



An Updated Forest Management Plan

For

Dr. Gretchen Rouse Besser Trust

Dr. Gretchen R. Besser Trustee

For the ten years beginning April 1, 2018

Located on Stagecoach Road in the Town of Morrisville, Vermont

Grandlist Acreage: 176.5

Acreage Enrolled into the Agricultural and Forestland Category of Use Value: 170.5

Acreage Excluded from the Tax Program: 6.0

Productive forestland: 90.2 acres

Agricultural land: 76.3 acres

Open land: 2.6 acres

Non-Productive land: 1.4 acres

I (We) certify that my(our) forest land, exclusive of any house site or other developed portion is at least 25 acres in size and is under active long-term forest management for the purpose of growing and harvesting repeated forest crops in accordance with the minimum acceptable standards for forest management. These management standards include the following practices outlined in the booklet "Acceptable Management Practices for Maintaining Water Quality on Logging Jobs in Vermont" in order to control stream siltation and soil erosion.

Prepared by: FRAN SLAYK Don Dodge 3/7/2018
Forester# 148.0122048 (printed) Signed Date

By signing below, I understand I am signing my forest management plan and by doing so I agree to manage according to the current approved plans

Approved by: GRETCHEN ROUSE BESSER G.R. Besser 3/12/18
Landowner (printed) Signed Date
Approved by: Rick Jones Mark Ogden 4/10/18
County forester Signed Date

The Dr. Gretchen Rouse Besser Trust (Dr. Gretchen R. Besser Trustee) owns a 176.5-acre property that is located on either side of the Stagecoach Road in the town of Morrisville. The boundary lines for this property can be found with some work. They generally consist of a barbed wire fence, but also include regions that consist of red or orange painted blazes. Paint generally fades over a dozen or so years. In addition, barbed wire does deteriorate over time. For these reasons, the owners should monitor the condition of their boundary lines over the next ten years. The boundary lines should be flagged prior to conducting logging operations. The owners should also consider re-painting old blazes and painting marks on boundary trees that contain barbed wire. This work will maintain the integrity of the boundary lines. It also will prevent an accidental trespass from neighboring logging operations. The Besser family purchased a majority of this land because they love this region of Vermont. The Besser land also has some great views of the Elmore Mountain Range. Their fear was that the fields and woods on the west side of the Stagecoach Road would be developed by homeowners attracted to the great views. They worked with the Vermont Land Trust to ensure that this will not occur. The Besser family has allowed numerous farming ventures to occur on this land. They are proud that it is still utilized for agricultural activities. The owners have also done some logging that improved tree health. This logging created some logging roads that provide recreational opportunities. The following forest management plan updates the previous one that was drafted in 2007. The updated plan is based upon a field cruise that occurred on October 31, 2018. This consisted of taking 34 sample plots with a 10 BAF prism. No rare or endangered plants were seen during this field visit. Unfortunately, one invasive plant was seen on a small portion of this property. Information on this invasive and control efforts will be detailed in the following forest management plan.

The Besser property has a long history of agricultural activities. This has included producing vegetables, providing pasture, and producing hay for cows and horses. It currently contains 76.3 acres of agricultural land. These 76.3 acres are used to produce hay or to provide pasture for a neighboring dairy farm. The owners should continue their present field management practices on this land over the next ten years. The long-term objective of this area is to keep it in agricultural use for as long as possible. Deer, turkeys, and many types of song birds currently use the field to feed on vegetation or the insects found in the grass. A 2.6-acre corner of old pasture has been gradually abandoned. This is still considered open land, but is starting to grow in young tree cover. It would be great if the farmer, would keep this land open by periodic brush hogging. However, he already has his hands full and this may not occur. If this corner is not kept open over the next ten years, it will convert into young forest. If no mowing occurs, this section of open land will be designated as area 1 in the next forest management plan. Either way these 2.6 acres will provide habitat opportunities for the regions wildlife.

Area 1 is 5.4 acres of pioneer hardwoods. The dominant species is grey birch, which comprises 19% of the trees within the area that have a diameter that is 6 inches or larger. Other species present include aspen (18%), black cherry (18%), balsam fir (18%), spruce (9%), red maple (9%), and white pine (9%). It is located on level to slightly sloped terrain that faces the east. The dominant soils include the Peru very stony fine sandy loam type. (Please see page 12 for more details of this soil.) The site index is 71 for white pine and 45 for spruce. (Site index is the height in feet that a tree will grow to in 55 years. It is determined by soils and the growing characteristics of the species found on the area.) Area 1 was utilized as pasture. This farmland was abandoned around twenty years ago. This allowed it to revert into a mixture of hard and softwoods. It has seen no logging due to the age of the area. This has allowed area 1 to remain an even aged stand. (An even aged stand is composed of trees from one or

