HINESBURG TOWN FOREST MANAGEMENT PLAN

HINESBURG, VERMONT

SEPTEMBER, 2012

Town of Hinesburg

John Trefry, Chair, Hinesburg Select Board Date

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1 EXECUTIVE SUMMARY

The 837-acre Hinesburg Town Forest was acquired by the Town of Hinesburg over a period of about 20 years beginning in 1936 as the farms that had been operating on these hills since the early and mid-1800s were abandoned or taken for back taxes. Over the past three quarters of a century, what were open fields and pastures have regenerated into woods, combining with older farm woodlots and hedgerows to form the diversity of forests you see here today. However, cellar holes, barn footings, stonewalls, and other remnants of the Town Forest's agricultural past are still visible at and around the ten homestead sites on the property.

Since the early years of its existence, the Hinesburg Town Forest has been managed by the State's Chittenden County Foresters and Hinesburg's Town Forest Committee primarily for timber, firewood, wildlife habitat, and recreation through projects such as tree plantings, planned timber harvests, apple tree release, road and trail rehabilitation and erosion control, and the construction of the Eagle's Trail.

More recently, over the past decade, recreational use has expanded through the development of a popular trail network created and stewarded by *Fellowship of the Wheel* for mountain biking, hiking, and running. The Town Forest is used and appreciated by an increased number of visitors both from and outside Hinesburg. Uses include, but are not limited to: hiking, biking, skiing, snowshoeing, horseback riding, birding and wildlife viewing, riding ATVs, hunting, dog walking, timber and wildlife habitat management, scientific study, and educational walks and tours.

This management plan was developed by the Town of Hinesburg in order to guide the future use and management of the HTF. In the spring of 2010, the Hinesburg Select Board charged the Town Forest Committee with the responsibility of creating a management plan that builds off of the *Hinesburg Town Forest: Inventory, Assessment, and Management Considerations* document created in 2006 by UVM Field Naturalist and Ecological Planning students, and incorporates public input and expert advice.

The following plan is the result of the Town Forest Committee's work. It introduces the HTF, provides the over-arching philosophy and specific guidelines for its management including:

- Vision and goals
- Management philosophy
- Permitted and restricted uses
- Management objective, guidelines, and actions

This plan is intended to be implemented by the Town Forest Committee in cooperation with other Town committees and outside partners and experts, and to be used as a reference by anyone interested in the HTF or involved in its management.

This plan will be updated and submitted for approval by the Hinesburg Select Board every 10 years. This plan is a working document and may be amended as necessary by the Hinesburg Town Forest Committee, subject to Select Board approval within the 10 years. The Management Plan will undergo comprehensive review in 2022.

2 INTRODUCTION

2.1 PLANNING FOR THE HINESBURG TOWN FOREST

2.1.1 Why Plan?

The following section was adapted from the introduction to Warren Vermont's Town Forest Plans.

In any situation, good planning facilitates wise – rather than reckless – use. In the case of the Hinesburg Town Forest (HTF), without a good plan, ecological function and health could be compromised, conflicts between different uses and interests could go unaddressed, legal and financial issues could arise, and short-term gain could be chosen over long-term investment. Even with the best of intentions, it can be easy to make very bad mistakes in land management. The thought and effort that has been put into creating this management plan will go a long way toward promoting the wise use of the HTF by documenting and communicating what is known about the property, the community's values and goals for its management, and the objectives, guidelines, and actions that should be taken to meet these goals.

2.1.1.1 One Forest. Many landowners.

The HTF is collectively-owned by all of Hinesburg's residents – current and future. This is a lot of landowners for an 837-acre piece of land. As a result, identifying the vision, goals and objectives for the land is not as simple as it would be for private property owned by a single landowner. Everyone must be given the opportunity to express and discuss his/her ideas and opinions, which must be balanced against those of others and the needs and interests of the community as a whole. Planning provides constructive opportunities for these discussions to happen and documents the decisions that are made.

The natural features and communities at the HTF are diverse; they include an array of upland forest types, streams, and wetlands. Therefore, multiple land managers, including foresters, wetland specialists, wildlife biologists, trail maintainers, and others are likely to conduct and need to coordinate management activities at the HTF. Since all of these features and communities are interconnected, wildlife habitat management, for example, cannot be conducted independently of forest or recreation management. This management plan provides important coordinated guidance for each of these land managers in their area of interest and expertise.

At any one moment in time, many people will be using the HTF and will be involved in its management. Over time, as there are changes in municipal staff, elected officials, agency personnel (such as County Foresters and state wildlife biologists) and in the citizenry of Hinesburg itself, this number will grow. As a result, many different people will look to this plan to provide direction for the use and management of the HTF. The more people involved, the more important it is to create a clear and comprehensive plan.

2.1.2 How was this plan developed?

The Town Forest Committee began the process of writing this plan in the summer and fall of 2010, first creating a draft vision statement and then draft goals for the forest. Articles in *The Hinesburg Record* informed the community of the committee's work and invited public input. Then

County Foresters Mike Snyder and Chris Olson and current County Forester, Keith Thompson participated in many of the committee's meetings. The committee held public forums in January and June of 2011 and March of 2012 and solicited public input at Town Meeting in February 2011. Frank Koss of the HPD attended the committee's April meeting to provide input. He also clarified traffic volume data. Committee members visited the Forest and made observations.

Based on the information gathered the committee inventoried the opportunities afforded by the forest and the threats toward achieving the vision and each goal. Key opportunities and threats were summarized as:

2.1.2.1 Key Opportunities

- Is a great forest in good condition – ecological systems and much of the trail network
- Has a rich history (pre-TF and since formation)
- Is a part of large forest block – not yet fragmented
- Lots of people know about, use, and care about the HTF
- Have knowledge (historical knowledge, 2006 inventory etc)
- Have cooperators/partners with expertise and resources (e.g. FOTW, Trails Committee, County Forester)
- Is a great model, learning opportunity, demonstration site
- Is open to the public

2.1.2.2 Key Threats

- Increased use – potential overuse
- Potential incompatible uses - conflicts between uses and other values
- Lack of education about the forest in the general populace
- Resistance to change
- Tension and lack of coordination/trust between user groups and with neighbors
- Potential changes in surrounding landscape (parcelization and fragmentation)
- Threats to forest health (invasive species, climate change, mismanagement etc.)
- Limited resources for enforcing rules, maintaining infrastructure, monitoring etc.
- The fact that it is not legally conserved
- Unknowns and uncertain future

The committee then determined that the opportunities could be maximized the threats minimized by the implementation of four basic strategies: research, collaboration, regulation and education. This management plan is based on implementing those general strategies.

2.1.3 What is a management plan?

At a minimum, a management plan is a written, comprehensive document or series of documents that:

- Defines landowner(s)' management goals and objectives.
- Describes the land (including maps).
- Outlines and prioritizes specific management actions.
- Addresses how these actions will act to meet the management goals and objectives.

Management plans come in many different formats, depending on how they will be used and by whom. Plans that are created and used solely by professional foresters may be very brief with little background and a lot of technical information. However, plans intended to be interpreted and used by a diverse audience, such as this one, must include extensive background information and explanation.

Since forests are dynamic, changing systems and our knowledge about how they function is constantly evolving through scientific research, management plans are typically updated every 10-15 years. This plan is designed to be updated every 10 years.

2.1.3.1 How is this plan designed to be used?

Overseeing the management of the HTF is ultimately the responsibility of the Hinesburg Select Board. This plan is an official document that has been approved by the Select Board and will direct the decisions that this governing body makes regarding the future of the HTF. The Town Forest Committee will be responsible for acting on behalf of the Select Board and the Town to ensure the implementation of the plan.

As a whole, this management plan is meant to be read and used by anyone who uses, manages, or is generally interested in the HTF.

2.1.3.2 Section I: Vision and Goals

This section is meant to be used as a reference or resource by anyone interested in the HTF or involved in its management, and includes:
Vision and goals
Management Philosophy
Permitted and restricted uses

The 2006 document *The Hinesburg Town Forest: Inventory, Assessment, and Management Considerations* created by UVM Field Naturalist and Ecological Planning students contains descriptions of the following features and conditions of the HTF: physical features, cultural history, vegetation, wildlife, and current use.
The 2006 document is meant to be used as a companion document with this plan that provides background information on the property and describes its current condition. Short updates in Section II provide a description of changes in condition and use over the past five years.

This section is meant to guide future management decisions regarding the HTF. It would be impossible to prescribe now how all the specific issues, conflicts, questions, and decisions that will arise over time should be dealt with. The information in this first section of the plan is designed to guide – not prescribe – any future decisions that need to be made. All choices should be evaluated

relative to the vision and goals, and what is currently known about the Forest. This section is designed to be relatively timeless, although vision and goals for the HTF may evolve over the years with changes in scientific understanding and management practices, as well as in the characteristics and values of Hinesburg's community.

