. Ascutney SP's land use history is unique for also having seen active quarrying and hosting a fire tower/lookout from the early 1900s to 1952. It is reported to have hosted the nation's first public recreation trail built in 1825.

Portions of the AMU rate high for the likelihood of habitation by Native Americans prior to European settlement. This designation applies to parts of the McClary Lot and nearby lands at Mt. Ascutney SP, portions of Little Ascutney WMA, and Wilgus SP.

E. Resource Highlights

The AMU is part of a regionally significant large contiguous block of public forestland comprised of Mt. Ascutney SP, Little Ascutney WMA, Weathersfield Town Forest, and West Windsor Town Forest. This unit is noted for the lower Connecticut River Valley's dominant land feature – Mount Ascutney at 3,130 ft. mean sea level and, Mt. Ascutney SP at 3,132 acres.

In 2015 The Town of Windsor and The Trust for Public lands were actively working to expand the Town Forest by acquiring lands of the former Ascutney Mountain Resort. If successful, this project will conserve an additional 469 acres of forest land and former ski trail protecting and expanding regional recreation opportunities and critical wildlife habitat and linkage between MASP and LAWMA.

The dominant cover is forest (97%) with much smaller areas of wetlands, meadows, and wildlife openings. Developed areas occupy approximately 20 acres and include Mt. Ascutney SP, Wilgus SP, trailhead parking, access roads, and two mountaintop communication sites on Mt. Ascutney.

Of the 80 natural community types in Vermont, 33 are found on the AMU. The diversity of ecosystems is highlighted by the occurrence of 13 uncommon and three rare natural communities. Seventeen natural communities are considered state significant – four that feature a large area of matrix community, and 12 high quality examples of an uncommon or rare natural community. Primary natural community types on the AMU are Hemlock-Northern Hardwood Forest (950 acres), Hemlock Forest (885 acres), Northern Hardwood Forests (738 acres), Mesic Red Oak-Northern Hardwood Forest (623 acres), Montane Yellow Birch-Red Spruce Forest (420 acres), and, Mesic Maple-Ash-Hickory-Oak Forest (344 acres),

In 2016, the 200-acre Cascade Falls Natural Area within Mt. Ascutney State Park was designated by the Governor.

Rare, Threatened, and Endangered Species

Seven species of rare or very rare plants have been located within the AMU (two listed as endangered) and three uncommon plants. These ten plants are found within uncommon and rare natural communities on Little Ascutney WMA, Mt. Ascutney SP, and Skitchewaig WMA in LUCs 1.1 and 1.8.

Two uncommon mammals, hairy-tailed mole and pine vole, were identified on Wilgus SP and Skitchewaig WMA, respectively.

Wildlife Habitat

Significant habitat features include 706 acres of deer wintering area on Little Ascutney WMA, Mt. Ascutney SP, and Skitchewaig WMA; an abundance of hard mast producers (oak and hickory) on 1,171 acres, and small acreages of unique wetland and cliff/talus communities on most of the parcels. A lack of early successional woodland at AMU is typical for the region, with the exception of Little Ascutney WMA which features 8% of its area in young growth, wetlands, and meadows.

F. Relationship to Town, Regional, and Other Pertinent Planning Efforts

Planning and management on the AMU are compatible and complementary to natural resource goals of the Southern Windsor County Regional Plan adopted June 2009 and its recent update completed in 2014.

Applicable goals, policies, and recommendations include the following from the Regional Plan:

Forest Land and Forestry

- Encourage conservation and management of the region's forest resources.
- Protect the working landscape.
- Reduce fragmentation of forest lands.
- Protect and preserve the character and integrity of significant public forest lands.
- Support expansion of forestry-based economic activity.

Wildlife and Wildlife Habitat

- Preserve or enhance the biodiversity and population of wildlife by minimizing development impacts on large blocks of habitat and wildlife travel corridors.
- Support recreational activities, fishing, trapping and hunting done in an ecologically sound manner providing for the continued success of wildlife species and their habitat.
- Encourage the use of forest land as working landscape and wildlife habitat.
- Protect rare, threatened, and endangered species and their habitats.
- Support efforts to map and inventory large blocks of habitat, connecting lands and wildlife travel corridors
- Manage large contiguous tracts of forest for a diversity of ages and tree cover.
- Special consideration will be given during development planning to:
 - forested corridors used by songbirds during migration
 - open fields
 - cliff areas or rock out-crops
 - areas over 2500' in elevation
 - large contiguous tracts of forest land

Town policies as outlined in town plans of Springfield (2014), Weathersfield (2005), West Windsor (2010), and Windsor (2004) are generally supportive of the policies and practices associated with proposed use and management on the AMU. Common themes in the four town plans as relate to the AMU and conservation in general include:

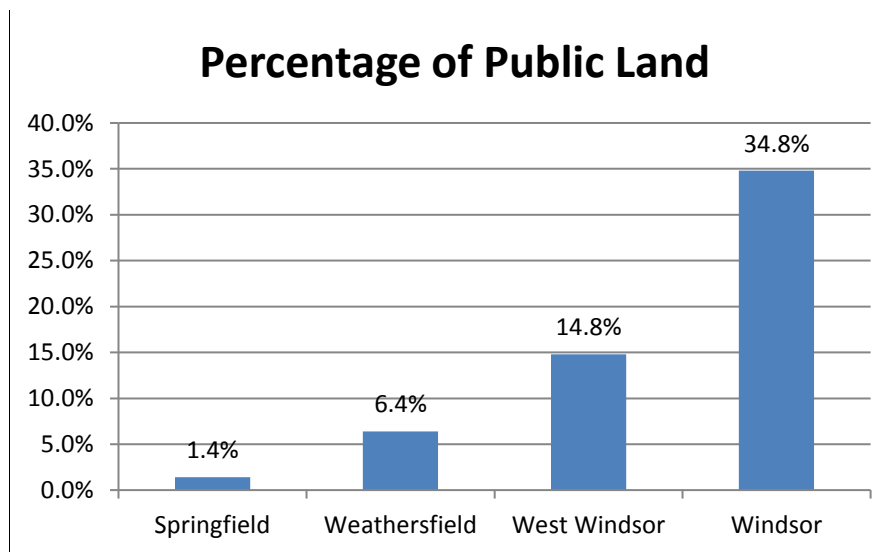
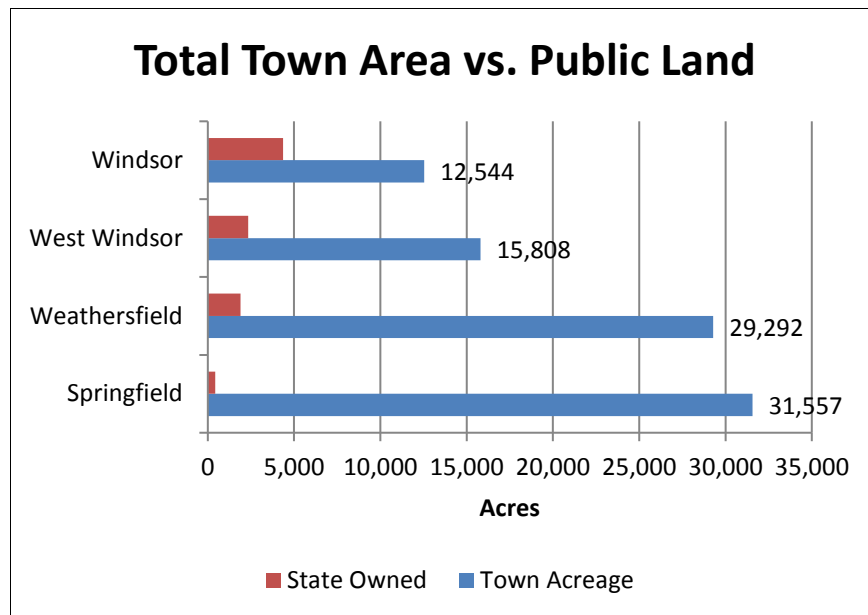
- Protection, preservation and enhancement of:
 - surface and groundwater
 - wetlands and wetland function, including vernal pools
 - rare, threatened, and endangered species and their habitat
 - critical wildlife habitat
 - historic wildlife habitat
 - historic and archaeological resources
 - visual resources, particularly views of Mt. Ascutney
 - working forests and rural landscapes and economies
 - forest-based recreation
 - contiguous forest blocks and wildlife travel corridors

In general, town plans support forest management that:

- protect soil and water quality
- is balanced to not negatively impact other uses
- improves wildlife habitat
- supports local economies and improves forest growing stock
- controls invasive plants

However, in several towns the amount of public land and its impacts on local property tax is an occasional topic of concern among town officials.

The amount of public land varies dramatically by town according to Southern Windsor County Regional Planning Commission in 2009:



Understandably, Windsor’s Town Plan speaks to the issue of State Land being a dominant ownership and supports the conversion of portions of Southeast Correctional Facility lands to private use and recommends recreational use of town and state land be promoted, although the goal, “maintain the current acreage of recreation and forest land available for public use”, conflicts with the stated objective of converting public land to private use.

Weathersfield’s Town Plan actively supports “acquisition of open spaces and scenic views” while Windsor, Weathersfield, and Springfield speaks to the need for more public access to the Connecticut River through creation of public land or purchase of access rights. Weathersfield and West Windsor have actively acquired forest land to enhance the Mt. Ascutney public land ownership and provide contiguous forest cover from I-91 to the western side of Little Ascutney WMA (Figure 1). This gives conservation practice and recreational use a broad context at Mt. Ascutney SP and Little Ascutney WMA. It also allows Mt. Ascutney SP and Little Ascutney WMA to provide regionally significant habitat and wildlife travel corridors.

Future land use maps and goals in all four towns “zone” lands of the AMU as conservation lands with nearby lands mapped as conservation lands or rural residential with forest and agriculture remaining a pre-dominant component.

Impact on local property taxes of public lands:

Weathersfield’s Town Plan references undeveloped forest land and public land as a means to keep local property taxes down due to the lack of service demands from forest land.

Concern in Windsor in the past and referenced in the Town Plan is the belief that the amount of public land is contributing to the tax burden. To address this concern, the Vermont Department of Forests, Parks and Recreation contracted a study of this issue in 2006. This analysis, conducted by Deb Brighton¹, concluded:

In the late 1990s, Act 60 (and later, Act 68) changed the way towns pay for education, and also changed the relationship between the Grand List and school taxes. Now, the school effective tax rate depends on the per-pupil spending and not on the tax base. Shrinking the tax base by taking land off the tax rolls for land conservation won’t change the school tax rate. Similarly, growing the tax base won’t change the school tax rate, as long as the district continues to spend the same amount per pupil.

The municipal tax is affected by changes in the Grand List. There is often an increase in the municipal tax rate resulting from a conservation acquisition. In Windsor, when land is acquired by the Agency of Natural Resources, the town will receive a payment from the State that amounts to roughly 89 percent of what the municipal tax that would be if the land remained in private ownership.

¹ The Tax Consequences of Land Conservation in Windsor; Deb Brighton, Tax Policy Consultant; 2006; Contracted Study to Vermont Agency of Natural Resources.

II. PUBLIC INPUT

The citizen participation process for the AMU Long Range Management Plan was conducted in accordance with Agency of Natural Resources policies, procedures, and guidelines. Public involvement or citizen participation is a broad term for a variety of methods through which the general public has input into public land management decisions. The Agency of Natural Resources, including the Departments of Forests, Parks and Recreation and Fish & Wildlife, is committed to a planning process which offers the opportunity for all citizens and stakeholders to participate. These include letters, surveys, personal comments, telephone calls, e-mails, and more formal methods such as public meetings and workshops. All public input received concerning the future stewardship of AMU has been considered in the preparation of this plan.

An open-house style public scoping meeting was held on May 26, 2011 at the Weathersfield Town Office in Ascutney, Vermont to present inventory and assessment information and to receive comments. After a 30-day public comment period ending June 26, 2011, the comments were reviewed and analyzed by the District Stewardship Team and a draft long range management plan was written.

The draft LRMP was presented at a public meeting on May 26, 2016.

A summary of the comments received during the public involvement process, a summary of the Department's response to comments, and additional information about the public involvement process are in Appendix 5.

III. RESOURCE ANALYSIS

A. Legal Constraints Assessment Summary

There are a number of constraints that affect the stewardship of AMU. They include:

Summary of Major Legal Constraints

Little Ascutney WMA

Conservation Easements

- Vermont Housing and Conservation Board Grant Agreement (Atkinson-Davis Corporation and Spackman): In 1992 and 1993 the VHCB partially funded State acquisition of:
 - The timber rights on the 396-acre Slayton Lot (partially owned by the Vermont Fish & Wildlife Department since 1959).
 - The 53-acre Davis inholding parcel.
 - The 207-acre Spackman property.

As a condition of accepting the funding, the Fish & Wildlife Department agreed to hold these acquisitions in public ownership as part of the Little Ascutney WMA solely for recreation, forestry, open space, and wildlife uses. The Department was required to submit a management plan to VHCB for review and also include the VHCB on any signs posted on the property indicating project sponsorship.

Deed Restrictions or Obligations

- The deed for the Spackman property indicates a spring and a right-of-way to it reserved for W. J. Oakes, his heirs or assigns. The specific location of the spring on the property is unknown.
- State Owned “Hunting Rights”: The Vermont Fish & Wildlife Department purchased the hunting rights on 209 acres of land in the town of Weathersfield in 1964.

Funding Conditions or Restrictions

- Federal Aid in Wildlife Restoration Act (PR) (Pittman-Robertson Act): This Act, commonly called the Pittman-Robertson Wildlife Restoration Act, provides federal aid to the State for the management and restoration of wildlife. The federal aid, funded through an excise tax on sporting arms and ammunition, may be used to support a variety of wildlife projects including acquisition and improvements to wildlife habitat. These funds were used for the improvements made to the access road and parking area as well as the enhancements to wildlife habitat on the Little Ascutney WMA. Management activities and land uses on parcels funded with Pittman-Robertson funds must be consistent with the objectives of protecting, restoring, or improving habitat for wildlife. Recreational activities may be restricted to those activities which meet these objectives.

Long-term Leases and Licenses

- Green Mountain Power (GMP) leases a strip of land 100' wide and 100' long located near the main entrance to Little Ascutney WMA for construction and maintenance of an overhead electrical transmission line. State agrees not to erect any structures or to block access to this leased area.
- GMP and NE Telephone & Telegraph (NE T&T) have an easement to install and maintain one stub guy installation that will support a pole carrying electric and telephone wire cables and fixtures. Pole is located along TH #6 near the main entrance to the WMA.

Mt. Ascutney State Park

Conservation Easements

- Upper Valley Land Trust (UVLT) and Vermont Housing and Conservation Board (VHCB) Conservation Easements (Miller, Richards, Angeloff, and Dunbar) in Mt. Ascutney State Park – Approximately 796.8 acres of land owned in fee by the State of Vermont is subject to a perpetual conservation easement co-held by the Upper Valley Land Trust and the VHCB. The easement permits forest and wildlife management practices in accordance with an approved management plan, agricultural management practices, non-motorized dispersed recreation (including use of snowmobile trail), construction of trails, and other uses, in accordance with an approved management plan, but limits residential, industrial, and mining activities along with other activities that would conflict with the purposes of the grant.
- Vermont Housing and Conservation Board Conservation Agreement (Bickford) in Mt. Ascutney State Park: Approximately 179.16 acres of land owned in fee by the State of Vermont is subject to a perpetual Conservation Agreement between the Vermont FPR and the VHCB. The Conservation Agreement permits forest and wildlife management practices, agricultural management practices, recreational uses and other uses, construction of trails in accordance with an approved management plan but limits residual, commercial, industrial or mining activities.

Deed Restrictions or Obligations

- Deed Restrictions (McClary), Mt. Ascutney State Park (EXPIRED): Approximately 205 acres of land deeded to the State of Vermont is subject to certain deed restrictions held in perpetuity by The Nature Conservancy. The restrictions allow the property to be managed and maintained as a natural area for public use and enjoyment and prohibits development except that which is required to provide sanitation, safety, control, and access for the public. Trailer camping is also prohibited in the deed. *This easement expired in 2016.*
- Spring and water rights reserved by adjacent landowners over Mt. Ascutney State Park in the towns of Windsor and Weathersfield. These rights predate the construction of I-91 and may no longer be valid. Records on file in the ANR Springfield regional office.

- A perpetual easement for the purpose of constructing, erecting, repairing, and doing all things necessary for sewer line purposes on the Miller property in the town of Windsor.
- Hiking Trail Easements held by the State (Mt. Ascutney State Park): Four hiking trail easements owned by the State of Vermont in perpetuity to maintain access to Mt. Ascutney over the following trails:
 - a. Weathersfield Trail Easement – The State of Vermont holds a 100’ hiking trail easement (50’ on both sides of the trail) through 6,645’ of the West Windsor Town Forest for the purpose of providing a public trail or footpath to the summit of Mount Ascutney.
 - b. Weathersfield Trail Easement – The State of Vermont holds a 25’x800’ hiking trail easement over land belonging to Morgan and Ruth Adams in the Town of Weathersfield.
 - c. Brownsville Trail Easement – The State of Vermont holds a 100’ hiking trail and trailhead access area easement over land belonging to Robert and Amy Sullivan for the purpose of locating and maintaining a hiking trail and trailhead parking.
 - d. Brownsville Trail Easement – Ascutney Mountain Resort agrees to establish a 100 foot wide buffer zone along the Brownsville Trail and around the former Norcross Quarry as a land use permit condition.
- The State of Vermont holds a 50’ right-of-way over land owned by the Mount Ascutney Ski Resort in West Windsor for the purpose of gaining access to the Sullivan parcel by foot or vehicle.
- The State of Vermont possesses a right-of-way for the Mountain Road over the Wheeler Lot along the southern boundary line of the park to allow for continuous access to the summit parking area.
- VT Department of Transportation has a deeded easement right on the McClary Lot to relocate, widen and maintain Mill Brook.
- NE T&T and GMP hold a line right-of-way across Mt. Ascutney SP. This right-of-way predates the construction of I-91 so it is unknown if it is still active or has been dissolved.

Regulatory

- Any development on Mt. Ascutney SP lands above 2500’ elevation are required to submit an Act 250 permit application.

Funding Conditions or Restrictions

- LWCF Funding Agreement (Sullivan) in Mt. Ascutney State Park: Approximately 200 acres of land and a public access easement owned in fee by the State of Vermont is subject to a perpetual grant agreement with the LWCF. Created by Congress in 1964, the LWCF

provides money to federal, state, and local governments to purchase land, water, and wetlands for the benefits of all Americans. The fund receives money mostly from fees paid by companies drilling offshore for oil and gas. Other funding sources include the sale of surplus federal real estate and taxes on motorboat fuel. Management activities and land uses must be consistent with the objectives of providing outdoor recreational opportunities along with other benefits including: clean water, wildlife habitat, scenic vistas, and protecting archaeological and historical sites.

- Land and Water Conservation Funds and Vermont Housing and Conservation Funds were used in the development of the Brownsville Trailhead. Certain restriction may apply to use and further development.
- Land and Water Conservation Funds were used in the development of the Weathersfield Trailhead. Certain restriction may apply to use and further development.
- According to the 1993 LRMP a portion of the park is encumbered by a LWCF condition due to a 1971 water system maintenance project. No other information is available at this time. Further research is necessary as to what the encumbrance is and where it applies.

Long-term Leases, Licenses and Agreements

- South Peak Electronics Communication Site (Mt. Ascutney State Park): Located on the summit of Mount Ascutney South Peak in the Town of Windsor, the 3.3 acre site is owned in fee by the State of Vermont and licensed to Vermont Public Television (VPT). The site contains a 380' guyed tower with associated infrastructure and a permanent building to house communication equipment. The tower is also used for other broadcast, cellular, and microwave antennas. The site is accessed by a spur road from an established parking area at the end of the Ascutney Mountain Access Road. The VPT site contains a number of commercial users who have co-located antennas and electronic communications equipment on the site.
- North Peak Electronics Communications Site (Mt. Ascutney State Park): Located on the summit of Mt. Ascutney North Peak in the Town of Windsor, the site has an electronics building and two towers on .45 acres: the 110' self-supporting tower and the 75' self-supporting tower owned by TransCanada Hydro Northeast. Various private, broadcast, industrial, governmental, and communications companies are also users of the tallest tower and collectively belong to the Electronic Communications Association which leases and manages the site.
- Vermont Electric Cooperative Company (VELCO) leases a 150' wide strip of land for the construction, maintenance, and operation of the Ascutney Windsor 115 KV transmission line with right to access that line over Mt. Ascutney SP.
- GMP has a number of easements for pole lines for electrical transmission over Mt. Ascutney SP land in the towns of Windsor and Weathersfield. Records on file in the ANR Springfield regional office.

- An agreement with the Ascutney Trails Association that sets out a cooperative approach to hiking trail management, advocacy, and trail publications.
- The Vermont Hang Glider Association has a license to use the mountain road and two hang glider launch sites on the SP and right to cross the SP to access the west peak launch site on the West Windsor Town Forest.

Skitchewaugh WMA

Funding Conditions or Restrictions

- Federal Aid in Wildlife Restoration Act (Pittman-Robertson Funding): Approximately 175 acres of land and a permanent right-of-way (through the Kendall property on US Route 5) owned in fee by the Vermont Fish & Wildlife Department.

Deed Restrictions or Obligations

- Timber Rights Reserved: Approximately 43 acres of land acquired from Arthur Davis by the Vermont Fish & Wildlife Department in 1959 have the timber rights reserved.
- New England Telephone and Telegraph Co.: Pole line easement recorded in Book 31 and 56, pages 381 and 77. It is not known whether this right-of-way is still used, but according to ANR Survey Section, an underground fiber optic cable is buried along this right-of-way. Further research will be required as to whom the current owner of the right-of-way is and if it is being utilized.

Weathersfield WMA

Deed Restrictions or Obligations

- Timber Rights Reserved: Approximately 80 acres of land purchased from the Atkinson-Davis Corporation by the Vermont Fish & Wildlife Department with Pittman-Robertson funding have the timber rights reserved.

Wilgus State Park

Deed Restrictions or Obligations

- Deed Restrictions in Wilgus State Park: The land deeded to the State of Vermont requires the State to: forever maintain and preserve the land as a “State Forest Park” to be kept open for recreational purposes and kept free of buildings and structures used for commercial purposes. The deed also prohibits towers or other structures and buildings on the hill called the “Pinnacle”.

Figure 9: Little Ascutney WMA Legal Constraints and Historic Resources Map

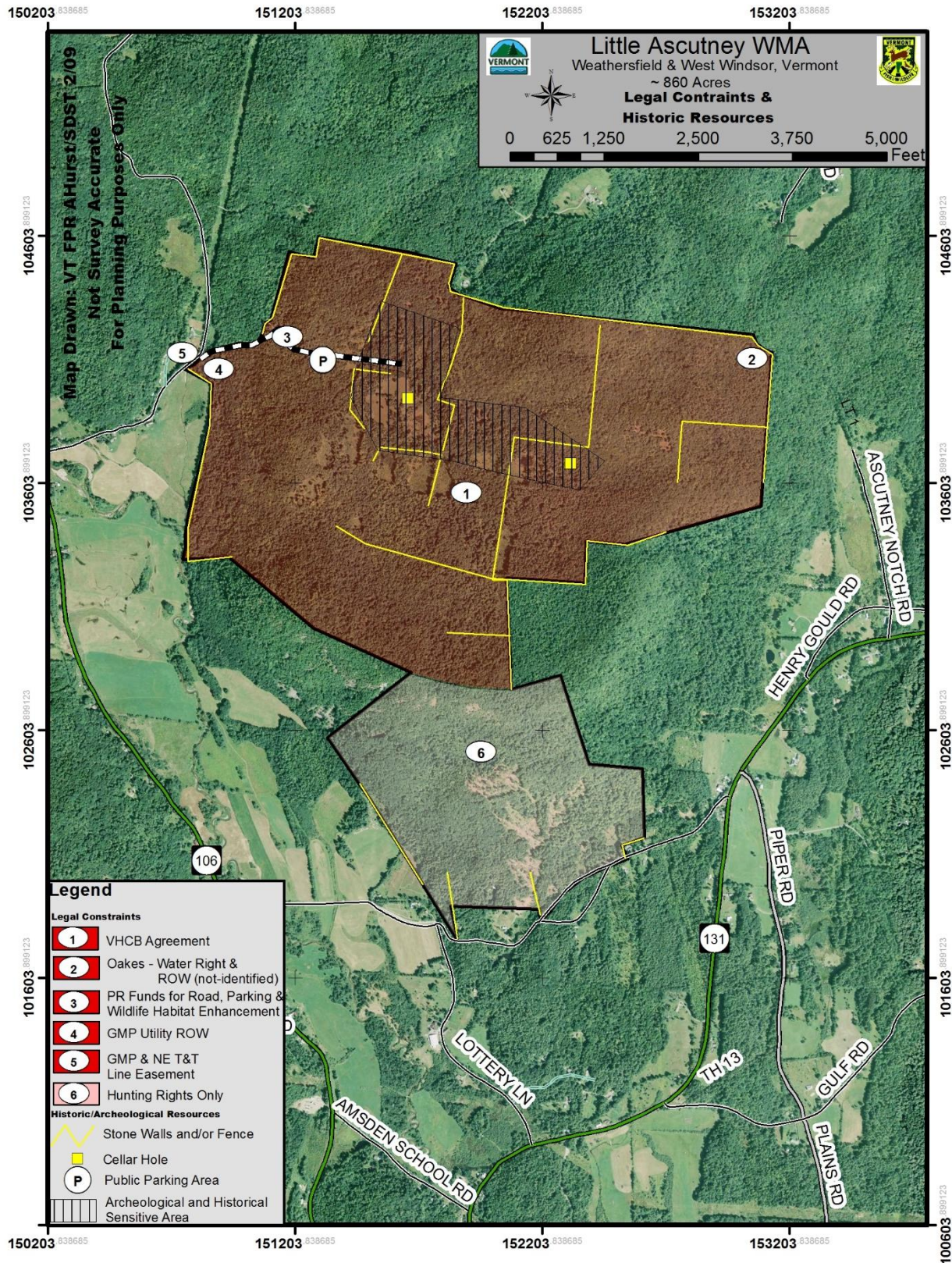


Figure 10: Mt. Ascutney State Park Legal Constraints Map

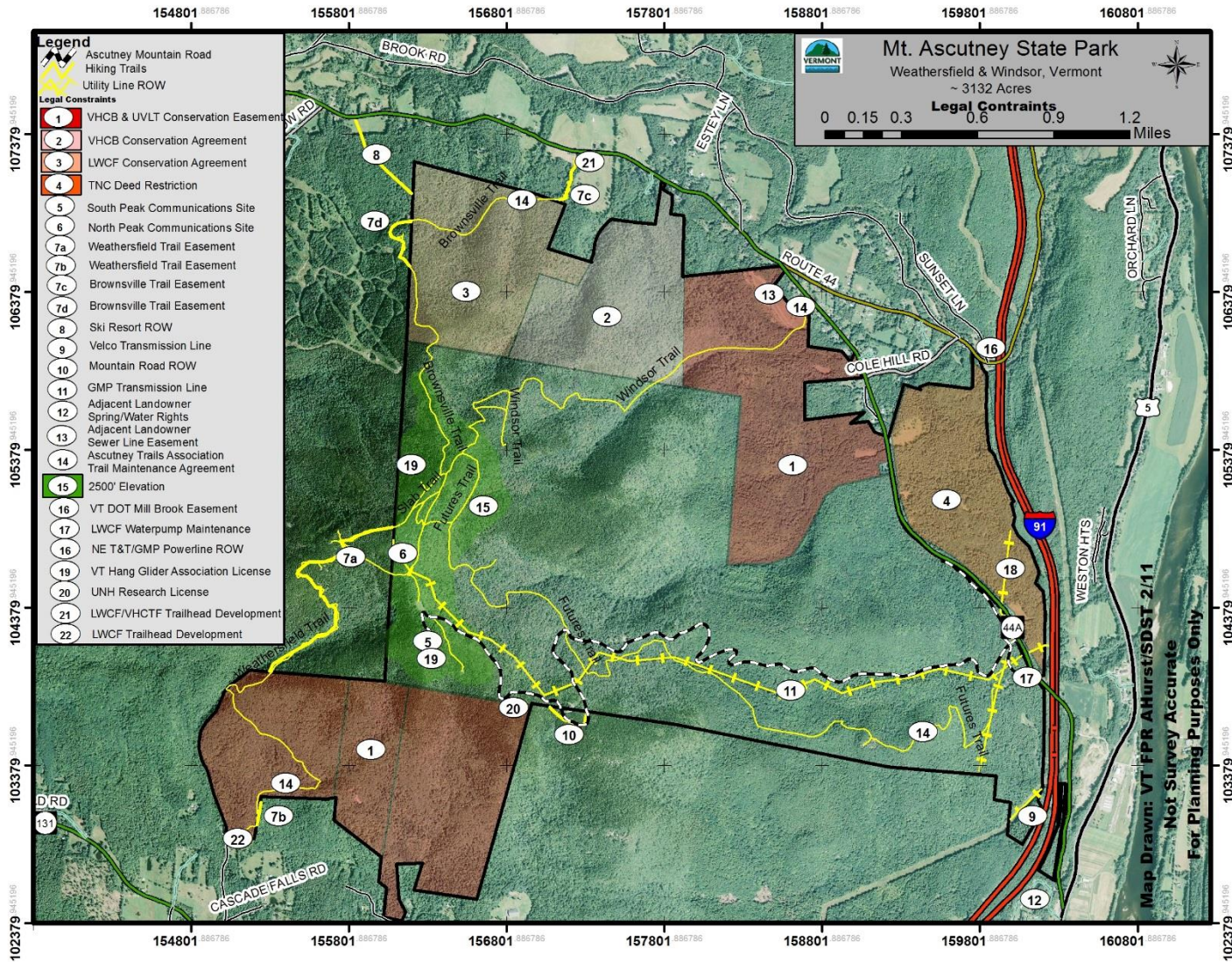


Figure 11: Skitchewaog WMA Legal Constraints and Historic Resources Map

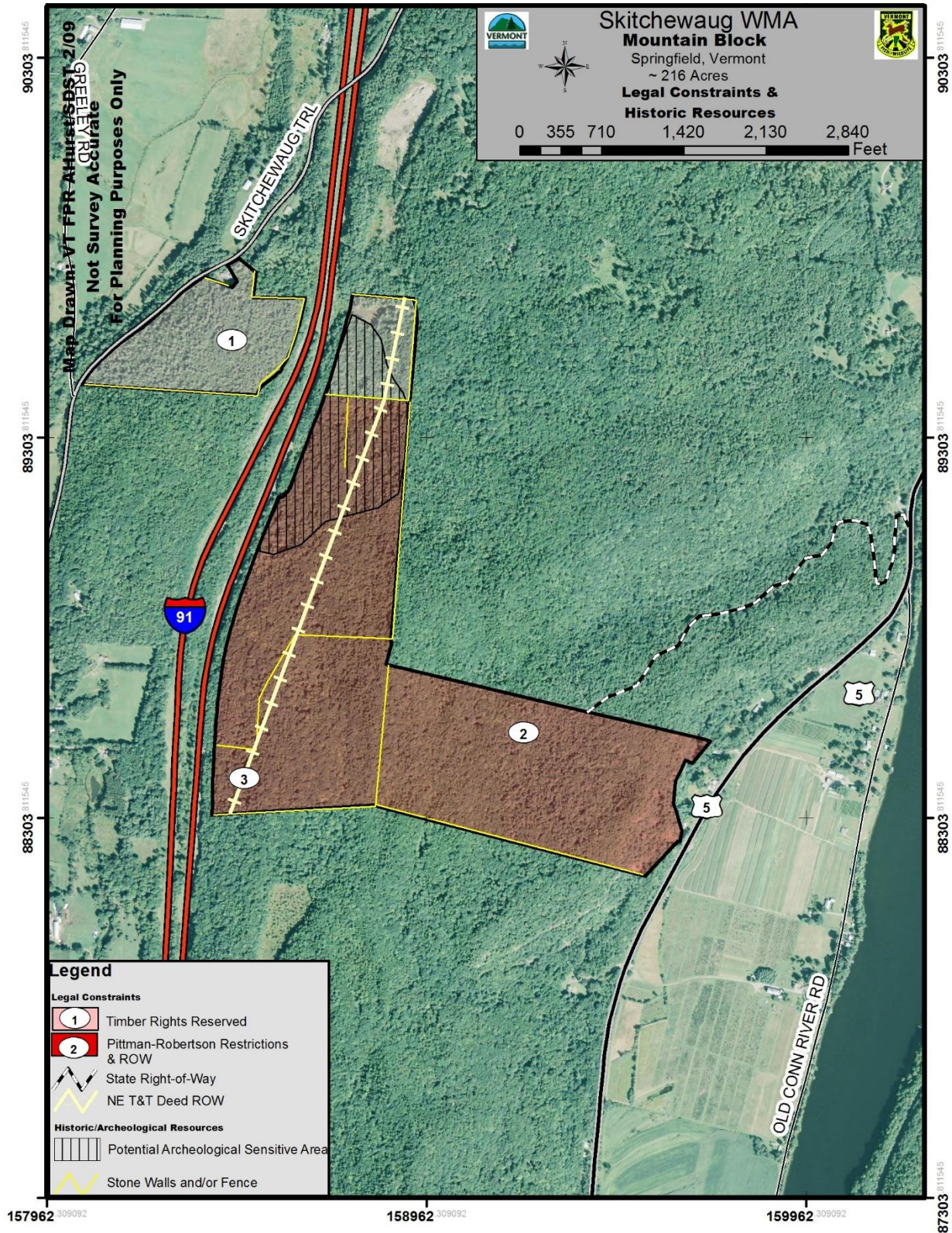


Figure 12: Weathersfield WMA Legal Constraints and Historic Resources Map

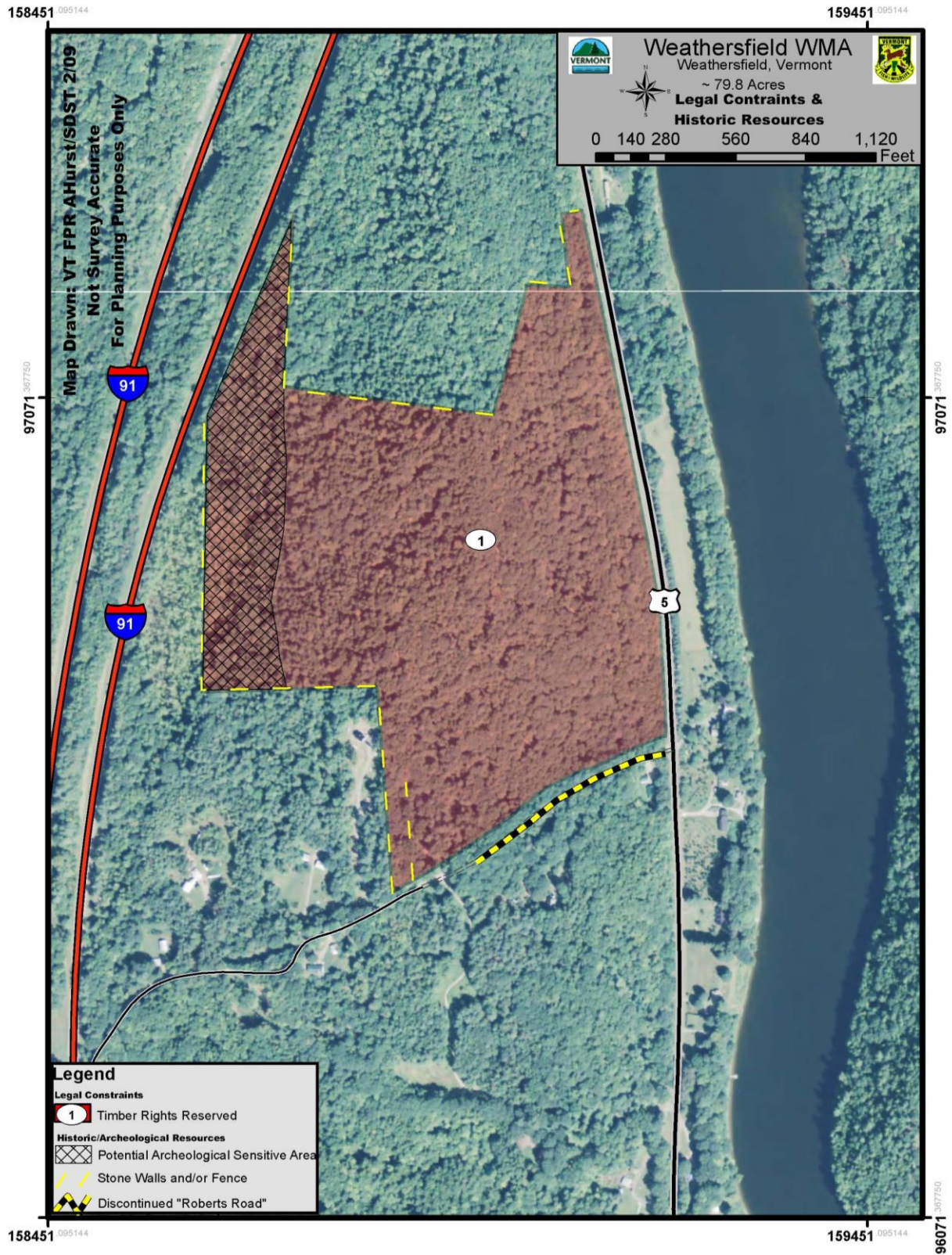
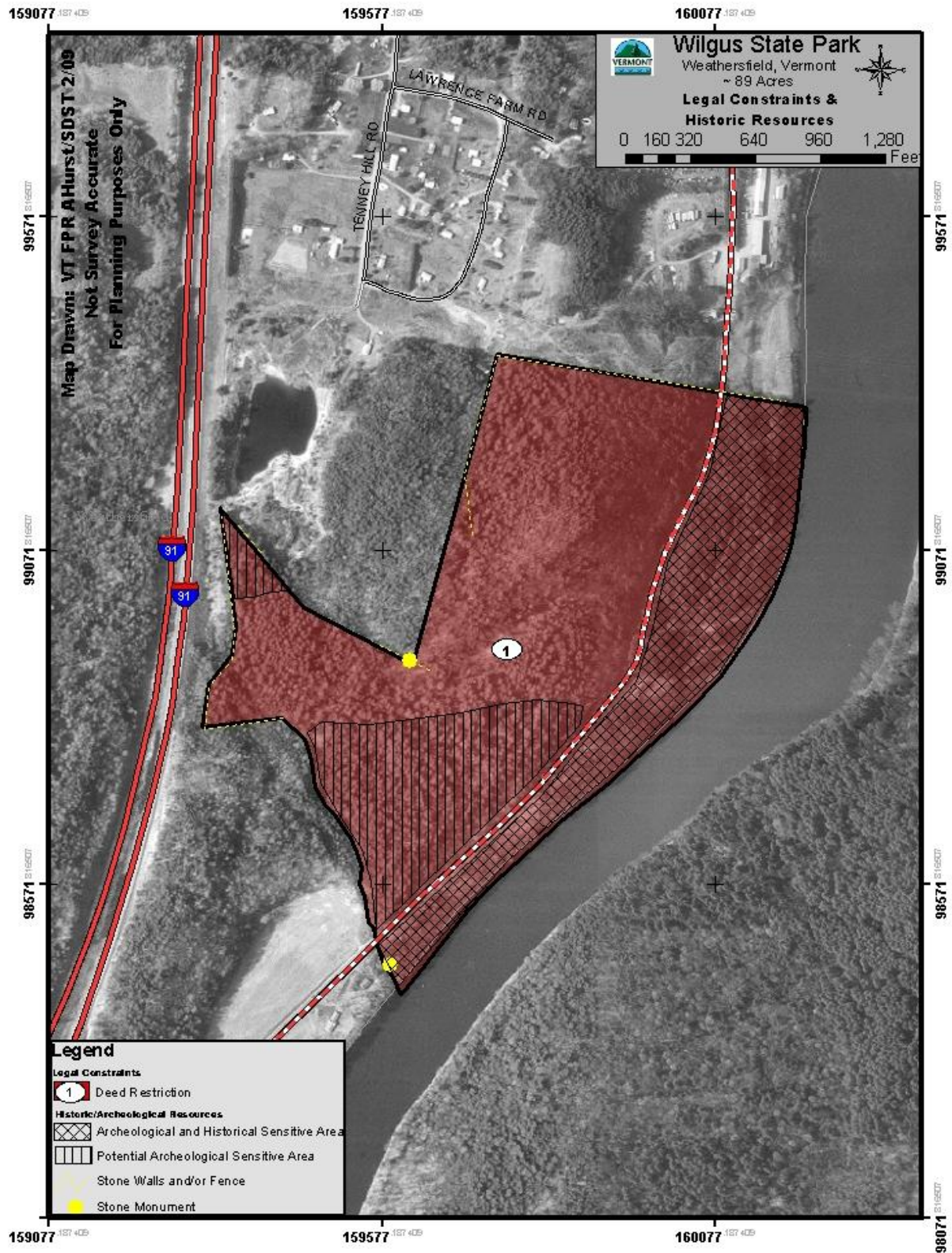


Figure 13: Wilgus State Park Legal Constraints and Historic Resources Map



B. Natural Community Assessment

A natural community is an assemblage of biological organisms, their physical environment (e.g., geology, hydrology, climate, natural disturbance regime, etc.), and the interactions between them (Thompson and Sorenson 2000). More than a simple collection of species, a natural community is characterized by complex webs of mutualism, predation, and other forms of interaction. The 80 natural community types described in Vermont repeat across the landscape in patches (or “polygons”) of various sizes. These patches (or groups of patches in close proximity to each other) are referred to as natural community *occurrences*, and are to be distinguished from broad descriptions of community types. Natural community occurrences vary greatly in their size. *Matrix* communities, such as hemlock forests, occur in broad expanses across the landscape, and form the context in which other, smaller communities are found. *Large patch* communities, such as red oak-northern hardwood forest, typically occur at scales of 10-100 acres. *Small patch* communities such as rock outcrops and vernal pools are usually less than 10 acres in size, and owe their existence to highly localized site and disturbance characteristics.

Natural communities in the AMU were identified through aerial photograph interpretation and field surveys. Field data were collected using a Trimble GeoXM global positioning system (GPS) unit, clinometer, compass, binoculars, soil augur, Cornell pH kit, and a variety of reference manuals for identification of plants, animals, fungi, etc. Many plant specimens were collected for identification in the lab. A Geographic Information System (GIS) map of natural communities was produced using ArcView software from ESRI, Inc. Because some natural communities occur at very small scales (e.g., less than ¼ acre), this mapping effort is probably incomplete. Natural community mapping is an iterative process, and our knowledge improves with each mapping effort. Thus, the map presented here should not be viewed as a final statement on community distribution in the AMU; instead, it should be treated as a first attempt at describing natural communities in this area. Land managers and members of the public should be aware that additional examples of small patch natural communities (e.g., vernal pools and seeps) probably occur on the management unit. As subsequent inventories and site visits are conducted, this map will be improved.

Natural community occurrences are assigned a quality rank, a statement of their overall ecological value which helps guide management. An “A”-ranked occurrence is of high quality relative to others of its type in the state, while a D-ranked example is of comparatively low quality. Quality ranks are objectively assigned on the basis of three factors: occurrence size, current condition, and landscape context. The three factors vary in the degree to which they influence overall quality in different communities. For example, size and landscape quality are more important factors than current condition in the quality ranking of northern hardwood forests, while current condition and landscape context receive greater attention in the ranking of rich northern hardwood forests. It is important to recognize that assignment of low quality ranks may be due to small size rather than poor current condition. When community occurrences are either rare or of high quality (or a combination of these factors), they may be designated as being of “statewide significance.” This designation is applied according to objective guidelines established by the Vermont Nongame and Natural Heritage Program, which are available upon request. It is recommended that state-significant natural communities be afforded a higher level of protection than other areas of the management unit.

Seventy-two occurrences of 33 natural community types (and two variants) were identified and mapped in the AMU (Tables 2 and 3). A total of 138 natural community polygons were mapped. Some broad patterns emerged from this mapping effort. Forested natural communities follow an elevational gradient, with low-elevation forests having a strong component of eastern hemlock (*Tsuga canadensis*), while mixed hardwoods are predominant at mid-elevations. Slope aspect also plays a role, with southern and western facing slopes having a higher proportion of oaks and hickories. Shady north-facing slopes and sharp stream valleys had more northern hardwood forest and hemlock forest. Montane forests with red spruce (*Picea rubens*), balsam fir (*Abies balsamea*), and birches cover the highest elevations of Mount Ascutney.

