DRAFT Ashley Community Forest Stewardship Plan 2023-2032

Towns of Sharon Vermont (149.7 acres) and Strafford Vermont (106.7 acres)



Prepared by the Ashley Community Forest Board

David Paganelli, Annie Penfield, Erik Skarsten, Rob Stainton, Michael Sacca

With assistance from:

AJ Follensbee: Windsor-Orange County Forester, Vermont Department of Forests, Parks & Recreation. David Paganelli: Orange County Forester, Vermont Department of Forests, Parks & Recreation. Andrea Shortsleeve: Private Lands Habitat Biologist, Vermont Department of Fish & Wildlife. Steve Faccio: Conservation Biologist, Vermont Center for Ecostudies. Micki Colbeck: Conservation Biologist. Judith Falk, Kevin Gish, Dick Ruben, Gayle Giovanna: Friends of Ashley Community Forest. Donna Foster: Regional Project Director, Vermont Land Trust. Dan "Rudi" Ruddell: Watershed Specialist, White River Partnership.

Adopted :

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Ashley Community Forest Location:

Towns of Sharon Vermont (149.7 acres) and Strafford Vermont (106.7 acres)

Parcel Boundaries and Acreage: The boundaries of this parcel and total acreage, was determined by a boundary retracement survey, completed in August 2020 by Holt Gilmore Survey Associates, LLC of Woodstock Vermont. Copies of the survey map are on file in each of the towns of Sharon and Strafford, and a copy of the survey map is attached to this document as Appendix 1.

Location: North of Clifford Farm Road in Sharon, and west of Nutting Road in Strafford.

SPAN: 576-181-10020 Sharon; 624-196-10518 Strafford.

Biophysical Region: Southern Vermont Piedmont

Land acknowledgement

We acknowledge that the land of the Ashley Community Forest is the homeland of the Abenaki people of the Black Ash trees. The Indigenous people of Vermont.

We reflect upon the fact that the Ashley Community Forest, located in present-day Sharon and Strafford, Vermont, sits on land which has served as a site of sustenance, community, meeting, and exchange among Indigenous peoples since time immemorial.

The Western Abenaki are the traditional stewards of these forests, lands, and waters, which they call N'dakinna, or "homeland." We respect their spiritual and lived connections to this region and remember the hardships they've endured - both past and present, including violence and forced displacement at the hands of colonizing peoples.

We give thanks for the opportunity to share in the joys of this place and to protect it. We welcome all opportunities for Abenaki citizens and other Indigenous people to connect with their relations - including water, soil, plants, and animals - across Ashley Community Forest grounds.

We further recognize and celebrate the Indigenous Nations who's homeland makes up Vermont, the Elnu Abenaki Tribe, the Nulhegan Band of the Coosuk Abenaki Nation, the St Francis-Sokoki Band of the Abenaki Nation of Missisquoi, the Abenaki First Nation of Odanak, and the Stockbridge-Munsee Band of Mohican Indians.

We strengthen and celebrate our relationship with N'dakinna by honoring its past and finding our place. We offer our respect and gratitude to the traditional caretakers for their stewardship by seeking to uplift indigenous peoples, cultures, and arts as we share narratives of the land and enjoy the forest as a community.

Introduction

History

The land of the Ashley Community Forest is the homeland of the Abenaki people of the Black Ash trees. The Indigenous people of Vermont. We recognize that the land on which the Vermont Law School sits - Koas - is the homeland of the Koasek Traditional Band of the Koas Abenaki Nation.

The 256-acre Ashley Community Forest is one of the largest, undeveloped forested properties located near the 4 corners of the four-town region of Royalton, Sharon, Strafford and Tunbridge with opportunities for forest management and diverse community benefits. The property has known high forest values and is proximate to the recently conserved Manning and Robinson Farms. Ownership of the Ashley Community Forest will advance town goals to promote forest protection, preserve rural character, and expand recreational opportunities, including hiking, cross country skiing and hunting, along multi-use trails. The Ashley Community Forest straddles the town line separating Strafford and Sharon.

The current ownership appears to be made up of all or part of at least two separate farms, one in the northeastern part of the parcel in Strafford, and one in the southwestern portion of the parcel in Sharon. Little is known about the Sharon farm at this time, but there is a large, excavated foundation that was likely for a substantial house, and there are two small barn or shed foundations nearby. The northern farm was settled by Edward and Thankful Preston in 1795 and was in the Preston family for several generations. It appears to have been actively farmed until the 1920s. Tyler Robinson, who grew up at the farm down the hill at the junction of Brook Road and Robinson Road, remembers the house and sugarhouse still standing in the 1940s.

The land was last farmed between 75-100 years ago and logged lightly for a log cabin around 1969. It was originally known as the Preston Farm. Rosamond (Jean) Ashley lived with Doug Savage on the land until 1971 and it has been undeveloped since that time.

The forest has been logged at least three times in the past 50 years. An extensive harvest in the Sharon portion that was accessed from Clifford Farm Road. The objective of this harvest appears to have been removal of the best white pines along with some hardwood sawlogs and firewood. A similar harvest occurred in the northern portion of the forest that focused mostly on removal of hardwood sawlogs and firewood. A third, more recent and smaller harvest in the vicinity of the Preston farmstead appears to have focused on white ash removal.

The Ashley family owned the entire parcel for approximately 50 years before it was purchased by the Alliance for Vermont Communities in June, 2018, and transferred to the two towns in January 2022.

Acquisition

An offer was made on the property by David Hall of the NewVistas Foundation, a 20,000 person proposed development in January of 2018. Knowing the land had the potential to be a valuable educational resource and public recreation area, the non-profit Alliance for Vermont Communities (AVC) rekindled conversations with Rosamond Ashley's niece, Holly Kicklighter who was acting as her aunt's guardian. Holly expressed her disinterest in selling to David Hall and the NewVistas development, with the hope that the land would be conserved. Holly needed to sell the property quickly to help pay for her aunt's medical care, so AVC swiftly entered into an agreement and began raising the necessary funds. During this time AVC had begun conversations with the Vermont Land Trust (VLT). AVC has raised \$373,000 from generous donors large and small and VLT assisted with a bridge loan to secure the final funding before the closing. The land purchase was \$375,000. The total project budget was \$523,100 and included costs for a land survey, taxes paid to the towns, a Phase 1 Environmental Assessment, a stewardship fund, trail development, outreach, and VLT staff time among other expenses.

AVC and VLT worked cooperatively as partners to secure additional funding from the Vermont Housing and Conservation Board in the amount of \$150,000 under the assumption that the towns would eventually take ownership of the property as a town forest open to the public. AVC, VLT and the Vermont Housing and Conservation Board believe that this property will be a great educational, recreational, and natural resource for not only the residents of Strafford and Sharon but other residents and visitors as well. A conservation easement has been placed on the entire Ashley Community Forest and the Vermont Land Trust (VLT) and VHCB will hold the easement. VLT will be the main contact responsible for easement stewardship in perpetuity.

Governance

The Ashley Community Forest (ACF) is a volunteer driven endeavor. A five-member Board of Directors, comprised of dedicated local citizens, creates policy and strategic planning to oversee the recreational uses of the Forest. The ACF board and volunteers manage the day-to-day operations. All uses of the forest are subject to the approval of the Vermont Land Trust and Vermont Housing and Conservation Board that hold a joint conservation easement on the forest.

Stewardship Plan Purpose

This Stewardship plan is intended to inform the management of the property for the next ten years. Following this time, the plan will be revised and updated. This plan is intended to outline long-term management intentions and inform partner organizations, including the Vermont Land Trust and the Vermont Housing & Conservation Board, who will co-hold a conservation easement on the property about those management decisions. This plan describes intended management for the Ashley Community Forest, that are rooted in discussions with the community and the involvement and council of experts.

This and subsequent Plans are also intended to provide guidance to contractors and volunteers (if any) who will conduct on-the-ground management activities within the Ashley Community Forest, in accordance with the restrictions in the conservation easement.

Mission

The primary objective of the purchase and conservation of this land is to protect the land's natural areas, natural communities, undeveloped character, historic artifacts and scenic open

space; and to provide opportunities for low-impact, public outdoor recreation and education and for modest and sustainable timber management.

The project also advances town goals to preserve wildlife corridors. Sharon's town plan directly recognizes this value: Sharon contains large tracts of contiguous woodlands that adjoin woodlands in neighboring towns. These forested tracts act as wildlife corridors, allowing animals unrestricted movement not possible in more developed areas. The undeveloped acreage extending from conserved lands...north to the Strafford town line is part of a regionally significant wildlife corridor spanning multiple Vermont counties.

Public Input Process

As part of the planning process, the Ashley Community Forest Board offered open public meetings, and conducted a survey to assess current public use, invite ideas and feedback about possible improvements, and to develop lasting networks. We advocate for public involvement that is transparent and welcoming, both early in the stewardship plan development process and at other appropriate times. Uses will continually be monitored and considered.

Future Planning

The approved stewardship plan is developed as a 10-year plan with regular 10-year updates thereafter. However, it should be considered a fluid document that will be revised and updated as necessary.

General Description of This Land

The Ashley Community Forest property in Strafford and Sharon is mostly forested, with a small area of wetland and open meadows near its eastern side along Nutting Road. The parcel's 256.4-acres include a ridge running north-south, with the western slope dropping steeply down to a south-flowing tributary of Fay Brook. An arm of the ridge extends east and is partially open with expansive views of the surrounding area. Nutting Road's terminus soon reaches a cellar hole of a historic farmhouse, as well as stone walls and rows of large old trees that once lined farm roads. Elevations range from a high point of about 1600' on a hilltop in the center of the property, down to a low point of about 1180' where the stream flows off the southern boundary.

The land has established trails and logging roads that lead through a variety of forest types. In addition to the existing trails, there is significant opportunity for addition trail development for hiking, cross-country skiing, or other uses. The homestead area has old stone cellar holes that provide historical and cultural educational opportunities.

Ashley Community Forest Management Plan

FOREST HISTORY

This forest developed following the retreat of the glaciers, roughly 8-10,000 years ago. Though the species mix of the forest has changed over that period, the land remained forested for thousands of years, until nearly all of the parcel was cleared for agricultural use in the late 1700s and early 1800s. The small amount of forest left uncut was likely used as wooded pasture and heavily managed for maple sugar, firewood, fencing and building materials. Stonewalls are common along the boundaries and in the interior of the forest, and there are several stone foundations that appear to be houses, barns, sheds and a sugarhouse. In the last 30-40 years, there have been at least two significant logging entries. Little is known about these harvests, but it appears that neither of these entries was organized or supervised by a forester and neither harvest significantly altered the species composition or quality of the forest.

The forest today is an interesting and complex mix of multiple species, hardwood and softwood, old and young, with intermixed areas of healthy, well-formed trees and areas of mature, unhealthy or poorly formed trees. The combination of intense, past agricultural use, uneven agricultural abandonment, and then unregulated logging of the newly regenerated forest, has created significant structural complexity, with multiple unique forest stands. Most of the upland portions of the forest are destined to be composed of a mix of northern hardwood species. Areas with deep, rich soil are expected to be dominated by sugar maple, while other areas, with thinner, drier, or more nutrient poor soils are expected to be dominated by beech. Those areas along and near the main streams are likely to remain a mix of hardwoods and softwoods with hemlock being the dominant softwood species. The current forest, while guite diverse, has certain consistent characteristics throughout. Northern hardwoods are part of the understory and overstory in all locations. Large, mostly rough white pine, with heavy white pine weevil damage and significant crown loss due to needle cast disease, is common in the overstory. Large diameter aspen and paper birch, along with scattered very large individual sugar maple, ash, yellow birch and white pines are common in a matrix of younger, smaller hardwoods. The regeneration throughout is generally a mix of northern hardwood seedlings, under well-established beech saplings and poles. Invasive plants are well established at light to moderate levels throughout the parcel. Japanese Barberry is the most common and well-distributed species, with shrub Honeysuckle, Common Buckthorn, and Autumn Olive also noted.

MANAGEMENT GOALS

The principal management goal of the two towns is to maintain a healthy, diverse, and resilient forest that can be used to achieve multiple public benefits, such as carbon sequestration, carbon storage, clean air, clean water, ecological integrity, natural resource education, natural beauty, the sustainable production of forest products and the maintenance and improvement of wildlife habitat. Forest management is a tool that can be used to achieve these goals but is not a principal goal in itself.

During this planning cycle priority will be given to the following goals.

• Increase public access and use of the Ashley Community Forest.