2.1.3.3 Section II: Objectives, Guidelines, and Actions

Section II is more specific and technical, and provides objectives, management guidelines, and actions within each of the following areas:

- Landscape and Neighborhood Connections
- Education and Community Uses
- Forests and Wildlife
- Water and Wetlands
- Recreation

These sections provide more detailed guidance on how to reach the broad goals in the first section through specific management objectives, guidelines, and actions in each of these areas. These sections give the Town and professionals the specific information they need to coordinate and implement treatments or activities that work to meet the long-term goals and objectives outlined in the first section.

2.1.3.4 Section III: Summary of Actions

This section summaries, prioritizes, and provides a potential schedule for the actions described in each of the areas in Section II.

3 Section I: Vision, Goals, and Background

3.1 A VISION FOR THE FUTURE

3.1.1 Vision Statement

The following statement is the vision of the residents of Hinesburg for the future of the Hinesburg Town Forest (HTF):

The Hinesburg Town Forest, in a rural residential context on Hayden Hill, has an extensive hill farm history and diverse and functioning natural communities and wildlife habitat. It is used by the public as a place for recreation, quiet solitude, demonstration of sustainable forestry, water quality protection, carbon storage, and public education.

3.1.2 Management Philosophy

The Hinesburg Town Forest will be managed for the benefit of the local community, using a triad approach that designates zones of (1) intensive use, (2) intermediate use, and (3) light duty use and/or reserves. Zones have been formed by matching opportunities present in specific forest sites with potential uses. Every site will not support every use. All uses and management must be compatible with sustaining water quality, wildlife habitat, and general ecosystem function and health over the long term. Permitted uses and management will be reviewed and modified as needed based on experience and the best available information.

3.1.3 Management Goals

The following are the goals of the town of Hinesburg, and its residents for the sustainable management of the Hinesburg Town Forest (HTF). All of the goals are of equal importance, and therefore, do not represent any priority in the order they are presented.

- Use the forest as a model and example of the value of forests to the community, including promotion of educational and community uses that are compatible with other management goals.
- Protect water quality.
- Maintain and enhance ecological connections between the HTF and the larger landscape.
- Monitor and respond to changes.
- Allow natural processes to govern the HTF ecosystems and model any active management on these processes to the extent possible.
- Maintain the forest in at least its present parcel size and configuration.
- Demonstrate sustainable forestry practices that protect and enhance the ecosystem function and health.
- Protect and promote the natural and human made elements of historic and environmental significance for educational and cultural purposes.
- Protect and/or enhance habitat for native species, including game and non-game wildlife.
- Manage the allowed uses of the forest in such a way that they appropriately minimize the adverse effect on the rural residential nature of the neighborhood.
- Manage non-commercial, recreational opportunities that are not incompatible with the other management plan goals.

3.2 PERMITTED AND RESTRICTED USES

Use and management of the Hinesburg Town Forest must conform to the terms of this Hinesburg Town Forest Management Plan that has been approved by the Select Board.

3.2.1 Permitted Uses

Under the terms of the Plan the following uses are permitted:

3.2.1.1 **Recreation:** The Town may use the property for all types of non-motorized, non-commercial recreation including bird-watching, cross-country skiing, fishing, hiking, hunting, snowshoeing, trapping, walking and wildlife observation. Motorized, non-motorized mechanized recreation (such as mountain biking), and horseback riding may be permitted if such activities are regulated in the Management plan.

3.2.1.2 **Management plan Activities:** The Town may conduct activities that are reasonably necessary to carry out the purposes of and are permitted in this management plan. These activities may include management of vegetation and wildlife.

3.2.1.3 **Fields:** The Town may use and maintain fields and pastures for scenic or open space purposes and/or for the purpose of maintaining or enhancing wildlife habitat.

3.2.1.4 **Forest Management:** The Town may harvest timber, construct and maintain logging roads, and conduct sugaring operations. All timber management must be in accordance with Forest and Wildlife Habitat Management Guidelines (Section II) and a project plan.

3.2.1.5 **Trails:** The Town may maintain trails for motorized, non-motorized, non-commercial recreational activities and may clear and construct new trails as described in this management plan. All user groups of the Forest who use the trails must be involved in the design, construction, use and maintenance of these trails at levels appropriate to the impact of such use. If documentation is presented that any one user group is responsible for trail abuse, that user group will be prohibited from the HTF until the abuse is corrected and a program is put in place to prevent future abuse.

3.2.1.6 **Motor Vehicles:** Motor vehicles with engine volume of up to 1000 cubic centimeters are allowed but are restricted to specified roads as indicated on the map. If motorized vehicle users would like to expand the trails available to them they will need to come forward and agree to meet certain standards with regard to trail design, construction, use and maintenance (See *United States Forest Service Trail Construction and Maintenance Notebook* (http://www.fs.fed.us/t-d/pubs/htmlpubs/htm07232806/page04.htm#half) and agree to provide a point person for problem solving. The use of motorized vehicles is permitted for approved forest management and trail and road construction and maintenance activities.

3.2.1.7 **Horses:** Horses are restricted to specified roads as indicated on the map. If horses users would like to expand the trails available to them they will need to come forward and agree to meet certain standards with regard to trail design, construction, use and maintenance (See *United States Forest Service Trail Construction and Maintenance Notebook* (http://www.fs.fed.us/td/pubs/htmlpubs/htm07232806/page04.htm#half) and agree to provide a

point person for problem solving. The use of horses is permitted for approved forest management and trail and road construction and maintenance activities.

3.2.1.8 **Dogs:** May be walked in the HTF. They should be under the immediate physical or verbal control of their handlers (maximum of three dogs per handler). Sled dogs that are harnessed to a sled or wagon have no maximum number per handler. Dog owners must be responsible for picking up and safely disposing of their dogs' feces in parking areas and trails.

3.2.1.9 **Hunting:** Hunting is permitted within the HTF. Hunters must comply with all state and federal hunting laws and adhere to safety zones within the HTF. No shooting is allowed in the forest within 500 feet of parking lots and contiguous occupied dwellings. These safety zones will be depicted on the forest map at each trailhead.

3.2.1.10 **Public Events:** The Town and other groups with the permission of the Committee may conduct periodic, temporary, non-commercial, community, and public gatherings and events in the HTF.

3.2.1.11 **Parking Areas:** The Town may construct, maintain, and replace a permeable surfaced parking area, not to exceed 0.5 acres at the three main entrances to the HTF – Hayden Hill East & West and Economou Rd. The parking lots may not be used for loitering.

3.2.2 Restricted Uses

Under the terms of the Plan the following uses are restricted:

3.2.2.1 **General:** The HTF shall be used for habitat conservation, water quality protection, education, motorized recreation, non-motorized and non-commercial recreation, natural area, open space, agricultural and forestry purposes only. Unless specified in the Plan no residential, commercial, industrial or mining activities are permitted. No building or structures may be constructed, created, erected or moved onto the property, unless specifically permitted by the Town Forest Committee and the Selectboard.

3.2.2.2 **Signs:** No signs, billboards, or outdoor advertising of any kind may be erected or displayed on the property. However, the Town may erect and maintain reasonable signs indicating the name and ownership of the property, boundary markers, directional trail signs, trail maps, rules of forest use, informational, interpretive signs, and signs limiting access or use. The committee may approve memorial and historic plaques and signs with logos no larger than 4"x 4" recognizing sponsors of user groups. Temporary signs announcing approved events in the HTF are allowed.

3.2.2.3 **Excavation:** The Plan prohibits filling, excavation, removal of topsoil, sand, gravel, rocks, or minerals or any change to topography unless the change is necessary to carry out the uses otherwise permitted by the Plan. Surface mining is expressly prohibited.

3.2.2.4 **Water Resources:** The Plan prohibits manipulation of natural water courses or other water bodies. No activities that would be detrimental to water purity, natural water level, or flow are permitted except as reasonably necessary to carry out the uses permitted in the Plan.

3.2.2.5 **Closure of the Forest:** The Town Forest Committee or Town Administrator may close the HTF when dangerous conditions exist or when erosion threatens our trails and roads. The Committee may close the Forest temporarily to give certain user groups preference over others. This temporary closing can be from 1-16 days. The Committee may prohibit any user group from using the forest for multiple infractions of the rules governing the use of the Forest. These rules shall be posted at the three entrances to the HTF. If a user group is so prohibited they may appeal to the Selectboard.

3.2.2.6. Firearms: Target and recreational shooting are prohibited within the HTF.

3.2.2.7. Camping: (per February 2016 amendment) Overnight camping is prohibited in the HTF.

3.3 LIABILITY

Like any town owned land in Vermont, the HTF is afforded some protection from liability under the doctrine of sovereign immunity, as well as case law. In addition, the Town has a $2 million insurance policy for all public land and facilities. In general, the Town's insurance provider feels that a town forest creates only a low exposure to risk. Since the land is open to the public and recreational trail use is encouraged, there will be some expectation that the trails are maintained to a certain level, and this increases the liability exposure. All volunteers working in the Town Forest must have proper safety equipment and, in some cases, proper training for the tasks they are doing. To limit expectations, and thus liability exposure, signs at all entry points should say, "Use at your own risk."