The topography, soils, vegetation, and wildlife associations of each natural community in the AMU are described in Tables 2 and 3. Table 2 summarizes Wetland Natural Communities, their location, acreage, state distribution, and rank. Table 3 summarizes this information for Upland Natural Communities.

Key to Units in the Tables:

LA = Little Ascutney WMA

MA = Mt. Ascutney State Park

SK = Skitchewaugh WMA

SK2 = Skitchewaugh WMA Spencer Brook Block

WE = Weathersfield WMA

WG = Wilgus State Park


 = state significant example of an uncommon or rare natural community

Table 2: Wetland Natural Communities of AMU

Unit(s)	Natural Community	Acres	Vermont Distribution	State Significant Example?
SK2	Alluvial Shrub Swamp	3	common	
LA	Beaver Wetland	7	common	
SK2	Cattail Marsh	4	common	
SK	Hemlock-Balsam Fir-Black Ash Seepage Swamp	7	uncommon	Yes
SK	Hemlock-Sphagnum Acidic Basin Swamp	1	rare	Yes
WE	Red Maple-Black Ash Seepage Swamp	3	common	
SK	Red Maple-Black Gum Swamp	0.5	rare	Yes
WG	Rivershore Grassland	5	uncommon	
LA	Seep	1.7	common	
SK, SK2	Shallow Emergent Marsh	5	common	
MA	Spruce-Fir-Tamarack Swamp	<0.1	uncommon	
SK, WG	Vernal Pool	0.6	common	Unknown*
<p>For more information on these and other natural communities, see <i>Wetland, Woodland, Wildland: a Guide to the Natural Communities of Vermont</i>, by Elizabeth Thompson and Eric Sorenson. Information may also be found online at: http://www.vtfishandwildlife.com/books.cfm?libbase=Wetland,Woodland,Wildland</p>				
<p>*Vernal pools must be evaluated during amphibian breed season (spring) to determine if a pool is considered state-significant.</p>				

Table 3: Upland Natural Communities of AMU

Unit(s)	Natural Community	Acres	Vermont Distribution	State Significant Example?
MA	Boreal Outcrop	1	common	
MA	Boreal Talus Woodland	3	uncommon	Yes
MA, LA	Dry Oak-Hickory-Hophornbeam Forest	155	uncommon	Yes
MA, SK	Dry Oak Forest	67	uncommon	Yes
MA	Dry Oak Woodland	3.5	rare	Yes
MA, LA, SK, WE	Hemlock Forest	885	common	Yes
MA, LA, WG, WE	Hemlock-Northern Hardwood Forest	950	common	
MA, LA, SK, WE	Mesic Maple-Ash-Hickory-Oak Forest	344	uncommon	Yes
LA, MA, WG	Mesic Red Oak-Northern Hardwood Forest	623	common	Yes
MA	Montane Spruce-Fir Forest ^[1]	105	uncommon	Yes
MA	Montane Yellow Birch-Red Spruce Forest	420	uncommon	Yes
MA, LA	Northern Hardwood Forest	738	very common	
MA	Northern Hardwood Talus Woodland	3	uncommon	Yes
MA	Red Spruce-Red Oak Forest	89	uncertain	Unknown**
MA, WE	Rich Northern Hardwood Forest	24	common	
SK2	Sandy Slope Seepage Forest	1	unknown	
LA	Temperate Acidic Cliff ^[2]	2.5	common	Yes
MA, LA	Temperate Acidic Outcrop	10	common	Yes
SK	Temperate Calcareous Cliff	7	uncommon	Yes
LA, SK	Transition Hardwood Talus Woodland	27	uncommon	Yes
MA, WG, SK2	White Pine-Red Oak-Black Oak Forest	143	uncommon	Yes (MA, WG)
<p>For more information on these and other natural communities, see <i>Wetland, Woodland, Wildland: a Guide to the Natural Communities of Vermont</i>, by Elizabeth Thompson and Eric Sorenson. Information may also be found online at: http://www.vtfishandwildlife.com/books.cfm?libbase =Wetland,Woodland,Wildland</p>				
<p><i>**This is a new community type described provisionally in this report. As such, there are no specifications to determine if it meets criteria for state-significance.</i></p>				

[1] Historic records of Bicknell’s Thrush, no recent record.

[2] Historic records of timber rattlesnake and peregrine falcon, no recent record except peregrine falcon at Skitchewaugh WMA.

Fine Filter Assessment

Rare, Threatened, and Endangered Species

The Ascutney Management Unit is home to a number of rare, threatened, and endangered species of animals and plants. The species and their rarity ranking are summarized below.

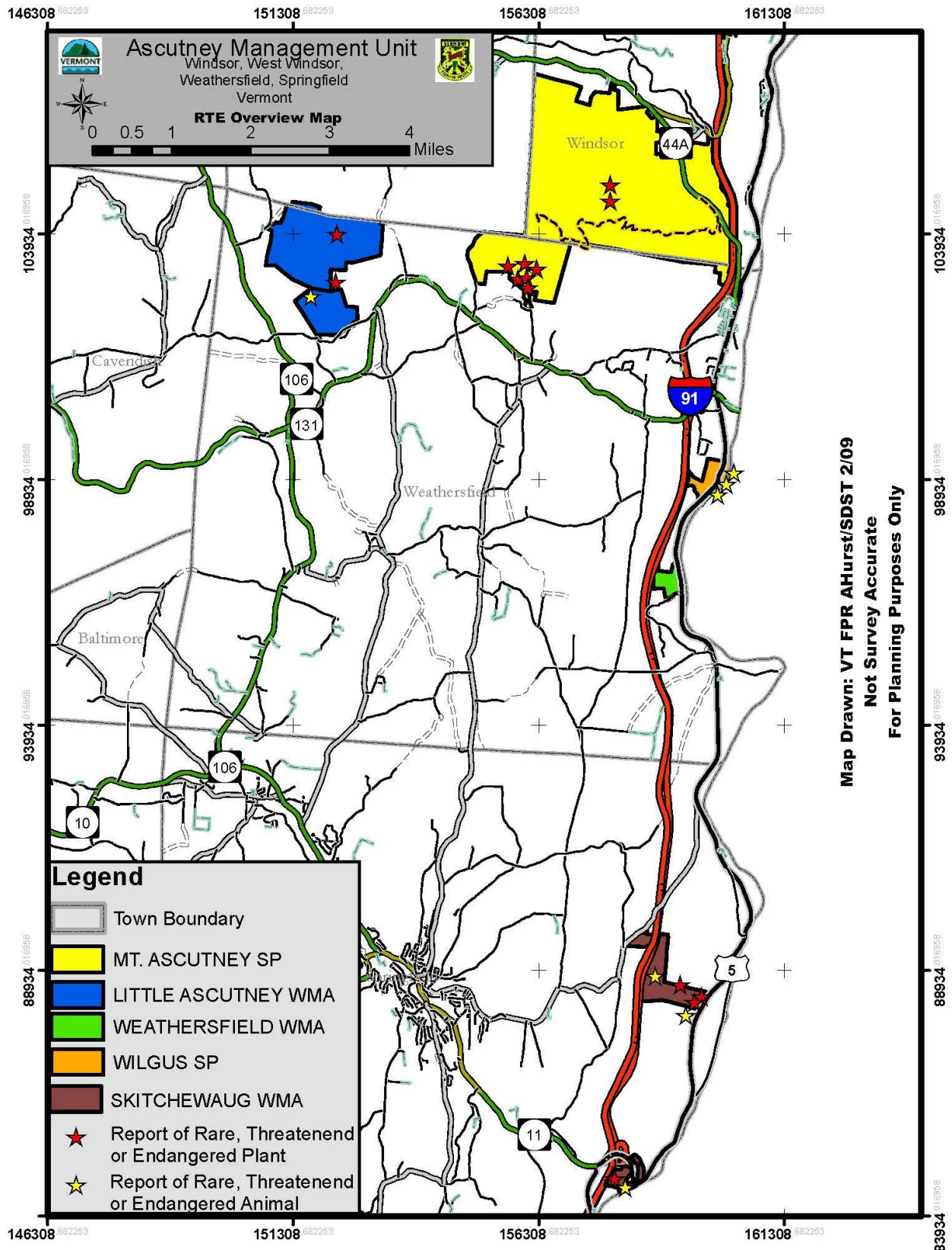
PLANTS

Seven species of rare plants have been located within the AMU. Three of these are listed as “endangered” by Vermont state endangered species statute (10 V.S.A. § 123). Their occurrence at AMU is thus very important on a statewide basis. Three plants that are uncommon in the state were also found. These plants are summarized in the Table 4. Another of Vermont’s rare plants, the federally-endangered barbed-bristle bulrush (*Scirpus ancistrochaetus*), may also occur within the AMU, most likely at Skitchewaug WMA, where a known population is only 500’ outside of the WMA. This bulrush, which grows in swamps and marshes, is globally uncommon (G3), and is ranked S2 and listed endangered in Vermont. Land managers should be familiar with the plant, and look for it in swamp and marsh habitat in the AMU.

Table 4: Rare, Threatened, and Endangered Plants of Ascutney MU

Species Name	Common Name	Sites Where Found	State Rarity Rank	Rarity*	State Legal Status
<i>Carex foenea</i>	Bronze sedge	Mt. Ascutney SP	S1	very rare	endangered
<i>Carex siccata</i>	Hay sedge	Little Ascutney WMA	S1	very rare	endangered
<i>Glyceria acutiflora</i>	Sharp manna-grass	Skitchewaug WMA	S1	very rare	endangered
<i>Cardamine parviflora var. arenicola</i>	Small flower bitter-cress	Skitchewaug WMA	S2	rare	
<i>Carex argyrantha</i>	Hay sedge	Mt. Ascutney SP, Skitchewaug WMA	S2	rare	
<i>Chimaphila maculate</i>	Spotted wintergreen	Mt. Ascutney SP	S2	rare	
<i>Viola palmata</i>	Early blue violet	Skitchewaug WMA	S2	very rare	
<i>Carex backii</i>	Back’s sedge	Little Ascutney WMA, Mt. Ascutney SP, Skitchewaug WMA	S3	uncommon	
<i>Nyssa sylvatica</i>	Black gum	Skitchewaug WMA	S3	uncommon	
<i>Poa saltuensis</i> <i>spp. Saltuensis</i>	Drooping bluegrass	Mt. Ascutney SP	S3	uncommon	
<i>Woodsia obtusa</i>	Blunt leaved woodsia	Skitchewaug WMA	S3	uncommon	
*for an explanation of these rarity ranks, visit the Vermont Nongame and Natural Heritage Program's website: http://www.vtfishandwildlife.com/wildlife_nongame.cfm or Glossary (Appendix 9).					

Figure 14: Rare, Threatened, and Endangered Overview Map



ANIMALS

Several rare, threatened, and endangered species are found or predicted on or near parcels of AMU including:

Dwarf Wedge Mussels – A known population in the Connecticut River near the south end of Wilgus SP.

Hairy-tailed Mole – Tunnels of this somewhat uncommon species were abundant at Wilgus SP within the rivershore Grassland Community in a field survey in 2008.

Long-tailed Shrew and Rock Vole – Talus woodlands found at Mt. Ascutney SP, Little Ascutney WMA, and Skitchewaugh WMA provide suitable habitat. Confirmed in a follow-up small mammal survey between 2008 and 2010.

Peregrine Falcon – Historical records of peregrine falcon nesting sites on cliff face on or adjacent to the Little Ascutney WMA. No contemporary sightings. Peregrine falcons are documented and monitored nesting on a cliff face adjacent to Skitchewaugh WMA above Route 5.

Pine Vole – One specimen of this uncommon species was captured at Skitchewaugh WMA in a hemlock stand in the 2008 survey.

Puritan Tiger Beetle – Historical records of this species from shorelines along this portion of the Connecticut River. Of 11 known historic sites along the Connecticut, only two remain, none in Vermont (Silvio Conte Refuge report).

Timber Rattle Snake – Historical records from sites near Skitchewaugh WMA and Little Ascutney WMA with similar features. No sightings since the 1950s.

Core Forest

Core forest is a biological term that simply refers to any forested areas that are greater than 100 meters from a non-forested opening. While edge and transition habitat can be habitat for some native plant and animal species, edges can also negatively impact forest resources. An increase in invasive species, increased predation on many native songbirds, and a decrease in wildlife that prefers to use large blocks of intact forest are all associated with an increase in forest edge. Additionally, unbroken forest allows for easy dispersal of plants and animals, without large barriers to this movement. The AMU is located in a rural landscape that is in places highly fragmented by residential development and agriculture. Within this landscape, however, most of Mt. Ascutney SP and Little Ascutney WMA (and the West Windsor Town Forest parcel that connects them) is part of a nearly 7,000-acre block of core forest. This block is one of the largest core forest blocks in the Southern Vermont Piedmont biophysical region, and as such it provides important habitat in the region for wildlife species that avoid forest edges. Much of Skitchewaugh WMA is part of a smaller block of core forest (approximately 1,000 acres) that runs north-south along the length of Skitchewaugh Mountain. This block reaches nearly to the northern tip of the wetland parcel of Spencer Brook.

Wildlife Movement Corridors

Connections between wild lands can serve an important role in maintaining the long-term health and viability of wildlife populations. Wildlife corridors not only allow individual animals (such as young individuals searching for new habitat) to move throughout the landscape, but also allow for the transfer of genetic information across the region. The occasional travel of a few individual animals between otherwise isolated populations can substantially increase the long-term viability of each, because the genetic diversity within each group is effectively increased.

Small patches of forest that are not core forest can serve an important role by providing corridors for wildlife to travel between larger forest blocks. In particular, Wilgus SP, Weathersfield WMA, and Skitchewaug WMA are all connected by forest that is sandwiched between Route 5 and I-91, and crossed by only a few east-west roads. This may be an important corridor for north-south wildlife movement, though the interstate and the Connecticut River probably create barriers for some species. Larger species seem to have no trouble reaching this area, though: moose tracks were seen in the wetland parcel of Spencer Brook Block, even though it is surrounded by the highway, the Connecticut River, Route 5, and residential and commercial development. Fish & Wildlife has documented a portion of Little Ascutney WMA and West Windsor Town Forest at the height of land on Kimball Farm Road as a bobcat travel corridor. It is likely used by many wildlife species moving from Ascutney Mountain and Little Ascutney WMA. Much of the area west of Little Ascutney WMA is forested, and several moderately large core forest blocks are close by. This may create a corridor for wildlife to travel between the relatively wild southern Green Mountains and the smaller forested areas of the Connecticut River Valley.

Figure 15: Little Ascutney WMA Natural Communities Map

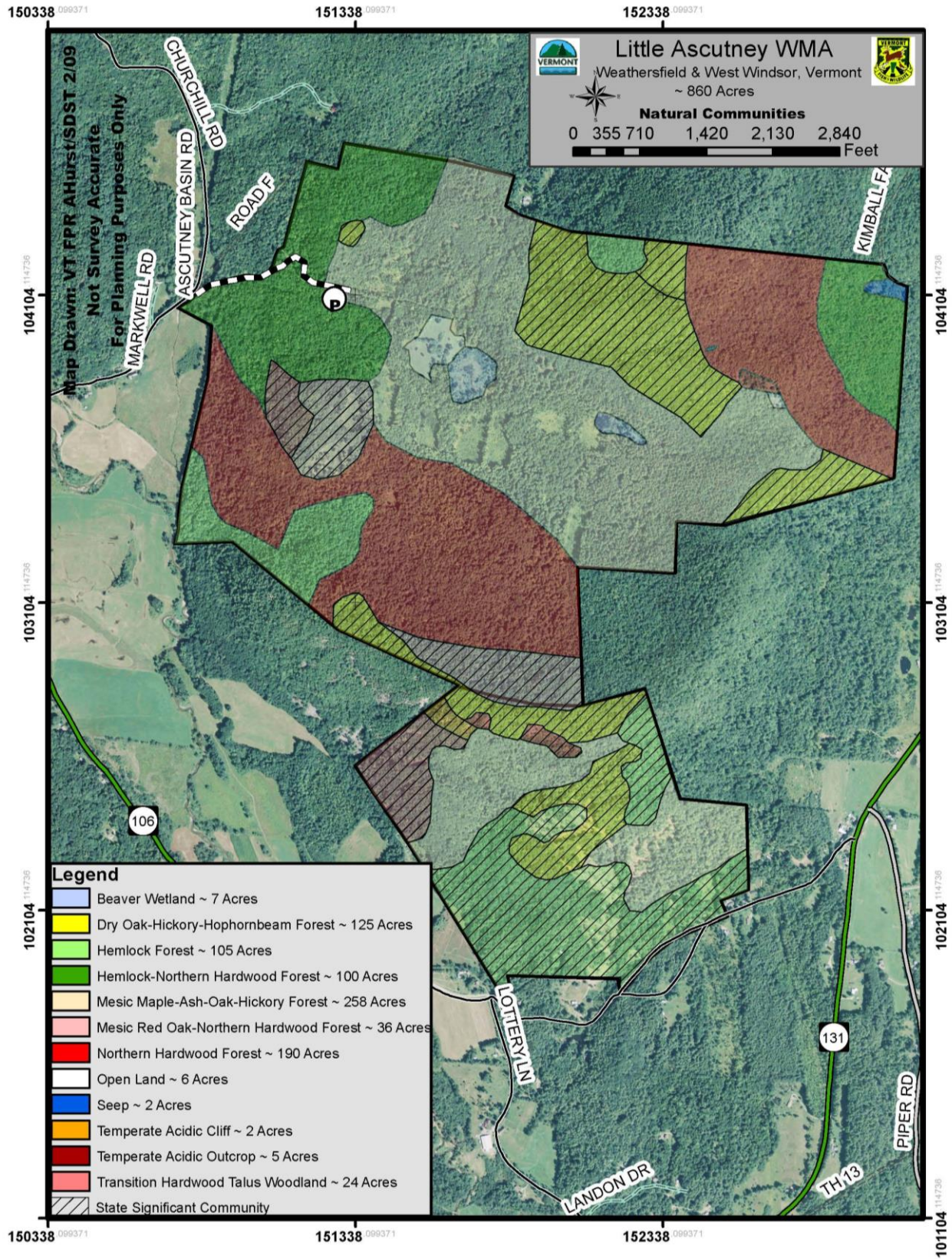


Figure 16: Mt. Ascutney State Park Natural Communities Map

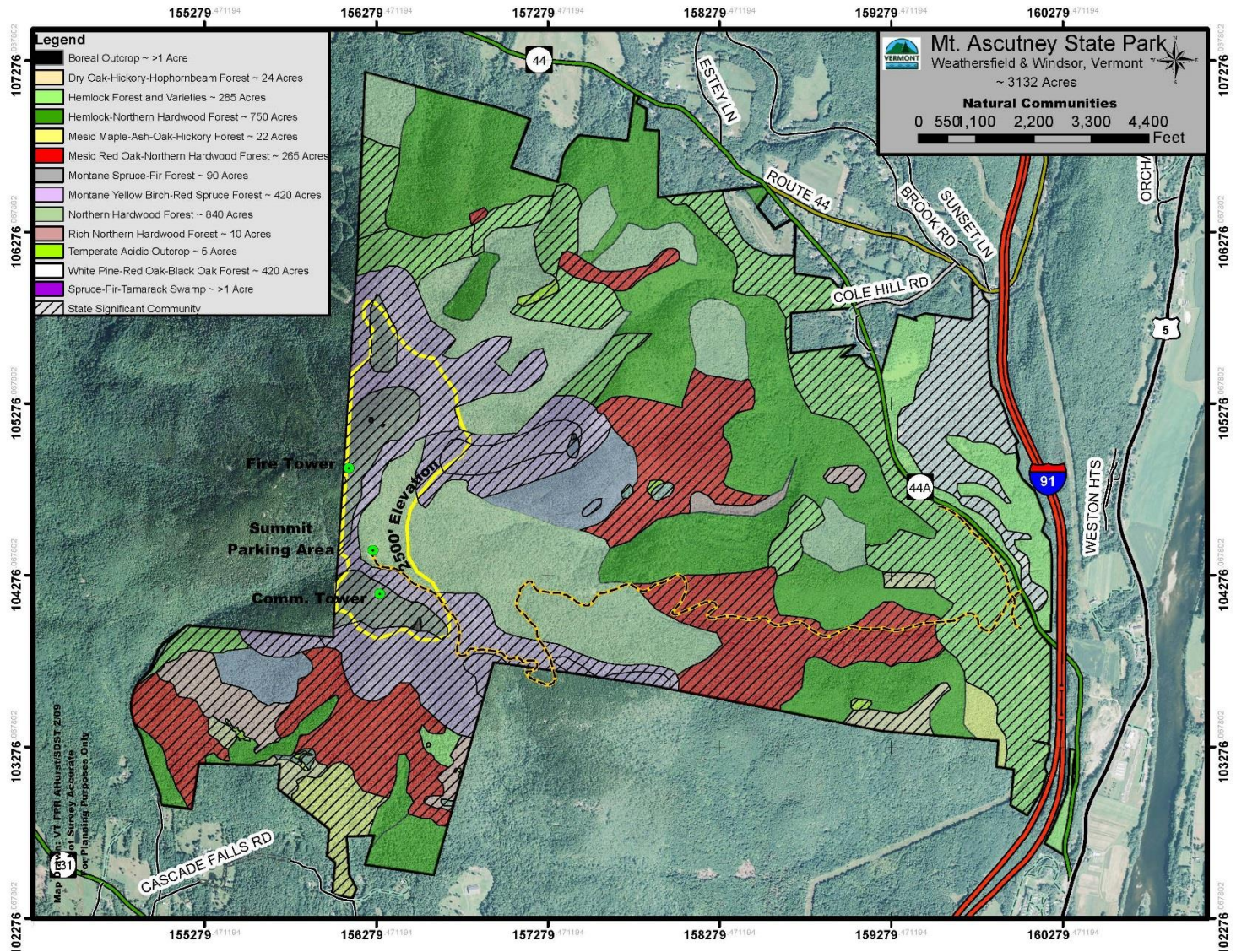


Figure 17: Skitchewaug WMA Mountain Block Natural Communities Map

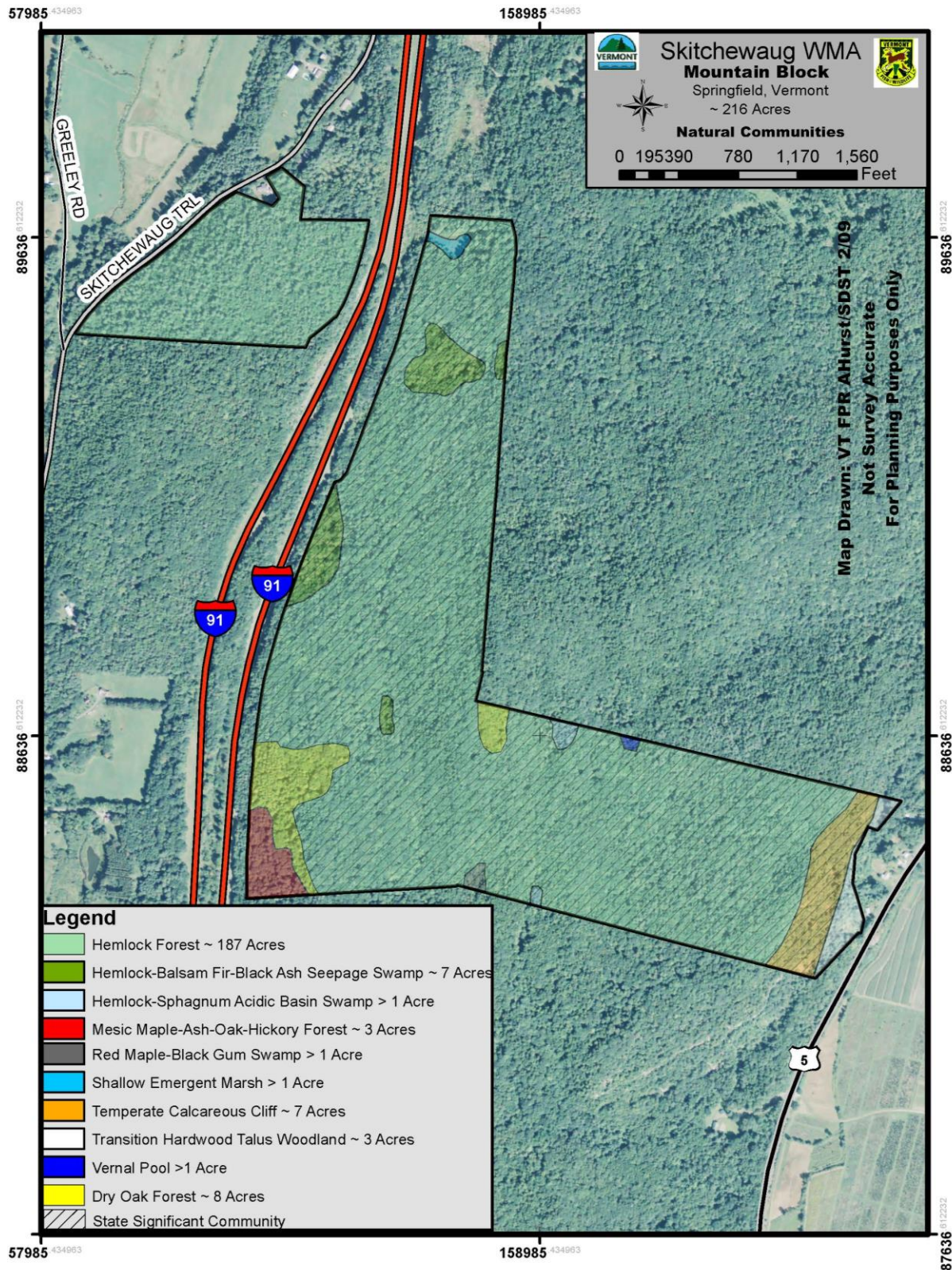


Figure 18: Skitchewaug WMA Spencer Brook Block Natural Communities Map

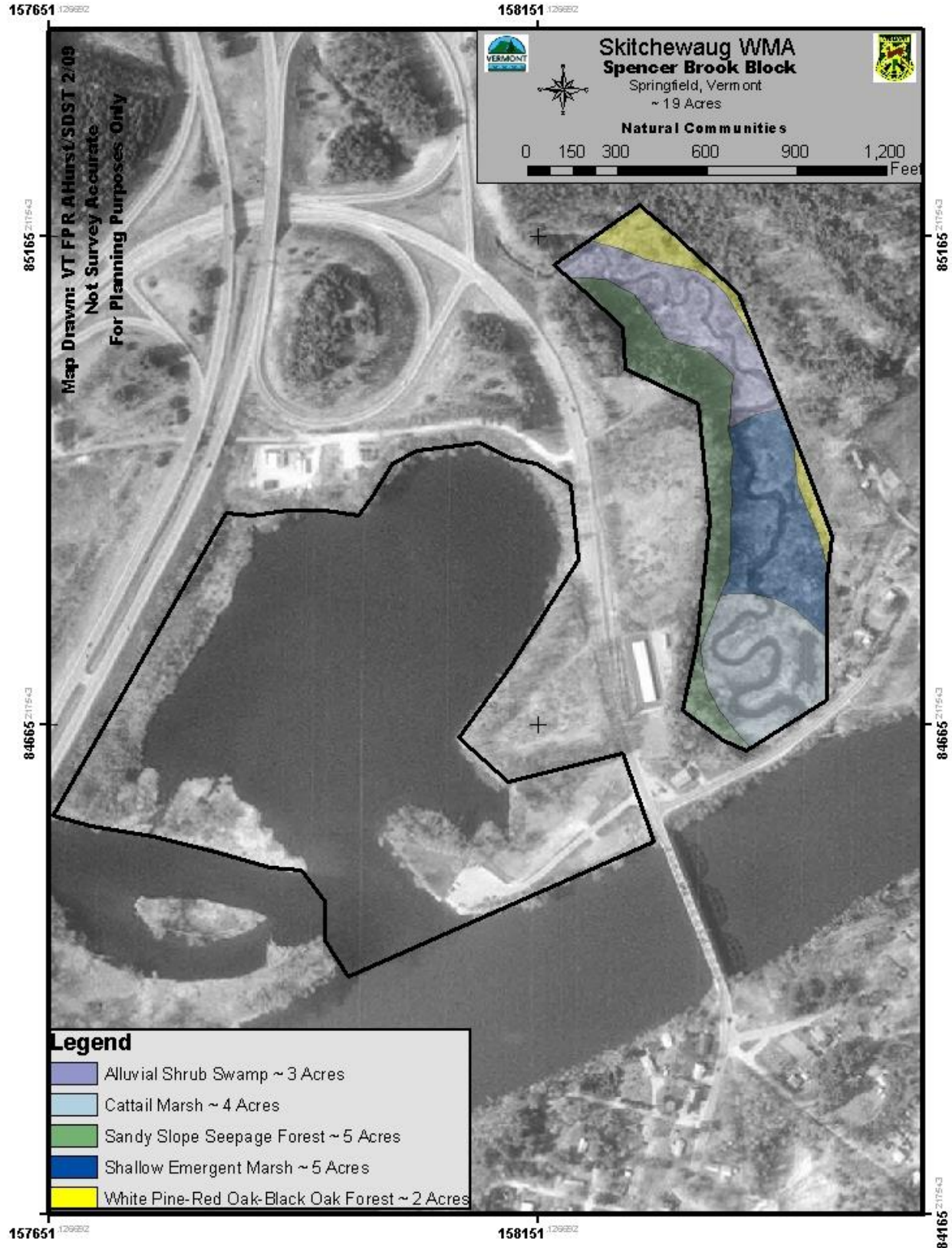


Figure 19: Weathersfield WMA Natural Communities Map

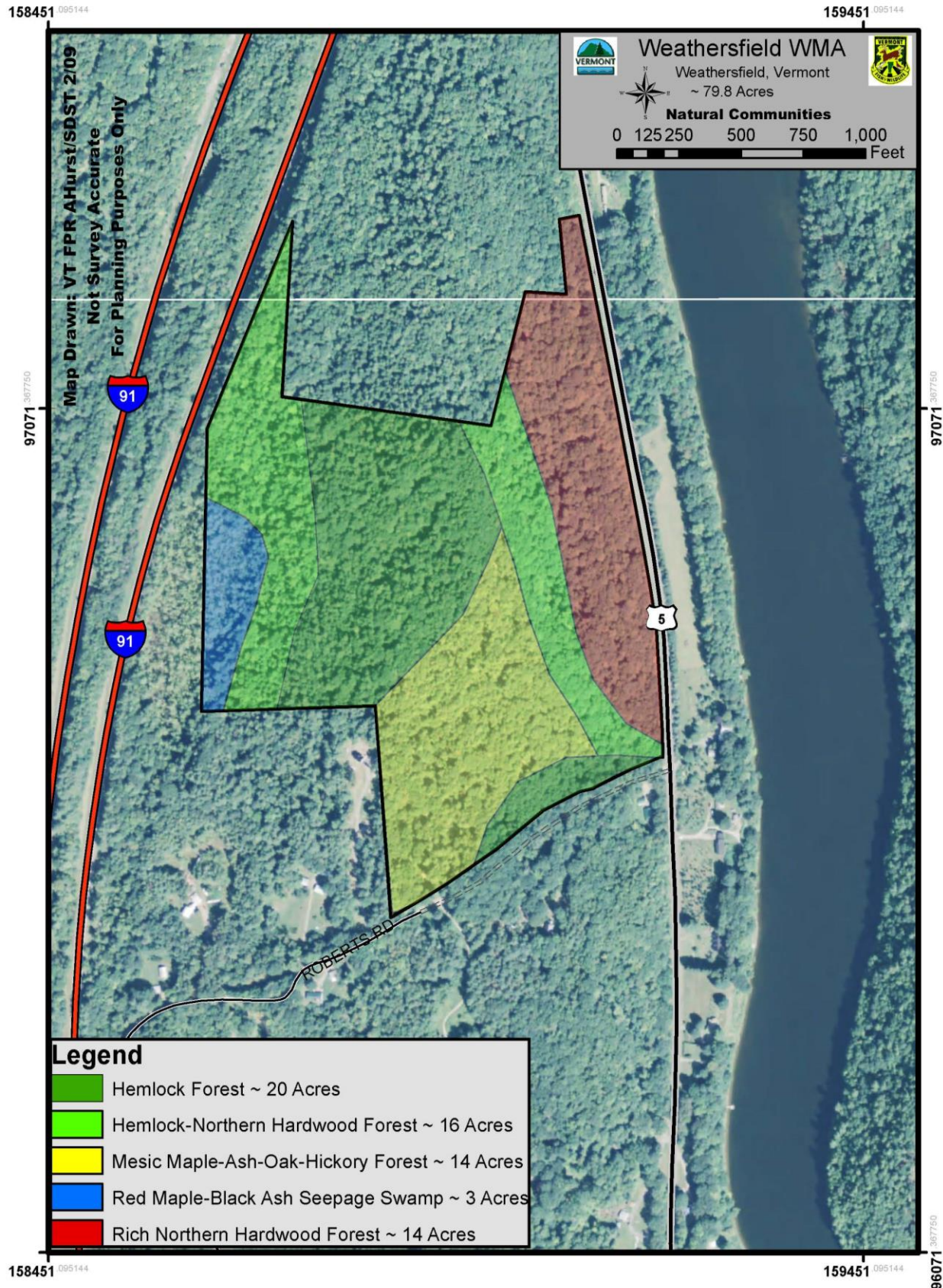
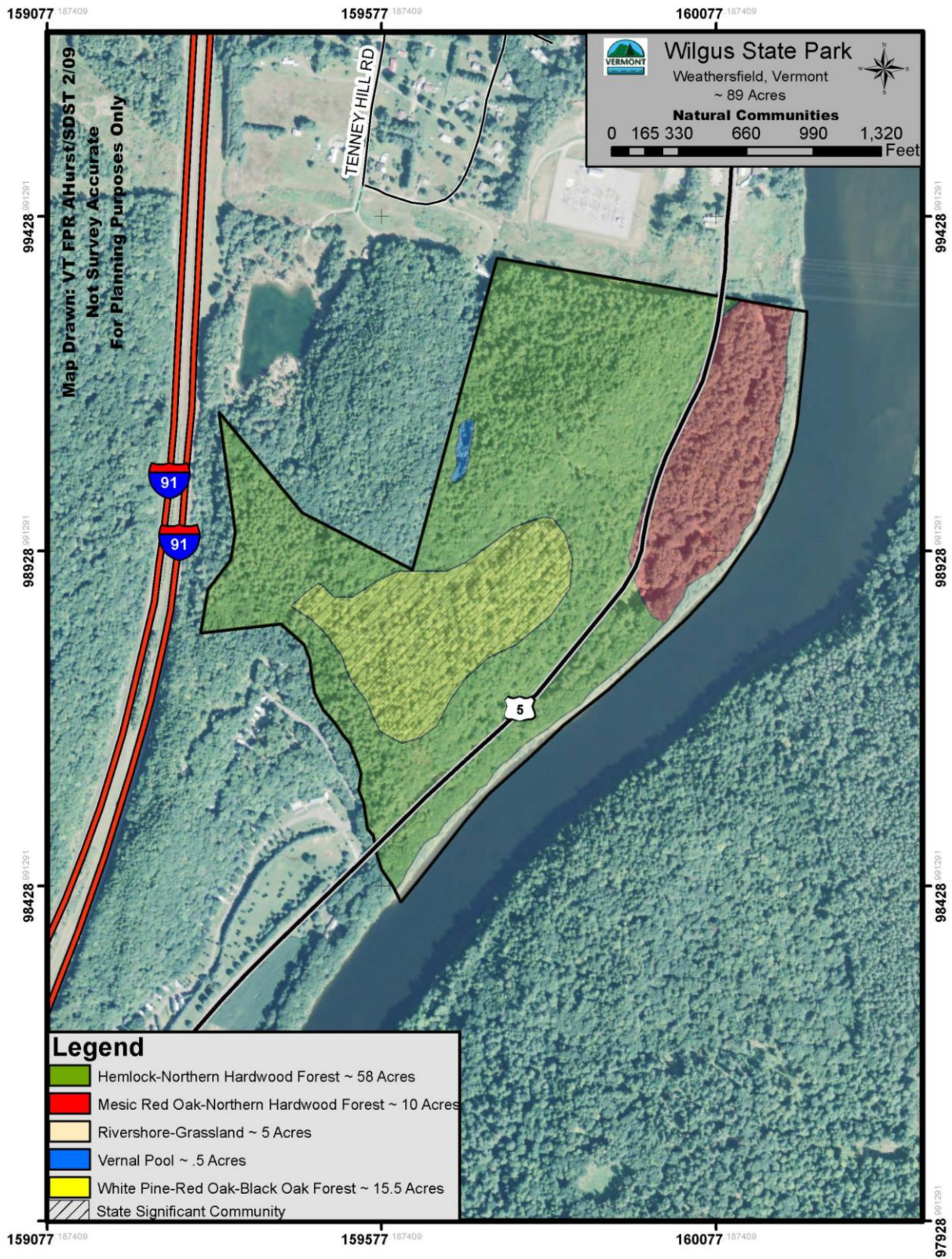


Figure 20: Wilgus State Park Natural Communities Map



C. Forest Health Assessment

1. General Forest Health:

Overall forest and tree health on the AMU, as reflected by tree condition, appears good. Significant exceptions are noted below and included invasive plant species, heavy deer browse damage, upper elevation weather damage, insect defoliations, and stem rot in some pine stands.

2. Site and Elevation, etc.:

The most productive sites for tree growth are found at Little Ascutney WMA, low and mid slopes on Mt. Ascutney SP, Wilgus SP, and terraces at Mt. Ascutney SP and Wilgus SP. Shallow soils and/or high elevation on upper slopes of Little Ascutney WMA, Mt. Ascutney SP, and Skitchewaugh WMA limit tree productivity.

3. Browse Sensitivity Assessment:

Heavy browsing by deer on forest regeneration is present on portions of Little Ascutney WMA and Mt. Ascutney SP, primarily in areas that have seen partial or no harvest and/or are located in or near a deer wintering area. Patch clearcuts and overstory removal treatment areas do not generally exhibit regeneration problems with the exception of portions of the McClary Lot at Mt. Ascutney SP.

4. Invasive Exotic Species Assessment:

Non-Native Species

A number of non-native plant species are found on the AMU. Most are not a threat to native vegetation, habitats or wildlife; however, there are a few notable exceptions. Glossy buckthorn (*Rhamnus cathartica*), Morrow's honeysuckle (*Lonicera morrowii*), Japanese barberry (*Berberis thunbergii*), European barberry (*Berberis communis*) are all found in the understory of some of the forests, wetlands, and field edges of the AMU. These shrubs are particularly common on both sides of Route 44A in Mt. Ascutney SP, and the latter two species are abundant in Skitchewaugh WMA and the wetland parcel of Spencer Brook Block. These species have also been found in many other areas. Another shrub capable of forming dense thickets and excluding native plants, winged burning bush (*Eonymus alatus*) was identified at the Spencer Brook wetland parcel. This invasive species is currently uncommon in Vermont, but is more widespread to the south.

Reed canary grass (*Phalaris arundinacea*) and common reed (*Phragmites australis*) are grasses that can invade mesic to wet areas and displace native species. Reed canary grass is especially abundant along the shoreline of the Connecticut River in Wilgus SP, and common reed is poised to invade a wetland in Skitchewaugh WMA. (There is a native strain of *Phragmites australis*, but all of the individuals seen in this inventory appeared to be the non-native and invasive strain.)

Hemlock woolly adelgid is a non-native insect species that is damaging eastern hemlock in other parts of the northeast, and has recently been found in southeast Vermont. This insect has not been found on hemlock trees in the AMU, but it should be monitored. A widespread infestation of the adelgid could alter many of the natural resources on the AMU.

Emerald ash borer is an exotic beetle whose larvae eats and kills ash trees. It was brought here from Asia, probably in wood-packing material on cargo ships, and was first identified in 2002 in southeastern Michigan. Since then, and despite great efforts to eradicate the beetle, the infestation has spread. Currently it has been found in all of our neighboring states. The closest found infestation is approximately 40 miles away in Hopkinton, New Hampshire.

Table 5: Primary Invasive Exotic Plants of Ascutney MU

Invasive Plants of AMU					
Species Name	Common Name	Distribution	Estimated % Cover	Sites Where Found	Present Threat to Native Plant Communities
Lonicera sp.	Honeysuckle	McClary Lot	25%	MASP	Yes
		Lower slopes	10%		Yes
		Edges	80%		No
		Lower slopes	50%	LAWMA	Yes
		Edges	80%		No
		Wetlands	20%	SKWMA	Yes
		Wetlands	50%		Yes
		Western Unit	80%		Yes
Barberris sp.	Barberry	Scattered	20%	As above	Yes
Rhannus cathartica	Glossy Buckthorn	Scattered	20%	As above	Yes

a. Insects

Defoliation History

The defoliation history of Little Ascutney WMA and Mt. Ascutney SP was examined for the previous 30-year period. Analysis was based on GIS mapping of aerial defoliation surveys of the Vermont Department of Forests, Parks and Recreation provided by the Vermont Monitoring Cooperative. Because management is expected to be very limited on Skitchewaug WMA and Wilgus SP and management rights are held by others on Weathersfield WMA, these parcels were not evaluated.

The notable defoliations at Little Ascutney WMA were pear thrips in 1988 (sugar maple), ice damage in 1998, anthracnose (a leaf fungus) 1998-2000, and several instances of drought damage and forest tent caterpillar in 2004, 2005, and 2006. Most commonly ridge tops and dry slopes displayed the most damage with the exception of forest tent caterpillar which was mapped

over much of the parcel. While of historical interest, enough time has passed that impacts from these events is no longer evident. Events in the last five years are significant to management as they generally result in tree stress and a period of lower tree resilience. In that period, evidence of defoliation or drought damage occurred in only a few ridge top and steep side hill areas.

Mapped defoliation on Mt. Ascutney SP was considerably less frequent than at Little Ascutney WMA. Forest tent caterpillar, anthracnose, and spruce winter injury were all mapped on the upper slopes or peaks for time periods and/or extents that were limited. Upper elevation white birch trees exhibited significant defoliation and/or foliage discoloration over three events: 1994 and 1995, 2002 and 2003, and 2013. Referred to as ‘Birch Defoliation Complex’, the events have taken a toll on white birch on the upper slopes as evidenced by the large number of dead and dying white birch trees visible from the mountain road and upper elevation hiking trails.

Management Considerations/Assessment of Need:

- Follow-up inventory of invasive plant populations to develop a management program for key populations is needed. Successful management will require herbicide use.
- Where feasible, the use of patch clearcuts may be necessary to propagate seedlings and saplings in areas of heavy browsing damage by deer.
- Upper elevations of Mount Ascutney should continue to see the decline of white birch. No management is proposed but an increase in hazard tree removal cost is expected and additional monitoring is warranted.
- The potential for loss of hemlock cover for wintering deer due to hemlock woolly adelgid is moderate. Management to promote natural white pine stands is recommended as a source of replacement cover. For key areas where deer winter cover is a primary objective, the potential for planting of other species, such as white spruce, should be evaluated.
- No recent defoliation impacts forest management units. Annual aerial monitoring and mapping will continue to be utilized to identify stands that may be under stress where a delay in management could be beneficial.
- Monitoring for emerald ash borer will continue.

D. Wildlife and Habitat Assessment Summary

In addition to the rare and uncommon species and species of special concern described in the Fine Filter Assessment, wildlife and habitat inventories documented a variety of more common species.

a. Small Mammals:

A total of 17 species of small mammals including 3 species of bats and 14 species of small terrestrial mammals were detected on the Ascutney Management Unit in a survey conducted for the Fish & Wildlife Department. This survey provided documentation of a population of the uncommon pine vole (*Microtus pinetorum*) at Skitchewaug WMA. Habitats associated with two other rare species, long-tailed shrews (*Sorex dispar*) and rock voles (*Microtus chrotorrhinus*) were identified and surveyed (Talus slopes); however, no individuals of either species were detected, possibly due to high populations of mice of the genus *Peromyscus* at the time of the survey.

1. Critical Habitats and Important Habitat Features

Critical Habitats

Critical habitats are features that are required for maintaining populations of certain species. These areas typically provide necessary cover or food at important times such as winter or breeding seasons. Key habitat features and associated acreage and location are found in Table 6.