two different age classes.) The understory contains gray birches that are 1 to 4 inches in diameter. The forest floor additionally contains some red maples that are 20 feet high and a few pockets of young spruce, fir, and hemlocks that are 5 to 10 feet in height. The tree health is good with no disease or wind issues. The only insect damage was some weevil damage on white pine. (The white pine weevil is an insect that kills the terminal leader or top of a pine tree. This stem damage causes lower branches of the tree to vie to become the new tree top. This results in a multi-topped white pine that often has a crooked or miss-shaped stem. The crotch of a multi-stemmed tree is a weak point. Eventually, one of the stems in a multi-topped tree break. This causes staining in the remainder of the tree and is an entry for rot and decay.) The other health concern is the large volume of gray birches. This tree grows quickly in abandoned fields or disturbed areas because it likes a large volume of sun light. However, gray birches typically die in 30 or so years. They additionally have poor structural strength and are very susceptible to heavy snow or ice damage. A large volume of these birches will succumb to mortality over the next ten to twenty years. The quality of saw timber is poor due to the volume of non-commercial grey birch that are present. Fifty four percent of the trees in area 1 have a diameter that is 6 inches and are considered cull. (Cull are trees from undesired species, trees with poor form, or trees with poor health. Generally, cull trees have a lower commercial value when compared to other trees.) Most of this cull are either aspens or gray birch, which neither have a great commercial value. Area 1 is under stocked for a hardwood stand with a basal area of 37 square feet and 111 trees per acre. (Basal area is a forestry term used to describe the cross-sectional area of a tree at breast height. It is used to determine stocking levels.) The basal area of acceptable growing stock is 17 square feet per acre. The mean stand diameter is 7 inches.

Area 1 is a young stand that is understocked. For these reasons, it requires no immediate activity. It should be evaluated in 2027 to determine health and stocking. These two factors will determine future prescriptions. The long-term objective for area 1 is to produce softwood logs, while promoting the growth and regeneration of desirable hard and softwoods. Area 1 is currently an even aged stand. It will be converted into an uneven aged stand by conducting a series of thinnings that will occur over the next 40 or so years. (An uneven aged stand is composed of trees from at least three different age classes. These age classes are somewhat evenly distributed.) The cutting cycle (period between harvests) is 20 years. The desired diameter is 18 for most hardwoods and hemlocks. The desired diameter is 12 to 14 inches for spruce and fir. The target Q factor will be 1.3 to 1.5. (A Q factor describes the diameter distribution within an uneven aged stand. A Q of 1.3 to 1.5 means that eventually 60% of the trees in the area will have a diameter that is 12 inches or larger.)

Area 2 is 26.8 acres of mixed hard and softwoods. The dominant species is spruce, which comprises 40% of the trees within the area that have a diameter that is 6 inches or larger. Other species present include hemlock (24%), red maple (12%), yellow birch (9%), balsam fir (8%), white pine (2%), black cherry (2%), aspen (commonly referred to as popple 1%), white birch (1%), and elm (1%). It is located on level to moderately sloped terrain that faces the east. The dominant soils include the Peru very stony fine sandy loam type, the Fragaquept and Haplaquept type, the Marlow very stony fine sandy loam type, the Potsdam silt loam type, and the Tunbridge-Lyman fine sandy loam, rocky type. (Please see page 12 for more details of these soils.) The site index is 48-55 for spruce and 57 for balsam fir. Area 2 was once utilized as pasture by a previous landowner. This farmland was abandoned in the 1950's. This allowed it to revert into a mixture of hard and softwoods. It had seen no logging activity until 2000. At that time, it underwent an extended irregular shelterwood cut. A shelterwood cut is done

to create space on the forest floor for new regeneration or to release established regeneration. It is generally followed by an overstory removal cut that occurs 10 to 15 years later. The overstory removal cut removes most of the remaining trees located in the overstory. The result of this activity is the creation of a two aged or even aged stand. Frequently, a stand may contain trees from three age classes. However, these age classes are not equally divided. This makes uneven aged management difficult because the stocking cannot produce the required periodic (15 to 20 year) harvest. An irregular shelterwood essentially creates a three-aged stand managed on a longer rotation that does not have the equal age distribution of an uneven aged stand. The cut that occurred on area 2 removed large fir, mature spruce, cull hardwoods, and diseased hemlocks. Trees were removed individually and in groups that ranged from 2 to 6 stems in size. The purpose of this cut was to stimulate regeneration where there was none. It also would release pockets of existing softwoods. This was the only logging to occur. For this reason, area 2 is still considered to be an even aged stand. The understory conditions vary. Portions of the area contain spruce and firs that are 1 to 4 inches in diameter. Other sections contain yellow birch and red maple of a similar size. There are also some younger spruce, firs, and yellow birch stems that range from 10 to 20 feet in height. There also has been some recent wind damage. These wind created openings are growing in raspberry bushes. The tree health is good with no insect concerns. The only disease observed was ring shake, which was seen on about a third of the area's hemlocks. (Ring shake is a condition that affects hemlocks and results in a deterioration of the inner stem. Hemlocks that have ring shake often have seams in their lower trunks. They also will often have numerous sap sucker holes in their stem. Hemlocks with shake are more prone to wind damage when compared to other stems. They are also utilized as pulp when harvested and not as dimensional lumber). Most of the hemlocks in area 2 with signs of having ring shake have diameters that range from 16 to 20 inches. A majority of the area is situated on shallow soils. This increases the risk for large scale wind events. The current level of wind damage is light and consists of an occasional blown over spruce, fir, or hemlock that had ring shake. The quality of saw timber is good due to the previous cut that removed a fair volume of cull. Only fourteen percent of the trees within area 2 have a diameter that is 6 inches or larger and are considered cull. Most of this cull consists of hemlocks with ring shake or poorly formed hardwoods. Area 2 is adequately stocked for a mixed stand of hard and softwood with a basal area of 110 square feet and 180 trees per acre. The basal area of acceptable growing stock is 95 square feet per acre. The mean stand diameter is 11 inches.