4 SECTION II: MANAGEMENT OBJECTIVES, GUIDELINES, AND ACTIONS

4.1 LANDSCAPE AND NEIGHBORHOOD CONNECTIONS

In recent years, the HTF has had an increase in recreational activity which has given rise to concern among some neighborhood residents. Their concerns are largely the: environmental impact on the forest, increased security/safety issues for residents, impact on infrastructure leading to the forest, and interference with the rural lifestyle historically associated with the neighborhood. On the other hand, some neighbors have been pleased with the increased recreational opportunities afforded by the trail network and see it as an asset.

4.1.1 Related Goals

- Maintain and enhance ecological connections between the HTF and the larger landscape.
- Maintain the forest in at least its present parcel size and configuration.
- Manage the allowed uses of the forest in such a way that they do not adversely affect the rural residential nature of the neighborhood.
- Monitor and respond to changes.

4.1.2 Objectives

- Actively manage vegetation and animal habitats to provide opportunities for demonstration and use of experimental techniques for adjoining landowners, and neighborhood.
- Allow wildlife to move freely within the HTF and the surrounding landscape.
- Consider establishing legal conservation of the present parcel.

- All infrastructures (parking lots, signs, trails, etc.) will adhere to Town regulations.

- Maintain and seek open lines of communication at least annually on the perspective of the neighborhood adjacent to the Town Forest, particularly Hayden Hill East, Hayden Hill West and Economou Road.

4.1.3 Management Guidelines

- Encourage neighborhood property owners to participate in management incentive programs such as WHIP, Current Use, Watershed, etc.
- Educate and inform neighbors on the impact, identification, and control of non indigenous and invasive species.
- If entering negotiations for sale, purchase, trade, donation and/or easements on land, the parcel size will not be reduced.
- Appropriately distribute the number and extent of vehicular traffic among access roads.
- Address privacy concerns with owner(s) of adjoining properties.
- Use local law enforcement to collect traffic data if the need arises.

4.1.4 Actions

- Obtain information about legal conservation opportunities.
- Invite neighbors to educational opportunities geared toward forestry management.
- Post signs at parking areas informing public of speed limit and guidelines of general respect.
- Mark property boundaries in conjunction with adjacent property owners and post signs to let the public know they are leaving public land, if requested by the land owner.
- Designate a committee member to be the point person for neighborhood concerns.
- Attempt to maintain a member of the Town Forest Committee that is a resident of an access road or adjacent property owner.
- Invite neighbors to meetings designated for their input.
- Develop and maintain a list of neighbors.
- Request increased police patrol of the Hinesburg parking lots.
- Post safety zone signs around the parking lots.

4.2 EDUCATION AND COMMUNITY USES

4.2.1 Related Goals

- Use the forest as a model and example of the value of forests to the community, including promotion of educational and community uses that are compatible with other management goals.
- Protect and promote the natural and human made elements of historic and environmental significance for educational and cultural purposes.
- Allow natural processes to govern the HTF ecosystems and model any active management on these processes to the extent possible.
- Monitor and respond to changes.

4.2.2 Objectives:

- Teachers and students at HCS, CVU, UVM and other educational organizations and institutions will use the HTF as an outdoor classroom.
- Student, academic, and government scientific researchers will use the HTF as a study site.
- The HTF will be used as a community education and outreach site for educational demonstrations and tours.

4.2.3 Management Guidelines

- Reasonable access for at least one school bus will be maintained at all of the access points of the HTF (Hayden Hill East, Haden Hill West, and Economou Road).
- Service learning and community service projects are encouraged in the HTF. School-based projects, that have specific learning objectives and a benefit to the forest and/or the town, are distinguished from community service projects and will be given priority. All service learning projects and community service projects require permission from the Hinesburg Town Forest Committee.
- The Town website should be used to list information about, and contacts related to, scientific projects happening in the HTF.
- Publicize community events on the town website and at the Town Forest kiosks.
- Scientific and historical research is encouraged in the HTF. The HTF Committee may ask or require researchers to share their findings with the HTF management committee and/or the public through a copy of a written publication, a walk, a talk, etc.
- Studies of any kind (i.e. scientific, historic, etc.) will avoid causing any negative impact on the condition of the ecological communities at the HTF or leaving any lasting markers whenever possible (i.e. flagging, plot markers, etc). All studies require permission from the Hinesburg Town Forest Committee.
- Teachers and tour leaders should avoid taking large groups into the reserve areas or sensitive areas where they could have a collectively damaging impact. Access to these reserve areas should be limited to the perimeter whenever possible.
- Small groups and individuals should minimize use of reserve areas and should take care to minimize their negative impact.
- Educational groups will be managed in such a way as to insure that the integrity of the trail system and forest environment will be maintained. Travel in small groups is encouraged.

- Structures, artifacts, and vegetation of historic significance (cellar holes, stones, apple trees, cedars, and "wolf trees") shall remain undisturbed by all visitors to the HTF, and their removal from the forest is strictly forbidden. Written documentation, photography, video, etc. are acceptable means of historic documentation. The Hinesburg Historical Society or other organizations may appeal to the Hinesburg Town Forest Committee if removal of historic objects or vegetation is desired.
- Teachers and group leaders should be aware that hunting on the HTF is allowed during legal seasons. Each specific hunting season may not be posted at the HTF, or the town website. Forest users are encouraged to consult the State of Vermont Fish and Wildlife site for a calendar of open seasons. www.vtfishandwildlife.com
- If educational or community uses begin to conflict with each other or other management goals, stakeholders may be required to work together with the Town Forest Committee to devise and implement a solution(s).

4.2.4 Actions

- Offer opportunities for teachers to learn about the HTF at the HTF.
- Seek funds to offer small incentive grants to cover fieldtrip costs for teachers to bring their classes to the HTF.
- Develop a list of potential service-learning projects that the Town Forest Committee could partner on with teachers and their students at the HTF (i.e. development of interpretive/informational material at a kiosk or creating and maintaining trail markers).
- Seek input from local teachers on what resources would be helpful for bringing their students to the HTF on a regular basis.
- Coordinate with academic and state professionals to accomplish monitoring goals.
- Maintain a list of research projects that have been completed at the HTF.
- Work with high schools, colleges and universities to develop ongoing programs that inventory, and monitor the forest to help maintain the natural systems in the town forest.
- Designate a contact on the HTF committee to act as a liaison between County Foresters, Fish and Wildlife Department biologists, researchers, local schools and others who want to use the HTF for education and demonstration purposes. List contact information on the Town website and in all relevant documents.

4.3 FORESTS AND WILDLIFE

Timber management and wildlife habitat protection have been part of the HTF's history from the beginning and continue today under the guidance and supervision of the Chittenden County Forester. Since the creation of the 2006 Landscape Inventory and Assessment, several activities related to forests and wildlife have been conducted on the Town Forest:

Forest to Floor Project: In 2007 and 2008, Chittenden County Forester, Mike Snyder, conducted a timber harvest in the "Frasier Compartment" (central portion of Cover Type Unit 19A and southern portion of Unit 19C. See map 7). White ash from the harvest was locally milled and used to replace the Town Hall floor. Sugar maple crop trees were retained and released using crop tree release. Small gaps to release red spruce and release and/or initiate regeneration were created where clusters of low-value, high risk stems were removed. Vertical structure was enhanced within the even-aged stand through the treatment, resulting in new regeneration, snags, woody material, and growth in canopy trees, which has enhanced habitat for interior nesting songbirds and other wildlife. The harvest site has been – and continues to be – used on numerous occasions for demonstration purposes and educational tours, and has been showcased as an example of sustainable and integrated forestry.

Completion of plantation harvest: Mike Snyder worked with logger, Bill Torrey, to complete a harvest that had been started several years ago in the pine plantations accessed from Economou Road. The harvest was stopped due to wet conditions, and Bill resumed work in Units 6 and 7A in fall 2010. Operations were halted after the December 1 wind storm toppled most of these stands.

Plantation Salvage Harvest: After the December 1 wind storm in 2010, Mike Snyder worked with Bill Torrey to begin salvage work on the plantations, and to begin reopening the woods roads through the areas. Chris Olson also assisted, and new Chittenden County Forester, Keith Thompson, was assisting the Town with completing the project at the time of the writing of this plan.

Audubon Forest Bird Habitat Assessment: Conservation biologist, Aaron Worthley, conducted a forest bird habitat assessment of the entire forest in 2009. The assessment describes the current habitat conditions for a suite of forest songbirds of conservation priority and makes recommendations for protecting and improving habitat conditions for these species through forestry practices.