- Education through demonstration
- Establish ecological reserve areas that include riparian protection zones.
- Increase climate change resiliency by managing for warmer climate adapted species

CLIMATE CHANGE EFFECTS

Climate change is affecting this forest in several ways. Rather than rain coming in mostly gentle events spread throughout the growing season, it now comes in fewer, more violent storms. Often these storms are accompanied by damaging winds. Less extreme cold, less snow and more ice constitute the new pattern in Winter weather. In total, we now receive more precipitation than we have historically, but due to the nature of the storms that bring the rain, much of the additional rainfall runs off rapidly as streamflow and is not available for tree growth. That is, there is more water moving into and out of the forest, but less water available for plant growth. Less snow and warmer winter temperatures often lead to early snowmelt and near drought conditions when trees break bud in the Spring and must rehydrate after winter dormancy. Less available water in the Spring and during the growing season leads to less photosynthesis, often resulting in less growth, even in the presence of an extended growing season. The warm season available for growth may be extended, but if available water is not present in sufficient quantities, the effective growth period may be shorter in our new climate, not longer. Some species of trees adapt better than others to these changes in temperature and moisture, and that results in a shift of competitive advantage between species, which leads to a gradual shift in the species composition of the forest over time. When someone says something like "The range of sugar maple will move north over the next century", this is what they are referring to. Sugar maple is expected to be less competitive in the new climate and so will be present in lesser proportions in the future forest.

PUBLIC ACCESS

There are two access points north of the switchback of Clifford Farm Road in Sharon. Both pass through the land of others to reach the Ashley Community Forest and both have been used in the recent past, under previous ownership, to access the southern half of the parcel for logging. The lower access enters the parcel, but no landing is evident. The upper access has a landing at the road, on the land of others. It appears that this access is used only by permission of the landowner that owns the road frontage. There is evidence of a deeded right-of-way for logging on the lower access road from Clifford Farm Road across land currently owned by Debra Fisk. While Ms. Fisk has been generally supportive of the establishment of the forest as public land, and has been agreeable to discussing forest management access, she has not formally acknowledged the right-of-way. The legal status of the right-of-way will need to be determined in the future.

The main access to the forest is from Nutting Road in Strafford. The town road ends within the parcel and there is a parking area that will comfortably accommodate several cars, or a school bus. This access is suitable for forest management and there is an established landing area just beyond the parking area with a much smaller second landing further uphill. Much of the northern portion of the parcel can be accessed from Nutting Road and the lower landing. The

lower landing could also be used for overflow parking for events held at the forest. The small landing further up the hill that is likely not practical for future use.

Internal logging trails are found in the Sharon portion of the parcel, but are overgrown, and have not been well maintained. There is a need to install water control structures on all trails, and to remove debris from the stream and properly close out a stream crossing in Sharon that was left in place by loggers many years ago. Once the former stream crossing is closed out, the spur road leading to this crossing should be waterbarred and discontinued.

Following any future forest management activity, such as the treatments recommended in this document, all main trails will be cleared of large debris, smoothed and waterbars will be installed in full compliance with Vermont water quality standards as outlined in **Vermont Water Quality, Acceptable Management Practices**, dated 2019.

The trail system is more well developed on the northern portion of the parcel, with a main loop trail and 2-3 spur trails. The town road leading into the property has minor erosion that needs repair when an excavator is next on site. To restrict unauthorized motorized access, a gate should be installed just beyond the parking area.

Additional recreational trails are under consideration that would extend and connect spur trails into a single, comprehensive trails system with multiple loop trails.

RECREATION AND AESTHETICS

There are local trails being developed on two conserved, neighboring parcels, that compliment the trail system on the Ashley Community Forest. While the trails on the neighboring parcels do not currently connect to the trails on the Ashley Community Forest, that is a possibility in the future.

In 2020, prior to town ownership, the Alliance for Vermont Communities and a group of community volunteers cleaned up an abandoned camper trailer and a tire dump nearby from the Sharon portion of the open land.

Both open areas were brushhogged after August 1st, in both 2020 and 2021. It is recommended that both areas be mowed annually in the future to maintain them as open, both for aesthetic value and for the wildlife habitat options they provide. If the openings are intended to be maintained primarily as pollinator habitat Vermont Fish & Wildlife recommends mowing annually after the growing season.

CULTURAL/HISTORICAL RESOURCES

There are at least three excavated house foundations, and three barn foundations, along with other foundations from unknown structures, two stone wells, a stone culvert and the remains of a farm orchard. Stonewalls are common along the boundaries of the parcel and internally. It will be very important during any forest management activities to protect all stonewalls and historic features.

RARE, THREATENED AND ENDANGERED SPECIES

There are no known significant natural communities, or rare, threatened and endangered species on this parcel.

WILDLIFE HABITAT

This parcel is quite diverse in species composition, age and structure. It is the intent of the two towns to maintain and enhance this forest complexity to provide quality wildlife habitat and to promote full ecological function. Open land adds to the ecological diversity and structural complexity, and it is expected that the two small open areas will be maintained through periodic mowing for pollinators, butterflies, songbird breeding habitat and as a food source for larger mammals.

Mast is defined as fruits or nuts that are valuable to wildlife. Throughout the forest there are mast bearing trees, such as red oak, beech, ironwood and black cherry. Mast bearing trees provide an important food source for birds and mammals. Maintaining a variety of mast bearing trees will increase the amount of wildlife on the property that rely on this food source. In this forest the most common mast bearing trees are beech.

There are several large, old trees on the property. Many of these older trees have holes and cracks. These cavity trees are very important to different species of birds and mammals. Northern Long-Eared Bat, a federally listed threatened species rely on trees with cracks and cavities. These bats will roost in these trees during the summer months. Trees like this should be preserved and promoted as much as possible.

Interior forest songbirds can be heard throughout the spring and summer. They are often neotropical migrants that rely on larger, diverse forest blocks in Vermont for their breeding habitat. Oven birds, red eyed vireos, scarlet tanagers and both black-throated green and black-throated blue warblers are just some of the birds that use interior forest habitats in the Town Forest. Some of Vermont's forest songbird populations are declining due to development in their Caribbean and Central and South American winter habitats. Making sure their summer breeding habitat is the best it can be is an important way to help these species. Improvements to forest structure, including keeping tall older trees, providing mid-story and understory layers of vegetation, and even creating patches of dense young trees are all activities that provide habitats for these often-very habitat-specific forest birds. Removing invasive plants and reducing forest fragmentation are also important ways to help our forest songbirds. More information on forest songbirds can be found at <u>Vermont Audubon</u>.

FOREST BLOCK

The Ashley Community Forest is part of a roughly 3,355-acre forest block. This forest block is mapped in <u>VT BioFinder</u>, a biological diversity tool, as providing <u>Interior Forest Habitat</u>, <u>Connectivity</u> and <u>Landscape Diversity</u>. An interior forest habitat block provides suitable conditions to support a variety of native plant and animal species. Animals with large ranges depend on these interior forest blocks and it is important to keep these large blocks

unfragmented. Human development splits these forest blocks up into smaller and smaller pieces. The smaller a block gets, the less beneficial they are to wildlife. Every parcel in the forest block matters. The Ashley Community Forest is an important piece of a larger forest block. More information on forest blocks can be found at Vermont Bio Finder.



Map of forest blocks in Sharon, Strafford, and surround towns. Light green blocks are priority blocks, dark green blocks are high priority according to Vermont Biofinder

STREAMS AND WETLANDS

There is a small stream that passes through the northern part of the parcel, from west to east, and exits the forest near the end of Nutting Road. This stream continues east to Fay Brook near the Strafford/Sharon town line. A second, larger stream that bisects the southwestern portion of the parcel flows south, leaving the forest near the switchback in the Clifford Farm Road. From there it follows Clifford Farm Road and joins Fay Brook in Sharon. Both streams deserve respectful buffers during any forest management activities. The number of stream crossings will be minimized and any temporary crossings that may be deemed necessary will be installed in full conformance with State of Vermont stream alteration rules.

There are many small seeps on the southern portion of the parcel that are generally associated with the main stream and it's smaller side drainages. There are two larger wetlands, one of which is along the Fetter boundary in Sharon, at the southeastern end of Stand 2. Most of this wetland is on the adjoining Fetter land, but a portion is on the Ashley Community Forest parcel. The other wetland is north of the maintained open land in Strafford. Neither of these wetlands has yet been formally classified, but both are ecologically significant on the parcel and will be respectfully buffered from all forest management activities. It is likely that invasive plant

treatment will be needed in both wetlands, and that some open-grown white pines might be removed from the northern wetland to create growing space for native wetland plants.

RESOURCE CONCERNS

The principal resource concern on this parcel is the presence of well-established populations of invasive plants. In order to maintain the ecological integrity of the forest and associated wetlands, it will be necessary to treat these plants to keep their populations from expanding and ultimately controlling the site. The practice of treating invasive plants is not intended to eradicate them, as this is recognized to be impractical. Instead, by treating invasive plants, we reduce the amount of available growing space they occupy and thereby maintain available growing space for native plant species, for the habitats that native plant communities create and for the native birds, animals, amphibians, insects and microbes that depend upon these native plant communities for their existence.

FOREST HEALTH

Overall, the Ashley Community Forest is healthy. Forest health issues are commonly divided into three groups: invasive plants, insects and disease. Invasive plants are well-established in areas of the forest and present a long-term threat to the ecological function of this forest. There are numerous native or naturalized forest health issues that commonly occur throughout Vermont found in the forest. Some level of insect and disease damage is normal in any forest. Insects and forest disease currently present at Ashley Community Forest occur at natural levels and are not considered serious forest health concerns at this time.

Invasive Plants

Barberry is established in small patches on wetter soils throughout the southern portion of the forest and in scattered places throughout the remainder of the forest. Other plants, including Common Buckthorn, Autumn Olive and shrub Honeysuckle are also present. These plants have the potential to dominate openings in the forest and restrict the establishment of native trees and understory plants. This change in the plant community affects habitat for all species that live in the forest.

Beech Bark Disease

Beech Bark Disease is unfortunately a common occurrence in the forests of Vermont. It was introduced in Nova Scotia in the early 1900's from Europe. It has worked its way west from there. The pathogen effects the vigor of beech and will eventually lead to mortality. Beech Bark Disease is an attack of a beech scale insect and a fungus in the *nectria* genus. Beech trees infected with Beech Bark Disease will have cankers on the bark. Some beech trees are resistant to this disease and should be protected and managed for. Genetic resistance is the best way to manage for this disease.

Red Rot

Red rot is a fungal disease caused by *Phellinus pini*. Red rot is a common disease in temperate forests, affecting softwood trees. This disease leads to decay within the stem of a tree. The fungus is introduced through wounds or dead stems. It can greatly affect the quality of trees when they are sold for lumber. Highly stocked stands are more susceptible due to competition for resources. Reducing the density softwood stands is one way to manage for this pathogen.

Sugar Maple Borer

Sugar Maple Borer damage is caused by the larva of long-horned wood boring beetle, *Glycobius speciosus*. This beetle is 25mm in length and has yellow and black coloring, with a distinctive "W" design on the wing cover. Sugar Maple Borer is a native beetle. It rarely causes mortality on its own. The damage is done by the larva of the beetle once the eggs hatch. The larva bores it's way through the cambium layer. This damage reduces the value of the tree as well as its structural integrity.

White Pine Needle Cast

White pine needle cast is a relatively new pathogen. This disease was first noticed throughout the northeast in 2010 and has been affecting white pines year after year since. This is a fungal pathogen caused by three different fungi. These fungi effect the second-year needles of pine. Which turn the needles brown in June, then these needles are dropped. This leaves the infected trees with only one set of needles. A healthy white pine tree has 3 years' worth of needles. This decreases the growth and vigor of trees affected.

White Pine Weevil

White pine weevil is an insect, *Pissodes strobi* that attacks the top leaders of conifers. It lays eggs in the previous year's leader. Once the eggs hatch the grubs tunnel inwards towards the center of the leader, feeding on the cambium. The leader is eventually girdled by the feeding and killed. The response of the tree is to develop multiple leaders to replace the dead leader. A weevil infestation rarely results in mortality, but infestation ruins the form and quality of the tree and often gives it a bush-like appearance. White Pine, Norway spruce, Colorado blue spruce, jack pine, red pine, Scotch pine and mugho pine are susceptible to white pine weevil.

REGIONAL FOREST HEALTH CONCERNS

The following forest health issues are currently found in Vermont or in neighboring states but were **not** found in the Ashley Community Forest. These are significant issues that should be monitored for. If found their impact will be significant.