Area 2 should undergo another extended irregular shelterwood cut in 2023. (Please note that the Current Use Program allows for a three-year window on either side of the prescription date. For this reason, the extended irregular shelterwood cut on area 2 could occur any time between 2020 and 2023.) This cut will remove all large firs, mature spruce, all large pines, hemlocks with ring shake, and cull hardwoods. The cut will remove individual trees and trees in groups that could range from 2 to 8 stems in size. The size of the group will depend upon the density of large spruce and hemlocks. The purpose of the cut is to release a portion of the established soft and hardwoods within the understory. This will allow some of them to develop into larger poles. The cut will also improve the growth on the spruce, yellow birch, fir, and hemlocks that are in the 6 to 16-inch diameter class by reducing competition. The cut will also reduce the risk of future wind events by removing at risk trees. The residual basal area should be no lower than 80 square feet per acre. This is considered low for a mixed hard and softwood stand. However, it is justified by the volume of young trees within the understory. These young stems will increase the stocking. This extended irregular shelterwood will be followed by a

similar cut that will occur in another twenty years. The next cut will remove the softwoods that are left within the overstory after the completion of the 2023 extended irregular shelterwood cut. The long-term objective for area 2 is to produce logs, while promoting the growth and regeneration of desirable hard and softwoods. It is under even aged management with an 80-year rotation age. The following chart details the present diameter distribution and the distribution after the extended irregular shelterwood cut.

Diameter Range	Total Basal Area	Acceptable Basal Area	Basal area after cut
6-10 inches	40 sq.ft.	38 sq.ft.	35 sq.ft.
12-14 inches	35 sq.ft.	24 sq.ft.	25 sq.ft.
16 inches or larger	35 sq.ft.	24 sq.ft.	20 sq.ft.

Area 3 is 8.7 acres of mixed hard and softwoods. The dominant species is spruce, which comprises 46% of the trees within the area that have a diameter that is 6 inches or larger. Other species present include red maple (22%), yellow birch (11%), hemlock (11%), balsam fir (5%), white ash (3%), and sugar maple (2%). It is located on level to slightly sloped terrain. The dominant soils include the Marlow very stony fine sandy loam type and the Fragiaquept and Haplaquept type. (Please see page 12 for more details of these soils.) The site index is 48 for spruce and 59 for maple. Area 3 was once utilized as pasture by a previous landowner. This farmland was abandoned in the 1950's. This allowed it to revert into a mixture of hard and softwoods. It had seen no logging activity until 2000. At that time, it underwent a shelterwood cut, which removed large fir, mature spruce, diseased hemlocks, and cull hardwood. The purpose of the cut was to release the established understory. This was the only logging to occur within the area. For this reason, area 4 is still considered to be an even aged stand. The understory predominately contains a mixture of yellow birch stems that are 2 to 4 inches in diameter. Mixed in with the birches are some younger spruce, firs, hemlocks, and beech that are 5 to 20 feet in height. The tree health is good with no insect or wind concerns. The only disease present is a small volume of hemlocks that have ring shake. The quality of sawtimber is good due to the previous cut, which removed cull. Only eleven percent of the trees within the area have a diameter that is 6 inches and are cull. Most of this cull consists of red maple or diseased hemlocks. Area 3 is adequately stocked for a mixed stand of hard and softwoods with a basal area of 123 square feet and 274 trees per acre. The basal area of acceptable growing stock is 110 square feet per acre. The mean stand diameter is 10 inches.

Area 3 should undergo an overstory removal cut with reserves in 2023. (Please note that the Current Use Program allows for a three-year window on either side of the prescription date. For this reason, the overstory removal cut on area 3 could occur between 2020 and 2026.) This cut will remove all large spruce, all cull hemlocks, and cull hardwoods. The cut will not cut spruce and younger hardwoods that are currently in 6 to 8-inch diameter class. The purpose of the cut is to release the understory of birch and softwoods. This will allow these stems to develop into larger poles and small sawtimber. The residual basal area should be no lower than 40 square feet per acre. The long-term objective for area 3 is to promote the growth of future hardwood sawtimber. It is currently under even aged management with a rotation age of 60 to 70 years.

Area 4 is 7.8 acres of mixed hard and softwoods. The dominant species is hemlock, which comprises 64% of the trees within the area that have a diameter that is 6 inches or larger. Other species present include red maple (27%), yellow birch (7%), and white ash (2%). It is located on predominately level terrain. The dominant soils include the Fragiaquept and Haplaquept type. (Please see page 12 for more details of this soil.) The site index for area 4 is 45 for spruce and 50 for maple. Area 4 was also utilized as pasture by a previous owner. This farmland was abandoned in the 1950's. This allowed the area to revert into a mixture of hard and softwoods. It had seen no logging activity until 2000. At that time, the area underwent an individual tree selection cut. This consisted of a removal of large spruce, cull hemlocks, and cull hardwoods. This was the only logging to occur. For this reason, area 4 is still considered to be an even aged stand. The understory conditions vary. A portion of the area is growing in yellow birch and red maples that are 1 to 4 inches in diameter. Other sections contain a mixture of spruce, fir, beech, and hemlocks that are 5 to 20 feet in height. The tree health is good with no insect concerns. The only disease present is ring shake, which was seen on a few of the area's hemlocks. The current level of wind damage is also light and consists of a periodic individual blow down. The last health concern is some young balsam firs within the understory that have been heavily damaged by deer. The deer have fed on foliage on firs that are 6 feet high. The heavy feeding will likely result in some mortality. The quality of saw timber is good due to the previous cut, which removed cull. Only fifteen percent of the trees have a diameter that is 6 inches and are considered cull. Most of this cull consists of poorly formed hardwoods or hemlocks with ring shake. Area 4 is adequately stocked for a mixed hard and softwood stand with a basal area of 153 square feet and 253 trees per acre. The basal area of acceptable growing stock is 130 square feet per acre. The mean stand diameter is 9 inches.