Table 6: Key Habitat Features of AMU (acres)

	Little Ascutney WMA	Mt. Ascutney State Park	Skitchewaug1 WMA	Skitchewaug2 WMA	Weathersfield WMA	Wilgus State Park	Total
Apples	6	3	—	—	—	—	9
Cliff/Talus	2	6	7	—	—	—	15
Deer Wintering Area	137	395	174	—	—	—	706
Early Successional (1-40 years)	32	<50	—	—	—	—	<82
Hard Mast	352	720	23	2	14	60	1,171
Meadows & Openings	19	12	—	—	—	—	31
Mid and Late Successional Forest (41 years and >)	789	3,059	199	—	84	80	4,211
Wetlands, Seeps & Vernal Pools	12	2	10	12	3	5.5	44.5

Deer Wintering Areas (DWA)

Important winter deer cover is found on Mt. Ascutney SP, Little Ascutney WMA, and Skitchewaug WMA. The southern slopes of Mount Ascutney provide a regionally significant DWA as do southern and western slopes on Little Ascutney WMA. In general, these areas are functionally in good condition. Some of these areas are steep south slopes of hardwood as opposed to the more typical hemlock stands. The DWA on Mount Ascutney is easily the most regionally significant on the AMU.

Conservation and improvement of DWAs has been and will continue to be a focus of management on ANR lands. Increased winter recreation on Mt. Ascutney could lead to conflicts between public use and the functioning of the DWA. Impacts to white-tailed deer in winter will be an important consideration of management and decisions of land use allocation.

Amphibian Breeding Sites

Amphibian and reptile surveys were conducted in 2006 and 2007 at Mt. Ascutney SP, Little Ascutney WMA, and Skitchewaug WMA. Fourteen reptile and amphibian species were observed on the AMU. Habitat for six less common to rare species was identified. Breeding sites in the form of streams, wetlands, and vernal pools can be found on all parcels of the AMU. State guidelines to protect riparian zones and water features provide protection for breeding sites.

Riparian Areas

Significant wetlands occur on Little Ascutney WMA, Skitchewaug WMA, and Weathersfield WMA. All are important local wildlife habitats with no known threats to their occurrence. None are in conflict with access roads or harvesting trails, though ANR has limited control over road and trail placement on Weathersfield WMA. State lands riparian management guidelines should protect these areas sufficiently.

Important Habitats

Hard Mast Stands – The seeds of oaks, hickory, and American beech are important wildlife food sources for game and non-game species. Significant hard mast stands are found on Mt. Ascutney SP, Little Ascutney WMA, Skitchewaug WMA, and Weathersfield WMA. The condition of these trees and stands is generally excellent except for American beech which continues to succumb to beech bark disease throughout the region. Management of hard mast trees has been a focus at Little Ascutney WMA with approximately 75 acres of crop tree release of oak and hickory completed in the last five years. Most mast stands on Mt. Ascutney SP are on steep, unmanageable hillsides as are a number of more mature mast stands on Little Ascutney WMA. A long-term threat to mast production is the heavy deer browsing that tends to occur on oak and hickory seedlings and prevents recruitment of new mast trees for the future. Deer browsing of oak and hickory seedlings on most of the AMU ranges from heavy to severe.

Soft Mast Trees and Shrubs – Apples, fruit trees and shrubs, raspberries, and blackberries are important summer and fall food sources for many birds, insects, and mammals. Wild apple orchards are found on Mt. Ascutney SP and Little Ascutney WMA and have seen significant improvement through thinning. Serviceberry are somewhat common on portions of Little Ascutney WMA and many have been released from competition in the last several years.

Meadows are maintained for habitat on Mt. Ascutney SP and Little Ascutney WMA. Fields that are mowed annually at Little Ascutney WMA provide the most abundant grasses. As budgets shrink and mowing becomes less frequent, more woody vegetation encroaches as does the risk of invasive exotic shrubs becoming established. Mowing is typically done late summer to protect field-nesting birds. Meadows at both parcels are also providing excellent reptile habitat. Stone pile or woodpile type cover could enhance this habitat.

Less frequent mowing of fields has resulted in recruitment of dewberry – an important food source for field sparrows in several areas, notably Little Ascutney WMA.

Cliff/Talus – Cliff and talus sites are found at Mt. Ascutney SP, Little Ascutney WMA, and Skitchewaug WMA. They are important habitat features for common and uncommon animals and plants including bobcat, garter snake, milk snake, and porcupine.

Several historical or expected occurrences of rare, threatened, and endangered animals are reported for the AMU including peregrine falcon at Little Ascutney WMA and near Skitchewaug WMA, timber rattlesnake near Skitchewaug WMA, and long-tailed shrew and rock vole on talus slopes.

Talus and cliff sites are generally remote and unreachable for management purposes and so little conflict with forest management is expected. Recreational uses such as rock climbing could have negative impacts though currently there are no official climbing sites on the AMU. Ice climbing and occasional rock climbing are known to occur at Mt. Ascutney SP. A recommendation to clear brush and trees of rock and ledge to improve snake habitat has been made, but budget and practicality make it unlikely this will occur.

Rivershore – Rivershore habitat is found at Wilgus SP on the Connecticut River. The dwarf wedge mussel, on the federal endangered species list, occurs off the southern end of Wilgus. In 2000 as part of a canoe access stabilization project, several dwarf wedge mussels were found on the north end of the park and relocated. The rivershore is also potential habitat for the Puritan tiger beetle listed as state threatened. This shoreline provides habitat for shore-feeding birds and furbearers such as river otter and mink.

The land above the shore is steep and eroded severely limiting human access and use, but has limited impact to the rivershore's use by wildlife.

Habitat Diversity

The current variety of wildlife species found on AMU is reflective of the diverse and productive habitat found on most of the parcels (Table 6). In general, mast stands or individual trees of oak and hickory are abundant as are deer wintering areas and mature stands. Less well represented, though equally important, are young forest stands, meadows, and shrubby openings.

Little Ascutney WMA

High quality habitat for game species is abundant at Little Ascutney WMA. Managed meadows, apple orchards, oak stands, and a large deer wintering area provide habitat for many species. Early successional stands and openings comprise 69 acres or 8% of the total parcel. Older stands comprise 789 acres or 92% of the total. Portions of the WMA are inaccessible and inoperable and will provide an older age class habitat feature into the future. A large wetland complex at the center of the parcel is a productive habitat feature for a wide variety of game and non-game species.

Mt. Ascutney State Park

The dominant habitat features of Mt. Ascutney SP are deer wintering areas, oak (and some hickory) mast stands, and a large block of uncommon natural communities. Less than 1% is early successional forest or openings, leading to intense browsing pressure of forest understories, particularly within or near deer wintering areas. Steep slopes and heavy recreational use in the areas considered operable for forestry will make it difficult, if not impossible, to improve this condition.

Skitchewaug WMA

Key features of Skitchewaug WMA are several uncommon natural communities, numerous pockets of young red oak and bitternut hickory trees, other uncommon oak species, a 10-acre cliff and talus slope, several wetlands, and a large deer wintering area.

The main constraint to active management here are the numerous exotic shrubs on edges and surrounding lands and the lack of legal, usable access. However, within the heavily fragmented landscape it sits, it serves an important function of providing core habitat for a number of species, in particular white-tailed deer.

Skitchewaug WMA (Spencer Brook Block)

This block is primarily a wetland surrounded by road on three sides with a bank of oak and pine on the north side. Surrounded by roads and homes, there is little opportunity for active management.

Weathersfield WMA

Key habitat features on this small parcel are mast trees and a three-acre wetland that at one time supported a modest population of black ash (now dead). FWD does not control timber rights on the parcel so management by ANR is not possible.

Wilgus State Park

Wilgus SP features the only rivershore habitat on the AMU. It is a key habitat feature here and is frequently used by furbearers such as otter and mink. Oaks scattered throughout the parcel produce mast crops. An isolated vernal pool along the west boundary is an important amphibian habitat.

AMU

Within the AMU, as a whole, the breakdown of habitat age classes and their respective acreages and proportions of AMU lands are as follows:

- Permanent openings
 - fields, landings, power corridor: 33 <1%
 - open wetlands: 7 <1%
- Shrubland
 - Wetland edges and cattail marsh: ~15 <1%
 - Shrub swamp: ~12 <1%
 - Wooded wetland: ~10 <1%
- Early successional forest*
 - 1-40 years: 79 1.8%
- Mid and Late Successional forest land
 - 41+ years: 4,337 97%

**Includes apple orchards*

These figures yield several important conclusions:

1. Permanent openings and wetlands, important habitat for many species, comprise a very small portion of the AMU. Maintaining openings, protecting wetlands, and co-existing with beavers will continue to be important habitat objectives.
2. The availability of early successional forest land is below ideal levels to support early successional wildlife species. In addition, approximately half of the early successional habitat on AMU is at a point in its development when it will no longer serve in that capacity.

b. Breeding Birds and Game Birds:

Bird species presence and status on the AMU are summarized from three sources: Vermont Breeding Bird Atlas (VBBA), Vermont Forest Bird Monitoring Program (VFBMP), and a site-specific inventory of Skitchewaugh WMA conducted in 2006. A more detailed assessment and a report of the Skitchewaugh WMA are available.

Eleven species of “Greatest Conservation Need” (SGCN) are probable or confirmed breeders within the AMU: American woodcock, black-billed cuckoo, black-throated blue warbler, Canada warbler, chestnut-sided warbler, field sparrow, olive-sided flycatcher, peregrine falcon, ruffed grouse, veery, and wood thrush.

An important game species, the eastern wild turkey, is a common and important species for hunters on Mt. Ascutney SP and Little Ascutney WMA. Ruffed grouse are relatively abundant on Little Ascutney WMA offering some of the best grouse hunting in the region. Woodcock can be found seasonally along wetland and stream edges and in dense regenerating stands. Due to the limited wetlands on the AMU, duck and goose hunting opportunities are limited. However, ducks can be found in the larger wetlands on Little Ascutney and Weathersfield WMAs.

Bird habitat needs are as diverse as bird populations, but several important general recommendations and concerns apply to many species including:

- Forest fragmentation increases brood parasitism and predation by edge species, such as blue jays and raccoons, has a negative impact on interior songbirds such as veery, wood thrush, and black-throated blue warbler.
- Enhancing shrub-sapling understories and vertical diversity is beneficial to a number of songbird species.
- Maintenance and creation of early successional habitat such as meadows and young forests benefit certain songbirds and three important game species: American woodcock, ruffed grouse, and eastern wild turkey.
- Riparian areas and water features, such as wetlands and seeps, are important habitat to many species of birds.

Figure 21: Little Ascutey WMA Wildlife Habitat Map

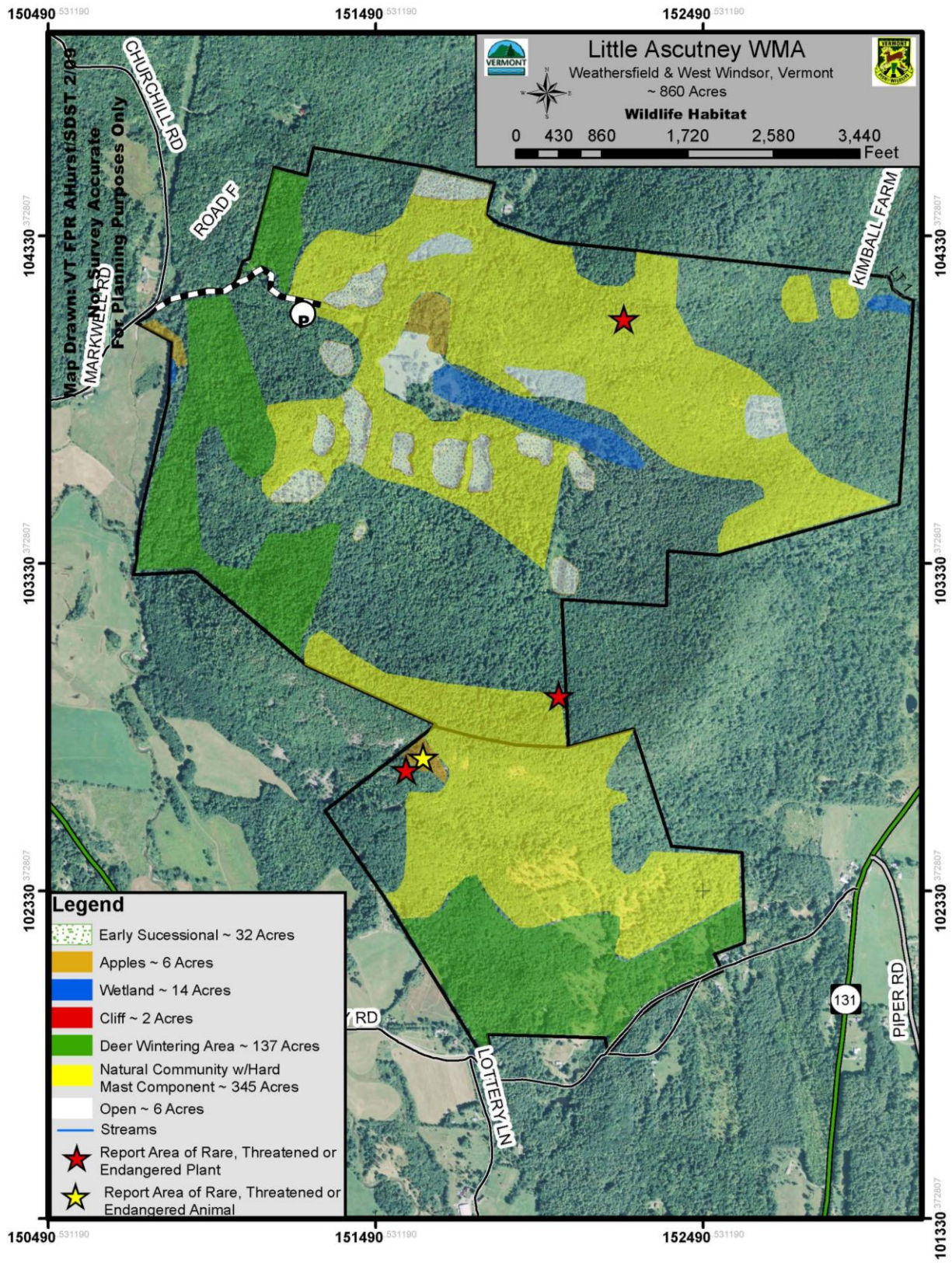


Figure 22: Mt. Ascutney State Park Wildlife Habitat Map

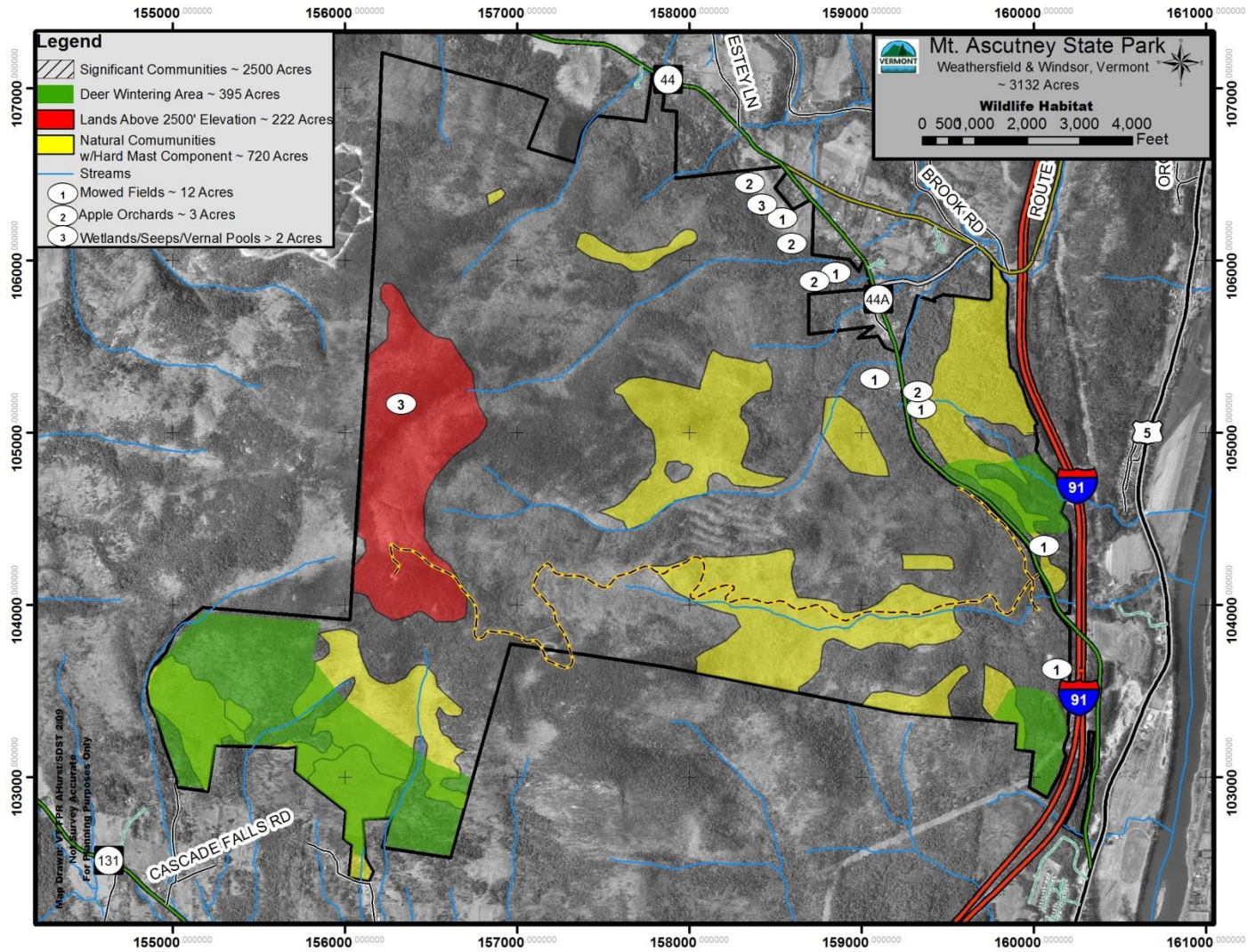


Figure 23: Skitchewaug WMA Mountain Block Wildlife Habitat Map

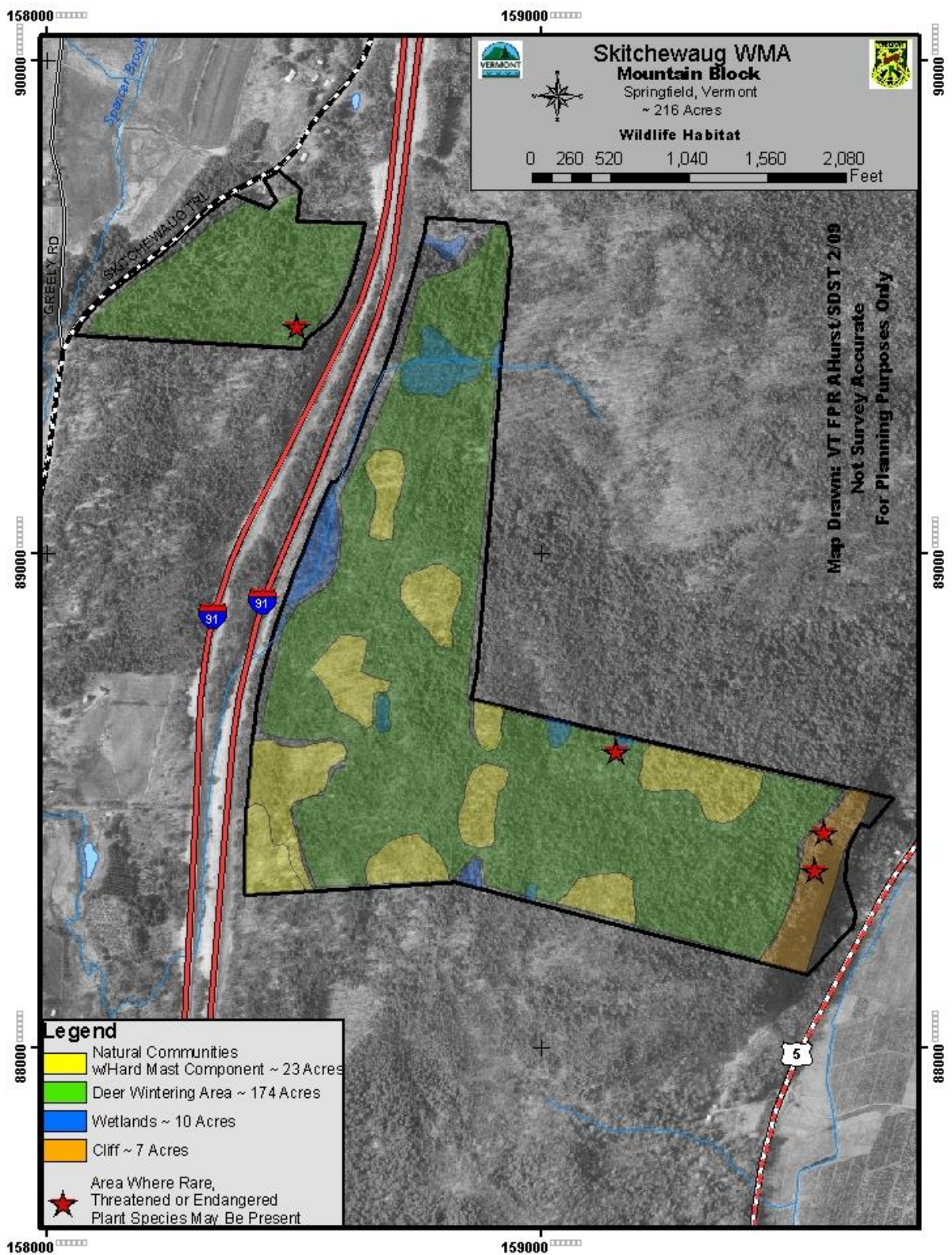


Figure 24: Skitchewaug WMA Spencer Brook Block Wildlife Habitat Map

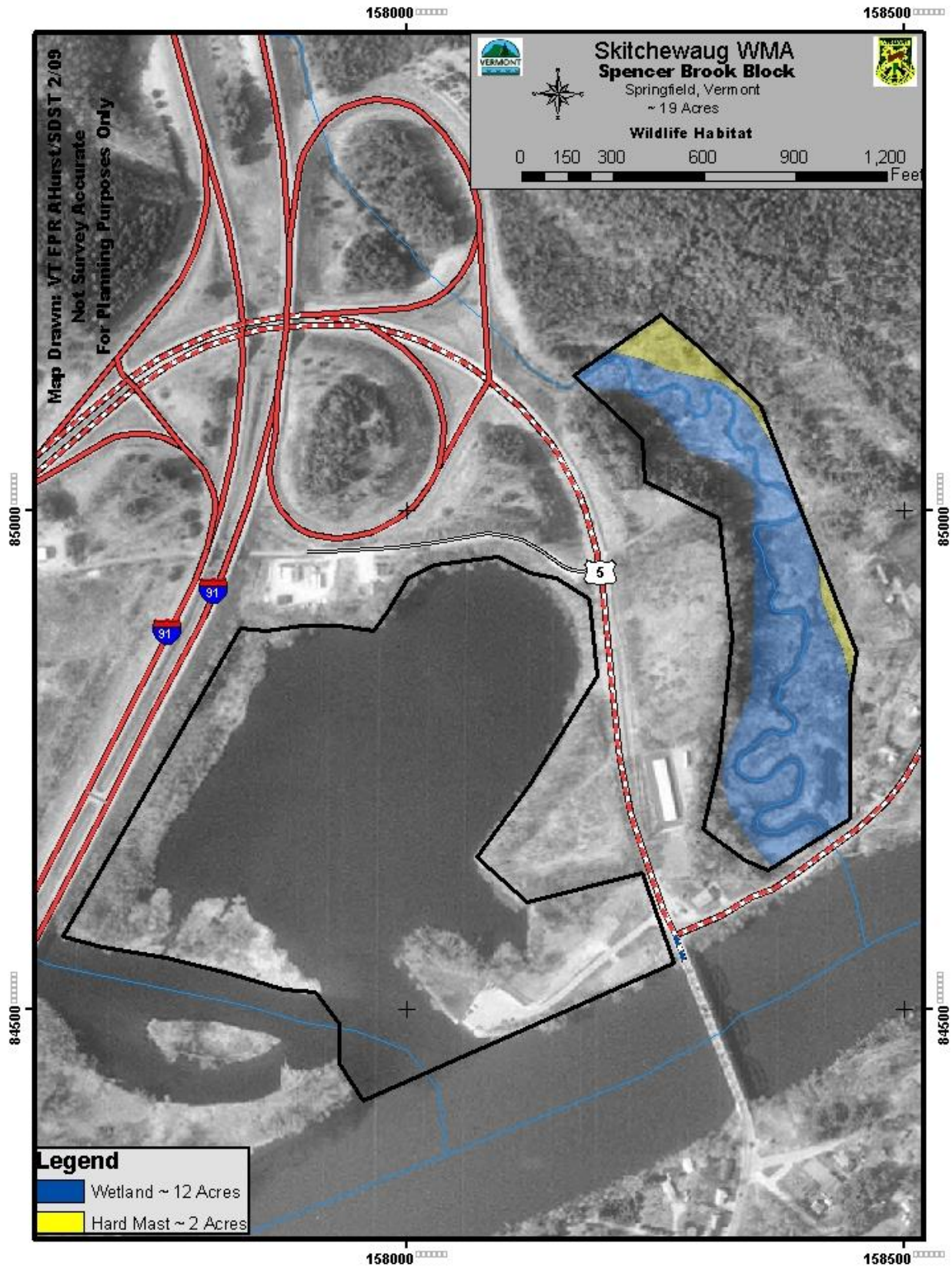


Figure 25: Weathersfield WMA Wildlife Habitat Map

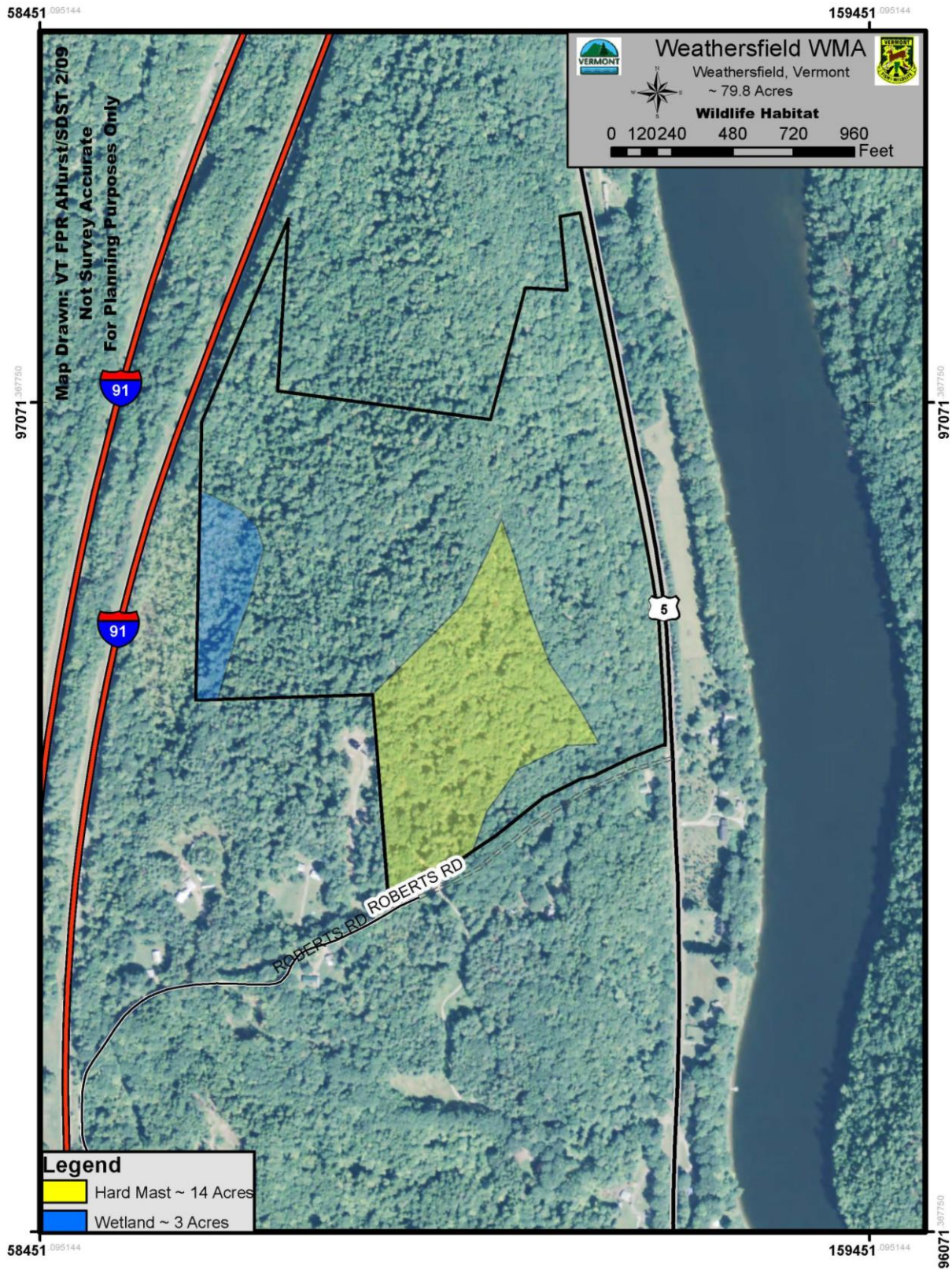
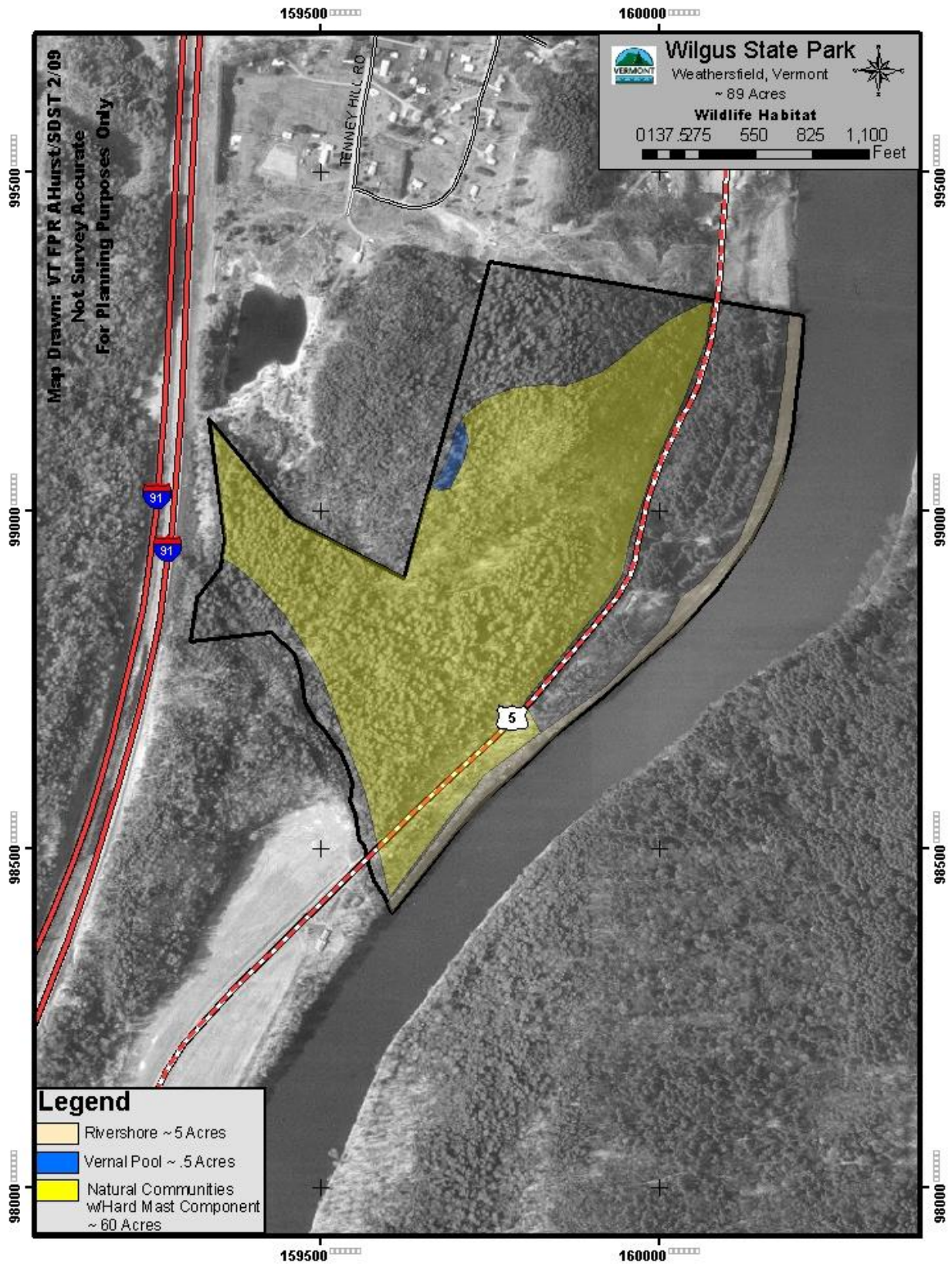


Figure 26: Wilgus State Park Wildlife Habitat Map



E. Timber Resource Assessment Summary

Little Ascutney WMA

While terrain and access at Little Ascutney WMA are difficult, soils are highly productive and tree health is excellent. Results of habitat and tree management have been excellent. There are a diversity of forest types that feature oak and hickory species that complement habitat objectives.

Maintenance and improvement of access, control of invasive plants, and continued tree and stand management through timber harvest and non-commercial thinning are priorities for management.

Mt. Ascutney State Park

Management potential at Mt. Ascutney SP is limited by excessively steep and rocky terrain, poor access, and conflicts with recreational use. In select areas, productivity and manageability is high. While manageable land is estimated at 1,000 acres, it is likely the practical area will be closer to 500 acres. Results of management in the past have been excellent on lower slopes and poor on upper slopes. Most impressive is the growth of white pine sawtimber and seedling/sapling white pine on the McClary Lot between Route 44A and I-91. As recreational demands increase, manageable areas could shrink further.

Management focus will be on the most productive areas with attention to controlling invasive plants, promoting white pine growth on the McClary Lot, and releasing existing stands of young hardwood from overstory shading to allow growth beyond the height of heavy deer browsing.

Skitchewaugh WMA

Access to Skitchewaugh WMA is the limiting factor. The legal right-of-way from Route 5 is unusable for log trucks and location does not allow for reconfiguration. Access to the upper block is on a request basis through abutting lands and a wet portion of Skitchewaugh WMA. Invasive plants are abundant along the western border. The terrain ranges from moderate to severe. The highest quality trees are pole-sized hardwood while softwood tend to be overmature and exhibiting signs of decay.

Management focus at Skitchewaugh WMA will be deer wintering area improvement, growth of oak and hickory for food, release of softwood regeneration; retention and protection of rare, threatened, and endangered species and unique natural communities; and control of invasive plants.

Weathersfield WMA

Timber rights and management responsibility of Weathersfield WMA are privately retained.

Wilgus State Park

Due to terrain and legal constraints that interfere with temporary access over adjoining parcels, there is virtually no timber management access onto forestland of Wilgus SP. Management is scheduled however, should this be resolved.

F. Water Resource Assessment

1. **Watershed Description:** Four of the five management units addressed by this plan drain to tributaries of or directly to the Connecticut River (CTR). These are Mt. Ascutney and Wilgus State Parks (SP), and Weathersfield and Skitchewaug Wildlife Management Areas (WMAs). Little Ascutney WMA drains to the North Branch of the Black River. All are included in state planning Basin 10-13.

There are only two water quality monitoring sites in these drainages, one is on Mill Brook (Windsor) below Mt. Ascutney SP at river mile (RM) 3.1. Here the macroinvertebrate community is rated as *Excellent*. The other is on the North Branch Black River below Little Ascutney WMA at RM 4.9 where macroinvertebrates are *Excellent-Very Good*. Both of these ratings mean that at these sites the stream is considered to fully support aquatic life.

No other relevant monitoring data is available.

2. **Significant Feature(s):** Aquatic habitats in the AMU include numerous first order streams, three second order, and one third order which drains to Mill Brook (Windsor), the largest Connecticut direct tributary. The North Branch Black is a fourth order river.
3. **Wetland Description and Function:** Of the five sub-units, Skitchewaug WMA has mapped wetlands in or contiguous to it, all are Class 2. Here there are nine wetlands with the largest being 4.6 acres. Weathersfield WMA contains part of a 6.2 acre wetland.
4. **Class A Waters:** Mt. Ascutney SP has both Class A(1) and A(2) waters. A(1) are all waters above 2500' in elevation which covers the peak of the mountain. A(2) waters are Public Water Supplies. Though only a small part of the A(2) is on state land, the park's southeastern portion feeds the watershed of the Village of Ascutney town water supply.

Also within and below park land are the Source Protection Areas for the wells of the Mount Ascutney Mobile Home Park in Windsor and the Summit Water Company and Albert Bridge School in Brownsville. The wells for the park facilities and campground are also within the park here and also at Wilgus SP.

5. **Relationship to Basin Plan and Basin Plan Recommendations:** All waters within the AMU are classified as Class B which are managed to achieve and maintain a level of quality that fully supports aquatic biota and habitat, swimming, fishing, boating, irrigation of crops, and public water supply with treatment.

Wilgus SP sits on the bank of the Connecticut River which is impaired for flow alterations caused by the operation of the hydroelectric dam at Bellows Falls. While the park does not contribute to this impairment, it is effected by the constant water level fluctuations which destabilize the soils and can increase bank erosion.

A stream geomorphic assessment (SGA) of Mill Brook (Windsor, VT13-08) is currently underway. This assessment will identify locations of protection and remediation projects to implement that will improve water quality or move the brook toward an equilibrium condition. The locations where this is most relevant is where Mt. Ascutney SP land meets the

mapped river corridor at Brownsville Road just west of I-91 and below the resort development.

Little Ascutney WMA also meets the river corridor along a short reach of the North Branch Black south of Ascutney Basin Road.

Pertinent issues for all *management units*:

- Maintain riparian zones along all waters.
- Maintain and enhance wetland habitats.
- On all lands directly adjacent to waterways:
 - Allow waterways to meander and re-establish a natural channel where not a threat to existing infrastructure.
 - Maintain a densely vegetated riparian management zone (RMZ) on steep slopes above streams. This is the area where there is the greatest likelihood of erosion in high flow events.
 - Do not encroach on the floodplain with new infrastructure or earth-moving.

Pertinent issues for all *individual units*:

- Little Ascutney WMA:
 - East boundary along neighboring open field along North Branch Black and tributary: maintain 100' RMZ. Allow river to meander into parcel as it naturally occurs.
 - Allow vegetation to re-establish naturally on state land along Ascutney Basin Road at 43.43677, -72.52016 (site of 2014 flood damage).
- Wilgus SP:
 - Maintain RMZ along CTR.
 - Manage invasive shrubs and perennials in riparian zone.
 - Continue to limit access over bank.

Assessment of Need:

- Invasive species monitoring and control.
- Additional wetlands assessments as needed.

G. Fisheries Resource Assessment Summary

Aquatic habitats located on all subunits of AMU with exception of Wilgus SP are limited to first and second order streams, small wetlands, and beaver flowages. Wilgus SP has approximately 3,630' of frontage on the Connecticut River. None of the WMAs or State Parks has any lentic or standing water habitats (lakes, ponds, swamps, bogs) of any significant size or supportive of any noteworthy fish populations.

Little Ascutney WMA

Two streams, both unnamed, are of large enough size to appear on most maps of this WMA. The more significant of these is the one that flows along the south side of the WMA's principal access road off Ascutney Basin Road. With a total length of about 1.1 miles, this stream originates at an inactive beaver pond. The stream discharges into the North Branch of the Black River.

In August 2006 two sites on the stream were sampled by electrofishing to characterize resident fish communities and estimate trout population abundance. The stream was found to support four fish species: blacknose dace *Rhinichthys atratulus*, creek chub *Semotilus atromaculatus*, brook trout *Salvelinus fontinalis*, and slimy sculpin *Cottus cognatus*.

More informal observations of the beaver use areas failed to reveal the presence of any fish life. It is surmised from these findings that fish populations are confined to the stream below the falls above the lower parking lot (an impassable barrier to the upstream movement of fish), and that the stream has some limited value as spawning and nursery habitat for adult brook trout originating in the North Branch.

Weathersfield WMA and Skitchewaug WMA Mountain Block

These have no surface waters supporting fish populations. The Spencer Hollow Block of Skitchewaug WMA has not been evaluated for fish populations. Hoyt's Landing Access Area, a setback of the Connecticut River and managed by the Vermont Fish & Wildlife Department, is a very popular destination for anglers.

Mt. Ascutney State Park

Mount Ascutney is drained by numerous small, high elevation streams. Several of the larger streams originating on the state park have average elevation drops in the range of 146-192' per 1,000' stream channel length which equates to average streambed gradients of 15-19%. Additionally high elevation, small drainage area size streams tend to be ephemeral, i.e. seasonally cease to flow above ground in most years. As a consequence, resident fish populations are more apt to occur in low elevation stream reaches which, in the case of Mt. Ascutney SP, are mostly located outside the park boundary.

No fish population data exists for streams in Mt. Ascutney SP.

Wilgus State Park

The southern boundary of the park is a small, ephemeral stream that flows directly into the Connecticut River. No fish population data is available; however, it is unlikely that it serves as fish habitat. In terms of sheer size and fish species diversity, the Connecticut River is the most significant aquatic habitat associated with AMU. The river is the eastern boundary of the park with 3,630' of river bank frontage. The Connecticut River supports primarily a warmwater/coolwater fish community, including such recreationally important species as smallmouth bass², largemouth bass, northern pike, and walleye. The river is seasonal habitat for several coldwater fishes, namely rainbow trout, anadromous Atlantic salmon, and brown trout. Other fishes that may be expected to occupy suitable habitats in proximity of the park are anadromous sea lamprey, American eel, chain pickerel, a half dozen or so species of cyprinids (minnows, carp, etc.), white sucker, brown bullhead, several sunfishes, yellow perch, and tessellated darter.

During the summer of 2007, Biodiversity LLC conducted a survey of freshwater mussels in the Connecticut River in the vicinity of Wilgus SP. The survey of a 24,000 square foot area in the river was done under a contract with the Parks Department to identify the presence of mussels prior to reconstruction of the park's canoe launch. Five mussel species were observed (in order of decreasing abundance): eastern elliptio, eastern lampmussel, dwarf wedgemussel, creeper, and triangle floater (M. Ferguson, Vermont Fish & Wildlife Department, personal communication). The dwarf wedge mussel is an endangered species listed by both U.S. Fish & Wildlife Service and State of Vermont. The upper Connecticut River between Vermont and New Hampshire is believed to be one of the highest, most dense dwarf wedge mussel populations remaining throughout its North American range.

² See 2012 Ascutney Management Unit LRMP Natural Resource Assessment and Analysis for Latin nomenclature.

H. Historic Resource Assessment Summary

A detailed historical assessment of the Ascutney Management Unit (AMU) was prepared by staff from the Archaeology Research Center from the University of Maine at Farmington in 2008. Summary tables from this report listing the historic resources within or in close proximity to each of the five properties assessed can be found in Table 7.

Archaeological Precontact Site Sensitivity Assessments were conducted between 2003 and 2008 on portions of Mt. Ascutney SP and Little Ascutney and Skitchewaung WMAs by the Consulting Archaeology Program (CAP) of the University of Vermont. CAP has also conducted site inspections at three locations within Mt. Ascutney SP.

Other archaeological surveys conducted within the AMU include a site inspection of a proposed management activity within Little Ascutney WMA conducted in 1997 by the Archaeology Consulting Team, Inc. and a study of archaeological sensitivity within Vermont State Parks conducted in 1984-1986 for the Vermont Division for Historic Preservation and FPR by Shelly Height.

Native American and Pre-historic Sensitivity Analysis

The five parcels comprising the AMU are primarily oriented along the Connecticut River, one of Vermont's principal north-south Native American travel corridors. Important east-west travel corridors such as the Black River also intersect the Connecticut River route within the management unit area. Early historic accounts in Vermont often describe the veneration for natural landforms by Native Americans making it possible that mountain peaks and other geological features within the AMU were of ideological importance to Native Americans.

