The Estate of Philip F. Leach
FOREST MANAGEMENT PLAN
+/- 494 Acres
Newbury, Vermont

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PLAN PURPOSE

This plan's purpose is to provide the landowners, the beneficiaries of the Estate of Philip F. Leach with a comprehensive description of their property's natural resource attributes and proposed management activities. It is meant to be a "User's Guide" that reflects the landowners' objectives as well as the forest's attributes. The plan allows for flexibility as the forest conditions change and if the landowner objectives change over time. This plan sets forth management activities in the form of **silvicultural prescriptions** * and other suggestions to help meet the landowners' goals.

The plan is designed to meet the standards of the Vermont Use – Value taxation program. Also, this plan and the property meets the standards for participation in the Vermont Tree Farm Program.

BRIEF PROPERTY DESCRIPTION

The property is located on Tucker Mountain Road in Newbury, Vermont. The property is made up of several lots or parts of lots and is approximately 494 acres. The property is almost entirely forested with the exception of open land at the top of Tucker Mountain which is kept open by periodic mowing. This remote area is highly used due to its fantastic views and easy access. The forest is mixed; the predominant tree species are white pine, hemlock, balsam fir red maple, yellow birch, white ash and red oak. Over the years, there have been several logging operations in different parts of the property. Old field areas in different stages of succession are also found.

**** note: all bold words can be found in the glossary, appendix B***

The open land on Tucker Mountain

Tucker Mountain Road

WOODLOT HISTORY

The property is made up of several lots purchased by Philip Leach over the years. The closest house and barn to the property were also owned by Mr. Leach but they have since been sold. No research has been done for this plan about earlier owners, but the land use history can be gleaned from on-ground evidence. Prior to settlement, the property was probably entirely forest. The forest at that time likely consisted of a mixture of hemlock, white pine, red spruce, sugar maple, beech and yellow birch. These shade-tolerant trees are commonly represented in a **climax forest**. Shade-tolerant species are the only trees that can reproduce in dense shade. In the absence of any disturbance, they could theoretically occupy a site indefinitely as the climax forest. In reality however, this virtually never occurs. Fires, hurricanes, insect infestations, diseases, and/or people intervene, producing a disturbance and causing the forest to revert to an earlier stage of forest succession. The current forest is considered to be second or third growth with numerous cutting entries throughout the property.

A few very large pine in an area cut in 1998

Prolific softwood regeneration under pine

In the early 1800's, settlement expanded from the valleys into the hills. Most if not all of the property was cleared for agricultural use either as crop land or pasture. A few areas are still open land. Here, stone walls are found as a testament to this land use. Most of the land is now forested, or in some stage of becoming forested. Since reforestation, trees have been cut in many different areas, with some areas cut several time. The first logging based on scientific forestry principals was conducted in 1993 with more completed in 1995 – 1996. The work was planned and implemented by Vermont Forestry Associates. Most, if not all of the tree marking was done by this plans author. Around 2000, the forestry work was switched to O'Brien Forestry Services under which two small timber sales were implemented.

A conservation easement held by the Vermont Land Trust conveyed the development rights in 1992.

LANDOWNER OBJECTIVES

The objectives of the owners are multi-faceted and interrelated. The main objectives of ownership are listed below in a unprioritized order:

- Continue to be responsible stewards of the land
- Produce periodic revenue by the sustainable harvesting of trees or other forest products
- Steadily improve tree quality while maintaining a healthy and ecologically intact forest system
- Maintain the water quality of streams and wetlands
- Provide and maintain a variety of habitats for wildlife
- Use the property for recreational pursuits such as hiking and observing nature

It is not always possible, nor practical, to achieve every landowner objective on each acre of land. Some objectives such as "*Continue to be responsible stewards of the land"* for example, by their nature are practiced on the entire parcel. But often, the more specific objectives are better applied to sections of the land best suited to meet those objectives. For example, the habitat of certain wildlife species can often be improved

while meeting objectives for growing timber. Red oak, a hard **mast** food source for many wildlife species such as white-tailed deer and turkeys, is also a good tree to grow for timber. The opening of the forest **canopy** during timber harvesting also allows more sunlight to hit the forest floor. This prompts the growth of herbaceous and woody trees and shrubs which provide **browse**, shelter, structure complexities and diversity.

For wildlife species that require dense, undisturbed mature forest, timber harvesting likely would not be a complimentary management objective. The inverse is true as well; the access road, log landing and areas around the open areas not yet reforested are excellent places to manage shrubby, open wildlife habitat with a lot of edge and shrub "islands" as well as grasses and other herbs. Periodic brush-hogging will keep these areas open. Dynamic planning that allows for islands of shrubby vegetation in these areas would provide shelter and often harbor soft mast species. In these areas, timber harvesting obviously is not a compatible objective, but recreation could be if hiking trails were created to provide opportunities for wildlife viewing.

Other wildlife objectives could be met through forest management but not in combination with a specific timber objective. For example, some forest stands could be improved based on the wildlife **habitat** they provide. **Snag** trees and **down logs** could be created, and living **cavity trees** could be managed for wildlife by releasing them from competition. Perch trees could be released or intentionally left to meet specific habitat requirements. Forest species diversity could be increased through selective thinning. Forest structure can be manipulated to provide habitat in different levels of the forest.

A Legacy tree to be retained for wildlife value

A large white ash blown down creating a downed log

PROCEDURES

A **forest inventory** was conducted to evaluate the timber types and wildlife habitats on the property. The forest inventory also was used to evaluate the **stocking** and composition of the forest and the volume of the merchantable timber on the woodlot. The data were used to calculate the present market value of the timber on the property. A **cruise** grid of 125 sample plots was created spacing points 420 x 420 feet apart, providing one point for every 4 acres. A 20-BAF **prism** was used to sample trees 6 inches and larger at each **point**. The trees which fell within the sample at each point were recorded by species, diameters tallied to the nearest inch, growing stock status and crown position. The trees were also tallied as sawlogs, **pulpwood,** or a combination of the two. Information on **snags**, downed wood, cavity trees, indicator plants, and regeneration was also collected. Photographs were taken at points of interest.

Merchantable products estimated in tallied trees greater than 6 inches in diameter were **graded** in multiples of eight feet. Hardwood sawlogs were estimated to a 10 inch small-end diameter while softwood logs were estimated to an 8 inch small-end diameter. Pulpwood was estimated in 8 foot lengths up to a minimum 4 inch top.

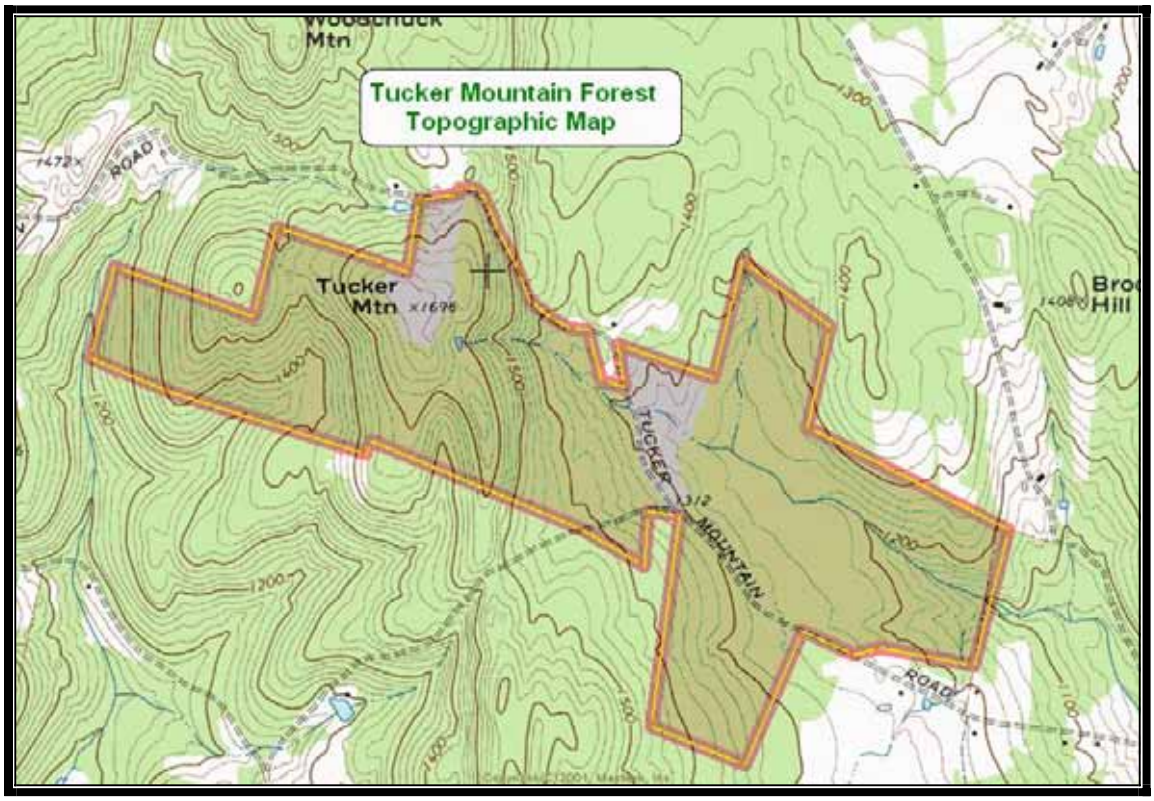
In order to more accurately determine volume and make specific forest management and wildlife **habitat** recommendations, the property was broken down into 13 stands. Stands are differentiated from each other on the basis of tree size, species composition, and density. There are many micro-stands on the property, but these variations are too subtle to map and too numerous to describe. These subtleties are best left to the intuitive forester to sort out in the field when applying any sort of silvicultural treatment. The computer program ASSISI was used to process the data collected at the sample points. This was then extrapolated to the entire forest. The detailed computer program output is not included as part of this plan but is available, if needed, from Butternut Hollow Forestry.

GEOLOGICAL ATTRIBUTES

Topography & Terrain

The terrain on the Tucker Mountain Forest is quite variable. Elevations range from about 1,100' to 1,700' on the top of the mountain. To the East, the land is gentle with some level to moderately sloping ground. The western part of the property is more rolling with some steep to very steep ground. One ridge south of the summit of Tucker Mountain is considered inaccessible for logging equipment.

Ledge outcrops and surface stones are common, especially near heights of land and convex slopes.



Aspect

With undulating terrain, the property has areas that face in every direction. Southerly and easterly aspects are the most common, however.

Brooks & Wetlands

The property has numerous water features. **Riparian zones** deserve special consideration in the management process. They are valuable from a wildlife habitat standpoint, and obviously they are important from a water quality standpoint. Most notable is a large beaver impounded wetland found in the eastern part of the property. Here, beaver are still active, continuing to work upstream from their original dam.

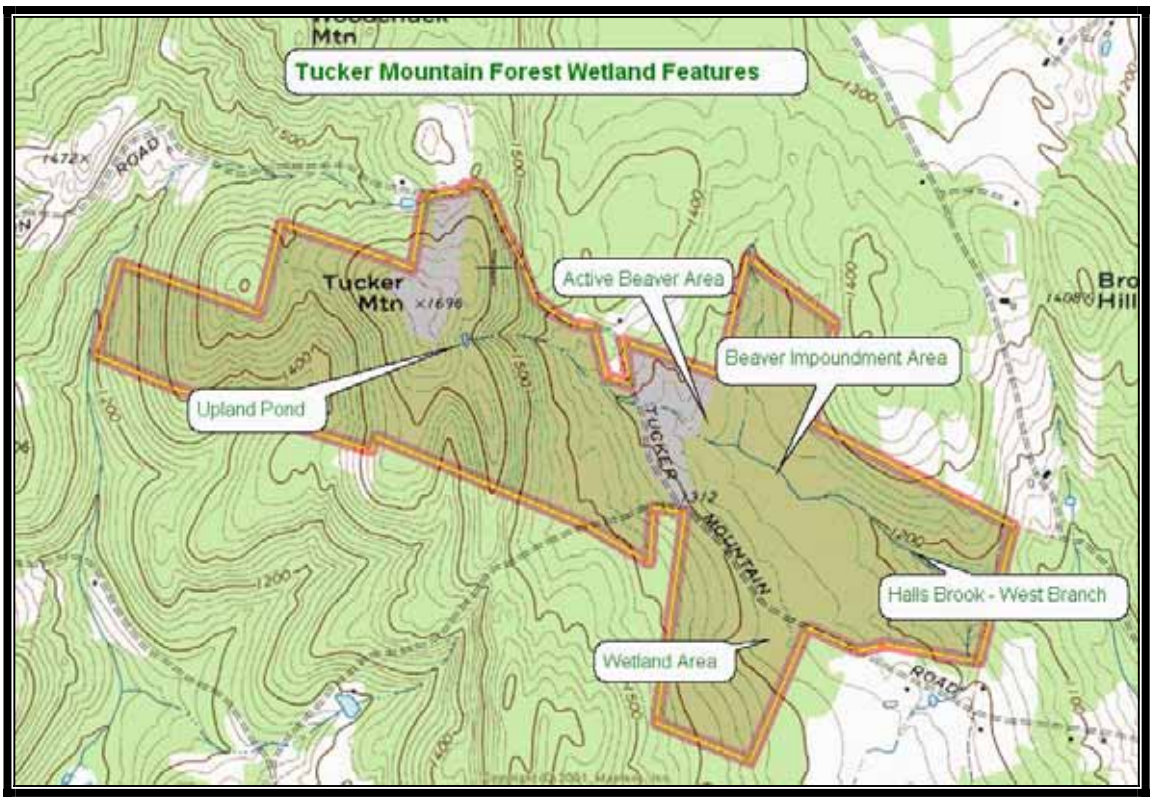
Forest land flooded by beaver activity

A sign of active beavers

A stream that starts at an interesting pool of water located just to the East of the summit of Tucker Mountain partly feeds this area. The western part of the property is quite dry compared with the eastern part.

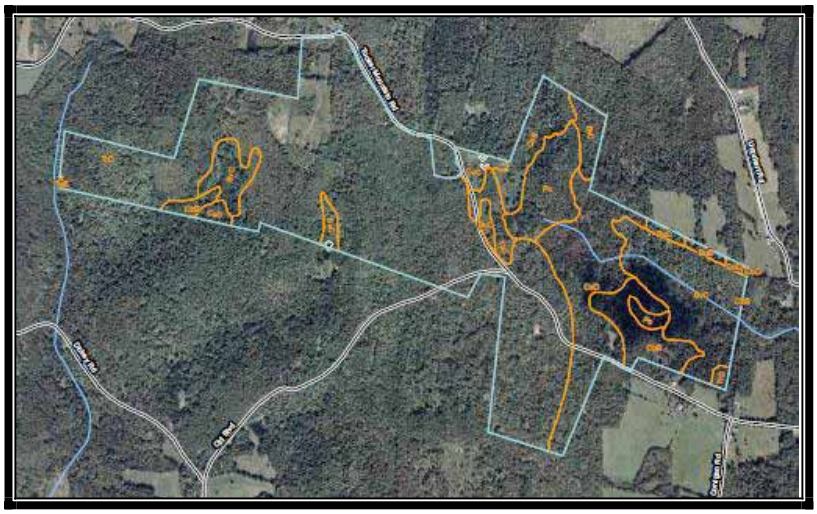
An upland pond fed by ground water

Halls Brook below the beaver impoundment



Soils

For a relatively large parcel, the property has few soil types. The upland soils were derived from glacial till and are primarily fine sandy loams that are well drained and of moderate fertility. The entire property has many stone outcrops and a small talus area. The exception to this is the Peacham soils in the concave low lying areas. (*see soils report, Appendix C*)



FOREST CONDITIONS

Forest Stands

Based on past management plan mapping, information collected during the timber cruise, aerial photos and topographic interpretation, the forestland was divided into 14 **stands**. Stands are aggregates of trees which have similar characteristics and are the basic units of forest management. Stands differ from one another in species composition, density, and often age. Stand differences occur due to soil conditions, aspect, and most commonly, past land use.

Stand 3 - a young hardwood pole forest

Stand 8 – a two aged mixed softwood forest

A description of each stand and a chart noting other characteristics can be found in the Forest Data section of this plan. The location of each stand can be quickly identified by looking at the Forest Type Map found in the binder of this plan.