Area 4 should undergo another individual tree selection/improvement cut in 2023. (Please note that the Current Use Program allows for a three-year window on either side of the prescription date. For this reason, the individual tree selection cut on area 4 could occur between 2020 and 2026.) Area 4 borders an old sugarbush. It would be nice to add to the tap numbers on the Besser property by promoting maple growth in area 4. The individual tree selection cut will remove mature hemlocks, cull hemlocks, some non-maple cull, and red maples with significant stem flaws. Most of the stems removed would be adjacent to red maples. The purpose of the cut is to promote the growth on red maples that are in the 8 to 14-inch diameter class by reducing competition. The cut will additionally release a portion of the young hard and softwoods within the understory. This will allow them to develop into larger poles. The residual basal area should be no lower than 100 square feet per acre. The long-term objective for area 4 is to develop a stand that could be utilized for sap or red maple sawtimber production. It should be noted that the Use Value Program is requiring that sugar makers maintain some species diversity in sugarbushes that are enrolled in the Tax program. The State is requiring maintaining a diversity level so that at least 25% of the stems as non-sugar maples. The reason for this diversity level is to avoid catastrophic damage in the result of insect infestation or disease. For example, forest tent caterpillars tend to favor sugar maple over beech, birch or red maple. Different species also develop leaves at different stages of the spring. Therefore, you will see pear thrip damage on sugar maple and not red maple or ash. A proper diversity level could help minimize the impact from a large insect infestation. The cut will easily maintain this recommended diversity level. Most modern sugarbushes are using 5/16-inch spout. The State also recommends having drop lines (line that connects spout to tubing land) that are at least 30 inches in length. This longer length allows for greater

flexibility to find a spot to tap. This will help insure that tapping is done on a sustainable basis. The State also has mandated the following Tapping guidelines:

0 taps-trees less than 10 inches in diameter

1 tap-trees between 10 and 16

2 taps-trees between 16 and 20 inches

3 taps-trees 22 inches or larger

4 tap trees are prohibited.

Area 4 is currently an even aged stand. The completion of the next individual tree selection cut will allow the area to revert into an uneven aged stand. The cutting cycle is 20 years. The desired diameter for growing maples is 24 inches or larger. The desired diameter for growing hemlocks is 18 inches. The target Q factor is 1.3 to 1.5. (A factor of 1.3 to 1.5 means that eventually 60% of the trees in the area will have a diameter that is 12 inches or larger.) It will take some time and the completion of the prescribed improvement cut to achieve this Q goal. The following chart details the present diameter distribution and the distribution after the improvement cut.

Diameter Range	Total Basal Area	Acceptable Basal Area	Basal area after cut
6-10 inches	63 sq.ft.	53 sq.ft.	50 sq.ft.
12-14 inches	47 sq.ft.	43 sq.ft.	30 sq.ft.
16 inches or larger	43 sq.ft.	34 sq.ft.	20 sq.ft.

Area 5 is 20.7 acres of northern hardwoods. The dominant species is sugar maple, which comprises 54% of the trees within the area that have a diameter that is 6 inches or larger. Other species present include red maple (26%), hemlocks (9%), white ash (7%), and beech (4%). It is located on slightly to moderately sloped terrain that faces the east. The dominant soils type includes the Lyman-Tunbridge fine sandy loam, very rocky type. (Please see page 12 for more details of these soils.) The site index for area 5 is 50 for sugar maple. Area 5 has a long history of sap production. It was once a pastured sugarbush. It stills contains large diameter maples that have big spreading crowns. This crown pattern is typical for a hardwood that is growing in the wide open. At some point between the 1940's and 1950's, livestock were fenced out of the area. This allowed the area to revert into hardwoods. It had seen sugaring off and on until the early 1990's. This additionally included some periodic salvage and improvement cuts. The salvage cuts consisted of a removal of dead and wind damaged material. The improvement cuts removed non-maple competition. The purpose of most of the salvage and improvement cuts was to provide firewood that would fuel the sugaring arch. The last improvement cut occurred in 2000 and consisted of a removal of a few mature ash and diseased beech stems. The history of sugaring and logging has allowed area 5 to revert into an uneven aged stand. The understory predominately contains a mixture of yellow birch and beech. These hardwoods are 1 to 4 inches in diameter or have heights that range from 5 to 20 feet. The tree health is good with no insect concerns. However, over the last two summers, there was some major defoliation caused by the forest tent caterpillar on other nearby properties (Elmore Mountain) in Lamoille County and other regions of Northern Vermont. This is an insect that likes to eat sugar maple, oak, and ash leaves. It has not been