All management for forest products and/or wildlife habitat at the Hinesburg Town Forest (HTF) shall be overseen by the Town Forest Committee with assistance from the Chittenden County Forester and other experts as needed. All management activities shall be directed by a specific project plan based on data from a recent forest inventory and approved by the Town Forest Committee working in consultation with the County Forester. The specific project plan should address the following goals, objectives, guidelines and actions within this plan.

4.3.1 Related Goals

- Allow natural processes to govern the HTF ecosystems and model any active management on these processes to the extent possible.
- Demonstrate sustainable forestry practices that protect and enhance the ecosystem function and health.
- Protect and/or enhance habitat for native species, including game and non-game wildlife.

- Manage the allowed uses of the forest in such a way that they do not adversely affect the rural residential nature of the neighborhood.
- Monitor and respond to changes.

4.3.1.1 Forest Zones

The Hinesburg Town Forest will be managed for the benefit of the local community, using a triad approach that designates zones of (1) intensive use, (2) intermediate use, and (3) low intensity use/reserves. Low-intensity recreation is compatible in some forest management reserves. The zones have been established as an attempt to provide for variety in intensity of uses in different parts of the forest and thereby meet the needs of all types of users. The zones are based on the ability of the terrain to accommodate various forest uses without compromising the integrity of the ecosystem. The mapping of zones will evolve and change as natural resources are identified and verified in the field. Every site will not support every use. All uses and management must be compatible with sustaining water quality, wildlife habitat, and general ecosystem function and health over the long term.

Zone	Management Goal	Compatible Practices/Uses
Low Intensity Use/Reserves	Protect forest biodiversity and ecologically sensitive sites.	No timber management – unless needed to protect ecological integrity Limit access to wetlands and vernal pools Low-density single-track sustainably-built hike/bike trails where appropriate
Intermediate Use	Protect and enhance biodiversity (primary) through timber management (secondary).	Timber management which mimics small-scale natural disturbance events. Any openings created should be <1acre. Single-track, sustainably-built hike/bike trails.
Intensive Use	Protect and enhance biodiversity through timber management	Timber management which mimics natural disturbance events. Range of recreational opportunities.

4.3.2 Objectives

- Reserves will be left alone unless intervention is required to protect the ecological integrity of a natural community (e.g. invasive species removal).
- Horizontal and vertical structure of forests in the HTF will be enhanced through natural processes alone in low intensity use/reserves, and through natural processes and forest management in other zones.
- Native plant species composition will be fostered or maintained in each natural community, as appropriate within successional stages of development. Vermont natural community descriptions will be referenced from the publication *Wetland, Woodland, and Wildland* (Thompson and Sorenson, 2005) or any updated descriptions from the Vermont Nongame and Natural Heritage Program.
- Habitats for the full diversity of organisms associated with the natural communities at the HTF will be maintained and/or enhanced wherever possible.
- Active management of vegetation and animal habitats will provide opportunities for demonstration, use of experimental techniques, and community involvement.

- An attempt will be made to assure that identified populations of rare, threatened or endangered plants and animals on the HTF are viable and healthy enough to be resilient to change and stress over time and to serve as sources for the colonization of nearby habitat patches.
- Viable populations of wide-ranging wildlife species that require large areas of contiguous and/or connected forest will be present and breeding at the HTF.
- Wildlife will be able to move freely between the HTF and the surrounding landscape.

4.3.3 Management Guidelines

4.3.3.1 General

Until more specific guides are available for Vermont, consult the following publications for more detailed guidelines on protecting and enhancing forest health, function, and biodiversity by mimicking natural processes:

> *Natural Stand Dynamics Silviculture: A Discussion of Natural Community-Based Forestry Practices* published by the Nature Conservancy (2000).
>
> *Natural Disturbance and Stand Development Principles for Ecological Forestry* by Jerry F. Franklin, Robert J. Mitchell, and Brian J. Palik, Department of Agriculture Forest Service Northern Research Station General Technical Report NRS-19 (2007)
>
> *Biodiversity in the Forests of Maine* by Gro Flatebo et al. (1999)

4.3.3.2 Wildlife Habitat

- Take opportunities to protect and enhance forest songbird habitat. Use *Silviculture with Birds in Mind: Options for Vermont Foresters in Northern Hardwood Forests* (Vermont Department of Forests, Parks, and Recreation and Audubon Vermont, 2011) as a guide and refer to 2009 Audubon habitat assessment.
- In northern goshawk nesting areas, follow management guidelines to protect and enhance habitat for this species found in *Focus Species Forestry: A Guide to Integrating Timber and Biodiversity Management in Maine* (Bryan, 2004).
- Consider all management activities within the surrounding landscape context (2500 acres). Work to create and/or maintain a forested landscape capable of supporting viable populations of species associated with a variety of forest types, successional stages, and patch sizes (horizontal diversity). Pay special attention to ensuring habitat for species whose life-history requirements include large areas of contiguous forest.
- Enhance vertical structure of forest stands where it is lacking to ensure nesting and foraging habitat for a diversity of breeding forest birds and other wildlife.
- Protect and enhance long-term hard and soft mast production in hardwood stands with significant beech, oak, hickory, cherry and/or apple densities.
- Maintain and regenerate inclusions of softwood cover in predominantly hardwood stands and inclusions of hardwood cover in predominantly softwood stands.
- Manage existing and potential deer wintering areas according to the Vermont Fish and Wildlife Department guidelines.

- Retain a high percentage of trees >24" dbh (diameter at breast height) and at least 1 snag/acre >18" dbh where present. Plan for the recruitment of these sizes, types, and densities of trees into the future.
- Manage for coarse woody debris by retaining material that currently exists and allowing its accumulation where it is currently missing.
- Follow VT Fish and Wildlife forest management guidelines for protecting vernal pools (http://www.vtfishandwildlife.com/cwp_elem_comm_vp.cfm).

4.3.3.3 *Silviculture*

- Apply currently accepted principles of sustainable forestry to protect biodiversity, ecological health, water quality, and site productivity.
- The single-tree and small group (up to one acre) selection methods should be used for shade tolerant species and the deferred shelter wood with legacy tree retention method should be used for shade intolerant species. Large patch cuts (>2 acres) and clear cuts (>10 acres) should be restricted to stands in the Intensive Zone.
- Grow the largest trees and use the longest rotations possible within site and log quality limitations. (For example, for high quality red and sugar maple, yellow birch, beech, and white ash, the diameter objective should be 22 inches or greater.) Culmination of mean annual board foot growth for these species occurs at 100 to 120 years.
- If planting is done, use only local sources of native species to the maximum practical extent and attempt to match species composition to the known or suspected natural community type.
- When thinning or regenerating stands, favor native species over non-native ones.
- Use natural regeneration to the maximum practical extent.
- Biological legacies of the forest community -- including coarse dead wood, logs, and snags; trees that are large, living, and old; buried seeds; soil organic matter; invertebrates; sprouting plants; and mycorrhizal fungi -- should be retained to aid in post-harvest recovery and to keep the forest from becoming oversimplified.
- Promote the seed bearing capacities of poorly represented plant species of the stand.
- Tree felling should be avoided on slopes exceeding 50%.
- Leave on the site all woody materials that are less than 4 inches in diameter. Salvage operations, if necessary, may be an exception.
- Remove slash from all trails and lop it to 3 feet within 25 feet of trails. Retain large specimen trees and trees with unusual shape or interesting character along trails.
- Promote a vertical stand structure that includes differentiated over story and mid story strata, as well as diverse understory and herbaceous vegetation layers.
- Within 25 feet of streams and wetland areas maintain a closed canopy (75-80%) and prohibit the use of machinery outside of acceptable crossings. Enforce strict water quality protection practices at all times

4.3.3.4 *Forestry Operations*

- Post signs at trail heads and trail closures informing public when timber management is active. Keep neighbors, the general public, and partners updated on activity. Look for opportunities to educate and engage.