The only recorded Native American site that has been identified within the AMU is site VT-WN-39, located in Wilgus SP. This site was first reported by a local collector and is known primarily from two "fish spears" found by a former caretaker near the ranger's cabin. Very little is known about the site, and no professional archaeology has been conducted in the park. The effect of river bank erosion on potential cultural remains in Wilgus SP is a serious concern cited in UMaine's report.

UVM CAP sensitivity studies were conducted for Mt. Ascutney SP and Little Ascutney and Skitchewaung WMA. One area of archaeological sensitivity was identified within Mt. Ascutney SP. This sensitive area is located in the McClary Lot bounded by Route 44A on the west and I-91 on the east and contains a series of flat, elevated landforms and stream terraces likely dating to the retreat of the glaciers in the last ice age. Two sensitive areas were identified within Little Ascutney WMA. One area borders the North Branch of the Black River, and the other is located in the middle of the bowl between Pearson Peak and Little Ascutney Mountain along terraces on the north and south sides of a tributary of the Black River. Specific actions to protect these areas and historical resources in general during management or recreational development are determined during the annual project planning phase for each fiscal year.

Skitchewaugh WMA

Early maps indicate that the upper slopes of the mountain within the WMA were not inhabited by settler-farmers. It is believed that the western side of the WMA was cleared of trees in the 1830s for sheep grazing. Cattle were pastured on this portion of the mountain from the early 1900s to the early 1940s.

Wilgus State Park

Colonel William Wilgus purchased the land, where the park is now located, as farmland in 1922. In 1933 he donated 100 acres to the State stipulating that the property be named and managed as Wilgus SP. CCC crews from Mt. Ascutney SP constructed the park between 1933 and 1935. Park structures and features built by the CCC that contribute to the historical significance of the park include the stone house, 7 stone water fountains, 12 stone fireplaces, and the hiking trail to the Pinnacle. Wilgus SP was included in the National Register of Historic Places in 2002 due to its CCC heritage.

The construction of I-91 through Wilgus SP during the 1960s resulted in the separation of a 10-acre portion of the park. This 10 acre-landlocked parcel was declared surplus property and sold in 1987.

Little Ascutney WMA

Two historic farm sites are located in Little Ascutney WMA within the bowl between Pearson Peak and Little Ascutney Mountain. It is believed that the farms were abandoned in the late 1800s or early 1900s, although some of the fields associated with the farms were maintained by local farmers until the 1970s. The sites contain cellar holes, stone foundations, and stone walls. A portion of the former road providing access to the farms is still visible as a dugway road with stone walls along both sides.

Weathersfield WMA

Historic maps locate two former farms close to the WMA boundaries during the mid 1800s. The Shelden farm was located at the southwestern corner of the WMA and the Tolles farm was located at the eastern end of Roberts Road near its junction with Route 5. In both cases, the actual farm building sites are located outside of the WMA boundaries. Stone walls from the Shelden farm are found along the WMA boundary and within the WMA.

Mt. Ascutney State Park

Historic Euro American resources which may be expected within or in close proximity of Mt. Ascutney SP include those related to logging and lumbering, quarrying, and agriculture.

No historic homestead sites appear to be contained within Mt. Ascutney SP. However, resources such as stone walls, fence lines, orchards, sugar maple stands, sap houses/sugar arches, sheep pasture, farm dumps, and other features of nineteenth century farms can be expected to be identified within the park.

Logging

According to the UMaine report, logging and lumbering on Ascutney Mountain did not happen on a large scale until spruce had become the wood of choice for building purposes following the depletion of white pine in the mid 1800s. The remains of several old logging camps and a steam donkey are located within the park. A 1985 Division of Historic Preservation report by Shelly Height suggests that the stream donkey was used by a cable logging crew in the 1930s and that the CCC salvaged spruce on the mountain following the 1938 hurricane.

According to the 1992 edition of the Ascutney Trails Association guide book, the Chase and Carpenter Co. operated a logging camp at Halfway Spring. The 1981 ATA Guidebook contains a picture of the C&C logger's cabin taken in 1927. Access to this camp was provided by a road that was grubbed out in 1858 and roughly follows the course of the present day Windsor Trail. A map of Mt. Ascutney SP prepared by Perry Merrill in 1937 shows the location of an "old sawmill" and a network of old logging roads high on the mountain. The locations of the sawmill and C&C logging camp have not been confirmed on the ground.

Quarrying

There are four known granite or syenite quarries on the mountain. The Tyler quarry is located outside the park boundaries on the southeastern side of the mountain. This quarry possibly represents the earliest known Euro American quarry on the mountain as it began producing grist mill stones in 1770 and continued in the nineteenth century providing stone and blocks for road and building construction. The Mower quarry is also located outside the park boundaries in the West Windsor Town Forest. This quarry opened in 1906 and was abandoned by 1923.

Two quarries are located within the park. The Enright quarry is located on the southern end of the Miller property that was acquired by the State in 2000. This site contains old haul roads, waste granite piles, and granite blocks, and ledges with drill marks on them.

A major portion of the Norcross quarry is also located on state land. This quarry is found along the Brownsville Trail straddling the West Windsor/Windsor town line. The Windsor Green Granite Company of Worcester, MA operated this quarry on an occasional basis beginning near the turn of the century and abandoned it by 1923. In 1909 the quarry measured about 200' x 40' with a ledge and working face of 80-90' above the quarry bottom. Three derricks, a hoisting machine, and steam drill were used in the operation. A boarding house was built at the quarry and a blacksmith shop with barn and stable were located lower down the mountain. The site currently contains huge piles of waste granite, the remains of derrick booms or spar poles, rusty steel cables, and assorted hardware.

The 1.1 mile access road to the Norcross quarry is also considered an important secondary feature of the quarry operation. This road was built to the quarry over extremely steep ledgy terrain using horse and ox power, black powder explosives, and pick axes and shovels. A 1901 map also shows an old quarry site at the ledges where Mountain Brook crosses the quarry road, suggesting that quarrying activity was probably more extensive than represented on existing maps.

Civilian Conservation Corps

A CCC camp was established within Mt. Ascutney SP in 1933. This camp was located south of the campground entrance in the area now used as campsites 19-39. Construction projects completed by the CCC within Ascutney include the mountain road, the park campground complex with features such as the stone ranger's house, stone fireplaces, tent platforms, stone water fountains, stone toilet buildings and stone picnic shelter, a 30-meter ski jump, the summit hiking trails, and the fire tower. CCC crews from the Ascutney camp also constructed the campground at Wilgus SP. This CCC camp was closed and moved to Okemo State Forest in 1938. The administrative building, now unused, is the only original CCC building from this camp still standing; the others were dismantled after the camp closed. A stone chimney standing above campsite #20 is all that remains of the officer's quarters.

Mt. Ascutney SP was included in the National Register of Historic Places in 2002 due to its CCC heritage.

Hiking Trails

According to the 1992 edition of the Ascutney Trails Association guidebook, Mt. Ascutney was the first American mountain to have a "proper" hiking trail. The ATA claims that a trail was laid out in 1825 to the summit in preparation for a visit by General Lafayette, who was on a tour of the states. Unfortunately, Lafayette's visit in Vermont was shortened and his trip to Ascutney Mountain was canceled.

In 1858 volunteers built a carriage road/trail largely along the route of the present day Windsor Trail under the direction of D.C. Linsley. They also constructed a stone hut, known as the Tiptop House, on the summit near Brownsville Rock. The foundation stones for the stone hut can still be seen along the Windsor Trail near Brownsville Rock.

The Brownsville Trail was built in 1898 as an alternative route to the summit. In 1903, the Ascutney Mountain Association was formed to maintain the trails and stone hut.

Fire Tower

The summit of Mount Ascutney was at one time part of the Vermont fire lookout system. According to the ATA guidebook, a fire lookout ranger's cabin was constructed out of logs at the upper junction of the slot and slab trails in 1920. By 1945, the cabin was in disrepair and no longer usable; no trace of it exists today. CCC crews constructed a steel tower fire lookout tower in 1938-40. This tower was manned until 1952 when it was classified as an inactive secondary station for use only in emergency situations. In 1987 the tower was dismantled and the two lower sections used to construct an observation platform approximately 350' north of the tower's original location.

Table 7: Historic Resources Within or in Close Proximity to AMU

County, Town, State Park/WMA	Known or Expected	Historic Resources	Preservation Theme	Historic Context	Property Types	Comments	Significance/ Recommendations
Windsor Co., Windsor, Weathersfield – Mt. Ascutney State Park	K	Historic park/CCC	Culture and Government, Tourism	The New Deal-CCC, 1933-1938	Motor road, picnic shelter, campsites/stone fireplaces, water fountains, stone toilet buildings, recreation hall, CCC camp, ski jump, fire tower, dam, quarrying sites, potential temporary work camps and misc. structures.	CCC camp dismantled and moved - standing chimney, administration bldg and buried cement bldg slabs remain in present camping area sites, 19-39. Granite culverts are notable features of motor road. Fire tower replaces 1920 wood-constructed tower.	High Priority – CCC built structures and features are eligible for inclusion in the National Register’s, Historic Park Landscapes in National and State Parks multiple cover. Field documentation of the dam, quarrying sites, potential logging/work camps and other CCC-related resources not included in the NRHP document is recommended. Field inspection, documentation and assignment of state site numbers is recommended.
	K	Historic hiking trails, structures and features	Tourism	Outdoor Recreation	1825 summit house and trail; 1857 Dudley Trail (Windsor Trail) and stone hut; 1898 Brownsville Trail; 1906 Weathersfield Trail.	System of trails and structures are potentially resources associated with logging and lumbering on the mountain. Dudley Trail originated at the Mountain House (A. Dudley farm) on Vermont Route 44.	High Priority – 1825 trail popularly referred to as first ‘proper’ hiking trail on an American mountain and inspiration of the formation of the Green Mountain Club and the Long Trail. Survey of old trail alignments for associated features (markers, bridges, stone steps, etc.) and location and archaeological assessment of former building sites recommended.
	K	Logging camp(s) and associated structures and features	Industry and Commerce	Logging and Lumbering	Logging camps (structural remains), dumps, log slide(s), steam donkey, steam powered sawmill, tote and haul roads, potential cribbed landings and other constructions.	Cast iron stove parts, leather boots, bottle glass identify one logging camp site, others are likely identifiable. Summit house sites(s) and later structures associated with hiking trails may have related logging contexts.	High Priority – Field inspection, documentation and assignment of state site numbers is recommended should logging camp, sawmill, log slide or other significant logging resource be identified in the field.
	K	Quarries	Industry and Commerce	Norcross and Enright quarries	Quarry (containing remains of derrick booms, cable, waste piles, among other related resources),	Euro-American quarrying on Mount Ascutney dates to the 18 th century. Location of Enright quarry has not been field verified. Norcross quarry	High Priority – Field inspection, documentation and assignment of state site numbers is recommended for quarries identified in the field. All areas of

County, Town, State Park/WMA	Known or Expected	Historic Resources	Preservation Theme	Historic Context	Property Types	Comments	Significance/ Recommendations
Windsor Co., Windsor, Weathersfield – Mt. Ascutney State Park (cont.)					boarding house, access roads and related features.	abandoned in 1923. CCC quarried granite for park construction.	known or expected quarry activity should be ground-truthed and a detailed sketch map showing the location of quarry openings, machinery, dumps, roads, together with photographic documentation should be a long-term preservation goal.
	E	Historic Upland farm-related resources	Agriculture	Diversified and Specialty Agriculture (ca. 1800-1875)	Known and potential agricultural resources to include stone walls, fence lines, orchards, sugar maple groves, sugar houses/arches, farm roads, dumps, discarded machinery.	Selected areas along routes 44A, 44 in Windsor and the Cascade Falls and South Mountain roads in Weathersfield are potentially sensitive for these resources.	Moderate Priority – Field inspection of areas within the park adjacent to or possibly including portions of nineteenth century farms is recommended. A structure identified on the Beers map as “E.G.L.”, located on Route 44A and likely within park boundaries should receive further investigation.
Windsor Co., Weathersfield, West Windsor – Little Ascutney WMA	K	19 th century Upland farmsteads	Agriculture	Diversified and Specialty Agriculture (mid 19 th century)	Cell hole/foundation remains (2 farmsteads), well (2), stone walls, orchard, sugar house.	Vicinity of two farmsteads known as the “Great Bowl”. VT-WN-240 identifies the Streeter (Kendall) farm, VT-WN-241 identifies the Sherwin farm. Sugar house may be related to nearby Slayton farm.	High Priority – Background research, additional field investigation and extension of 20-ft buffer to reflect former farm building complex rather than just the cellar holes is recommended as a long term preservation goal and prior to proposed subsurface ground disturbance.
	K	Historic road	Transportation	Overland Transportation	Road segment, road bed, and other potential features.	Described in 20 th century deeds as, “the old abandoned highway”. Access road into the Great Bowl and Streeter and Sherwin farmsteads. Existing stone wall may be an associated feature.	Moderate Priority – Field inspection and documentation recommended.
	E	Logging Camp(s) and associated structures and features	Industry and Commerce	Logging and Lumbering	Logging camps (structural remains), dumps, tote and haul roads, potential cribbed landings and other constructions.	No resources have been identified on maps or in the documentary record reviewed for this study.	Moderate Priority – Field inspection, documentation and assignment of state site numbers is recommended should logging camp or other significant logging resource be identified in the field.

County, Town, State Park/WMA	Known or Expected	Historic Resources	Preservation Theme	Historic Context	Property Types	Comments	Significance/ Recommendations
Windsor Co., Weathersfield, West Windsor – Little Ascutney WMA (cont.)	E	Historic Upland farm related resources	Agriculture	Diversified and Specialty Agriculture (ca. 1800-1875)	Known and potential agricultural resources to include stone walls, fence lines, orchards, sugar maple groves, sugar houses/arches, farm roads, dumps, discarded machinery.	Selected areas along Little Ascutney and Ascutney Notch roads are potentially sensitive for these resources. Stone walls identified in both areas associated with nearby farms.	Moderate Priority – Field inspection of areas within the park adjacent to or possibly including portions of nineteenth century farms is recommended.
Windsor Co., Weathersfield – Wilgus State Park	K	Historic park/CCC	Culture and Government, Tourism	The New Deal- CCC, 1933-1938	Ranger's Quarters, 12 stone fireplaces.	Company No. 129 from Mt. Ascutney State Park constructed Wilgus State Park 1935-1936.	High Priority – CCC built structures and features are eligible for inclusion in the National Register's, Historic Park Landscapes in National and State Parks multiple cover. It has been suggested that the Hitchcock farmhouse may have been located on the site of the present Ranger's Quarters. An architectural assessment is recommended to determine whether components of the 19 th century farmstead were incorporated into the construction of the Ranger's Quarters.
	K	Historic road	Transportation	Overland Transportation	Segment of abandoned section of Vermont Route 5, together with potential abutments, culverts, markers and other related features.	U.S. Route 5 relinquished and returned to Town of Weathersfield in 1937 and since discontinued as Town Highway. Major portion of road eroded into Connecticut River.	Moderate Priority – Field inspection and documentation recommended.
	E	19 th century Connecticut Valley farmstead	Agriculture	Diversified and Specialty Agriculture (ca. 1800-1875)	Potential agricultural resources include a subsurface remains of nineteenth century farmhouse, outbuildings, well, and secondary farm features such as stone walls, fence lines, orchard, sugar maple, groves,	1869 Beers map indicates the "I. Hitchcock" farm within or in the immediate vicinity of the park.	High Priority – Background research and additional field investigation, including subsurface testing recommended as a long term preservation goal and prior to proposed subsurface ground disturbance.

County, Town, State Park/WMA	Known or Expected	Historic Resources	Preservation Theme	Historic Context	Property Types	Comments	Significance/ Recommendations
Windsor Co., Weathersfield – Wilgus State Park (cont.)					sugar houses/ arches, farm roads, dumps, discarded machinery.		
	E	Historic Upland farm related resources	Agriculture	Diversified and Specialty Agriculture (ca. 1800-1875)	Potential agricultural resources include stone walls, fence lines, orchards, sugar maple groves, sugar house /arches, farm roads, dumps, discarded machinery.	In western portions of the park, historic maps indicate the “R. Haskall” farm in the near vicinity of park boundaries.	Moderate Priority – Field inspection and documentation recommended.
	E	Historic road	Transportation	Overland Transportation	Segments of abandoned sections of two intersecting roads potentially extant in western portion of park, in the vicinity of the former H. Haskall farm, together with potential abutments, culverts, markers and other related features.	Map comparison shows that both roads were discontinued by 1869. Construction of I-91 may have eliminated evidence of these features.	Moderate Priority – Field inspection and documentation recommendation.
	E	Logging Camp(s) and associated structures and features	Industry and Commerce	Logging and Lumbering	Logging camps (structural remains), dumps, tote and haul roads, potential cribbed landings and other constructions.	No resources have been identified on maps or in the documentary record reviewed for this study.	Moderate Priority – Field inspection, documentation and assignment of state site numbers is recommended should logging camp or other significant logging resource be identified in the field.
Windsor Co., Weathersfield – Weathersfield WMA	E	Historic Upland farm related resources	Agriculture	Diversified and Specialty Agriculture (ca. 1800-1875)	Known and potential agricultural resources include stone walls, fence lines, orchards, sugar maple groves, sugar houses/arches, farm roads, dumps, discarded machinery.	Historic maps indicate the “Sheldon” farm near the southwest corner of the WMA and the “F. Tolles” farm near the southeast corner of the WMA. Stone walls and fence line are present w/in the WMA in the vicinity of the Sheldon farm and along northern and western boundaries of the WMA.	Moderate Priority – Field inspection and documentation of stone walls bordering and within the WMA is recommended.

County, Town, State Park/WMA	Known or Expected	Historic Resources	Preservation Theme	Historic Context	Property Types	Comments	Significance/ Recommendations
Windsor Co., Weathersfield – Weathersfield WMA (cont.)	K	Historic road	Transportation	Overland Transportation	Road segment, road bed, other potential features.	Roberts Road, on which the Sheldon and Tolles farm sites are located, a through road to Vermont Route 5 until, ca. 1953.	High Priority – Field inspection and documentation recommended. Junction of discontinued section of Roberts Road and Vermont Route 5 indicates the potential for unrecorded historic resources within or in close proximity to the WMA.
	E	Logging Camp(s) and associated structures and features	Industry and Commerce	Logging and Lumbering	Logging camps (structural remains), dumps, tote and haul roads, potential cribbed landings and other constructions.	No resources have been identified on maps or in the documentary record reviewed for this study.	Moderate Priority – Field inspection, documentation and assignment of state site numbers is recommended should logging camp or other significant logging resource be identified in the field.
Windsor Co., Springfield, Skitchewaog WMA	E	18 th century farmstead	Agriculture	Diversified subsistence farm	Cellar hole/foundation remains, well, outbuildings, stone walls/fence line, orchard, sugar house/arch.	Daniel Gill built log cabin, ca. 1770, on hillside behind Gill Homestead, located on intervale below WMA.	High Priority – Field inspection, documentation and assignment of state site number is recommended should evidence of Gill’s log cabin site be identified.
	E	Quarry	Industry and Commerce	Gill granite quarry	Quarry, waste piles, openings, access roads and related features.	Daniel Gill, ca. 1771, began to quarry on his land for mill site on Black River. Project abandoned.	High Priority – Location unknown. Field inspection and documentation recommendation.
	E	Caves	Culture and Government	Unidentified caves	Hearths, dumps and secondary constructions associated with cave habitation.	Historical record alludes to caves on Skitchewaog Mountain utilized by Tories and counterfeiters, ca. 1788-1812.	High Priority – Field inspection and documentation recommended.
	E	Iron ore deposit	Industry and Commerce	Iron ore mining	Opening(s), waste pile(s)	1869 Beers map indicates the presence of a potential iron ore deposit in or near northern portions of the WMA, although there is little reason to suspect the deposit was commercially developed.	Moderate Priority – Field inspection and documentation recommended.

County, Town, State Park/WMA	Known or Expected	Historic Resources	Preservation Theme	Historic Context	Property Types	Comments	Significance/ Recommendations
Windsor Co., Springfield, Skitchewaug WMA (cont.)	E	Historic Upland farm related resources	Agriculture	Diversified and Specialty Agriculture (ca. 1800-1875), or earlier.	Potential agricultural resources include stone walls, fence lines, orchards, sugar maple groves, sugar houses/ arches, farm roads, dumps, discarded machinery.	Western portions of the WMA overlook Spencer Hollow and road leading to junctions with the Crown Point and Eureka roads, the earliest settled area of Springfield.	Moderate Priority – Field inspection and documentation recommended.
	E	Logging Camp(s) and associated structures and features	Industry and Commerce	Logging and Lumbering	Logging camps (structural remains), dumps, tote and haul roads, potential cribbed landings and other constructions.	No resources have been identified on maps or in the documentary record reviewed for this study.	Moderate Priority – Field inspection and documentation recommended.

I. Recreation Resource Assessment Summary

Two different categories of recreational opportunities are experienced by the public within the AMU.

The campground areas located within Mt. Ascutney and Wilgus State Parks are characterized by high recreational use and substantial modifications to the property including buildings, parking lots, and roads. The campgrounds are supervised by park attendants and are heavily used by people during the park season. Busy roads are located adjacent to the two campgrounds with the sound of vehicle traffic constantly in the background. The paved mountain road, the three main hiking trails within Mt. Ascutney SP, and the summit area of Mount Ascutney also experience high recreational use especially during the summer and fall. Sights and sounds of people are expected and readily evident in all of these areas; and the chance of contact with other recreational users is high.

A recreational experience in a less developed environment with fewer people is found at Little Ascutney, Skitchewaung, and Weathersfield WMAs and in the areas outside of the developed campgrounds at Mt. Ascutney and Wilgus SPs. These areas are characterized by a natural-appearing setting with woods roads and trails. Contact with other users is generally low, but evidence of other users is high. Most of these areas are located less than one half mile from maintained town roads.

Little Ascutney WMA

Little Ascutney WMA receives a great deal of hunting use. Much of the hunting activity centers around the fall deer, turkey, and grouse seasons. Spring turkey season is popular in years when the access road has thawed and dried enabling the gate to be opened early.

The North Branch of the Black River is located along a section of the southwestern portion of Little Ascutney WMA and provides opportunities for native brook trout fishing.

Snowmobiling is a popular winter activity within Little Ascutney WMA. VAST corridor trail #5 follows the old town road through Ascutney Notch. Little Ascutney WMA has approximately 380' of frontage on this trail that is heavily used and groomed regularly. A secondary snowmobile trail cuts through the western side of Little Ascutney WMA following a network of skid roads.

Proposals for creating mountain bike trails on Little Ascutney WMA were submitted in 2011. Initial approval was given for the shortest section though a final agreement remains to be completed before any physical work is done.

Mt. Ascutney State Park

Mt. Ascutney SP contains 3,132 acres with the main access through the campground entrance off Route 44A. Other access points include three trailhead parking lots dispersed around the base of the mountain and several vehicle pull-offs along Route 44A.

Mt. Ascutney SP contains some of southeastern Vermont's most popular and heaviest used hiking trails. Four major trails totaling approximately 12 miles in length start at the base of the mountain and climb to the summit. All four trails are located primarily on State-owned land with portions of trail located on other lands through easement or Act 250 permit conditions. The three trails located outside of the campground area have their own trailhead parking lots maintained by FPR. A network of summit trails provides access to the mountaintop for visitors who drive or ride up the paved mountain road. A 25' tall observation tower located near the summit provides hikers with views of Vermont and New Hampshire.

Hang gliding and paragliding occur on two authorized sites within Mt. Ascutney SP; Brownsville Rock and South Peak.

Currently there are no official VAST snowmobile trails located within Mt. Ascutney SP although trails have been active here in the past. In 2010 a proposal was received from the local snowmobile club, called the Windsor Sno-Travelers, to reopen a former VAST snowmobile trail within the park. A portion of the proposal was approved with conditions; however, the trail was not reopened due to access problems on adjoining lands.

Phase 1 of the VMBA-STAB mountain bike trail consisting of a 3.5 mile loop was completed in 2014. Additional planning work for Phase 2 of this trail is scheduled for 2015. Phase 2 is also approximately 3.5 miles in length and would connect Phase 1 to STAB's network of trails on the former Ascutney Ski Area and West Windsor Town Forest.

In 2010 the Town of Weathersfield, Vermont acquired 310 acres on the southern slope of Mt. Ascutney adjoining Mt. Ascutney State Park. The Town of Weathersfield plans to develop trails on this new town forest and has contacted the State to discuss options for parking and access through the park. The State plans to work with the Town to coordinate and promote recreational opportunities on these adjoining properties.

Ice climbing occurs at several locations within the park including Cascade Falls and Little Cascade Falls along the Weathersfield Trail and an unnamed falls along the lower section of the Brownsville Trail. Snowshoeing is a popular activity on the hiking trails during the winter with the most activity occurring on the Weathersfield Trail. All three of the main trailhead parking lots are plowed during the winter.

Hunting is a popular activity on portions of the park. Most of the activity centers around the fall deer seasons and the spring and fall turkey seasons.

The 3.8 mile long Mountain Road usually hosts several recreational events every year, with the Mountain Road being closed to the general public during those events. Organized bike climbs and foot races have also been held on the road.

Skitchewaug WMA

There is no developed access to the Mountain Block of this WMA making public recreational access very difficult.

Hunting activity occurs on the Mountain Block primarily from hunters accessing the WMA from adjoining private lands.

Approximately 0.5 miles of secondary snowmobile trail crosses through the center of the Mountain Block of Skitchewaug WMA.

The Spencer Brook Block of Skitchewaug WMA contains 19 acres of wetlands and uplands bordered by I-91 and Route 5 with accessed from Route 5. Trapping is likely one of the few activities that occur on this property. Although not managed by FPR, Hoyt's Landing is a developed Fish and Wildlife Department access area that provides boat access to the Connecticut River.

Weathersfield WMA

This WMA is accessed on the western side by Roberts Road, a class 3 town gravel road that turns to an impassable section of discontinued road just beyond where it abuts the WMA; there is no access off of Route 5 due to steep slopes.

Hunting is the only recreation believed to occur on the WMA.

Wilgus State Park

Two short hiking trails are located within the park. The Pinnacle Trail is an approximately 1.0 mile long loop trail that climbs to the top of the ridge located west of Route 5 at a 628' elevation offering views of the Connecticut River and New Hampshire. The Wilgus Nature Trail provides a 0.5 mile walk on level terrain with tree identification and informational signs posted along the path and a viewing platform that provides hikers with views of the Connecticut River and its wildlife.

The land above the shore is steep and eroded limiting public access and use. A car-top boat access is located on the north end and a partial stairway and observation platform at the south end. Long-term plans for Wilgus SP include better river access for campers. While the stairway project is on hold for the near future, if completed, foot traffic along the river could increase.

Canoeing, kayaking, and fishing are very popular activities within the park, and a canoe/kayak launch site provides visitors with great access to the Connecticut River.

Recreation Use and Infrastructure Summary:

Little Ascutney WMA:

- Steep gravel access road and upper parking lot open Mid May to December, lower parking lot 'open' year round but not plowed.
- Class IV road access east side. This access is virtually unusable due to its poor condition.
- Primary activity is hunting and snowmobiling on a 380' section of VAST corridor trail #5 on the east side and a secondary trail on the west side.
- Other known uses include snowshoeing, walking, birding, and horseback riding.
- The District Stewardship Team approved a proposal for a short section of mountain bike trail, with conditions to be constructed as a connector and maintained by Sports Trails of the Ascutney Basin (STAB). A final agreement has not been completed.

Mt. Ascutney State Park:

- Developed campground.
- Access points are campground entrance, three trailhead parking lots, and several vehicle pull-offs along Route 44A.
- Mountain top access via the paved mountain road, upper parking lot, and a network of summit trails.
- Four major hiking trails totaling 12 miles in length featuring scenic waterfalls, historic sites, and periodic views.
- Known recreational uses include: mountain biking, hiking, hunting, snowshoeing, and ice climbing.
- Hang gliding and para gliding occur on two sites at Mt. Ascutney SP (Brownsville Rock, and South Peak), and one site on the West Windsor Town Forest (West Peak). All are accessed by trails on Mt. Ascutney SP.
- Proposals for re-opening a VAST trail and creating a mountain bike trail were approved in 2012. The VAST trail is on hold pending AOT approval for a section and construction of the mountain bike trail, Phase 1, was completed in 2014.
- The Ascutney Trails Association (ATA) is an active partner with FPR on Mount Ascutney trail issues.
- 3.5 mile swoops and loops mountain bike trail east of Route 44A in service, 3.5 mile phase 2 under construction.

Skitchewaugh WMA:

- No reasonable access for the public, virtually landlocked.
- Hunting activity occurs as spillover for adjoining private lands.
- A short section of secondary snowmobile trail crosses the mountain block.

Weathersfield WMA:

- Access by gravel town road.
- Limited use due to small size (80 acres) and location.

Wilgus State Park:

- Developed campground.
- Access via State Route 5 and a trail off Tenney Hill Road on town-owned land.
- Two hiking trails; the Pinnacle Trail is a 1 mile loop with a ridge top view of the Connecticut River and New Hampshire; the Wilgus Nature Trail is a .5 mile interpretive trail.
- A launch site provides canoe, kayak, and fishing access.

AMU:

- Probable future recreational issues and proposals:
 - Interest in mountain biking and horseback riding in the Weathersfield Town Forest-Mt. Ascutney SP-West Windsor Town Forest area continues to grow. Balancing increased recreation with existing uses, resource limitations, and wildlife habitat will be a concern.
 - Increased demand for snowmobile trails.
 - Conflicts between timber and habitat management with recreational demands will likely increase, particularly on the McClary Lot of Mt. Ascutney SP and Little Ascutney WMA.
 - Conflicts between recreation users are likely to occur, particularly on Mt. Ascutney SP, where limited terrain that can be easily traversed is limited and shared by wildlife, hunters, and other users.
 - Demand for official recreational trail development within rare or uncommon natural communities is likely to occur given the large areas of unique natural communities on Mt. Ascutney SP, Little Ascutney WMA, and Skitchewaog WMA.
 - The Town of West Windsor worked with The Trust for Public Land (TPL) to acquire 469 acres of the former Ascutney Mountain Resort as an addition to West Windsor Town Forest to secure an ecological diverse landscape, a significant trail network and the prominent backdrop of their town. By permanently protecting this property – a regional destination for mountain biking, hiking, and backcountry skiing – the expanded West Windsor Town Forest is expected to connect local citizens to the natural landscape by expanding recreational opportunities, conserving significant wildlife habitat and strengthening the local economy. Conservation of this land and recreational development contributes significantly to the recreational opportunities in the region of the AMU. It will also offer opportunities to continue cooperative work to meet common conservation and recreation goals on the parcels of the AMU, the West Windsor Town Forest, and the Weathersfield Town Forest.

Figure 27: Little Ascutey WMA Recreational Opportunities Map

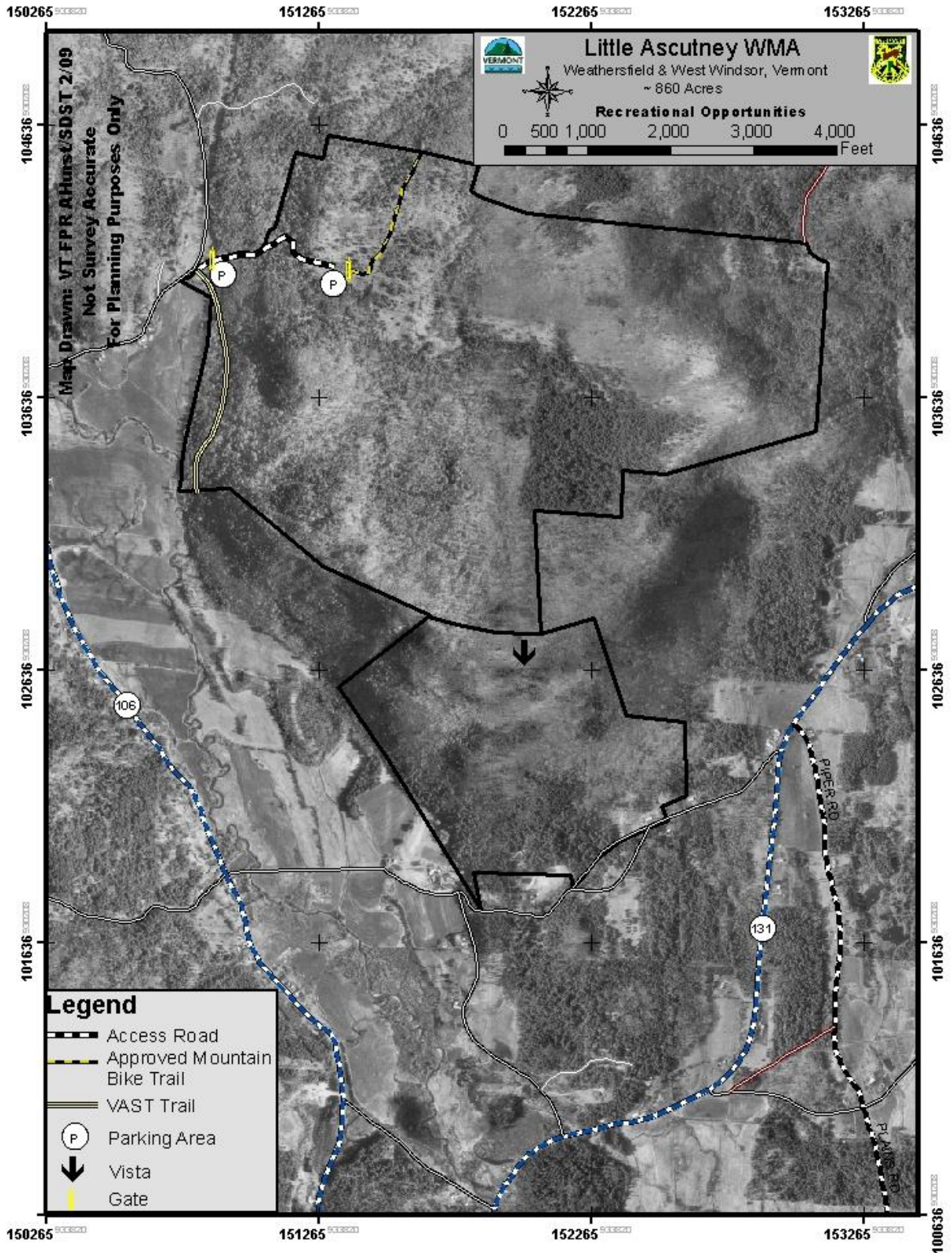


Figure 28: Mt. Ascutney State Park Recreational Opportunities Map

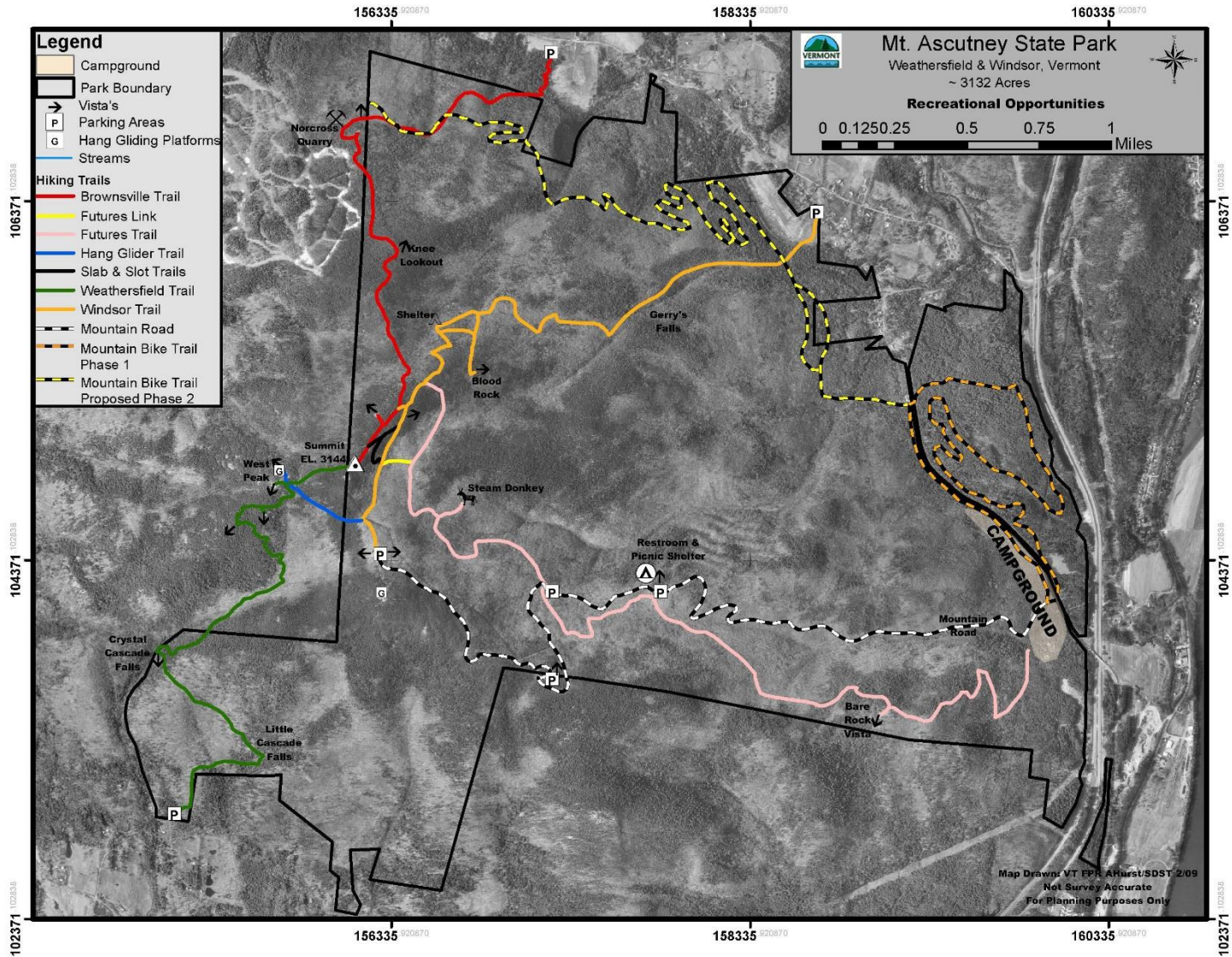
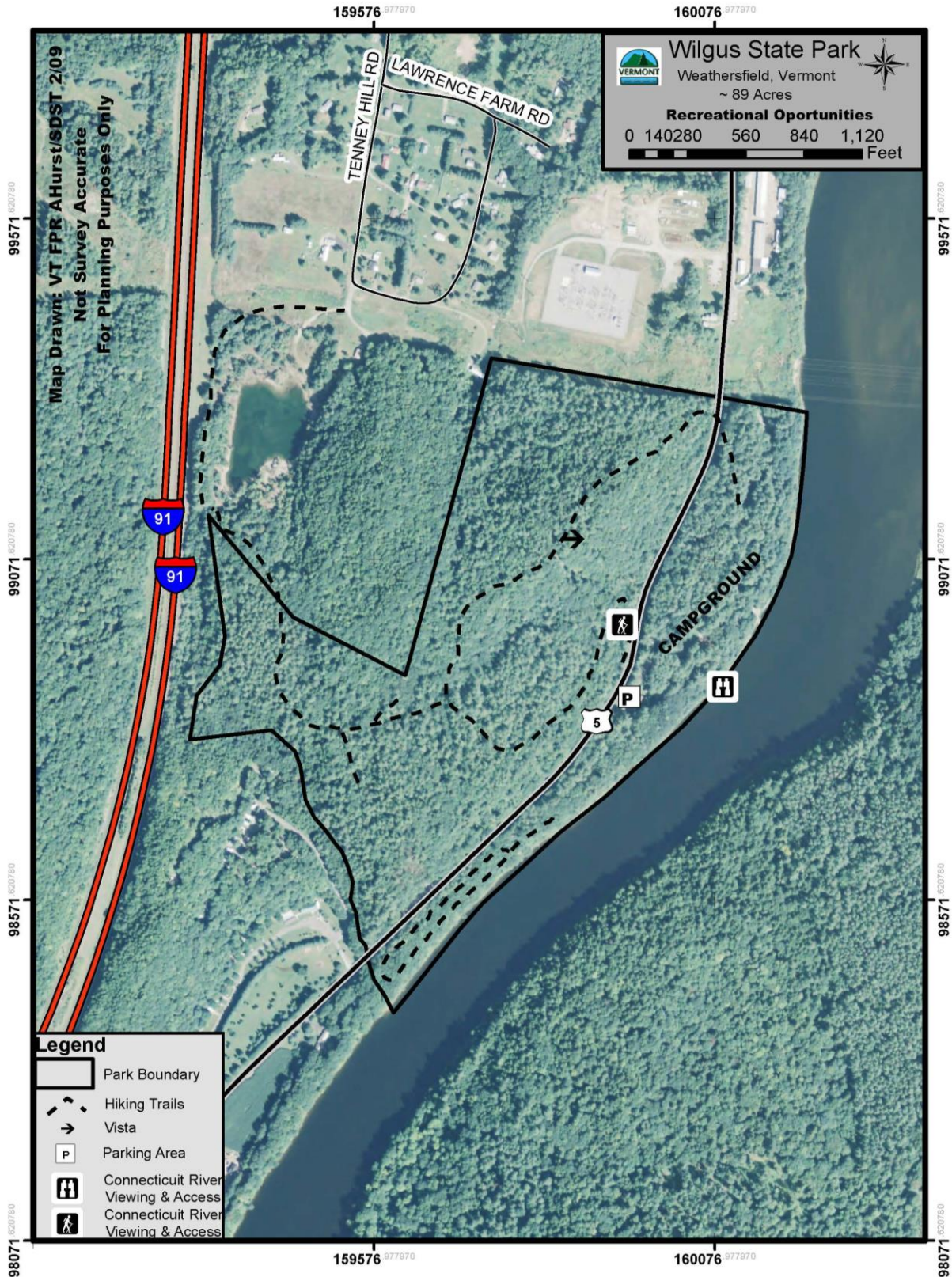


Figure 29: Wilgus State Park Recreational Opportunities Map



J. Infrastructure and Public Access Assessment

1. Description:

The parcels of AMU are used and managed to meet a broad range of objectives. Infrastructure features include open access roads, gated interior roads, parking lots, signs, kiosks and park buildings, utilities and facilities within the developed portions of the two state parks.

2. Existing Conditions:

Infrastructure Summary

Access, Management & Public State Forest Highways and Roads

Road	Class	Condition	Length	Uses	Needs
LITTLE ASCUTNEY WMA					
Access Road	B*	Excellent	.5 mile	Forest management and public access	Steep grade – requires annual material, crown and compaction
MT. ASCUTNEY STATE PARK					
McClary Lot Interior Roads	C**	Good	1.5 miles	Forest management, foot travel	Periodic maintenance of drainage
Cascade Falls Interior Road	C	Good	.25 mile	Forest management, foot travel	Periodic maintenance of drainage
Mt. Ascutney Parkway Mountain Road	B	Fair- Poor	3.7 miles	Seasonal access to high elevation parking, picnic area and cabins. Licensee access to communications sites. Not used for forest management.	Significant culvert replacement, pavement grinding and repaving, ditch maintenance
South Loop Campground Road	B	Fair	0.4 mile	Seasonal access to campsites	Annual material placement on gravel portion; additional culverts needed; paved portion in good shape; large culvert needs assessment for condition and capacity
North Loop Campground Road	B	Fair	0.5 mile	Seasonal access to campsites	Material needed, culverts need replacing, ditch maintenance needed
WILGUS STATE PARK					
Campground road	B	Excellent	0.4 mile	Seasonal access to campsites	Material addition every ten years

*Class B Road: A paved or unpaved state forest highway that is generally open for public vehicle use but may be closed at certain times of the year to restrict such access.