Emerald Ash Borer

Emerald ash borer (EAB) is a beetle native to northern Asia. This insect was first discovered in Detroit in 2002. It has spread rapidly east since then, mostly being moved by humans. EAB will kill infected ash trees by effectively girdling the tree. The larva of EAB feed over the winter in the cambium layer of ash trees. Infested trees will normally die within 5 years. EAB kills 95-99% of the trees it infects. Native ash trees have very little resistance. EAB was found in Vermont in February of 2018 in the town of Orange. Since then, it has been found in more and more towns in Vermont. The closet EAB infestation is 9 miles away in Pomfret

Oak Wilt

Oak Wilt is a fungal pathogen caused by *Bretziella fagacearum*. This fungus grows in the sap wood of an infected tree. This causes a reaction from the infected tree which clogs conductive tissue further. Eventually the tree can no longer translocate water which causes the tree to wilt. This pathogen often leads to mortality. For a tree to become infected the stem must first become damage. Something as simple as a small saw cut or axe graze is enough for the fungus to enter the tree. Oak Wilt has become a major pest in the central and eastern United States. No known

occurrence has been found in Vermont or New England, the closest infestation is in New York state.

Hemlock Wooly Adelgid

Hemlock Wooly Adelgid (HWA) is an introduced insect from Asia. It was first found in the Pacific Northwest in the 1920's, then found in northern Virginia in the 1950's. It is currently in southern Vermont, slowly spreading north. HWA can be identified by the cotton like frass at the bottom of hemlock needles. HWA feeds on young twigs causing needles to dry out and fall off the tree prematurely. If infested, a hemlock tree can die within 4 to 6 years. Some trees can survive but have reduced live crowns making the tree less valuable to wildlife that depend on hemlock.

SAMPLING INFORMATION

During July of 2019, stand information was gathered at 102 variable radius sample plots, randomly located throughout the forest. At each sample plot, trees to be measured were determined using a 10-BAF glass prism. Measured trees were tallied by species, crown position, and stem quality. Diameter at breast height (dbh) was measured for each tree and notes on tree health, coarse woody material, invasive plants and regeneration were made at each plot. The data was then processed in FOREX, an FPR developed forest inventory software. This information was used to determine the proportions of species composition, mean stand diameters, and total and acceptable growing stock basal areas by stand. Basal area is a measure related to crown closure and thus the degree of crowding. "Acceptable" growing stock is defined as that portion of total stocking that has the potential to develop commercially valuable product. Economic value is certainly not the only value in a forest, but it does dictate our management options, so it is important to have some sense of what it may be. Five forest stands were identified, with stocking levels and recommended treatments determined by referencing U.S. Forest Service silvicultural guides for mixedwood and northern hardwood forest types.

TIMBER RESOURCE

The current timber resource on this parcel is modest. A 2016 timber assessment done by consulting forester, Paul Harwood, placed the total timber value at approximately \$36,675 for what was estimated at that time to be a 217.8 acre parcel. This amounts to approximately \$168/acre. No timber valuation was included in the sampling for this forest management plan, but it is agreed that the current timber value is relatively low for the forest types present. It is however expected that through careful forest management designed to improve species composition and to reduce the proportion of trees with low vigor and low value, that the economic value of the forest will increase substantially over time. Having some modest potential to generate revenue from future timber harvest is important because this forest is expected to be a self-sustaining entity that is not reliant on direct funding from either town.

In order to fully understand the recommendations for forest management in this plan, it is important to first understand the overarching management philosophy and desired future conditions. With the following recommendations, we are trying to adjust species composition to more finely match soil and site conditions. We know that much of the white pine that is present in this forest is a relic of agricultural abandonment and that it will naturally decrease in proportion over time. By reducing the proportion of white pine sooner, we create growing space for mid-tolerant and shade tolerant species of hardwoods which are better adapted to this place. The aspen and paper birch are early successional species and are over-represented in this forest due to open conditions that followed agricultural abandonment and also because of openings created with heavy, unregulated logging. It is our goal to encourage all native hardwoods while retaining some white pine, hemlock, aspen and paper birch as legacies.

CARBON MANAGEMENT

Trees and plants sequester (absorb) carbon from the atmosphere, storing it in biomass (wood and plant tissue). This carbon is found in both living and dead biomass in the forest, and a large portion of stored carbon can be found below ground in forest soils. Forests are a major global carbon "sink," sequestering and storing huge amounts of carbon. Large, old trees with large, deep root systems store more carbon than smaller, younger trees, but sequester carbon more slowly. Young, densely stocked, fast-growing trees sequester carbon at a faster rate than large, old trees, but store less carbon because they have less collective biomass. Some believe that healthy natural forests best balance carbon storage and carbon sequestration, by having the full component of available species and a mix of tree sizes, forms and ages. This diversity of tree species, form and size is referred to as "forest structure" and the general thinking is that forests with more complex forest structure are more resilient to climate change and more likely to remain healthy in a changing future. Elements of forest structure can also include standing dead trees, coarse woody material on the forest floor, variation in overstory stocking levels, native shrub layers and herbaceous plants, mosses and lichens.

Forests can be managed intensively to maximize carbon sequestration by regular cutting and the creation of a vigorous, young forest. This management approach encourages rapid growth, and thus rapid absorption of carbon, but other benefits of the forest are sacrificed by having a simplified forest structure and repeated forest management entries on short intervals.

Forests can alternatively be managed passively to maximize carbon storage by minimizing harvest and allow the forest to reach full stocking and to be populated by mostly large, old trees. This type of passive management will generally result in larger stores carbon, but limited carbon sequestration and reduced wildlife habitat benefits associated with active forest management.

The management at the Ashley Community Forest will be a combination of the two approaches seeking balance, but favoring development of larger trees and generally higher stocking. In the proposed ecological reserve areas, carbon storage will be a primary objective. In the early successional patch cuts planned for stand 1, sequestration will be the carbon goal. In the bulk of the remainder of the forest, we will seek to manage for both carbon storage and carbon

sequestration by growing our forest at higher stocking and to larger individual tree diameters, while retaining some proportion of large trees as "legacy" trees to enhance structural complexity and as recruits for snags and coarse woody material. We intend our management approach to be less intensive than the norm, but not passive. We intend to manage carefully and conservatively, but we do intend to practice forest management.

The Ashley Community Forest should be managed to support and improve carbon sequestration and storage in the forest whenever possible.

Carbon sequestration and storage priorities:

- Avoid creating large-scale disturbances (openings larger than 5 acres).
- Minimize soil disturbance in the course of forest management activities to an extent dictated by responsible silvicultural practices.
- Retain dead biomass in the form of dead-standing and fallen trees and as much coarse and fine woody debris as possible during forest management.
- Employ uneven-aged and low-impact silvicultural techniques as much as possible to encourage a healthy, diverse, resilient forest.
- Encourage the development of large trees throughout the forest. Allow for some significant number of these large trees to naturally live out their life cycle in the forest as biological legacies.
- Manage for high quality, valuable trees that can be turned into durable wood products when removed from the forest. That is, minimize the removal of low-quality forest products with short carbon residence times, and focus management instead on early forest stand improvement practices that result in a higher proportion of high-quality, valuable trees, that produce forest products with longer carbon residence times.

SPECIES AND AGE DIVERSITY

Forests can be quite complex. Some forms of forest management (even-age management) intentionally seek to simplify forest structure, while other management approaches seek to enhance complexity (uneven-age management or multi-age management). All forest management recommended at the Ashley Community Forest will utilize a multi-age management approach that embraces the enhancement of forest complexity in all components of the forest. The proportion of species will be managed, and those species proportions will vary from place to place, but all native species are part of this forest and all have an ongoing role in maintaining the ecological integrity of this forest, even though we do not, and never will, fully understand all of the hidden interactions between species.

In order to maintain a continuous developmental progression of all native species, with species proportions that fall within a natural range of variability, it will be necessary to maintain individuals or groups of trees of various ages. A forest composed of the full suite of native species with multiple age classes represented, will result in a forest that is more structurally

complex and more resilient to changing conditions associated with invasive insects, disease and plants and to climate change.

"NATURAL" FOREST STRUCTURE

Attaining a "natural" forest structure will be a long-term management objective and it will take time. Forests develop over decades and centuries, and that developmental pathway can be reversed, changed or slowed by natural disturbances, such as weather events, insect infestations or disease outbreaks. And the truth is that our forests have been so dramatically changed by past human disturbance, that we do not know for certain what the current "natural" condition is or should be. While we may not know exactly how our forests will develop in the future and what that new natural equilibrium is that they will move toward, we can recognize their trajectory and remove obvious obstacles that slow forest succession. That is the management approach that we take here. From our forestry training and years of observation, we know that the pine, aspen and paper birch will all decline and lose proportion in the forest over the next century. The reduction in proportion of pine, aspen and paper birch is a natural process and will create open growing space for those species that will take their place in the natural development of this forest. We cannot change the natural endpoint of forest development, but we can advance the process by recognizing what is happening and speeding the natural decline of certain species and aiding the natural accession of other species.

LEGACY TREES, CAVITY TREES, SNAGS AND COARSE WOODY MATERIAL

Legacy trees will be retained as part of all recommended forest management activities. These are trees that will be left to complete their life cycle naturally. While some will be retained simply because they are beautiful, healthy specimens of their species, most will be large, old trees and many will be defective. In the ecological sense, being defective is not a negative characteristic. Seams, cracks, large broken branches and cavities provide multiple habitat niches for wildlife. While large trees are healthy, they spread copious amounts of seed. As they become less and less healthy with age, they will exhibit more and more breakage, rot and cavities. All of these conditions are common in well-developed, natural forests and are necessary to provide the full range of natural habitats in a functioning forest ecosystem. As all living things will, the legacy trees we leave behind will ultimately die. They will provide habitat value as large standing dead trees, and different habitat value when they find their way to the forest floor as coarse, woody material. All stages of life of large trees have value and provide critical and varied habitat for multiple organisms, large and small, that live in the Ashley Community Forest.

INVASIVE PLANT MANAGEMENT

Invasive plants are present on this forest and in the surrounding landscape. Populations of new plants (and also insects and diseases) are often slow to establish, then enter a rapid (exponential) growth phase. Eradication is not a practical option. What we strive for is that as these species naturalize, they are not permitted to take up so much of the available growing space that they preclude the presence of the native plant communities. We will treat invasive

plants in order to suppress their populations to levels low enough that native plants are allowed to persist in the new natural mix in what are meaningful proportions.

Currently, Japanese Barberry is well established in the wetter portions of the southern half of the Ashley Community Forest, and is established at low to moderate levels elsewhere. Autumn Olive and Common Buckthorn are established at low levels and are found primarily in the northern part of the forest. It is recommended that an aggressive commercial herbicide treatment be applied to the heaviest infestations of Barberry during the late growing season of 2023. This treatment should be implemented by a licensed commercial pesticide applicator in strict accordance with all regulations and safety standards. Concurrent with that chemical treatment, it is recommended that volunteers hand pull individual plants throughout the remainder of the forest (outside of the chemical treatment area) as part of two or three work days during Summer and Fall 2023. It will likely be necessary to follow with at least one invasive plant, handpulling work day per year thereafter.

Forest management activities, and any other disturbance that opens the canopy of the forest, provides an establishment and growth advantage to invasive plants. Following all forestry activities, areas treated will be monitored for new infestations of invasive plants. Any plants found should be dealt with promptly. While chemical treatment is not a desirable option to control populations of invasive plants, it is simple reality that this is the only practical way to reduce well-established populations. Failure to use pesticides to treat well established populations of invasive plants will lead to rapid expansion of those populations and significant degradation of the ecological function of the forest.

WATER QUALITY

There are many water resources on the property. These include wetlands, streams, and multiple, unmapped small seeps. All the water resources on the property will be protected during forest management activities. This will be accomplished primarily by employing respectful (100-foot) buffers with clearly defined boundaries on all significant water resources. All forest management activities will fully adhere to the Vermont Acceptable Management Practices (AMPs), as detailed in the booklet Vermont Water Quality, Acceptable Management Practices, Manual for Logging Professionals (2019). Stream crossings will be avoided where possible and all roads and trails used during logging operations will be properly closed out to the standard of the AMP manual.

ASH MANAGEMENT

The Ashley Community Forest is 9 miles away from a known Emerald Ash Borer (EAB) infestation in Pomfret. It is only a matter of time before EAB is found at the Ashley Community Forest and when found, EAB is expected to kill most if not all of the ash present in the forest within 5-10 years. In some parts of the Ashley Community Forest white ash makes up nearly 10% of the species composition, so the loss of this species will have a significant impact on the composition of the forest. The management of ash going forward will adhere to the following management goals:

- Maintain ash as a component throughout the forest for as long as possible.
- Some individual ash trees will be harvested, but the majority of the ash present in the forest will remain.
- Promote a diverse mix of native species, so that what will naturally replace ash will be present and able to do so.
- Follow State of Vermont recommendations to slow the spread of EAB in the region.