- The use of pesticides – including insecticides, fungicides, and herbicides – should be extremely limited and only those pesticides accepted by the Northeast Organic Farming Association and/or recommended by The Nature Conservancy should be used.
- Residual stand damage – including basal wounds, broken and/or scraped tops, and exposed roots – should be confined to 10% or fewer of the dominant or co-dominant trees.
- All trees to be removed shall be marked prior to the inception of harvest except those necessary for establishment of skid trails..
- Average annual harvest volumes should not exceed 75% of the average annual growth.
- Avoid spring harvests and/or rutting that extends beyond the A soil horizon.
- Minimize the number and extent of truck roads and skid trails -- particularly in or near sensitive areas such as stream crossings, protective strips, and steep slopes.
- All skid trails, truck roads, and log landings should be carefully designed and flagged or otherwise marked prior to the inception of harvest. They should be carefully constructed and should not exceed 10% of the land area of the harvest zone.
- Truck roads should be built at grades from 0% to 10% and skid trails from 0% to 15%.
- Skid trails, truck roads, and log landings -- located on easily compacted soils --should only be used when adequately dry or frozen.
- Log landings should be located on nearly level, stable ground, be kept away from protective strips, have water diversions installed, and be graded to prevent erosion and sedimentation..
- Truck roads and skid trails should be properly drained during and after use according to the Vermont AMP manual.
- Protective strips -- characterized by minimal soil disturbance, nearly-complete canopy closure, and many large mature trees -- should be maintained between the access network and surface waters according to Table 4 in the Vermont AMP manual.
- Areas of exposed soil that occur within the protective strip should be seeded and mulched according to Table 3 in the AMP manual9th printing.
- Stream crossings should be restored and non-permanent structures should be removed as soon as possible after forestry operations are complete.
- Streams when not solidly frozen should be crossed with bridges or culverts that are properly sized according to Table 2 in the AMP manual 9th printing) and installed at right angles to streams.
- Sediment should be prevented from entering streams by using turn-ups or broad-based dips on truck roads and skid trails prior to all stream crossings.
- Drainage ditches should not feed directly into streams or other surface waters.
- Post-harvest use of the access network should be restricted in order to prevent erosion, compaction, and site disruption.
- In order to minimize inadvertent benefit of harvesting activities to invasive plant populations, adhere to BMPs 15 – 24 listed in the *Best Management Practices for the Prevention and Treatment of Terrestrial Invasive Plants in Vermont Woodlands* - Nature Conservancy in conjunction with other VT partners 2011

4.3.4 Actions

- Build a relationship with the new Chittenden County Forester.
- Designate a committee member to be the point person for forest management work being planned and done in the HTF.

- Request that the Chittenden County Forester inventory the forest and provide a written report of the inventory and recommendations for management, including an assessment of the feasibility of a sugaring operation.
- Update 2006 inventory of wildlife and habitats, and create recommendations for protection and enhancement. Create a map of wildlife sightings and signs, and significant habitat features that can be added to and updated periodically.
- Use updated inventories to update forest zones as appropriate.
- Coordinate with Audubon Vermont to continue forest bird monitoring. Set up additional monitoring programs including other wildlife and vegetation. Approach local schools and institutions (HCS, CVU, UVM) to get assistance with monitoring.

4.4 WATER AND WETLANDS

The Hinesburg Town Forest has a rich diversity of aquatic environments. Streams, wetlands, vernal pools and seeps have been reported in the Landscape Inventory and Assessment of the Hinesburg Town Forest published in 2006. These aquatic environments are critical to the health of the forest ecosystems. They provide important habitat for many species and the source of fresh water for all species in the forest. The streams from the Hinesburg town forest feed the surrounding streams and the HTF is a headwater location for the receiving streams. The water quality of these aquatic environments impacts ecosystems beyond the boundaries of the town forest. As the use of the forest increases for recreational purposes it is imperative that the aquatic habitats be protected to maintain the overall ecosystem health. This management plan will outline a process to identify and protect these valuable aquatic environments.

4.4.1 Related Goals

- Protect water quality.
- Allow natural processes to govern the HTF ecosystems and model any active management on these processes to the extent possible.
- Protect and/or enhance habitat for native species, including game and non-game wildlife.
- Monitor and respond to changes.

4.4.2 Objectives

- Preserve and restore the natural value of streams, wetlands and vernal pools. Maintain and improve the natural functioning of these aquatic environments and habitats by restricting human impact on these aquatic environments.
- Allow stream channels to continue to adjust (migrate, erode, deposit sediment, etc.) in order to reach equilibrium conditions (slope, channel dimensions) over the long term through a passive management approach.
- Reduce erosion hazards by allowing streams to maintain natural (equilibrium) form and thereby reduce water speeds during high flows.
- Maintain native plant communities along streams, wetlands and vernal pools.
- Maintain forest connectivity between upland habitats and aquatic habitats.
- Protect the water quality of the streams and their tributaries.
- Conserve, protect and/or restore wetlands.
- Conserve and protect vernal pools.

4.4.3 Management Guidelines

4.4.3.1 General

- Consult the Vermont Department of Environmental Conservation, Vermont Agency of Natural Resources and other sources for more specific guidelines regarding stream, wetland and vernal pool buffer zones, passive restoration, and stream management.

4.4.3.2 Buffer Zones

- With the exception of stream crossings for purposes otherwise consistent with this document, no new structures, permanent trails or maintained/permanent alterations to the natural

condition to the forest (permanent openings, landings) shall be established within 100' of the high waterline of any vernal pool or permanent water resource. The exceptions to this guideline are as follows:

1. Well maintained stream crossings and approaches for purposes otherwise consistent with this document
2. For existing and proposed uses where **all** of the following apply: The use and its location are necessary for management of the HTF and achievement of goals explicitly outlined in this document, no reasonable alternative exists, the use can and will be maintained in a manner that will not compromise water quality or habitat viability, the buffer is maximized and the area of proposed use within the buffer is minimized.

- Buffer of vernal pools and permanent water resources: 100' – 400' buffer of vernal pools and wetlands: Permanent openings should not exceed 1 acre in size and comprise not more than 10% of the total buffer area of any vernal pool or wetland. All permanent uses (trails, structures etc.) in this buffer shall result in a maintenance of a minimum of 75% canopy cover uniformly distributed throughout the buffer (forest management may temporarily reduce canopy cover to not below 50% outside of 1 acre groups). Permanent uses shall be designed in a manner that minimizes impediments to movement or potential impacts to wildlife using the wetlands or vernal pools. Uses shall: maintain coarse woody debris and over story composition and also avoid and repair rutting, trampling of vegetation, dramatic linear changes in slope (long bench cuts on trails, steep edged drainage ditches) unnecessary compaction of soil area or modifications to hydrology that affect pool or wetland functioning.
- Forest management resulting in temporary changes within buffer zones should, at a minimum, adhere to standards outlined in Vermont's AMP manual (appendix A), and Forest Habitat Management Guidelines for Vernal Pool Wildlife (appendix B). Where overlap exists, adhere to the more restrictive standard. .
- If rare threatened or endangered species or species sensitive to a particular disturbance are determined to inhabit any water resource on the HTF, modifications necessary for the protection of such species shall be established.
- Avoid disturbance of soil within the stream buffer zones so as not to contribute sediment or excessive runoff or erosion into the streams. Refer to guidelines for the specific activity. Appendix A
- Forest management and other activities within buffer zones should be limited and must be compatible with aquatic ecosystem function and reviewed by the HTF Management Committee.
- Maintain natural vegetation (native plant species) within the buffer zone to limit erosion and enhance wildlife habitat.
- Any non-native or invasive plants that are removed should be immediately replaced by native plant species. Native vegetation may be removed for such purposes as treating pest infestations or accomplishing other activities compatible with the HTF management plan.

4.4.3.3 Trails

- Stream, wetland and vernal pools processes take precedence over trails.
- Protect stream, wetland and vernal pool buffer zones from excessive use and manage any trails within these buffer zones so as to minimize their impact on buffer vegetation and habitat.

- Trails will be designed and built in response to the changing stream profile and wetlands dimensions. Trails will be adapted as necessary when such changes happen so as not to impede stream, wetland or vernal pool processes.
- Trails will be designed and managed to maintain the integrity of the aquatic ecosystem and have minimal impact on the natural plant communities and the aquatic environment. The Town Forest Committee reserves the right to adjust remove or reroute any trail if that trail is identified as degrading an aquatic habitat.
- Trail construction in the HTF will have erosion control as a high priority and this activity will have minimal impact on aquatic habitats.

4.4.3.4 *Stream Crossings*

- Stream crossings will be minimized and designed so as not to impede stream function and have minimal impact on the natural plant communities in the riparian zone.
- Size crossing structures according to the VT DEC River Management Program guidelines and Guidelines for the Design of Stream/Road Crossings for the Passage of Aquatic Organisms in Vermont (VT DFW) and/or consult with the District Stream Alteration Engineer and District Fisheries Biologist for sizing, placement, and permitting requirements.

4.4.3.5 *Aquatic Habitat*

- Natural depressions, vernal pools, seeps and wetlands, will be maintained to provide habitat for obligate species.
- Woody debris will be allowed to accumulate in the aquatic habitats and will be allowed to accumulate in streams to create and maintain varied habitat when such accumulation does not threaten downstream properties.

4.4.3.6 *Invasive Species*

- Invasive plant species such as reed canary grass, purple loosestrife, and phragmites may be removed from wetland areas and replaced with native vegetation.
- Best attempts will be made to monitor wetland sites for invasive plant species and remove them when found before they produce seeds.
- The HTF Management Committee will consult state and other invasive species experts as needed for current guidance on invasive species management.
- (Per April 2017 amendment) A current infestation of invasive exotic plant species in the Hinesburg (HTF) in Hinesburg, has been observed . The Town of Hinesburg recognizes the threats embodied by the presence of invasive exotic plant species. It is the policy of the Hinesburg Town Forest Committee (HTFC), in their stewardship of the HTF, to discourage the continued establishment and spread of these species. The methods with which the HTFC will use respond to remove these species will be dictated by the judgement of the HTFC, in consideration of available research on successful invasive species removal strategies. The removal of these species should commence as soon as is feasible, with specific timing dictated by the HTFC.