found in significant numbers in this region of the State since the 1980's. The proximity of this pest and the sugar maple component within area 5 makes it a potential candidate for forest tent defoliation during the next few summers. The State of Vermont is not advising thinning in stands that have seen heavy defoliation. Logging or thinning concentrates the damage to the remaining trees in the residual stand. A combination of an insect defoliation with a significant drought could result in tree mortality. The only diseases seen on area 5 is a small number of eutypella cankers and some beech bark disease. (Eutypella canker is commonly found among maples. It is often referred to as a cobra canker because the shape of the canker is like the hooded snake's head. This canker creates a weak point on the stem and makes the tree susceptible to wind damage.) (Beech bark disease is a combination of a fungus and canker. The vector for this disease is an insect called the beech scale. The small insect will land on fruiting bodies of the fungus and will travel to healthy beech. The scale then can create a small scar in the bark, which then is an entry point for the fruiting bodies of the fungus. Once in the stem, the fungus causes the formation of dead or callus tissue. These cankers grow and eventually girdle the stem by preventing water and nutrient travel. This disease is a slow killer of beech. It often takes 15 years for an infected tree to die.) Both diseases are found in small numbers. The level of wind damage is also light and consists of a few individual blown over trees. The quality of sawtimber had been reduced due to the sugaring history. Tapping a maple tree can cause staining and an increase in heartwood. Mills also will not purchase the lower log of a tapped maple because of the fear of damaging their mill equipment on metal spouts, tapping bits, or nails. For both reasons, the saw log value of a tapped maple is diminished. Only twenty seven percent of the trees within area 5 have a diameter that is 6 inches and are considered cull. Most of this cull consists of large diameter maples with stem flaws or rot in their stem. These large "veteran" maples contain no sawtimber, but are still perfectly capable of producing sap. Area 5 is adequately stocked for a maple stand with a basal area of 110 square feet and 110 trees per acre. The basal area of acceptable growing stock is 110 square feet per acre. The mean stand diameter is 13 inches. The Q factor is 1.3. (A Q factor of 1.3 means that currently 87% of the trees within the area have a diameter that is 12 inches or larger.)

Area 5 should undergo another individual tree selection/improvement cut in 2023. (Please note that the Current Use Program allows for a three-year window on either side of the prescription date. For this reason, the individual tree selection cut would occur any time between 2020 and 2026.) This improvement/individual tree selection cut will remove mature hemlocks, diseased beech, mature non-maples, and any maple that has a significant crown or stem flaw. The purpose of this cut is to promote the growth of the maples that are in the 8 to 20-inch diameter class by reducing competition. The cut will additionally release the birch and beech that established within the understory. This will allow some of them to develop into larger poles. The residual basal area should be no lower than 90 square feet per acre. The long-term objective for area 5 is to eventually produce sap. The completion of the cut will not create a monoculture of sugar maples. The yellow birch within the understory will add to the level of diversity over time. Area 5 will easily comply with the State's diversity requirements for sugarbushes. The Besser family is also familiar with the States tapping recommendations (see description in area 4). All future tapping activities will abide by these recommendations. Area 5 is under uneven aged management with a cutting cycle of 20 years. The desired diameter for growing maples is 24 inches or larger. The desired diameter for growing non-maple hardwoods and hemlocks is 18 inches. The target Q factor will be 1.3 to 1.5. (A factor of 1.3 to 1.5 means that eventually 60% of the trees in the area will have a diameter that is 12 inches or larger.) It will take some time, the completion of the prescribed

improvement cut, and some mortality of veteran maples to achieve this Q goal. The following chart details the present diameter distribution and the distribution after the improvement cut.

Diameter Range	Total Basal Area	Acceptable Basal Area	Basal area after cut
6-10 inches	14 sq.ft.	14 sq.ft.	14 sq.ft.
12-14 inches	28 sq.ft.	18 sq.ft.	20 sq.ft.
16 inches or larger	68 sq.ft.	48 sq.ft.	56 sq.ft.

Area 6 is 20.8 acres of mixed hard and softwoods. The dominant species is red spruce, which comprises 35% of the trees within the area that have a diameter that is 6 inches or larger. Other species present include hemlocks (26%), red maple (15%), balsam fir (7%), yellow birch (7%), white pine (6%), aspen (3%), and black cherry (1%). It is located on level to slightly sloped terrain that can face the east. The dominant soils include the Peru fine sandy loam type, the Salmon very fine sandy loam type, and the Lyman-Tunbridge fine sandy loam, very rocky type. (Please see page 12 for more details of these soils). The site index for area 6 is 45 for spruce, 57-65 for maple, and 71-75 for white pine. Area 6 was once utilized as pasture by a previous landowner. This farmland was abandoned in the 1950's. This allowed it to revert into a mixture of hard and softwoods. It has seen no logging activity. For this reason, it is still considered to be an even aged stand. The understory varies. A large portion of it contains a mixture of spruce, firs, and hemlocks that are 10 to 30 feet in height. Other sections contain yellow birch that are 2 to 4 inches in diameter. There are also some pockets of younger softwoods that are 3 to 5 feet in height. Area 6 borders some fields. The act of pasturing created disturbances that allowed the invasive plant, bush honeysuckle to become established. Bush honeysuckle comes from the Orient and has been taking hold in this region of Vermont. There is a heavy presence of this invasive species located along the Route 15 corridor from Morrisville to Cambridge. On route 15, it likely was spread by road side mowing. Bush honeysuckle is one of the first plants to leaf out in the spring. This makes it easily identified during late April. Bush honeysuckle plants have a habit of spreading out by creating a dense, impenetrable ceiling within the understory. This plant can out shade native regeneration and offers competition for nutrients. For this reason, this bush quickly discourages the regeneration of native trees, ferns, and flowers. Bush honeysuckle also has a growing root system, which allows it to grow quickly. The plant easily sprouts from a severed stump. Invasive plants like old, pasture settings or some type of disturbance. These settings have full sun and have been partially disturbed by animal hooves or logging equipment. The bush produces a small berry that is enjoyed by many birds and animals. Wildlife could quickly spread this bush to other sections of the Besser parcel and choke out the native regeneration. The fear with invasive plants like bush honeysuckle is a natural disturbance like a storm could blow over substantial numbers of trees in the overstory and there would be no replacement trees in regions that have a high density of invasive plants. The invasive has the capability of creating a kind of ecological wasteland. The tree health is good. The only insect concerns are a few white pines that have been damaged by the white pine weevil. The only disease present is ring shake which is seen on just a few of the area's hemlocks. The main health concern is wind damage. This is due to the shallow soil conditions and the fact that the area contains some spruce and firs that are approaching maturity. The present level of wind damage is light. However, the level of wind damage could increase dramatically if no logging is done. The quality of sawtimber is good with very little cull. Only eleven percent of the trees within that are have a diameter that is 6 inches and are considered cull.

