

HINESBURG TOWN FOREST MANAGEMENT PLAN

HINESBURG, VERMONT

2022

Town of Hinesburg


Merrily Lovell, Chair, Hinesburg Selectboard



Date

Vermont Land Trust and VHC



11/14/2022

Rebecca Roman, Project Director, Vermont Land Trust

Date

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1 DOCUMENT HISTORY

1.1 1986 Management Plan authored by David Brynn

David Brynn is a forester, who at the time was working for the Vermont Department of Forests, Parks, and Recreation.

1.2 Adopted September 2012

The 2012 management plan authors and contributors included the Town Forest Committee members:

- Steve Russell, Chair
- Wayne Bissonette
- Brent Francis
- Pat Mainer
- Stewart Pierson
- Jason Reed
- Chuck Reiss
- Brooke Scatchard
- Kristen Sharpless
- Paul Wiczorek

Also contributing were Chittenden County Foresters: Mike Snyder, Chris Olson, and Keith Thompson

1.2.1 Amended the 2012 Plan on February 1, 2016

Added paragraph 3.2.2.7 prohibiting camping in the Town Forest

1.2.2 Amended the 2012 Plan on April 17, 2017

Added a bullet to section 4.4.3.6 regarding an infestation of invasive exotic plant species in the HTF.

1.2.3 Amended the 2012 Plan on May 21, 2018

Added the Hinesburg Town Forest Inventory and Assessment by Harris Roen

1.2.3.1 Amended the Hinesburg Town Forest Inventory and Assessment on June 16, 2021

This is a separate amendment document, so the paragraph numbering is not in alignment with the original 2018 document. Added:

II. RARE, THREATENED, ENDANGERED SPECIES

Northern Long-Eared Bat

The U.S. Fish and Wildlife Service has listed the northern long-eared bat as threatened and established a new rule, "called the 4(d) Rule, to protect the bat population during its most vulnerable life stages in areas where the disease (white-nosed syndrome), is present." Although there are no maternal roost trees or winter hibernaculum known on this property,

this area is in the Long-eared bat's natural range. Follow recommendations set up in the 4d rule regarding management activities, which are included as part of this management plan.

Indiana Bat

This property is mapped as potential summer range for Indiana Bat. It should provide an interconnected network of forest blocks and riparian areas maintaining or enhancing an adequate long-term supply of large diameter dead and dying roost trees. A long term supply of Indiana bat roost trees requires the retention of large diameter trees that serve as either current or future potential roost trees. Roost trees are trees with cervices and/or exfoliating bark, such as shagbark hickory. Management activities must avoid harming or killing any Indiana bats in roost trees while conducting such activities. Research was provided through the VT ANR Atlas website.

Carse Addition Interim Management Plan

The 291 acre Carse Addition (see Executive Summary) was added to the Hinesburg Town Forest (HTF) in February of 2022. The Vermont Land Trust (VLT) required that the Town create an Interim Management Plan (IMP) for the Carse property prior to completing the sale of parcel to the Town. The Forest Committee wrote the plan which was then reviewed by VLT, the Vermont Housing and Conservation Board (VHCB), the general public, and the Selectboard. The plan was adopted by the Selectboard at its November 17, 2021 meeting as an addendum to the Hinesburg Town Forest (HTF) Management Plan. The goals, management guidelines, and actions found in the IMP will be merged and included in the 2022 revision of the HTF Management Plan. Once this revision of the HTF Management Plan is adopted, the IMP will no longer exist as a separate addendum.

1.3 Revised and adopted the Management Plan on October ??, 2022

Revisions were authored by HTF Committee members: Pat Mainer, Kelsey Barklund, and Jonathan Trefry

List significant changes:

- Revised the history section to include indigenous peoples use of the area now occupied by the HTF
- Added document history section
- Rewrote language about motorized vehicle use
- Strengthened language about dogs
- Added enforcement language
- Added conservation easement restrictions
- Added 291 acres and merged the interim management plan for that parcel into this plan
- Created a separate invasive species section
- Created a longer executive summary to share work of last 10 years
- Prohibited campfires w/o permission from TF Committee
- Adds a fourth level of management –a reserve zone where no human use other than

dispersed recreation is allowed.

2 EXECUTIVE SUMMARY

The Hinesburg Town Forest (HTF) is located in the foothills of the Green Mountains on the eastern edge of the Town. During the height of the last glacial age, 15-20,000 years ago, the upland area where the Forest is located was covered by two miles of ice. As the glacier melted it left a layer of glacial till covering the hills.

There is evidence of ancient Indigenous Peoples , or Paleoindians, in Vermont more than 12,000 years ago. The Abenaki people were the original stewards of Ndakinna, a portion of which is currently known as Vermont. We recognize the Abenaki as traditional caretakers of the lands and waters where HTF currently resides. As guests on this land, we give thanks for the opportunity to share in the bounty of this place we protect. Hinesburg Town Forest Committee (HTFC) along with Vermont Land Trust (VLT) want to affirm to citizens of the Abenaki community that they have been - and always will be - welcome to continue their relationship with the land. The Abenaki people are trusted and respected caretakers who do not need any specific permission to use these lands for community and cultural purposes, and for gathering food, medicine, and materials. HTFC and VLT value indigenous practices and welcome input and collaboration with the Abenaki on the stewardship of these lands.

The first documented European appearance in Vermont was that of Samuel de Champlain in 1609 when he and his team explored the lake and its watersheds. By the mid-1700's, Benning Wentworth, governor of New Hampshire (which then claimed the territory that is now Vermont), began chartering towns through grants of land in the region west of the Connecticut River. Hinesburg was chartered in 1762 with just two documented families living in the new community prior to the Revolutionary War (1775). Farms were established throughout the Community including the upland hills on the east side of the Town. Some of these farms were established on the shallow soils of what is now the Town Forest, located between Hayden Hill and Lincoln Hill Roads. Of historical significance were the African American families that settled and farmed on Lincoln Hill Road between 1795 and 1865. At one time during that period, eight of the homesteads on the hill were owned by these families. More research is required to determine whether any part of the HTF occupies land that was once one of those homesteads.

In the 1930's the changing farm economy as well as the poor soils, challenging terrain, and mechanization forced the abandonment of many of the farms in Hinesburg. National and State movements to establish town forests for timber production had been in existence for more than a decade. Falling in line with those movements, in 1936, the Hinesburg Selectboard began acquiring abandoned farms and woodlots. They continued adding to and selling the Town's holdings until 1958 at which time the Town owned 834 acres. In 1939, with assistance from the State soil conservation program, the first of several conifer plantations was planted on one of the acquired farms, and in 1940, State Forester Perry H. Merrill designated a 12-acre area including the first conifer plantation as a Town Forest. State Forester, Albert W. Gottlieb, classified the entire 834 acres as Town Forest in 1958.

Since the early years of its existence, the Hinesburg Town Forest has been managed 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.

The Town Forest Committee collaborated with the local mountain bike club, now Fellowship Of The Wheel (FOTW), to develop what has become a popular trail network. The FOTW created and maintains the trail network for mountain biking, trail running, hiking, and walking. Hinesburg's Trails Committee also helps in the HTF with trail maintenance, signs, and maps. The Town Forest is used and appreciated by an increasing number of visitors both from and outside Hinesburg. Uses include, but are not limited to: hiking, biking, skiing, snowshoeing, birding and wildlife viewing, hunting, dog walking, timber and wildlife habitat management, scientific study, and educational walks/tours. Horseback and snow machine riding have been also enjoyed on specified trails.

In 2021 the VLT approached the Town with an opportunity to add 291 acres to the Town Forest and conserve the combined 1,125 acre forests. The 291 acres was a part of a 1,000 acre woodlot that had been owned and managed by Henry Carse since the mid 1900 until his death in 2008 when ownership passed to his heirs as a family trust. In 2021 when the family decided to sell the land, the VLT approached the family and discussed conserving the entire parcel. That negotiation concluded with one member of the Carse family purchasing 700 acres on the south side of Lincoln Hill Road and the VLT offering to conserve and sell the remaining 291 acres on the north side of the road to the Town to become part of the HTF. The Community was eager to accept VLT's offer, and with a significant grant from the Vermont Housing and Conservation Board (VHCB), added to funding from the VLT, generous local citizens, the Davis Foundation, Lawson's Finest Liquids, and the Town, the Carse addition to the HTF and the conservation of the entire 1125 acre Town Forest was completed in February of 2022. The Town is grateful to VLT for its leadership of this project.