4.4.4 Actions

- Identify and map all streams, wetlands, seeps and vernal pools in the HTF. Update the 2006 inventory of aquatic habitats. Use an accredited biologist to help identify and make the

delineations of each aquatic system.

- Conduct a habitat assessment for all streams, wetlands and vernal pools using updated appropriate habitat assessment protocols
- Verify in the field the location of all streams, wetlands and vernal pools in the HTF.
- Assess the impact of existing trails within the stream, wetland, seeps and vernal pool buffer zones. For next steps refer to guidelines.
- Set up permanent monitoring sites along stream channels for cross sections, pebble counts, and photographs. Define a monitoring schedule to track channel adjustments. Possibly coordinate with UVM to combine this with education as a student project.

- Set up permanent monitoring sites for wetlands and vernal pools to monitor changes in these aquatic environments. Possibly coordinate with UVM to combine this with education as a student project.
- Continue to work with the Natural Resources Conservation District (presently Justin Kenny) and the Vermont Youth Conservation Core to restore the Eagles Trail. Assess the present location of the Eagles trail and consider possibly relocating parts of the trail to avoid aquatic habitats and steep slopes that may erode and impact water quality. Include the Selectboard in discussion of the part of the Eagle's Trail on the class 4 town road between Hayden Hill West and East. Consider turning that section of road into a trail.

4.5 RECREATION

Since the early years of its existence the Hinesburg Town Forest has been managed by the State's Chittenden County Foresters and Hinesburg's Town Forest Committee. Some managed uses and activities have included: planned timber harvests, firewood harvests, wildlife habitat maintenance, tree plantings, apple tree release, erosion control, and trail construction and maintenance for use by pedestrians and mountain bikers.

The Town Forest is used and appreciated by visitors both from and outside of Hinesburg. Uses have included: hiking, biking, skiing, snowshoeing, horseback riding, birding and wildlife viewing, riding ATVs, hunting, dog walking, timber and wildlife habitat management, scientific study, and educational walks and tours.

The Town's plan includes recreation that is consistent with the plan's other goals of quiet solitude, demonstration of sustainable forestry, water quality and wildlife habitat protection, carbon storage, and public education, while not adversely affecting the rural residential nature of the neighborhood.

The level of recreational use will be monitored to determine what management strategies should be adopted so that balance is achieved and recreation is allowed. Future recreational activities and management of the Hinesburg Town Forest for recreation should be undertaken only with the specific approval of the Hinesburg Town Forest Committee. Recreation and recreation management must be guided by the permitted and restricted uses, goals, objectives and actions set forth in the Management Plan.

4.5.1 Related Goals

- Manage non-commercial, recreational opportunities that are compatible with the other management goals.
- Manage the allowed uses of the forest in such a way that they do not adversely affect the rural residential nature of the neighborhood.
- Monitor and respond to changes.
- Allow natural processes to govern the HTF ecosystems and model any active management on these processes to the extent possible.
- Protect water quality

4.5.2 Objectives

- Recreation is consistent with protection of natural systems.
- Collaboration and communication between user groups is maximized and conflicts between user groups are minimized.
- Open lines of communication and positive working relationships with neighbors are established and maintained.
- Recreation management regulations are adapted as needed to reflect changes in resource conditions and changes in the types and intensities of human uses

4.5.3 Management Guidelines

- Concentrate recreational use on existing trails and limit the creation of new trails except as needed to 1) bypass wet, steep, ecologically sensitive or otherwise unsuitable stretches of existing trails, 2) connect trails segments interrupted by acts of nature or forest management activities or 3) to connect to trails on adjacent land.
- Trails will adhere to relevant trail and recreational standards and the best available professional judgment to protect soils, water quality, and other HTF resources
- Maintain permanent gates to block unauthorized motorized vehicle access to the Forest.
- There will be on-going collaboration with the Hinesburg Trails Committee, and any other user groups deemed responsible to use and maintain the trail system
- Multi-use trails will be only in appropriate zones (see Forests and Wildlife section).
- Bridges, culverts, and other trail amenities will be used as needed to minimize impacts on soil, water, and other resources
- Non-commercial hunting, trapping and fishing in the HTF is allowed in accordance with all state and federal regulations. Tree stands and ground blinds must be portable and removable seasonally and cause no damage to trees.
- Recreational groups will be managed in such a way as to insure that the integrity of the trail system and forest environment will be maintained. Travel in small groups is encouraged.
- Should there be any reported problems, or suspected illegal activity at the trailheads; the Hinesburg Police will be involved in patrolling the area.
- Recognize and take advantage of the educational opportunities created by recreational use of the HTF.
- Trails that link with other local trail networks will be maintained.

4.5.4 Actions:

- Temporarily restrict or curtail recreational activities when needed to allow for other management activities provided for by this plan (e.g. timber management) or when conditions are not suitable.
- Create and/or review annually and as needed a comprehensive and specific trail/recreation plan for the HTF that inventories and assesses existing trails, maps out any future re-routes, connections, closures and provides clear expectations and understandings for how and by whom trails will be maintained, marked and signed.
- Create and post on the Town website a HART trail map (and iterations as necessary) for the Town Forest that is similar in format to other HART trail maps.
- Post information at the parking areas entrances to educate dog walkers about the negative impacts of dog waste on water quality and the disruptive impact dogs have on wildlife e.g. birds.
- Post signs at parking area and at entrances to the Forest that designate the allowed and restricted uses of the trails, and encourage trail safety and courtesy. Check each parking area monthly to be sure signs are up-to-date as conditions and seasons change.
- Continually educate the public about the use of the Town Forest and issues related to its management via the Town Website, *The Hinesburg Record, Front Porch Forums,* The Town Report and user group communications. Keep the information up-to-date as the seasons and conditions change.

- Develop a flyer that summarizes the vision and goals for the HTF along with guidelines for public uses (events and recreation) that can be downloaded from the Town website and available at the kiosks at the HTF.
- To promote safety and to minimize conflicts between hunters and other users of the HTF, post permanent signs at parking areas and trail heads indicating that hunting for deer, bear, turkeys, grouse, and other legal game is permitted within the HTF
- Create an official MOU between any user group with the majority of responsibility for building and maintaining trails and the Town re: trail maintenance over the long term.
- Regularly refresh the property boundaries to facilitate 1) the placement of trail signs, and 2) discussion with adjoining property owners about Town Forest use.
- Monitor the effect of the use of the Forest on the neighbors particularly with regard to traffic safety and criminal activity.
- Post signs on the access roads near the parking lots asking motorists to drive slowly on the neighborhood roads.
- Seasonally monitor the forest, particularly the trails, for evidence of abuse or damage to natural systems due to recreational activities and modify management recommendations and actions appropriately. Dated and annotated photographs could be useful for this purpose.
- Seasonally monitor use of the parking areas for evidence of overcrowding during certain seasons or at certain times.
- Confer with user groups at least annually about their observations of conditions in the forest and changes in the types and intensities of human uses.
- Update recreation regulations as needed to reflect changes in recreational demand and changes in natural systems within the HTF
- Designate a committee member to be the point person for recreational use of the HTF.

5 SECTION III: SUMMARY OF ACTIONS

These actions will be assigned to specific committee members and others when the Management Plan is adopted and reviewed on an as needed and annual basis.