Most of this cull are poorly formed hardwoods or aspens. Area 6 is adequately stocked for a mixed hard and softwood stand with a basal area of 110 square feet and 199 trees per acre. The basal area of acceptable growing stock is 98 square feet per acre. The mean stand diameter is 11 inches.

Area 6 contains a small volume of bush honeysuckles. Now is the time to work on controls in this area before the honeysuckles become more established. There are several approved tactics for controlling bush honeysuckle. They can be uprooted, if found at a young age. Bushes that are a foot in height are easily uprooted. Many landowners will walk their land in the spring and look for the first green foliage of a honeysuckle. They will uproot the tree and leave it hanging in another plant. Young plants will die if their roots are not in contact with soil. However, a honeysuckle can re-establish itself if a small section of root is left in the ground. Cutting honeysuckle is frustrating because it quickly sprouts from severed stumps. The Nature Conservancy recommends cutting bush honeysuckle and applying Round Up to the stump. The herbicide prevents the stump from sprouting. For more information on this control effort, the landowner is advised to contact the Nature Conservancy or a certified pesticide applicator. One non-chemical control is burning. Landowners have had good luck taking a commercial torch (like what roofers or pavers use) to the base of the invasive stem. This should be done when the ground is either wet or covered with snow to avoid unnecessary fires. Basically, the torch is held to the lower stem of the tree until the bark starts to bubble and blacken. This kills the bush and it will not re-sprout. These control efforts will help slow or stop the spread of this invasive to Besser and neighboring parcels. Invasive controls will have no immediate impact on the residual basal area. Area 6 should undergo an extended irregular shelterwood cut in 2023. (Please note that the Current Use Program allows for a three-year window on either side of the prescription date. For this reason, the extended irregular shelterwood cut on area 6 could occur any time between 2020 and 2026.) This extended irregular shelterwood cut will remove all large fir, a large portion of the large spruce, weevil damaged pine, aspens, cull hemlocks, and cull hardwoods. This cut will remove individual trees and trees in groups that will range from 2 to 6 stems in size. The size of the groups will depend upon the density of large spruce and balsam firs. The purpose of the cut is to minimize wind damage by removing at risk trees. It also will release a portion of the established hard and softwoods that are in the understory. This will allow many of them to develop into larger poles. The cut will additionally result in creating new openings on the forest floor where there is no young tree regeneration. These openings will be small and will have shaded conditions. This will promote the growth of shade loving softwoods and yellow birch. The cut will also improve the growth on some of the remaining softwoods that are in the 8 to 16-inch diameter class by reducing competition. The residual basal area should be no lower than 90 square feet per acre. This is slightly lower than what is typically suggested for managing a hard and softwood stand. It is justified given the volume of mature spruce and firs that are present. The stocking level will be reduced to this level if no logging occurs due to wind damage and natural mortality. The stocking will increase due to the stems within the understory. This cut will be followed by a similar cut that will occur in another twenty years. The long-term objective for area 6 is to produce logs, while promoting the growth and regeneration of desirable hard and softwoods. It is under even aged management with a rotation age of 80 to 100 years.

Area 7 is 1.4 acres of non-productive land. This consists of an old farm pond and a small wetland. This area requires no activity. The long-term objective for area 7 is to provide habitat opportunities for wildlife.

<u>Area</u>	<u>Year</u>	<u>Management Practice Prescribed in order of priority</u>
6	2018-2027	Owners should conduct some invasive controls on the bush honeysuckles that are present. This will not result in any change to the residual basal area.
All	2018-2027	Owners should monitor all areas for the presence of bush honeysuckles. This will be important for regions that see logging activity or regions adjacent to the town road. The Owners should conduct appropriate controls.
All	2018-2027	The owners should periodically monitor the condition of their boundary lines. They should flag the boundary lines prior to any logging activity. They also should consider re-painting blazes and painting marks on boundary trees that contain wire while they are still easy to identify. This will maintain the integrity of the boundary line and could prevent an accidental trespass from neighboring logging operations.
All	2018-2027	Owners should submit a forest management activity report when significant commercial thinning activity has occurred in acreage that is enrolled in the Use Value program. This report documents the area thinned and what was removed during the previous calendar year. This report must be filed with the County Forester prior to February 1. This report can be received from the County forester or the owner's consulting forester.
Ag land	2018-2027	Owners should continue their present field management practices.
Open land	2018-2027	Area may be mowed and utilized as pasture if the farmer has the time. If this does not occur, the area will be designated as area 1 (pioneer hardwoods) in the next plan.
6	2020-2026	Area should undergo an extended irregular shelterwood cut. This extended irregular shelterwood cut will remove all large fir, a large portion of the large spruce, weevil damaged pine, aspens, cull hemlocks, and cull hardwoods. This cut will remove individual trees and trees in groups that will range from 2 to 6 stems in size. The size of the groups will depend upon the density of large spruce and balsam firs. The residual basal area should be no lower than 90 square feet per acre.
3	2020-2026	Area should undergo an overstory removal cut with reserves. This cut will remove all large spruce, large hemlocks, and large cull hardwoods. The cut will not remove spruce and smaller hardwoods that are in the 6 to 8-inch diameter class. The residual basal area should be no lower than 40 square feet per acre.
2	2020-2026	Area should undergo an extended irregular shelterwood cut. This cut will remove large fir, large spruce, hemlocks with ring shake, and cull hardwoods. The cut will remove individual trees and stems in groups that could range from 2 to 8 stems in size. The residual basal area should be no lower than 80 square feet per acre.
4	2020-2026	Area should undergo another individual tree selection/improvement cut. This will consist of a removal of mature hemlocks, cull hemlocks, non-maple cull, and maples with significant stem flaws. The residual basal area should be no lower than 100 square feet per acre.