The Carse addition and conservation of the HTF are significant for several reasons, including:

- Perpetually protects the HTF from development.
- Aligns with the State's, Conservation Design Plan to protect Priority Interior Forest Blocks and Priority Connectivity Blocks.
- Fulfills a significant need to retain valued natural areas: to sustain wildlife habitat, water quality, and natural plant and forest communities.
- Protects three vernal pools and approximately 12.5 acres of Dry Red Oak – White Pine Forest, both of which are rare natural communities in Vermont.
- Provides an HTF access point from another Town road.
- Protects and retains the existing 15+ miles of multi-use recreational trails as well as the connection to the existing 10 miles of multi-use trails on the 700 acres held by one member of the Carse family.
- Provides a connection from the HTF to the 1,172 acre conserved land of the Fred Johnson Wildlife Management Area.

This version of the Management Plan was developed by the Town Forest Committee with input

from the Trails Committee, Conservation Commission, Chittenden County Forester Ethan Tapper, the general public, the Selectboard, and our conservation partners, the VLT and VHCB. The plan retains much of the content of the 2012 plan because the vision, goals and management philosophy for the HTF have not changed in the ten years since the 2012 plan was adopted.

The Plan provides the over-arching philosophy and specific guidelines for management of the HTF including:

- Vision and Goals
- Management Philosophy
- Permitted and Restricted uses
- Management Objectives, 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.

The Plan will be updated and submitted for approval by the Hinesburg Select Board every 10 years. The Plan is a working document and may be amended as necessary by the Hinesburg Town Forest Committee, subject to Selectboard approval.

3 INTRODUCTION

3.1 Planning for the Hinesburg Town Forest

3.1.1 Why Plan?

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.

3.1.2 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 1,125 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.

3.1.3 How was this plan developed?

Following an announcement and holding a public meeting to take input from the Community, a draft revision to the 2012 management plan was created by a subcommittee of the Forest Committee in the spring of 2022. A notice of the Committee's work on the revision was included in *The Record*, Hinesburg's local newspaper. A similar notice was shared on the local social media network, Front Porch Forum. Target dates were set for sharing and receiving feedback on the draft revision with our management partners including County Forester, Ethan Tapper, Trails Committee, Conservation Commission, VLT, VHCB, FOTW, and the general public. The Forest Committee discussed the feedback and updated the draft as deemed appropriate. This updated draft was again shared with stake holders including the Selectboard. Feedback was received and a final draft submitted to the Selectboard for approval.

In creating the 2012 management plan the Forest Committee collected information about the forest and used that to list the key opportunities the HTF provides and the key threats to achieving the vision and goals that had been established. The lists were updated for the 2022 revision.

3.1.3.1 Key Opportunities

- Is a great forest in good condition – ecological systems and 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 conserved and open to the public

3.1.3.2 Key Threats

- Impacts climate change poses to forest health
- Failure to comply with and enforce the guidelines put forth in the Management Plan
- Increased use – potential overuse
- Potential incompatible uses - conflicts between uses and other values
- Lack of education about the forest in the general populace
- Tension and lack of coordination/trust between user groups and with neighbors
- Potential changes in surrounding landscape (parcel subdivision and fragmentation)
- Limited resources for enforcing rules, maintaining infrastructure, monitoring etc.
- Non-native invasive plants, insects, pests and pathogens.

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.

3.1.4 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.

3.1.4.1 How is this plan designed to be used?

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

3.1.4.2 Section I: Vision and Goals

Section I includes: Vision and Goals, Management Philosophy, Permitted and Restricted uses. This section is meant to guide future management decisions regarding the HTF. It 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.

3.1.4.3 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.

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. Although the document was researched and written over 16 years ago, much of the information it contains is relevant and unchanged. The document will be referenced in the management plan.

3.1.4.4 Section III: Summary of Actions

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

4 SECTION I: VISION, GOALS, MANAGEMENT PHILOSOPHY, PERMITTED AND RESTRICTED USES

4.1 A Vision for the Future

4.1.1 Vision Statement

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

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.

4.1.2 Management Philosophy

The Hinesburg Town Forest will be managed for the benefit of the local community, using an approach that designates zones of (1) intensive use, (2) intermediate use, and (3) low intensity use, and (4) 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. In addition to the use designations, the Conservation Easement defines specific Ecological Protection Zones for vernal pools and areas of dry red oak-white pine, both of which are rare natural communities in Vermont. Management activity is limited in those areas. The Easement also calls for restricted development within the stream buffer zone. Permitted uses and management will be reviewed and modified as needed based on experience and the best available information. Reference [Appendix C](#) for a table of the four zones and allowed uses.

4.1.3 Management Goals

The following are the goals of the Town of Hinesburg, and its residents for the sustainable management of the Hinesburg Town Forest. 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.
- 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.
- Maintain and routinely update a Town Forest Committee section on the Town website with documents and links to all information relevant to the Community regarding Town Forest, including its: management, use, events, research, reports, or other information of interest to the Community.

4.2 Permitted and Restricted Uses

Use and management of the Hinesburg Town Forest must conform to the terms of the approved Conservation Easement (February, 2022) and this Management Plan. Permitted and Restricted use sections below are not a complete replication of the stipulations found in the Conservation Easement. For clarification, always refer to the Conservation Easement. Specific attention must be paid to the Conservation Easement's stipulations regarding the Dry Red Oak – White Pine Forest and Vernal Pool Ecological Protection Zones and stream buffers when planning any forest management activities.

4.2.1 Permitted Uses

4.2.1.1 Recreation:

The Town may use the property for all types of non-motorized, non-commercial recreation including, but not limited to: birdwatching, cross-country skiing, fishing, mountain biking, hiking, hunting, snowshoeing, trapping, walking and wildlife observation. Refer to paragraphs 4.2.1.6 and 4.2.1.7 below for motorized and horseback riding use.

4.2.1.2 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.

4.2.1.3 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.

4.2.1.4 Forest Management:

The Town may harvest timber, construct and maintain logging roads, and conduct sugaring operations. All forest management must be in accordance with Forest and Wildlife Habitat Management Guidelines (Section II) and a Forest Management Plan approved by easement holders VLT and VHCB (the most recent FMP for the HTF was written by Harris Roen of Long Meadow Resources in 2017 and adopted by the Hinesburg Selectboard in 2018). The FMP is considered an addendum to this Management Plan and may be updated and amended without amending the entirety of this Management Plan.

4.2.1.5 Trails:

The Town may maintain, repair, improve and replace existing recreational trails, together with the right to clear, construct, repair, improve, maintain and replace new trails, provided that the location, use and construction of such new trails are consistent with the Conservation Easement and approved in advance by easement holders VLT and VHCB. 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.

4.2.1.6 Motor Vehicles:

Off-highway vehicles (OHVs)- including dirt bikes, ATVs, and side-by-sides (UTVs) are restricted to specified roads indicated on the trail map ([Appendix C](#)). Snow machine use is also allowed on the existing VAST trail network. Additional use of motorized vehicles is permitted for approved forest management, trail and road maintenance and construction, firefighting, and emergencies. Motorized personal assistive mobility devices for use by persons with mobility disabilities are allowed.

OHV have the ability to carve deep tracks into soil or snow, leach chemicals and erode dirt into streams, destroy riparian areas and native vegetation, and spread non-native weeds. Persistently loud motors disturb wildlife and obliterate the peace and quiet of wild places and wilderness. As with any public land use, OHV use must be managed in a manner consistent with the capability of the land to sustain the use, with due consideration for the impact of OHV use on the land, the resources and other land users.

Ride responsibly by adhering to the following regulations. Stay on designated roads with a permitted vehicle that is smaller than the width of the trail/road. Share the road respectfully without braiding the trail/road or riding over vegetation. Slow down to respect wildlife and other individuals. Make sure your vehicle is in good working condition. Stay off roads/trails when your use will leave ruts and impact the trail tread, such as during very wet or dry conditions. Educate others, those who don't ride responsibly are threatening YOUR riding opportunities.

4.2.1.7 Horses, including other animals capable of transporting humans:

Horses are restricted to specified roads as indicated on the map. If horse 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* <https://www.fs.fed.us/t-d/pubs/pdfpubs/pdf07232806/pdf07232806dpi72.pdf> and agree to provide an organization for problem solving. The use of horses is permitted for approved forest management and trail and road construction and maintenance activities.

4.2.1.8 Dogs:

Dogs are allowed on the HTF subject to the [Hinesburg Animal Control Ordinance](#). Articles V, VI, VII, and VIII are most relevant to dogs in the HTF.