Unless otherwise specified the following will be used to achieve the long-term goals:

- The cutting cycle (return harvest cycle) in any one place will be 15-20 years.
- At least 3 age class cohorts will be managed for in each stand.
- Allow large trees time to develop using the following diameter objectives for the most healthy and highest-quality crop trees.
 - white pine 22-24", sugar maple, 20-22", hemlock 18-20", yellow birch and red maple 16-18", white ash 14-16" red spruce 14-16".
- Snag retention and recruitment of snags through girdling, goal of 1-3 snags an acre.
- Coarse woody material recruitment through retention of legacy trees and deliberately felling other trees and leaving them on the forest floor. Goal of 5 stems per acre greater than 14-inches in diameter.
- Leave tops of trees unlopped in groups to deter deer browse of established regeneration.
- Develop areas of late-successional forest in the areas designated as Ecological Reserves. Old forests are uncommon in the region and will provide important ecological and social benefits.
- While some areas will be managed for forest products, other areas will be reserved from harvesting.

STAND 1

Forest Type: Mixedwood, Pine-Hardwood

Area: 60.4 Acres

Stand Description: This site has the potential to grow a high-quality northern hardwoods. However, the current overstory is dominated by mature Paper Birch and Aspen spp., large lowquality White Pines that are suffering from needle cast disease, mature Red Spruce and firewood-quality Beech, most with beech bark disease. The proportion of softwoods in this stand (28%) currently defines it as mixedwood (25-65% softwood). The understory is dominated by mixed northern hardwood seedlings overtopped by well-established Beech saplings and poles. Japanese Barberry is established in the understory and well distributed.

Sampling Information: 24 sample plots, 10 BAF prism, July 2019.

Terrain: Gently to steeply sloping with southwest aspect.

Species Composition: Sugar Maple (24%); White Pine (15%); Paper Birch (16%); American Beech (13%); Paper Birch (13%); Aspen spp. (9%); Eastern Hemlock (9%); with lesser amounts of Red Spruce; Ironwood; White Ash; Yellow Birch, Red Maple, Black Cherry and Basswood.

Total Basal Area: 116 sq.ft./acre

Acceptable Growing Stock Basal Area: 39 sq.ft./acre

Trees/Acre: 209

Quadratic Mean Stand Diameter: 9.9 inches

Stocking Level: Just below A-level. USDA Research Paper NE-603.

Site Class: I, II

Soil Series: Glover-Vershire complex, with Glover being approximately 45% and Vershire being approximately 40%. Glover soils tend to be shallow, 10-20 inches to bedrock, excessively well drained and composed of fine sandy loam with a thin forest floor (< 2 inches). Vershire soils are deeper, being 20-40 inches to bedrock, also made up of fine sandy loam, also with a thin forest floor (< 2 inches) and are considered well drained. Microsite is important with this complex. Areas of Glover soil are more likely to support beech, while Vershire soils are more likely to support sugar maple.

Stand Structure: Two-aged, or possibly Three-aged. The overstory is dominated by large stems of White Pine, Paper Birch, Aspen spp. Along with Sugar Maple, Hemlock and Yellow Birch.

Many trees were tallied in the 20-40 inch diameter classes, almost all of which were classified as unacceptable growing stock due to open grown characteristics. The classification of "unacceptable" or "acceptable" are forestry terms that refer solely to potential timber quality. Much "unacceptable" growing stock has great ecological value. Acceptable growing stock was tallied in trees from 4-20 inches dbh. Regeneration is variable, with northern hardwood seedlings common below beech saplings and poles. Rich site indicators were noted at some sample plots. Invasive plants, primarily Japanese Barberry, were common. Overall, coarse woody material (CWM) abundance is considered moderate in this stand and managing for additional CWM would be desirable. It would be desirable to manage for additional snags, as these trees have wildlife value while they stand and will be recruited as CWM when they fall. There is potential in this stand to retain 2-5 large trees/acre as legacy trees for structural diversity, and recruitment as future snags and CWM.



Diameter Distribution

Stand History: This area was once open agricultural land, that was abandoned approximately a century ago. There is a stone foundation near the center of the stand that appears to have been shed or barn associated with the house foundation across the stream. Scattered stumps provide an indication that logging has occurred within the last 20-30 years under previous ownership. It is unlikely that a forester was associated with the logging.

Access: Terrain allows access to this stand for forest management from the trails established in the northern portion of the forest. More trails will need to be developed and the planned trail that parallels the stream will ultimately mark the western edge of this stand and will constitute the eastern edge of the Sharon Ecological Reserve. The exact location of this trail is yet to be determined but will be close to the location shown on the forest stand map. During previous logging entries, much of this stand was accessed from Clifford Farm Road, but that requires crossing land of other owners and crossing a major stream. While the distance to a landing

located along Nutting Road is longer, this will be the access route in the future, since the trail is entirely on this parcel and there are no streams to cross.

Stand Health: Many White Pine trees in this stand exhibit thin, unhealthy crowns, likely due to needle cast disease. The resulting thin, weak crowns eventually result in weaker root systems and the trees become less structurally stable and more subject to wind damage. Recent wind damage is evident in this stand. Most of the pines also exhibit damage by the white pine weevil, an insect that infests the terminal leader of trees, and results in crooked or multi-stem form. Many of the larger trees of all species exhibit poor form and are of low commercial value.

Invasive plants are common here and constitute the largest threat to ecological integrity on the forest. Japanese Barberry is most common and well-established at low to moderate levels in the understory. Left untreated, invasive plants would be expected to inhibit regeneration of native trees and plants, changing the future forest, with severe degradation of native wildlife habitat.

Wildlife Habitat: This stand is remote, located just above the major stream that runs through the parcel and has a high degree of structural complexity due to varied species composition and a wide range of diameter classes. These factors all contribute to quality wildlife habitat.

Long-term Objective: The long-term objective is to maintain or enhance structural complexity, improve species composition, and promote the best quality, most healthy individuals of all species represented, using a multi-age silvicultural system with a 20-year cutting cycle. While the current stocking level may appear optimum, the trees that compose that stocking are generally mature, low-quality or at risk. The short-term management objective in this stand is to establish or release adequate regeneration of native species.

Treatment Recommendation:

Summer 2023: Treat invasive plants.

During the winter of 2024-25, implement a combination of large patch cuts (3-5 acres in size), with individual tree selection between patches. The patches will be located in areas of mature, low-quality or at risk trees and will include cutting of beech saplings and poles down to 1-inch in diameter, with legacy tree retention. Three or four patches, totaling 10-15 acres, are expected. Within patches, retain 2-5 large legacy trees/acre, girdle large open-grown white pines and cut and leave 5-10 well-distributed trees/acre > 14-inches dbh, in place as coarse woody debris.

Individual tree selection will seek to improve species composition and quality through harvest of mature, at-risk trees and unacceptable growing stock while releasing sugar maple of quality. Residual basal area between groups will be 70-80 sq.ft./acre. Residual basal area within groups is expected to be 10-20 sq.ft./ac.. Products harvested will be primarily pulpwood, and firewood with a small amount of mixed logs of primarily White Pine, Ash, Red Spruce, and Paper Birch. White Pine here is generally considered mature and at-risk due to advanced

needle cast disease, regardless of diameter. Approximately 10% of the white pine will be left to die and be recruited as snags and ultimately coarse woody debris. Beech infected with beech bark disease is available for harvest at any diameter. Use a 14-inch diameter objective for healthy Paper Birch, Aspen spp. and Red Spruce, 16-inch diameter objective for White Ash and 18-inch diameter objective for Hemlock. Sugar maple and yellow birch will largely be reserved from cutting during this entry.

Summer 2026: Post-harvest invasive plant treatment.

STAND 2

Forest Type: Northern Hardwood

Area: 49.0 Acres

Stand Description: A well-developed northern hardwood stand with the potential to grow high-quality sugar maples. Currently the stand is a mix of species, with broad representation of diameters and quality. The understory is dominated by mixed northern hardwood seedlings overtopped by well-established Beech saplings and poles. Japanese Barberry is established and well distributed in the understory and will require treatment.

Sampling Information: 18 sample plots, 10 BAF prism, July 2019.

Terrain: Gently to steeply sloping with easterly aspect.

Species Composition: Sugar Maple (50%); Yellow Birch (9%); White Ash (9%); Aspen spp. (8%); Ironwood (7%); American Beech (5%); Basswood (4%); with lesser amounts of White Pine, Red Maple, Black Cherry, Paper Birch, American Elm, Butternut, Eastern Hemlock and Gray Birch.

Total Basal Area: 95 sq.ft./acre

Acceptable Growing Stock Basal Area: 41 sq.ft./acre

Trees/Acre: 144

Quadratic Mean Stand Diameter: 10.9 inches

Stocking Level: Just below A-level. USDA Research Paper NE-603.

Site Class: I, II

Soil Series: Tunbridge-Woodstock complex and Glover-Vershire complex. These complexes are quite similar but are classified differently across county lines. In the Tunbridge-Woodstock

complex, each soil series makes up approximately 45% of the total. Tunbridge soil is a fine sandy loam, that is moderately deep at 20-40 inches to bedrock, and is considered to be well drained and quite productive. Woodstock soils are also fine sandy loam, but are shallow, being 10-20 inches in depth to bedrock, and are considered excessively well drained. In the Glover-Woodstock complex, Glover makes up approximately 45% and Vershire being approximately 40%. Glover soils tend to be shallow, 10-20 inches to bedrock, composed of fine sandy loam with a thin forest floor (< 2 inches) and tend to be excessively well drained. Vershire soils are deeper, being 20-40 inches to bedrock, also made up of fine sandy loam, also with a thin forest floor (< 2 inches) and tend to be more likely to support beech, while Vershire and Tunbridge soils are more likely to support sugar maple.

Stand Structure: Two-age classes. The overstory in most areas is dominated by large stems of Sugar Maple, White Pine, Beech, White Ash, Aspen spp., Paper Birch and Yellow Birch. Some trees were tallied in the 20-40 inch diameter classes, almost all of which were classified as unacceptable growing stock, but most trees tallied were 20-inches in diameter or less. Acceptable growing stock was tallied in trees from 6-20 inches in diameter. Cavity trees and snags are common. Regeneration is variable, with northern hardwood seedlings and saplings being common and well-established in most areas. Plants indicating rich site are abundant. Invasive plants, primarily Japanese Barberry, are also common. Overall, coarse, woody material (CWM) abundance is considered moderate in this stand and managing for additional CWM would be desirable. It would be desirable to manage for additional snags, as these trees have important wildlife habitat value while they stand and will be recruited as CWM when they fall. There is potential in this stand to retain 2-5 large trees/acre as legacy trees for structural diversity, and recruitment as future snags and CWM.



Diameter Distribution

Stand History: This area was once pastured woodlot, and probably served as the sugarbush for the farm further downslope to the east. Scattered stumps provide an indication that logging has occurred within the last 20-30 years and the lack of trees in the larger diameter classes likely indicates diameter limit cutting took place. It is unlikely that a forester was associated with the logging although old blue paint was noted on two trees.

Access: Terrain allows access to this stand for forest management, and trails are well developed here. A potential landing exists downhill, in stand 4, with access to Nutting Road in Strafford. An old landing, used in a previous logging entry, is found to the south of the main trail near the border of stand 4. It is interesting that trucks traveled this far into the forest to pick up logs, but that will not be feasible or desirable in the future.

Stand Health: White Pine trees in this stand exhibit thin, unhealthy crowns, likely due to needle cast disease. The resulting thin, weak crowns eventually result in weaker root systems and the trees become more subject to wind damage. Beech has beech bark disease and Aspen spp. and Paper Birch are mature and in decline.

Invasive plants are common in this stand and constitute a significant threat to ecological function. Japanese Barberry is well-established at low to moderate levels in the understory and if left untreated, can be expected to inhibit natural forest regeneration in the future, with associated degradation of wildlife habitat and reduction of ecological function. Invasive plant treatment is recommended.

Wildlife Habitat: This stand is located on the hillside above the northern farm foundations. It has significant species diversity and structural complexity. These factors contribute to quality wildlife habitat.

Long-term Objective: The long-term objective is to maintain a productive northern hardwood stand that has a significant component of Sugar Maple. Enhance structural complexity, improve species composition, and promote the best quality and most healthy individuals of all species represented, using a multi-age silvicultural system with a 20-year cutting cycle.

Treatment Recommendation:

Summer 2023: Treat invasive plants.