5 2020-2026 Area should undergo an individual tree selection/improvement cut. This will consist of a removal of hemlocks, diseased beech, mature non-maples, and maples with significant stem flaws. The residual basal area should be no lower than 90 square feet per acre.

All 2027 Re-evaluate all areas and update forest management plan

The Following Resources were used while developing this forest management plan:

Silvicultural Guide for Northern Hardwood types in the Northeast by William Leak, Dale Solomon, and Paul DeBald

North American Maple Syrup Producers Manual Massachusetts Sugarmakers Association 2006

A Silvicultural Guide for Spruce-fir in the Northeast USDA-USFS-NA-FES Technical Report NE-6 1973

Mapping Eastern Hemlock: A preliminary guide. USDA-USFS-NA-FR-30. 1985

A Silvicultural Guide for White Pine in the Northeast USDA-USFS. Lancaster and Leak. General Technical Report NE-41.1978

The Irregular Shelterwood System: Review, Classification, and Potential Application to Forests Affected by Partial Disturbances by Patricia Raymond, Steve Bedard, Vincent Roy, Catherine Larouche, and Stephane Tremblay.

Soils Data

The Peru very stony fine sandy loam is composed of a mixture of sand, stones, and loam. This soil includes a layer of hardpan that is located between 1 and 2 feet two feet from the soil's surface. This layer of hard pan slows the drainage after rains. For this reason, the owners should abide by the State of Vermont's Acceptable Management Practices for Logging Operations (AMP's). These are some guidelines for logging and log roads that prevent erosion and the discharge of silt into water ways. The layer of hardpan also creates a seasonal high water table during the fall and late spring. This high-water table can limit root development. For this reason, trees located on this soil are susceptible to wind damage over time.

The Frাগiaquept and Haplaquept soil type is composed of a mixture of clay and loam. This composition slows the drainage after rains. This drainage pattern creates a seasonally high water table that lasts from the fall into the early summer. It also increases the likelihood of erosion. For this reason, the owners should follow the AMP's. The owners should also consider conducting logging activity either during frozen winters or in dry summers. This will prevent damage and rutting to the soils. The high water table also limits the development of tree roots. The shallow rooting pattern that occurs on this soil increases the area's susceptibility of wide spread wind damage.

The Marlow very stony fine sandy loam is composed of a mixture of sand, stones, and loam. This soil includes a layer of hardpan that is located between 1 and 2 feet two feet from the soil's surface. This layer of hard pan slows the drainage after rains. For this reason, the owners should abide by the AMP's when logging. The layer of hardpan also creates a seasonal high water table during the fall and late spring. This high-water table can limit root development. For this reason, trees located on this soil are susceptible to wind damage over time.

The Potsdam silt loam is composed of a mixture of silt and loam. It contains a layer of hard pan that is located around 16 inches from the soil's surface. This layer of hard pan slows the drainage after heavy rains. It also creates a seasonally high water table that lasts from the fall into the early summer. For these reasons, the owners should abide by the AMP's and consider timing logging activity during dry summer or frozen winter conditions. The high water table and hard pan layer also limit root development. This can increase the risk of wind damage for trees on this area as they mature.

The Tunbridge-Lyman fine sandy loam, rocky is composed of a mixture of sand, loam, silt, and gravel. The composition of this soil allows it to drain within a day of heavy rains. For this reason, the owner should follow the State of Vermont's Acceptable Management Practices for Logging Operations (AMP's) when conducting logging activity. These are some guidelines for logging and log road construction that prevent erosion and the discharge of silt into water ways. The drainage pattern of this soil can also cause some stress for trees located on it during times of droughts. Drought stress can cause premature leaf fall, root damage, and sometimes mortality. The depth of this soil can vary. Bedrock can be exposed but is often found between 14 to 28 inches from the surface. Trees located on regions of shallow soils are susceptible to wind damage.

I. PROPERTY SUMMARY

Name: Dr. Gretchen Rous Besser Trust Gretchen R. Besser Trustee

Address: 3679 Stagecoach Road Morrisville, Vermont 05661 (888-3967)

Town Where Land is Located: Morrisville

Acreage / Grand List Description: 176.5 acres dwellings, farm

School Property Account Number (SPAN): 414-129-10200

Orthophoto: 136224,1140224,140220

Biophysical Region: Northern Green Mountains

II. PARCEL RESOURCE INFORMATION

Soil and Water Resources: Parcel is bisected by a brook and contains a wetland.

Recreation/Aesthetics: Parcel contains roads from previous logging that are used for a variety of recreational uses.

Cultural Resources: Property contains an old sugarhouse.

Wildlife Habitat: Parcel contains some large fields that can not be easily seen from the road. It sees frequent wildlife activity.

III. STAND DESCRIPTION & TREATMENT PLAN

Stand Number: Agricultural/open land

Acres: 76.3 acres of active agricultural land, 2.6 acres of open land

UVA Category of Eligible Forest Land: Agricultural/open land that is located within a mile of a Class III Town Road

Stand History: Ag land is used to pasture dairy cows and to produce hay. The open land was old pasture that is starting to revert into woods.