All pet owners are required to remove pet waste in a responsible and healthy manner. Littering or leaving pet-waste collection bags on the property is prohibited. The Forest Committee may prohibit individual dogs due to behavioral issues on the part of the pet or pet owner.

The ability to bring your pet to the HTF is a privilege and will only be possible through responsible behavior by pet owners. Users are asked to know your pet and make informed and realistic decisions about the appropriateness of bringing your pet to the HTF. There must be

not more than three dogs per handler. Sled dogs that are harnessed to a sled or wagon have no maximum number per handler. The Forest Committee will provide signage reminding pet owners of their responsibilities.

4.2.1.9 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. Tree stands and ground blinds must be portable and removable seasonally and cause no damage to trees per section 5.5.3.

4.2.1.10 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.

4.2.1.11 Parking Areas:

The Town may construct, maintain, and replace a permeable surfaced parking area, not to exceed 0.5 acres at the four main entrances to the HTF – Hayden Hill East & West, Economou Road, and Lincoln Hill Road. The parking lots may not be used for loitering. If the Town chooses to expand the current parking lots or build any parking lots not shown on the map, it must get permission from the Conservation Easement holders.

4.2.2 Restricted Uses

4.2.2.1 General:

The HTF shall be used for habitat conservation, water quality protection, education, non-motorized, **restricted 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 Conservation Easement and this Management Plan.

4.2.2.2 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. The Conservation Easement holders may erect and maintain signs designating the Protected Property as land under their protection.

4.2.2.3 Excavation:

There shall be no disturbance of the surface, including but not limited to filling, excavation, removal of topsoil, sand, gravel, rocks or minerals, or change of the topography of the land in

any manner, unless the change is necessary to carry out the uses otherwise permitted by the Conservation Easement and this Management Plan, including recreational and forest management access. Surface mining of subsurface oil, gas, or other minerals is expressly prohibited.

4.2.2.4 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.

4.2.2.5 Closure of the Forest:

The Town Forest Committee or Town Manager 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.

4.2.2.6 Firearms:

Target and recreational shooting are prohibited within the HTF.

4.2.2.7 Camping:

Overnight camping is prohibited in the HTF.

4.2.2.8 Campfire:

Campfires or fires of any sort are prohibited without permission of the Town Forest Committee.

4.2.2.9 Property Conservation

The Town shall not give, grant, sell, convey, subdivide, partition, convey in separate parcels, transfer, mortgage, pledge, lease or otherwise encumber the Protected Property without the prior written approval of the Conservation Easement holders, VLT and VHCB.

4.3 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 an 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."

4.4 Enforcement of Compliance with HTF Use Restrictions

Compliance with the restrictions and prohibitions contained in the Management Plan rely first and foremost on the honor system. Our community takes great pride in the HTF and the Plan envisions that users will respect and comply with the restrictions contained in the Plan. On rare occasions, however, a person may intentionally, and even repeatedly, violate these restrictions. Under certain egregious circumstances, the Hinesburg Selectboard, in consultation with the Forest Committee, may wish to take affirmative legal action. One alternative remedy for the Town under Vermont law is to serve an unlawful trespass notice on the offender, which provides legal notice to the offender that they may no longer set foot in the HTF. See 13 V.S.A. § 3705. If such person were to subsequently enter the HTF, they could be subject to prosecution and a \$500 fine and/or imprisoned for no more than three months (a misdemeanor criminal offense).

4.4.1 Conservation Easement Holders Rights

The Enforcement of Covenants and Restrictions, section of the Conservation Easement requires VLT and VHCB to make “reasonable efforts” to ensure compliance and confers on them the right to “reasonable access” to monitor the HTF. If VLT and VHCB find non-compliance with the conservation restrictions, they are required to notify the Town and may demand corrective action to restore the property to its previous condition. VLT and VHCB have a right to be reimbursed for any reasonable costs and fees they incur for taking such action. VLT and VHCB may also seek injunctive relief in court if the non-compliance is causing “immediate and irreparable injury”.

5 SECTION II: MANAGEMENT OBJECTIVES, GUIDELINES, AND ACTIONS

5.1 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.

5.1.1 Related Goals

- Maintain and enhance ecological connections between the HTF and the larger landscape.
- 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.

5.1.2 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.
- All infrastructures (parking lots, signs, trails, etc.) will adhere to the Conservation Easement and Town regulations.
- Maintain and seek open lines of communication on the perspective of the neighborhood adjacent to the Town Forest, particularly Hayden Hill East, Hayden Hill West, Economou, and Lincoln Hill Road.

5.1.3 Management Guidelines

- Seek opportunities to appropriately distribute the number and extent of vehicular traffic among access roads.
- Address privacy concerns, as they arise, with owner(s) of adjoining properties.

5.1.4 Actions

- Invite neighbors to educational opportunities geared toward forest management.
- Communicate with neighboring property owners and mark the property boundary of the 291 acre Carse addition to the HTF in 2022.
- Mark and maintain all boundaries in conjunction with adjacent property owners. If requested by the landowner, post signs to let the public know they are leaving public land.
- 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.
- Post and maintain safety zone signs around the parking lots.
- Update and use the Town website as one means of communicating to HTF neighbors and the greater community.

5.2 Education and Community Uses

5.2.1 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.

5.2.2 Objectives:

- Teachers and students at Hinesburg Community School, Champlain Valley Union, the University of Vermont 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.

5.2.3 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, Hayden Hill West, Economou, and Lincoln Hill 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, e.g., 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, e.g. 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 assure 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).

5.2.4 Actions

- 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.
- 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.
- Use the Town website as one means of communicating to the greater community about research and educational opportunities at the HTF.

5.3 *Forests and Wildlife*

Forest 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 and the 2018 approved Hinesburg Town Forest Inventory and Assessment (Forest Management Plan). Activities related to the forest and wildlife that have been conducted in the ten years since the adoption of the 2012 Management Plan include:

Hinesburg Town Forest Inventory and Assessment

In 2017 the Town Forest Committee hired licensed forester, Harris Roen, to conduct an Inventory and Assessment of the HTF. Harris completed this work and the report was shared in a public meeting, updated and adopted by the Selectboard as the HTF's Forest Management Plan (FMP) in 2018. The report provides valuable information about the health of the forest, wildlife, water quality, and general condition of the natural systems of the forest in addition to a ten year plan for forest management. The document is available on the Town website, Hinesburg Town Forest Inventory and Assessment – Final-05/08/18.

Implementation of the forest management defined in the 2018 Forest Inventory and Assessment

Forest management from the Economou Road access to the HTF began in the winter of 2018-2019 and concluded in the winter of 2019-2020. A second project began from the HTF's Hayden Hill Road East

access in winter 2021-22, slated to continue through winter 2022-23. The project was directed by Chittenden County Forester, Ethan Tapper, who used it to educate the public, including private forest landowners, about the latest ecological and science-based forest management techniques. Canopy gaps, groups and patch cuts of 1-2 acres were chosen and trees selectively removed, creating a variety of structural conditions and wildlife habitats. The areas where management occurred were intentionally left 'messy': treetops and slash were left on the ground with branches intact. Some legacy trees and snags were left standing. The purpose of this type of forest management is to mimic natural disturbances that occur in a forest, and the developmental processes that make forests more diverse and complex over time. As of this writing some of the patches cut three and four years ago as part of the Economou Road project are now filled with raspberry canes and tree seedlings and saplings. Revenue from the sale of harvested logs was used to treat invasive species encroachment in the LaPlatte Headwaters Town Forest and to lesser degree in the HTF, to pay for trail maintenance and upgrades to the Economou Road access road, and to help fund conservation of the expanded HTF including the addition of the 291 acre Carse parcel.

Actions Completed by the Forest Committee's Partners

Chittenden County Foresters provide a tremendous amount of support to the Town Forest Committee and its management efforts of the HTF. Over the past ten years the Committee has benefitted from the expertise provided by foresters Michael Snyder, Keith Thompson, and since 2016, Ethan Tapper. Their input on forest management and the development of a comprehensive management plan and forest inventory and assessment has been invaluable. Ethan designed the forest management operations that were initiated in 2018 and 2021. He sent requests for proposals to loggers, assisted the Committee in the selection process, marked the trees to be harvested, and monitored and directed all aspects of the logging operation. In addition to managing the harvesting operation, Ethan began an ongoing effort to educate the public about forest management and the harvesting of trees. He has conducted dozens of public walks, which for the Economou Road project were attended by more than 500 interested participants. He authored and published articles about silviculture and forest management at least monthly in two local newspapers. He created and placed educational signs for a self-guided forest walk of the 2018-2020 harvest sites. The Committee is very fortunate and grateful to have such a dedicated and hardworking partner in Ethan and all of our County Foresters.