5.1 HIGHEST PRIORITY

Recommended to be completed in 2012

- Build a relationship with the Chittenden County Forester. (4.3.4)
- Mark property boundaries in conjunction with adjacent property owners and post signs to let the public know they are leaving public land. (4.1.4)
- Create an official MOU between any user group with the majority of responsibility for building and maintaining trails) and the Town re: trail maintenance over long term. (4.5.4)
- Create and post on the Town website a HART trail map (and iterations as necessary) for the Town Forest that is similar in format to other HART trail maps (4.5.4)
- Update maps, signs, and information in parking lot kiosks. Post new signs at parking areas informing public of :
    - the speed limit and guidelines of general respect. (4.1.4)
    - the negative impacts of dog waste on water quality and the disruptive impact dogs have on wildlife e.g. birds. (4.5.4)
    - the allowed and restricted uses of the trails, and encourage trail safety and courtesy (3.2, 4.5.4)
    - the fact that hunting for deer, bear, turkeys, grouse, and other legal game is permitted within the HTF (4.5.4)
    - liability (3.3)
    - the expectation of trail safety and courtesy (4.5.4)
    - any forestry operations in progress (4.5.4)
    - any restrictions or curtailments of activities for timber management or for unsuitable conditions (4.5.4)
- Continue to work with Justin Kenny and the VYCC to restore the Eagles Trail. Assess the present location of the Eagles trail and consider possible relocating parts of the trail to avoid aquatic habitats and steep slopes that may erode and impact water quality. Include the SelectBoard in discussion of the part of the Eagle's Trail on the class 4 town road between Hayden Hill West and East. Consider turning that section of road into a trail (4.4.4)
- Designate a contact person (list contact information on Town website and on all relevant documents) on the HTF management committee to act as a liaison with the following groups/activities:
    - scientists or educators who are using or may want to use the HTF as a study site(4.2.4)
    - forest management work being planned and done in the HTF (4.3.4)
    - neighborhood concerns (4.1.4)
    - recreational users (4.5.4)
- Designate a contact on the HTF committee to act as a liaison between County Foresters, Fish and Wildlife Department biologists, researchers, local schools and others who want to use the HTF for education and demonstration purposes. List contact information on the Town website and in all relevant documents. (4.2.4)
- Create and review annually and as needed a comprehensive and specific trail/recreation plan for the HTF that inventories and assesses existing trails, maps out any future re-routes,

connections, closures and provides clear expectations and understandings for how and by whom trails will be maintained, marked and signed. (4.5.4)

- Post signs on the access roads near the parking lots asking motorists to drive slowly on the neighborhood roads. (4.5.4)
- Identify, map and verify all streams, wetlands, seeps and vernal pools in the HTF. Update the 2006 inventory of aquatic habitats. Use an accredited biologist to identify and make the delineations of each aquatic system. (C) (4.4.4)
- Request that the Chittenden County Forester inventory the forest and provide a written report of the inventory and recommendations for management, including an assessment of the feasibility of a sugaring operation. (4.3.4)
- Request increased police patrol of the Hinesburg parking lots. (4.1.4)
- Post safety zone signs around the parking lots. (4.1.5)

5.2 HIGH PRIORITY

Recommended to be completed in 2012-13

- Assess the impact of existing trails within the stream, wetland, seeps and vernal pool buffer zones and decide if removal of those trails is necessary to maintain aquatic ecosystem integrity. Remove or re-route all trails within the buffer zones of streams, wetlands and vernal pools that will degrade the aquatic habitat. (4.4.4)
- Once all streams, wetlands and vernal pools have been identified establish the appropriate buffer zone consulting state natural resource guidelines. Vernal pools may require buffer zones 100 to 400 ft to protect a percentage of the aquatic species breeding in those pools. See VT Fish and Wildlife ttp://www.vtfishandwildlife.com/cwp_elem_comm_vp.cfm) (4.4.4)
- Update 2006 inventory of wildlife and habitats, and create recommendations for protection and enhancement. Create a map of wildlife sightings and signs, and significant habitat features that can be added to and updated periodically. (4.3.4)

5.3 MEDIUM PRIORITY

Recommended to be completed in 2012-2017

- Develop a list of potential service-learning projects that the HTF Management Committee could partner with teachers and their students at the HTF (i.e. development of interpretive/informational material at a kiosk or creating and maintaining trail markers). (4.2.4)
- Develop a flyer that summarizes the vision and goals for the HTF along with guidelines for public uses (events and recreation) that can be downloaded from the Town website and available at the kiosks at the HTF. (4.5.4)

5.4 ONGOING AND LONG-TERM (5+YEARS)

- Temporarily restrict or curtail recreational activities when needed to allow for other management activities provided for by this plan (e.g. timber management) or when conditions are not suitable. (4.5.4)
- Confer with user groups at least annually about their observations of conditions in the forest and changes in the types and intensities of human uses. (4.5.4)

- Seasonally monitor the forest, particularly the trails, for evidence of abuse or damage to natural systems due to recreational activities and modify management recommendations and actions appropriately. Dated and annotated photographs could be useful for this purpose. (4.5.4)
- Seasonally monitor use of the parking areas for evidence of overcrowding during certain seasons or at certain times. (4.5.4)
- Update recreation regulations as needed to reflect changes in recreational demand and changes in natural systems within the HTF (4.5.4)
- Check each parking area monthly to be sure signs are up-to-date as conditions and seasons change. (4.5.4)
- Offer opportunities for teachers to learn about the HTF at the HTF. (4.2.4)
- Seek funds to offer small incentive grants to cover fieldtrip costs for teachers to bring their classes to the HTF. (4.2.4)
- Regularly refresh the property boundaries to facilitate 1) the placement of trail signs, and 2) discussion with adjoining property owners about Town Forest use. (4.5.4)
- Monitor the effect of the use of the Forest on the neighbors particularly with regard to traffic safety and criminal activity. (4.5.4)
- Seek input from local teachers on what resources would be helpful for bringing their students to the HTF on a regular basis. (4.2.4)
- Coordinate with academic and state professionals to accomplish monitoring goals. (4.2.4)
- Work with high schools, colleges and universities to develop ongoing programs that inventory, and monitor the forest to help maintain the natural systems in the town forest. (4.2.4)
- Use updated inventories to update forest zones as appropriate. (4.3.4)
- Invite neighbors to meetings designated for their input. (4.1.4)
- Maintain a list of research projects that have been completed at the HTF.(4.2.4)
- Invite of neighbors to educational opportunities geared toward forestry management. (4.1.4)
- Attempt to maintain a member of the Town Forest Committee that is a resident of an access road or adjacent property owner. (4.1.4)
- Develop and maintain a list of neighbors. (4.1.4)
- Continually educate the public about the use of the Town Forest and issues related to its management via the Town Website, *The Hinesburg Record, Front Porch Forums,* The Town Report and user group communications. Keep the information up-to-date as the seasons and conditions change. (4.5.4)
- Obtain information about legal conservation opportunities. (4.1.4)
- Coordinate with Audubon Vermont to continue forest bird monitoring. Set up additional monitoring programs including other wildlife and vegetation. Approach local schools and institutions (HCS, CVU, UVM) to get assistance with monitoring. (4.3.4)
- Set up permanent monitoring sites along stream channels for cross sections, pebble counts, and photographs and define a monitoring schedule to track channel adjustments. Possibly coordinate with UVM to combine this with education as a student project. (4.4.4)
- Set up permanent monitoring sites for wetlands and vernal pools to monitor changes in these aquatic environments. Possibly coordinate with UVM to combine this with education as a student project. (4.4.4)
- Coordinate with academic and state scientists to accomplish monitoring goals. (4.2.4)

5.5 FUTURE ACTIONS TO CONSIDER

To be completed as resources and opportunities allow. These projects may be particularly well-suited for academic research/projects so this list should be made available to local schools and academic institutions.

- Develop an understanding of the habitats found on adjacent lands and identify how plants and animals move between these habitats and habitats on the HTF.
- Monitor wildlife use of travel corridors.
- With the help of neighboring landowners, field visits and orthophotos, map the spatial layout of forest ages and types in the roughly 2500 acres surrounding the HTF.
- Approach local schools and institutions (HCS, CVU, UVM) to get assistance with monitoring.
- Set up monitoring programs including vegetation plots, and birds, bats, and other wildlife.
- Meet and coordinate with local town committees such as: Conservation Commission, Planning Commission, Hinesburg Land Trust, and Trails Committee.
- Communicate with regional conservation organizations such as the Lewis Creek Association, the LaPlatte Watershed Partnership, the Nature Conservancy, and Audubon Vermont.
- Town Forest Committee participates in town plan and zoning regulation updates, and revisions.

· 6 REFERENCES AND RESOURCES

Daley, Jad (eds.) *The Vermont Town Forest Stewardship Guide: A Community Users' Manual for Town Forests.* 2008. Vermont Town Forest Project.