**Class C Road: An unpaved state forest highway not generally open for public vehicle use.

Gates

Location	Condition	Status	Needs
LITTLE ASCUTNEY WMA			
Lower Gate	Good	Open except spring	Periodic painting
Upper Gate	Good	Remains closed, management access point	Periodic painting
MT. ASCUTNEY STATE PARK			
44A, West Side	Fair	Closed, open for management only	Periodic painting
44A, Whipple Lot	Poor	Closed, open for management only	Needs replacement
44A, McClary Lot	Good	Closed, open for management only	Periodic painting
44A, McClary Lot North	Good	Closed, open for management only	Periodic painting
44A, Southeast Meadow	Good	Closed, open for management only	Periodic painting
Weathersfield Trail	Poor	Closed, open for management only	Needs replacement
Windsor Trail	Good	Closed, open for management only	Periodic painting
Park main gate	Fair	Open during operating season	Stonework needs repair
Parkway yellow gate	Poor	Open during the day in operating season; open in off season for communication site access when snow is on ground	Needs replacement

Kiosks

Location	Condition	Status	Needs
LITTLE ASCUTNEY WMA			
Upper Parking Lot	Fair	New panels being developed	Repainting and new panel
MT. ASCUTNEY STATE PARK			
Summit Parking Area	Fair	New sign panel being designed and fabricated	Repainting
Weathersfield Trail	Fair	New sign panel being designed and fabricated	Resetting and repainting
Windsor Trail	Poor	New kiosk being constructed and sign panel being designed and fabricated	Needs replacement
Brownsville Trail	Good	New sign panel being designed and fabricated	None
WILGUS STATE PARK			
Entrance Area	Good	Maintained by park staff	None

Signs

Location	Condition	Status	Needs
LITTLE ASCUTNEY WMA			
Lower Parking Lot	Fair	Repainted 2014	None
MT. ASCUTNEY STATE PARK			
Main Entrance Sign	Fair	Repainted two years ago	Will need replacing in next 5-7 years
Weathersfield Trail	Fair		Will need repainting within 5 years
Windsor Trail	Fair		Will need repainting within 5 years
Brownsville Trail	Fair		Will need repainting within 5 years
SKITCHEWAUG WMA			
n/a	n/a	No signs	Possibility for one sign on Route 143
WEATHERSFIELD WMA			
n/a	n/a	No signs	Possibility for sign on Robert's Road and/or Route 5
WILGUS STATE PARK			
Main Entrance	Good	In place seasonally	None
Rt. 5 Shield Signs	Poor	Being replaced/repainted	Posts need to be moved back from highway

Culverts and Bridges

Every roadway has culverts beneath them. Most access and interior roads have culverts that carry only ditch runoff away from the road surface. One 5-foot diameter culvert on the Mt. Ascutney South Campground Loop Road passes a perennial stream. This culvert has been filled to capacity and blocked with debris several times in flash storm events in the past ten years. It needs to be assessed for proper capacity and replacement with a structure better suited to its needs. Most ditch culverts under the campground loop roads at Mt. Ascutney and Wilgus and the Mt. Ascutney Parkway are original to either the 1930s or 1960s. Most are galvanized metal pipes that have rusted out and partially failed. Five culverts on the Parkway were replaced with corrugated HDPE pipes following Tropical Storm Irene. There is one 30 foot bridge on the Parkway that passes a seasonal flowage, primarily during the spring and summer flash weather events. This bridge has stacked dry stone abutments, a concrete deck, and wooden guardrails. It is in fair to poor condition as the abutments have suffered erosion in recent storm events. The guardrails do not provide sufficient safety containment.

Parking Lots

Public parking lots with access roads are maintained on three trailheads at Mt. Ascutney SP and in two locations at Little Ascutney WMA. All receive annual maintenance including grading and mowing. All are in good to excellent condition. Four parking areas are plowed in winter – one by FPR, two by the Ascutney Trails Association, and one by AOT. No winter parking is available on the other WMA parcels. Other parking areas exist within the gated fee areas at Mt. Ascutney SP and Wilgus SP. There are two paved lots and one gravel lot along the Mt. Ascutney Parkway, all in fair condition, and one gravel lot at Wilgus in excellent condition.

3. Pertinent Issues:

Public winter access for recreation is becoming increasingly popular, and it is anticipated more will be needed on other parcels in the AMU. If provided, capital and maintenance needs will increase due to the need to construct or reconstruct facilities for year-round use and the cost of plowing and sanding will increase. Annual maintenance will increase to account for year round use and springtime surface damage.

Vandalism and resource damage by users has been minimal mostly limited to graffiti to kiosks and gates and illegal dumping along access roads and parking areas.

4. Assessment of Need:

Visitor access is lacking at Skitchewaug WMA and limited at Weathersfield WMA. Because Skitchewaug WMA's highest value is conservation of rare, threatened, and endangered species and natural communities, and the existing right-of-way is so steep and narrow, construction of public access is of limited feasibility. At Weathersfield WMA, room for unofficial parking exists and is used by local residents. Because the parcel is small and limited in use, additional access is not a priority.

The most popular infrastructure feature on the AMU, the Mount Ascutney Parkway, is in need of a significant amount of maintenance and reconstruction work to keep it viable and safe as a public resource for the coming decades. Most culverts are in need of replacement, and over two miles of ditch needs to be cleaned, lined, and redefined. The bridge needs to be assessed by a structural engineer and planned for repair or replacement. The entire road surface needs grinding, some base work, and repaving with a base coat and top coat of hot rolled asphalt. The price tag for this work could easily exceed \$500,000.

Forest management access is limited to non-existent at Mt. Ascutney SP, Skitchewaug WMA, and Wilgus SP. Due to steep ground and narrow road frontage in key areas, improving forest management access at Mt. Ascutney SP and Skitchewaug WMA may be infeasible. Determination will be made in anticipation of specific vegetative management projects. Skitchewaug WMA access is so poor that commercial tree harvest may be limited to only a small portion of the parcel. The eastern section of the Little Ascutney WMA is accessed by 4-wheel drive off the Class IV section of Kimball Farm Road. It is not suitable for public or forest management access. Improvement of this road, in cooperation with the Town of West Windsor and Vermont Mountain Bike Association (VMBA), may be a possibility.

K. Scenic Resource Assessment

1. **Description:** High quality scenery, especially scenery with natural-appearing landscapes, enhances people’s lives and benefits society³. Scenic resources on the AMU range from the regionally-significant view of Mount Ascutney to the small mowed meadows of Little Ascutney WMA. While the large landscape view is an obvious feature, the appearance of management at a smaller scale can also give visitors an impression of the quality of planning and implementation that was practiced.
2. **Existing Conditions:** Regionally-significant scenic resources occur on Mt. Ascutney SP and Little Ascutney WMA and are visible from Wilgus SP (Table 8).

Table 8: Ascutney Management Unit Scenic Resources

Mt. Ascutney State Park

Feature	Location	Vantage Point	Description	Visual Significance*
Mt. Ascutney	Mt. Ascutney State Park	Throughout the surrounding landscape and I-91, Mount Ascutney is the dominant natural feature.	High mountain peak surrounded by low elevation foothills. Forested summit with two visible communication sites.	Regional
Mountain Road Corridor	East face of Mount Ascutney	Entire length of Mountain Road.	Mid-successional Northern Hardwood Forest.	Parcel scale, regionally significant use.
Pine Hillside	McClary Lot	I-91 Mill Brook Bridge	A stand of larger, older white pine are highly visible and attractive from a portion of I-91.	Local scale visible for all travelers on I-91.
Cascade Falls	South slopes of Mount Ascutney, Weathersfield Trail	Hiking trail	An 84’ sheer cliff waterfall.	Parcel
Norcross Quarry and Hiking Trail	North slope of Mount Ascutney, Brownsville Trail	Hiking trail	Quarry, slag pile, Quarry Road, and scattered steel and wood remnants.	Parcel

<i>*Regional</i>	A significant scenic resource known and appreciated at a broad geographic scale (often geologic land form), typically unique, prominent and visible by a large number of people.
<i>Local</i>	A scenic resource visible from off site that may be geologic but can also be subjectively attractive rural and/or forest vistas.
<i>Parcel</i>	A scenic resource visible from only within or just adjacent to the parcel such as maintained meadows, historic sites, and unique geological features.

³ USFS Handbook #701, Landscape Aesthetics – A Handbook for Scenery Management.

Little Ascutney WMA

Feature	Location	Vantage Point	Description	Visual Significance*
Hillsides	West slopes	Route 106, two town roads	Steep rocky side hills highly visible from the Route 106 valley.	Regional, Local
Mountain Saddle and Multiple Hillsides	Parcel center	Meadows	Three significant mountain peaks in a 360-degree vista from mowed fields.	Parcel
Vista	Ridge top south of Pierson's Peak and Little Ascutney Mountain	Unmowed but open ridge top	Views of surrounding landscape from two partly-open unofficial vistas.	Parcel

Skitchewaug WMA, Weathersfield WMA and Wilgus State Park

Feature	Location	Vantage Point	Description	Visual Significance*
Wetlands, Forest	Along I-91 and Route 5	I-91	Wetlands and forestland visible briefly along I-91.	Local
Connecticut River	Adjacent to Wilgus State Park	Wilgus State Park campground	Forested lands on the banks of the Connecticut River in Vermont and New Hampshire.	Regional

<i>*Regional</i>	A significant scenic resource known and appreciated at a broad geographic scale (often geologic land form), typically unique, prominent and visible by a large number of people.
<i>Local</i>	A scenic resource visible from off site that may be geologic but can also be subjectively attractive rural and/or forest vistas.
<i>Parcel</i>	A scenic resource visible from only within or just adjacent to the parcel such as maintained meadows, historic sites, and unique geological features.

The most significant scenic resources in the AMU are the view of Mount Ascutney seen from points near and far and all directions and the numerous views of the three hilltops that are a major feature of Little Ascutney WMA and seen from numerous points in the immediate region. The view of New Hampshire forestlands and the Connecticut River from Wilgus SP campground and the top of the Pinnacle Trail are not unique to the area but an important feature of the park.

Within the parcels, scenic resources include mowed meadows with forested back drops, small waterfalls and cascades in several locations, and old farmstead stone wall complexes. Normal conservative management practices around water features and historic sites will maintain the forested context they occur in. Routine mowing for habitat objectives maintains meadows on Mt. Ascutney SP and Little Ascutney WMA in an aesthetically-pleasing condition.

3. Pertinent Issues: Communication sites on Mount Ascutney can be seen for many miles and to some, mar the view of the mountain. They are, however, critical to communications in the region. The regulatory control of the sites is conducted by the Vermont Public Service Board, imposing some limitations on FPR's management of the sites. If technology results in off-site alternatives, removal of the structures should be a priority. Because these heavily-industrial sites are in the midst of a popular recreation area that features undisturbed high elevation forests, monitoring of the sites for compliance to license conditions is critical.

Timber harvesting on highly visible hill sides and peaks will be conducted to minimize negative aesthetic impact. Much of the highly visible slopes on Mount Ascutney and Little Ascutney WMA are inoperable with no harvesting planned.

Two unique foreground forest views, the forest along the toll road and the McClary Lot Pines visible from I-91, will be managed to maintain a relatively intact canopy over time.

Softwood (conifer) removal within and along I-91 corridor is critical to limiting icing and freezing on the road surface. Removal of softwood on adjoining state lands may occur on a cooperative basis with VTrans any time during this planning period.

At a parcel level, scenic locations that are highly visible are best suited to all-aged management approaches that limit the size of canopy gaps in harvest layout.

Forest management in visually-sensitive areas can be refined in a number of ways at the time of on-the-ground layout to lessen visual impacts. Adjustments to standard practice can include:

- Retention of additional stems or tree groups
- 'Feathering' harvest into topography
- Lengthening rotation age or cutting cycle
- Modifying the size or shape of the project
- Spreading work out over time
- Conducting additional post-practice treatment

4. Assessment of Need:

- Develop guidelines for post-harvest aesthetics in important aesthetic areas.
- Additional funding to ensure meadows mowed annually and field edges periodically 'cut-back' to limit encroachment.

IV. MANAGEMENT STRATEGIES AND ACTIONS

Land Management Classification

Vermont ANR lands are managed using four categories of use or types of management to be emphasized on the land. In this section of the plan, the recommended levels of use or types of management will be shown for all the land area in this parcel. This section also describes generally how the land will be managed so that the activities occurring on the land are compatible with the category assigned. The four categories are: (1) *Highly Sensitive Management*; (2) *Special Management*; (3) *General Management*; and (4) *Intensive Management*.

As part of the planning process, the lands, resources, and facilities held by the ANR are evaluated and assigned to the appropriate land management category. Assignment of management categories for AMU is based on a thorough understanding of the resources identified and the application of over-arching lands management standards. The resources include natural communities, plants, and wildlife as well as recreation, historic, timber, and water resources.

- 1.0) Highly Sensitive Management** – Areas designated as Highly Sensitive Management are described as *“areas with uncommon or outstanding biological, ecological, geological, scenic, cultural, or historical significance...”* Acres managed under this category will have no timber management, salvage harvest, or active wildlife habitat management. However, trees and other vegetation may be cut to restore natural community species composition and structure in limited locations; manage specific habitat conditions for rare, threatened, and endangered species; and to maintain safe and enjoyable recreational conditions.
- 2.0) Special Management** – Areas designated as Special Management include areas *“...where protection and/or enhancement of those resources is an important consideration for management.”* Timber harvesting and wildlife habitat management as well as recreation are considered to be complementary uses within this classification to the extent that they do not impact special features.
- 3.0) General Management** – The General Management category includes areas where *“dominant uses include vegetation management for timber and wildlife habitat, concentrated trail networks, and dispersed recreation...”* A primary consideration for management is minimizing conflict between activities. Sensitive resources that occur within these areas may require special attention.
- 4.0) Intensive Management** – The Intensive Management category is characterized by a *“high level of human activity and high intensity development on/or adjacent to State land.”* Aesthetics and safety are the primary management considerations in these areas. However, more sensitive resources that occur within these areas may require special attention.

Management Goals and Objectives for: **Ascutney Management Unit**

Management goals for the Ascutney Management Unit include strategies to:

- Protect or enhance rare, threatened, and endangered species and their habitat.
- Maintain or enhance the quality of State Significant Natural Communities and wetlands.
- Enhance wildlife habitat through management of all seral stages; creation of early successional growth; improvement of deer wintering areas and mast production; and protection of unique habitats.
- Enhance opportunities for dispersed non-motorized activities for wildlife-based recreation in general, focusing on hunting, trapping, and wildlife viewing on WMAs.
- Maintain and improve public and management access.
- Provide safe, well-managed outdoor recreation opportunities across all parcels in keeping with division-specific goals and funding sources.
- Protect the historic significance of key sites.
- Provide sustainable, periodic timber harvesting in appropriate areas to promote forest productivity and improve the quality of timber grown and harvested.

Land Management Classification on Ascutney Management Unit

1.0 HIGHLY SENSITIVE MANAGEMENT — 1,733 acres

Highly Sensitive Management areas represent approximately 1,733 acres or 36% of the AMU.

These areas are exceptional ecological or historic resources and include the Cascade Falls Natural Area on Mt. Ascutney SP. These sites are often of extreme topography or wetlands with poor access and so other than hiking trails, have seen little use or management in decades. Primary use is to provide a natural setting for hiking trail segments, habitat for a number of rare, threatened, and endangered plant species, interior forest songbirds, and protection zones for historic sites. Interior units of this LUC are considered core forest as well as important wildlife travel corridor. Potential conflicts exist between protection of resource and potential trail re-routing or expansion. Proposals to do either will be evaluated against the sensitive ecology of these significant natural communities and historic sites.

Management Goals and Objectives:

- Protection of the Natural Area surrounding Cascade Falls at Mt. Ascutney State Park designated.
- Non-native invasive plants controlled in a manner that presents spread to significant communities while protecting rare, threatened, and endangered plants.
- Question of presence of rare, threatened, and endangered animal species of historical record resolved.
- Enright quarry located and a more complete assessment completed.
- Trail maintenance, relocation, and location minimize impacts to State Significant natural communities and rare, threatened, and endangered plant species.
- Protect core forest attributes and wildlife travel corridor function.

HSM 1.1 – Rare or Exemplary Natural Communities (1,527 Acres; Figures 30, 31 and 32)

Natural communities that are rare of type or significant in area occur on four of the parcels in the AMU. These areas feature or host other important resources or uses. However, conservation of the ecological condition and/or value is a primary management objective. Management objectives are generally designed to minimize any reduction in the ecological quality of the site.

These areas feature a number of unique and uncommon community types as well as uncommon or rare, threatened, and endangered plants and historical record of two rare, threatened, and endangered animals (Tables 10 and 11). Notable attributes or uses include deer wintering areas, oak and hickory species, extensive hiking trails at Mt. Ascutney SP and in several cases, invasive plant populations poised to expand and disrupt native plant populations (Table 9).


Because these natural communities often occur on steep or wet ground, with the exception of Mt. Ascutney SP, past use and management has been limited. At Mt. Ascutney SP, these communities host trails, recreation infrastructure, and historic sites. Expansion, relocation or extensive maintenance of any of these features will include a site assessment for, and protection of, rare, threatened, and endangered plants.

Table 9: Significant Resources and Considerations of AMU LUC 1.1

Significant Resources & Considerations	LAWMA	MASP	SKWMA1	LRMP DETAIL PAGE NO.
Archeological and/or Historical Sensitivity			✓	62-63
Deer Wintering Area	✓	✓	✓	46
Hard Mast		✓	✓	46
Highly Productive Forest Soils	✓			57
Historical Resources		✓		64-71
Invasive Plant Populations	✓		✓	43
Legal Constraints	✓	✓		18-27
RT&E Species Possible	✓		✓	34
RT&E Species Present	✓		✓	32, 34
Significant Natural Communities	✓	✓	✓	36-41
Soft Mast			✓	46-47
Trail(s)		✓		75-76
Wetland and/or Water Resources			✓	58-59
Wildlife Travel Corridor			✓	35

Table 10: Significant Natural Communities of AMU LUC 1.1

Unit(s)	Natural Community	Vermont Distribution	State Significant Example?
MA, LA	Dry Oak-Hickory-Hophornbeam Forest	uncommon	Yes
MA, LA, SK	Hemlock Forest	common	Yes
SK	Hemlock-Balsam Fir-Black Ash Seepage Swamp	uncommon	Yes
MA	Hemlock-Northern Hardwood Forest	common	
SK	Hemlock-Sphagnum Acidic Basin Swamp	rare	Yes
MA	Mesic Maple-Ash-Hickory-Oak Forest	uncommon	Yes
LA, MA	Mesic Red Oak-Northern Hardwood Forest	common	Yes
MA	Montane Spruce-Fir Forest ^[1]	uncommon	Yes
MA	Montane Yellow Birch-Red Spruce Forest	uncommon	Yes
MA	Northern Hardwood Talus Woodland	uncommon	
SK	Red Maple-Black Gum Swamp	rare	Yes
SK	Temperate Calcareous Cliff	uncommon	Yes
MA	Temperature Acidic Outcrop	common	Yes
LA, SK	Transition Hardwood Talus Woodland	uncommon	Yes
SK	Vernal Pool	common	Unknown*
For more information on these and other natural communities, see Wetland, Woodland, Wildland: a Guide to the Natural Communities of Vermont, by Elizabeth Thompson and Eric Sorenson. Information may also be found online at: http://www.vtfishandwildlife.com/books.cfm?libbase=Wetland,Woodland,Wildland			
*Vernal pools must be evaluated during amphibian breed season (spring) to determine if a pool is considered state-significant.			

 = state significant example of an uncommon or rare natural community

^[1] Historic records of Bicknell’s Thrush, no recent record.

Table 11: Rare, Threatened, and Endangered Plants of Ascutney MU LUC 1.1

Species Name	Common Name	Sites Where Found	State Rarity Rank	Rarity*	State Legal Status
<i>Carex siccata</i>	Hay sedge	Little Ascutney WMA	S1	very rare	endangered
<i>Glyceria acutiflora</i>	Sharp manna- grass	Skitchewaug WMA	S1	very rare	endangered
<i>Viola palmata</i>	Early blue violet	Skitchewaug WMA	S1	very rare	
<i>Carex argyrantha</i>	Hay sedge	Skitchewaug WMA	S2	rare	
<i>Nyssa sylvatica</i>	Black gum	Skitchewaug WMA	S2	rare	
<i>Cardamine parviflora</i>	Small flower bittercress	Skitchewaug WMA	S2	rare	
<i>Carex backii</i>	Back's sedge	Little Ascutney WMA	S3	uncommon	
<i>Woodsia obtusa</i>	Blunt leaved woodsia	Skitchewaug WMA	S3	uncommon	
<i>Poa saltuensis</i> spp. <i>Saltuensis</i>	Drooping bluegrass	Mt. Ascutney SP	S3	uncommon	
<i>Carex comans</i>	Bronze sedge	Mt. Ascutney SP	S2	rare	endangered
*for an explanation of these rarity ranks, visit the Vermont Nongame and Natural Heritage Program's website: http://www.vtfishandwildlife.com/wildlife_nongame.cfm or Glossary (Appendix 9).					

Management Actions:

- Periodic assessment and management of invasive exotic shrubs.
- Survey for occurrence of rare, threatened, and endangered animal species in the historical record at Little Ascutney WMA and Skitchewaug WMA; timber rattlesnake and peregrine falcon. If found, develop management recommendations to enhance or stabilize population.
- Relocation of interior access roads and trails out of wetland riparian zones where feasible. Stabilization of road surface where alternatives not available.

HSM 1.4 – Exceptional Cultural Features (8 Acres; Figure 31)

Two historical quarries are located on Mt. Ascutney SP – the Norcross quarry and Enright quarry. The Norcross quarry is a visually striking and large site comprised of pits, waste piles, roads, cables, and derrick booms. A large portion of this historical quarry is located on adjoining land. The site is crossed by the Brownsville Trail and is a feature of that route. The Enright quarry is non-descript and difficult to locate. No trail leads to the site. Little documentation exists.

Both sites are durable by nature and few, if any, impacts need resolution. A part of the Brownsville Trail occupies the historical quarry access road. It is periodically maintained using hand tools and on-site materials. The Enright quarry, in a remote location, has been protected from negative impacts by its location and setting.

Management Actions:

- Continue careful maintenance of trail that features and protects historic resources.
- Locate Enright quarry geospatially and document its site and condition through narrative and photo documentation.

Table 12: Significant Resources and Considerations of AMU LUC 1.4

Significant Resources & Considerations	MASP	LRMP DETAIL PAGE NO.
Archeological and/or Historical Sensitivity	✓	62-63
Historical Resources	✓	64-71
Recreational Features	✓	72-79
Trail(s)	✓	75-76

HSM 1.8 – Natural Area (198 Acres; Figure 31)

A Natural Area consisting of approximately 198 acres of land within the southern portion of Mt. Ascutney SP located in the town of Weathersfield, Vermont was designated as “**Cascade Falls Natural Area**” in October of 2016. The area designated includes three unique geological formations: Crystal Cascade Falls, Little Cascade Falls, and a small granite gorge with a seasonal waterfall surrounded by a large area consisting of steep granite ledges hosting a number of state significant natural communities. The popular Weathersfield Hiking Trail bisects the area as delineated on Figure 31.

The namesake for the Natural Area, Cascade Falls, locally known as Crystal Cascade, consists of an exposed 84-foot open granite ledge which represents Mt. Ascutney’s “ring dike origin” where molten magma extruded from the earth’s core formed a nordmarkite core. The molten magma digested much of the softer rock it encountered, but some fragments remained suspended as the magma cooled. Cascade Falls was ranked highly significant (HS) as a large, undisturbed, wild cascade; (HS) as Vermont’s only waterfall on a volcanic dike, (HS) as a large pool-cascade chain in an undisturbed setting, and significant (S) for hiking because of its proximity to the Weathersfield Hiking Trail in a 1987 study prepared for the Agency of Natural Resources titled: “Waterfalls, Cascades and Gorges of Vermont” (J. Jenkins and P. Zika, 1985, 1987).

Little Cascade Falls and the granite gorge are located along the lower section of a second smaller, seasonal stream. These two geologic features, though not ranked by any existing geologic study are of regional significance due to features similar to a flume gorge where a stream eroded a dike in the existing rock, in this case creating a 15' wide, 70' deep gorge.

The area surrounding these three significant geological features is very steep and inoperable for timber management purposes and features a number of unique Natural Communities in Table 13.


Table 13: Significant Resources and Considerations of AMU LUC 1.8

Significant Resources & Considerations	MASP	LRMP DETAIL PAGE NO.
Hard Mast	✓	46
Invasive Plant Populations	✓	43
Legal Constraints	✓	18-27
Parking	✓	103
Recreational Features	✓	72-79
RT&E Species Present	✓	32, 34
Significant Natural Communities	✓	36-41
Trail(s)	✓	75-76
Wetland and/or Water Resources	✓	58-59

The only access to this Natural Area is the Weathersfield Hiking Trail which was opened for public use in 1987. Other than maintenance of the existing hiking trail and vistas, no other management activities are planned for this area.

Table 14: Significant Natural Communities of AMU LUC 1.8 (Cascade Falls NA)

Natural Community	Vermont Distribution	State Significant Example?
Dry Oak Forest	uncommon	Yes
Dry Oak Woodland	rare	Yes
Dry Oak-Hickory Hophornbeam Forest	uncommon	Yes
Hemlock-Northern Hardwood Forest	common	
Hemlock-Red Spruce Forest	not known	not known
Mesic Red Oak-Northern Hardwood Forest	common	Yes
Montane Yellow Birch-Red Spruce Forest	uncommon	Yes
Red Spruce-Red Oak Forest	not known	not known
Temperate Acidic Outcrop	common	Yes

 = state significant example of an uncommon or rare natural community

Management Actions:

- Continued trail maintenance.
- Any trail relocations or proposals will take into account the ecological function and natural area status of the area.
- Monitor and manage invasive exotic shrubs.

2.0 SPECIAL MANAGEMENT — 1,888 acres

Special Management areas represent approximately 1,888 acres or 47% of the AMU.

These areas include critical wildlife habitat, important biological resources (natural communities), wildlife travel corridors, riparian areas, and a special recreation area.

Primary uses are dispersed recreation, habitat management, conservation of notable natural communities, and timber management, where appropriate. These areas host trails and managed forest set in a number of both common and uncommon natural communities. Interior units of this LUC are considered core forest as well as important wildlife travel corridor. Past management has focused on habitat improvement, trail maintenance, protection of riparian areas, and timber management.

A number of roads and trails exist in these areas with minimal conflict. Timber and habitat management has occurred where feasible, and has been designed to have minimal impact and/or perpetuate the natural community type. Future management will focus on the enhancement of the tree species native to the community type and control of invasive plants. Improvement of deer wintering areas will be a focus in existing wintering areas as will maintenance or improvement of wildlife travel corridors. Management of trees in recreation units will promote higher density stands and larger trees than in other managed areas.

Management Goals and Objectives:

- Use and management of State Significant natural communities maintains or enhances quality rank.
- Deer wintering areas and travel corridors improved in quality and extent.
- Develop and maintain forest cover if hemlock health declines due to hemlock woolly adelgid.
- Wildlife food sources maintained and improved.
- Forest regeneration in managed areas converted from a dominance of unacceptable species and quality to a mix of desired species at densities sufficient to create a future forest stand. Existing white pine regeneration released and ‘free to grow’.

SM 2.1 – Important Biological Resources (1,068 Acres; Figure 31)

These units are located on Mt. Ascutney SP. They feature several high quality examples of common and uncommon types (Table 15).

Table 15: Significant Natural Communities of AMU LUC 2.1

Unit(s)	Natural Community	Vermont Distribution	State Significant Example?
SK2	Alluvial Shrub Swamp	common	
SK2	Cattail Marsh	common	
MA	Hemlock Forest	common	Yes
MA	Hemlock-Northern Hardwood Forest	common	
MA	Mesic Maple-Ash-Hickory-Oak Forest	uncommon	Yes
SK2	Shallow Emergent Marsh	common	
MA	White Pine-Red Oak-Black Oak Forest	uncommon	Yes

For more information on these and other natural communities, see Wetland, Woodland, Wildland: a Guide to the Natural Communities of Vermont, by Elizabeth Thompson and Eric Sorenson. Information may also be found online at: <http://www.vtfishandwildlife.com/books.cfm?libbase=Wetland,Woodland,Wildland>

At Mt. Ascutney SP, this LUC is bisected by roads and trails, and the primary transmission line on Mount Ascutney. Features within this type include deer wintering areas, mast tree stands, mowed log landings, wild apple orchards, and wetlands (Table 16).

Table 16: Significant Resources and Considerations of AMU LUC 2.1

Significant Resources & Considerations	MASP	LRMP DETAIL PAGE NO.
Deer Wintering Area	✓	46
Hard Mast	✓	46
Highly Productive Forest Soils	✓	57
Invasive Plant Populations	✓	43
Legal Constraints	✓	18-27
Mowed Fields	✓	45
Recreational Features	✓	72-79
Significant Natural Communities	✓	36-41
Soft Mast	✓	46-47
Trail(s)	✓	75-76

Management Actions:

- Pre-commercial crop tree release of oak and hickory for wildlife food production.
- Maintenance of mowing's and apple orchards.
- Phase 2 of mountain bike trail.
- Ongoing trail maintenance.
- Forest (timber) management where feasible and appropriate. Deer wintering area and/or native forest type goals.
- Invasive plant assessments and management.

SM 2.2 – Critical Wildlife Habitat (767 Acres; Figures 31, 32, 33, and 34)

The Special Management LUC occupies a significant portion of the AMU. These areas include deer wintering areas, mast stands, wildlife travel corridors, riparian zones, and wetland habitat.

Embedded in these areas are multiple resources and features (Table 17) including historical resources, recreational trails and sites, hard and soft mast sites, and wildlife mowings. Special considerations include encroaching invasive plant populations, easement conditions, and access limitations, areas with significant archeological sensitivity, damaging browse levels and poor regeneration, and significant natural communities (Table 18). At Skitchewaugh WMA, one uncommon pine vole was captured during mammal survey monitoring. This species prefers habitats with thick ground cover and occupies a variety of cover types. Management objectives include habitat improvement (particularly deer wintering areas), protection and management of wildlife travel corridors, control of invasive plant spread, improvement of regeneration quality and quantity, growth of high quality sawtimber, and maintenance of trails and roads.

Table 17: Significant Resources and Considerations of AMU LUC 2.2

Significant Resources & Considerations	LAWMA	MASP	SKWMA 1	WSP	LRMP DETAIL PAGE NO.
Archeological and/or Historical Sensitivity		✓			62-63
Deer Wintering Area	✓	✓	✓		46
Hard Mast	✓	✓	✓		46
Highly Productive Forest Soils	✓	✓	✓	✓	57
Historical Resources	✓				64-71
Invasive Plant Populations	✓				43
Legal Constraints	✓	✓			18-27
Mowed Fields	✓	✓			45
Recreational Features		✓			72-79
RT&E Species Present			✓		32, 34
Significant Natural Communities		✓	✓	✓	36-41
Soft Mast	✓	✓			46-47
Trail(s)		✓			75-76
Wetland &/or Water Resources	✓			✓	58-59
Wildlife Travel Corridor	✓	✓	✓	✓	35

Table 18: Significant Natural Communities of AMU LUC 2.2

Unit(s)	Natural Community	Vermont Distribution	State Significant Example?
MA	Dry Oak-Hickory-Hophornbeam Forest	uncommon	Yes
MA	Dry Oak Forest	uncommon	Yes
MA, LA, SK	Hemlock Forest	common	Yes
LA	Hemlock-Northern Hardwood Forest	common	Yes
MA	Mesic Maple-Ash-Hickory-Oak Forest	uncommon	Yes
MA	Mesic Red Oak-Northern Hardwood Forest	common	Yes
MA	White Pine-Red Oak-Black Oak Forest	uncommon	Yes
For more information on these and other natural communities, see Wetland, Woodland, Wildland: a Guide to the Natural Communities of Vermont, by Elizabeth Thompson and Eric Sorenson. Information may also be found online at: http://www.vtfishandwildlife.com/books.cfm?libbase =Wetland,Woodland,Wildland			

Management Actions:

- Deer wintering area management and improvement.
- Wildlife corridor management and improvement.
- Mast tree release.
- Invasive plant management.
- Wild apple orchard and meadow maintenance.
- Brush control along stone wall borders of mowing and historical stone structures to control invasive plants and provide snake habitat.
- Hiking trail and road maintenance.
- White pine sawtimber and regeneration management. Release of established white pine regeneration with use of ‘expanding gaps’ in aesthetically important areas, particularly the McClary Lot at Mt. Ascutney SP.
- Softwood planting in deer wintering areas in need of additional cover.
- Enhancement of regeneration where lacking or heavily browsed.
- Maintenance and enhancement of public parking and access.
- Development of additional young forest habitat where feasible, primarily Little Ascutney WMA.

SM 2.9 – Special Recreation Area (53 Acres; *Figure 33*)

A large portion of Wilgus SP forestland is used primarily for hiking and dispersed recreation, both from campground users and nearby neighbors with access from the adjoining developments. The terrain here is either flat and gentle or exceedingly steep. A portion of the plateau above Route 5 is occupied by the rare natural community White Pine-Red Oak-Black Oak Forest. Though it is not a high quality example, it is rated as state significant. Past timber management has been hampered or thwarted by difficult terrain and access disputes with adjacent landowners. A small area of productive but overstocked pine is overdue for thinning due to this conflict.

Future management will include expansion of walking trails into this area to feature the large white pine found here. Future thinning if possible in this area, will include retention of large specimen trees and oak species characteristics of the natural community type.

Table 19: Significant Resources and Considerations of AMU LUC 2.9

Significant Resources & Considerations	WSP	LRMP DETAIL PAGE #
Archeological and/or Historical Sensitivity	✓	62-63
Deer Wintering Area	✓	46
Hard Mast	✓	46
Highly Productive Forest Soils	✓	57
Invasive Plant Populations		43
Legal Constraints	✓	18-27
Parking		103
Recreational Features	✓	72-79
Significant Natural Communities	✓	36-41
Soft Mast		46-47
Trail(s)	✓	75-76
Wetland &/or Water Resources	✓ (vernal pool)	58-59
Wildlife Travel Corridor	✓	35

Management Actions:

- Develop walking trails west of current trail system.
- Thinning of forest stands if access gained.
- Promotion and retention of white pine, red oak, and black oak.

3.0 GENERAL MANAGEMENT — 343 acres

General Management areas, and parcels where timber rights are held by a third party, represent approximately 343 acres or 8% of the AMU.

Due to the abundance of significant natural communities, wildlife habitat, inaccessible ground, and recreational features, only a small portion of AMU is classified as General Management. These areas are generally Northern Hardwood or Hardwood-Hemlock types without other significant resource constraints (Table 20) that have historically been managed for timber and wildlife habitat. Current features include mowed fields, patch clearcuts, and scattered apple trees. Interior units of this LUC are considered core forest as well as important wildlife travel corridor. Softwood species as wildlife cover (not deer wintering areas) and travel corridor are a minor feature.

Management Goals and Objectives:

- Early successional habitat and young forest age class (1-20 years old) occupies 15% of Little Ascotney WMA.
- Softwood cover types enhanced and expanded. Where feasible, white pine promoted as a replacement of at risk eastern hemlock.
- Mast trees vigorous and producing food crops for wildlife.
- Non-native invasive shrubs and trees limited in density and coverage.
- Protect core forest attributes and wildlife travel corridor function.

Table 20: Significant Resources and Considerations of AMU LUC 3.0

Significant Resources & Considerations	LAWMA	MASP	WSP	LRMP DETAIL PAGE NO.
Archeological and/or Historical Sensitivity		✓		62-63
Hard Mast	✓			46
Highly Productive Forest Soils	✓		✓	57
Historical Resources	✓			64-71
Invasive Plant Populations	✓			43
Legal Constraints	✓		✓	18-27
Mowed Fields		✓		45
Parking	✓			103
Recreational Features		✓		72-79
Soft Mast	✓	✓		46-47
Trail(s)		✓		75-76
Wetland &/or Water Resources		✓		58-59
Wildlife Travel Corridor	✓			35

Management Actions:

- Develop additional young forest habitat.
- Retain and release softwood and enhance habitat diversity and wildlife travel.
- Continue maintenance of mowing’s and wild apple trees.
- Invasive plant assessments and management.
- Mast tree release.
- Consideration of wildlife travel corridor between Little Ascutney WMA and West Windsor Town Forest.
- Brush control along stone wall borders of mowing and historical stone structures to control invasive plants and provide snake habitat.
- Investigate feasibility of controlled burn on openings on the peaks of Little Ascutney WMA.

4.0 INTENSIVE MANAGEMENT — 87 acres

Intensive Management areas represent approximately 87 acres or 2% of the AMU. At Mt. Ascutney SP these areas include the campground, parking areas, communication sites, and the mid mountain cabin sites; at Wilgus SP the unit includes the campground, parking, and boat launch; and at Little Ascutney WMA two developed parking areas. Skitchewaung and Weathersfield WMAs include no developed areas. All of the sites in this class intersect numerous resources and uses (Table 21).

Table 21: Significant Resources and Considerations of AMU LUC 4.0

Significant Resources & Considerations	LAWMA	MASP	SKWMA 1	SKWMA 2	WSP	LRMP DETAIL PAGE NO.
Archeological and/or Historical Sensitivity					✓	62-63
Hard Mast		✓			✓	46
Highly Productive Forest Soils					✓	57
Historical Resources					✓	64-71
Invasive Plant Populations	✓	✓			✓	43
Legal Constraints	✓	✓			✓	18-27
Mowed Fields		✓				45
Parking	✓	✓			✓	103
Recreational Features		✓			✓	72-79
RT&E Species Present					✓	32-34
Significant Natural Communities					✓	36-41
Trail(s)		✓			✓	75-76
Wetland &/or Water Resources					✓	58-59
Wildlife Travel Corridor					✓	35

Primary uses in this LUC are for public recreational use and access. Two electronic communication sites on Mount Ascutney are the primary use of the north and south peak and exclude public use. These sites are comprised of several towers, buildings, and other infrastructure. They require year-round access for maintenance and repair, which can generate some conflict with recreational users and the seasonal closing of the mountain road.

Management Goals and Objectives:

- Continue to provide developed recreational facilities and opportunities.
 - Maintain facilities, the Mt. Ascutney Parkway and trail systems at Mt. Ascutney SP and Wilgus SP.
 - Maintain trailhead access points at Mt. Ascutney SP, Wilgus SP, and Little Ascutney WMA.
 - Monitor user demand and respond to changes in existing recreational uses and new uses.

IM 4.2 – Campgrounds; Mt. Ascutney SP and Wilgus SP (63 Acres; Figures 31 and 33)

The campground at Wilgus State Park was constructed in 1960. It offers tent, self-contained RV, lean-to and cabin camping on 17 tent or trailer sites, 6 lean-tos, and 4 cabins. Many sites are along the bank of the Connecticut River. There is a group camping area with three lean-tos capable of handling groups of up to 50 people. This campground operates from late April through Columbus Day, and is extremely popular for people recreating on the river. Average annual camping attendance is over 7,000 camper nights.

The four cabins are the most popular camping features and typically register more than 80% occupancy. Full service restrooms are available, firewood and ice are available for sale, and a trailer sanitary station is available for RV use.

Camping at Mt. Ascutney is a much different experience than at Wilgus. The campground is much larger, but also much less popular due to local environmental factors. The campground at Mt. Ascutney State Park was constructed in three phases. The first phase, to the north of the park entrance, was built by the Civilian Conservation Corps in the mid 1930s. This area features 17 tent or trailer sites and a stone masonry bathroom building with restrooms and showers. This area is in very close proximity to Route 44A, and thus campers are often dissuaded by traffic noise and sight lines to the road. The second phase of the campground was built about 1958 to the south of the park entrance in the area originally occupied by the CCC encampment. This area features 21 tent/trailer sites and 10 lean-to shelters. This area was constructed just before I-91. As a consequence of highway construction, this camping area is extremely close to the roadway; highway noise proliferates many campsites and cars whizzing by are visible from some sites. For this reason, this part of the campground is also unpopular. Historic campground occupancy has averaged 17% with about 6,000 camper nights registered. The campground primarily serves as a place for people coming to participate in a special event in the area or as an overflow when other more popular campgrounds are fully booked on summer weekends and holidays. The third phase of campground construction is ongoing in 2014. This will add five cabins to a new camping area 2.0 miles up the Mt. Ascutney Parkway.

The riverbank of Wilgus State Park is generally too steep for public use other than in a couple of locations. This area hosts the boat ramp to the north and an access stairway to the south. The natural community type of the area including Rivershore Grassland which warrants special consideration in park management and development. Ample evidence of tunneling by the hairy-tailed mole was recorded on the riverbank during field assessments. Retention of sandy and sandy loam soils will benefit this species. Archeological sensitivity is high along the riverbank as well. Shoreline erosion is a concern for potential archeological resources. Invasive plants also occupy this site.

Management Actions:

- Maintain and regularly improve existing infrastructure in both campgrounds as necessary.
- Add new features to respond to customer demands and changes in camping trends and visitor use.
- Monitor and control invasive plant species while promoting native plant cover.
- Complete stairway access to the Connecticut River while protecting native mussel populations.
- Stabilize eroding shoreline as feasible.

IM 4.4 – Parking Areas (21 Acres; Figures 30 and 31)

Trailhead parking areas at Mt. Ascutney State Park serve three of the four main hiking trails located within the park. The fourth trail, the Futures Trail, is accessed from within the campground. The three trailhead parking areas have been regularly maintained and are in good shape. All three are plowed during the winter – with the ATA arranging for the plowing of the Windsor and Brownsville Trailheads. An effort has been made to reduce the amount of pressure-treated wood fencing at each parking lot through the use of stone boulders where appropriate. The Weathersfield Trail parking lot is often full to capacity and is in need of expansion provided this action is supported by the estimated capacity of the trail system.

Two parking areas are maintained at Little Ascutney WMA, primarily for hunter access. The lower parking lot suffered severe storm damage in 2013. This parking area was rebuilt in 2013.

Management Actions:

- Continue to maintain parking areas to provide access to the public.
- Continue to plow three parking areas for winter access.
- Apply for funding to expand Weathersfield Trailhead parking lot.
- Explore and assess potential locations for Phase 2 of mountain bike trails.
- Expand monitoring of trail and parking use to gauge impacts of increased use.

IM 4.5 – Electronic Communication Sites (3 Acres; Figures 31)

Mt. Ascutney State Park has two designated Electronic Communications Sites; one at the North Peak which consists of three towers and an equipment building and one at the South Peak which consists of a 380-foot guyed and lighted tower, a main equipment building, and a small auxiliary equipment building. Access to the North Peak site is by foot, helicopter or snowmobile (when sufficient snow cover is available). Access to the South Peak site is via a 0.1 mile gravel spur road from the very end of the Mt. Ascutney Parkway. The North Peak site is under long-term license agreement to the Electronic Communications Association, Inc.; the South Peak site is under recently renegotiated long-term license agreement to Vermont Public Television, Inc.

Management Actions:

- Continue to work with License holders on managing access to both sites.
- Limit impacts of access to recreational experience.
- Do not expand or upgrade access roads and trails where detrimental to the public experience and/or natural resources.