291 Acre 'Carse Addition' to the HTF

In February of 2022 the town of Hinesburg, with help from Hinesburg Land Trust, Vermont Land Trust, and Vermont Housing & Conservation Board, purchased 291 acres of land from the Carse Family. The property is located on the north side of Lincoln Hill Road. The 291 acre parcel was previously a portion of 1,000 acres owned and managed by Henry Carse since the mid 1900's. This parcel of land borders the 834 acre Hinesburg Town Forest on two sides and has existing trails that cross uninterrupted into that forest.

The Carse Addition connects the HTF to the 1,172 acre Fred Johnson Wildlife Management Area, and the 700 acre parcel retained by the Carse family. Conservation of the HTF and Carse Addition and their connection to existing conserved land fulfill a significant need to retain valued natural areas to sustain wildlife habitat, water quality, and natural plant and forest communities. The conservation effort aligns with the State's Conservation Design Plan to protect Priority Interior Forest Blocks and Priority Connectivity Blocks.

The Carse Addition has diverse and functioning natural communities and wildlife habitat that include headwater streams, wetlands, vernal pools, and areas of Dry Red Oak - White Pine Forest, an uncommon natural community in Vermont. The Carse Addition maintains outdoor recreation opportunities by retraining connectivity between the 15 miles of existing recreation trails in the Town Forest and 10 miles of trails on the parcel still owned by the Carse family.

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. All forestry plans must receive approval from easement holders prior to any management activity in the forest. The specific project plan should address the following goals, objectives, guidelines and actions within this plan.

5.3.1 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 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.

5.3.1.1 Forest Zones

The Hinesburg Town Forest will be managed for the benefit of the local community, using an approach that designates zones of (1) higher intensity use, (2) intermediate use, (3) low intensity use, and (4) reserves, reference [Appendix C](#). The zones have been established as an attempt to provide for variety in the intensity of uses in different parts of the forest and to facilitate balancing all management goals and responsibilities. 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.

5.3.2 Objectives

- Reserves will be unmanaged unless intervention is required to protect the ecological integrity of a natural community, i.e. 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.

5.3.3 Management Guidelines

5.3.3.1 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.

Consult the Conservation Easement, specifically Section V and Section VI, prior to initiating any management activity in the designated special protection zones of the HTF.

A Forest Manager's Guide to Restoring Late-Successional Forest Structure by Anthony D'Amato of the University of Minnesota and Paul Catanzaro of the University of Massachusetts

(https://masswoods.org/sites/masswoods.net/files/pdf-doc-ppt/forest_mgr_guide_ls_structure_web.pdf)

Restoring Old-Growth Characteristics by Anthony D'Amato of the University of Massachusetts and Paul Catanzaro of the University of Massachusetts

(https://extension.unh.edu/sites/default/files/migrated_unmanaged_files/Resource000429_Rep451.pdf)

Ecological Silviculture Foundation and Applications by Brian Palik, Anthony D'Amato, Jerry F. Franklin, and K. Norman Johnson

(<https://www.amazon.com/Ecological-Silviculture-Applications-Brian-Palik/dp/1478638478>)

5.3.3.2 Wildlife Habitat

- Take opportunities to protect and enhance forest songbird habitat. Use Silviculture with Birds in Mind: Birder's Dozen Pocket Guide for Vermont Foresters (Vermont Department of Forests, Parks, and Recreation and Audubon Vermont, 2011) as a guide and refer to the 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, 2007). <https://www.maineaudubon.org/wp-content/uploads/2017/03/MEAud-FocusSpeciesForestry.pdf>
- 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.
- Refer to paragraph 5.4, Water and Wetlands, of this Plan for forest management guidelines for protecting vernal pools

5.3.3.3 Silviculture

- Apply currently accepted principles of sustainable forestry to protect biodiversity, ecological health, water quality, and site productivity.
- Silvicultural systems should seek to create a complex forest, with a variety of structural conditions for tree species of different shade tolerances. Legacy trees (trees retained forever) and lots of dead wood of all shapes and sizes, dead standing trees and cavity trees should be retained within management areas.
- 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 seedbearing capacities of poorly represented plant species of the stand.
- Tree felling should be avoided on slopes exceeding 50%.
- Promote a vertical stand structure that includes differentiated over story and mid story strata, as well as diverse understory and herbaceous vegetation layers.
- Maintain a closed canopy (75-80%) within 50 feet of permanent streams and wetland areas
- Other than for acceptable water crossing, the use of machinery is prohibited within 25' of permanent and intermittent streams.
- Enforce strict water quality protection practices at all times

5.3.3.4 Forestry Operations

- Post signs at trail heads and trail closures informing the public when forest management is active. Keep neighbors, the general public, and partners updated on activity. Look for opportunities to educate and engage.
- 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 excessive rutting.
- 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 most recent revision of the Vermont Acceptable Management Practices (AMP) manual for logging professionals.
- 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 most recent revision of 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 most recent revision of the AMP manual.
- 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, fords, brushed-in crossings, or culverts that are properly sized – all according to the most recent revision of the AMP manual.
- 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.
- Refer to Section 5.6, Invasive Species, for guidelines regarding invasive species when conducting Forestry Operations.

5.3.4 Actions

- Maintain a relationship with the Chittenden County Forester.
- Designate a committee member to be the point person for forest management work being planned and done in the HTF.
- Update the Forest Inventory and Assessment (Forest Management Plan) at least every ten years.
- Hire an independent forester or request that the Chittenden County Forester inventory the 291 acre 2022 Carse addition to the forest and provide a written report of the inventory and recommendations for management, including an assessment of the feasibility of a sugaring operation.
- 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.
- Use the Town website as one means of communicating to the greater community about forest management activities.
- Share inventory documents with easement holders as they are updated.
- Submit management plans, amendments and addendums to easement holders for review and approval prior to taking action.

5.4 *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 HTF feed the surrounding streams and the forest 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.

5.4.1 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.

5.4.2 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.

5.4.3 Management Guidelines

5.4.3.1 General

- Always consult the Conservation Easement, specifically Section III paragraph 5 and Section VI, prior to initiating any management activity in the aquatic environments of the HTF.
- Use the resources available at Vermont Department of Environmental Conservation, Vermont Agency of Natural Resources, Vermont Fish and Wildlife, and other sources for additional guidelines regarding stream, wetland and vernal pool buffer zones, passive restoration, and stream management.

5.4.3.2 Buffer Zones (Vernal pool buffer zones are a special case, see 5.4.3.3)

- Refer to Section III paragraph 5 and Section VI of the Conservation Easement for the

limitations on management activities in buffer zones of the aquatic environments, including streams, wetlands, and vernal pools.

- The Conservation Easement requires a 50 foot Protected Area buffer for all streams and significant wetlands.
- With the exception of stream crossings for purposes otherwise consistent with the Conservation Easement and this document, no new structures, permanent logging roads or maintained/permanent alterations to the natural condition to the forest (permanent openings, landings) shall be established within 50' of the high waterline of any permanent water resource, including: wetlands, seeps, and permanent streams. 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, soil integrity, natural hydrology, or habitat viability.
 - ❖ The buffer is maximized, and the area of proposed use within the buffer is minimized.
 - ❖ The use is reviewed and approved by our conservation partners, VLT and VHCB.
- Unless otherwise greater limitations are defined in the bulleted list above, forest management resulting in temporary changes within the 50' buffer zone for permanent streams shall, at a minimum, adhere to standards outlined in the most recent version of Vermont's AMP manual.
- When working in the area of an intermittent stream, use the guidelines in the most recent version of Vermont's AMP manual to determine the required buffer zone.
- 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.
- Maintain natural vegetation (native plant species) within the buffer zone to limit erosion and enhance wildlife habitat.
- Native vegetation may be removed for such purposes as treating pest infestations or accomplishing other activities compatible with the HTF management plan.
- Forest management and other activities within buffer zones, that do not meet the requirements defined above, should be limited, and must first be reviewed and approved by the Forest Committee, the County Forester, and our conservation partners, VLT and VHCB.