Forest Types

The following forest type designations are used to describe stands in a broad sense:

COVER TYPES
H ≥ 50% dominant & co-dominant trees are hardwood
S ≥ 50% dominant & co-dominant trees are softwood
HS = Mixed species but dominated by hardwood
SH = Mixed species but dominated by softwood

SIZE CLASS
1 = Seedlings or regeneration - 90% of stems < 3" DBH
2 = Saplings or small poles 3" - 8" DBH
3 = Large poles and/or small sawtimber 9" - 12" DBH
4 = Sawtimber 13" and larger

CROWN CLOSURE/DENSITY
A = 75-100% crown closure of co-dominant or dominant trees
B = 50-74% crown closure of co-dominant or dominant trees
C = 0-49% crown closure of co-dominant or dominant trees

Age and Age Class Distribution

Compared with many properties in the area, this forest has a good mix of cohorts with varying aged trees. The most common are the older overstory trees which in most stands are between 75 and 115 years old. Areas containing younger trees, almost all softwood, are found primarily in groups associated with the tree cutting that took place in the early to mid 1990's, most notably in stands 4,8 and 9. Openings created by natural disturbances are very small. Striped maple and beech are the most common young hardwood trees. Stand # 3 has regenerated into a pole-sized hardwood stand as a result of small clear cuts done in 1993 and 1994. Stand 5 is an older (20 - 35 years) pole stand.

The juxtaposition of trees of different age classes has important implications for long-term forest and wildlife management. Forest managers generally divide a well-balanced (**uneven-aged**) forest into four different size classes: **seedlings**, **saplings**, **pole timber** and **sawtimber**. A balance of age classes is desirable for a diverse forest structure and the sustained yield of forest products. A mixture of age classes is also important for providing a variety and richness of wildlife habitats and an overall increase in diversity.

As time passes, and with additional treatments, the present forest will continue to be better balanced for optimal diversity of wildlife habitat and a sustained yield of forest products. Balancing age classes is not addressed or accomplished all at once; it takes many years and numerous treatments to develop such a structure.

Growth Rates

An in-depth study of tree growth is beyond the scope of this plan. While not statistically sound, some growth observations can be made by counting tree rings on old stumps and taking **increment cores** of some live trees. Although volume growth is very difficult and expensive to accurately calculate, a few basic rules-of-thumb do apply. A tree's growth is directly related to the substrate (soil) on which it is located. Wet, ledgy and dry areas do not promote rapid growth of trees. Lower elevation and cool moist but well-drained areas support better tree growth as the soils are deeper and more fertile. Younger trees and trees with adequate growing space generally grow at a fast rate. Trees in the average managed woodlot in Vermont grow 2 to 4 percent per year. This corresponds to volume increases of approximately 0.4 cords or 200 board feet per acre per year. The soils on the Tucker Mountain Forest are mostly average in fertility, and they are capable of growing large trees. In general, the pine stands grow at a faster rate than hardwood stands, and younger trees grow faster than older ones.

The Forest Management Plan done in 1994 took increment cores to estimate growth rates. While likely not statistically valid, the rates calculated growth to be 3.6% for sawlogs and 3.9% for pulpwood. Interestingly, these rates fall within the ranges described above.

Being conservative, based on a growth rate of 3%, and given the current estimated volumes, annual growth is estimated to be 64,000 board feet of sawtimber and 171 cords of pulpwood per acre.

Tree Quality

As with most properties in the area, tree quality and health are quite variable. Quality, for the purposes of this discussion, is primarily a timber related consideration. It should be understood that a tree that is of poor quality for timber may be exceptional from a wildlife standpoint. Timber quality on the Tucker Mountain Forest ranges from some excellent quality red oak and mostly average white pine with a few scattered, exceptional ones. The hemlock is good for what is typically low value species. Much of the spruce and fir has been cut over the years and what remains is low to moderate quality. The property has some large open grown trees especially in stands 2 & 3. Large

trees, while impressive to look at, have often reached or exceeded their economic maturity. These trees are often losing quality as rot, splits and broken tops or blowdown topples or degrades them. Usually because of quality problems, these trees are more valuable for wildlife habitat than for timber.

This low quality beech is preferred by bears

A really nice 40” DBH white pine

Forest Health

Generally speaking, the forest is free of widespread disease. The diseases found here are not unusual, and they are an integral part of a naturally functioning forest ecosystem. Common problems such as sugar maple borer, beech bark disease and white pine blister rust are present but not in high concentrations. May white pine lost needles this spring and early summer due to Brown – Spot Needle Blight. A little more worrisome is dieback in some of the overstory white pine found mostly in stand 8 on the wetter ground.

Crowns of white pine showing serious decline in stand 8

Trees exhibiting signs of decline have been able to grow well up until the last 10 or 15 years and since then have been going down hill. This is likely caused by root damage from prior logging in combination with some other stressing agent. Caliciopsis, (pine canker) is a fungal disease that is not very well understood. It has been noted in the Connecticut River Valley over the past several years and is likely present but it has not been positively identified here, however.

Stocking and Volumes

Stocking is a term used by foresters to describe the relative density of the trees in a stand. Stands may be under stocked, over stocked, or fully stocked. Stands which are fully stocked have trees which are wholly utilizing the growing space available to them. Stocking on the Tucker Mountain Forest is variable, but generally the forest is nearing but below full stocking for all stands.

Volume refers to the quantity of merchantable timber found on the property. It is estimated that 78% of the sawtimber volume is softwood and the bulk of which is white pine. The forest inventory data collected estimates an average of 4,795 board feet per acre of sawtimber and 13 cords of pulpwood per acre.

While there is a substantial volume of harvestable trees, it will be important to let stocking levels and diameters increase somewhat prior to the next entry for logging.

OTHER CONSIDERATIONS

Landscape Considerations

From an ecological perspective, property boundaries mean little. The same can be said for wildlife and plant distributions. However, differing landowner practices have a huge impact on landscape scale processes. The broad patterns of landscape cover and fragmentation should be considered when making management decisions made on a particular property. For example, a large clear cut on an abutting property may satisfy the objectives of an owner to create early successional habitat for wildlife.

An in-depth study of landscape patterns around the Tucker Mountain Forest property is beyond the scope of this management plan, but a lot of information can be gleaned from looking at aerial photography and topographic maps. Even though the property is located only a few miles from a major interstate and only a few miles from two villages, it is remote. The ownerships include both forest and farm land and re generally quite large. Many owners are practicing some form of forest management or tree cutting. There are quite a few (at least 3) large properties in the vicinity that have conservation easements in place. This bodes well for the long term stability of the forest land in this region. In fact, this core block of conserved land could serve as an example and a catalyst for further conservation.

This is a very rural part of Orange County with some fairly large, undeveloped tracts of land. Most of these are to the North and West. To the East the land is more fragmented with more roads and higher population densities. Forest fragmentation is the breaking apart of intact landscapes by roads and other unnatural features. Parcelization is the breaking up of lands into smaller blocks. Both happen over time, eroding wildlife habitat and isolating plant communities. Both are occurring locally and regionally.

Cultural Features

Evidence of an old farmstead was found in one area of the property. There may be others as well.

An old stone wall on the edge of a pasture

An old foundation wall

Cultural features encompass many things and what may be a valued part of the landscape to one person may be seen as a liability to another. In any case these features should be located and protected during any land management activities.

An old truck converted to haul logs

An old Chrysler going back to the earth

Rare Species & Unique Natural Communities

An in-depth flora and fauna survey is not within the scope of this plan. No endangered plants or animals were encountered while collecting the data for this plan.

The natural communities found on this property are quite common for this region, but rare communities can be quite small. Wetlands, seeps and steep areas at the toe of steep slopes would be the most likely place to find rare plants. The Vermont Natural Heritage Bureau, within the Agency of Natural Resources, maintains a database of known locations of rare plants.

Recreation

Most of the recreational activities on the property are centered on the top of Tucker Mountain. Here, beautiful views are found in almost every direction.

Looking East to Mt. Lafayette

The Orange Hills to the West

Along with these nice views come the unfortunate activities of a few who seem to have little respect for the land or the landowners. Numerous attempts have been made to gate the access up to the mountain and every time, the gate has been removed or destroyed. It is too bad when a few spoil such a nice place. ATVs are using a trail in stand 1 with a similar lack of respect. This trail is badly rutted and was being used in the spring when it was very wet.

A badly rutted ATV trail

Trash dumped off of one of the log landings

Some of the owners recreate on the property. Walking and nature viewing are enjoyed. Other than the partying that takes place on Tucker Mountain, hunting is undoubtedly is the most common recreational activity on the property. The land is not posted, it is remote but it is easy to get to – all things hunters are looking for.

Future Potential

This property has ample potential to meet the owners' objectives. The commitment of the current owners to learn more about the property and to practice exemplary stewardship will ensure that the land supports a healthy and productive forest well into the future. The conservation easement will protect it from future development.

OPERATIONAL CONSIDERATIONS

Access

Tucker Mountain Road essentially bisects the land and access is gained off of this road. Unfortunately, this is an un-maintained class 4 road, meaning that the road is open to the public yet it is maintained minimally by the town. At times the road is impassible in places. Some amount of upgrading will be required prior to any logging operation. Log landings are in place and all of the property has adequate access except for the western block of stand 1. This area is quite a distance and downhill from any landing area.

Internal access is adequate in the form of old skid trails leading to the various landing areas.

The log landing adjacent to stand 8

An old brook crossing on a main skid trail

Operability

From a logging standpoint, the property is well suited to forest management. Operationally, there are few limitations as long as common sense is applied. One area was deemed non-commercial due to excessive steepness. The eastern part of the property is best suited to winter operations due to wet ground. The western part has dryer ground so summer operations could be considered there.

Boundaries

The entire property has been surveyed in three different projects by Michael Hemond from St. Johnsbury, Vermont. A fourth survey was done depicting a subdivision of the property. The make-up of the boundary lines consist mostly of painted and blazed lines, but barbed wire fences and stonewalls are also found. A majority of corner points were located and captured using a Garmin 60Cx GPS unit to aid with the accuracy of the forest management map.

It is good practice to keep property lines blazed and painted to prevent problems or questions in the future. Most of the boundaries can currently be found but not without some difficulty. They should be re-blazed and painted as soon as possible and then re-painted every 10 to 12 years and re-blazed every 20 years. A season or two should pass after the trees have been blazed so the paint will adhere well.

Old barbed wire in a red maple

An old blaze in a balsam fir

TUCKER MOUNTAIN FOREST

FOREST DATA

Stand 1 Hemlock – mixed hardwood SH3A 25 acres – 7 points

GENERAL ATTRIBUTES

Natural Community Type:	Hemlock – Northern Hardwood Forest
Past Management History:	Western area not cut for many years Eastern area has had more recent cutting
Approximate Age of Dominant Trees:	90 to100 years
Stand Health:	Good to excellent
Insects/Damage/Disease:	Nothing out of the ordinary
Timber quality:	Variable but good for hemlock with a few nice hardwoods

SITE CONDITIONS

Site class:	2
Determined by:	Soils and Field Observation
Tree vigor:	Medium to high vigor
Soils:	Tunbridge – Woodstock Buckland
Parent material:	Coarse Loamy Till
Soil texture:	Fine sandy loam but very stony
Drainage:	Well to moderately well drained
Terrain:	Both areas on moderate side hills
Aspect:	West to southwest
Elevation:	1,200’ to 1,300’

Cultural Attributes

Archeological features present:	Barbed wire
Past land use:	Likely pastured in the 1800’s

Wildlife Attributes and Objectives

Forest type:	Upland mixed wood forest
Vertical diversity:	Low to moderate
Vegetative diversity:	Pretty low
Beneficial shrubs and trees:	Hemlock for cover
Hard mast:	Acorns from a few oaks that did not get inventoried but are lightly scattered in the western part of the stand
Soft mast:	None
Dead and decaying structure:	Low amount of standing dead trees, down logs, few recruitment possibilities for future addition to structure
Special habitat features:	None in particular
Wildlife protection zones:	Spring seep areas
Special wildlife practices:	Promote large crowned oak and healthy beech

Snags Per Acre

DBH Class	Moderately Punky	Snag-Punky Throughout	Grand Total
<12"			
12-18"	10		10
>18"			
Grand Total	**10**		**10**

Table 1.1: Snags per acre by size and decay class.

Wetland and Water Features

Wetland type:	No wetlands
Streams:	None
Ponds or Standing Water	None

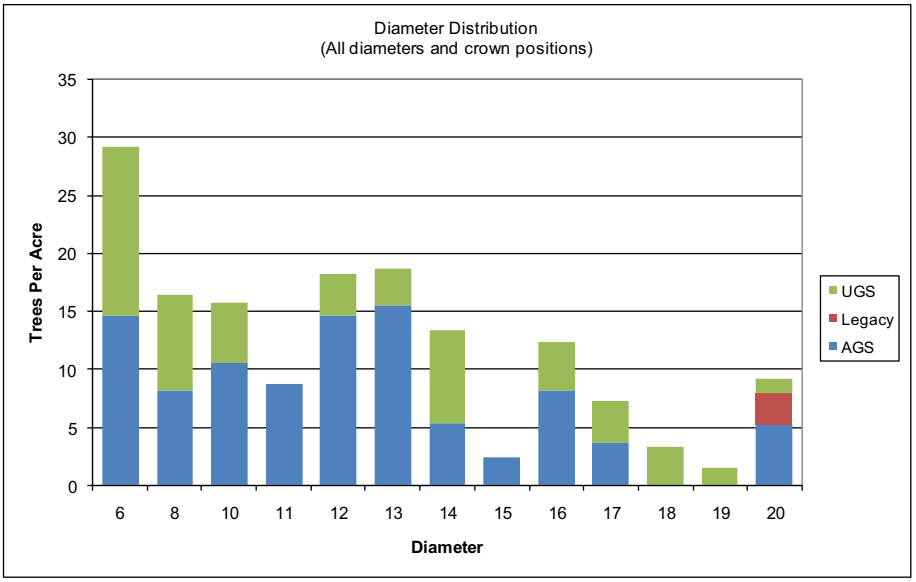
Structural and Silvicultural Attributes

Broad Forest Type:	Sh3A
Size Class:	Medium sawtimber
Stand Structure:	Even age with a little understory
Crown Closure:	90 -100%
Total Basal Area Per Acre:	131
Total Acceptable Basal Area Per Acre:	80
Trees Per Acre:	155
Quadratic Mean Stand Diameter:	12.4

Forest Composition and Volume

Group	Species	% TPA	Veneer (bf)	Sawlog (bf)	Pallet/Tie (bf)	Legacy (bf)	Total BF	Pulp (cd)	Growing Stock (cd)	Total Cords	AGS Saw
Hardwood	American Bee	1.3%	0	0	0	0	0	1	0	1	0
	Red Maple	5.7%	0	221	0	0	221	1	0	2	221
	Sugar Maple	0.8%	0	0	0	1	1	0	0	1	0
	White Birch	5.2%	0	0	0	1	1	1	0	2	0
	Yellow Birch	5.0%	0	458	0	0	458	1	0	2	458
Hardwood Total		***18.1%***	***0***	***679***	***0***	***1***	***680***	***4***	***0***	***7***	***679***
Softwood	Balsam Fir	2.8%	0	148	0	0	148	0	0	0	148
	Hemlock	72.0%	0	6,352	0	0	6,352	12	2	26	6,352
	Red Spruce	7.1%	0	790	0	0	790	0	0	2	790
Softwood Total		***81.9%***	***0***	***7,290***	***0***	***0***	***7,290***	***13***	***2***	***28***	***7,290***
Grand Total		**100.0%**	**0**	**7,968**	**0**	**1**	**7,970**	**17**	**2**	**35**	**7,968**

Table 1.2: Stand volume and trees per acre by species and product.



Silvicultural Objectives

Management system:	Multiple-age management
Harvest Entry:	15 to 20 year cutting cycle
Products:	A mix of site-suited trees
Desired Composition:	Maintain natural species composition while setting the stage for regeneration of cohorts of other age classes.
Crop tree target diameter:	Hemlock 20 -22” Red maple 18 – 20” White birch 20 - 22”

Operational Considerations

Operability:	100% operable
Seasonal limitations:	Could operate any time of the year
Terrain:	Difficult for the western section with a 2 long uphill pulls. Eastern portion easy.
Access and landing area:	For western area might need to access through an abutting property
Skidding distance:	Variable
General maintenance:	None
Brook-wetland crossings:	There could several crossings

Stand 1 Description
&
10- YEAR MANAGEMENT SCHEDULE

Stand 1 is a middle age hemlock - northern hardwood community. The stand is broken down into 2 non-contiguous areas (see forest type map for locations) that have had slightly different histories but have a similar composition. The eastern part of this stand has had some light thinning about 15 years ago. The western area has not been cut in many years, likely because access for timber harvesting to this area is limited. The most suitable access is across abutting lands. If this stand were to be accessed though the present ownership, it is a long and difficult route to get to a suitable log landing area. For a treatment to be implemented, access

will need to be though through. Being west to south westerly facing, this is a warm and relatively dry site especially towards the ridge tops. Soil fertility is pretty high, especially in lower slope areas that benefit from the accumulation of soil and minerals from up slope areas.