Figure 30: Little Ascutney WMA Land Use Classification Map

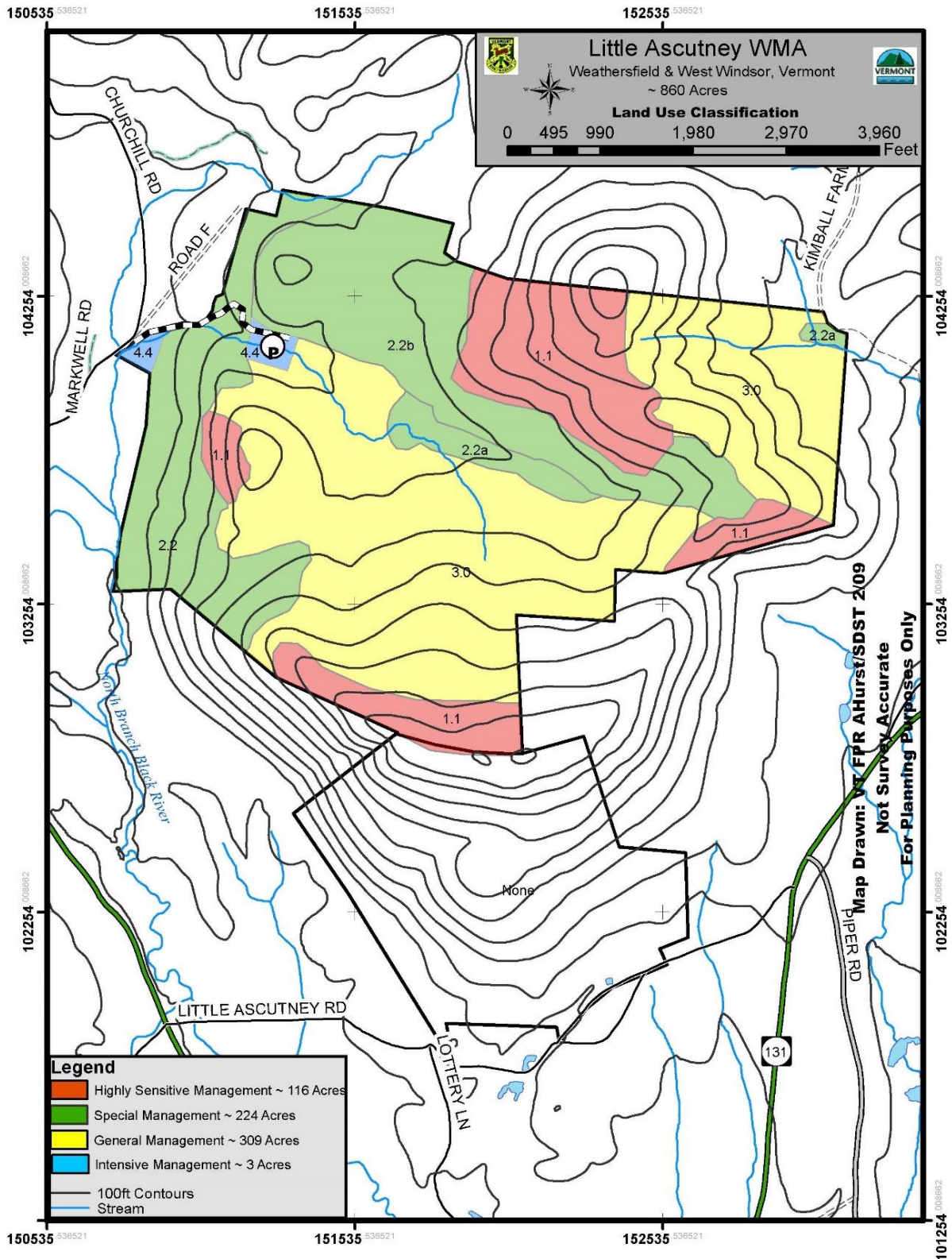


Figure 31: Mt. Ascutney State Park Land Use Classification Map

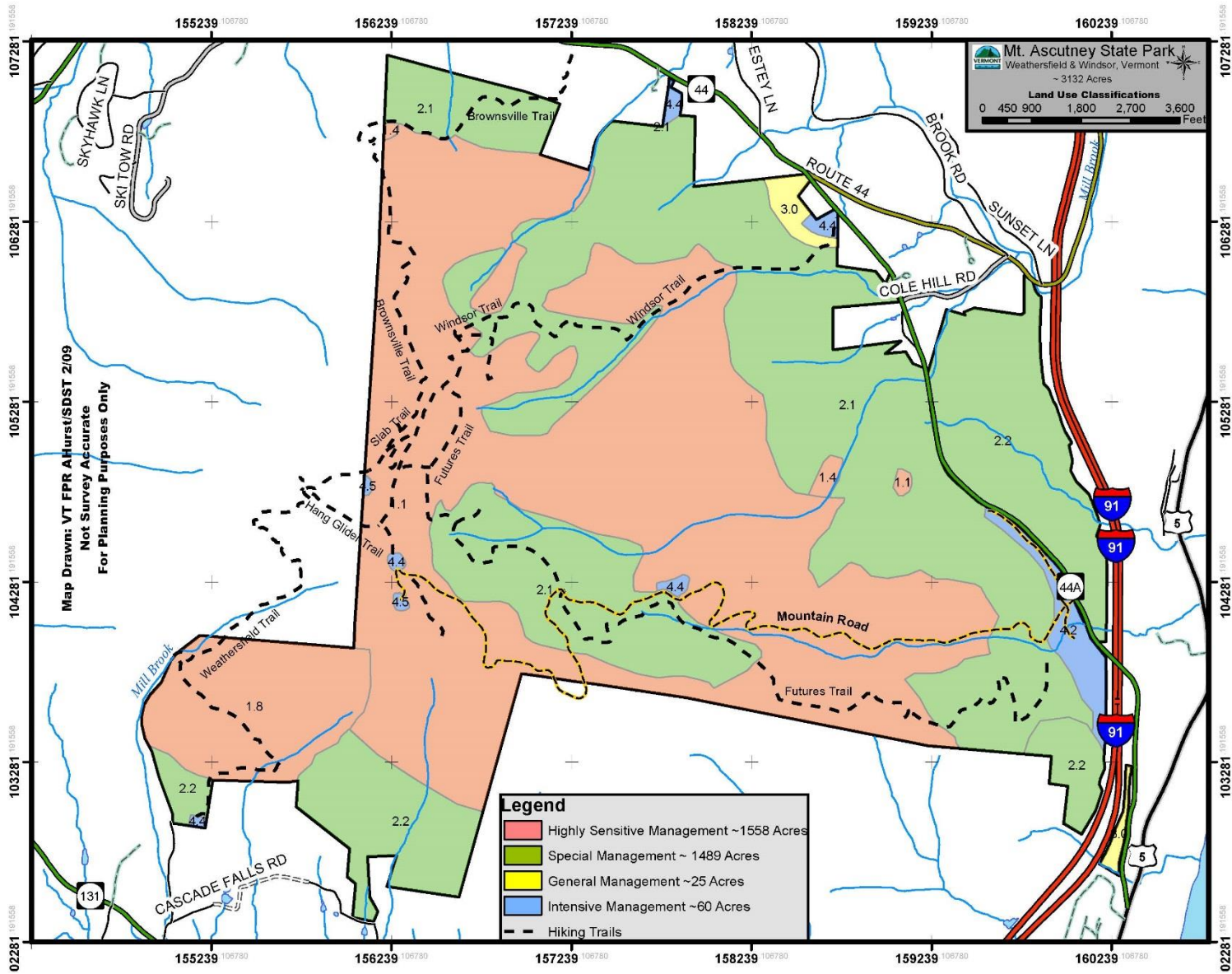


Figure 32: Skitchewaug WMA Land Use Classification Map

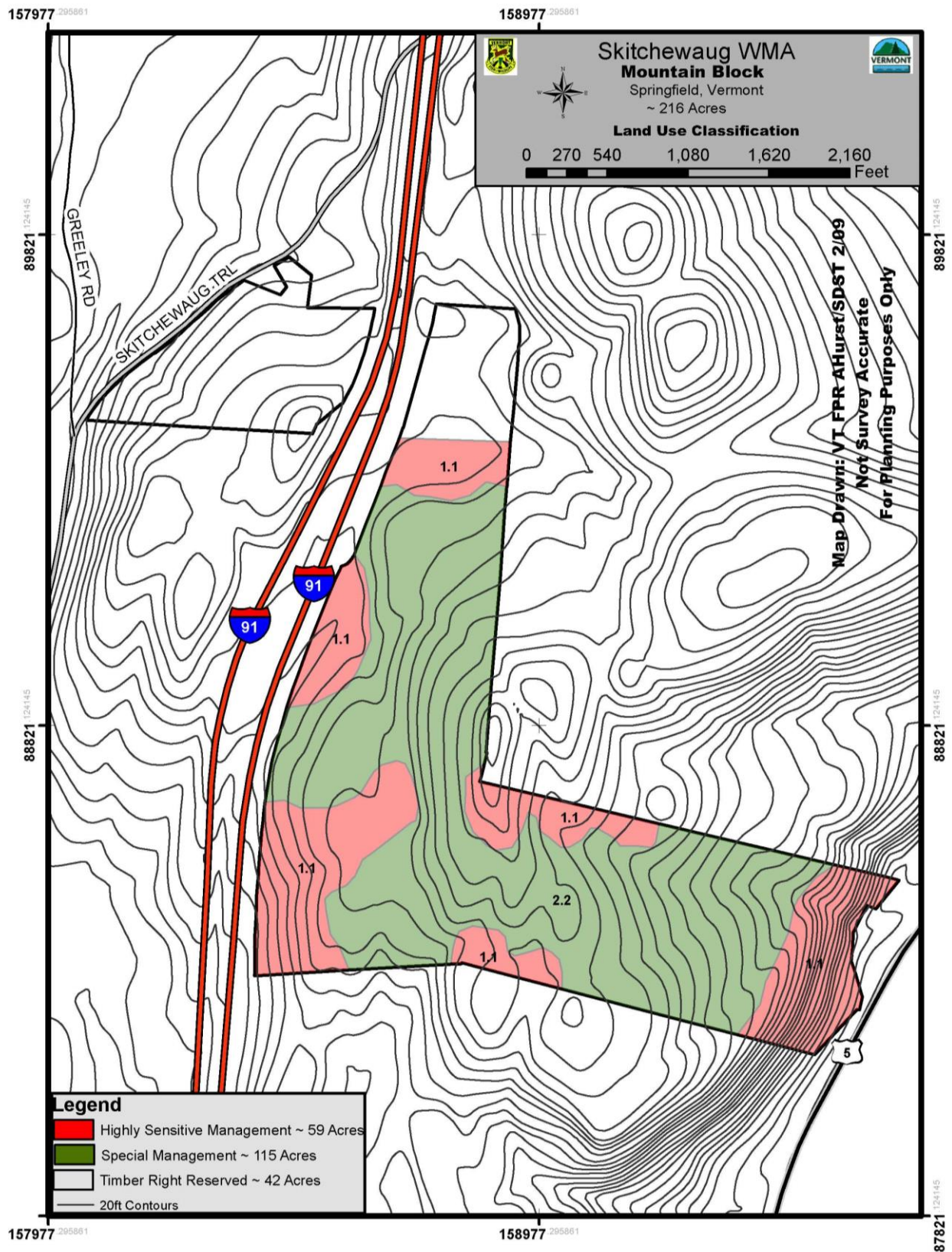
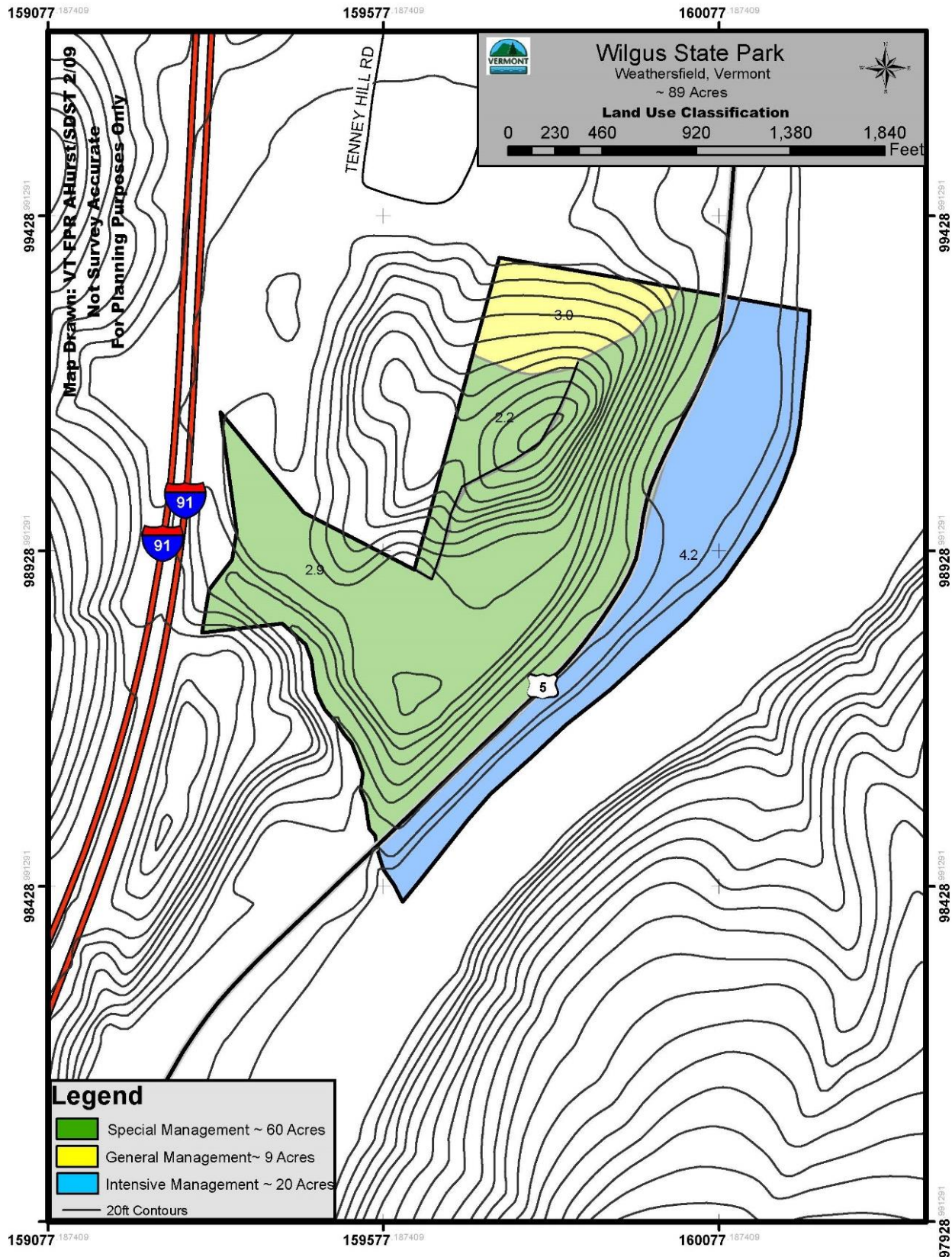


Figure 33: Wilgus State Park Land Use Classification Map



Management Implementation

Table 22: Implementation Schedule 2015-2035

Activity	Location	Acreage	Goal	Year	Outcome
Annual Mowing of Landings, Roadsides, and Meadows	LAWMA MASP		Maintain wildlife habitat and condition of roads	Annual	Grasses retained in meadows and landings.
Road and Parking Maintenance	LAWMA access, MASP trailheads & mountain road		Well-maintained surface and drainage.	Annual	High quality roads and parking.
Trail Maintenance	MASP, WSP	n/a	Maintain trails in safe condition, prevent erosion.	Annual	High quality trail network.
Acquire Timber Rights	SKWMA, WWMA	43 80	Fee simple ownership.	TBD	Parcels under management of ANR.
Invasive Plant Monitoring and Treatment	LAWMA, MASP, SKWMA, WSP	As needed (<100 acres)	Limit spread of invasive plants. Pre-treat MUs as feasible. Use combination of herbicide and mechanical methods.	2015	Reduce coverage and seed production. Improved native plant regeneration. Improved public health.
Apple Tree Release	LAWMA MASP	40	Trees free of competition.	2016	Apple production increased.
Boundary Survey and Blazing	LAWMA, MASP, SKWMA Block 2, WSP		Unmarked lines located, surveyed, and marked.	2016	All lines located and blazed.
Mast Tree Release – Pre-commercial	SKWMA MU #1 and #2	50	Release for growth oaks and hickories.	2016	Improved mast production.
Mountain Bike Trail Construction	MASP – Miller Lot, etc. east and north slope	Phase 2	Complete 3.5-mile trail.	2016	Trail in use and surface stable.
Parking Lot Improvement	MASP – Weathersfield Trail	<1	Additional parking.	2016	Increased capacity.
Rare, Threatened and Endangered Species Survey	LAWMA, SKWMA	100	Investigate the potential presence of peregrine falcon/ timber rattlesnake in historic location.	2016	Determine habitat needs if present.

Activity	Location	Acreage	Goal	Year	Outcome
Vegetative Management	LAWMA MU #1	160	Game habitat.	2016 2031	Additional early successional habitat established and deer wintering area improved.
Vegetative Management	MASP MU #1	224	White pine management. Develop 3 size class white pine forest. Maintain higher stocking and connectivity in deer wintering area.	2016 2026	Enhance white pine sawtimber growth, release pine regeneration.
Vegetative Management	SKWMA MU #1	126	Deer wintering area and mast tree enhancement.	2016 2026	Increased vigor in hemlock and pine stems and mast production increased.
Vegetative Management	WSP – MU #1	42	Pine management. Retain large pine as feasible for aesthetics along potential trail location.	2016 & 2026	White pine growth enhanced. Hazard trees removed. Stands thinned to B-level stocking.
Vegetative Management	MASP MU #2	596	Thinning to release oak pine portions (may be pre-commercial).	2017 2032	Increased vigor in pine and mast production.
Historic Assessment	MASP – Enright Quarry	10	Document correct location and attributes of poorly-documented historic site.	2018	Update information provided to Division of Historic Preservation.
Vegetative Management	LAWMA MU #2	130	Thinning to release oak and pine (may be pre-commercial). Deer wintering area improvement.	2018 2025	Increased vigor in pine and mast production.
Invasive Plant Monitoring and Treatment	LAWMA, MASP, SKWMA, WSP	As needed (<100 acres)	Limit spread of invasive plants. Pre-treat MUs as feasible. Use combination of herbicide and	2020	Reduce coverage and seed production. Improved native plant regeneration. Improved public health.

Activity	Location	Acreage	Goal	Year	Outcome
			mechanical methods.		
Vegetative Management	LAWMA MU #3	100	Mast tree release (may be pre-commercial).	2020	Increased mast production.
Walking Trail Development	WSP	25	New trail for park visitors and neighbors on west unit plateau.	2020	Big Tree Trail in place 1/2 mile.
Invasive Plant Monitoring and Treatment	LAWMA, MASP, SKWMA, WSP	As needed (<100 acres)	Limit spread of invasive plants. Pre-treat MUs as feasible. Use combination of herbicide and mechanical methods.	2025	Reduce coverage and seed production. Improved native plant regeneration. Improved public health.
Vegetative Management	LAWMA MU #4	120	Early successional habitat.	2025	Early successional habitat
Invasive Plant Monitoring and Treatment	LAWMA, MASP, SKWMA, WSP	As needed (<100 acres)	Limit spread of invasive plants. Pre-treat MUs as feasible. Use combination of herbicide and mechanical methods.	2030	Reduce coverage and seed production. Improved native plant regeneration. Improved public health.
Vegetative Management	MASP MU #3	88	Hardwood saw-timber production and mast tree development.	2030 (sooner if access allows)	Increased mast production.
Invasive Plant Monitoring and Treatment	LAWMA, MASP, SKWMA, WSP	As needed (<100 acres)	Limit spread of invasive plants. Pre-treat MUs as feasible. Use combination of herbicide and mechanical methods.	2035	Reduce coverage and seed production. Improved native plant regeneration. Improved public health.

LAWMA	Little Ascutney WMA
MASP	Mt. Ascutney State Park
SKWMA	Skitchewaung WMA
WSP	Wilgus State Park

Figure 34: Little Ascutney WMA Implementation Schedule Map

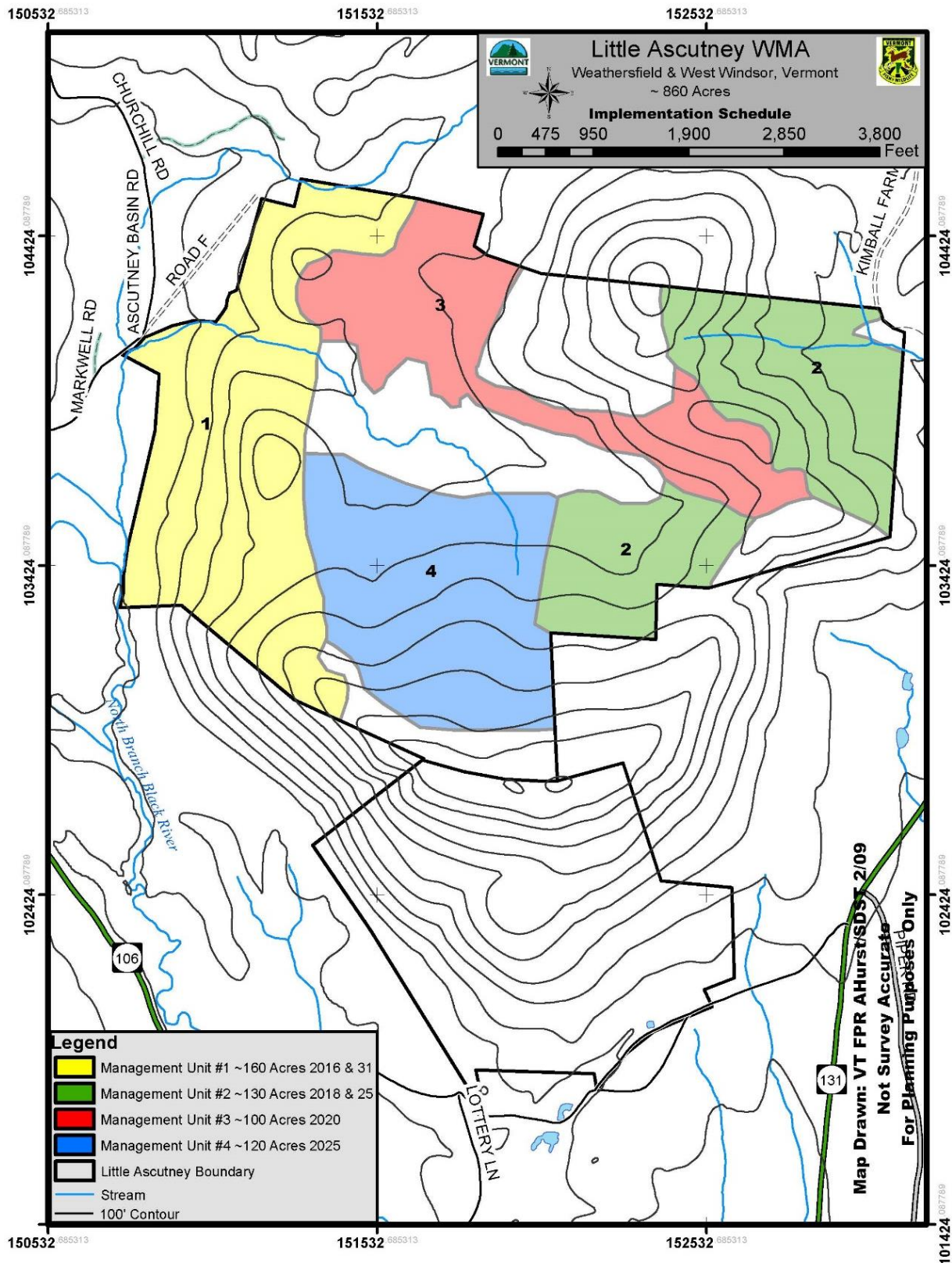


Figure 35: Mt. Ascutney State Park Implementation Schedule Map

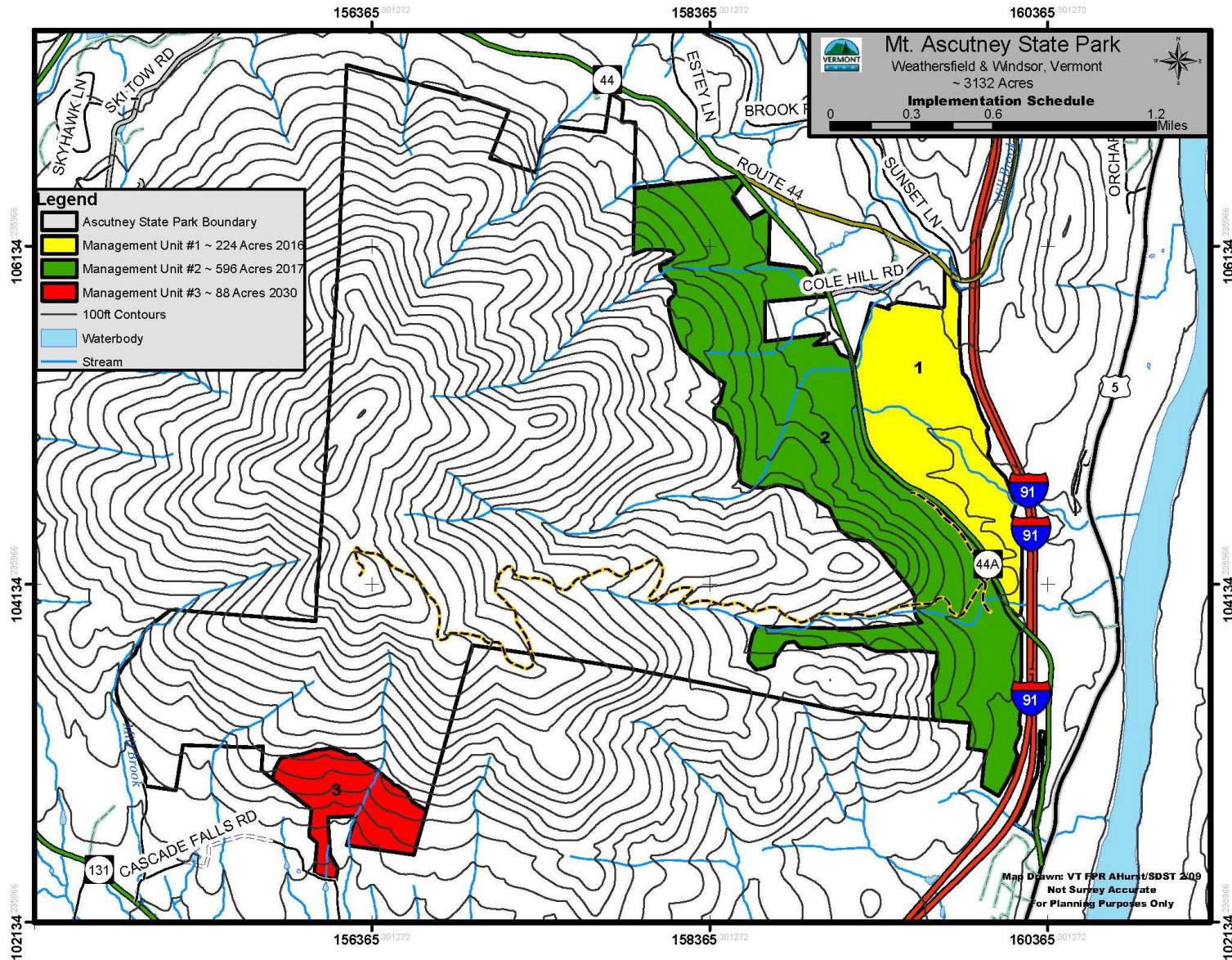


Figure 36: Skitchewaug WMA Implementation Schedule Map

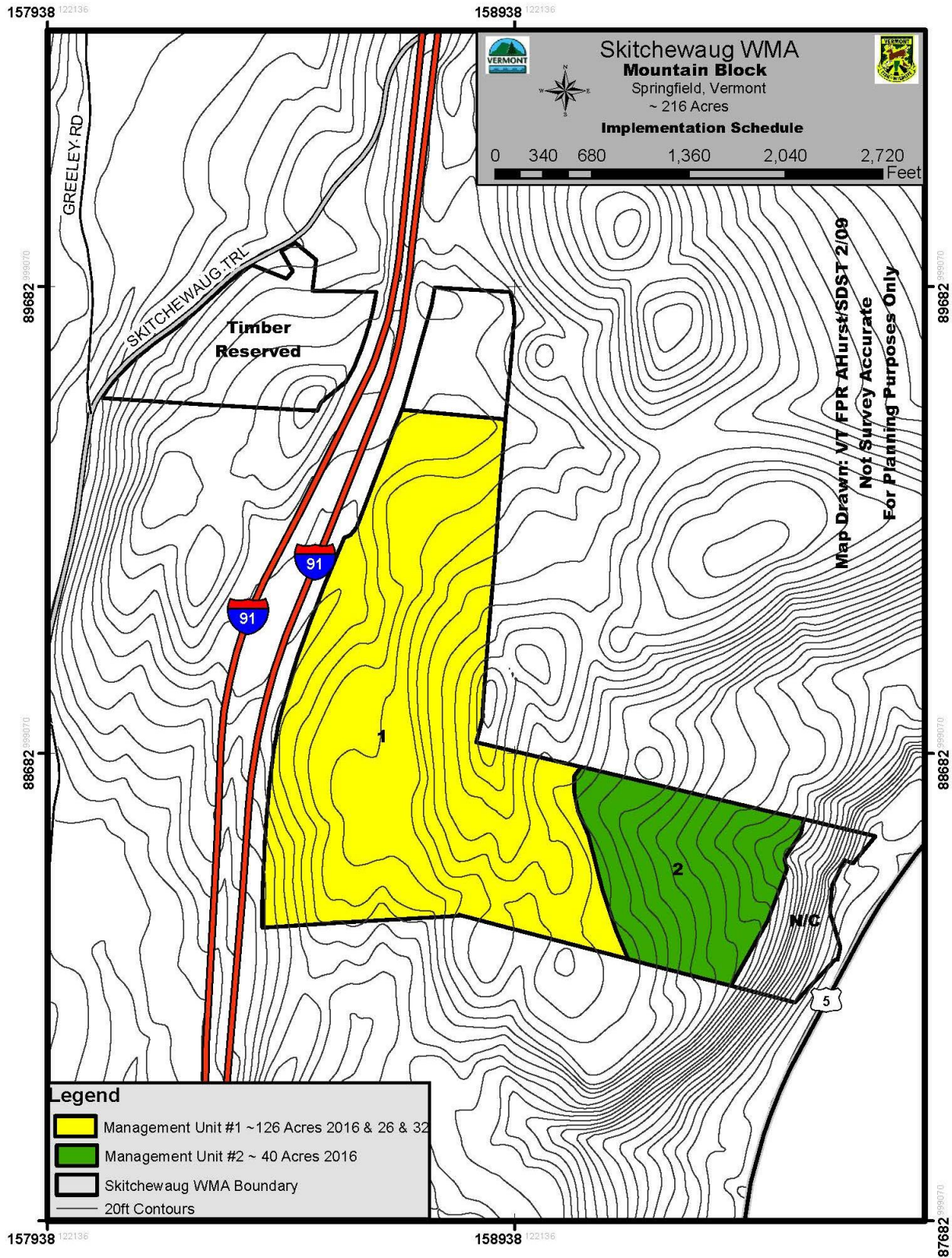
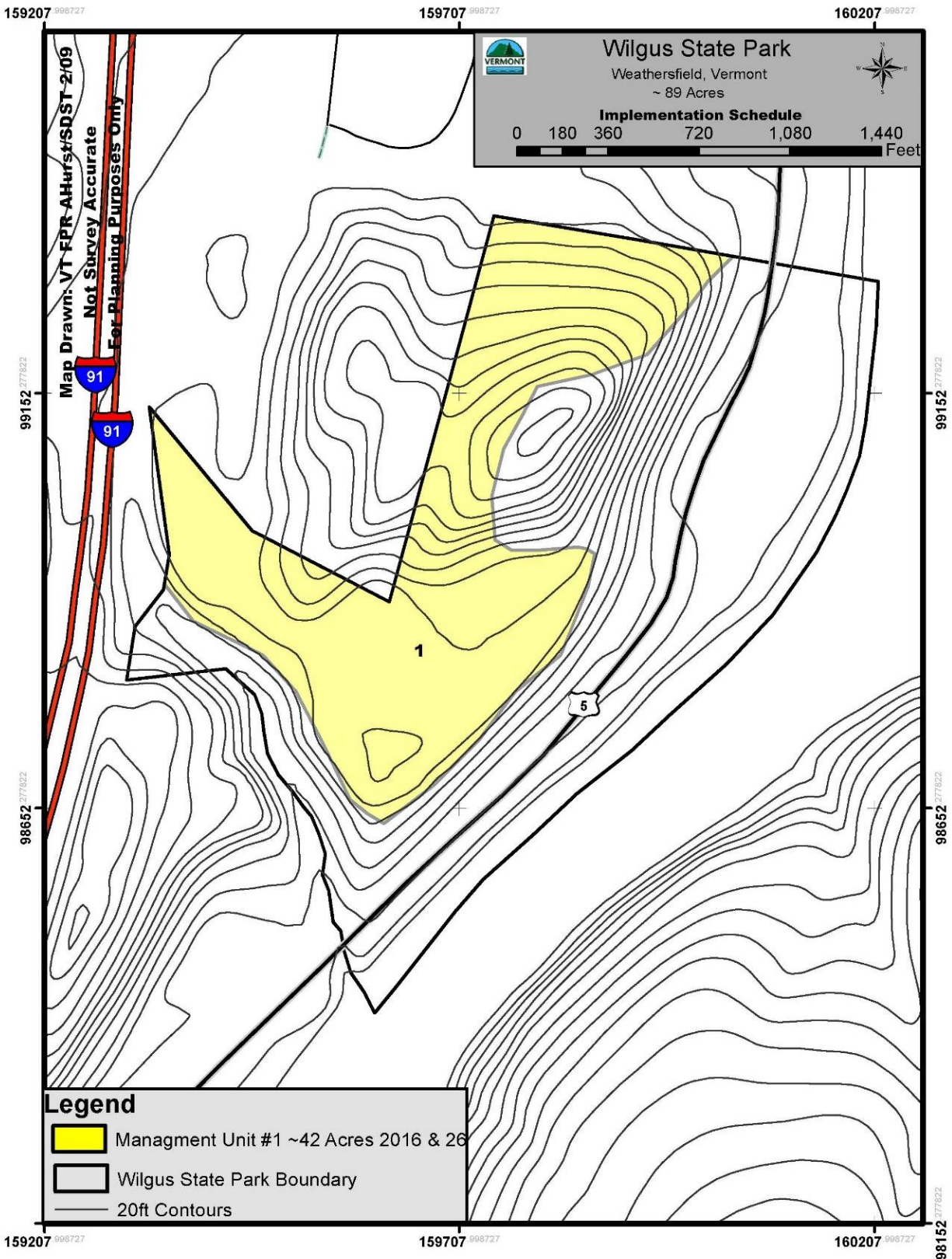


Figure 37: Wilgus State Park Implementation Schedule Map



V. CLIMATE CHANGE ADAPTATION

The effects of climate change are an evolving management issue at AMU.

Historical data have shown changes across Vermont over the past 50 years, including:

- Summer temperatures increased 0.4°F per decade
- Winter temperature increased 0.9°F per decade
- Spring thaw arrives 2.3 days earlier per decade
- Precipitation increased 15-20%, with 67% from “heavy precipitation” events

1. Anticipated Climate Change Effects

Scientific studies estimate a variety of potential changes in the future, including:

- Increased temperatures, especially in winter
- Increased precipitation, especially rain in winter
- Increased extreme weather events, including floods, wind storms, and fires
- Longer growing seasons, shorter winters
- Changing biological interactions

These potential changes are expected to have a range of effects on the forested ecosystems of the AMU, as with forests across the State. Table 23 lists examples of anticipated effects and time frames of many key climate factors on upland forests of Vermont.

Table 23: Expected Climate Change Effects and Timeframes⁴

Key Climate Change Factors	Expected Effects	Timeframe
Warming temperatures	Compositional changes associated with changes in thermally suitable habitat (loss of cold-adapted species and increase in warm-adapted species)	Long-term, but localized effects could occur on a shorter timescale
	Increase in overwinter survival of pests, such as balsam and hemlock woolly adelgid	Immediate
	Increased physiological stress, resulting in increased susceptibility to pests and disease, decreased productivity and increased tree mortality	Immediate
	Increased evapotranspiration, resulting in a decrease in soil moisture; moisture limitation/stress negatively impacts productivity and survival in many species	Immediate
	Increased decomposition rate of organic material may enrich soils and make them more suitable for competitors	Long-term, but localized effects could occur on a shorter timescale
	Decrease in winter snow pack, leading to change in deer browsing patterns, which affects regeneration	Immediate
	Lengthening of growing season resulting in changes in species competitiveness, especially favoring non-native invasive plants	Immediate
Increase in extreme storm events	Increased physical damage and disturbance, leading to gap formation, which could facilitate the spread of invasive plants	Immediate
Phenology (timing)	Longer growing season	Immediate
	Early spring thaws/late frosts can damage buds, blossoms and roots, which affects regeneration	Immediate
	Change in freeze/thaw cycles could disrupt regular periodicity of cone cycles	Immediate
	Asynchronous changes in phenology may negatively impact some migratory species and pollinators	Immediate
Increase in fire risk	Loss of fire intolerant species and increase in fire tolerant species, such as red and pitch pines	Long-term, but localized effects could occur on a shorter timescale

⁴ Source: TetraTech. 2013. Climate change adaptation framework. Prepared for Vermont Agency of Natural Resources.

Key Climate Change Factors	Expected Effects	Timeframe
Increase in fire risk <i>(cont.)</i>	Earlier and warmer springs and smaller snow packs, and hotter drier summers conducive to increased fire risk	Immediate
Increase in number of short-term droughts	Declines in forest productivity and tree survival associated with water limitation	Long-term

2. Land Management Adaptation Strategies⁵

Adaptation to these effects will take a variety of forms, many of which have long been a part of the land management ANR practices. Some of these primary goals and strategies are listed below. Note that some, but not all, strategies are applicable in all parts of AMU.

A) Sustain fundamental ecological functions: protect soil quality, nutrient cycling, and hydrology.

- Enhancing nutrient cycling and soil protection by retaining woody material on the forest floor.
- Matching harvesting equipment to the site for soil protection.
- Minimizing the number of skid roads and trails.
- Maintaining roads in good condition and following all Acceptable Management Practices for Maintaining Water Quality on Logging Jobs in Vermont (AMPs) and Vermont Voluntary Harvesting guidelines.
- Replacing and enlarging inadequate culverts and stream crossing structures.

B) Reduce impact of existing biological stressors: increase pest and pathogen resistance, limit herbivory, and manage invasive species.

- Control and limit spread of non-native invasive plants.
- Control of white-tailed deer numbers through maintaining hunting access.
- Management of beech mast production areas to promote resistant trees.

C) Moderate impacts of severe disturbances, such as fire and wind disturbance.

- Managing for a multi-age, structurally diverse forest.

D) Maintain or create refugia and increase ecosystem redundancy.

- Maintaining rare and sensitive natural communities as potential refugia.
- Maintaining and developing biological “legacies,” such as very old trees.

E) Maintain, enhance species and structural diversity and facilitate community adjustments through species transition.

- Maintaining and developing a forest with a diversity of species and age classes.
- Retention of biological legacies from a variety of tree species.

⁵ Source: Creating and Maintaining Resilient Forests in Vermont. October 2014 Draft. Vermont Department of Forests, Parks and Recreation.

F) *Promote landscape connectivity.*

- Maintain a landscape-scale focus, in cooperation with the other nearby landowners, and being mindful of management in the surrounding region.

Taken together, these strategies will help the full range of native fish, wildlife, and plant species; natural communities; and ecological processes face a changing climate.

3. Infrastructure and Public Use Adaptation Strategies

In addition to the far-reaching effects on ecological systems described above, climate change may also affect the infrastructure and public uses on AMU.

Potential effects could include:

- Floods damaging roads, trails, and camp structures.
- Fires endangering users, campground properties, and neighboring properties.
- Increased precipitation leading to more temporary/seasonal road closures and increased road maintenance.
- Shorter winters reducing snowmobile use seasons.
- Windstorms increasing maintenance needs to keep roads clear of trees.

Such effects will be dealt with on a case-by-case basis. It is anticipated that the systems in place to manage many of these uses will readily handle these issues. Others will require more comprehensive considerations, for example, increased precipitation and flooding – maintaining the AMU as extensively forested, with well managed riparian zones and intact wetlands is a key strategy to reduce and mitigate flooding in the AMU and downstream to the Connecticut River. In addition, however, ANR has and will continue to replace undersized culverts (which can fail in flood events) with larger and better positioned structures, and – long term – may need to consider some roads away from streams.

Future assessments of landscape and species vulnerability to climate change effects may be conducted to help management decision-making by identifying locations vulnerable to weather extremes and species vulnerable based on factors such as temperature extremes and habitat conditions.

VI. MONITORING AND EVALUATION

During the life of the LRMP for AMU, periodic monitoring and evaluation will be conducted to ensure that the resources are protected from fire, insect and disease, encroachments, or unforeseen problems that may occur within the AMU. Management activities will be evaluated to determine how closely the results matched those projected within the plan. Minor adjustments in management may be made to reflect changed conditions or unanticipated results.

As long-term management for AMU continues, inventory, monitoring, assessment, and research are necessary to: evaluate the status of the resource; assess progress toward achieving stated goals; and determine the effectiveness of management actions and activities.

- Were proposed strategies and actions carried out?
- Did the strategies and actions have the intended effect?
- Were the results consistent with expectations and predictive models?
- Do we have the necessary information to understand and evaluate actions taken?

Obtaining quality information is critical to making informed decisions and conducting sound, thoughtful management actions. Research projects on the AMU are directed by the District Stewardship Team to ensure that they do not conflict with the goals and objectives for the AMU as set forth in the LRMP. It is important that individual research projects be assessed for their effects on the resource, potential conflicts with other uses or users, and consist of quality proposals from credible institutions and individuals. All data from private research will be shared with the Agency of Natural Resources.

Ecological/Wildlife

Maintaining the biological diversity of the AMU requires long-term research and monitoring projects in a number of areas. Some of the efforts at meeting these goals include:

Strategies and Actions:

- Continue ongoing inventory and assessment projects promoting the collection and documentation of quality long-term information critical to the assessment and evaluation of management on the AMU (including forest inventory, aerial insect and disease surveys, amphibian and reptile surveys).
- Monitor rare, threatened, and endangered species and natural communities.
- Consider and support appropriate, credible research project proposals which further understanding of ecological elements and wildlife habitat on the AMU and the impacts of management activities.

Timber and Wildlife Habitat

Timber management and harvest is an important tool used to achieve wildlife habitat and forest management objectives. An effective monitoring and assessment program is essential for ensuring the long-term sustainability of a quality timber management program. Careful analysis of the forest, its resource capabilities, potential impacts on other important management goals, protection of rare and/or threatened endangered species, water quality, management or protection of rare and/or state significant natural communities, and the documentation of the occurrence of

natural processes (i.e., insect and disease outbreaks, blowdown events) is important in the execution and understanding of the effects of timber management actions.

Timber harvests and wildlife management activities completion within the AMU will be periodically reviewed by the stewardship forester and the District Stewardship Team to determine how well management objectives are being met. If monitoring results indicate that there is a significant difference between the outcomes predicted by the plan and actual conditions, changes to the plan may be recommended.

Strategies and Actions:

- Continue to support ongoing assessment and mapping efforts (e.g., forest inventory, aerial insect and disease surveys).
- Conduct periodic, standardized post-practice assessments to assess effectiveness of management activities.
- Support proposals for appropriate research addressing long-term evaluation of forest management activities. Gather baseline data as necessary and practical to support assessment of management effectiveness and impacts.

Recreation

Public recreation will be periodically monitored across the property by the District Stewardship Team to identify where recreational uses are in conflict with or may be damaging natural resources. Changes in recreational uses may be implemented including new management strategies designed to minimize or eliminate conflicts. State game wardens will be utilized to assist with maintaining compliance with state laws where specific and/or ongoing problems are occurring.

Strategies and Actions:

- Document illegal use and damage of resources.
- Support appropriate research projects including the collection of baseline data to expand knowledge of recreational carrying capacity, resource impacts, and user conflicts.

Historic

There are both historic and suspected pre-contact resources within the AMU. Current understanding and documentation of these resources varies by site. Detailed documentation and study of field evidence is an important component to the understanding, protection, and interpretation of the individual sites and the greater historic context of the AMU and surrounding areas.

Strategies and Actions:

- Continue to inventory, map, and document historic features.
- Monitor and document condition of known historic features using standardized forms and photo documentation.
- Support efforts to research the history of the AMU.

Invasive Exotic Species

Invasive exotic species are known to be a problem in many areas of the state negatively impacting wildlife habitat, timber management, natural community composition, recreation, and economics. The District Stewardship Team will monitor the AMU for the presence of invasive exotic species and work with cooperating partner organizations to develop a monitoring protocol. The District Stewardship Team will work to identify populations of invasive exotic species and implement control measures where feasible.

Strategies and Actions:

- Identify invasive species when populations are small. Develop control goals and implement.
- Assess and document levels of introduction of invasive exotic plants by species and location.
- Monitor timber harvest areas before and after timber sale activities. Control invasive species as necessary and practical.
- Evaluate invasive species control projects for effectiveness.

Climate Change

If the most conservative current models of climate change are accurate (Iverson, Prasad, Hale, & Sutherland), the AMU, like the rest of the region, will experience strong impacts over the next 50-100 years. These changes may have important consequences for forest nutrient cycling, timber productivity, forest pest ecology, wildlife habitat, and our enjoyment of the forest.