5.4.3.3 Vernal Pool Buffer Zones

- Consult and abide by the limitations and restrictions found in Section VI, Vernal Pool Ecological Protection Zone (EPZ), of the Conservation Easement when considering

any management activities within the 100' Primary and 500' Secondary EPZ of vernal pools. From the Vermont AMP manual, "Amphibians that breed in vernal pools spend most of the year (11+ months) in the surrounding upland forest, generally within 600 feet of the pool. The integrity of this "amphibian life zone" must be maintained in order to support viable populations of amphibians".

- Consult and abide by the recommendations found in the most recent version of the Vermont AMP manual as it relates to vernal pools.
- This Management Plan further defines management activity within the 100 foot primary buffer of vernal pools and wetlands. This exceeds the state wetland rule of a 50 foot buffer.
 1. All permanent uses (trails, structures etc.) and forest management activity in the primary buffer shall result in a maintenance of a minimum of 75% canopy cover uniformly distributed throughout the buffer.
 2. Permanent uses shall be designed in a manner that minimizes impediments to movement or potential impacts to wildlife using the wetlands or vernal pools.
 3. 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.
- Guidelines for management activity within the 100-600 foot secondary buffer (600' total distance from the edge of a vernal pool) surrounding vernal pools (the list below is taken from Forestry Habitat Management Guidelines for Vernal Pool Wildlife, 2004).
 1. Harvest only during completely frozen or completely dry conditions. Do not create ruts.
 2. Maintain a minimum average of >50% canopy cover of trees 20-30 feet tall uniformly distributed.
 3. Avoid canopy harvest openings >1 acre.
 4. Avoid significant shifts in forest cover type to minimize changes in natural litter composition.
 5. Leave a minimum of 2 per acre of older or dying trees.
 6. Avoid disturbing fallen logs.
 7. Leave limbs and tops where felled.
 8. Minimize soil compaction.
 9. Avoid road or landing construction.

5.4.3.4 Trails

- All trail construction requires review by, and approval of the Forest Committee and the easement holders. Unauthorized trails are not allowed.
- The natural processes of streams, wetlands and vernal pools take precedence over trails.
- Protect stream, wetland and vernal pool buffer zones from excessive use and manage any trails within these buffer zones 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, so they do not 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.

5.4.3.5 Stream Crossings

- Stream crossings will be minimized and designed so they do not 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.

5.4.3.6 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.

5.4.4 Actions

- 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 on the section of the Eagles Trail connecting the Hayden Hill West and Economou entrances to protect water quality by improving the trail design.
- Use the Town website as one means of communicating to the greater community about forest management activities.

5.5 *Recreation*

This Plan includes recreation that is consistent with the plan's other goals of quiet solitude, demonstration of sustainable forestry, protection of water quality and wildlife habitat, public education, and carbon storage. 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.

The Town Forest is used and appreciated by visitors both from and outside of Hinesburg. Uses include, but are not limited to: hiking, biking, skiing, snowshoeing, birding and wildlife viewing, hunting, dog walking, timber and wildlife habitat management, scientific study, and educational walks and tours. Horseback and snow machine riding are also enjoyed on specified trails.

New Trail Added in 2021

Since the early 2000's, the Town's partnership with the FOTW and their work at maintaining and upgrading the trail network has provided hundreds of residents and recreation enthusiasts from around the county and elsewhere with access to the beauty and solace provided by time spent in the HTF. The 2010 windstorm that knocked down trees in 40 acres of a softwood plantation in the HTF also resulted in the closing the Nature Boy and Boneyard trails that had been created and maintained by the FOTW. In 2020 the Forest Committee approved construction of a new trail that skirts the area of the blow down. The new trail provides access for novice mountain bikers and walkers who are less comfortable with steep climbs and rougher terrain. The addition of the trail also helps to disperse increasing trail use.

Hinesburg Trails Committee

The Town Trails Committee plays an important role in the HTF trail creation and maintenance. The Trails Committee constructed and installed Kiosks at the three trail head parking sites, improved trail signage, maintained trail maps, and cleared trails. They recently provided the technology to access trail maps electronically using the free, Avenza, mobile phone APP. HTF trail maps can also be found on "All Trails" and "Trail Forks" mobile phone applications.

2018 Recreation Planning and Town Forest Visioning Process

The Vermont Department of Parks and Recreation hired the SE Group to work with ten towns around the State to promote creation of new town forests and enhance recreation opportunities in existing town forests. Hinesburg was chosen as one of the towns to participate in this project. Hinesburg's essential question was, "How much use is too much?" In 2018 SE Group conducted a visioning workshop and made an online survey available for those unable to attend the workshop in an effort to engage the public in creating a recreation plan for the HTF. They also monitored current recreational usage of the HTF using volunteers at the trail heads and wildlife cameras. Results of their work can be found on the Town Forest Committee section of the Town website in the Visioning Workshop Survey Results and SE Group Hinesburg Trail Assessment documents.

The level of recreational use will be monitored to determine what management strategies should be adopted to balance recreational use with other management goals. Future recreational activities and management of the HTF for recreation shall only be allowed with the specific approval of the Town Forest Committee. Recreation and recreation management shall be guided by the permitted and restricted uses, goals, objectives, and actions set forth in the Conservation Easement and this Management Plan.

5.5.1 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

5.5.2 Objectives

- Recreation that 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.

5.5.3 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.
 3. 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 only be located in appropriate zones (see the Conservation Easement and the Forests and Wildlife Sections of this Plan).
- 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 assure that the integrity of the forest environment and the trail system will be maintained. Travel in small groups, not more than 20 people is encouraged.
- 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.

- Signs will be placed and maintained to help trail users navigate the trail system. Users will be encouraged to also use phone apps to help with navigation.

5.5.4 Actions

- Temporarily restrict or curtail recreational activities when trail conditions are not suitable or as needed to allow for other management activities provided for by this plan, e.g., timber management.
- Create and periodically review a specific trail recreation plan for the HTF that inventories and assesses existing trails, maps out any future re-routes, connections, and 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 Hinesburg Area Recreational Trails (HART) trail map for the HTF that is similar in format to other HART trail maps. Update the map as necessary.
- 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 the parking areas and entrances to the Forest that designate the allowed and restricted uses of the trails, and that encourage trail safety and courtesy. Periodically check each parking area 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, Town Report, and user group communication channels. Keep the information up to date as the seasons and conditions change.
- 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 Memorandum of Understanding (MOU) between the Town and any user group with the majority of responsibility for building and maintaining trails regarding trail maintenance over the long term.
- Regularly refresh the property boundaries to facilitate:
 1. The placement of trail signs.
 2. Discussion with adjoining property owners about Town Forest use.
- 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.
- Maintain signs to help users know where they are in the forest. Put links to electronic maps available on phone apps on the kiosks and website.
- Use the Town website as one means of communicating to the greater community about recreational opportunities and forest management activities in the HTF.

5.6 *Invasive Species*

The following definitions are taken from the Lilly Center for Lakes and Streams website copyright 2022.

- **Native:** a species that originated and developed in its surrounding habitat and has adapted to living in that particular environment. (It can become aggressive, similar to an invasive species.)
- **Invasive:** a species of plant or animal that outcompetes other species, causing damage to an ecosystem.
- **Non-native:** a species that originated somewhere other than its current location and has been introduced to the area where it now lives (also called exotic species).

The term, invasive species, will be used in this document to include exotic, non-indigenous, and non-native invasive species.

5.6.1 Related 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.
- 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.

5.6.2 Objectives

- Discourage the continued establishment and spread of invasive species in all areas of the HTF including Reserves, wetlands and streams.
- Stay informed regarding the current knowledge and management practices for control of invasive species.
- Monitor wetland sites for invasive plant species and remove them when found, before they produce seeds.
- Invasive species found in areas of the HTF classified as Reserves may be removed and replaced with native vegetation.

5.6.3 Management Guidelines

- Identify areas of the forest with existing invasive species challenges.
- Use best practices for control and removal of invasive species that are supported by current science based practices, including the Forestry Best Management Practices for Invasive Species Management document published by the University of Vermont Extension Service in 2010, and consultation with State and other invasives species experts.
- Use the Town website and other methods of communication to engage and educate the general public about the issues associated with invasive species as they relate to the Forest.
- In order to minimize inadvertent benefit of timber harvesting activities to invasive plant populations, adhere to BMPs 15 – 24 listed in the Forestry Best Management Practices for Invasive Species Management.
- Removal of invasive species should commence as soon as is feasible, with specific timing determined by the Forest Committee.