During the winter of 2024-25, implement an individual tree selection treatment. Improve species composition and quality through harvest of mature, at-risk trees and unacceptable growing stock while releasing Sugar Maple and Yellow Birch of quality. Residual basal area will be 70-80 sq.ft./acre. Products harvested will be primarily pulpwood and firewood, with a small amount of mixed logs of primarily White Pine, White Ash, and Paper Birch. White Pine here is generally considered mature and at-risk due to advanced needle cast disease, regardless of diameter. Approximately 10% of the white pine will be left to die and be recruited as snags and ultimately coarse woody debris. Beech infected with beech bark disease is available for harvest at any diameter. Use a 14-inch diameter objective for healthy Paper Birch and Aspen

spp. and 16 inches for White Ash. Sugar maple and yellow birch will largely be reserved from cutting during this entry.

Summer 2026: Post-harvest invasive plant treatment.

STAND 3

Forest Type: Northern Hardwood

Area: 19.0 Acres

Stand Description: This site has the potential to grow a high-quality northern hardwood stand. The current overstory is consists mostly of well stocked poles and small sawtimber of good quality and vigor, with overtopping pasture hardwoods and White Pine. There is a significant component of Black Locust in this stand that likely seeded in on abandoned open land from trees around the old farmstead. The proportion of acceptable growing stock is relatively high here despite the fact that many of the larger trees are of moderate to poor stem quality. Implementation of forest stand improvement practices such as girdling of large, rough White Pine and crop tree release would greatly improve the quality of this stand. Autumn Olive , Common Buckthorn and Japanese Barberry are all present at low levels in this stand and will need to be treated.

Sampling Information: 8 sample plots, 10 BAF prism, July 2019.

Terrain: Gently sloping with variable east and south aspect.

Species Composition: Sugar Maple (32%); Black Locust (16%); Red Maple (12%); White Ash (11%); White Pine (10%); American Beech (6%); Aspen spp. (4%); with lesser amounts of Yellow Birch, Paper Birch, Basswood, Black Cherry, Butternut, Northern White Cedar and Red Pine.

Total Basal Area: 118 sq.ft./acre

Acceptable Growing Stock Basal Area: 56 sq.ft./acre

Trees/Acre: 231

Quadratic Mean Stand Diameter: 9.4 inches

Stocking Level: Just below A-level. USDA Research Paper NE-603.

Site Class: I, II

Soil Series: Tunbridge-Woodstock complex and Glover-Vershire complex. These complexes are quite similar but are classified differently across county lines. In the Tunbridge-Woodstock

complex, each soil series makes up approximately 45% of the total. Tunbridge soil is a fine sandy loam, that is moderately deep at 20-40 inches to bedrock, and is considered to be well drained and quite productive. Woodstock soils are also fine sandy loam, but are shallow, being 10-20 inches in depth to bedrock, and are considered excessively well drained. In the Glover-Woodstock complex, Glover makes up approximately 45% and Vershire being approximately 40%. Glover soils tend to be shallow, 10-20 inches to bedrock, composed of fine sandy loam with a thin forest floor (< 2 inches) and tend to be excessively well drained. Vershire soils are deeper, being 20-40 inches to bedrock, also made up of fine sandy loam, also with a thin forest floor (< 2 inches) and tend to de excessively well drained. Vershire soils are deeper, being 20-40 inches to bedrock, also made up of fine sandy loam, also with a thin forest floor (< 2 inches) and tend to zeroside up of fine sandy loam, also with a thin forest floor (< 2 inches) and are considered well drained. Microsite is important with these complexes. Areas of Glover and Woodstock soils are more likely to support beech, while Vershire and Tunbridge soils are more likely to support sugar maple.



Diameter Distribution

Stand Structure: Two-age classes. The overstory in most areas is dominated by large stems of Sugar Maple, Black Locust, Red Maple, White Pine, White Ash, American Beech and Aspen over smaller, younger northern hardwoods of quality. Several trees were tallied in the 22-34 inch diameter classes, almost all of which were classified as unacceptable growing stock. Acceptable growing stock was tallied in trees from 4-22 inches in diameter. Cavity trees and snags are present but not common. Regeneration is not well established in most areas, as the bulk of the stand itself is composed of young trees. Rich site indicators are present. Invasive plants, primarily Japanese Barberry, Autumn Olive and Common Buckthorn are established at low levels. Treatment is recommended. Black Locust is both an invasive tree, and a legacy of past agricultural use, but it will be managed here as a naturalized component of the stand. Overall, coarse woody material (CWM) abundance is considered low in this stand and managing for additional CWM would be desirable. It would be desirable to manage for additional snags, as these trees have important wildlife value while they stand and will be recruited as CWM

when they fall. There is potential in this stand to retain 2-5 large trees/acre as legacy trees for structural diversity, and recruitment as future snags and CWM.

Stand History: This area was once open agricultural land, that was abandoned approximately 50 years ago. Two stone house foundations and foundations for several sheds or barns are found in this stand. Scattered stumps provide an indication that a small amount of logging has occurred within the last 20-30 years and the main log landing for future activity is located here. It is unlikely that there was forester involvement with the past logging.

Access: This stand can be accessed from the end of Nutting Road in Strafford. Trails are developed in some areas and can easily be extended into most parts of the stand. A parking area and an old landing are located in this stand near the entrance to the property.

Stand Health: Overall stand health is good in the featured young hardwoods, and in the large pasture hardwoods that will form legacy trees. The White Pine trees in this stand exhibit thin, unhealthy crowns, likely due to needle cast disease. The resulting thin, weak crowns eventually result in weaker root systems and the trees become more subject to wind damage. Most of the pines also exhibit damage by the white pine weevil, an insect that infests the terminal leader of trees, and results in crooked or multi-stem form. The Paper Birch and Aspen trees here are mature and in decline. Emerald Ash Borer is nearby and can be expected to kill the majority of ash in this stand in the near future.

Invasive plants, primarily Japanese Barberry, but also Autumn Olive and Common Buckthorn are established and well-distributed in this stand, and constitute a significant threat to wildlife habitat and to long-term ecological function.

Wildlife Habitat: This stand is young and is located near the entrance to the parcel and is adjacent to the open/idle agricultural lands. The large residual pasture trees provide an important element of structural complexity that benefits wildlife.

Long-term Objective: Manage using multi-age silvicultural techniques to enhance structural complexity, favor native species that are well adapted to the site, and promote the best quality, most healthy individuals of all species represented. Reserve a minimum of 2-3 large legacy trees per acre as seed sources, and as future recruitment for snags and coarse woody material. Any forest management activity should leave some large, coarse, woody material in place on the forest floor. Cutting cycle 20 years.

Treatment Recommendation:

Summer 2023: Treat invasive plants.

- Harvest a small amount of Black Locust as kiosk posts, sign posts, or other local uses, as needed.
- Implement a forest stand improvement project that seeks to girdle 3-5 trees/acre and a Crop Tree Release treatment that releases 50-100 trees/acre on 2-3 sides. Favor health trees of all species that have superior stem quality.

- Extend recreational trails into this area.

Summer 2026: Treat invasive plants.

STAND 4

Forest Type: Northern Hardwood

Area: 30.9 Acres

Stand Description: This stand has the potential to grow a high-quality northern hardwood stand. The current overstory is highly variable, consisting mostly of well stocked poles and small sawtimber, with overtopping pasture hardwoods, Paper Birch, Aspen spp. and White Pine. The proportion of acceptable growing stock is quite low but this is influenced by the dominance of large trees that are mostly classified as unacceptable growing stock. Access to this stand is difficult and it is immediately adjacent to the Strafford Ecological Reserve. A light, pre-commercial harvest focused on cutting and dropping 3-5 trees per acre to enhance coarse woody material, girdling of 3-5 large trees (> 12 inches) per acre, and crop tree release of 5-10 trees per acre would lead to more complex structure and enhanced species composition and future value. Japanese Barberry is well distributed in the understory and will need to be treated.

Sampling Information: 14 sample plots, 10 BAF prism, July 2019.

Terrain: Gently to steeply sloping with variable east and south aspect.

Species Composition: Sugar Maple (29%); American Beech (22%); White Pine (16%); Paper Birch (11%); Ironwood (10%); Aspen spp. (5%); White Ash (3%); Basswood (3%); with lesser amounts of Yellow Birch and Black Cherry.

Total Basal Area: 106 sq.ft./acre

Acceptable Growing Stock Basal Area: 42 sq.ft./acre

Trees/Acre: 236

Quadratic Mean Stand Diameter: 9.4 inches

Stocking Level: Just below A-level. USDA Research Paper NE-603.

Site Class: I, II

Soil Series: Tunbridge-Woodstock complex and Glover-Vershire complex. These complexes are quite similar but are classified differently across county lines. In the Tunbridge-Woodstock complex, each soil series makes up approximately 45% of the total. Tunbridge soil is a fine sandy loam, that is moderately deep at 20-40 inches to bedrock, and is considered to be well drained and quite productive. Woodstock soils are also fine sandy loam, but are shallow, being 10-20 inches in depth to bedrock, and are considered excessively well drained. In the Glover-Woodstock complex, Glover makes up approximately 45% and Vershire being approximately 40%. Glover soils tend to be shallow, 10-20 inches to bedrock, composed of fine sandy loam with a thin forest floor (< 2 inches) and tend to be excessively well drained. Vershire soils are deeper, being 20-40 inches to bedrock, also made up of fine sandy loam, also with a thin forest floor (< 2 inches) and are considered well drained. Microsite is important with these complexes. Areas of Glover and Woodstock soils are more likely to support beech, while Vershire and Tunbridge soils are more likely to support sugar maple.



Diameter Distribution

Stand Structure: Two-age classes. The overstory in most areas is dominated by large stems of Sugar Maple, White Pine, White Ash, Paper Birch and Aspen over smaller, younger northern hardwoods. Many trees were tallied in the 24-40 inch diameter classes, almost all of which were classified as unacceptable growing stock. Acceptable growing stock was tallied in trees from 4-22 inches in diameter. Cavity trees and snags are common. Regeneration is not well established in most areas, as the bulk of the stand itself is composed of young trees. Rich site indicators are present. Invasive plants, primarily Japanese Barberry, are common. Black Locust is both an invasive tree, and a legacy of past agricultural use, but it will be managed as a naturalized component of the stand. Overall, coarse woody material (CWM) abundance is considered low in this stand and managing for additional CWM would be desirable. It would be desirable to manage for additional snags, as these trees have important wildlife value while they stand and will be recruited as CWM when they fall. There is potential in this stand to

retain 2-5 large trees/acre as legacy trees for structural diversity, and recruitment as future snags and CWM.

Stand History: This area was once open agricultural land, that was abandoned approximately 50-70 years ago. Two stone house foundations and foundations for several sheds or barns are found in this stand. Scattered stumps provide an indication that logging has occurred within the last 20-30 years and the main log landing for future activity is located here. It is unlikely that there was forester involvement with the past logging.

Access: This stand can be accessed from the end of Nutting Road in Strafford. Trails are developed in some internal areas and could be extended into most parts of the stand. An old landing is located in adjacent stand 4, near the entrance to the property but the stream that flows into the wetland would need to be crossed at the western edge of the wetland. This stream crossing would pass through the Strafford Ecological Reserve, so if this does happen, great care needs to be taken to locate a crossing properly and remove it when forest management activities are complete.

Stand Health: Overall stand health is good in the featured young hardwoods, and in the large pasture hardwoods that will form legacy trees. The White Pine trees in this stand exhibit thin, unhealthy crowns, likely due to needle cast disease. The resulting thin, weak crowns eventually result in weaker root systems and the trees become more subject to wind damage. Most of the pines also exhibit damage by the white pine weevil, an insect that infests the terminal leader of trees, and results in crooked or multi-stem form. The Paper Birch and Aspen trees here are mature and in decline. Ash is at risk from Emerald Ash Borer.

Invasive plants, primarily Japanese Barberry, but also Autumn Olive and Common Buckthorn are well-established and well-distributed in this stand, and constitute a significant threat to wildlife habitat and to long-term ecological function.

Wildlife Habitat: This stand is young and is located near the entrance to the parcel and is adjacent to the open/idle agricultural lands. The large residual pasture trees provide an important element of structural complexity that benefits wildlife.

Long-term Objective: Manage using multi-age silvicultural techniques to enhance structural complexity, favor native species that are well adapted to the site, and promote the best quality, most healthy individuals of all species represented. Reserve a minimum of 2-3 large legacy trees per acre as seed sources, and as future recruitment for snags and coarse woody material. Any forest management activity should leave some large, coarse, woody material in place on the forest floor. Cutting cycle 20 years. This stand has difficult access and generally low-quality trees. A light pre-commercial forest stand improvement practice should be implemented, and then more time should be allowed for growth.

Treatment Recommendation:

Summer 2023: Treat invasive plants.

- Implement a light forest stand improvement project that seeks to girdle 3-5 trees/acre and cut and leave 3-5 trees per acre. Five to 10 crop trees of quality should be released per acre. Trees selected for cutting or girdling will mostly be 12 inches in diameter or greater and consist of unhealthy trees or low-quality trees competing with trees of high stem quality.
- Extend recreational trails into this area.