Eastern hemlock makes up 72% of the trees. Small amounts of spruce,fir and mixed northern hardwoods round out the remainder of the stand. The stand is estimated to have 7,900 feet of sawtimber and 19 cords of pulpwood per acre.

Silviculture: This stand should be managed on an un-evenage system with a goal of developing new age classes of trees of site suited species. Large, old trees of any quality will be encouraged as will the mixed hardwood - particularly yellow birch which is a minor component of this stand. If regeneration is secured soon and with future cuttings, varying age classes will exist primarily as pockets of similarly aged trees mixed throughout the stand. This multiple-age composition will provide a diverse forest structure beneficial to wildlife. It will also present an opportunity for a mix of silvicultural options in the future. The current species composition reflects the natural community type, however, with climate change and perhaps the introduction of the hemlock wooly adelgid (an introduced pest), the composition could change. The location of openings will be mostly dictated by operability. Those areas that can be accessed by logging equipment will be cut while other areas are inaccessible and will be left alone and allowed to grow to biological maturity.

2012: Reduce overall basal area to approximately 90-100 square feet through:

- **Group Selection:** Focus on creating openings of 5 -10 trees to establish regeneration and to release existing patches of acceptable regeneration. Patches could focus on areas of lower quality or areas with few surface stones.
- **Thinning:** Thin to reduce stocking and release the better quality trees, especially hardwoods as appropriate.

Wildlife: This stand is likely used primarily for cover. The dense hemlock is used for cover in the winter and these areas may function as small deer yards. Specific wildlife habitat improvements could include the maintenance of snags and down woody debris by felling and leaving some large trees on the forest floor. This stand can continue to provide a hard mast supply by favoring the few large dominant oak and beech trees.

Stand 2 Northern Hardwood H3A/B 18 acres – 5 points

GENERAL ATTRIBUTES

Natural Community Type:	Northern Hardwood Forest
Past Management History:	Some cutting in eastern portion about 15 years ago
Approximate Age of Dominant Trees:	75 -100 years – some much older legacies
Stand Health:	Good – no major problems noted
Insects/Damage/Disease:	Some beech bark disease, eutapella canker
Timber quality:	Generally fair to good, some scattered very nice pole timber coming along

SITE CONDITIONS

Site class:	2
Determined by:	Soils and Field Observation
Tree vigor:	Medium vigor some older trees in decline
Soils:	Tunbridge – Woodstock Buckland
Parent material:	LoamyTill
Soil texture:	Very stony fine sandy loam
Drainage:	Well to moderately well drained
Terrain:	Moderate slopes
Aspect:	Mostly southerly
Elevation:	Approximately 1,400’ to 1,600’

Cultural Attributes

Archeological features present:	Old stone walls – barbed wire fence
Past land use:	Likely old pasture land

Wildlife Attributes and Objectives

Forest type:	Upland hardwood forest
Vertical diversity:	Moderate – hophornbeam creates mid-canopy layer

Vegetative diversity:	Moderate, little softwood
Beneficial shrubs and trees:	Large legacy trees for structural diversity
Hard mast:	A few northern red oak & numerous beech
Soft mast:	Little to none
Dead and decaying structure:	Little on the ground, some recruitment potential
Special habitat features:	High proportion of hophornbeam is interesting
Wildlife protection zones:	None in particular
Special wildlife practices:	Promote and encourage large trees of all species Maintain mast producing oaks

Snags Per Acre

DBH Class	Moderately Punky	Snag-Punky Throughout	Grand Total
<12"			
12-18"	3		3
>18"			
Grand Total	**3**		**3**

Table 2.1: Snags per acre by size and decay class.

Wetland and Water Features

Wetland type:	Seeps in eastern part of stand
Streams:	None
Ponds or Standing Water	A small pond on adjacent parcel on eastern section

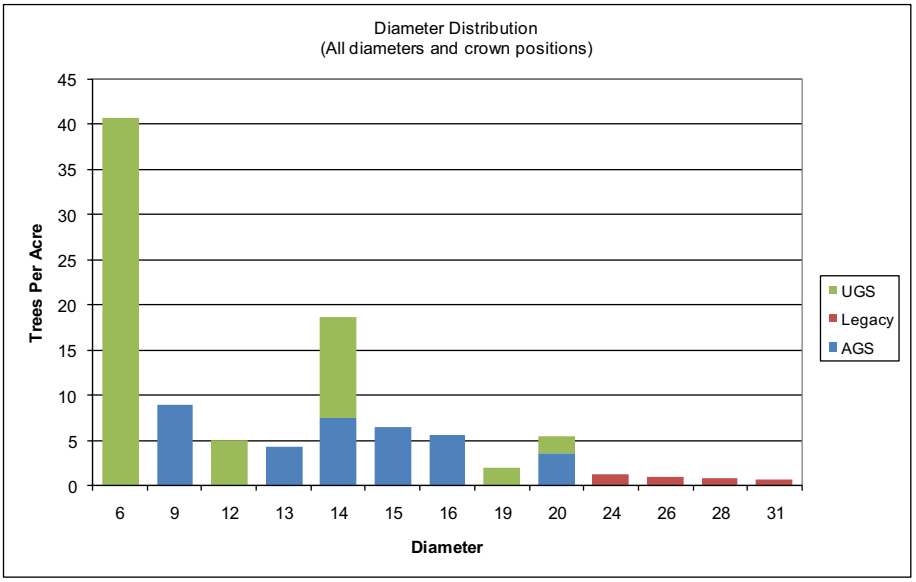
Structural and Silvicultural Attributes

Broad Forest Type:	H3A/B
Size Class:	Small to medium sawtimber
Stand Structure:	Even-age
Crown Closure:	Close to 70% -100%
Total Basal Area Per Acre:	88
Total Acceptable Basal area Per Acre:	40
Trees Per Acre:	101
Quadratic Mean Stand Diameter:	12.6
Timber Quality:	Fair to good

Forest Composition and Volume

Group	Species	% TPA	Veneer (bf)	Sawlog (bf)	Pallet/Tie (bf)	Legacy (bf)	Total BF	Pulp (cd)	Growing Stock (cd)	Total Cords	AGS Saw
Hardwood	American Bee	9.3%	0	0	0	0	0	3	0	3	0
	Hop Hornbear	40.0%	0	0	0	0	0	1	0	1	0
	Red Oak	1.3%	0	0	0	465	465	0	0	1	0
	Sugar Maple	48.3%	0	3,693	330	2	4,025	5	0	14	4,023
	White Ash	1.1%	0	0	0	1	1	0	0	1	0
Hardwood Total		***100.0%***	***0***	***3,693***	***330***	***468***	***4,491***	***8***	***0***	***20***	***4,023***
Grand Total		**100.0%**	**0**	**3,693**	**330**	**468**	**4,491**	**8**	**0**	**20**	**4,023**

Table 2.2: Stand volume per acre and composition by species and product.



Silvicultural Objectives

Management system:	Multiple-age management
Harvest Entry:	20 year cycle
Products:	A mix of quality sawtimber and pulpwood
Desired Composition:	Maintain natural species composition with a reduction in the amount of hophornbeam
Crop tree target diameter:	Sugar maple 22-24” Red oak 22-24”

Operational Considerations

Operability:	All areas operable
Seasonal limitations:	Could be operated in the summer or winter
Terrain:	Moderate convex and concave slopes
Access and landing area:	In place near the top of Tucker Mountain
Access distance:	Variable with the western section longer
General maintenance:	Erosion control will be necessary on slopes
Brook-wetland crossings:	Nothing of consequence

Stand 2 Description
&
10 - YEAR MANAGEMENT SCHEDULE

Stand 2 is a young to middle age northern hardwood community. Like stand 1, this stand is broken down into 2 distinct areas. The eastern part was cut using individual tree selection cutting in about 1995 or so. The western area has not been cut, since it likely reverted from old pasture land. Here however, there were remnant sugar maples in the pastures and the trees remain as a testament to the past. Also in this area, hophornbeam is a very common tree, especially in the drier areas. Little regeneration is found in much of the stand. Soil fertility is pretty high, especially in the convex slopes of the eastern part of this stand.

Hardwood species comprise 100% of the trees, dominated by sugar maple at 48%. The stand is estimated to have 3,600 feet of sawtimber and 9 cords of pulpwood per acre.

Silviculture: There is no immediate need for treatment in this stand, although the sooner an entry is made, the quicker new age classes can be started. Similar to the rest of the forest, the long-term goal of management in this stand is to develop new age classes of species well suited to the site. Large old trees of poor quality will be left as legacies to contribute to future forest structure. If regeneration is secured, varying age classes will exist primarily as pockets of similarly aged trees mixed throughout the stand. This multiple-age composition will provide a diverse forest structure beneficial to wildlife. It will also present an opportunity for a mix of silvicultural options in the future.

2012: Reduce overall basal area to approximately 70 square feet through:

- **Group Selection:** Focus on creating openings of from 5 -10 trees up to ¼ acre to create the conditions for regeneration of the more tolerant hardwoods.

- **Crop Tree Release:** In between groups, release crop trees of high quality and vigor. Release selected crop trees on at least 2 but preferably 3 sides. In-operable areas will remain uncut.

Wildlife: This stand adds diversity to the entire property. The amount of hornbeam is unusual and also adds to the diversity of the habitat. Hardwood stands (especially after cutting) provide browse for many species. The amount of legacy trees is high and there are opportunities for cavity nesters and porcupines. Birds that might be found here include migrants such as Blue-headed Vireo, Black-throated Green Warbler, and the Scarlet Tanager. Residents birds such as Black-capped Chickadee, Nuthatches and various woodpeckers would likely be found here.

Stand 3 Northern Hardwood H1A 10 acres – 3 points

GENERAL ATTRIBUTES

Natural Community Type:	Northern Hardwood Forest - regenerating
Past Management History:	Part of stand developed following cutting in the 1990's otherwise stand is growing on old field area
Approximate Age of Dominant Trees:	15 - 30 years with older remnants
Stand Health:	Good to excellent
Insects/Damage/Disease:	Nothing noted
Timber quality:	This stand has the potential to develop nicely over time

SITE CONDITIONS

Site class:	2
Determined by:	Soils & field observation
Tree vigor:	Medium to high vigor
Soils:	Tunbridge - Woodstock
Parent material:	Basal Till
Soil texture:	Stony fine sandy loam
Drainage:	Well drained
Terrain:	Moderate slopes
Aspect:	South and east
Elevation:	1,400' to 1,500'

Cultural Attributes

Archeological features present:	Stonewalls
Past land use:	Old pasture land

Wildlife Attributes and Objectives

Forest type:	Upland hardwood forest
Vertical diversity:	Low
Vegetative diversity:	Moderate
Beneficial shrubs and trees:	None in particular

Hard mast:	None
Soft mast:	None
Dead and decaying structure:	Very little
Special habitat features:	This stand adds to overall diversity
Wildlife protection zones:	None
Special wildlife practices:	None in particular

Snags Per Acre - None tallied

Wetland and Water Features

Wetland type:	None
Streams:	None
Ponds or Standing Water:	None

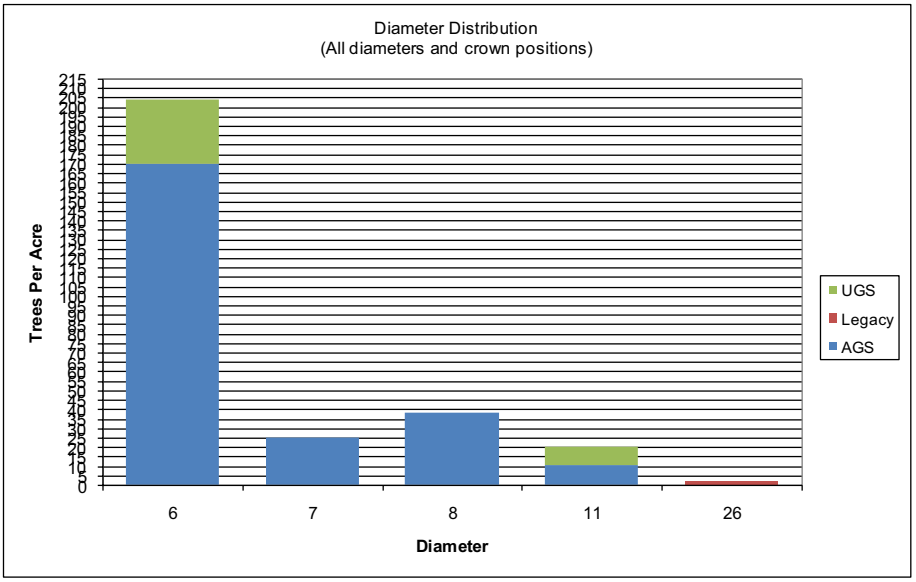
Structural and Silvicultural Attributes

Broad Forest Type:	H1A
Size Class:	Sapling and pole timber
Stand Structure:	Even age
Crown Closure:	100%
Basal Area Per Acre:	80
Acceptable Basal Area Per Acre:	60
Trees Per Acre:	289
Quadratic Mean Stand Diameter:	7.1

Forest Composition and Volume

Group	Species	% TPA	Veneer (bf)	Sawlog (bf)	Pallet/Tie (bf)	Legacy (bf)	Total BF	Pulp (cd)	Growing Stock (cd)	Total Cords	AGS Saw
Hardwood	American Elm	11.8%	0	0	0	0	0	0	0	0	0
	Basswood	0.6%	0	0	0	2	2	0	0	2	0
	Sugar Maple	68.9%	0	0	0	0	0	0	8	8	0
	White Ash	18.7%	0	0	0	0	0	1	2	3	0
Hardwood Total		***100.0%***	***0***	***0***	***0***	***2***	***2***	***2***	***10***	***13***	***0***
Grand Total		**100.0%**	**0**	**0**	**0**	**2**	**2**	**2**	**10**	**13**	**0**

Table 3.1: Stand volume per acre and composition by species and product.



Silvicultural Objectives

Management system:	Uneven-age management
Harvest Entry:	20 year cutting cycle once cycle starts
Products:	High quality hardwood sawlogs
Desired Composition:	Allow stand to develop naturally
Crop tree target diameter:	To be determined

Operational Considerations

Operability:	All operable
Seasonal limitations:	None
Terrain:	Moderate slopes
Access and landing area:	Up on Tucker mountain
Access distance:	Short
General maintenance:	Erosion control
Brook-wetland crossings:	Several will be required

Stand 3 Description
&
10 - YEAR MANAGEMENT SCHEDULE

Stand 3 is a young Northern Hardwood community. The stand is in the early stages of development and is looking quite nice. There are a few legacy trees scattered about but otherwise this small stand is quite uniform. Hardwood species comprise 100% of the trees lead by sugar maple at 69%. The stand is estimated to have 11 cords of pulpwood per acre.

Silviculture: No treatment is scheduled for the next planning period. This is to allow the forest to mature to a certain degree. At some point the next treatment here will be a non-commercial crop tree release to thin the stand to keep it growing and developing well.

Wildlife: These areas of young growth add to the diversity of the overall forest. Dense areas with high trees per acre are often used for cover. Snowshoe hare are likely to be found in here.

Migrant birds such as the Wood Thrush, Veery, ovenbird and the Yellow-bellied Sapsucker could be found here.