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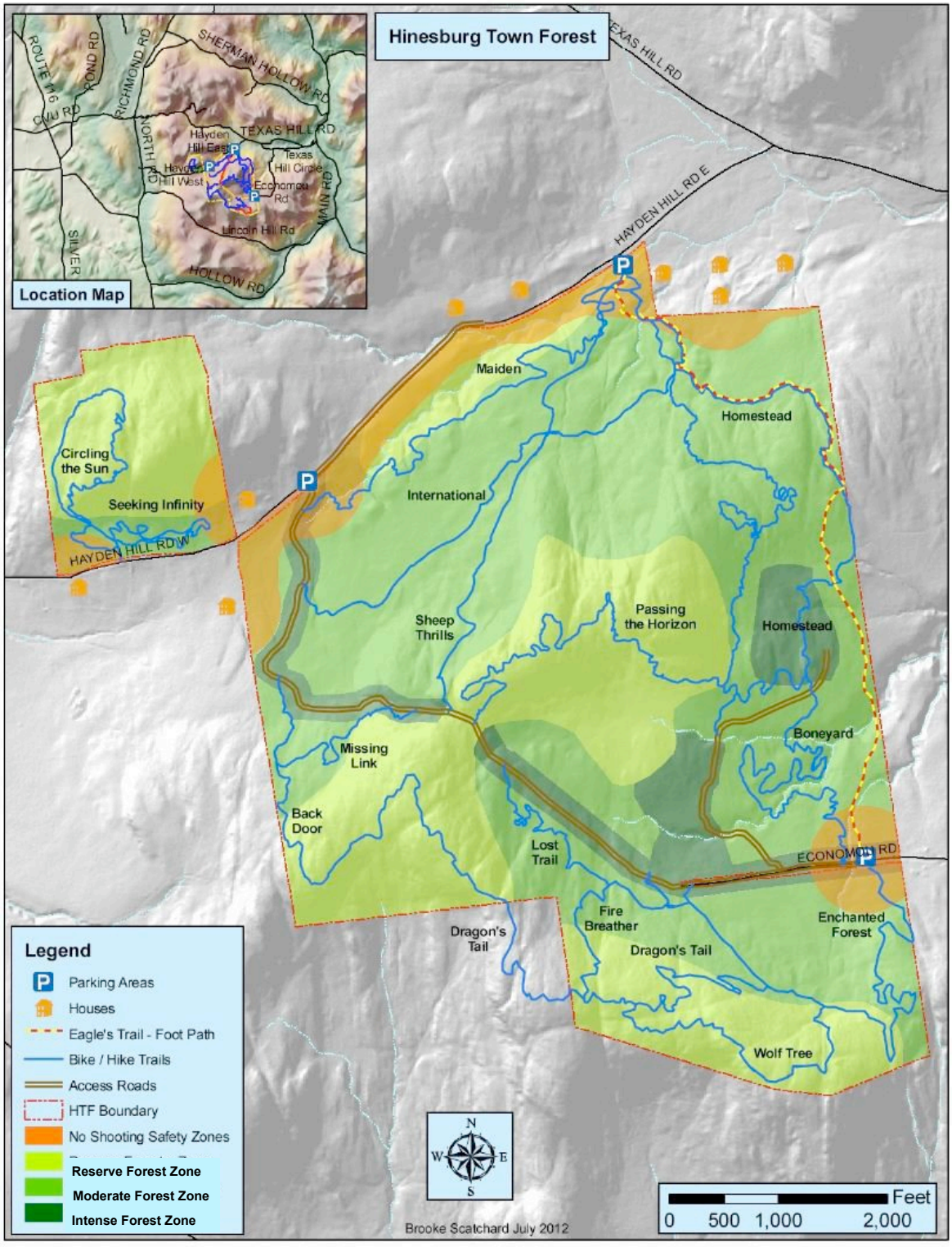
7 GLOSSARY OF TERMS

Downed woody debris – Dead woody branches, limbs, and logs lying on the forest floor
Co-dominant – Refers to a tree species in the forest canopy that shares the majority of percent species composition with another tree species.
Conservation easement – A legal document that dictates the purposes for which a conserved property can be used or managed. It may include specific permitted and restricted uses.
DBH (Diameter at Breast Height) – A measurement of the diameter of a tree 4.5 feet off the ground
Dominant – Having a very slow or temporarily stopped metabolism, as in the case of an overwintering animal or tree
Early-successional habitat – Young forest that is characterized by an open canopy (<30% closed) and dense shrub and sapling growth.
Ecosystem – The living (biotic) and non-living (abiotic) pieces of an environment and their interactions.
HTF – Hinesburg Town Forest located in the eastern foothills of Hinesburg and accessed off of Hayden Hill East and West Roads.
Hardwoods - Deciduous trees that lose their leaves each autumn (e.g. maple, ash)
Herb – An herbaceous plant that dies back and re-grows each year. Most herbs in the woods are perennials; they re-grow leaves and stems from an established root system rather than starting from seed each spring (e.g. asters)
Herb layer – the layer of herbs growing on the forest floor
Invasive species – A plant or animal that outcompetes and prevents the establishment or succession of other species
HTF – Hinesburg Town Forest
Large sawtimber – A tree with a DBH of greater than 23.5 inches.
Medium sawtimber – A tree with a DBH of 17.5-23.5 inches.
Natural Community – 'an interacting assemblage of organisms, their physical environment and the processes that affect them.' (taken from the book *Wetland, Woodland and Wildland*)
Non-native species – A species living in a place where it did not evolve
Overstory –The layer of trees whose crowns make up the top layer of the forest.
Pole – A tree with a DBH of 5.5-11 inches
Rich site indicators – Plant species that are restricted to growing on rich sites, indicating a high soil pH (6.5-8.5).
Sapling – A tree with a DBH of 1-5.5 inches.
Seedling – A tree with a "diameter at breast height" (DBH) of less than 1 inch.
Shrub – A woody plant with multiple stems that does not grow to the full size of a tree (e.g. dogwood)
Small sawtimber – A tree with a DBH of 11-17.5 inches.
Snag – A standing dead tree
Softwoods - Coniferous trees with needles that usually stay green throughout the winter (i.e. white pine, white cedar)
Spring ephemerals – Woodland herbs that grow and flower in the spring before the tree canopy leafs out.
Stand – A sub-unit of the forest defined by a common physical site and/or tree species composition, age, quality or size.
Understory – The layer of tall shrubs, seedlings, saplings and poles growing in the shade of the dominant trees
Wetland – A plant community characterized by permanently or seasonally wet soils.

8 FOREST ZONES AND TRAILS MAP



9 APPENDIX A:

BMP 15:Foresters should survey for invasive plants during forest inventories and incorporate invasive plant management in forest management plans.

BMP 16: Consider timing forest inventories during seasons when invasive plant populations can be detected.

BMP17: Treat invasive plant infestations before commencing timber harvesting or using roads, skid trails, and landings.

BMP 18: Consider invasive plant populations and their likely response when prescribing timber harvesting activities that result in an increase of sunlight reaching the forest understory.

BMP 19: Consider invasive plant populations and their likely response when prescribing timber harvesting activities that result in soil disturbance.

BMP 20: To the extent feasible clean all equipment before moving onto and off a property to reduce the chance of spreading invasive plants.

BMP 21: Attempt to limit the spread of invasive plants on existing forest roads, trails and landings or when constructing new infrastructure.

BMP 22: Ensure to the extent practical that materials used in forest activities are free of invasive plant propagules.

BMP 23: Consider how wildlife management goals are influencing the introduction or spread of invasive plants.

BMP 24: Consider how the presence of invasive plant species is affecting the wildlife goals of your property.

- All BMPs are from the Best Management Practices for the Prevention and Treatment of Terrestrial Invasive Plants in Vermont Woodlands. Nature Conservancy 2011
- Further information regarding the execution of each BMP can be found within the document referenced.

10 APPENDIX B:

Source: Calhoun, A. J. K. and P. deMaynadier. 2004.
Forestry habitat management guidelines for vernal pool wildlife.
MCA Technical Paper No. 6, Metropolitan Conservation Alliance,
Wildlife Conservation Society, Bronx, New York.

Recommended Guidelines:

1. **Maintain a partial forest canopy**
   a. *Maintain a minimum average of >50% canopy cover of trees 20-30 ft. tall, uniformly distributed.*
   b. *Avoid canopy harvest openings greater than 1 acre in size.*
   c. *If even-aged management is necessary, extended shelterwood or similar systems that involve continuous retention of some canopy component will help maintain suitable forest floor habitat.*
2. **Maintain natural litter composition**
   a. *Avoid significant shifts in forest cover type (e.g., hardwood or mixed wood to softwood) to minimize changes in natural litter composition.*
   b. *Avoid plantation silviculture in this zone.*
3. **Maintain coarse-woody-debris**
   a. *Leave two/acre of older or dying trees to serve as recruitment for coarse woody debris.*
   b. *Avoid disturbing fallen logs.*
   c. *Leave limbs and tops where felled, or return slash to the zone during whole-tree removal.*
4. **Protect the forest floor**
   a. *Harvest only during completely frozen or completely dry soil conditions. Do not create ruts.*
   b. *Minimize soil compaction and scarification by using techniques such as: controlled-yarding (including preplanning, adequate trail spacing, and limiting the number of passes), minimizing sharp turns, and using brush to help increase the bearing capacity of soils (American Pulpwood Association 1997).*
   c. *Avoid road or landing construction. If roads or landings already exist, apply appropriate erosion control BMPs to protect water quality (see Maine Forest Service Forestry BMPs for Water Quality).*
5. **Minimize the use of chemicals,** *especially those with surfactants (amphibians are sensitive to toxins that can be absorbed through their moist, permeable skin), particularly in the spring and late summer/fall when amphibian surface movements are greatest.*
6. **Extend the Life Zone and associated HMGs as far as is practical,** *where property boundaries and nonforest land-uses (e.g., residential areas, agricultural land, or pavement) limit the extent of accessible forest in this zone to less than 400 ft.*