Summer 2026: Treat invasive plants.

SHARON ECOLOGICAL RESERVE

Forest Type: Northern Hardwood (uplands) and Mixedwood (along the streams)

Area: 65.2 acres (Acreage may change as the exact location of the eastern edge of the reserve is determined)

Stand Description: The east facing hillside has the potential to develop a high-quality northern hardwood stand. The current overstory is dominated by large, northern hardwoods, with a component of mature White Pine, Paper Birch, Aspen spp., and Red Spruce. Japanese Barberry is well-established in the understory particularly in the eastern portion of this area and will require treatment. The riparian zone along the stream and the west-facing hillside immediately above it to the east is dominated by a mix of hardwoods and softwoods.

Terrain: Gently to steeply sloping with east and west aspects.

Species Composition: Sugar Maple, Eastern Hemlock, White Pine, White Ash, American Beech, Yellow Birch, Paper Birch, Bigtooth Aspen, Ironwood, Black Cherry, Basswood, Eastern Red Maple, Northern White Cedar and Red Spruce.

Total Basal Area: Not measured.

Trees/Acre: Not measured.

Quadratic Mean Stand Diameter: Not measured.

Site Class: I, II, III

Soil Series: Glover-Vershire complex, with Glover being approximately 45% and Vershire being approximately 40%. Glover soils tend to be shallow, 10-20 inches to bedrock and composed of fine sandy loam with a thin forest floor (< 2 inches). Glover soils tend to be excessively well drained. Vershire soils are deeper, being 20-40 inches to bedrock, also made up of fine sandy loam, also with a thin forest floor (< 2 inches) and are considered well drained. Microsite is important with this complex. Areas of Glover soil are more likely to support beech, while Vershire soils are more likely to support sugar maple.

Vershire-Dummerston complex, with Vershire being approximately 60% and Dummerston being approximately 25%. Vershire soils are deep, being 20-40 inches to bedrock, composed of fine sandy loam, with a thin forest floor (< 2 inches) and are considered well drained. Dummerston soils are very deep, being more than 80 inches in depth to a restrictive layer such as ledge or fragipan. They are considered to be well drained, with a thin forest floor (< 2 inches). Proximity to the stream means that soils of any depth may be saturated with water, or may be well drained, but with root access to saturated soils.

Stand Structure: Two-age classes. The overstory in most areas is dominated by large stems of Sugar Maple, White Pine, Beech, Eastern Hemlock, White Ash and Yellow Birch. Many trees were noted in the 20-40 inch diameter classes, almost all of which were classified as unacceptable growing stock. Acceptable growing stock was tallied in trees from 4-30 inches in diameter. Cavity trees are common. Regeneration is variable, with northern hardwood seedlings and saplings being common and well-established in most areas. Rich site indicators are abundant on the upper slopes with east aspect, as are invasive plants, primarily Japanese Barberry. Overall, coarse woody material (CWM) abundance is considered to be moderate.

Stand History: This area was once open agricultural land, that was abandoned approximately a century ago. There is an excavated foundation for what appears to have been a significant farmhouse in the east-central portion of this reserve, just uphill and west of the stream. Scattered stumps provide an indication that logging has occurred within the last 20-30 years. It is unlikely that a forester was associated with the logging.

Access: This stand could be accessed from either access point along Clifford Farm Road, if recreational access is granted by the adjoining owners. Old logging trails are found in the southern portion of the reserve area that may be incorporated into a trail that could be constructed to connect to other trails on the east side of the stream.

Forest Health: Tree health is generally good, except that most of the White Pine trees in this stand exhibit thin, unhealthy crowns, likely due to needle cast disease. The resulting thin, weak crowns eventually result in weaker root systems and the trees become more subject to wind damage. Most of the pines also exhibit damage by the white pine weevil, an insect that infests the terminal leader of trees, resulting in crooked or multi-stem form. Invasive plants, primarily Japanese Barberry, are well-established and well-distributed in this stand, and constitute a significant threat to ecological function and future wildlife habitat. Emerald Ash Borer will likely kill the bulk of the ash present in this reserve area.

Wildlife Habitat: This reserve area is remote. It is located just above the major stream that runs through the parcel and has a high degree of structural complexity due to varied species composition and a wide range of diameter classes. These factors all contribute to quality wildlife habitat. The presence of well-established invasive plants contributes to a reduction in wildlife habitat quality.

Long-term Objective: Manage as a long-term ecological reserve.

Treatment Recommendation:

Summer 2023: Invasive plant treatment and construction of a footpath through this area.

Summer 2026: Invasive plant treatment.

STRAFFORD ECOLOGICAL RESERVE

Forest Type: Rich Northern Hardwood with associated stream, wetland and buffer.

Area: 27.2 Acres

Stand Description: The Strafford Ecological Reserve consists of two discreet areas that are connected. The rock outcrop formation on the western edge of the reserve is populated by young northern hardwoods consisting mostly of sugar maple. Rich site indicators are abundant. The adjacent area on the east-facing slope includes a small stream and a 100-foot buffer to the stream and the wetland at the base of the hill. Many small seeps and areas of steep slope or exposed ledge are found here. The Strafford Ecological Reserve is a rich northern hardwood natural community, with the stream buffer and the wetland and wetland buffer below, being part of the reserve as protection for these important riparian features. The understory here is dominated by mixed northern hardwood seedlings overtopped by well-established Beech saplings and poles. Japanese Barberry is established and well distributed in the understory and will require treatment.

Terrain: Gently to steeply sloping with easterly aspect.

Species Composition: Sugar Maple; American Beech; White Pine, White Ash; Paper Birch; Ironwood; Aspen; Yellow Birch; Red Maple.

Total Basal Area: Not Measured

Trees/Acre: Not Measured

Quadratic Mean Stand Diameter: Not Measured

Site Class: I, II

Soil Series: Tunbridge-Woodstock complex and Glover-Vershire complex. These complexes are quite similar but are classified differently across county lines. In the Tunbridge-Woodstock complex, each soil series makes up approximately 45% of the total. Tunbridge soil is a fine sandy loam, that is moderately deep at 20-40 inches to bedrock, and is considered to be well drained and quite productive. Woodstock soils are also fine sandy loam, but are shallow, being

10-20 inches in depth to bedrock, and are considered excessively well drained. In the Glover-Woodstock complex, Glover makes up approximately 45% and Vershire being approximately 40%. Glover soils tend to be shallow, 10-20 inches to bedrock, composed of fine sandy loam with a thin forest floor (< 2 inches) and tend to be excessively well drained. Vershire soils are deeper, being 20-40 inches to bedrock, also made up of fine sandy loam, also with a thin forest floor (< 2 inches) and are considered well drained. Microsite is important with these complexes. Areas of Glover and Woodstock soils are more likely to support beech, while Vershire and Tunbridge soils are more likely to support sugar maple.

Stand Structure: Two-age classes. The overstory in most areas is dominated by large stems of Sugar Maple, White Pine, Beech, White Ash, Aspen spp., Paper Birch and Yellow Birch over younger, smaller northern hardwoods. Some trees were noted in the 20-40 inch diameter classes, but most trees are 20-inches in diameter or less. Cavity trees and snags are common. Regeneration is variable, with northern hardwood seedlings and saplings being common and well-established in most areas. Plants indicating rich site are abundant. Invasive plants, primarily Japanese Barberry, Autumn Olive and Common Buckthorn are also common. Overall, coarse, woody material (CWM) abundance is considered moderate in this reserve area.

Stand History: The area on the east and west sides of the Strafford Ecological Reserve were open pasture from around 1800 until the 1970s. The area in the middle of the reserve (stand 2) was once pastured woodlot, and probably served as the sugarbush for the farm further downslope to the south. Scattered stumps provide an indication that logging has occurred within the last 20-30 years and the lack of trees in the larger diameter classes likely indicates diameter limit cutting took place. It is unlikely that a forester was associated with the logging although old blue paint was noted on two trees.

Access: Terrain ranges from nearly flat to moderately steep, with the steepest terrain being along the stream. The area is accessible by trails to the east, west and south and a trail to the north is planned. This reserve area is a short walk from the parking area at the end of Nutting Road. It may be necessary to put a temporary logging trail across the stream at some point in order to gain access to stand 3. This is not planned in the near-term, but if this is deemed necessary in the future, the stream crossing will be carefully planned and installed in full accordance with State of Vermont requirements for stream alterations.

Forest Health: White Pine trees in this reserve exhibit thin, unhealthy crowns, likely due to needle cast disease. The resulting thin, weak crowns eventually result in weaker root systems and the trees become more subject to wind damage. Beech has beech bark disease and Aspen spp. and Paper Birch are mature and in decline. Emerald Ash Borer is expected to kill the majority of the ash present in the reserve at some point.

Invasive plants are common in this stand and constitute a significant threat to ecological function. Japanese Barberry, and to a lesser extent Autumn Olive and Common Buckthorn are well-established at low to moderate levels in the understory and if left untreated, can be expected to inhibit natural forest regeneration in the future, with associated degradation of

wildlife habitat and reduction of ecological function. Invasive plant treatment is recommended.

Wildlife Habitat: This stand is located on the hillside above the northern farm foundations. It has significant species diversity and structural complexity. These factors contribute to quality wildlife habitat.

Long-term Objective: This area will be managed as an ecological reserve.

Treatment Recommendation:

Summer 2023: Treat invasive plants.

Summer 2025: Extend trail system through the northern portion of stand 3.

Summer 2026: Possible second invasive plant treatment.

OPEN LAND

There are two small areas of open/idle agricultural land. One area consists of 1.9 acres north of Nutting Road in Strafford. The other area is south of Nutting Road and consists of 1.5 acres, located in Sharon.

Area: 3.4 Acres.

Treatment Recommendation: Annual mowing of paths in both areas in mid-July, with full mowing of each area every other year. The idea is to have trails open and mowed every year and to have each opening mowed every other year. The open areas are not large enough to provide valuable habitat for ground nesting birds but they are potentially useful to a wide range of pollinators. Unmowed milkweed plants tend to be tough by the end of the growing season when Monarch Butterfly caterpillars feed on them. By mowing in July, the milkweed plants present at the end of the growing season are more succulent and attractive to Monarchs. By mowing every other year we intend to let the herbaceous growth become better established and encourage more flowering plants, rather than grass.

We may expand one or both areas slightly when logging equipment is on site, then follow with stumping when an excavator is on site to close out work post-harvest.

Treat invasive plants in Summer 2023.

MANAGEMENT SUMMARY

All	Summer 2023	Invasive plant treatment.
		Trail construction.
		Boundary blazing and painting.
Stand 3	Summer/Fall 2023	Girdling/Felling low-quality trees.
Stand 4	Summer/Fall 2023	Girdling of low-quality trees and Crop Tree Release of 50-100 stems/acre.
Stand 1	Winter 2024-2025	Patch cuts and individual tree selection.
Stand 2	Winter 2024-2025	Individual tree selection.
Open Land	Winter 2024-2025	Mowing in July to keep trails open. Mow each area in full every other year. Any additional clearing that may be desired should be done concurrent with work in stands 1-3.
All	Winter 2024-2025	Clear any additional trails concurrent with work in stands 1-2.
All	Summer/Fall 2025	June: Close out the timber sale. This involves cleaning, grading, seeding and mulching the landing area(s), cleaning any debris from stream crossings, and installing water bars on all trails. - Construct any desired new trails and clear any additional open land while equipment is on site to close out the timber sale.
		Early August: Mow trails through both open areas. Comprehensive mowing at the end of September. Repeat this treatment each year thereafter.
		Trail construction.
All	Summer/Fall 2026	Treat invasive plants. Monitor each year thereafter to determine when retreatment is necessary.

Ashley Community Forest Wildlife Plan - 2022 Prepared by Andrea Shortsleeve, Private Land Habitat Biologist, Vermont Fish & Wildlife

Potential Practices: Crop/Mast Tree Release, Invasive Species Treatment, Canopy Gaps, Change in Mowing Regimes.

Objectives/Interests: Grow regeneration, suppress invasives, plan for and develop trails, create a stream buffer, create a forested reserve area, & pollinator and open land considerations.

Features: A couple small wetlands, one large stream, a few very small streams, foundations and stone walls, mostly northern hardwoods in upland and mixedwood near water, previous harvesting in past, previous agriculture in past, two open areas, VCD – priority interior forest and connectivity block, riparian wildlife connectivity, wetlands and vernal pool life zones **Invasives Present:** Barberry is common in understory

Mowing Options

We discussed the different methods and benefits of only mowing portions of the open fields each year, and rotating which portion is mowed annually. VTFWD recommends delaying the mowing until August 15th to benefit bird, pollinator, and wildflower populations. If possible, waiting until early October to mow will be the most beneficial to our native pollinators as they continue to stock up for the winter.