Stand 4 White pine – white birch – red maple HS3B 65 acres –18 points

GENERAL ATTRIBUTES

Natural Community Type:	Red Spruce -Northern Hardwood Forest
Past Management History:	Group and patch cutting /spruce salvage +/- 1990
Approximate Age of Dominant Trees:	70 -80 years, second age class 15 – 20 years
Stand Health:	Good to excellent
Insects/Damage/Disease:	White pine weevil, some white birch decline
Timber quality	Fair, a lot of the pine is pretty crooked and limby

SITE CONDITIONS

Site class:	2
Determined by:	Soils and Field Observation
Tree vigor:	Medium to high vigor
Soils:	Tunbridge – Woodstock
Parent material:	Basal till
Soil texture:	Stony fine sandy loam
Drainage:	Well drained
Terrain:	Moderate with a few steep slopes
Aspect:	All directions but North
Elevation:	1,300’ to 1,500’

Cultural Attributes

Archeological features present:	Stone walls and barbed wire fence
Past land use:	Old agricultural

Wildlife Attributes and Objectives

Forest type:	Upland mixed wood forest
Vertical diversity:	Moderate to high – a lot regeneration developing in groups and patches

Vegetative diversity:	Moderate
Beneficial shrubs and trees:	Aspen and birch for diversity
Hard mast:	A few red oaks
Soft mast:	Quite a bit of raspberry and blackberry
Dead and decaying structure:	Some but not much
Special habitat features:	This stand adds a diversity of age classes to the ownership
Wildlife protection zones:	None in particular
Special wildlife practices:	Continue with multi-age management adding additional age cohorts

Snags Per Acre

DBH Class	Moderately Punky	Snag-Punky Throughout	Grand Total
<12"	3		3
12-18"			
>18"	0		0
Grand Total	**3**		**3**

Table 4.1: Snags per acre by size and decay class

Wetland and Water Features

Wetland type:	1 to 1.5 acre fir wetland in basin
Streams:	One small stream draining above mentioned wetland and one coming out of the pond
Ponds or Standing Water:	One interesting pond which functions as a vernal pool

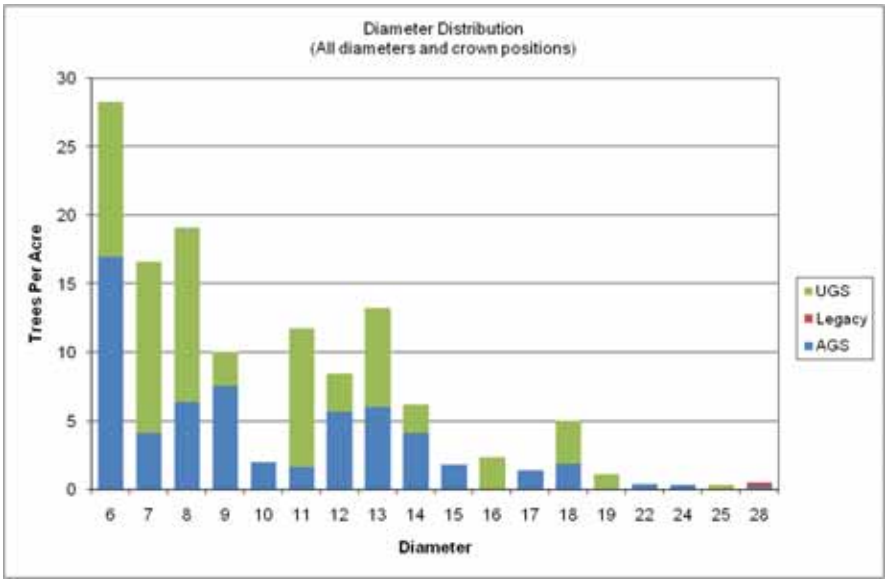
Structural and Silvicultural Attributes

Broad Forest Type:	HS3B
Size Class:	Medium sawtimber
Stand Structure:	Two-age
Crown Closure:	Variable from 0% to 80%
Basal Area Per Acre:	80
Acceptable Basal Area Per Acre:	38
Trees Per Acre:	129
Quadratic Mean Stand Diameter:	10.7

Forest Composition and Volume

Group	Species	% TPA	Veneer (bf)	Sawlog (bf)	Pallet/Tie (bf)	Legacy (bf)	Total BF	Pulp (cd)	Growing Stock (cd)	Total Cords	AGS Saw
Hardwood	Aspen	4.4%	0	0	0	0	0	0	0	0	0
	Red Maple	21.7%	0	0	0	0	0	2	0	2	0
	Red Oak	5.2%	0	0	0	0	0	0	0	0	0
	Sugar Maple	4.4%	0	0	0	0	0	0	0	0	0
	White Ash	0.6%	0	0	0	0	0	0	0	0	0
	White Birch	25.6%	0	258	0	0	258	2	0	3	258
Hardwood Total		***61.8%***	***0***	***258***	***0***	***0***	***258***	***4***	***1***	***5***	***258***
Softwood	Balsam Fir	14.7%	0	761	0	0	761	0	0	2	761
	White Pine	22.9%	0	2,293	0	0	2,294	6	0	10	2,293
	White Spruce	0.6%	0	0	0	0	0	0	0	0	0
Softwood Total		***38.2%***	***0***	***3,054***	***0***	***0***	***3,054***	***7***	***0***	***13***	***3,054***
Grand Total		**100.0%**	**0**	**3,312**	**0**	**0**	**3,312**	**10**	**1**	**18**	**3,312**

Table 4.2: Stand volume and trees per acre by species and product.



Silvicultural Objectives

Management system:	Uneven-age management
Harvest Entry:	15 years from the next cutting and then 30 years
Products:	Good quality mixed species stand
Desired Composition:	A mix of softwood with some quality hardwood
Crop tree target diameter:	White pine 20 -24” White birch 12 - 14” Red maple 16-18”

Operational Considerations

Operability:	All operable
Seasonal limitations:	None
Terrain:	Moderate with a few steep areas
Access and landing area:	On Tucker Mountain – some up hill pulling
Access distance:	Less than 1 mile
General maintenance:	None needed at this point
Brook-wetland crossings:	There could be one or 2 minor crossings needed

Stand 4 Description
&
10 - YEAR MANAGEMENT SCHEDULE

Stand 4 is a two-aged mixed wood community that has responded favorably to cutting done about 20 years ago. While the cutting was aggressive, it resulted in abundant softwood (mostly white pine and balsam fir with some red spruce). The pine is a remnant of an agricultural past and not really part of the natural community but it does well here. Much of the larger overstory pine is not of the best quality. It is crooked and limby but there are a few nice trees in the mix. This forest stand is found in two non-contiguous areas. One occupies terrain in a concave bowl and the other is located on the shoulder of a ridge with shallower soils.

In the overstory, hardwood species comprise 62% of the trees dominated by white birch and red maple. Of the softwoods, white pine makes up 23% of the trees and balsam fir 15%. The stand is estimated to have 3,300 board feet of sawtimber and 11 cords of pulpwood per acre.

Silviculture: The goal for this stand is to create three distinct cohorts of trees approximately 20 years apart in age. With two age classes already well established it is time to try and get the next one established. The next series of cuttings should focus on releasing the pockets of advanced regeneration as well as creating openings for new regeneration to become established. The remaining overstory trees should be cut 15 to 20 years after this.

2011: Reduce overall basal area to approximately 40 square feet through:

- **Irregular Shelterwood:** An un-evenage technique also called the Femelschlag is a method of creating expanding gaps around areas where existing regeneration is found. In some ways this is similar to group selection and patch cutting but less structured and rigid. After the final cutting, there should be some reserve trees left for structure and diversity.

Wildlife: This area is likely used for feeding. A real mix of species will use this area as there is quite a bit of soft mast in the form of berries, and a lot of browse as well. Wildlife here, especially birds, should find different niches as the age structure is more diverse than in other parts of the forest.

Stand 5 Spruce – white birch SH2A 21 acres – 5 points

GENERAL ATTRIBUTES

Natural Community Type:	Red Spruce - Northern Hardwood
Past Management History:	This stand is developing on old pasture land
Approximate Age of Dominant Trees:	40 to 50 years
Stand Health:	Good to excellent
Insects/Damage/Disease:	Nothing out of the ordinary
Timber quality:	Things are developing pretty well

SITE CONDITIONS

Site class:	2
Determined by:	Soils and Field Observation
Tree vigor:	Medium to high vigor
Soils:	Buckland
Parent material:	Loamy Till
Soil texture:	Fine sandy loam but very stony
Drainage:	Well to moderately well drained
Terrain:	The stand is located on a side hill
Aspect:	West
Elevation:	1,400’ to 1,500’

Cultural Attributes

Archeological features present:	No evidence in this stand
Past land use:	Old pasture land

Wildlife Attributes and Objectives

Forest type:	Upland mixed wood forest
Vertical diversity:	Low to moderate
Vegetative diversity:	Moderate
Beneficial shrubs and trees:	Softwood for cover
Hard mast:	None

Soft mast:	None
Dead and decaying structure:	Low amount of standing dead trees
Special habitat features:	Low cover
Wildlife protection zones:	None
Special wildlife practices:	None at this time

Snags Per Acre – none tallied

Wetland and Water Features

Wetland type:	No wetlands
Streams:	None
Ponds or Standing Water	None

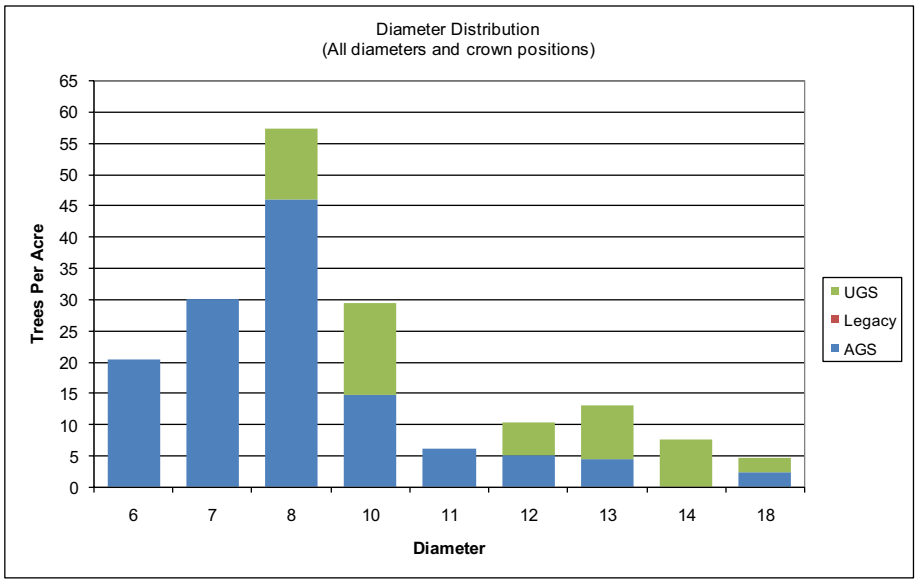
Structural and Silvicultural Attributes

Broad Forest Type:	SH2A
Size Class:	Poletimber
Stand Structure:	Even-age
Crown Closure:	90 -100%
Total Basal Area Per Acre:	88
Total Acceptable Basal Area Per Acre:	52
Trees Per Acre:	178
Quadratic Mean Stand Diameter:	9.5

Forest Composition and Volume

Group	Species	% TPA	Veneer (bf)	Sawlog (bf)	Pallet/Tie (bf)	Legacy (bf)	Total BF	Pulp (cd)	Growing Stock (cd)	Total Cords	AGS Saw
Hardwood	White Birch	35.8%	0	0	0	0	0	2	3	5	0
Hardwood Total		***35.8%***	***0***	***0***	***0***	***0***	***0***	***2***	***3***	***5***	***0***
Softwood	Balsam Fir	26.3%	0	0	0	0	0	0	1	1	0
	Red Spruce	29.3%	0	836	0	0	836	3	1	6	836
	White Pine	8.7%	0	0	0	0	0	3	0	3	0
Softwood Total		***64.2%***	***0***	***836***	***0***	***0***	***836***	***6***	***2***	***10***	***836***
Grand Total		**100.0%**	**0**	**836**	**0**	**0**	**836**	**9**	**5**	**15**	**836**

Table 5.1: Stand volume and trees per acre by species and product.



Silvicultural Objectives

Management system:	Multiple-age management
Harvest Entry:	15 to 20 year cutting cycle
Products:	A mix of site-suited trees
Desired Composition:	Allow to develop
Crop tree target diameter:	To be determined

Operational Considerations

Operability:	100% operable
Seasonal limitations:	Could operate any time of the year
Terrain:	Side hill but not too difficult

Access and landing area:	The top of Tucker Mountain
Skidding distance:	Pretty short
General maintenance:	None
Brook-wetland crossings:	None

Stand 5 Description
&
10- YEAR MANAGEMENT SCHEDULE

Stand 5 is a relatively young Red Spruce - Northern Hardwood community. The history here is a bit of a mystery as the stand is very different than any other forest type on the property. It is definitely growing on old pasture land which may have been clearcut 40 - 50 years ago. This may have been done to keep the view open from the top of Tucker Mountain. Being west to south westerly facing, this is a warm and relatively dry site especially towards the top of the mountain. The stand has low diversity and is quite uniform in nature.

Softwood makes up 64% of the trees with an almost equal proportion of spruce and fir. The hardwood component is almost 100% white birch. Other hardwoods are present (mostly red maple) but none fell within the sample points. The stand is estimated to have 850 feet of sawtimber and 14 cords of pulpwood per acre.

Silviculture: At this point, the stand can be left to grow another 10 years and then be re-evaluated. It may be that this stand is the only area on the property to be managed on an even-age system. Before the stand is regenerated there could be a series of thinning. This would add to the diversity of the property. It also may be that the edge of the stand on Tucker Mountain is cut to retain the view. As the stand grows up, it will have a softer edge for wildlife purposes.

Wildlife: This stand is likely used primarily for cover. The dense softwood, especially where the branches go down to the ground is perfect habitat for snowshoe hare. Specific wildlife habitat improvements could include as mentioned above, cutting back on the edges to promote a “soft edge” as a transition from open land to forested land.

Stand 6 Northern Hardwood H2/3A 39 acres – 8 points

GENERAL ATTRIBUTES

Natural Community Type:	Northern Hardwood Forest
Past Management History:	Some cutting was done about 10 years ago
Approximate Age of Dominant Trees:	75 -100 years, a few older legacies
Stand Health:	Good – no major problems noted
Insects/Damage/Disease:	Some beech bark disease, eutapella canker
Timber quality:	Generally fair to good, some scattered very nice oak

SITE CONDITIONS

Site class:	2
Determined by:	Soils and Field Observation
Tree vigor:	Medium to high
Soils:	Tunbridge – Woodstock
	Colrain
Parent material:	LoamyTill
Soil texture:	Very stony fine sandy loam
Drainage:	Well to moderately well drained
Terrain:	Moderate slopes
Aspect:	Northeast
Elevation:	Approximately 1,300’ to 1,400’

Cultural Attributes

Archeological features present:	Old stone walls – barbed wire fence
Past land use:	Likely old pasture land

Wildlife Attributes and Objectives

Forest type:	Upland hardwood forest
Vertical diversity:	Moderate, a little bit of understory development
Vegetative diversity:	Moderate to high

Beneficial shrubs and trees:	Large legacy trees for structural diversity
Hard mast:	Numerous beech, a few large oak
Soft mast:	Little to none
Dead and decaying structure:	Moderate amount on the ground, with some recruitment potential
Special habitat features:	High proportion of beech in the stand
Wildlife protection zones:	None in particular
Special wildlife practices:	Promote and encourage large trees of all species Maintain mast producing oaks

Snags Per Acre

DBH Class	Moderately Punky	Snag-Punky Throughout	Grand Total
<12"			
12-18"		1	1
>18"			
Grand Total		**1**	**1**

Table 6.1: Snags per acre by size and decay class.