5.6.4 Actions

- Learn to identify known invasives species.
- At least annually, check with the State for information about newly identified invasive species.
- Remove invasive species as soon as feasible, with specific timing and management methods determined by the Forest Committee.
- Educate and inform neighbors on the impact, identification, and control of invasive species.
- Wall Lettuce was discovered in one timber harvesting site in 2021, as well as along part of the Huntington end of Eagles Trail. Wall Lettuce is a recently identified herbaceous invasive plant species that spreads rapidly by windblown dandelion like seed heads. Efforts began in 2021 to remove Wall Lettuce. Continue with those efforts to control this infestation.
- Closely monitor areas where natural and intentional openings in the forest canopy create opportunities for infestation by invasive species.
- Monitor wetland sites for invasive plant species and remove them when found before they produce seeds. When feasible, replace the invasives with native vegetation.

6 SECTION III: SUMMARY OF ACTIONS

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

6.1 *High Priority*

Recommended to be completed in 2022-2024

- Communicate with neighboring property owners and mark the property boundary of the 291 acre Carse addition to the HTF in 2022.
 - Mark and maintain all boundaries in conjunction with adjacent property owners. If requested by the landowner, post signs to let the public know they are leaving public land. (5.1.4)
 - Update and use the Town website as one means of communicating to HTF

neighbors and the greater community. (5.1.4)

- Create and post on the Town website a Hinesburg Area Recreational Trails (HART) trail map (and iterations as necessary) for the Town Forest that is similar in format to other HART trail maps. Update the map as necessary. (5.5.4)
- Update and maintain maps, signs, and information in trailhead kiosks. Post new signs at parking areas informing public of:
 - the negative impacts of dog waste on water quality and the disruptive impact dogs have on wildlife, e.g., birds. (5.5.4)
 - the allowed and restricted uses of the trails, and encourage trail safety and courtesy (4.2, 5.5.4)
 - the fact that hunting for deer, bear, turkeys, grouse, and other legal game is permitted within the HTF (5.5.4)
 - liability (4.3)
 - the expectation of trail safety and courtesy (5.5.4)
 - any forestry operations in progress (5.5.4)
 - any restrictions or curtailments of activities for timber management or for unsuitable conditions (5.5.4)
- Continue to work with on the section of the Eagles Trail connecting the Hayden Hill West and Economou entrances to protect water quality by improving the trail design. (5.4.4)
- Add a kiosk or other signage to trail heads on Lincoln Hill Road for the Carse Addition to the HTF
- Add safety zone signs near the trail heads of the Carse Addition
- Perform an assessment of existing informal trails in the Carse Addition and determine what action to take regarding those trails.
- Hire a licensed forester to conduct an inventory and assessment of the Carse addition. Include wildlife and invasive species identification as part of the inventory and assessment.
- Consider constructing a bridge or puncheon over the stream near the southern end of the Backdoor Trail.

6.2 Medium Priority

Recommended to be completed in 2023-25

- Document the historic and cultural history of the Carse Addition. Contact Elise Guyette to learn if this parcel was part of the Black settlement on Lincoln Hill.

6.3 Ongoing and Long-Term (5+ Years)

- Maintain a relationship with the Stewardship contact at Vermont Land Trust and communicate any activities and changes that are planned for the conserved land.
- Temporarily restrict or curtail recreational activities when needed to allow for other management activities provided for by this plan, e.g., forest management or when conditions are not suitable. (5.5.4)
- Maintain a relationship with the Chittenden County Forester. (5.3.4)

- Create and periodically review, with collaboration of trail partners, a specific trail recreation plan for the HTF that inventories and assesses existing trails, maps out any future re-routes, connections, and closures, and provides clear expectations and understandings for how and by whom trails will be maintained, marked, and signed. (5.5.4)
- 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. (5.5.4)
- 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. (5.5.4)
- Seasonally monitor use of the parking areas for evidence of overcrowding during certain seasons or at certain times. (5.5.4)
- Update recreation regulations as needed to reflect changes in recreational demand and changes in natural systems within the HTF (5.5.4)
- Periodically check each parking area to be sure signs are up to date as conditions and seasons change. (5.5.4)
- Remove invasive species as soon as feasible, with specific timing and management methods determined by the Forest Committee. (5.6.4)
- Regularly refresh the property boundaries. (5.5.4)
- Discussion with adjoining property owners about Town Forest use. (5.5.4)
- Coordinate with academic and state professionals to accomplish monitoring goals. (5.2.4)
- 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. (5.2.4)
- Update the Forest Inventory and Assessment at least every ten years.
- Use updated inventories to update forest zones as appropriate. (5.3.4)
- Invite neighbors to meetings designated for their input. (5.1.4)
- Maintain a list of research projects that have been completed at the HTF. (5.2.4)
- Invite of neighbors to educational opportunities geared toward forestry management. (5.1.4)
- Attempt to maintain a member of the Town Forest Committee that is a resident of an access road or adjacent property owner. (5.1.4)
- Develop and maintain a list of neighbors. (5.1.4)
- 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*, Town Report, and user group communication channels. Keep the information up -to date as the seasons and conditions change. (5.5.4)
- 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. (5.4.4)
- Coordinate with academic and state scientists to accomplish monitoring goals. (5.2.4)

- Develop a list of potential service-learning projects that the HTF Management Committee could partner with teachers and their students at the HTF; e.g., development of interpretive/informational material at a kiosk, or creating and maintaining trail markers. (5.2.4)
- Update and maintain maps, signs, and information in trail head kiosks. Post new signs at parking areas informing public of:
 - the negative impacts of dog waste on water quality and the disruptive impact dogs have on wildlife, e.g., birds. (5.5.4)
 - the allowed and restricted uses of the trails, and encourage trail safety and courtesy (4.2, 5.5.4)
 - the fact that hunting for deer, bear, turkeys, grouse, and other legal game is permitted within the HTF (5.5.4)
 - liability (4.3)
 - the expectation of trail safety and courtesy (5.5.4)
 - any forestry operations in progress (5.5.4)
 - any restrictions or curtailments of activities for timber management or for unsuitable conditions (5.5.4)
 - links to electronic maps available on phone apps (5.5.4)
- Maintain and routinely update a Town Forest Committee section on the Town website. (5.1.4, 5.2.4, and 5.4.4)
- Create an official MOU between the Town and any user group with the majority of responsibility for building and maintaining trails) regarding trail maintenance over long term. (5.5.4)
- Maintain signs to help users know where they are in the forest. Put links to electronic maps available on phone apps on the kiosks and website. (5.5.4)

6.4 *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 TrailsCommittee.
- Communicate with South County River Watch, the Nature Conservancy, and Audubon Vermont.

- Participate in the Town Plan and zoning regulation updates and revisions.
 - 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.
- (5.3.4)

7 REFERENCES AND RESOURCES

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8 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 – Refers to a forest tree species that is present in the highest concentration in a specified area of the forest.

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, Hayden Hill West, and Lincoln Hill Roads in the Town of Hinesburg as well as Economou Road in the Town of Huntington.

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 non-native plant or animal that outcompetes native plants and prevents the establishment or succession of native species.

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 soil pH

between 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, e.g., white pine, white cedar

Spring ephemerals – Woodland herbs that grow and flower in the spring before the tree canopy leaf 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.