Choosing to mow and maintain some open fields while letting others continue to grow for a few seasons in between mowings is a good option for you to meet your multiple objectives and ensure your enjoyment of the property.

When mowing, one method is to creating curved edges and unmowed islands of taller shrubs and young trees throughout the fields to create habitat diversity for songbirds to feed in and perch from. Another mowing method is to simply cut wandering trails through the field that aren't straight. Leaving trails through the tall plants can also be beneficial for wildlife and for people walking through the property.

For monarchs (and milkweed), the Xerces Society has <u>a great website</u> and document called <u>Milkweeds: A Conservation Practitioner's Guide</u>, which is worth checking out. In general, research shows that the best management practice for milkweed in our region is to mow milkweed during July to simulate regrowth. Monarchs will lay more eggs on the fresh growth than on older, unmown plants. The challenge for the committee will be to balance milkweed mowing with letting other blooming wildflowers grow during the summer, so VTFWD recommends mowing on a subset of the total area and focusing on where the milkweed is flourishing.

I can't remember if we discussed cleaning the equipment used to mow with a hose before it goes onto the town forest property from a different area to minimize the potential for spreading invasive plants, but it's a good practice to get into as a way to minimize the spread of invasives like chervil and poison parsnip.

We also discussed creating a soft edge, or more of a transition zone along the trees and the open area. A soft edge is approximately a 20-yard-wide buffer between tall, mature forest and the open field which provides cover and food for birds and other wildlife. To create a soft edge,

you can start by just not mowing up to the edge of the trees and let the shrubs, wildflowers, and young trees to grow in their place. This edge may take some maintenance every 5 years or so in the form of cutting back any larger trees to continue providing the transitional hiding cover.

The National Wild Turkey Federation has some good tips on creating a soft edge: <u>https://www.nwtf.org/conservation/article/create-soft-edges-for-better-habitat</u> VTFWD has a great <u>guidebook for landowners</u> available on our website, with each chapter available as a pdf. Here are the chapters based on pollinators and field management: <u>Grassland</u> <u>Habitat Management</u>; <u>Old Field Management</u>; <u>Bees and Other Plant Pollinators</u>. Here's one last <u>technical note about pollinators</u>, put out by the Vermont NRCS office. This document will discuss a few tips about creating pollinator nesting areas, which are very important to consider.

Group Selections and Mast Tree Release

Wildlife likes thick cover and structural diversity within stands, both for nesting structure and for security. If you can see through the woods without a lot of obstruction, then there usually isn't enough vertical structure in the various canopy layers. One the best ways to improve this within the forest matrix is to cut holes into the canopy by selecting (and cutting) groups of trees throughout the stand. This will allow for more sunlight to hit the ground and allow for new vegetation to grow.

Your forester and forest management plan can help dictate where to make these group cuts, but areas where there are decadent aspen trees in the main canopy are ideal spots for wildlife. The aspen thicket that is present where we took the south trail stuck out in my mind a good place to put in one of these group selections. The area where we stopped to discuss the large, dying white pines was another area that would be good for some group selections. In addition to adding some vertical structure throughout the forest by group selection, releasing mast trees to promote species diversity and encourage nut and fruit production will benefit wildlife. Mast trees are those species that produce a nut, acorn, seed, or fruit that is eaten by wildlife. Examples of these are species in the Ashley Town Forest include apples, hawthorns, oaks, black cherry, butternut, beech, walnut (I think there were a couple?), and yellow birch. Releasing these trees means cutting any trees that are actively competing with that mast tree for sunlight and space in the canopy. By removing the trees that crowding out the mast tree, you are allowing for more sunlight and energy to be intercepted by the mast tree, which will result in the production of more nuts, acorns, fruit, etc. Releasing mast trees anywhere on the town forest will be beneficial to the wildlife that is living in and moving through the area.

Accumulating Coarse Woody Material

My notes from our walk highlight that in many areas, there wasn't a lot of Coarse Woody Material on the ground. Coarse Woody Material (CWM) is generally any large logs, root wads, large branches, or piles of branches strewn about the forest floor. It's an essential habitat component for bugs, salamanders and toads, many forest birds, and small mammals throughout the year. This debris also returns nutrients and retains moisture in the soil. Accumulating more CWM can be accomplished easily by just allowing any trees or pieces of trees that are cut and not utilized for firewood or timber harvesting to just lay on the ground. There's no need to pile it up or remove it from the forest. If there is an issue in the community about the aesthetics of leaving wood on the ground, this is a learning opportunity for the community about the importance of CWM. You can also choose areas away from trails to allow the woody material to accumulate, while piling or scattering branches and treetops that fall near the trail out further into the woods.

Trail Considerations & Reserve Area

Figuring out where and what kind of trails to develop is going to be an important part of the stewardship plan for the forest. We know that trail-less areas are a limited resource, and that the presence of trails has a negative impact on wildlife. More detailed information can be found in Meredith Naughton's thesis research, which she presents here: <u>The Impact of Trails on</u> <u>Wildlife</u>. It's also important to ensure that the town can access, recreate in, and enjoy the forest, and trails help make that possible.

Looking at the <u>E911-Viewer data</u>, you can see that the Ashely Town Forest is part of a large forest block that is relatively trail-free area, minus the forest roads that aren't shown in the view and the VAST trail. Incorporating those pre-existing pathways into your new trail network would reduce the disturbance to wildlife and would create a fairly complete system throughout the parcel.

Some things to consider:

- One perimeter trail around the property would be favorable to having multiple trails bisecting the area. The more trails there are, the more edge habitat you will be creating. Additionally, by having one large trail essentially around the perimeter, you are leaving a larger block of habitat that is undisturbed in the parcel which can be used as a 'steppingstone' for wildlife moving through the larger forest block.
- We spoke about how to best travel along the stream in the western portion of the property, and there are some logical arguments for both having a single crossing or having the trail go across multiple points. After giving it some thought, I think having two crossings would work from a wildlife perspective. Animals will be moving parallel with the riparian area, and I think having the trail cross the riparian area in two spots and then move away from the area will be less disturbing than having the trail cross once and run along the wet area for an extended length.
- We also discussed agreeing on some guidelines or at least a process for deciding how new trails would be considered when they are proposed in the future and deciding on what sort of recreation would be permitted in the town forest. Mountain bike trails tend to increase in density quickly once they are established. If mountain biking does become an allowed recreation use, VTFWD suggest keeping that use and their trails in one part of the forest rather than having the trails spread out all over the parcel to minimize the impact to wildlife.

- Seasonal and temporal closures on trails and areas are another way to minimize the impact on wildlife, whether it's limiting trail use after sunset/before sunrise or during breeding seasons (thinking about amphibians moving to the stream and wet areas) or if there's a location with dense mast trees during the fall.

The ANR Natural Resources Atlas doesn't show any sensitive or rare species and natural communities that would be damaged or critically disturbed by creating trails throughout the parcel. I think a consideration should be made to the overall, cumulative impact of trails and roads on the landscape, which add up and contribute to forest fragmentation, but if you follow these suggestions and continue to have thoughtful conversations prior to trail building on the Woodlot, I think the multiple objectives that Craftsbury Academy has for this parcel can be achieved.

Having a Reserve Area that's set aside from the trail development and a typical forest management schedule sounds like a worthwhile idea. I think the area that we visited walking uphill back to the vehicles with the larger trees makes sense as an area to do this in. I've been looking at the Biofinder maps with the Vermont Conservation Design layers turned on, but the entire property is a priority interior forest block. The two streams on the property show-up as Riparian Wildlife Connectivity areas, which are simply undeveloped riparian areas that VTFWD thinks are used as connecting lands for terrestrial wildlife movement. With that in mind, incorporating either of these riparian areas into the Reserve Area would benefit wildlife movement in the area.

Stream Buffer

I've attached our chapter on Riparian Habitat Management from the Department's Landowner's Guide to Habitat Management. It describes the function of a buffer and what it should look like to increase the wildlife value beyond just minimizing erosion and sedimentation in the water channel.

Ashley Community Forest Ecology Recommendations

Compilation of input by Steve Faccio, Dan (Rudi) Ruddell, Micki Colbeck, and Michael Sacca Prepared July 14, 2022, by Micki Colbeck

MAPS

- Correct parcel maps based on the most recent survey; update them to the many mapping apps (GAIA GPS, AVENZA, ESRI, etc.) and to the two town's Natural Resources websites.
- Conduct Natural Community mapping (possible project for a UVM Field-Naturalist MS student or AUNE Environmental Studies/Conservation Biology MS student)

NATURAL COMMUNITY INVENTORIES

- Conduct botanical inventories of:
 - Black Ash-Red Maple Seepage Swamp along east boundary, just north of Blake Hill Rd terminus (most of this wetland is on adjacent parcel); approximately 43.83241, -72.44673, 1364ft elevation
 - Small, uncharacterized wetland just north of Nutting Rd parking area, possible fen-like qualities. 43.83575, -72.44368, 1317 ft.
 - Ledges with calcium-rich flow feed steep hillsides with beautiful and uncommon plants—American Ginseng, Rattlesnake Ferns, Blue Cohosh, Showy Orchis, and Maidenhair Spleenwort ferns, which should be protected. Approximately 43.83856, -72.44824, 1556ft.
 - Rich Northern Hardwood stands from the northwest border down along the northern tributary of Fay Brook. At least six American Ginseng (*Panax quinquefolius*) (VT S3, uncommon) were noted here, along with several Showy Orchis (*Galearis spectabilis*). Potential for Hooker's Orchid (*Platanthera hookeri*) (VT S1, Threatened) here. Approximately 43.83960, -72.44680, to 43.83876, -72.44563, 1487ft

RIVERS, STREAMS, AND RIPARIAN AREAS

- Two headwater streams drain the northern and western portions of the Ashley Community Forest, flowing generally southeasterly. Both are unnamed tributaries of Fay Brook which flow into the White River, and then continue to the Connecticut River, and eventually to Long Island Sound. Vermont Conservation Design (Sorensen et al 2018) identifies Surface Waters and Riparian Areas as a key foundational unit due to a wide variety of crucial ecological functions including habitat connectivity. The calcium rich bedrock of the Ashley Community Forest area gives additional weight to the importance of the riparian areas connected with these streams, and they are further highlighted in Vermont Conservation Design as Highest Priority due to the presence of transitional low to mid-elevation calcareous and moderately calcareous riparian zones. These are "Responsibility" physical landscapes, common in Vermont but rare elsewhere. The combination of features present supports a number of uncommon plants, and it is likely these areas will continue to reveal a remarkable diversity of plant and animal life.
- Recommend 100-foot buffers on all streams and wetlands, but at a minimum, 50-ft buffers on each side of two primary streams on property as well as wetlands

associated with smaller drainages (several connected with these two streams as well as a margin of a wetland primarily located on an adjacent property in the eastern portion of the property near Blake Hill Rd, Black Ash-Red Maple Seepage Swamp, named in the Natural Inventories section). These drainages are visible in LiDAR-derived imagery of the property, particularly using slope angle (percent slope) LiDAR derivative imagery (VCGI Interactive viewer). While retention of an intact forested buffer in these areas is the primary desired outcome, the importance of large woody debris to stream dynamics on these types of headwater streams suggest an even stronger no-cut policy within the 50 ft buffer.

• Document and evaluate condition and management options for culverts/other stream crossings on property.

FIELDS

• Manage open fields for pollinators by annual mowing <u>after</u> the first killing frost. Mowing fields in August will kill much of the last generation of Monarchs that migrate south and are vital for population viability. Mowing paths through fields will facilitate access. Consider management options for the open fields in a broader landscape context (including surrounding properties) as these open areas on the ACF property are small in terms of habitat and will require a relatively high degree of ongoing maintenance (compared with regenerating forest). That said, the wet meadow near the parking area on Nutting Rd is likely to remain relatively open (due to hydrology) and may benefit from/augment the additional nearby open land.

FOREST MANAGEMENT

- Consider establishing a "no-cut" or "Forever Wild" section of ACF. We recommend the Rich Northern Hardwood stand mentioned above, which appears to have a well-developed herbaceous layer with a high diversity of plants that would benefit from a no-cut zone, and rich soils that would be easily damaged by logging equipment. We would first want to complete a Natural Community Map to establish the boundaries of the Rich Northern Hardwood community and then buffer this no-cut management zone to develop old growth characteristics over time. A second area to be considered for no cut/no management (except for invasive control) is the western area, west of No. 7 on the map.
- Develop an invasive control plan, especially for the barberry thicket that is developing in the southwest section of ACF. If left unchecked, this dense stand of barberry will expand and become ever-increasingly difficult to control. Smaller incursions of barberry, honeysuckle, and other invasive species can be removed manually. Explore non-herbicide methods of control first i.e., burning. 43.83089, -72.45347, 1338ft.