Wetland and Water Features

Wetland type:	None
Streams:	Small seasonal drainage
Ponds or Standing Water	None

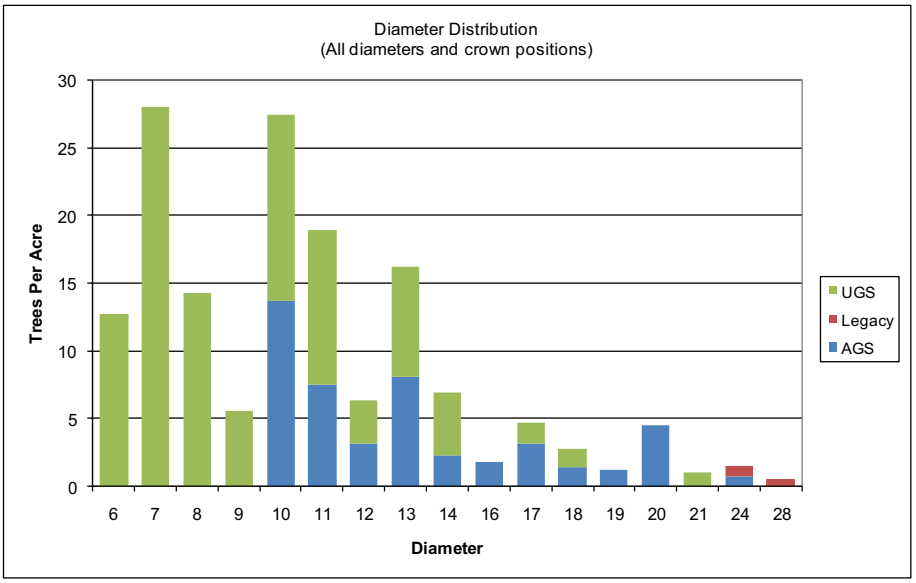
Structural and Silvicultural Attributes

Broad Forest Type:	H2/3A
Size Class:	Small to medium sawtimber
Stand Structure:	Even-age
Crown Closure:	70% -100%
Basal Area Per Acre:	110
Acceptable Basal area Per Acre:	50
Trees Per Acre:	155
Quadratic Mean Stand Diameter:	11.4
Timber Quality:	Fair to good

Forest Composition and Volume

Group	Species	% TPA	Veneer (bf)	Sawlog (bf)	Pallet/Tie (bf)	Legacy (bf)	Total BF	Pulp (cd)	Growing Stock (cd)	Total Cords	AGS Saw
Hardwood	American Bee	29.4%	0	0	0	0	0	4	0	4	0
	Hop Hornbear	8.2%	0	0	0	0	0	0	0	0	0
	Red Maple	20.2%	0	199	0	0	199	4	0	5	199
	Red Oak	3.7%	347	1,213	0	0	1,561	1	0	3	1,561
	Sugar Maple	19.2%	0	428	60	0	487	1	2	4	487
	White Ash	4.9%	0	903	0	1	904	0	0	3	903
	White Birch	8.3%	0	553	0	0	553	2	0	3	553
	Yellow Birch	0.8%	0	300	0	0	300	0	0	1	300
Hardwood Total		***94.8%***	***347***	***3,596***	***60***	***1***	***4,003***	***13***	***2***	***23***	***4,003***
Softwood	Hemlock	5.2%	0	271	0	356	627	2	0	4	271
Softwood Total		***5.2%***	***0***	***271***	***0***	***356***	***627***	***2***	***0***	***4***	***271***
Grand Total		**100.0%**	**347**	**3,867**	**60**	**357**	**4,630**	**15**	**2**	**26**	**4,274**

Table 6.2: Stand volume per acre and composition by species and product.



Silvicultural Objectives

Management system:	Multiple-age management
Harvest Entry:	20 year cycle
Products:	A mix of quality sawtimber and pulpwood
Desired Composition:	Maintain natural species composition with a reduction in the amount of beech – try to retain hemlock componant
Crop tree target diameter:	Sugar maple 20-22” Red oak 22-24” Red maple 18–20” White birch 16-18”

Operational Considerations

Operability:	All areas operable
Seasonal limitations:	Mostly winter ground or very dry late summer
Terrain:	Gently sloping
Access and landing area:	In place along Tucker Mountain Road
Access distance:	Mostly short
General maintenance:	Block of access to landing area
Brook-wetland crossings:	Perhaps one minor crossing

Stand 6 Description
&
10 - YEAR MANAGEMENT SCHEDULE

Stand 6 is a middle age Northern Hardwood community. While there are some very nice quality individual trees, generally the quality here is not great, with less than one half of the trees acceptable growing stock. Beech makes up 29% of the unacceptable growing stock. With a warming climate it seems like red oak could do quite well on this site.

Hardwood species comprise 95% of the trees dominated by beech at 29%.The stand is estimated to have 3,900 feet of sawtimber and 17 cords of pulpwood per acre.

Silviculture: The goal for this stand is to increase the proportion of acceptable growing stock over time. To do this, somewhat heavy cutting to secure regeneration will be required. Where quality trees exist, they should be retained if they are healthy and structurally sound, especially red oak. This transition does not need to be accomplished all at once but over several harvesting cycles. Large old trees of poor quality will be left as legacies to contribute to future forest structure. If regeneration is secured, varying age classes will exist primarily as pockets of similarly aged trees mixed throughout the stand. This multiple-age composition will provide a diverse forest structure beneficial to wildlife. It will also present an opportunity for a mix of silvicultural options in the future.

2012 - 2015: As markets allow reduce overall basal area to approximately 70 square feet through:

- **Group Selection:** Focus on creating openings of from 5 -10 trees up to ¼ to 1/3 acre to create the conditions for regeneration of the more tolerant hardwoods.
- **Patch Cutting:** Put in 5 to 7 patch cuts of between ¾ to 2 acres in size. Focus on areas heavy to beech and or other areas of low quality trees.
- **Crop Tree Release:** In between groups, release crop trees of high quality and vigor. Release selected crop trees on at least 2 but preferably 3 sides.

Wildlife: When the prescribed treatment is completed, this stand should provide quite a bit of browse opportunity for both moose and white-tailed deer. With the patch cuts, hopefully there will be enough for the animals as well as providing trees for the next forest. At this time, browse pressure is not excessive so this should work out fine. Many of the large oak trees will be retained providing a source of acorns. While the beech component will be reduced significantly, there still should be plenty of hard mast in this stand well into the future. Birds that might be found here include migrants such as Blue-headed Vireo, Black-throated Green Warbler, and the Scarlet Tanager. Residents birds such as Black-capped Chickadee, Nuthatches and various woodpeckers would likely be found here.

Stand 7 Spruce - fir – mixed hardwood SH2A/B 48 acres – 14 points

GENERAL ATTRIBUTES

Natural Community Type:	Lowland spruce – Fir Forest
Past Management History:	This area has had periodic cutting both 20 years ago and some areas about 10 years ago
Approximate Age of Dominant Trees:	70 to 80 years
Stand Health:	Fair
Insects/Damage/Disease:	Spruce decline and some rot in the fir
Timber quality:	Variable but generally fair

SITE CONDITIONS

Site class:	2
Determined by:	Soils and Field Observation
Tree vigor:	Low to medium
Soils:	Peacham
	Colrain
Parent material:	Coarse Loamy Till
Soil texture:	Fine sandy loam but very stony
Drainage:	Moderately well drained – peacham poorly drained
Terrain:	Flat
Aspect:	Predominately south or east
Elevation:	1,200’

Cultural Attributes

Archeological features present:	None encountered
Past land use:	Likely pastured in the 1800s

Wildlife Attributes and Objectives

Forest type:	Upland mixed wood forest
Vertical diversity:	Moderate
Vegetative diversity:	Moderate

Beneficial shrubs and trees:	None in particular
Hard mast:	None
Soft mast:	None
Dead and decaying structure:	Quite a few small snags in areas flooded by beavers
Special habitat features:	Nice wetlands
Wildlife protection zones:	Areas around wetlands
Special wildlife practices:	Allow beaver to continue their work. Patch cuts to promote the growth of saplings for beaver

Snags Per Acre

DBH Class	Moderately Punky	Snag-Punky Throughout	Grand Total
<12"	9		9
12-18"			
>18"			
Grand Total	**9**		**9**

Table 7.1: Snags per acre by size and decay class.

Wetland and Water Features

Wetland type:	Large beaver impounded wetland and several smaller ones
Streams:	West Branch Halls Brook flows through
Ponds or Standing Water	Quite a bit in several areas

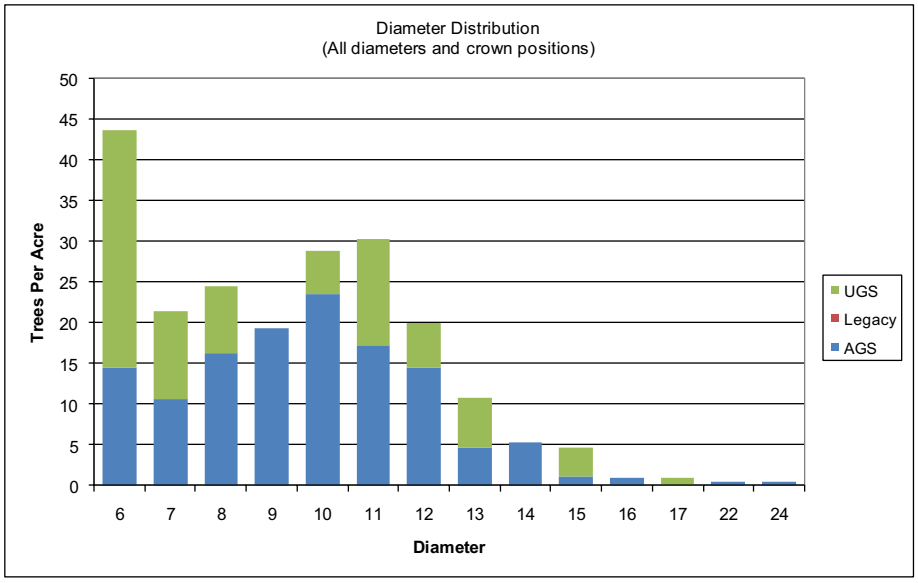
Structural and Silvicultural Attributes

Broad Forest Type:	SH2A/B
Size Class:	Small sawtimber
Stand Structure:	Multi-age
Crown Closure:	Variable
Total Basal Area Per Acre:	110
Total Acceptable Basal Area Per Acre:	70
Trees Per Acre:	210
Quadratic Mean Stand Diameter:	9.8

Forest Composition and Volume

Group	Species	% TPA	Veneer (bf)	Sawlog (bf)	Pallet/Tie (bf)	Legacy (bf)	Total BF	Pulp (cd)	Growing Stock (cd)	Total Cords	AGS Saw
Hardwood	Red Maple	12.9%	0	295	0	0	295	4	1	6	295
	Sugar Maple	1.9%	0	0	0	0	0	0	0	0	0
	White Birch	1.7%	0	257	0	0	257	0	0	1	257
	Yellow Birch	13.4%	0	0	0	0	0	1	1	2	0
Hardwood Total		***30.0%***	***0***	***552***	***0***	***0***	***552***	***6***	***2***	***8***	***552***
Softwood	Balsam Fir	44.9%	0	1,765	0	0	1,765	1	0	6	1,765
	Hemlock	5.3%	0	260	0	0	260	1	0	2	260
	Red Spruce	12.0%	0	696	0	0	696	0	0	2	622
	White Pine	3.6%	0	821	0	0	821	0	0	2	821
	White Spruce	4.2%	0	314	0	0	314	1	0	1	314
Softwood Total		***70.0%***	***0***	***3,855***	***0***	***0***	***3,855***	***4***	***1***	***13***	***3,781***
Grand Total		**100.0%**	**0**	**4,407**	**0**	**0**	**4,407**	**9**	**2**	**22**	**4,333**

Table 7.2: Stand volume and trees per acre by species and product.



Silvicultural Objectives

Management system:	Multiple-age management
Harvest Entry:	15 to 20 year cutting cycle
Products:	Mostly mixed softwood sawtimber and pulp
Desired Composition:	Maintain natural species composition and softwood component is regenerating
Crop tree target diameter:	Balsam fir 12-14” Red spruce 14-18” Yellow birch 20 -22”

Operational Considerations

Operability:	70% operable – some areas very wet
Seasonal limitations:	Mostly winter ground only
Terrain:	Easy if frozen
Access and landing area:	Main landing off of Tucker Mountain Road
Skidding distance:	Variable from short to long
General maintenance:	Replace log bridge at main brook crossing
Brook-wetland crossings:	One major and numerous minor crossings

Stand 7 Description
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10 - YEAR MANAGEMENT SCHEDULE

Stand 7 is a low land spruce – fir community. The area has been logged several times in a patchy manner. Beaver have influenced the area, heavily impounding water and causing tree mortality. In spite of all of this activity, there is quite a bit of wood to be cut from this stand as the fir in particular is in serious decline. Some trees have been flooded, and some have been blown down as part of a natural cycle of maturation. The spruce, while longer lived, is also in decline with blowdown common on these wet soils. The best hardwood tree here is yellow birch and there is also a fair amount of red maple. Abundant and dense regeneration of mostly softwood species is found in the areas opened up by past logging or by blowdowns.

Softwood species make up 69% of the trees. Of the hardwoods yellow birch and red maple are the most common trees. The stand is estimated to have 4,500 board feet of sawtimber and 12 cords of pulpwood per acre.

Silviculture: This stand should continue to be managed on an un-evenage basis. In reality though, it will likely be a two-aged forest. One age class is in place and another should come along following the proposed cutting. Much of the fir and a lot of the spruce should be cut as soon as the markets and weather conditions are favorable. As the fir declines, value is lost. Parts of the stand are too wet to harvest so in these areas the forest will be replaced over time at nature's pace. The location of openings will be mostly dictated by where the mature fir is, but

also by operability. Those areas that can be accessed by logging equipment will be cut while other areas that are too wet will be left alone and allowed to grow to biological maturity.

2012: Reduce overall basal area to approximately 40 square feet through:

- **Overstory removal / salvage:** As stated above salvage spruce and fir where appropriate releasing area of advanced regeneration. Release nice crop trees of yellow birch, and red maple where they exist.

Wildlife: The wetlands and open water here are responsible for this areas rich wildlife activity. The beavers of course have made habitat through their dam building activities which is then used by many species. Certainly the larger mammals can meet their needs for water here. Signs of moose were noted here as were deer. Smaller mammals such as mink, ermine, otter and raccoons are likely to be found here also.

Adding to the overall diversity of species on the property, waterfowl including mallard, black and wood duck were seen as well as Canada goose.

Stand 8 Mixed softwood S3/4A 62 acres –13 points

GENERAL ATTRIBUTES

Natural Community Type:	Lowland Spruce – Fir Forest
Past Management History:	Group and individual tree selection +/- 1990
Approximate Age of Dominant Trees:	75 - 90 years, second age class 15 – 20 years
Stand Health:	Overstory fair to good – understory excellent
Insects/Damage/Disease:	Crown dieback in pine & likely some red rot
Timber quality	Pine is good to very good with a few superior trees

SITE CONDITIONS

Site class:	2
Determined by:	Soils and Field Observation
Tree vigor:	Medium to high vigor
Soils:	Cabot Peacham Buckland
Parent material:	Basal till
Soil texture:	Stony Silt loam
Drainage:	poorly drained – Buckland is moderate
Terrain:	Moderate with a few steep slopes
Aspect:	Flat to slightly east
Elevation:	1,100’ to 1,200’

Cultural Attributes

Archeological features present:	Barbed wire fence
Past land use:	Old agricultural

Wildlife Attributes and Objectives

Forest type:	Upland softwood forest
Vertical diversity:	Moderate to high – a lot of regeneration developing in groups and patches

Vegetative diversity:	Low
Beneficial shrubs and trees:	Tall pine for perch trees
Hard mast:	None
Soft mast:	Some raspberry and blackberry
Dead and decaying structure:	Some but not much
Special habitat features:	Stand abuts pretty large wetland area – stand 7
Wildlife protection zones:	None in particular
Special wildlife practices:	Continue with multi-age management adding additional age cohorts

Snags Per Acre

DBH Class	Moderately Punky	Snag-Punky Throughout	Grand Total
<12"	3		3
12-18"	2		2
>18"			
Grand Total	**5**		**5**

Table 8.1: Snags per acre by size and decay class

Wetland and Water Features

Wetland type:	Small part of stand is seasonally wet
Streams:	Halls Brook and another small seasonal stream
Ponds or Standing Water:	None

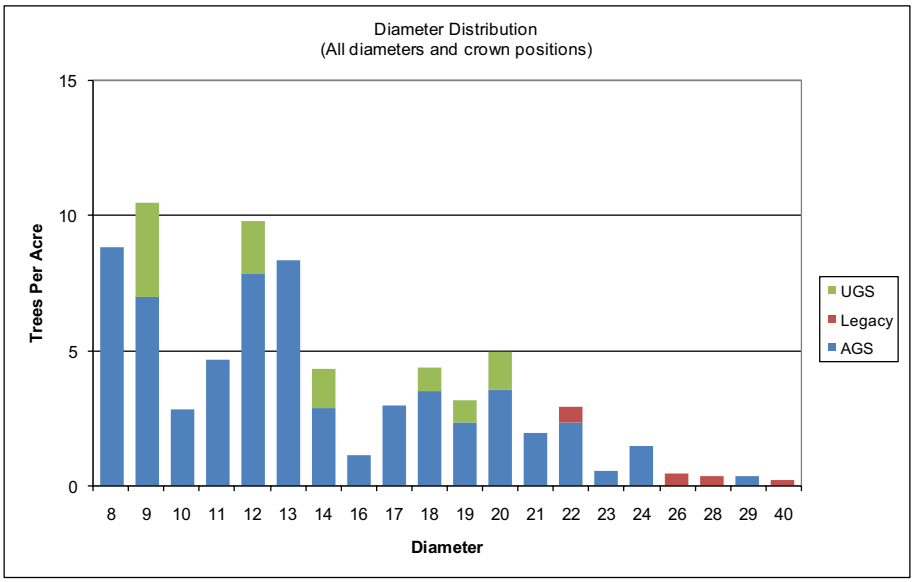
Structural and Silvicultural Attributes

Broad Forest Type:	S3/4B
Size Class:	Medium to large sawtimber
Stand Structure:	Two-age
Crown Closure:	Variable from 0% to 80%
Basal Area Per Acre:	88
Acceptable Basal Area Per Acre:	71
Trees Per Acre:	74
Quadratic Mean Stand Diameter:	14.8

Forest Composition and Volume

Group	Species	% TPA	Veneer (bf)	Sawlog (bf)	Pallet/Tie (bf)	Legacy (bf)	Total BF	Pulp (cd)	Growing Stock (cd)	Total Cords	AGS Saw
Hardwood	White Birch	1.0%	0	0	0	0	0	0	0	0	0
Hardwood Total		***1.0%***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Softwood	Balsam Fir	33.4%	0	1,110	0	0	1,110	0	0	3	1,110
	Hemlock	14.1%	0	0	0	212	212	1	0	1	0
	Red Spruce	10.2%	0	589	0	0	589	0	0	1	589
	White Pine	41.3%	0	8,203	0	1	8,204	5	0	20	8,203
Softwood Total		***99.0%***	***0***	***9,901***	***0***	***213***	***10,115***	***6***	***0***	***26***	***9,901***
Grand Total		**100.0%**	**0**	**9,901**	**0**	**213**	**10,115**	**6**	**0**	**26**	**9,901**

Table 8.2: Stand volume and trees per acre by species and product.