**9 APPENDIX A: CONSERVATION EASEMENT (CE) AND
CONSERVATION EASEMENT MAP**

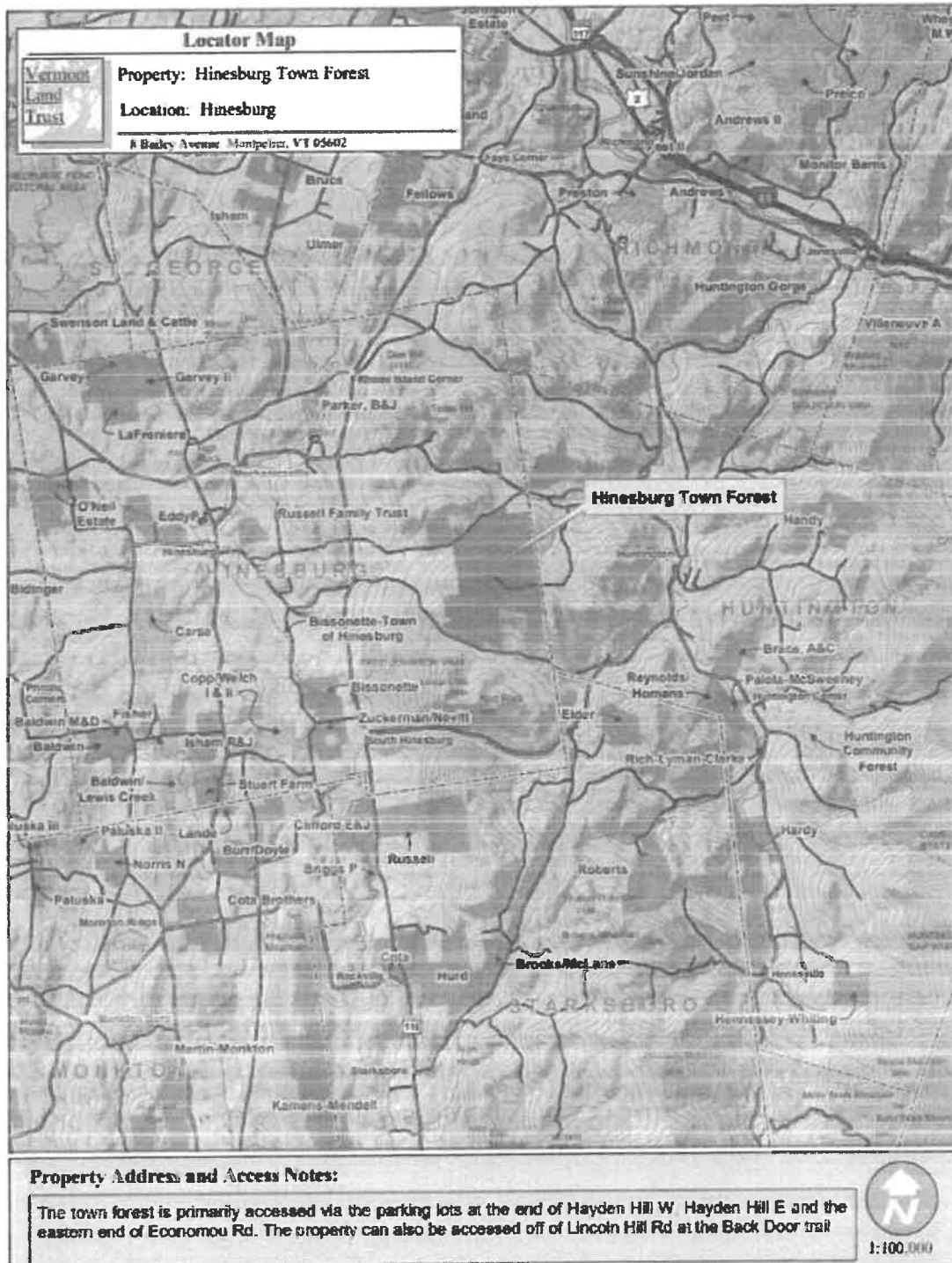
Held by our conservation partners, Vermont Housing and Conservation Board and the Vermont Land Trust.

**10 APPENDIX B: VERMONT LAND TRUST'S (VLT), BASELINE
DOCUMENT REPORT (BDR)**

Includes the, [ReviewHinesburgTFMapsPhotos.pdf](#), attachment to the BDR.

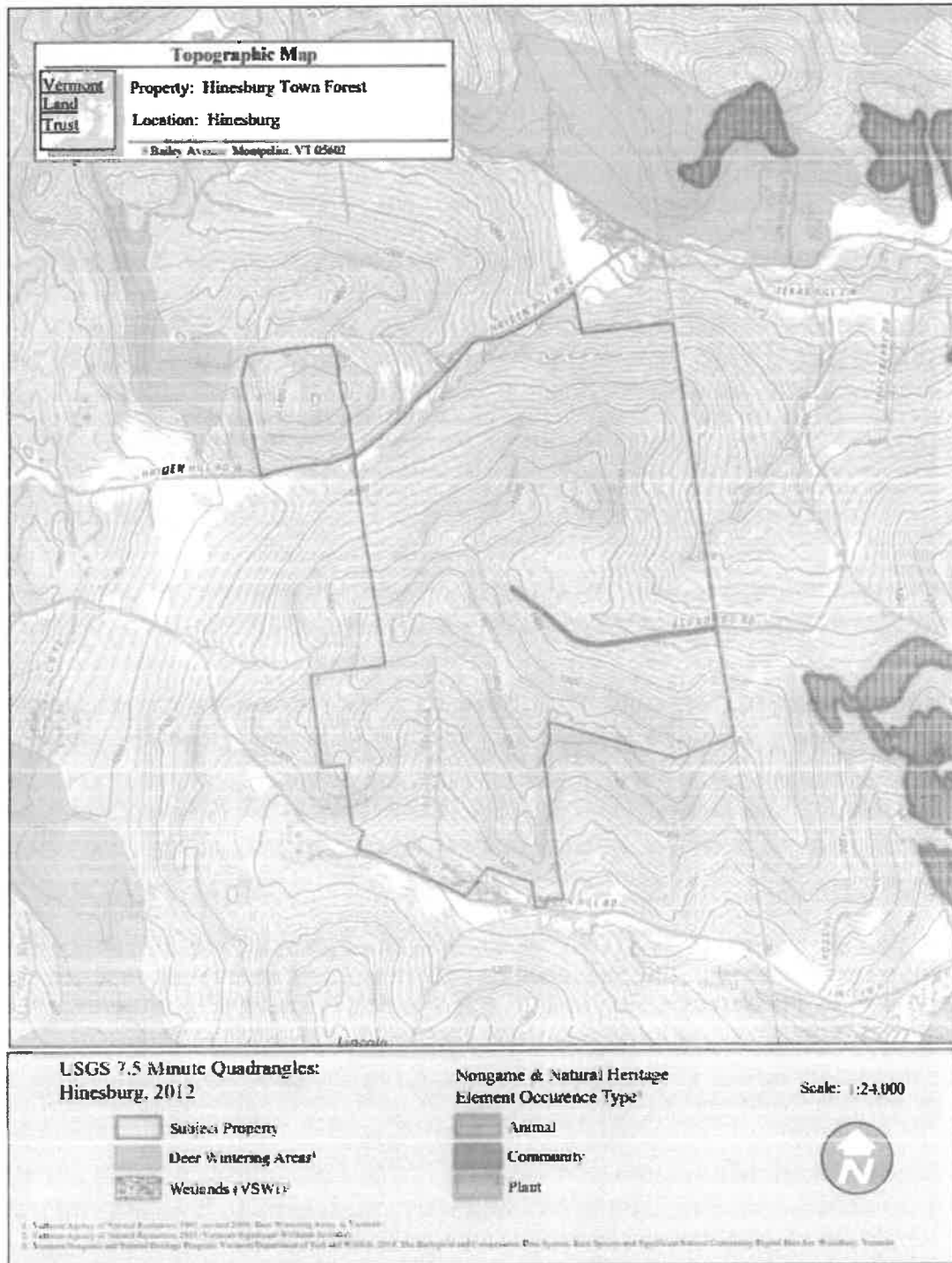
APPENDIX B Continued

Locator Map - Page 1 of the, ReviewHinesburgTFMapsPhotos.pdf, attachment to the VLT's, BDR.
Included here for ease of access.



APPENDIX B Continued

Topographic Map - Page 2 of the, ReviewHinesburgTFMapsPhotos.pdf, attachment to the VLT's, BDR. Included here for ease of access.