Strategies and Actions:

- Monitor ground conditions, results of management, research, and adaptations of silvicultural guides to inform management decisions and adapt treatment prescriptions as appropriate.
- Support appropriate research project proposals which further understanding of climate change on the AMU.

VII. NEW USES AND PLAN AMENDMENT PROCESS

The long range management plan provides guidance for the long-term management and development of a parcel of state land. However, the future cannot be fully determined at the time of plan development. The departments of Fish & Wildlife and Forests, Parks and Recreation undertake an amendment or plan update process when significant changes to the current long range management plan are proposed. These may include:

- 1) Substantial changes to any goals, management objectives, and implementation actions contained in the current plan;
- 2) Major change in land use, land classification, or species management direction;
- 3) Designation of non-developed camping sites (via statute regarding camping on state lands);
- 4) Permanent closure of existing trails and/or permanent creation of new recreation corridors not identified in the current plan;
- 5) Major rerouting, reclassification, permanent closing or creation of new roads (not including forest management access roads not meant for normal vehicle traffic) within state land boundaries not identified in current plan;
- 6) Major land acquisitions added to the existing parcel;
- 7) Major capital expenditures for new projects;
- 8) Facility closures;
- 9) Transfers in fee ownership;
- 10) Leasing of new acreage (e.g., ski resort); and
- 11) Renaming of natural features (prior to recommendation to Department of Libraries) or lands.

When the amendment process is triggered, a public involvement process begins. The type of process is determined at the time and is dependent upon the extent and type of amendment. If applicable, the easement holders are notified to discuss the proposed amendment.

There may be times when the public input and comments are sought regarding plan changes that are less significant than those triggering the plan amendment process. This is left to the discretion of the District Stewardship Team.

VIII. FUTURE ACQUISITION/DISPOSITION

Through its October 1999 *Vermont Agency of Natural Resources Lands Conservation Plan*, the Agency outlined priorities for acquiring new lands as well as for acquiring additions to existing ANR lands. It is the State's policy to acquire additions to ANR state lands parcels that are:

- 1) necessary for maintaining or enhancing the integrity of existing state holdings;
- 2) lands, such as inholdings and other parcels that serve to consolidate or connect existing state holdings and contain important public values and/or facilitate more efficient ANR land management;
- 3) parcels that enhance or facilitate public access to ANR lands; and
- 4) parcels that serve an identified facility, infrastructure, or program need.

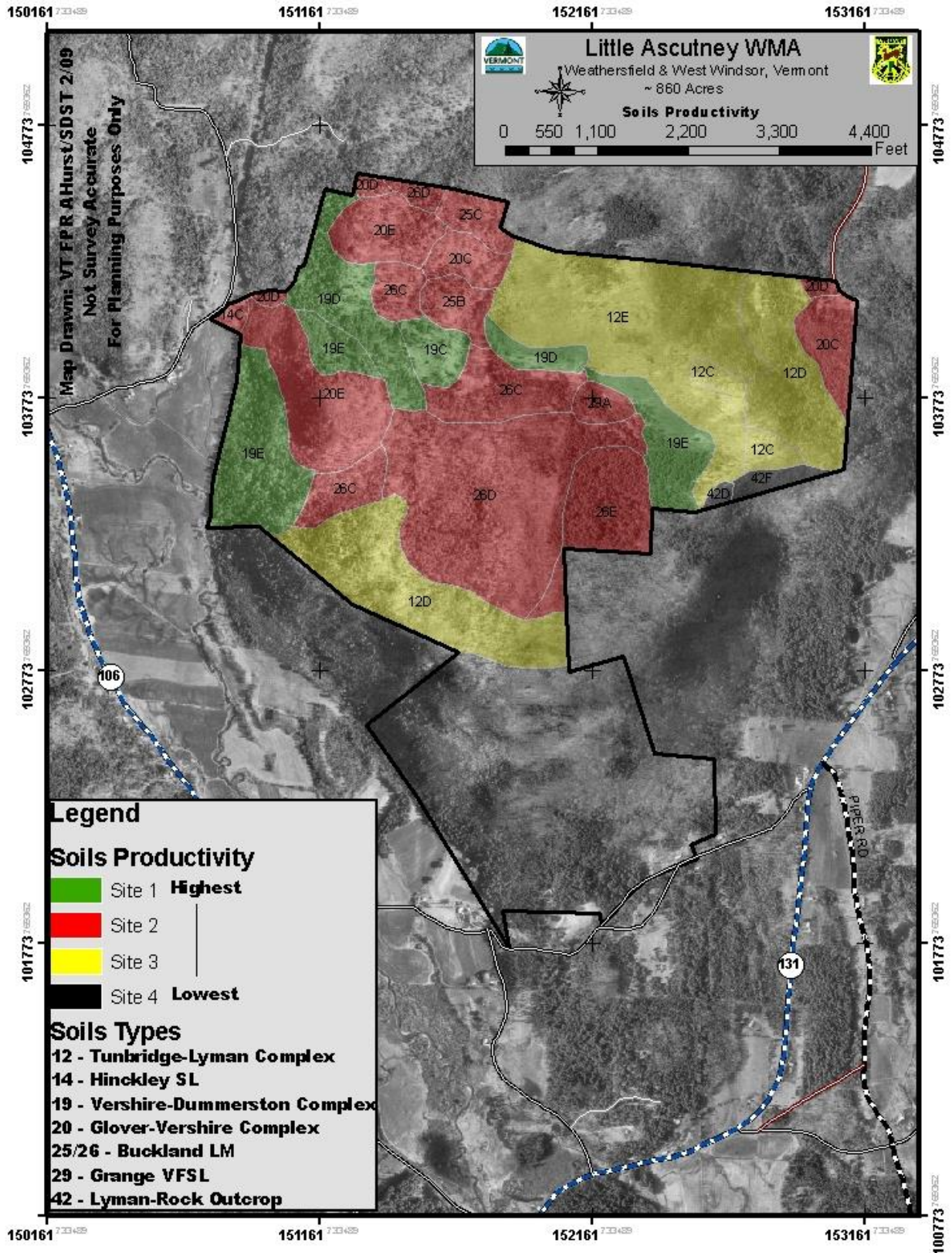
All new acquisitions of land to the AMU will be guided by this plan and must have a willing seller, as the Agency does not have the authority to exercise eminent domain. They will also be done in consultation with the regional planning commissions and the town(s) in which the parcel is located.

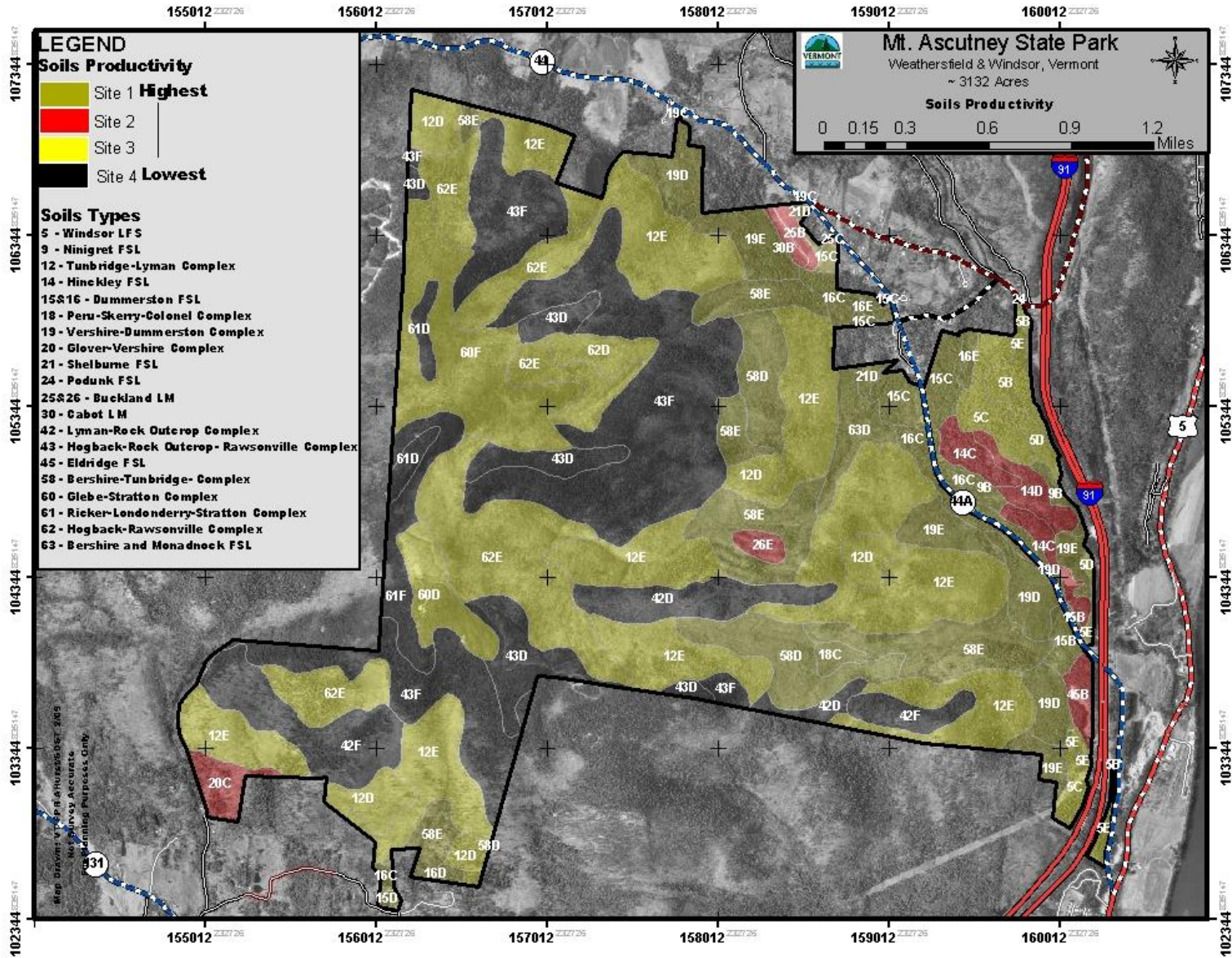
Any future disposition of land from the AMU will be approved by the Agency of Natural Resources Land Acquisition Review Committee (LARC) and the Secretary of the ANR after consultation with the regional planning commission and the town(s) in which the parcel is located.

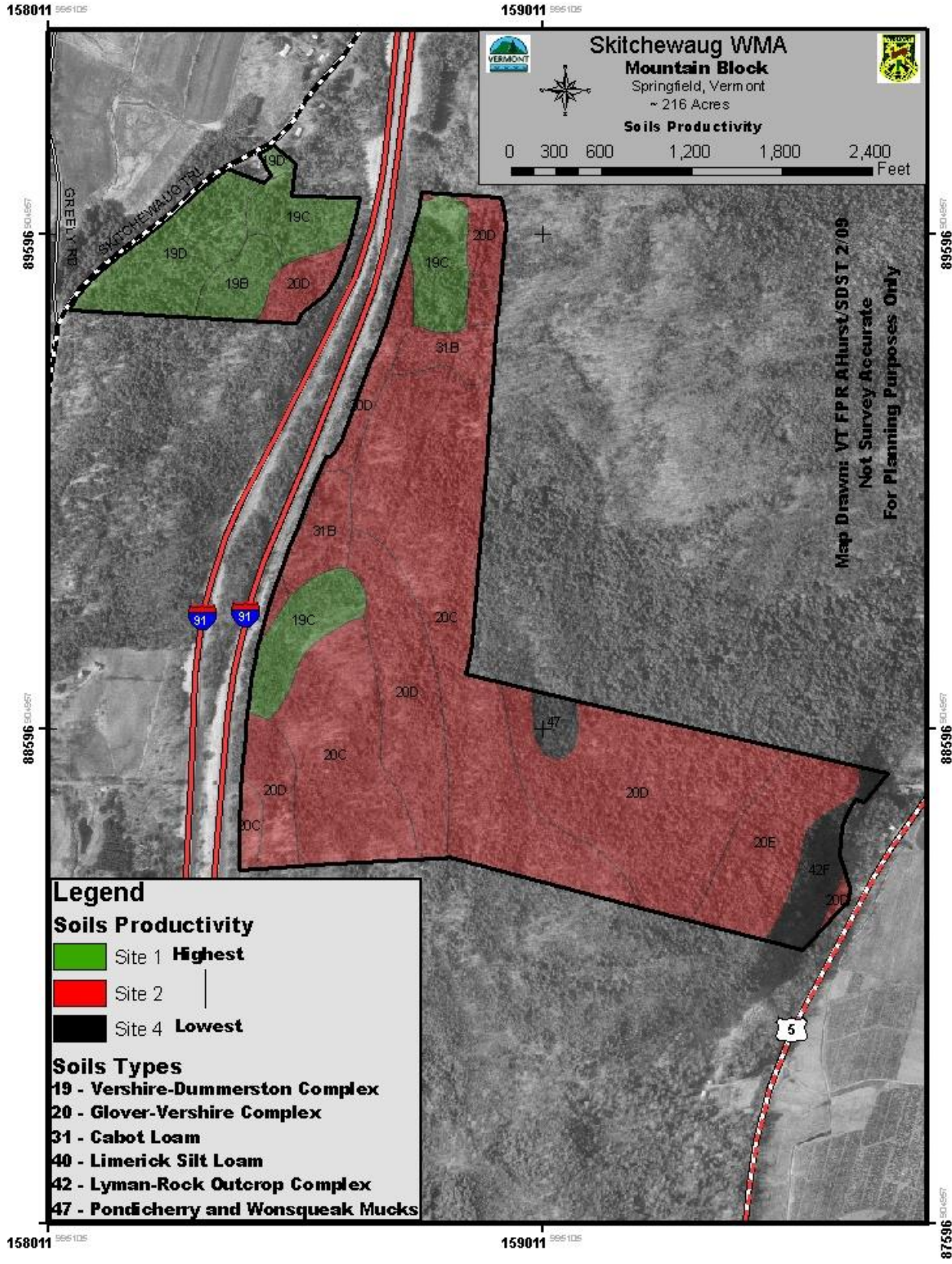
APPENDICES

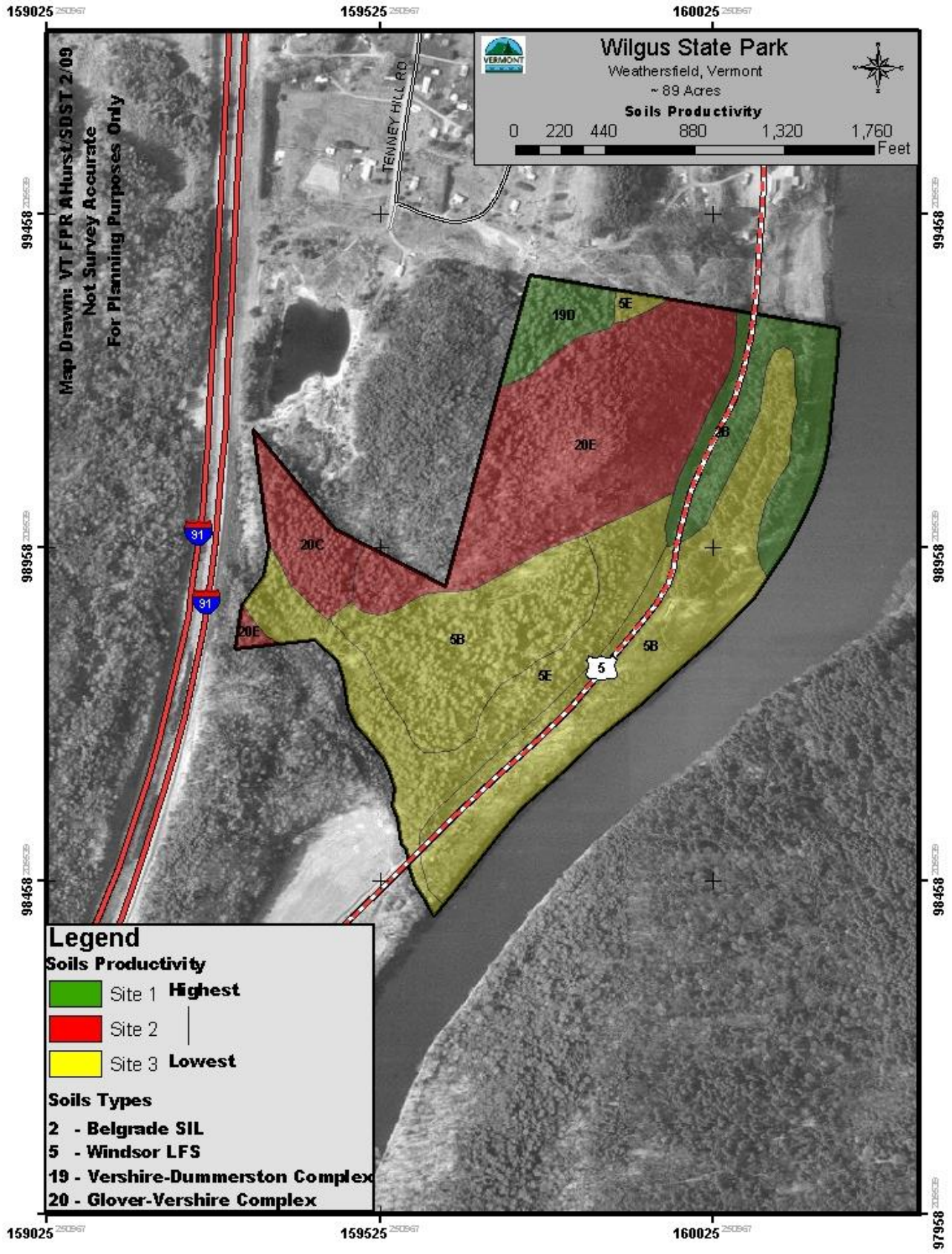
- APPENDIX 1: Soils and Site Class Maps
- APPENDIX 2: Stand Maps
- APPENDIX 3: Forest Stand Inventory Summary
- APPENDIX 4: Acquisition Detail and Funding Source
- APPENDIX 5: Public Comment Summary
- APPENDIX 6: Works Cited
- APPENDIX 7: App. § 15 Rule Governing Public Use of Vermont Fish and Wildlife Department Lands
- APPENDIX 8: Preliminary Details for Vegetative Management Units
- APPENDIX 9: Glossary

APPENDIX 1: Soil and Site Class Maps

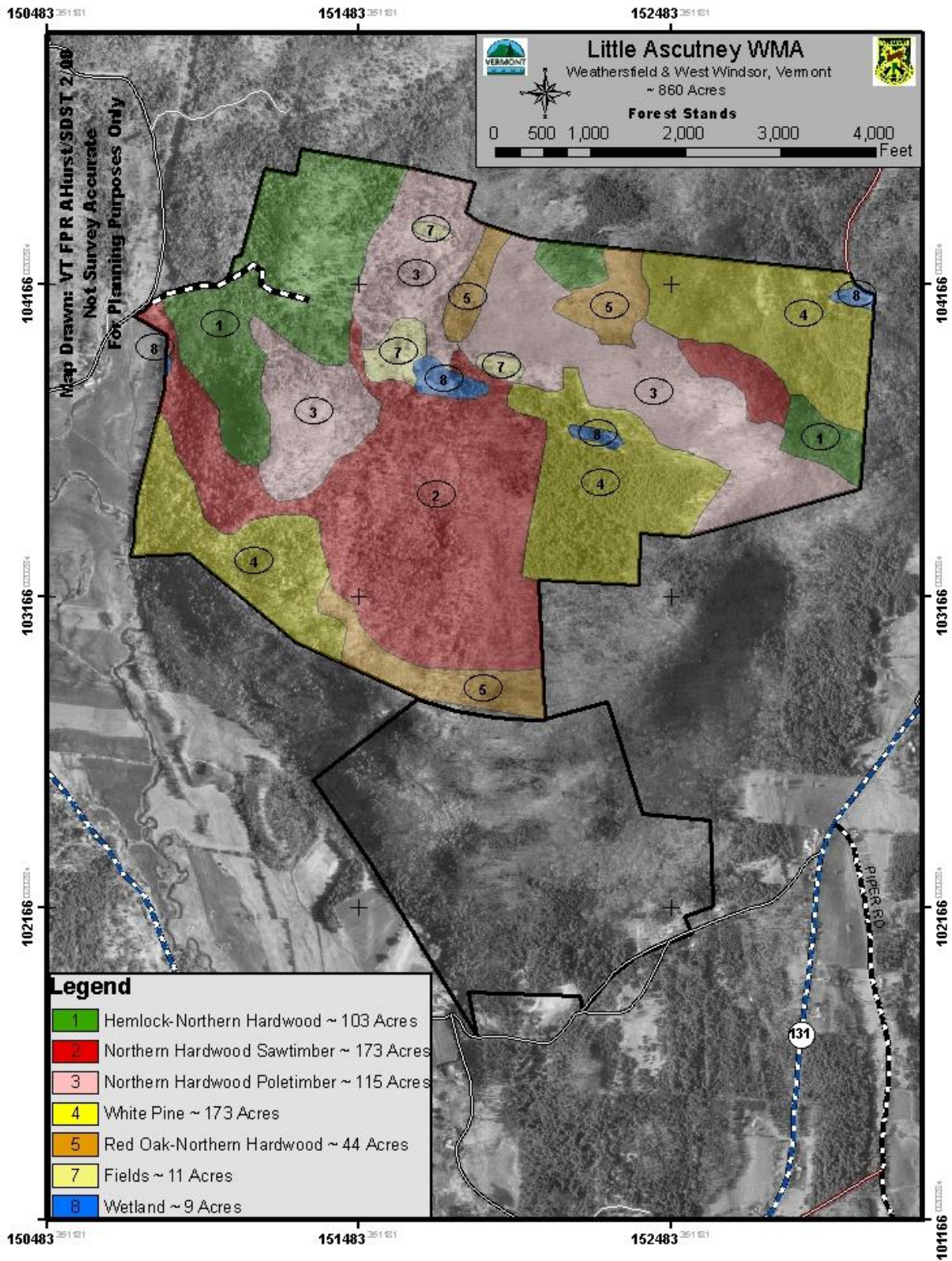


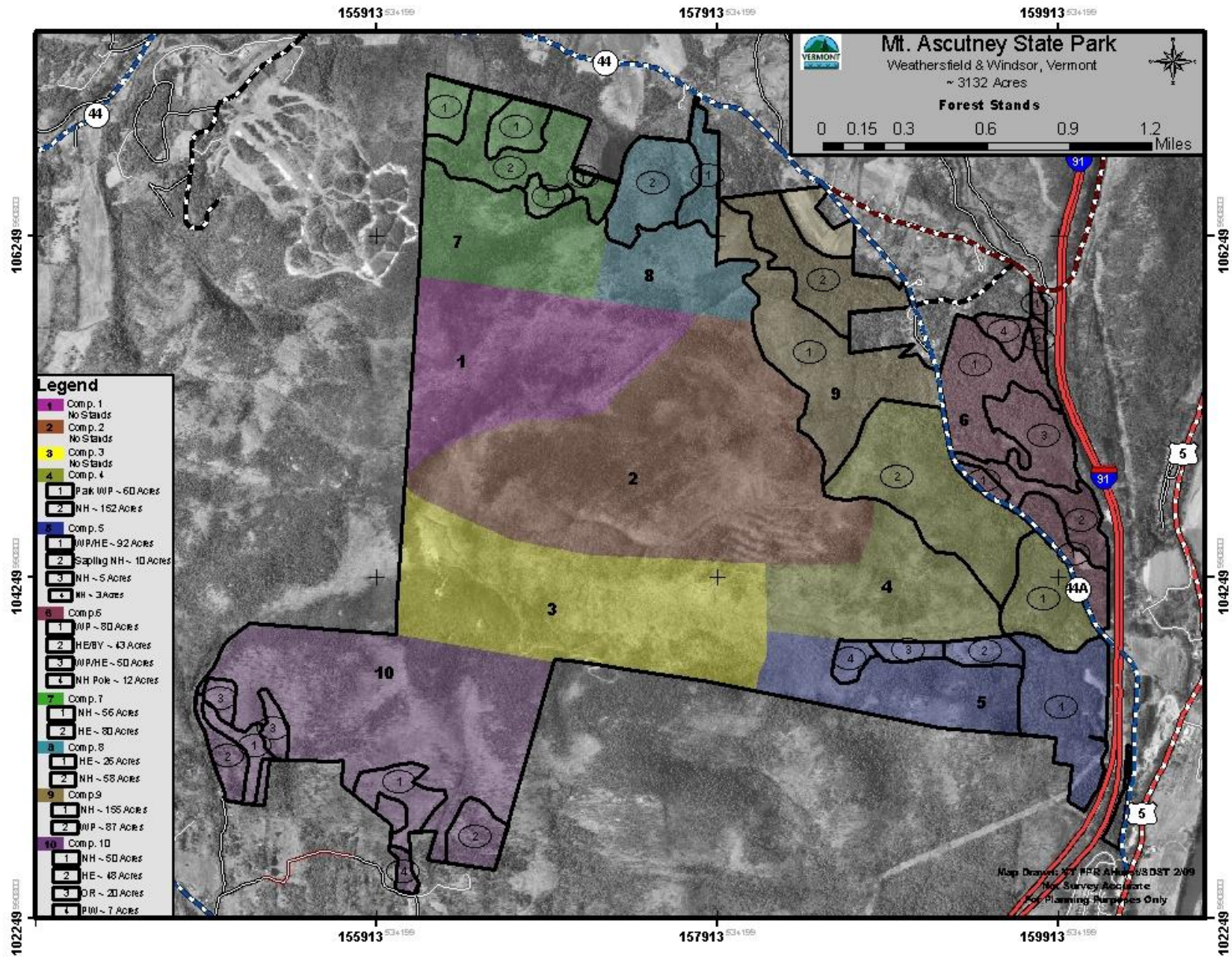


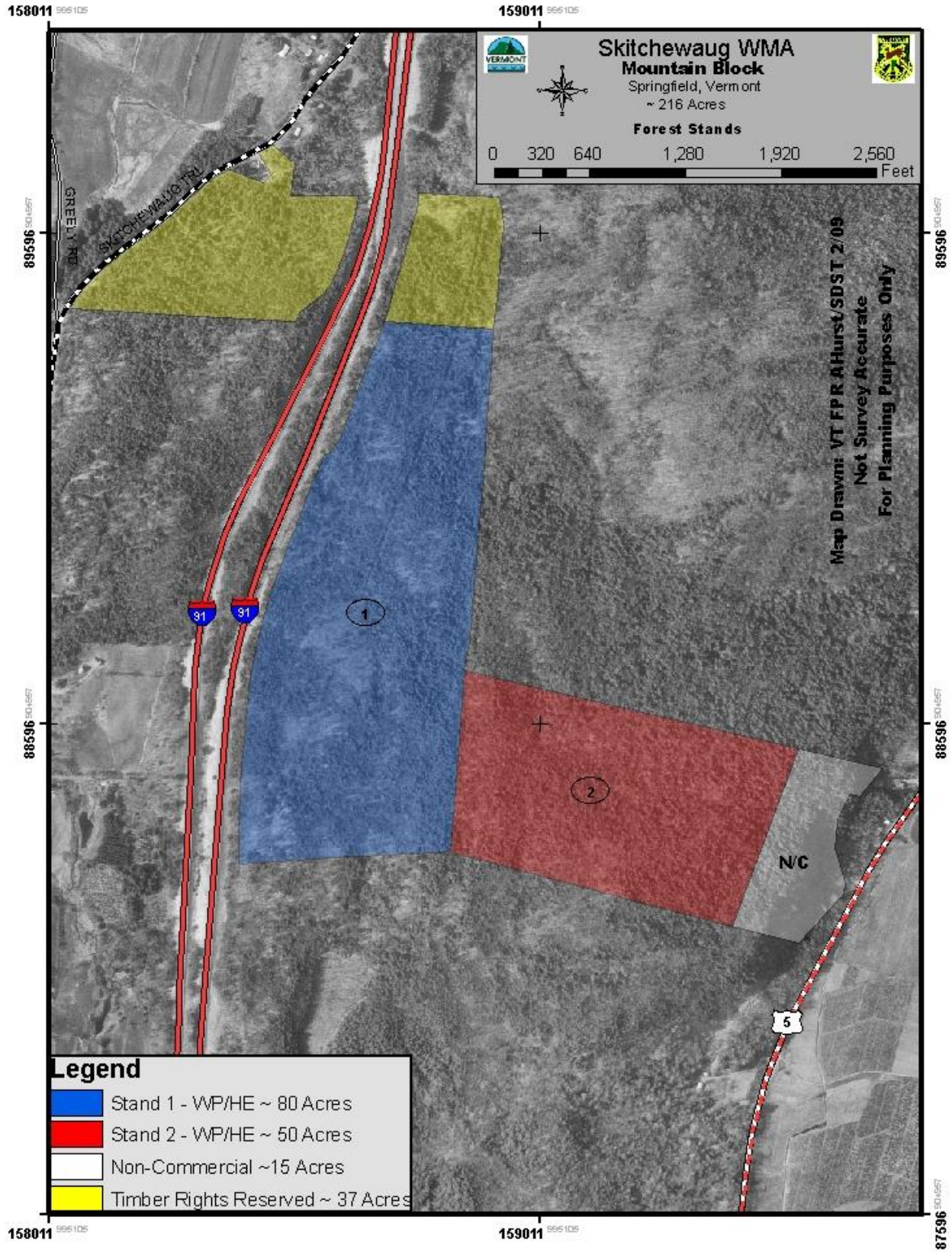


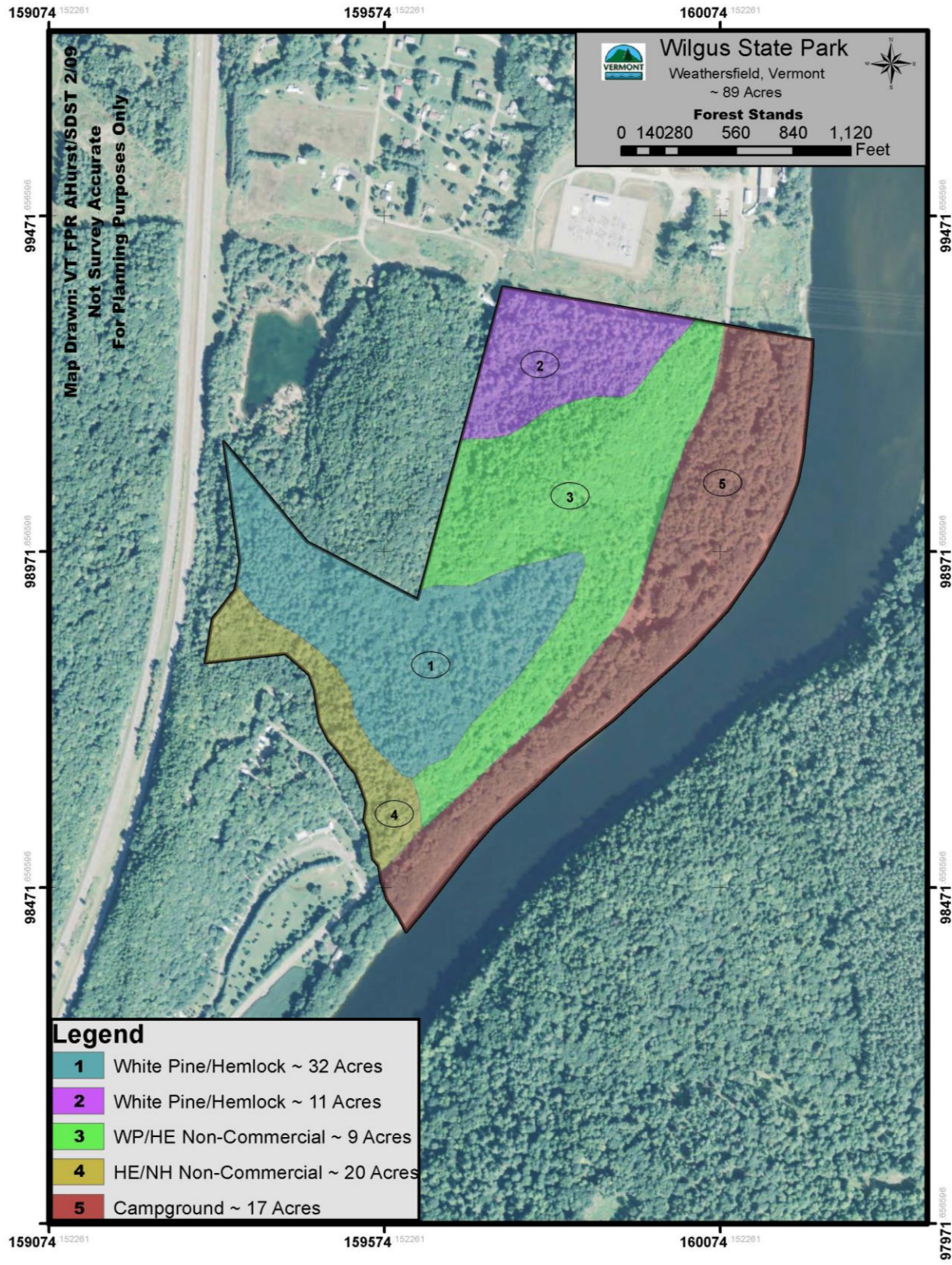


APPENDIX 2: Forest Stand Maps









APPENDIX 3: Forest Stand Inventory Summary

Ascutney Management Unit: Little Ascutney WMA

Comp./ Stand	Acres	MSD	BA A Total/ Dom-codom	Acc. BA/A	Unacc. BA/A	Cull BA/A	Site	Timber Type	Species % BA	Regeneration – Understory Condition	Recommended Treatment at time of inventory	Volume/ Acre
1	105	14.0	135/87	75	42	18		23 Eastern Hemlock	HE 49 MS 17 BE 14	Spotty Hw, By, Pw, Or competing with Be, HH, Stm	Release regeneration, mast trees and hemlock. Portions deer wintering area.	5.3 MBF 10 Cords
2	176	11.5	98/87	71	15	12		25 Beech-Birch-Maple	MS 58 BE 14 HE 8	Limited with areas of Be and Stm	Patch cuts in 2018. Heavy browsing pressure.	5.1 MBF 15 Cords
3	118	10.6	106/71	64	38	4		Northern Hardwood & Oak/HH	HH 23 MS 16 PW 16 OR 7 HE 6	Limited	Crop tree release for mast production.	3.1 MBF 6 Cords
4	174	12.5	156/144	44	66	45		21 White Pine	PW 67 HE 11	Abundant in places. Pw, He, BP, BY, AW, OR competing with Be and Stm	Single tree and group selection to release regeneration and crop trees. Portions deer wintering area.	7.6 MBF 17 Cords
5	44	12 ²⁺	30-100	0-60	n/a	n/a	1-3	26 Sugar Maple-Basswood	OR HC HE PW MS BA	Poor regeneration, heavily browsed	All data estimated. Scattered limited plots due to inoperability. Important mast area.	n/a

Date of Inventory: 2007

Ascutney Management Unit: Mt. Ascutney State Park

Comp./ Stand	Acres	MSD	BA A Total/ Dom-codom.	Acc. BA/A	Unacc. BA/A	Cull BA/A	Site	Timber Type	Species % BA	Regeneration – Understory Condition	Recommended Treatment at time of inventory	Volume/ Acre	
4/1	152	10.2	134/104	112	19	2		25 Beech-Birch-Maple	MS 25 HE 16 OR 15 HB 2.4	Inadequate with Be, stm, and HH competing.	Crop tree release poles—wildlife. Thin in pine/NH where accessible. Aspen patch cuts(s).	6.3 MBF 10.3 Cords	
5/1	152	14.0	108/89	76	30	2		22 White Pine-Hemlock	PW 53 HE 13 MS 7.9	Pockets of He, Pw, BB. Abundant Be, Stm in places.	Thin white pine and release regeneration. Follow up OSR/90 w/CL and W.	8.2 MBF 11.7 Cords	
5/2	10	4.6	89	54	35		2	25 Beech-Birch-Maple	BE 50 He 13 Stm 16	Poor – striped maple/beechn dense.	Previous overstory removal, TSI to release black birch.	1.3 MBF 6.6 Cords	
5/3	5	10.8	106	70	36		2	25 Beech-Birch-Maple	MS 41 Be 33 BB 17	Poor – striped maple/beechn dense.	Re-evaluate in next planning period.	6.3 MBF 7.3 Cords	
5/4	3	10.4	140	46	94		2	25 Beech-Birch-Maple	Be 28 MS 19 MR 19 OR 14	Poor – striped maple/beechn dense.	Re-evaluate in next planning period.	2.9 MBF	
6/1	80	15.5	121/96	92	26	3		21 White Pine	PW 73 HE 14 BB 6	Variable density Pw, He, Be, Stm, BB. Honeysuckle present.	Group selection to release understory white pine. Invasive control. Apple tree release.	18.2 MBF 4.3 Cords	
6/2	43	12.3	170/135	142	12	15		24 Hemlock-Yellow Birch	HE 62 PW 12 OR 7	Limited regeneration.	Next treatment should be 2020. Portions are steep streambank.	10.5 MBF 11 Cords	
6/3	50	9.5	116/110	92	16	8		22 White Pine-Hemlock	HE 41 PW 36 OR 7	Poor success w/striped maple and fern (wintering area).	Underplanting of white spruce.	4.9 MBF 5 Cords	
6/4	12	pole	no data collected						Northern Hardwood w/mast	ASP, HE, OR, AW	Poor, heavily browsed.	Patch cut aspen. Crop tree release mast trees.	
7/1	56	12.8	108/96	78	8	22		25 Beech-Birch-Maple	MS 54 AW 15 BE 11	Inadequate, often Be, HH, Stm.	Group selection where accessible. Portions may be inoperable.	5.6 MBF 10 Cords	

Comp./Stand	Acres	MSD	BA A Total/Dom-codom.	Acc. BA/A	Unacc. BA/A	Cull BA/A	Site	Timber Type	Species % BA	Regeneration – Understory Condition	Recommended Treatment at time of inventory	Volume/Acre
7/2	80	9.3	130/102	102	10	18		23 Eastern Hemlock	HE 54 SR 16 HR 9	Pockets of He and SR with BE, STM.	Group selection where accessible. Portions may be inoperable.	3.8 MBF 2 Cords
8/1	26	13.8	145/140	115	15	15		23 Eastern Hemlock	HE 79 BP 7	Spotty – some hemlock.	Thinning.	10 MBF 17 Cords
8/2	58	11.4	103/92	55	38	12		25 Beech-Birch- Maple	MS 47 AW 16 HH 14	Poor, generally striped maple, beech with some sugar maple.	Thinning.	3.1 MBF 7 Cords
9/1	155	10.5	99.3/77.9	63	24	11		25 Beech-Birch-Maple	MS 35 HE 22	Spotty to established HE	Thinning. Possibly exotic plant control.	3.5 MBF 9 Cords
9/2	87	11.2	104/98	78	6	20		21 White Pine	PW 56 HE 23	Establish OR, HI, BW, STM, AW, HM.	Regeneration release.	8.2 MBF 6 Cords
10/1	50	10.7	83/71	56	9	17		25 Beech-Birch-Maple	HS 62 PW 8 BE 8 OR 8	Spotty AW, BE, BW, STM, HH, PW.	Heavy browsing. Recently cut. In growth period.	2.7 MBF 9 Cords
10/2	48	10.2	110/94	79	11	20		23 Eastern Hemlock	HE 33 MS 10 BE 9 or 7	As above, but with black birch.	Will need ROW. Portions need thinning.	4.5 MBF 9.5 Cords
10/3	20	10.0	80/63	50	6.7	6		55 Northern Red Oak	OR 42 MR 17 SR 12 MS 12	Inadequate.	None recommended.	2.7 MBF 4.7 Cords
10/4	7	14.0	125/115	75	—	50		21 White Pine	PW 84 HI, CB, HH 12	Established but browsed hardwood.	Heavy browsing and deer sign. Cull removal and mast tree release (with apples).	7.4 MBF 11 Cords

Date of Inventory: 2007

* No data at Weathersfield WMA – timber owned by others.

Ascutney Management Unit: Skitchewaug WMA

Comp./ Stand	Acres	MSD	BA A Total/ Dom-codom	Acc. BA/A	Unacc. BA/A	Cull BA/A	Site	Timber Type	Species % BA	Regeneration – Understory Condition	Recommended Treatment at time of inventory	Volume/ Acre
1	80	13.1	137	78	59	—	2	22 White Pine-Hemlock	35 HE 14 MR 13 PW 16 Oaks	Scattered hemlock regeneration. Occasional barberry and honeysuckle	White pine salvage. Release of hemlock and mast trees.	7.2 MBF 15 Cords
2	50	13.2	125	89	36	—	2 & 3	22 White Pine-Hemlock	32 HE 23 PW 15 Oaks-Hickory	Scattered hemlock	Mast tree release. Browse production.	8.7 MBF 10 Cords

Date of Inventory: March 2008

Ascutney Management Unit: Wilgus State Park

Comp./ Stand	Acres	MSD	BA A Total/ Dom-codom	Acc. BA/A	Unacc. BA/A	Cull BA/A	Site	Timber Type	Species % BA	Regeneration – Understory Condition	Recommended Treatment at time of inventory	Volume/ Acre
1	32	14.9	149/130	139	2	8	2	22 White Pine-Hemlock	PW 59 HE 16 OR 14	Limited black birch and hemlock	Thinning	19.6 MBF 7 Cords
2	11	15.1	158/85	125	32	—	2	22 White Pine-Hemlock	HE 52 PW 29 BB 13	Inadequate	Thin white pine	10.3 MBF 13 Cords
3	9	13.3	190/160	166	—	23	2	22 White Pine-Hemlock	HE 61 PW 28	Inadequate	Inoperable – none	18.1 MBF 11 Cords
4	20	13.4	166/126	144	19	4	2	24 Hemlock-Yellow Birch	HE 34 PW 22 OR 20	Inadequate	Steep with no obvious access	12 MBF 16 Cords

Date of Inventory: 2003

APPENDIX 4: Acquisition Detail and Funding Source

LITTLE ASCUTNEY WMA

Parcel	Year Acquired	Acreage	Primary Funding Source
Slayton-Davis Lot land only	1959	396	PR?
Hunting rights only parcel	1964	209	PR
Slayton-Davis Lot Timber Rights	1992 & 1993	396	PR/VHCB
Davis Inholding	1992 & 1993	53	VHCB/Capital Bill
Spackman	1992 & 1993	207	PR/VHCB

MT. ASCUTNEY STATE PARK

Parcel	Year Acquired	Acreage	Primary Funding Source
Weston Heights, Inc.	1933	523	Federal Public Works Funds
EJ York	1933	640	Federal Public Works Funds
Bicknell	1938	300	Federal Public Works Funds
Martin	1944	43	?
Ascutney Mountain Club	1956	65	Donation
G. Lamaca	1961	15	?
D. Kelley	1965	190	?
Mary McClary	1969	205	Donation
AOT	1961	20	Land exchange for I-91
Weathersfield Trail Head	1988	3	VHCB/LWCF
Sullivan	1991	200	LWCF
Bickford	1995	179	VHCB/UVLT
Richards	1997	168	VHCB/UVLT
Angeloff	1999	90	VHCB/UVLT
Dunbar	1999	208	VHCB/UVLT
Miller	2003	302	UVLT/TEA-21 Grant/VHCB

? = Not recorded
 LWCF = Land and Water Conservation Fund
 PR = Pittman-Robertson

PR? = presumed to be Pittman-Robertson
 TEA 21 = Federal Transportation Enhancement Grant
 UVLT = Upper Valley Land Trust

SKITCHEWAUG WMA

Parcel	Year Acquired	Acreage	Primary Funding Source
Parcel #1* – Tri-State Timber	1959	43.2 acres timber reserved*	PR
Parcel #2 – Lawrence & Wheeler, Inc.	1964	43.5	PR
Parcel #3 – Craig Reid	1964	77 (with ROW from Route 5)	PR
Parcel #4 – Raymond & Laura Trombley	1964	46.42	PR
Parcel #5 - Lockwood	1985	8	?