Silvicultural Objectives

Management system:	Uneven-age management
Harvest Entry:	15 years from the next cutting and then 30 years
Products:	Good quality mixed species stand
Desired Composition:	A mix of softwood, pine component will likely be less over time
Crop tree target diameter:	White pine 22 -24” Balsam fir 12 - 14”
	Red spruce 14-16” Hemlock 14 – 16”

Operational Considerations

Operability:	All operable
Seasonal limitations:	This is mostly winter ground or very dry summer
Terrain:	Flat
Access and landing area:	On Tucker Mountain Road
Access distance:	Short
General maintenance:	None needed at this point
Brook-wetland crossings:	One for the back section

Stand 8 Description
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10 - YEAR MANAGEMENT SCHEDULE

Stand 8 is a two aged lowland spruce fir community that has responded favorably to cutting done about 20 years ago. This stand has the highest volume per acre of any stand on the property. The main part of the stand is located just off of Tucker Mountain Road but there are several remote pockets as well. This stand has been cut at least twice in the past 30 years. The last cut was done using group and individual tree methods resulting in abundant softwood regeneration (mostly white pine and balsam fir with some red spruce). The pine is a remnant of the agricultural past and not really part of the natural community, but it does well here.

In the overstory, softwood species comprise 99% of the trees, dominated by spruce and fir, followed by white pine. The stand is estimated to have 9,900 board feet of sawtimber and 7 cords of pulpwood per acre.

Silviculture: As in stand 8, the goal for this stand is to create three distinct cohorts of trees approximately 20 years apart in age. Unlike stand 4, there is a high volume of sawtimber in 8. With one age class already well established, it is time to try and get the next one

established. The next series of cuttings should focus on releasing the pockets of advanced regeneration as well as creating openings for new regeneration to become established 15 to 20 years after this. The remaining overstory trees should be cut, leaving legacy trees in reserve.

2011: Reduce overall basal area to approximately 50 square feet through:

- **Irregular Shelterwood:** An uneven-age technique also called the Femelschlag, this is a method of creating expanding gaps adjacent to areas where existing regeneration is found. Also, the pine showing signs of decline should be cut as they are going by and value is being lost. In some ways this is similar to group selection and patch cutting but less structured and rigid. After the final cutting, there should be some reserve trees left for structure and diversity. The best pine trees less than 28” should be left to put on volume and value for a final cutting. Most of the trees over 28 inches unless they are to be legacy trees should be cut at this time.

Wildlife: This area is likely used for feeding. A real mix of species will use this area as there is quite a bit of soft mast in the form of berries, and a lot of browse as well. This stands proximity to wet areas adds to the diversity. Wildlife here, especially birds should find different niches here as the age structure has more diversity than in other parts of the property.

Stand 9 White pine – balsam fir – red maple SH3B 31 acres –9 points

GENERAL ATTRIBUTES

Natural Community Type:	Lowland Spruce Fir Forest
Past Management History:	Group and patch cutting /spruce salvage +/- 1990
Approximate Age of Dominant Trees:	70 - 80 years, second age class 15 – 20 years
Stand Health:	Good to excellent
Insects/Damage/Disease:	White pine weevil, some spruce decline
Timber quality	Fair to good, some of the pine is pretty crooked and limby

SITE CONDITIONS

Site class:	2
Determined by:	Soils and Field Observation
Tree vigor:	Medium to high vigor
Soils:	Buckland
Parent material:	Basal till
Soil texture:	Stony fine sandy loam
Drainage:	Moderately well drained
Terrain:	Moderate slopes
Aspect:	Southerly
Elevation:	1,200’ to 1,300’

Cultural Attributes

Archeological features present:	Stone walls and barbed wire fence
Past land use:	Old agricultural

Wildlife Attributes and Objectives

Forest type:	Upland mixedwood forest
Vertical diversity:	Moderate to high – a lot ofregeneration developing in groups and patches

Vegetative diversity:	Moderate
Beneficial shrubs and trees:	Aspen and birch for diversity
Hard mast:	None
Soft mast:	Quite a bit of raspberry and blackberry
Dead and decaying structure:	Some but not much
Special habitat features:	Stand boarders open fields on abutting property
Wildlife protection zones:	None in particular
Special wildlife practices:	Continue with multi-age management adding additional age cohorts

Snags Per Acre – none tallied

Wetland and Water Features

Wetland type:	None
Streams:	Hall Stream located on southern boundary of the stand
Ponds or Standing Water:	None

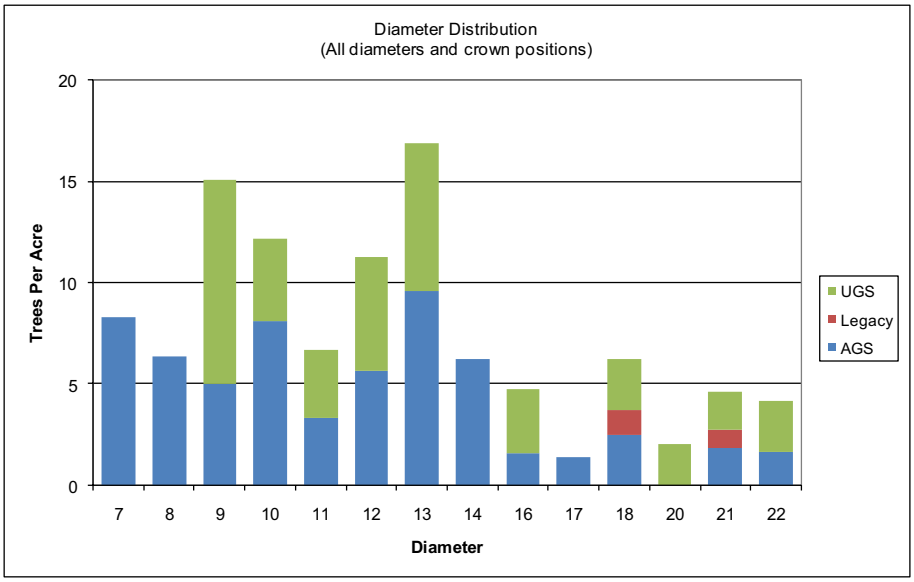
Structural and Silvicultural Attributes

Broad Forest Type:	SH3B
Size Class:	Medium sawtimber
Stand Structure:	Two-age
Crown Closure:	Variable from 0% to 80%
Basal Area Per Acre:	100
Acceptable Basal Area Per Acre:	51
Trees Per Acre:	106
Quadratic Mean Stand Diameter:	13.1

Forest Composition and Volume

Group	Species	% TPA	Veneer (bf)	Sawlog (bf)	Pallet/Tie (bf)	Legacy (bf)	Total BF	Pulp (cd)	Growing Stock (cd)	Total Cords	AGS Saw
Hardwood	Aspen	3.4%	0	0	0	1	1	1	0	1	0
	Red Maple	17.5%	0	0	0	0	0	1	0	2	0
	White Birch	3.8%	0	177	0	0	177	1	0	1	177
Hardwood Total		***24.7%***	***0***	***177***	***0***	***1***	***177***	***3***	***0***	***4***	***177***
Softwood	Balsam Fir	25.5%	0	1,036	0	0	1,036	0	0	3	1,036
	Hemlock	2.3%	0	0	0	0	0	0	0	0	0
	Red Spruce	13.4%	0	203	0	0	203	0	0	1	203
	White Pine	25.7%	0	2,857	0	1	2,858	8	0	14	2,857
	White Spruce	8.5%	0	539	0	0	539	1	0	2	539
Softwood Total		***75.3%***	***0***	***4,635***	***0***	***1***	***4,636***	***10***	***0***	***20***	***4,635***
Grand Total		**100.0%**	**0**	**4,812**	**0**	**1**	**4,813**	**13**	**1**	**24**	**4,812**

Table 9.1: Stand volume and trees per acre by species and product.



Silvicultural Objectives

Management system:	Uneven age management
Harvest Entry:	15 years from the next cutting and then 30 years
Products:	Mixed species of sawtimber and pulpwood
Desired Composition:	A mix of softwood with some quality hardwood likely the pine component will decrease
Crop tree target diameter:	White pine 20 -22” Balsam fir 12 - 14” Red maple 16-18”

Operational Considerations

Operability:	All operable
Seasonal limitations:	None
Terrain:	Moderate slopes
Access and landing area:	On Tucker Mountain Road
Access distance:	½ mile
General maintenance:	Replace bridge at main brook crossing
Brook-wetland crossings:	Yes – as stated above

Stand 9 Description
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10 - YEAR MANAGEMENT SCHEDULE

Stand 9 is a two aged lowland spruce fir community that has responded favorably to cutting done about 20 years ago. The cutting resulted in abundant softwood regeneration, mostly white pine and balsam fir with some red spruce. The pine is a remnant of an agricultural past and not really part of the natural community, but it does well here. Much of the larger over story pine is not of the best quality being crooked and limby but there are a few nice trees in the mix. This stand is on much dryer ground than stand 8 and the trees are not as large in general. Also, there are pockets of hardwood that are part of the mix.

In the overstory, hardwood species comprise 25% of the trees dominated by red maple at 17%. Of the softwoods, white pine and balsam fir each make up 26% of the trees. The stand is estimated to have 4,812 board feet of sawtimber and 14 cords of pulpwood per acre.

Silviculture: The goal for this stand is to create a multi-age structure over time. There is a high enough stocking and the trees are young enough here to upgrade the overstory and grow the good trees for at least 40 more years. The goal is to continue to improve the quality of the overstory by cutting lower grade trees while releasing pockets of advanced regeneration. With two age classes already well established it is time to try and get the next one established.

2011: Reduce overall basal area to approximately 70 square feet through:

- **Group Selection:** Focus on creating openings of from 5 -10 trees up to 1/2 acre to release patches of advanced regeneration while removing mostly mature of low grade overstory trees.

- **Individual Tree Selection:** In between groups, release the best and healthiest trees of any species on at least two sides to provide additional growing space.

Wildlife: This area is likely used for both feeding and low cover. With additional cutting this stand will provide a diversity of size classes that will benefit many species including song birds. Raptors should find tall trees to nest in as well as enough open forest for hunting grounds. This stands proximity to open fields on an abutting property will provide habitat for a broad array of wildlife.

Stand 10 Northern Hardwood- mixed softwood HS2/3A 26 acres – 8 points

GENERAL ATTRIBUTES

Natural Community Type:	Hemlock Northern Hardwood Forest
Past Management History:	Individual tree selection about 10 years ago
Approximate Age of Dominant Trees:	75 - 90 years – a few older legacies
Stand Health:	Good – typical fir decline due to age
Insects/Damage/Disease:	Some fir blowdown
Timber quality:	Generally good, but a lot of low grade trees – a few nice yellow birch

SITE CONDITIONS

Site class:	2
Determined by:	Soils and Field Observation
Tree vigor:	Medium to high
Soils:	Tunbridge – Woodstock
	Colrain
Parent material:	LoamyTill
Soil texture:	Very stony fine sandy loam
Drainage:	Moderately well drained a few places poorly drained
Terrain:	Moderate slopes
Aspect:	Northeast
Elevation:	Approximately 1,200’ to 1,300’

Cultural Attributes

Archeological features present:	Barbed wire fence
Past land use:	Likely old pasture land

Wildlife Attributes and Objectives

Forest type:	Upland mixed wood forest
Vertical diversity:	Low to moderate, a little bit of understory development

Vegetative diversity:	Moderate
Beneficial shrubs and trees:	Hemlock for cover
Hard mast:	Beech, a few but large oak
Soft mast:	Little to none
Dead and decaying structure:	Low amount
Special habitat features:	Some good species diversity
Wildlife protection zones:	None in particular
	Promote and encourage large trees of all species
Special wildlife practices:	Maintain mast producing oaks

Snags Per Acre – None tallied

Wetland and Water Features

Wetland type:	Stand is on the edge of wetland in stand 7
Streams:	Small seasonal drainage
Ponds or Standing Water	None

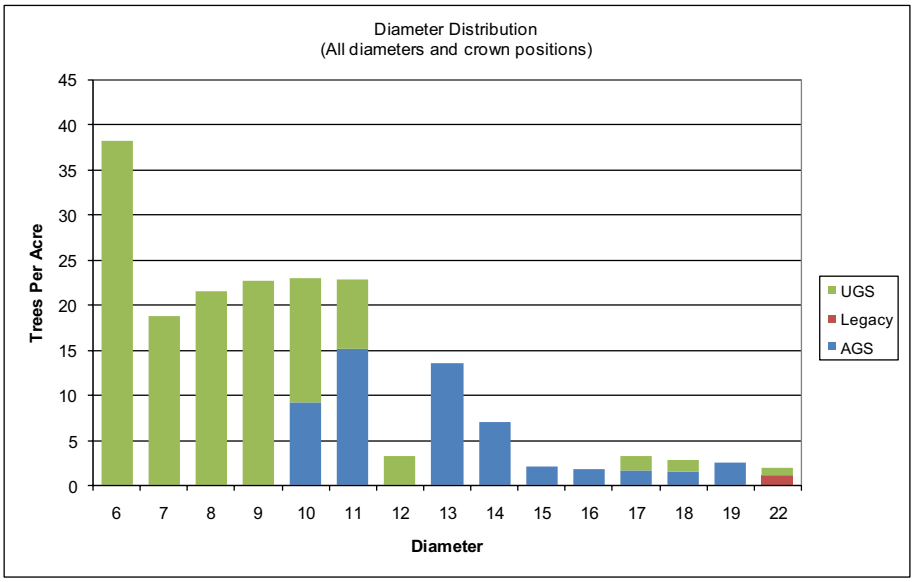
Structural and Silvicultural Attributes

Broad Forest Type:	HS2/3A
Size Class:	Small to medium sawtimber
Stand Structure:	Even age
Crown Closure:	80% -100%
Basal Area Per Acre:	105
Acceptable Basal area Per Acre:	50
Trees Per Acre:	184
Quadratic Mean Stand Diameter:	10.2
Timber Quality:	Fair to good

Forest Composition and Volume

Group	Species	% TPA	Veneer (bf)	Sawlog (bf)	Pallet/Tie (bf)	Legacy (bf)	Total BF	Pulp (cd)	Growing Stock (cd)	Total Cords	AGS Saw
Hardwood	American Bee	11.4%	0	0	0	0	0	1	0	1	0
	Hop Hornbear	3.1%	0	0	0	0	0	0	0	0	0
	Red Maple	21.4%	0	397	0	0	397	4	0	5	397
	Red Oak	2.2%	124	368	0	0	492	0	0	1	492
	Sugar Maple	10.1%	0	419	0	0	419	1	1	3	419
	White Ash	0.9%	0	350	0	0	350	0	0	1	350
	White Birch	7.9%	0	571	0	0	571	1	0	2	571
	Yellow Birch	13.1%	0	0	0	345	345	1	0	2	0
Hardwood Total		***70.0%***	***124***	***2,105***	***0***	***345***	***2,573***	***10***	***1***	***15***	***2,228***
Softwood	Balsam Fir	17.7%	0	0	0	0	0	1	0	1	0
	Hemlock	6.2%	0	1,282	0	0	1,282	2	0	5	1,282
	Red Spruce	6.2%	0	524	0	0	524	0	0	1	524
Softwood Total		***30.0%***	***0***	***1,806***	***0***	***0***	***1,806***	***3***	***0***	***7***	***1,806***
Grand Total		**100.0%**	**124**	**3,911**	**0**	**345**	**4,379**	**13**	**1**	**22**	**4,034**

Table 10.1: Stand volume per acre and composition by species and product.