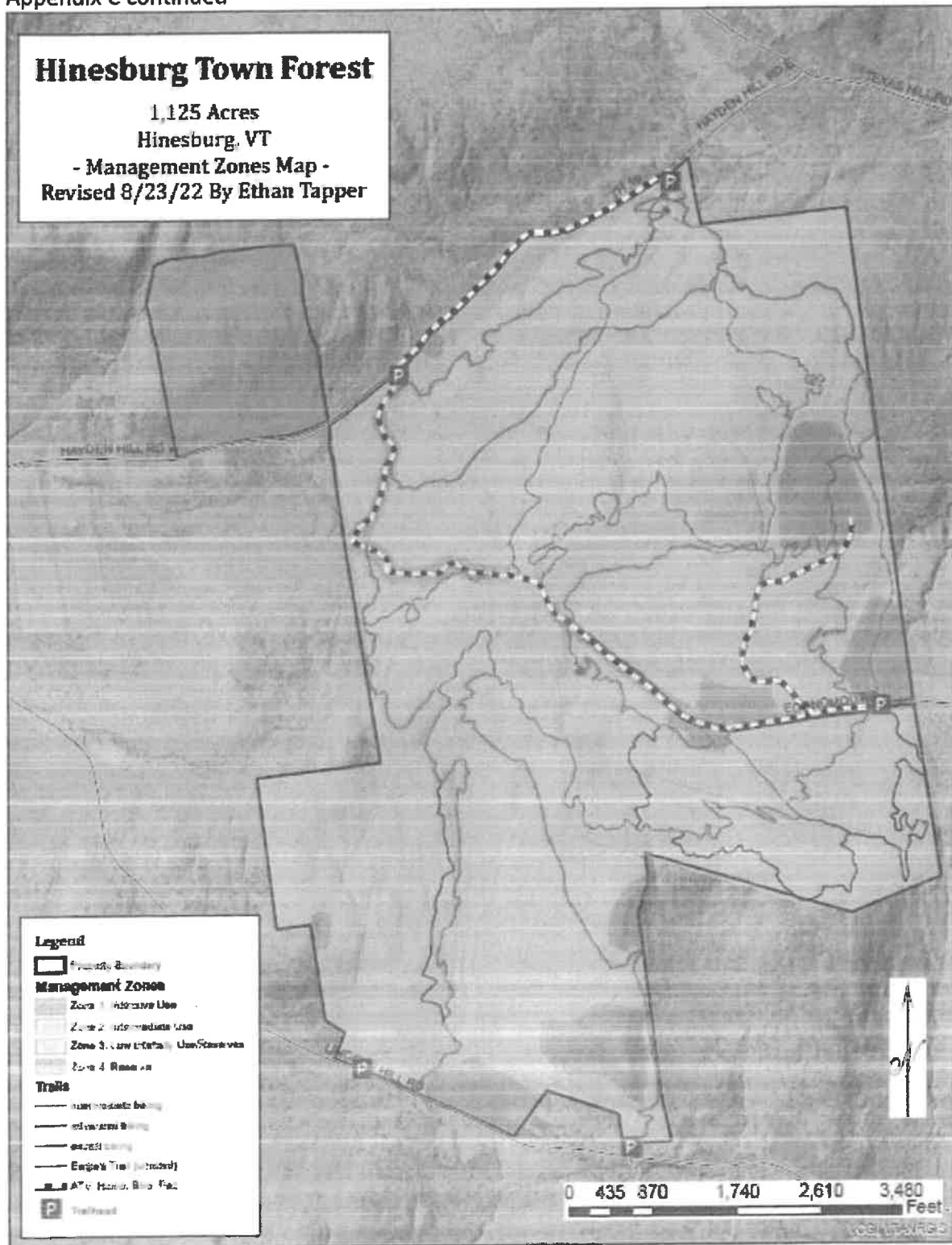
APPENDIX B Continued

Vernal Pool and Dry Red Oak – White Pine Forest Ecological Protection Zone Map - Page 3 of the, ReviewHinesburgTFMapsPhotos.pdf, attachment to the VLT's, BDR. Included here for ease of access.

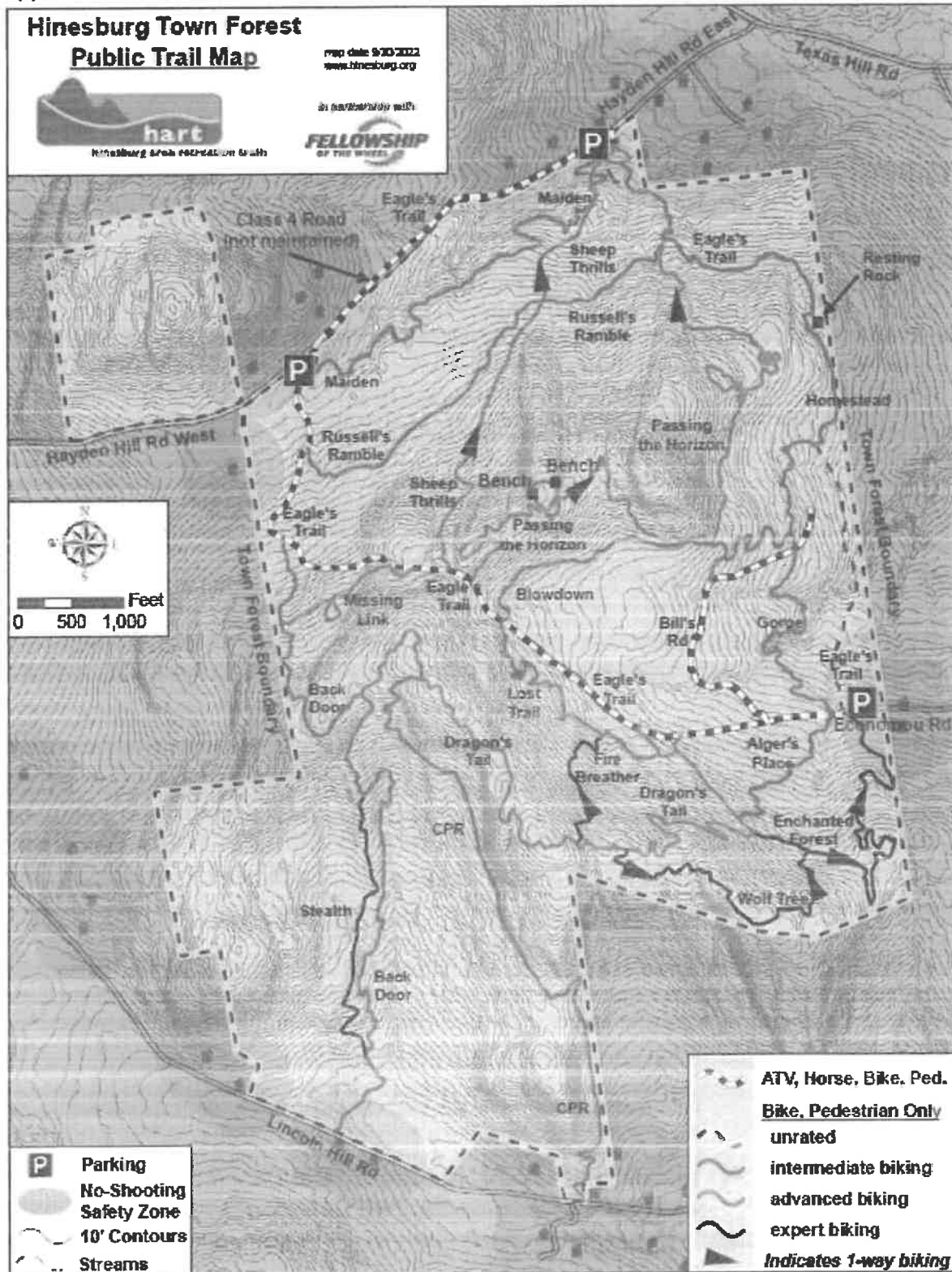


11 APPENDIX C - FOREST ZONES AND TRAILS MAP

| Zone | Management Goal | Compatible Practices/Uses |
|-------------------|---|---|
| Reserves | <ul style="list-style-type: none"> • Protect forest biodiversity and ecologically sensitive sites. • Areas of the forest where ecological functions are allowed to progress with minimal to no management activity. | <ul style="list-style-type: none"> • Timber and other management activity limited to those actions needed to protect ecological integrity • No permanent trails in the Primary EPZ of vernal pools • Dispersed recreation only |
| Low Intensity Use | Protect forest biodiversity and ecologically sensitive sites. | <ul style="list-style-type: none"> • No timber management – unless needed to protect ecological integrity • Limited access to wetlands and the secondary EPZ of vernal pools • Low density of single track, sustainably built hike/bike trails |
| Intermediate Use | Protect and enhance biodiversity (primary) through timber management (secondary). | <ul style="list-style-type: none"> • 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. | <ul style="list-style-type: none"> • Timber management which mimics natural disturbance events. • Range of recreational opportunities. |



Appendix C continued



12 APPENDIX D – HINESBURG TOWN FOREST INVENTORY AND ASSESSMENT – FINAL – 5/08/2018

The Hinesburg Town Forest Inventory and Assessment – Final – 5/08/2018 (HTFIA) is an important supplement to this Management Plan. The HTFIA developed forest management recommendations on the Management Philosophy, Management Guidelines, and Intensity Use Zones defined in the 2012 HTF Management Plan. The Philosophy and Guidelines of the 2022 Management Plan are the same as those of the 2012 Plan. The Intensity Use Zones in the 2022 Plan include the 291 acre addition to the HTF. The Use Zones also include a new Reserve Zone. The HTFIA recommendations will continue to be implemented in the ten year period following the adoption of this revision of the Management Plan with consideration given to the newly created Reserve Use Zone.

Once available, an Inventory and Assessment of the 291 acre addition to the HTF will be reviewed and included as an addendum to the 2022 Management Plan.