WEATHERSFIELD WMA

Parcel	Year Acquired	Acreage	Primary Funding Source
Atkinson-Davis timber reserved	1959	80	PR

WILGUS STATE PARK

Parcel	Year Acquired	Acreage	Primary Funding Source
Colonel William Wilgus	1933	100	donation

? = Not recorded
LWCF = Land and Water Conservation Fund
PR = Pittman-Robertson
PR? = presumed to be Pittman-Robertson

TEA 21 = Federal Transportation Enhancement Grant
UVLT = Upper Valley Land Trust
VHCB = Vermont Housing and Conservation Board

APPENDIX 5: Public Comment Summary

ASCUTNEY MANAGEMENT UNIT

Public Input Summary and Response to Comments

October 31, 2016

Public input was received at an initial scoping meeting in 2011, a public presentation of the final draft Long Range Management Plan in 2016, and through written comments, emails, and personal communications. Public input is summarized topically below with a response where appropriate.

NORTH TOWER SITE (ECA)

- **Numerous questions and points made regarding feasibility and potential use of proposed ATV trail to north site.** ANR did several intensive site visits to the proposed routes and concluded: “the project is not appropriate and likely not feasible for the summit of Mt. Ascutney. The site visit and topographic data for the area indicate any trail here would be too steep to control erosion effectively. At a lesser grade, if even feasible through the rock and ledge, the trail would have to switch back repeatedly over a significant portion of the summit area. In addition, we feel the noise and activity associated with ATV use on the proposed trail would detract significantly from the mountain top recreational experience.”

The trail was not approved.

COMPLETED AND PROPOSED STAB MOUNTAIN BIKE TRAILS

- **Will new trails increase unauthorized ATV use?** We do not anticipate single track trails will result in additional ATV use. Portions of bike trail that occupy wider woods roads continue to see light unauthorized ATV use. We anticipate if it becomes damaging we will be informed by our recreation partners and would respond with additional enforcement by Fish & Wildlife Wardens.
- **Will STAB trail connect to West Windsor Town Forest trails?** That is the goal of Phase 2, which began construction in the summer of 2016. We expect the work to occur in 3 phases over three years.
- **What is the maintenance plan for mountain bike trail?** Maintenance will be performed by volunteers from STAB and will be supervised by FPR staff.
- **Will mountain bike use interfere with hunting?** The trail will close each year from November 1 to Memorial Day. It should not interfere with the rifle seasons for big game, but could conflict with several earlier seasons including archery. However, at this point, trails on Mount Ascutney occupy a limited amount of land while large areas remain available to uninterrupted hunting. Any new proposed trails or uses will be evaluated and if approved, sited to reflect the popularity of hunting on parcels of the AMU.

TRAILS IN GENERAL

- **Can trails be shared between different types of users?** It is possible but will have to be evaluated as requests are made. Some uses work well together with limited impact to various

types of experience while some may be incompatible due to trail damage and/or conflicts with different types of activities.

- **Could a trail be constructed to the ‘ring dyke’ at Little Ascutney WMA?** trails are not a priority on wildlife management areas and so this is not a goal of management.
- **Will snowmobile trails be considered?** On a case-by-case basis as with all trail proposals.
- **Would like to see horse trails proposed. Hope expressed that FPR will work with horse riding community to develop horse trails or open existing trails to horseback riding. Gravel roads and trails are ideal for horses.**

Would like a horse trail from Yale Heights up through Little Ascutney WMA to give access from either town.

Statewide horse association willing to help with maintenance of horse trails.

Member of the Vermont Horse Council is currently working with FPR to develop a statewide agreement regarding how to process and manage trail requests and horse trails on FPR lands. We anticipate a specific proposal for the AMU in the near future.

- **Would like to see a trail to the bottom of the falls.** We are at capacity for hiking trail maintenance, and so no trail to the bottom of the falls is planned.

ROADS AND ACCESS

- **Support was given for maximizing or at the least maintaining road access on all state lands as a means for the public to access and use public lands.** We support the long-term goal of improving public access as stated in the AMU LRMP. No closures are planned for this unit. Where resource conflicts may arise, a reroute will be the priority. Any closures of significance require a public involvement process.

EXPANDED PARKING

- **Neighbor feels Weathersfield Trail parking lot has added runoff to his property. Can redesign reduce water flow onto his property?** Before construction staff will do a full assessment to determine if design can facilitate limiting run-off from the parking area. If necessary, an evaluation will be conducted by a consulting engineer.
- **Several spoke and/or wrote in favor of expanding parking lot at Weathersfield Trail.**

CASCADE FALLS NATURAL AREA

- **What recreation uses would be allowed? Rock climbing? Others?** In general recreation uses that allow for preservation of the area’s natural condition are allowed. New uses and/or trails will be evaluated following the same procedure as use for other ANR parcels.
- **Bicycles should not be allowed in the Natural Area.** [FPR Policy #7, Natural Area Designation](#), specifies Natural Areas, “though protected...are open to compatible uses...including...recreation of various forms.” While we cannot exclude biking or a biking trail here because of the designation, we will review any proposals here very closely and more restrictively than an undesignated area.
- **How much of the southern slope is privately owned?** A very rough GIS estimate puts 55% of the south slope of the mountain in conserved land and 45% private.
- **Location of Natural Area is acceptable provided it doesn’t encumber manageable land.** Regardless of designation this area would not be suitable for active land management due to

steep slopes, lack of soil. Rare plants and the presence of natural communities not suited to typical forestry practices.

- **Several spoke and/or wrote in favor of designating State Natural Area at Cascade Falls.**
- **ANR should consider purchasing a greater buffer around falls.** In October of 2016, the Governor approved the designation of the Cascade Falls Natural Area. We support additional land conservation around the falls be it state ownership or conservation easement. Should a willing seller appear, this designation would leverage further land conservation in this area.

FOREST AND HABITAT MANAGEMENT IN GENERAL

- **With 97% of Management Unit in mid to late successional stage, it would be good to schedule more logging and create additional young forest habitat.** The limits of the AMU, poor operability and access in a number of cases, precludes harvesting over much of the parcel(s). Where operable and accessible, an active forestry program is scheduled.

DEER WINTERING AREAS

- **There are too many deer in southeastern Vermont for a number of social, historical, and ecological reasons. Do we want to protect deer wintering areas when there are too many deer?** Deer wintering areas are a critical feature for the survival of white-tailed deer populations in the long term. Attempting to manage populations by degrading habitat is a high risk proposition. It is preferable and less risky to manage populations through regulated hunting. In the last decade the Fish & Wildlife Department has actively and consistently reduced deer numbers in southeastern Vermont in response to input from foresters and landowners. In addition, wildlife habitat is a primary objective on the AMU and deer wintering areas provide habitat for many wildlife species that rely on conifers for food and shelter.

USE OF HERBICIDES IN STATE PARKS

- **Several wrote to request we reconsider use of Glyphosate products to control invasive exotic shrubs on the AMU. Concern included both the general idea of application and more specifically suggesting these products not be used in areas used for recreation and access by people. In addition, a suggestion was made that we consider non-chemical means of control such as those offered by a specifically referenced private company.** We visited the sites of the non-chemical control referenced in public input and found the project to have performed poorly. Our modest work with herbicide control has been nearly 100% successful. We have also used hand pulling in more public areas such as Wilgus State Park. From the standpoint of sustainable forestry, we believe it is critical to grow seedlings and saplings of native species, which are generally not competitive, against invasive exotic plant populations without some form of control. There are also situations where invasive plant control is needed to protect natural communities; rare, threatened, and endangered sites; and critical wildlife habitat. In addition, several research projects have established a clear link between invasive plant density and population levels of disease-carrying ticks. We will continue to do herbicide control at a modest level following all state and federal laws while investigating other forms of non-chemical control. We will prioritize non-chemical control in areas of high human use.

ARCHEOLOGICAL SITES

- **Reference to a possible Native American mining site on the south side of Ascutney. This should be investigated and, if found, protected.** We will investigate this further. Should the site exist, it is likely located on the now protected Cascade Falls Natural Area. In addition, FPR protocol requires enhanced protection and consideration of documented archeological sites.

APPENDIX 6: Works Cited

- CAP. (June 2008), *Archeological Precontact Site Sensitivity Analysis and GIS Mapping for Little Ascutney Wildlife Management Area, Skitchewaug Wildlife Management Area, and Mt. Ascutney State Park*. University of Vermont, Consulting Archeological Program, Burlington, VT.
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- Rolando, V. (1992) *200 Years of Soot and Sweat*. Vermont Archeological Society.
- Thompson, E., & E. Sorenson. (2000) *Wetland, Woodland, Wildland. A Guide to the Natural Communities of Vermont*. Hanover, New Hampshire: University Press of New England.
- UMaine. (September 2008). *The Cultural Landscape of the Ascutney Management Unit*. University of Maine at Farmington, Farmington, Maine 04938.
- Vermont Fish and Wildlife Department. (2009). *Regulation: Public Activities at Wildlife Management Areas, Riparian Lands, Conservation Camps, and Fish Culture Stations of the Vermont Fish and Wildlife Department*.

APPENDIX 7: App. § 15 Rule Governing Public Use of Vermont Fish and Wildlife Department Lands

1.0 Authority

- 1.1 This rule is adopted pursuant to 10 V.S.A. §4145(a) which authorizes the Board to adopt rules to “regulate the use by the public of access areas, landing areas, parking areas or other lands or waters acquired or maintained pursuant to 10 V.S.A. § 4144.”

2.0 Purpose

- 2.1 The purposes of this rule is to regulate public activities and use at Wildlife Management Areas, Riparian Lands, Conservation Camps, and Fish Culture Stations in order to protect, manage, and conserve the fish, wildlife, vegetation, and other natural and cultural resources of the state, to provide for the safe and efficient operation of the developed facilities of the Department and to protect the health, safety, and welfare of the public.
- 2.2 To foster quality hunting, fishing, trapping, and other fish-based and wildlife-based activities at these lands and facilities.
- 2.3 This rule does not apply to Fishing Access Areas governed by 10 V.S.A. § 4145.
- 2.4 This rule is not intended to interfere with deed restrictions, easements, rights-of-way or other applicable legal agreements.

3.0 Definitions

- 3.1 “Board” means the Vermont Fish and Wildlife Board as defined in 10 V.S.A. § 4041.
- 3.2 “Department” means Vermont Fish and Wildlife Department.
- 3.3 “Commissioner” means Commissioner of the Vermont Fish and Wildlife Department.
- 3.4 “Wildlife Management Area” or “WMA” means any lands or portions of lands of the Department so designated by the Department.
- 3.5 “Riparian Land” means any lands or portions of lands of the Department other than WMAs, Fish Culture Stations, Fishing Access Areas, and Conservation Camps so designated by the Department, such as but not limited to stream bank parcels, dams, and pond sites.
- 3.6 “Conservation Camp” means any facilities, lands or portions of lands of the Department so designated by the Department.
- 3.7 “Fish Culture Station” means any facilities, lands or portions of lands of the Department so designated by the Department.

- 3.8 “Designated Site” means a delineated area at a WMA, Riparian Land, Conservation Camp or Fish Culture Station that the Department has designated for a particular activity or prohibition on an activity, and so identified and demarcated with signage or identified on a Department-issued map.
- 3.9 “Designated Corridor” means a road, trail, path or other linear travel route at a WMA, Riparian Land, Conservation Camp or Fish Culture Station that the Department has designated for travel by a particular means or vehicle, and so identified with signage or identified on a Department-issued map.
- 3.10 “Authorized Activity” means an activity for which a person does not need prior permission to engage in, and can engage in at a WMA, Riparian Land, Conservation Camp or Fish Culture Station, or at a Designated Site or on a Designated Corridor within a WMA, Riparian Land, Conservation Camp or Fish Culture Station.
- 3.11 “Prohibited Activity” means an activity that no person, group, business or entity shall be allowed to engage in under any circumstances, and for which no Permit, License or Lease shall be authorized, except as provided for in Sections 6.0 of this regulation.
- 3.12 “Commercial Activity” means any activity or service that produces income for any person, group, business or entity, including any activity or service by any non-profit entity where a fee is required or requested.
- 3.13 “Special Use Permit” means a written authorization issued by the Department or its designee issued to a person, group, business or entity to undertake an activity.
- 3.14 “Group” means ten (10) or more persons.
- 3.15 “Primitive Camping” means temporary overnight occupancy in a natural environment with no developed facilities leaving the site in its original condition so there is no or minimal evidence of human visitation.
- 3.16 “Self-contained Camping” means camping with a portable shelter equipped with a self-contained, portable, sanitary toilet.
- 3.17 “Artifact” means an object produced or shaped by human craft, especially a tool, weapon, or ornament or archaeological or historical interest.
- 3.18 “Emergency situation” means an unintended or unforeseen situation that poses a risk to health or life of a person or animal.
- 3.19 “Field processing” means the gutting or dressing or other removal of non-consumptive parts of an animal for the preservation of the carcass to include the boning and quartering.
- 3.20 “Tree stand” means a platform or structure (placed for any period of time) which is fastened to a tree by nails, bolts, wire, or other fasteners that intrude through the bark into the wood of the tree, or around the tree.

- 3.21 “Ground blind” means a structure or manufactured enclosure made of natural or man-made materials placed on the ground to assist in concealing or disguising the user or occupant. This does not apply to blinds constructed for purposes of hunting waterfowl which are governed by 10 V.S.A. App. § 23.
- 3.22 “Bait” means any animal, vegetable, fruit or mineral matter placed with the intention of attracting wildlife.
- 3.23 “All-terrain vehicle” or “ATV” means any non-highway recreational vehicle, except snowmobiles, having no less than two low pressure tires (10 pounds per square inch, or less) or tracks, not wider than 60 inches with two-wheel ATVs having permanent, full-time power to both wheels, and having a dry weight of less than 1,700 pounds, when used for cross-country travel on trails or on any one of the following or a combination thereof: land, water, snow, ice, marsh, swampland, and natural terrain.
- 3.24 “Utility task vehicle” means a side-by-side four-wheel drive off-road vehicle that has four wheels, or tracks, and is propelled by an internal combustion engine with a piston displacement capacity of 1,200 cubic centimeters or less, and has a total dry weight of 1,200 to 2,600 pounds.
- 3.25 “Waterbody” means any lake, pond, river, or stream.

4.0 Authorized Activities

- 4.1 The following activities are authorized on all lands under this rule:
- a) Hunting, fishing, trapping, and target shooting at designated shooting ranges, as well as all other activities authorized under 10 V.S.A. Part 4;
 - b) Fish and wildlife viewing and photography;
 - c) Boating, including launching and landing, for fish-based and wildlife-based activities where not otherwise prohibited by any other relevant regulations or statutes;
 - d) Dispersed, wildlife-based pedestrian activities including walking, snowshoeing, swimming, cross-country skiing, and collection of shed antlers;
 - e) Non-commercial picking of berries, nuts, fungi, and other wild edibles except ginseng;
 - f) Camping for purposes of hunting, fishing or trapping:
 - i. Primitive camping on WMAs designated by the Department for no more than 3 consecutive nights. Camp sites must be at least 200 feet from any waterbody, property line, or road;
 - ii. Self-contained camping on sites designated by the Department for this purpose, for no more than 16 days during the periods of May 1-31, September

1 through December 15. No individual parcel will have more than three designated sites for self-contained camping unless that site's use has been demonstrated to have preceded January 1, 2007.

- g) Fish-based and wildlife-based commercial activities limited to those specified in 4.a-4.c of this subsection when conducted by a person. This shall include guiding for purposes of fishing, hunting, and trapping.

5.0 Prohibited Activities

5.1 The following activities are strictly prohibited, unless otherwise authorized in accordance with Section 6:

- a) The operation of any ATV, UTV, or any wheeled or tracked motorized vehicle not registered for public highway use, except as noted as provided for under this subsection and section 6.0 of this regulation:
 - i. Pursuant to 23 V.S.A. § 3506 (b) (4), ATV use is prohibited on, “any public land, body of public water...unless the secretary has designated the area for use by all-terrain vehicles pursuant to rules promulgated under provisions of 3 V.S.A., chapter 25.”
 - ii. If the Secretary has previously designated an area of state land for use by ATVs pursuant to 23 V.S.A. § 3506 (b) (4), the Commissioner shall authorize a designated corridor on Department lands for under section 6.0 of this rule subject to the terms and conditions the Commissioner deems appropriate.
- b) Use of motorized vehicles except on roads specifically designated for such use;
- c) Snowmobiling except as approved by the Department and on designated corridors;
- d) Horseback riding, dog sledding, non-motorized cycle riding, or use of motorized vehicles except on designated corridors;
- e) Draft and pack animals except for retrieval of legally harvested moose, deer, and black bear during the respective hunting season(s);
- f) Commercial Activities except those allowed under 4.1(a-c);
- g) Artifact or fossil collection;
- h) Fires except in emergency situations, or for non-primitive and primitive camping in accordance with 4.1(f);
- i) Abandoning, or disposing of any animal carcass, or their parts, except that portions of fish or game legally harvested on the property may be deposited on site during routine

- field processing for preservation and transport, or parts used in conjunction with legal trapping;
- j) Construction or placement of temporary or permanent structures, except as provided under Section 7 of this rule or for primitive and non-primitive camping in accordance with Section 4.1(f);
 - k) Collection of plants, trees, evergreen brush or limbs, except wild edibles as allowed under Section 4.1(e) of this rule;
 - l) Use of any fireworks or pyrotechnic devices except signal flares in an emergency situation;
 - m) Feeding or baiting of wildlife except if otherwise authorized by law;
 - n) Taking of fish from a fish culture station except during special events established by the Department, including but not limited to fishing derbies, clinics, and educational events;
 - o) Entering within 500 feet of any building or other associated infrastructure that is associated with a Department Fish Culture Station or Conservation Camp during times of the day other than those times posted for public use;
 - p) Parking of vehicles except while engaged in an Authorized Activity;
 - q) All other activities not specifically authorized by this rule, or authorized in writing by the Commissioner including, but not limited to: para-sailing, hang-gliding, recreational rock climbing, and geocaching.

6.0 Special Use Activities and Designated Sites on Vermont Fish and Wildlife Department Lands

- 6.1 The Commissioner may grant a Special Use Permit, Lease or License for any activity under this rule, subject to Section 5.1(a), so long as the Commissioner has determined that there will be no adverse impact on Authorized Activities or other adverse impacts on Authorized Activities or other adverse impacts on the primary purposes of ownership.
- 6.2 The Commissioner may designate a site, by means of signage, or being identified on a Department-issued map, for any activity under this rule, subject to Section 5.1(a), so long as the Commissioner has determined that there will be no adverse impact on Authorized Activities or other adverse impacts on the primary purposes of ownership.
- 6.3 The Commissioner may permit accommodations to persons with a qualified disability pursuant to the Americans with Disabilities Act.

7.0 Use of Tree Stands and Ground Blinds on WMAs

7.1 Permanent tree stands and ground blinds are prohibited on state-owned WMAs.

7.2 Temporary tree stands and ground blinds are permitted on state-owned WMAs under the following conditions:

- a) Tree stands and ground blinds may be erected and used without written permission from the Department during the time period from the third Sunday in August through the third Saturday in December annually, May 1 through May 31, all dates inclusive, or during any Youth Hunting Day or Weekend. This does not include blinds constructed for purposes of hunting waterfowl pursuant to 10 V.S.A. App. § 23.
- b) Tree stands and ground blinds may be erected and used at other times of the year with advance notice to, and written permission from, the Department's District office staff responsible for managing and administering state land in the District in which the land is located.
- c) Tree stands and ground blinds used on WMAs must be constructed and erected in such a way that:
 - i. No damage is done to any living tree in erecting, maintaining, using, or accessing the stand or blind except that:
 - a) Dead limbs, trees or shrubs may be removed as needed to erect and use the stand or blind, and;
 - b) No live limbs, trees or shrubs may be cut for any purpose except those one inch or less in diameter at either ground level or from the main stem or branch of the tree where the stand or blind is located as appropriate (for guidance, a United States quarter is .9 inch in diameter), and;
 - c) No nails, bolts, screws (including access steps), wire, chain or other material that penetrates through the bark and into the wood of live trees shall be used in erecting any stand or blind, and;
 - d) All tree stands or ground blinds used on WMAs must be clearly and legibly marked with the owner's name and address. Marking shall be legible and placed in a manner that enables a person to conveniently and easily read it.

7.3 Tree stands and ground blinds that do not conform to this regulation are prohibited and may be confiscated and/or destroyed by the Department. Building, erecting, maintaining, using or occupying a non-conforming tree stand or ground blind is prohibited. Construction of any tree stand or ground blind does not confer exclusive use of its location to the person who built it. Any person may use that location for purposes consistent with this rule.

APPENDIX 8: Preliminary Details for Vegetative Management Units

Little Ascutney Wildlife Management Area

MU #1	2016	160 acres	LUC 1.1, 2.2 & 3.0	Stands 1-4	All-aged Management
Resource Summary	Portions deer wintering area, steep slopes, winter access possible. Heavy browsing pressure, beech in heavy decline, red oak and bitternut hickory present as poles and small sawtimber.				
Goal Summary	Enhance and expand deer wintering area, improve vigor of mast trees and mast production, regenerate cull hardwood groups to increase browse availability <u>and</u> ability of portion of regeneration to develop into trees.				
Preliminary Prescription	<ul style="list-style-type: none"> • Single tree and group selection. • Reduce overall stocking to 'B' level with crown close in deer wintering area reduced to no less than 70%. • Group cuts up to one acre in size – up to 20 acres in groups. 				
Other Considerations	<ul style="list-style-type: none"> • Riparian area protection, snowmobile trail, unclear boundary on southwest corner, aesthetics from Route 106 valley. • Exclude Dry Oak community on ridge top from treatment. 				

MU #2	2018	130 acres	LUC 3.0	Stands 1, 2 & 4	All-aged Management
Resource Summary	White pine and mixed hemlock hardwood stands that function as early season deer wintering area. Red oak and bitternut hickory scattered throughout. Highly productive but erodible soils in south unit.				
Goal Summary	Enhance and expand deer wintering area. Improve vigor of mast trees and mast production. Riparian area protection.				
Preliminary Prescription	<ul style="list-style-type: none"> • Single tree selection. • Maintain >70% canopy in deer wintering area. • Fully release red oak and bitternut hickory. • Manage enriched drainages on northern unit to maintain natural hydrology, colluvial soil movement, closed canopy, and species diversity. 				
Other Considerations	<ul style="list-style-type: none"> • Due to access constraints, portions may be 'pre-commercial'. • Commercial harvest access is summer-fall only due to steepness of access road. • Rare, threatened, and endangered plant species on Pierson's Peak, homestead/barn relics southern unit. • Will need rare, threatened, and endangered survey in northern unit. 				

MU #3	2020	100 acres	LUC 2.2	Stands 1, 3 & 6	Even-aged Management
Resource Summary	Pole and small sawtimber stands of hardwood with high component of red oak and bitternut hickory. Shallow, dry soils.				
Goal Summary	Continued development of mast trees for mast production.				
Preliminary Prescription	Crop tree release 3-4 sides released on a 20-40' spacing.				
Other Considerations	<ul style="list-style-type: none"> • Invasive plant management, apple trees. • Protect riparian zone around seep on east ridge. • Will likely need rare, threatened, and endangered survey on east ridge. 				

MU #4	2025	120 acres	LUC 3.0	Stand 2	Even-aged Management
Resource Summary	Small sawtimber size, northern hardwood with red oak and bitternut hickory component. Lower slopes include patch clearcuts completed 2006/2007.				
Goal Summary	Production of mast and woody browse.				
Preliminary Prescription	<ul style="list-style-type: none"> • Patch clearcuts of 2-5 acres evenly distributed across unit as conditions allow. • Retention and release of red oak and bitternut hickory. • Up to 30 acres in patch clearcuts to bring total early successional component on parcel to ~15%. 				
Other Considerations	<ul style="list-style-type: none"> • Invasive monitoring and control. • Avoid placing patch cuts near the ridge. 				

Mt. Ascutney State Park

MU #1	2016	224 acres	LUC 2.2	Compartment 6, Stands 1-4	All-aged Management
Resource Summary	Large sawtimber, stands of white pine, mixed hemlock/hardwood, and northern hardwood/oak. Areas of excellent white pine regeneration. Hardwood regeneration typically failed due to browsing. Portions are deer wintering area. Soils are deep, dry loamy sands.				
Goal Summary	Continuous production of white pine sawtimber. Enhancement of deer wintering area and mast production.				
Preliminary Prescription	<ul style="list-style-type: none"> • Single tree and group selection. • Maintain canopy at >70% in deer wintering area. • Gaps up to one acre to release white pine regeneration. • Release red oak crop trees as found on 3-4 sides. • Ongoing invasive plant control. 				
Other Considerations	<ul style="list-style-type: none"> • High archeological sensitivity, established mountain bike trail, aesthetic considerations from Route 44A and I-91. • Consider planting white spruce in areas of failed hardwood regeneration. • Significant natural community (White Pine-Red Oak-Black Oak Forest). 				

MU #2	2017	596 acres	LUC 2.1 & 2.2	Compartment 4, Stands 1 & 2 Compartment 5, Stands 1-4 Compartment 9, Stands 1 & 2	Even and All-aged Management
Resource Summary	Stands of northern hardwood with oak and hickory, white pine, and mixed hemlock and hardwood. Pole to small sawtimber. Some areas may be inoperable due to steepness.				
Goal Summary	Timber management compatible with aesthetic concerns.				
Preliminary Prescription	Develop three age classes through single tree and group selection with occasional patch clearcut, if feasible, up to two acres.				
Other Considerations	<ul style="list-style-type: none"> • Heavy browsing, hiking trail, access road, mountain bike trail, deer wintering area, significant natural communities. • May need ecological survey if operable areas include dry knobs or enriched coves. 				

MU #3	2030	86 acres	LUC 2.2	Compartment 10, Stands 1, 2 & 4 Compartment 7, Stand 1	Even-aged Management
Resource Summary	Northern hardwood, white pine, and hickory on difficult ground with undetermined access. Pole to sawtimber with heavily-browsed understory.				
Goal Summary	Production of hardwood sawtimber and enhancement of deer wintering area.				
Preliminary Prescription	B-level thinning to release mast species, hardwood sawtimber, and release wild apple trees.				
Other Considerations	<ul style="list-style-type: none"> • Access constraints, adjacent residual area, deer wintering area. • Rare, threatened, and endangered spp. and significant natural community (outcrops/oak woodland) near west boundary of unit. 				

Skitchewaug Wildlife Management Area

MU #1	2016	126 acres	LUC 1.1 & 2.2	Stands 1 & 2	All-aged Management
Resource Summary	Mixed sawtimber stands of hemlock, white pine, red maple, oak species, and hickory species. Regeneration is mix of hemlock and invasive plants.				
Goal Summary	Deer wintering area and mast tree enhancement, control of invasive plants, and release/stimulation of native tree regeneration.				
Preliminary Prescription	<ul style="list-style-type: none"> • Single tree and group selection with spot control of invasive plants. • Retain canopy closure of >70% in deer wintering area. 				
Other Considerations	<ul style="list-style-type: none"> • Aesthetics from I-91, riparian zones. • Unique natural communities. • Access requires temporary right-of-way from an abutter. • Snowmobile trail. • Rare, threatened, and endangered plants in unit, will need surveys. • Recommend 200' riparian management zone around Black Gum swamps. 				

MU #2	2016	40 acres	LUC 2.2	Stand 2	Even-aged Management
Resource Summary	Inclusions of pole hardwood within mixed stand on east-facing side hill.				
Goal Summary	Enhance mast production in area inaccessible for commercial harvest.				
Preliminary Prescription	<ul style="list-style-type: none"> • Crop tree release – pre-commercial. • Release mast trees on 3-4 sides at 20-40' spacing. 				
Other Considerations	<ul style="list-style-type: none"> • Adjacent to LUC area 1.1. • Access is by right-of-way suitable only for 4WD pick-up trucks. • May require special considerations near top of cliff. • May require rare, threatened, and endangered surveys. 				

Wilgus State Park

MU #1	<i>2016 42 acres LUC 2.2, 2.9 & 3.0 Stands 1, 2 & 3 All-aged Management</i>
Resource Summary	Large sawtimber size white pine, hemlock, and hardwood. Modest red oak component. Terrain ranges from flat to steep.
Goal Summary	White pine and red oak sawtimber productivity. Recruitment of new age class with composition reflecting main canopy. Protection of vernal pool.
Preliminary Prescription	<ul style="list-style-type: none">• Single tree and group selection.• Groups up to one acre as feasible.
Other Considerations	<ul style="list-style-type: none">• Access resolution has been problematic.• Possibility of joint project with AOT to resolve.• High archeological sensitivity, unofficial and official hiking trails.• Low quality example of white pine, red oak, and black oak natural communities.• Scattered large visually appealing white pine should be retained.

APPENDIX 9: Glossary

The following is a series of key words and their definitions used in the development of Long Range Management Plans for Vermont Agency of Natural Resource lands.

Acceptable Management Practices (AMPs). In this plan, a series of erosion control measures for timber harvesting operations, as identified in state statutes. The AMPs are the proper method for the control and dispersal of water collecting on logging roads, skid trails, and log landings to minimize erosion and reduce sediment and temperature changes in streams.

Acceptable Growing Stock (AGS). AGS trees exhibit form and appearance that suggests they will maintain and/or improve in quality and can be expected to contribute significantly to future timber crops in the form of vigorous high quality stems. They contain or may potentially produce high or medium quality sawlogs.

Age Class. One of the intervals, commonly 10 to 20 years, into which the age range of forest trees are divided for classification or use. Also pertains to the trees included in such an interval. For example, trees ranging in age from 21 to 40 years fall into a 30-year age class; 30 designates the midpoint of the 20-year interval from 21 to 40 years.

All-aged (Uneven-aged) system. Timber management which produces a stand or forest composed of a variety of ages and sizes. Regeneration cutting methods in this system include single tree selection and group selection.

Basal area. A measure of the density of trees on an area. It is determined by estimating the total cross-sectional area of all trees measured at breast height (4.5 feet) expressed in square feet per acre.

Best management practices. A practice or combination of practices determined to be the most effective and practicable means of preventing negative impacts of silvicultural activities.

Biodiversity. The variety of plants and animals, their genetic variability, their interrelationships, and the biological and physical systems, communities, and landscapes in which they exist.

Biophysical region. A region with shared characteristics of climate, geology, soils, and natural vegetation. There are currently eight biophysical regions recognized in Vermont.

Block. A land management planning unit.

Browse. The part of leaf and twig growth of shrubs, vines, and trees available for animal consumption.

Canopy. The more or less continuous cover of branches and foliage formed collectively by the crowns of adjacent trees and other woody growth.

Capability. The potential of an area to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and at a given level of management intensity. Capability depends on current conditions and site conditions such as climate, slope,

landform, soils, and geology as well as the application of management practices such as silvicultural protection from fire, insects, and disease.

Cleaning (Weeding). Regulating the composition of a young stand by eliminating some trees and encouraging others, and also freeing seedlings or saplings from competition with ground vegetation, vines, and shrubs.

Clearcutting. A cut which removes all trees from a designated area at one time, for the purpose of creating a new, even-aged stand.

Commercial forest land. Land declared suitable for producing timber crops and not withdrawn from timber production by statute or administrative regulation.

Conservation. The careful protection, planned management, and use of natural resources to prevent their depletion, destruction, or waste.

Conservation easement. Acquisition of some rights on a parcel of land designed to keep the property undeveloped in perpetuity.

Cover. Vegetation which provides concealment and protection to wild animals.

Cull Tree. Tree that does not meet regional merchantability standards because of excessive unsound cull. May include noncommercial tree species.

Cultural operation. The manipulation of vegetation to control stand composition or structure, such as site improvement, forest tree improvement, increased regeneration, increased growth, or measures to control insects or disease. Examples of methods used are timber stand improvement, cleaning or weeding, release, and site preparation.

DBH (diameter at breast height). The diameter of the stem of the tree measured at breast height (4.5 feet or 1.37 meters) from the ground.

Deer wintering area. Forest area with at least 70 percent conifer that provides suitable, stable habitat to meet deer needs during the winter.

Den tree. A live tree at least 15 inches DBH (diameter at breast height) containing a natural cavity used by wildlife for nesting, brood rearing, hibernating, daily or seasonal shelter, and escape from predators.

Developed (or intensive) recreation. Activities associated with man-made structures and facilities that result in concentrated use of an area. Examples are campgrounds and ski areas.

Diameter at breast height (DBH). The diameter of the stem of the tree measured at breast height (4.5 feet or 1.37 meters) from the ground.

Dispersed recreation. Outdoor recreation activities requiring few, if any, support facilities.

Down woody material (DWM). DWM is also referred to as coarse woody debris, woody material, and down woody debris. DWM is comprised of woody material left in the woods from harvested trees as well as portions or whole trees that die and fall naturally.

Ecological processes. The relationships between living organisms and their environment. Among these processes are natural disturbances such as periodic fire, flooding, or beaver activity; natural stresses such as disease or insects; catastrophic weather-related events such as severe storms or lightning strikes; or more subtle ongoing processes such as succession, hydrology, and nutrient cycling.

Ecological reserve. An area of land managed primarily for long-term conservation of biodiversity.

Ecosystem. A complex array of organisms, their natural environment, the interactions between them, the home of all living things, including humans, and the ecological processes that sustain the system.

Ecosystem management. The careful and skillful use of ecological, economic, social, and managerial principles in managing ecosystems to produce, restore, or sustain ecosystem integrity, uses, products, and services over the long-term.

Endangered species. A species listed on the current state or Federal endangered species list (V.S.A. Title 10, chapter 123). Endangered species are those which are in danger of becoming extinct within the foreseeable future throughout all or a significant portion of their range.

Even-aged system. Timber management that produces a forest or stand composed of trees having relatively small differences in age. Regeneration cutting methods in this system include clearcutting, seed tree (seed cut) method, and shelterwood method.

Forest health. Condition in which forest ecosystems sustain their complexity, diversity, resiliency, and productivity.

Forest type. A natural group or association of different species of trees which commonly occur together over a large area. Forest types are defined and named after the one or more dominant species of trees, such as the spruce-fir and the birch-beech-maple types.

Forestry. The art and science of growing and managing forests and forest lands for the continuing use of their resources.

Fragmentation. Division of a large forested area into smaller patches separated by areas converted to a different land use.

Game species. Animals habitually hunted for food, particular products, sport, or trophies.

Gap. An opening in the forest canopy caused by the death or harvest of one or several overstory trees.

Geographic Information Systems. A computer-based means of mapping lands and resources and communicating values associated with them (GIS).

Green certification. A process, sponsored by several international organizations, that promotes sustainable forest management practices, providing a marketplace identify for forest products certified to have been grown and manufactured in a sustainable manner.

Group Selection. The removal of small groups of trees to meet a predetermined goal of size, distribution, and species.

Habitat. A place that provides seasonal or year round food, water, shelter, or other environmental conditions for an organism, community, or population of plants or animals.

Hardwood. A broad leaved, flowering tree, as distinguished from a conifer. Trees belonging to the botanical group of angiospermae.

Healthy ecosystem. An ecosystem in which structure and functions allow the maintenance of the desired conditions of biological diversity, biotic integrity, and ecological processes over time.

Heritage Sites. Sites identified by the Vermont Nongame and Natural Heritage Program of the Department of Fish and Wildlife, which have rare, threatened, or endangered species of plants or animals. Heritage sites are identified using a common standards-based methodology, which provides a scientific and universally applicable set of procedures for identifying, inventorying, and mapping these species.

Intensive (or developed) recreation. Outdoor recreation activities requiring major structures and facilities.

Interior dependent species. Those wildlife species that depend on large unbroken tracts of forest land for breeding and long term survival. The term is also often used in conjunction with neotropical migratory bird species requiring large patches of fairly homogeneous habitat for population viability.

Intermediate treatment. Any treatment or tending designed to enhance growth, quality vigor, and composition of the stand after its establishment or regeneration and prior to the final harvest.

Invasive Exotic (Non-native). A species that is 1) non-native (or alien) to the ecoregion or watershed under consideration and 2) whose introduction does or is likely to cause economic or environmental harm or harm to human health.

Land conservation. The acquisition or protection through easements of land for wildlife habitat, developed state parks, and working forests.

Landscape. A heterogeneous area of land containing groups of natural communities and clusters of interacting ecosystems. These can be of widely varying scales but normally include a range of elevations, bedrock, and soils.

Mast. The fruit (including nuts) of such plants as oaks, beech, hickories, dogwood, blueberry, and grape, used for food by certain wildlife species.

Motorized use. Land uses requiring or largely dependent on motor vehicles and roads.

Multiple-use forestry. Any practice of forestry fulfilling two or more objectives of management, more particularly in forest utilization (e.g. production of both wood products and deer browse).

Multiple-use management. An onsite management strategy that encourages a complementary mix of several uses on a parcel of land or water within a larger geographic area.

Native (species). A plant or animal indigenous to a particular locality.

Natural Area. Limited areas of land, designated by Vermont statute, which have retained their wilderness character, although not necessarily completely natural and undisturbed, or have rare or vanishing species of plant or animal life or similar features of interest which are worthy of preservation for the use of present and future residents of the state. They may include unique ecological, geological, scenic, and contemplative recreational areas on state lands.

Natural community. An assemblage of plants and animals that is found recurring across the landscape under similar environmental conditions, where natural processes, rather than human disturbances, prevail.

Nongame species. Animal species that are not hunted, fished, or trapped in this state. This classification is determined by the state legislature.

Northern hardwood. Primarily sugar maple, yellow birch, and beech. May include red maple, white ash, white birch, black cherry, red spruce, and hemlock.

Old growth forest. A forest stand in which natural processes and succession have occurred over a long period of time relatively undisturbed by human intervention.

Outdoor recreation. Leisure time activities that occur outdoors or utilize an outdoor area or facility.

Overstory. That portion of the trees, in a forest of more than one story, forming the upper or upper-most canopy layer.

Patch Clearcut (Patch-cut). Under an even-aged method, a modification of the clearcutting method where patches (groups) are clearcut in an individual stand boundary in two or more entries. Under a two-aged method, varying numbers of reserve trees are not harvested in the patches (groups), to attain goals other than regeneration.

Pole. A tree of a size between a sapling and a mature tree.

Pole timber. As used in timber survey, a size class definition; trees 5.0 to 8.9 inches (varies by species) at DBH. As used in logging operations, trees from which pole products are produced, such as telephone poles, pilings, etc.

Regeneration. Seedlings or saplings existing in a stand. Regeneration may be artificial (direct seeding or planting) or natural (natural seeding, coppice, or root suckers).

Regeneration treatment (harvest cut). Trees are removed from the stand to create conditions that will allow the forest to renew or reproduce itself. This is accomplished under either an even-aged management system or an uneven-aged management system.

The four basic methods used to regenerate a forest are clearcutting, seed-tree, shelterwood, and selection (group selection or single tree selection).

Regeneration methods. Timber management practices employed to either regenerate a new stand (regeneration cutting) or to improve the composition and increase the growth of the existing forest (intermediate treatment).

Regulated Hunting/Fishing/Trapping. The harvest of wildlife under regulations stipulating setting of seasons, time frame of lawful harvest, open and closed zones, methods of take, bag limits, possession limits, and reporting or tagging of species.

Release (release operation). The freeing of well-established cover trees, usually large seedlings or saplings, from closely surrounding growth.

Removal cut. The final cut of the shelterwood system that removes the remaining mature trees, completely releasing the young stand. An even-aged stand results.

Riparian Area. “The word “*riparian*” means of or pertaining to the bank of a river or lake. Riparian areas are ecosystems comprised of streams, rivers, lakes, wetlands, and floodplains that form a complex and interrelated hydrologic system. They extend up and down streams and along lakeshores from the bottom of the water table to the top of the vegetation canopy, and include all land that is directly affected by surface water. Riparian areas are unique in their high biological diversity. They are “characterized by frequent disturbances related to inundation, transport of sediments, and the abrasive and erosive forces of water and ice movement that, in turn, create habitat complexity and variability...resulting in ecologically diverse communities” (Verry, E.S., J.W. Hornbeck, and C.A. Dolloff (eds). 2000. Riparian management in forests of the continental Eastern United States. Lewis Publishers, Boca Raton, FL. 402p.)

Riparian Management Zone (RMZ). The width of land adjacent to streams or lakes between the top of the bank or top of slope or mean water level and the edge of other land uses. Riparian management zones are typically areas of minimal disturbance, consisting of trees, shrubs, groundcover plants, duff layer, and a naturally vegetated uneven ground surface, that protect the water body and the adjacent riparian area from the impact of these land uses.

Salvage Cutting. The removal of dead, dying, and damaged trees after a natural disaster such as fire, insect or disease attack, or wind or ice storm to utilize the wood before it rots.

Sanitation cutting. The removal of dead, damaged, or susceptible trees to improve stand health by stopping or reducing the spread of insects or disease.

Sapling. As used in timber surveys, a size class definition. A usually young tree larger than seedling but smaller than pole, often 1.0 to 4.9 inches at DBH.

Sawlog or Sawtimber. A log or tree that is large enough (usually > than 10 or 12 inches DBH) to be sawn into lumber. Minimum log length is typically 8 feet.

Seedling. A very young plant that grew from a seed.

Seed-Tree (Seed Cut) method. The removal of most of the trees in one cut, leaving a few scattered trees of desired species to serve as a seed source to reforest the area.

Shelterwood method. A series of two or three cuttings which open the stand and stimulate natural reproduction. A two cutting series has a seed cut and a removal cut, while a three cutting series has a preparatory cut, a seed cut, and a removal cut.

Silvicultural systems. A management process whereby forests are tended, harvested, and replaced, resulting in a forest of distinctive form. Systems are classified according to the method of carrying out the fellings that remove the mature crop and provide for regeneration and according to the type of forest thereby produced.

Single tree selection method. Individual trees of all size classes are removed more or less uniformly throughout the stand to promote growth of remaining trees and to provide space for regeneration.

Site Preparation. Hand or mechanical manipulation of a site, designed to enhance the success of regeneration.

Site Quality. A broad reference of the potential of forest lands to grow wood. Site class identifies the potential growth more specifically in merchantable cubic feet/acre/year.

Snag. Includes standing dead or partially dead trees that are at least 6 inches in diameter at breast height (DBH) and 20 feet tall.

Softwood. A coniferous tree. Softwood trees belong to the botanical group gymnospermae, including balsam fir, red spruce, and hemlock.

Stand improvement. An intermediate treatment made to improve the composition, structure, condition, health, and growth of even or uneven-aged stands.

Stewardship. Caring for land and associated resources with consideration to future generations.

Stocking. A description of the number of trees, basal area, or volume per acre in the forest stand compared with a desired level for balanced health and growth. Most often used in comparative expressions, such as well-stocked, poorly stocked, or overstocked.

Sustainability. The production and use of resources to meet the needs of present generations without compromising the ability of future generations to meet their needs.

Sustained yield. The yield that a forest can produce continuously at a given intensity of management.

Thinning. Removing some of the trees in a dense immature stand primarily to improve the growth rate and form of the remaining trees and enhance forest health.

Threatened species. A species listed on the state or Federal threatened species list. Threatened species are those likely to become endangered within the foreseeable future throughout all or a significant portion of their range.

Timber lands. Properties that are managed primarily for the maximum production of forest products.

Timber Stand Improvement. Activities conducted in young stands of timber to improve growth rate and form of the remaining trees.

Traditional uses. Those uses of the forest that have characterized the general area in the recent past and present, including an integrated mix of timber and forest products harvesting, outdoor recreation, and recreation camps or residences.

Unacceptable Growing Stock (UGS). UGS trees are high risk and are expected to decline before harvest. UGS trees are of poor form and/or low quality and cannot reasonably be expected to improve. They have the potential to produce only low quality logs or pulp-type products.

Uneven-aged (All-aged) system. Timber management which produces a stand or forest composed of a variety of ages and sizes. Regeneration cutting methods in this system include single tree selection and group selection.

Watershed. The geographic area within which water drains into a particular river, stream, or body of water. A watershed includes both the land and the body of water into which the land drains.

Weeding (cleaning). Regulating the composition of a young stand by eliminating some trees and encouraging others, and also freeing seedlings or saplings from competition with ground vegetation, vines, and shrubs.

Wilderness. Areas having pristine and natural characteristics, typically roadless and often with some limits on uses. (This is not the federal definition of wilderness.)

Wildlife habitat. Lands supplying a critical habitat need for any species of wildlife, especially that which requires specific treatment and is of limited acreage.

Working forest. Land primarily used for forestry purposes but also available for recreation, usually where both managed land and land not presently being managed is present.

Working landscape. A landscape dominated by land used for agricultural and/or forestry purposes.