Silvicultural Objectives

Management system:	Multiple-age management
Harvest Entry:	15 - 20 year cycle
Products:	A mix of quality sawtimber and pulpwood
Desired Composition:	Maintain natural species composition, try to retain hemlock component
Crop tree target diameter:	Sugar maple 20-22” Red oak 22-24” Red maple 18–20” Yellow birch 20 – 22”

Operational Considerations

Operability:	All areas operable – some wet areas
Seasonal limitations:	Mostly winter ground or very dry late summer
Terrain:	Gently sloping
Access and landing area:	In place along Tucker Mountain Road
Access distance:	Mostly short
General maintenance:	Block of access to landing area
Brook-wetland crossings:	Perhaps one minor crossing

Stand 10 Description
&
10 - YEAR MANAGEMENT SCHEDULE

Stand 10 is a middle-age hemlock northern hardwood community. While there are some very nice individual trees, generally overall, the quality here is not great with less than half the trees being acceptable growing stock. Beech makes up 11% of the unacceptable growing stock. This area is wetter and has more northern characteristics than similar stands on the property and yellow birch seems to be a pretty good tree to grow here. The balsam fir is mature or over mature from a timber standpoint and is beginning to decline. Small pockets of softwood regeneration can be found in the gaps created by falling trees.

Hardwood species comprise 70% of the trees dominated by red maple at 21%. Of the softwoods, Balsam fir leads the way at 18%. The stand is estimated to have 3,900 feet of sawtimber and 14 cords of pulpwood per acre.

Silviculture: As in stand 6, the goal for this stand is to increase the proportion of acceptable growing stock over time. To do this, somewhat heavy cutting to secure regeneration will be required. Most, if not all of the balsam fir should be cut as it will continue to decline. Where quality trees exist, they should be retained if they are healthy and structurally sound, especially yellow birch. This transition does not need to be accomplished all at once but over several harvesting cycles. Large old trees of poor quality will be left as legacies to contribute to future forest structure. If regeneration is secured, varying age classes will exist primarily as pockets of similarly aged trees mixed throughout the stand. This multiple-age composition will

provide a diverse forest structure beneficial to wildlife. It will also present an opportunity for a mix of silvicultural options in the future.

2012 - 2015: As markets allow, reduce overall basal area to approximately 70 square feet through:

- **Group Selection:** Focus on creating openings of from 5 -10 trees up to ¼ to 1/3 acre to create the conditions for regeneration of the more tolerant hardwoods.
- **Patch Cutting:** Put in 5 to 7 patch cuts of between ¾ to 2 acres in size. Focus on areas heavy to beech and or other areas of low quality trees.
- **Crop Tree Release:** In between groups, release crop trees of high quality and vigor. Release selected crop trees on at least 2 but preferably 3 sides.

Wildlife: When the prescribed treatment is completed, this stand should provide quite a bit of browse opportunity for both moose and white-tailed deer. With the patch cuts, hopefully there will be enough for the animals as well as providing trees for the next forest. At this time, browse pressure is not excessive so this should work out fine. Some beech will be retained providing a source of mast. As the stand develops, dense pockets of softwoods, should provide cover for small mammals.

Stand 11 Northern Hardwood- mixed softwood HS2/3A 62 acres – 16 points

GENERAL ATTRIBUTES

Natural Community Type:	Hemlock Northern Hardwood Forest
Past Management History:	Individual tree selection about 15 years ago
Approximate Age of Dominant Trees:	75 - 90 years – a few older legacies
Stand Health:	Good – no significant problems
Insects/Damage/Disease:	Spruce decline
Timber quality:	Generally good, but a lot of low grade trees – a few nice white pine

SITE CONDITIONS

Site class:	2
Determined by:	Soils and Field Observation
Tree vigor:	Medium to high
Soils:	Tunbridge – Woodstock
Parent material:	LoamyTill
Soil texture:	Very stony fine sandy loam
Drainage:	Well to moderately well drained - a few wet areas
Terrain:	Moderate slopes
Aspect:	Northeast
Elevation:	Approximately 1,200’ to 1,300’

Cultural Attributes

Archeological features present:	Barbed wire fence
Past land use:	Likely old pasture land

Wildlife Attributes and Objectives

Forest type:	Upland mixed wood forest
Vertical diversity:	Low to moderate, a little bit of understory development
Vegetative diversity:	Moderate

Beneficial shrubs and trees:	Aspen adds to diversity
Hard mast:	Beech
Soft mast:	Little to none
Dead and decaying structure:	Low to moderate amount
Special habitat features:	None in particular
Wildlife protection zones:	None
Special wildlife practices:	Encourage pockets of softwood

Snags Per Acre

DBH Class	Moderately Punky	Snag-Punky Throughout	Grand Total
<12"			
12-18"		1	1
>18"			
Grand Total		1	1

Table 11.1: Snags per acre by size and decay class

Wetland and Water Features

Wetland type:	None
Streams:	Small brook
Ponds or Standing Water	None

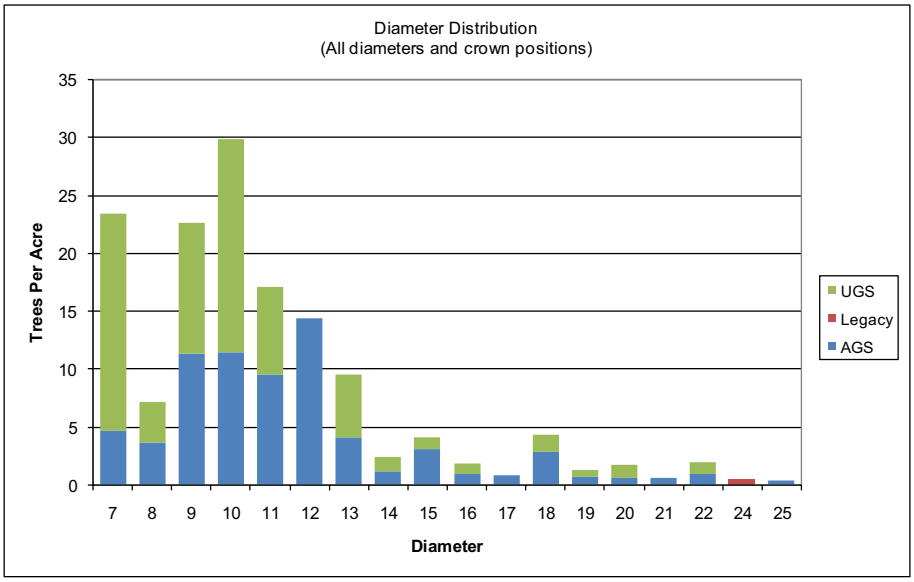
Structural and Silvicultural Attributes

Broad Forest Type:	HS2/3A
Size Class:	Small to medium sawtimber
Stand Structure:	Even- age
Crown Closure:	80% -100%
Basal Area Per Acre:	100
Acceptable Basal area Per Acre:	55
Trees Per Acre:	143
Quadratic Mean Stand Diameter:	11.3
Timber Quality:	Good

Forest Composition and Volume

Group	Species	% TPA	Veneer (bf)	Sawlog (bf)	Pallet/Tie (bf)	Legacy (bf)	Total BF	Pulp (cd)	Growing Stock (cd)	Total Cords	AGS Saw
Hardwood	American Bee	4.9%	0	0	0	0	0	0	0	0	0
	Aspen	1.8%	0	0	0	0	0	1	0	1	0
	Hop Hornbear	1.6%	0	0	0	0	0	0	0	0	0
	Red Maple	32.9%	0	96	0	0	96	3	1	4	96
	Red Oak	0.3%	63	87	0	0	151	0	0	0	151
	Sugar Maple	6.2%	0	0	0	0	0	0	0	1	0
	White Ash	4.4%	0	0	0	0	0	1	0	1	0
	White Birch	12.3%	0	494	0	0	494	1	0	3	494
	Yellow Birch	4.0%	0	0	0	0	0	0	0	1	0
Hardwood Total		***68.5%***	***63***	***677***	***0***	***0***	***741***	***7***	***2***	***11***	***741***
Softwood	Balsam Fir	10.4%	0	594	0	0	594	1	0	2	594
	Hemlock	3.9%	0	723	0	0	723	1	0	3	723
	Red Spruce	10.2%	0	709	0	0	709	0	0	2	709
	White Pine	6.9%	0	2,157	0	0	2,157	2	0	6	2,157
Softwood Total		***31.5%***	***0***	***4,183***	***0***	***0***	***4,183***	***4***	***0***	***13***	***4,183***
Grand Total		**100.0%**	**63**	**4,861**	**0**	**0**	**4,924**	**12**	**2**	**24**	**4,924**

Table 11.2: Stand volume per acre and composition by species and product.



Silvicultural Objectives

Management system:	Multiple-age management
Harvest Entry:	15 - 20 year cycle
Products:	A mix of quality sawtimber and pulpwood
Desired Composition:	Maintain natural species composition, try to retain softwood component
Crop tree target diameter:	Sugar maple 20-22” White pine 22-24” Red maple 18–20” White birch 12 –16”

Operational Considerations

Operability:	All areas operable – some wet areas
Seasonal limitations:	Mostly winter ground or very dry late summer
Terrain:	Gently sloping
Access and landing area:	In place along Tucker Mountain Road
Access distance:	Short to moderate
General maintenance:	Block of access to landing area
Brook-wetland crossings:	One minor crossing

Stand 11 Description
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10 - YEAR MANAGEMENT SCHEDULE

Stand 11 is a middle age hemlock northern hardwood community. This stand is very similar to stand 10 except that it is dryer and it has a white pine component . Also, the hardwoods are of better quality, generally.

Hardwood species comprise 69% of the trees, dominated by red maple at 33%. Of the softwoods, balsam fir and red spruce lead the way at 10% each. The stand is estimated to have 4,850 feet of sawtimber and 14 cords of pulpwood per acre.

Silviculture: Like in stand 10, the goal for this stand is to increase the proportion of acceptable growing stock over time. Unlike stand 10 the cutting here can be somewhat lighter working with some of the crop trees that are of good quality. Most, if not all of the balsam fir should be cut or it will continue to decline. Pockets of softwood including good quality white pine should be retained for diversity. Over time, if regeneration is secured, the resulting multiple-age composition will provide a diverse forest structure beneficial to wildlife. It will also present an opportunity for a mix of silvicultural options in the future.

2012 - 2015: As markets allow, reduce overall basal area to approximately 70 square feet through:

- **Group Selection:** Focus on creating openings of from 5 -10 trees up to ¼ to 1/3 acre to create the conditions for regeneration of the more tolerant hardwoods.

- **Individual Tree Selection:** In between groups, release trees of high quality and vigor by cutting poorer quality trees. Free up growing space on at least 2 but preferably 3 sides.

Wildlife: When the prescribed treatment is completed, this stand should provide quite a bit of browse opportunity for both moose and white-tailed deer. With the patch cuts, hopefully there will be enough for the animals as well as providing trees for the next forest. At this time, browse pressure is not excessive so this should work out fine. Some beech will be retained providing a source of mast. As the stand develops, dense pockets of softwoods should provide cover for small mammals.

Stand 12 Northern Hardwood H2/3A 34 acres – 8 points

GENERAL ATTRIBUTES

Natural Community Type:	Northern Hardwood Forest
Past Management History:	Some cutting was done about 15 years ago
Approximate Age of Dominant Trees:	75 - 90 years with a few older legacies
Stand Health:	Good – no major problems noted
Insects/Damage/Disease:	Some beech bark disease, eutapella canker
Timber quality:	Generally fair to good, some scattered very nice oak and ash

SITE CONDITIONS

Site class:	2
Determined by:	Soils and Field Observation
Tree vigor:	Medium to high
Soils:	Tunbridge – Woodstock
Parent material:	LoamyTill
Soil texture:	Very stony fine sandy loam
Drainage:	Well to moderately well drained
Terrain:	Moderate slopes to some steep slopes
Aspect:	Northeast
Elevation:	Approximately 1,400’ to 1,500’

Cultural Attributes

Archeological features present:	Old stone walls – barbed wire fence
Past land use:	Likely old pasture land

Wildlife Attributes and Objectives

Forest type:	Upland hardwood forest
Vertical diversity:	Low to moderate
Vegetative diversity:	Moderate

Beneficial shrubs and trees:	Large legacy trees for structural diversity
Hard mast:	Numerous beech, a few large oak
Soft mast:	Little to none
Dead and decaying structure:	Low to moderate amount on the ground
Special habitat features:	High proportion of beech in the stand
Wildlife protection zones:	None in particular
Special wildlife practices:	Promote and encourage large trees of all species Maintain mast producing oaks

Snags Per Acre

DBH Class	Moderately Punky	Snag-Punky Throughout	Grand Total
<12"	5	5	9
12-18"			
>18"			
Grand Total	**5**	**5**	**9**

Table 12.1: Snags per acre by size and decay class.

Wetland and Water Features

Wetland type:	None
Streams:	One small brook
Ponds or Standing Water	None

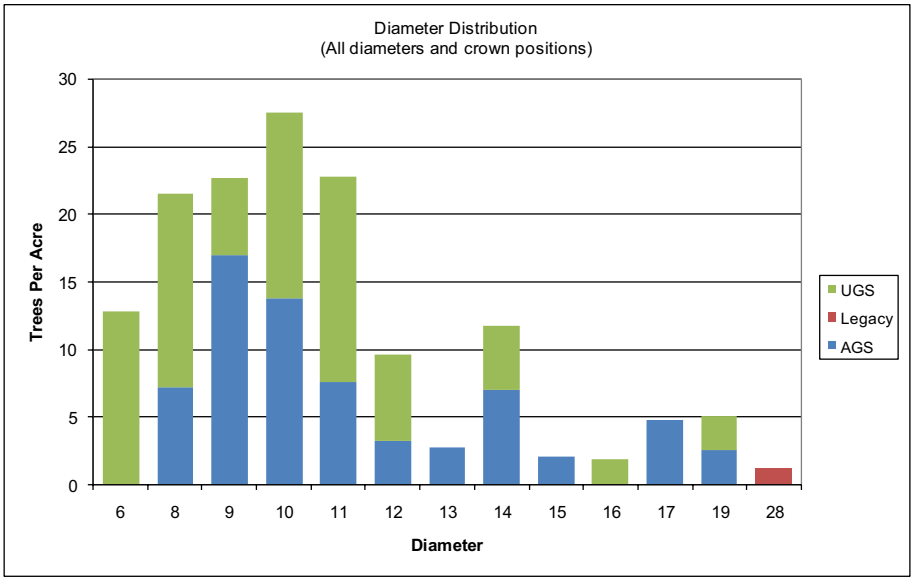
Structural and Silvicultural Attributes

Broad Forest Type:	H2/3A
Size Class:	Small to medium sawtimber
Stand Structure:	Even-age
Crown Closure:	70% -100%
Basal Area Per Acre:	100
Acceptable Basal area Per Acre:	50
Trees Per Acre:	146
Quadratic Mean Stand Diameter:	11.2
Timber Quality:	Fair to good

Forest Composition and Volume

Group	Species	% TPA	Veneer (bf)	Sawlog (bf)	Pallet/Tie (bf)	Legacy (bf)	Total BF	Pulp (cd)	Growing Stock (cd)	Total Cords	AGS Saw
Hardwood	American Bee	15.1%	0	0	0	0	0	2	0	2	0
	Aspen	1.2%	0	0	0	0	0	1	0	1	0
	Red Maple	30.7%	0	407	0	0	407	5	1	7	407
	Red Oak	3.3%	121	801	40	0	962	0	0	2	962
	Sugar Maple	13.1%	0	195	0	1	196	1	1	3	195
	White Ash	23.1%	0	1,031	0	0	1,031	3	1	6	1,031
	White Birch	1.6%	0	281	0	0	281	0	0	1	281
	Yellow Birch	8.8%	0	0	0	0	0	0	1	1	0
Hardwood Total		***96.9%***	***121***	***2,715***	***40***	***1***	***2,877***	***12***	***4***	***21***	***2,876***
Softwood	Hemlock	3.1%	0	0	0	0	0	0	0	0	0
Softwood Total		***3.1%***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***
Grand Total		**100.0%**	**121**	**2,715**	**40**	**1**	**2,877**	**12**	**4**	**22**	**2,876**

Table 12.2: Stand volume per acre and composition by species and product.