Ashley Community Forest Education Plan

Ashley Community Forest has countless opportunities for education at all levels. The range of possibilities would suit K-12 place-based education, university and graduate level research and community education. The area is accessible nearly year round, with the exception of "mud" season when the road is impassable. Hunting season is also a time when education groups would need to adjust their plans. Education providers need to follow <u>Leave No Trace</u> ethics so that the forest remains in the condition as outlined in the Stewardship Plan. This includes not moving or climbing on the stone walls or and removing any artifacts. The privilege of holding school in the forest may be revoked if these principles are not followed.

Educational Opportunities at the Ashley Community Forest

The Ashley Community Forest (ACF) is a 256-acre parcel with value to the two towns of Strafford and Sharon as well as surrounding towns as a community resource for recreation, wildlife habitat and corridors, forest connectivity, historic preservation, sustainable timber practices and for educational opportunities. The ACF is home to beautiful and productive forest, field and stream environments, and some really great cellar holes of houses and barns in remarkably good shape that offer a glimpse into the agricultural history of the area. The Ashley Community Forest is open to the public for hiking, cross-country skiing, bird watching and wildlife observations and for picnicking among other uses. The land is contiguous to other conserved parcels.

The Sharon Elementary School, The Newton School and both the middle and high schools of The Sharon Academy have discussed how to use the land as an educational resource and in a cooperative manner for place-based education, natural history outings, art class outings, outdoor skills development, mapping, school research projects, and citizen science efforts all year round. Further, it is a working forest with rich opportunities to educate, inspire, and promote stewardship. The ACF successfully blends recreation and education into a productive environment for learning. It will provide educational resources for not only the two host towns and schools, but residents and schools in the region. In addition, there are opportunities to host summer activities with local recreation committees.

A series of public outings have been offered on a wide array of topics highlighting both the natural and cultural history of the land. In all cases local experts have graciously offered their time to share their knowledge in engaging ways. It has made the series a success.

"We are educators from across the state of Vermont who all contribute to the inspiration of children and students in this world. We want to honor the legacy of Vermont's Indigenous people, the Abenaki People of the Dawn, who have cared for this land for generations and continue to do so. We recognize that colonialism and the oppression of Native peoples are a current and ongoing process, and we commit to building our awareness of our present participation. We pay our respects to the elders past and present. We honor with deep gratitude this land and all it gives us." The Ashley Community Forest has excellent examples of historic stone foundations that date from the first half of the 19th century. The forest and wildlife and topography are interesting and diverse. It is a perfect place for exploration of natural and cultural history topics. It will be a gathering place for generations to come.

Specific outings have included the following topics:

Birding

Forest Management

Ferns

Mosses

Poems in the Forest

Geology of Ashley Community Forest

Cellar Holes and Stone Walls

Full moon walk

An introduction to iNaturalist

Reading the landscape

Summer solstice forest magic

Mushrooms

Naturalist Walk

Emerald ash borer

Exploring wetlands

Tyler Robinson remembers

Existing remnants of historic foundations give this parcel unique community value. These historic resources, likely from the early European settlement period, have been the source of great community interest and illustrate an important era in the 4-town history. The diverse forest habitats, historic resources and extensive trail system may also provide an incredible opportunity for local schools to use the property as an educational resource to support natural history and place-based curriculum.

The ACF currently has about three miles of hiking trails with more planned. It is part of a developing trail network in the area known historically as The Robinson District that will encompass approximately ten miles of trails on four contiguous (or nearly so) conserved parcels totaling 972 acres. All four parcels have agricultural connections and are part of the working landscape Vermonters cherish.

The goal of the Ashley Community Forest is to transform a somewhat forgotten and underutilized parcel of land into a vibrant regional recreation and education resource. There is a network of local people who know the land, the history, and have experience touring through it observing birds, history of foundations and stonewalls, and other historical remnants. In fact it is this resource - people who know the land - that could be most quickly used by teachers.

{include descriptions of the physical attributes of the land - mature hardwood forests, field and stream environments, stonewalls and historical infrastructure, walking/skiing/hiking trails}

Historical resource

Early narratives of Abenaki settlements throughout this area and Black Ash Area is Robinson DIstrict, agricultural community spanning Sharon and Strafford Robinson District Meeting House History as a subsistence farm, then a working sheep farm Robinson Farm used it for grazing cattle in the mid 20th century

Educational opportunities:

Trails and trail work Writing Citizen science Schools interacting, group projects across town and schools Art Mapping, GIS, orienteering Wildlife studies Plant studies

The Ashley Community Forest Education Program can partner with foundations, nonprofits, school districts, municipalities, and businesses to support broad community impact. Visitors may learn about:

- The region's rich history, especially its agricultural history
- Local ecology and wildlife,
- Sustainable forestry
- The community action that led to the creation of the Ashley Community Forest
- Recreation part of 4-town connected trail with Strafford, Sharon, Tunbridge, and Royalton
- Offer workshops and outings to community members on natural and cultural history

• Educators work with County foresters, local farmers, environmental education professionals

- Place-based education
- · Year round recreation, science resource
- Trails and trail work
- Writing
- Citizen science
- Schools interacting across boundaries , group projects across schools
- Art
- Mapping, GIS
- Wildlife studies
- Plant and forestry studies

Potential Education Partners

- MBR Nat'l Historical Park
- Upper Valley Teaching Place Collaborative, (Emily Shipman)
- Sharon and Strafford conservation commissions
- Jason Loomis, Sharon? writing code for mega database for VCE
- Vermont Center for Ecostudies
- School Supervisory Unions
- Forest Kinder (Meg Teachout, Eliza Minuuci)
- School programs and field trips run Spring, Summer, and Fall for regional schools, and camps.
- Classes (partnerships with local govt, nonprofits and businesses, community colleges) stargazing, birdwatching, foraging, ecology, and forestry events are provided on a monthly basis.
- Towns of Sharon and Strafford. From the Sharon town plan: "It is the policy of the Town to maintain its diverse community recreation program that provides such a wide range of recreational experiences and physical challenges for all age groups."

"The Town should better educate the public on the existence of public trails and recreational facilities in Sharon and develop a town-wide trail and recreation map."

See also:

https://tuckertownforest.org/education/

Brushwood Community Forest

Barre Town Community Forest

Andrews Community Forest, Richmond VT

Ashley Community Forest Recreational Use Plan

Ashley Community Forest Board encourages recreational use of the Forest that is ecologically sensitive, promotes the natural beauty of the region, and creates a sense of community. We strive to accomplish this mission by providing a network of quality non-motorized trails for all levels of ability incorporating the best of the natural scenery and natural diversity and offering group activities and a trail network.

We advocate for public involvement that is transparent and welcoming. Uses will continually be monitored and considered.

General Rules

Dogs are allowed in the Ashley Community Forest. They must be leashed in order to protect wildlife and be respectful of other walkers and dog owners.

Maps and signage will be available for trail use.

We ask that visitors not disturb the historic artifacts. Please do not climb on or remove stones from walls and foundations, so that we may protect the historic integrity of the site.

Visit, enjoy, but leave no trace. Do not harvest plants or trees or create new trails.

ACF may close access to the trails at any time to address erosion or safety issues.

General Uses

The Ashley Community Forest is open to the public for year-round, non-motorized, recreational purposes. A trail network may be developed offering single-use and multi-use trail designations. Trails may be closed seasonally to prevent erosion and preserve the integrity of the trails. Public events, such as walks and workshops, may be scheduled throughout the year. Races and organized events for group activities may be offered both for the general public and as paid fundraisers.

Note: carpooling will be appreciated for large groups, as parking is limited.

Encouraged Recreational uses:

- Mountain Biking on designated trails only
- Backcountry skiing
- Snowshoeing
- Hiking
- Wildlife Observation & Birding
- Running
- Horseback riding on designated use trails
- Hunting, by permission of ACF Board (contact:ashleycommunityforest@gmail.com)
- o Community Activities & Organized Races, with approval of ACF Board

• Educational uses set forth in Education Section

It is hoped that the property will continue to be used as an example of environmentally sustainable trail network that promotes enjoyment of healthy, outdoor, physical activity.

Prohibited Uses:

• Campfires and camping.

• Trapping. Trapping poses a safety hazard to visitors and their pets and at this time is seen as incompatible with recreational and educational off-trail hiking by residents, school groups, researchers, and hunters.

• Motorized vehicles are not allowed in the Ashley Community Forest, except with ACF Board Permission.

• Disturbing or removing flowers, plants, fungi, and historic artifacts.

Care and Maintenance of Recreation Trails

Ashley Community Forest Board will manage and maintain the public access and recreation trails to best promote appropriate use, public safety and environmental sustainability. Should damage to trails occur or if there is conflict between user groups the ACF Board reserves the right to limit uses or close trails.

Hunting, by permission of ACF Board, is allowed at the Ashley Community Forest, so for your safety please wear blaze orange during hunting seasons. (Contact:<u>ashleycommunityforest@gmail.com</u>)

Trail and educational signage will be posted in all the proper and visible locations and maps of the forest will be developed and made available to the public.

The potential for future recreational trails will be continually evaluated in accordance with ACF Management Plan. There may be short sections of existing trail that are relocated in the future to reduce maintenance or to prevent erosion.

Access and Parking Areas

Vehicular access to the Ashley Community Forest will be from Nutting Road in Strafford, with a small parking area at the entrance to the forest. A kiosk is planned that will have a map of the forest and other information useful to the public.

Future Recreation Planning

The Ashley Community Forest Board envisions encouraging increased use of the forest through an expansion of the current trail system, with a focus on creating loop trails. At present the trail system consists of a single loop trail accessed from the Nutting Road parking area, with two spur trails off that loop. There is a section of trail in Sharon that originates on Clifford Farm Road at the switchback. This section of trail was used for logging by a previous owner and does not currently connect with trails in the northern portion of the forest, but may ultimately be included in the planned trail system for the forest. At present it consists of a main trail that runs parallel to Fay Brook, with a short spur off this trail that crosses Fay Brook. This crossing may not meet State requirements for stream crossings and should be removed when equipment is next on site. The short spur from the main trail to the stream should be closed.

(See Appendices for Proposed Trail Map and Trail Development Map)

Sharon Right-of-Way

There is an unconnected segment of trail in Sharon that was built under previous ownership as logging access from Clifford Farm Road. There is evidence of historic use by the owners of this parcel and indication that the forest has a legal right-of-way, but an abutting landowner disputes the right-of-way claim. The Ashley Community Forest Board will seek legal counsel to determine the proper status of the apparent right-of-way. In the meantime, out of respect for the abutting landowner, this access is not open to the public.

Kiosk and Trail Signs

An informational kiosk will be installed in the vicinity of the Nutting Road parking area. It will have information about the forest, a map of the forest and possibly a brochure box with trail maps. At each trail junction it is expected that a trail sign would be installed. Trails may be marked with paint along their pathway.

Black Locust

Black locust is a rot-resistant, non-native tree that was likely planted by previous owners to be used as fence posts. There are many black locust trees in the forest near the Nutting Road parking area. It is the intention of the Ashley Community Forest Board to harvest black locust to be used as the main posts for the kiosk and also as posts for trail signs. In the process of harvesting and milling the posts needed on the forest, we may produce additional posts for kiosks or trail signs in Sharon, Royalton, Strafford and Tunbridge.

In addition, since our goal is to increase use of the forest, to make the site comfortable to use for school groups and other educational programs, we will allow placement of a portable toilet onsite for 2023. The location will be either in the vicinity of the parking area or the landing area just above it. In the longer-term, we would like to install a permanent composting or "mouldering" toilet for visitors to use. This would need to be constructed on a platform to be level and to allow access to waste for cleaning. While we are sawing black locust posts for kiosks and smaller black locust for sign posts, we may also mill a small amount of black locust lumber to build a platform for a permanent toilet. Conclusion

This forest is a community forest and it is for all of us.

We give thanks for the opportunity to share in the joys of this place and to protect it. We welcome all opportunities for Abenaki citizens and other Indigenous people to connect with their relations - including water, soil, plants, and animals - across Ashley Community Forest grounds.

Lost

Stand still. The trees ahead and bushes beside you Are not lost. Wherever you are is called Here, And you must treat it as a powerful stranger, Must ask permission to know it and be known. The forest breathes. Listen. It answers, I have made this place around you. If you leave it, you may come back again, saying Here. No two trees are the same to Raven. No two branches are the same to Wren. If what a tree or a bush does is lost on you, You are surely lost. Stand still. The forest knows Where you are. You must let it find you.