Silvicultural Objectives

Management system:	Multiple-age management
Harvest Entry:	15 - 20 year cycle
Products:	A mix of quality sawtimber and pulpwood
Desired Composition:	Maintain natural species composition, attempt to retain hemlock component
Crop tree target diameter:	Sugar maple 20-22” Red oak 22-24”
	Red maple 18–20” White ash 18-22”

Operational Considerations

Operability:	All areas operable
Seasonal limitations:	None really, could be operated in the dry part of the summer
Terrain:	Moderate to a few steep slopes
Access and landing area:	A small landing needs to be constructed Tucker Mountain Road.
Access distance:	Mostly short
General maintenance:	Road work needed on Town road
Brook-wetland crossings:	One crossing

Stand 12 Description
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10 - YEAR MANAGEMENT SCHEDULE

Stand 12 is a middle age northern hardwood community. Generally the quality here is better than in stand 6 but about half the trees are unacceptable growing stock. Beech makes up 15% of the unacceptable growing stock. White ash has an affinity for the site, likely because it has a favorable moister regime and the right fertility. Some of the red maple in this stand are also pretty nice.

Hardwood species comprise 97% of the trees, dominated by red maple at 31%. The stand is estimated to have 2,700 feet of sawtimber and 16 cords of pulpwood per acre.

Silviculture: The goal for this stand, as in stand 6, is to increase the proportion of acceptable growing stock over time. Patch and group openings are needed to secure regeneration. Where quality trees exist, they should be retained if they are healthy and structurally sound, especially sugar maple. This transition does not need to be accomplished all at once but over several harvesting cycles. Large, old trees of poor quality will be left as legacies to contribute to future forest structure. If regeneration is secured, varying age classes will exist primarily as pockets of similarly aged trees mixed throughout the stand. This multiple-age composition will provide a diverse forest structure beneficial to wildlife. It will also present

an opportunity for a mix of silvicultural options in the future.

2015: As markets allow, reduce overall basal area to approximately 65 square feet through:

- **Group Selection:** Focus on creating openings of from 5 -10 trees up to ¼ to 1/3 acre to create the conditions for regeneration of the more tolerant hardwoods.
- **Patch Cutting:** Put in 5 to 7 patch cuts of between ¾ to 2 acres in size. Focus on areas heavy to beech and or other areas of low quality trees.
- **Crop Tree Release:** In between groups, release crop trees of high quality and vigor. Release selected crop trees on at least 2 but preferably 3 sides.

Wildlife: When the prescribed treatment is completed, this stand should provide quite a bit of browse opportunity for both moose and white-tailed deer. With the patch cuts, hopefully there will be enough for the animals, as well as providing trees for the next forest. At this time, browse pressure is not excessive so this should work out fine. Some of the large oak trees will be retained providing a source of acorns. While the beech component will be reduced somewhat, there still should be plenty of hard mast in this stand well into the future. Birds that might be found here include migrants such as Blue-headed Vireo, Black-throated Green Warbler, and the Scarlet Tanager. Residents birds such as Black-capped Chickadee, Nuthatches and various woodpeckers would likely be found here.

Stand 13 White pine – Aspen S2A 7 acres –2 points

GENERAL ATTRIBUTES

Natural Community Type:	Hemlock -Northern Hardwood Forest
Past Management History:	Stand growing up in old field
Approximate Age of Dominant Trees:	25 – 30 years
Stand Health:	Good
Insects/Damage/Disease:	White pine weevil
Timber quality	Poor, the pine is pretty crooked and limby

SITE CONDITIONS

Site class:	2
Determined by:	Soils and Field Observation
Tree vigor:	Medium to high vigor
Soils:	Tunbridge – Woodstock
Parent material:	Basal till
Soil texture:	Stony fine sandy loam
Drainage:	Well drained, but a few areas poorly drained
Terrain:	Gentle
Aspect:	South
Elevation:	1,300’

Cultural Attributes

Archeological features present:	Stone walls and barbed wire fence
Past land use:	Old agricultural

Wildlife Attributes and Objectives

Forest type:	Upland softwood forest
Vertical diversity:	None
Vegetative diversity:	Low

Beneficial shrubs and trees:	Aspen for diversity
Hard mast:	None
Soft mast:	Raspberry and blackberry on stand frindges
Dead and decaying structure:	Very little
Special habitat features:	Stand borders on an area with heavy beaver use
Wildlife protection zones:	None in particular
Special wildlife practices:	Create early successional habitat on about 2.5 acres

Snags Per Acre – None tallied

Wetland and Water Features

Wetland type:	Southern fringe borders wetland area
Streams:	Small stream bisects this stand
Ponds or Standing Water:	Beaver impounded water

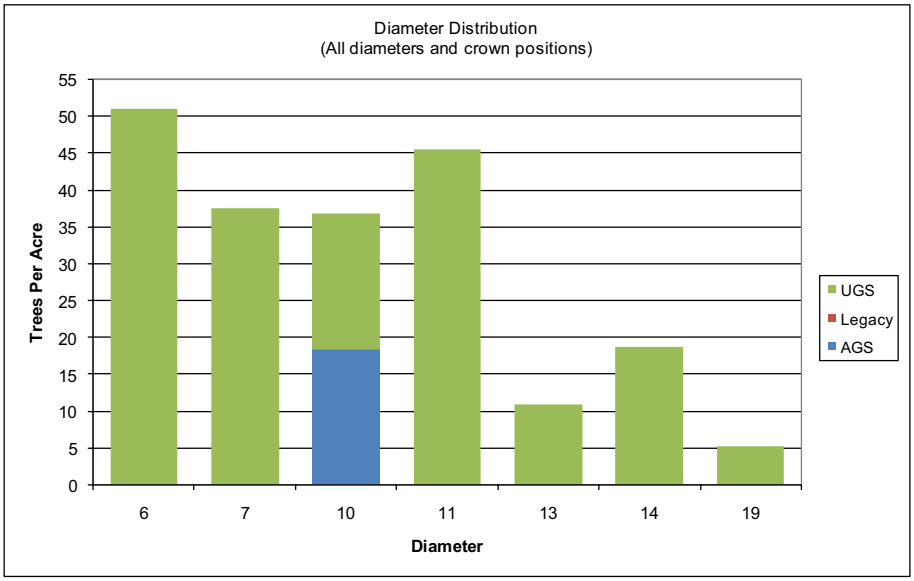
Structural and Silvicultural Attributes

Broad Forest Type:	S2A
Size Class:	Poles and very small sawtimber
Stand Structure:	Even age
Crown Closure:	100%
Basal Area Per Acre:	110
Acceptable Basal Area Per Acre:	10
Trees Per Acre:	205
Quadratic Mean Stand Diameter:	9.9

Forest Composition and Volume

Group	Species	% TPA	Veneer (bf)	Sawlog (bf)	Pallet/Tie (bf)	Legacy (bf)	Total BF	Pulp (cd)	Growing Stock (cd)	Total Cords	AGS Saw
Hardwood	Aspen	41.2%	0	0	0	0	0	6	0	6	0
Hardwood Total		***41.2%***	***0***	***0***	***0***	***0***	***0***	***6***	***0***	***6***	***0***
Softwood	White Pine	58.8%	0	0	0	0	0	16	0	16	0
Softwood Total		***58.8%***	***0***	***0***	***0***	***0***	***0***	***16***	***0***	***16***	***0***
Grand Total		**100.0%**	**0**	**0**	**0**	**0**	**0**	**22**	**0**	**22**	**0**

Table 13.1: Stand volume and trees per acre by species and product.



Silvicultural Objectives

Management system:	Even age management
Harvest Entry:	15 years from the next cutting
Products:	Pulpwood
Desired Composition:	Early sucessional habitat
Crop tree target diameter:	White pine 10-12” Aspen 6-10”

Operational Considerations

Operability:	All operable
Seasonal limitations:	Wet periods
Terrain:	Rolling
Access and landing area:	May need to be built on Tucker Mountain Road
Access distance:	Very short
General maintenance:	None needed at this point
Brook-wetland crossings:	There could be one crossing needed

Stand 13 Description
&
10 - YEAR MANAGEMENT SCHEDULE

Stand 13 is a an even age old field pine stand. The quality is very bad due to the terminal leaders being killed by the white pine weevil. The stand has little potential from a timber standpoint and it is not very diverse for wildlife either.

White pine makes up 58% of the trees with aspen making up the remainder The stand is 22 cords of pulpwood per acre.

Silviculture: The goal for this stand is to create two distinct cohorts of trees approximately 15 years apart in age. With such low quality, this stand will be managed more for wildlife habitat diversity.

2012: Reduce overall basal area to approximately 40 square feet through:

- **Patch cuts:** Open up about 3 acres in connected patches. If it is possible to use traditional harvesting methods it will be less costly than Brontosaurus work. Either way it seems that this work will be at a cost.

Wildlife: Currently, this stand provides cover. After the prescribed treatment is completed, the area should re-grow quickly, mostly to aspen sprouts. Ruffed grouse habitat should improve here.

Stand 14 Brushy openings S1A 15 acres – points

There are several areas that have grown up from field areas in the past 15 to 20 years. It is apparent that at some point mowing or brush hogging was discontinued and the forest began to re-grow. At this point they trees are not of commercial size but they will be by the next plan update. The trees are a mix of mostly early successional species such as white pine, white birch and aspen among others.

The goal here is to manage these openings for a continuation of early sucessional wildlife habitat. This would create habitat for both ruffed grouse and woodcock. Every three to five years, about one third of the area should be regenerated using a brontosaurus. This will over time create an area with three distinct age classes.

TOTAL FOREST STOCKING

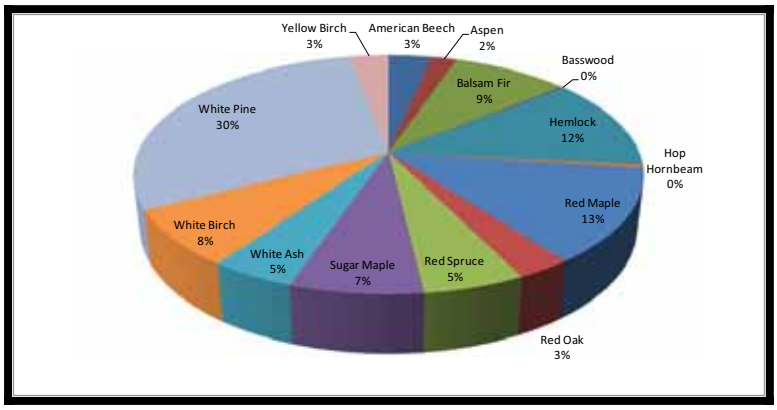
Tucker Mountain Forest Property

August 2010

446 Wooded Acres

Group	Species	% TPA	Veneer (bf)	Sawlog (bf)	Pallet/Tie (bf)	Legacy (bf)	Total BF	Pulp (cd)	Growing Stock (cd)	Total Cords	AGS Saw
Hardwood	American Beech	5.2%	0	0	0	0	0	334	0	334	0
	American Elm	1.6%	0	0	0	0	0	5	0	5	0
	Aspen	4.7%	0	0	0	18	18	163	6	187	0
	Basswood	0.1%	0	0	0	18	18	0	0	18	0
	Hop Hornbeam	3.0%	0	0	0	0	0	48	0	48	0
	Red Maple	11.8%	0	57,583	0	0	57,583	1,037	133	1,278	57,583
	Red Oak	1.1%	24,937	90,230	1,375	8,458	125,000	58	19	296	116,542
	Sugar Maple	16.1%	0	101,645	8,357	100	110,102	189	224	716	110,002
	White Ash	5.1%	0	80,034	0	44	80,077	179	87	455	80,034
	White Birch	7.7%	0	111,141	0	15	111,156	437	106	771	111,141
	Yellow Birch	3.9%	0	23,050	0	8,959	32,010	131	112	298	23,050
Hardwood Total		**60.2%**	**24,937**	**463,683**	**9,732**	**17,612**	**515,964**	**2,580**	**687**	**4,405**	**498,352**
Softwood	Balsam Fir	12.7%	0	274,532	0	0	274,532	190	43	897	274,532
	Hemlock	8.0%	0	256,605	0	27,181	283,786	672	56	1,247	256,605
	Red Spruce	6.6%	0	169,886	0	0	169,886	130	25	546	166,346
	White Pine	11.6%	0	916,833	0	112	916,945	1,262	16	2,986	916,833
	White Spruce	0.9%	0	31,530	0	0	31,530	56	0	126	31,530
Softwood Total		**39.8%**	**0**	**1,649,386**	**0**	**27,293**	**1,676,679**	**2,310**	**140**	**5,802**	**1,645,847**
Grand Total		**100.0%**	**24,937**	**2,113,069**	**9,732**	**44,906**	**2,192,644**	**4,891**	**827**	**10,208**	**2,144,199**

Total cords (sawtimber and pulpwood) by species



TUCKER MOUNTAIN FOREST

SILVICULTURAL TREATMENT SCHEDULE

This schedule is only meant to be a guide to prioritize treatment areas. All treatments may be rescheduled due to variable weather and market conditions.

Stand #	Type	Acres	Treatment	Year
1	**SH3A**	**25**	Group Selection / Thinning	**2011**
2	**H3A/B**	**18**	Group Selection/Crop Tree Release	**2011**
3	**H1A**	**10**	None	**------**
4	**HS3B**	**65**	Irregular Shelterwood	**2011**
5	**SH2A**	**21**	None	**------**
6	**H2/3A**	**39**	Group Selection/Patch Cuts/Crop Tree Release	**2014**
7	**SH2A/B**	**48**	Overstory Removal/Salvage	**2012**
8	**S3/4A**	**62**	Irregular Shelterwood	**2012**
9	**SH3B**	**31**	Group Selection / I. Tree Selection	**2012**
10	**HS2/3A**	**26**	Group Selection/Patch Cuts/Crop Tree Release	**2014**
11	**HS2/3A**	**62**	Group Selection / I. Tree Selection	**2015**
12	**H2/3A**	**34**	Group Selection/Patch Cuts/Crop Tree Release	**2015**

13	**S2A**	**7**	Patch Cuts	**2012**
14	**S1A**	**15**	Brontosaurus Work	**2012**
All			Update this plan	**2020**

ACCOMPLISHING TREATMENTS

There are no treatments scheduled for some time. When the time comes, these treatments should be laid out and supervised by a forester. The most crucial part of good forest management takes place on the ground, not in this document. The science of forest management is still in its infancy, and the intuition of the forester on the ground is crucial to success. There are many components of a timber harvesting operation that need to fall into place if the treatment is to be successful. The two most important components are a knowledgeable, willing seller and a willing, competent buyer. A stable market for the product being sold is also important.

If an agreement can be made between the seller and buyer through a timber sale contract, the logistics of the operation need to be fully considered. Suitable access and landing areas need to be located; the timing of the operation, payment schedules, and other issues need to be addressed. Patience is often required, as well as good weather conditions. Market conditions will play an important role as well and rarely are all conditions in alignment. The scheduling of all of the treatments can be adjusted such that positive conditions exist to implement a successful timber harvest.