DESIRED FUTURE STAND CONDITION: Maintain in present conditions

PLANNED TREATMENTS: Continue present field management practices.

III. STAND DESCRIPTION & TREATMENT PLAN

EXISTING STAND DESCRIPTION

Stand Number: 1

Acres: 5.4

Stand Cover Type: Pioneer hardwoods

Age Class Structure: even

Site Class: I

Site Index or Soil Series: Peru very stony fine sandy loam 45 for spruce, 71 for white pine

Significant Wildlife Habitat or Special Places and Sensitive Sites Description: Area includes some softwoods that provide some poor weather cover for deer and turkeys.

Stand History: Area was once utilized as pasture by a former owner. This farmland was abandoned around twenty years or so ago. This allowed the area to revert into a mixed stand of hard and softwoods.

It has seen no logging.

Stand Health: Area is located on shallow soils and is susceptible to wind damage. It also contains some white pines that have been damaged by the weevil.

Sampling Method: point sample

Sampling Date: 10/30

Number Points/Plots: 3

BAF/Plot Size: 10 BAF

Quadratic Mean Stand Diameter (inches): 7

Basal Area (ft²/acre):

Total: 37

Acceptable Growing Stock: 17

Unacceptable Growing Stock: 20

Regeneration Data: The understory contains grey birch that are 1 to 4 inches in diameter and some young softwoods that are 5 to 10 feet in height.

DESIRED FUTURE STAND CONDITION

Long Range Silvicultural Objectives: **Uneven-age Management**

Cutting Cycle: 20 years

Desired diameter: 18 for most hardwoods and hemlocks 12-16 for spruce

PLANNED TREATMENTS

Treatment Year: 2027

Treatment: Area should undergo an evaluation to determine health and stocking. These two factors will determine future prescriptions.

Residual Basal Area: NA

Species favored for retention and regeneration: softwoods, red maple

AND/OR

Current Q factor:

Target Q factor: 1.3-1.5

Diameter Class 2 inch class	Current Total Basal Area (ft ² /acre)	Current Acceptable Basal Area (ft ² /acre)	Target Residual Basal Area (ft ² /acre)
6-10 inch	27	17	
12-14 inch	3	0	
16 inch plus	7	0	

III. STAND DESCRIPTION & TREATMENT PLAN

EXISTING STAND DESCRIPTION

Stand Number: 2

Acres: 26.8

Stand Cover Type: mixed hard and softwoods

Age Class Structure: even

Site Class: I,II

Site Index or Soil Series: Peru very stony fine sandy loam type, Fragiaquept and Haplaquept type, Marlow very stony fine sandy loam type, Potsdam silt loam type, Tunbridge-Lyman fine sandy loam, rocky 48-55 for spruce, 57 for balsam fir

Significant Wildlife Habitat or Special Places and Sensitive Sites Description: Area includes some softwoods that provide some poor weather cover for deer and turkeys.

Stand History: Area was once utilized as pasture by a former owner. This farmland was abandoned in the 1950s. This allowed the area to revert into a mixed stand of hard and softwoods. Most of the Area underwent an extended irregular shelterwood cut in 2000. The northern 13.7 acres were not cut at this time. This cut consisted of removing large fir, cull hardwoods, cull hemlocks, and mature spruce,

Stand Health: Area is located on shallow soils and is susceptible to wind damage. It also contains some hemlocks that have ring shake.

Sampling Method: point sample

Sampling Date: 10/30/18

Number Points/Plots: 13

BAF/Plot Size: 10 BAF

Quadratic Mean Stand Diameter (inches): 11

Basal Area (ft²/acre):

Total: 110

Acceptable Growing Stock: 95

Unacceptable Growing Stock: 15

Regeneration Data: The understory contains a variety of hard and softwoods of various heights.

DESIRED FUTURE STAND CONDITION

Long Range Silvicultural Objectives: **even-age Management**

Current Age: 60 years

Rotation Age: 80 years

PLANNED TREATMENTS

Treatment Year: 2020-2026

Treatment: Area should undergo another extended irregular shelterwood cut. This cut will remove all large firs, mature spruce, some of the hemlocks with ring shake, mature pine, and cull hardwoods. Cut will remove individual stems and trees in groups that will range from 2 to 8 stems in size

Residual Basal Area: 80

Species favored for retention and regeneration: softwoods, red maple, yellow birch

Diameter Class 2 inch class	Current Total Basal Area (ft ² /acre)	Current Acceptable Basal Area(ft ² /acre)	Target Residual Basal Area(ft ² /acre)
6-10 inch	40	38	35
12-14 inch	35	33	25
16 inch plus	35	24	20

III. STAND DESCRIPTION & TREATMENT PLAN

EXISTING STAND DESCRIPTION

Stand Number: 3

Acres: 8.7

Stand Cover Type: mixed hard and softwoods

Age Class Structure: even

Site Class: I,II

Site Index or Soil Series: Fragiaquept and Haplaquept type, Marlow very stony fine sandy loam type, 48 for spruce, 59 for sugar maple

Significant Wildlife Habitat or Special Places and Sensitive Sites Description: Area includes some softwoods that provide some poor weather cover for deer and turkeys.

Stand History: Area was once utilized as pasture by a former owner. This farmland was abandoned in the 1950s. This allowed the area to revert into a mixed stand of hard and softwoods. Most of the Area underwent a shelterwood cut in 2000. This consisted of a removal of large spruce and hemlocks.

Stand Health: Area is located on shallow soils and is susceptible to wind damage. It also contains some hemlocks that have ring shake.

Sampling Method: point sample

Sampling Date: 10/30/18

Number Points/Plots: 3

BAF/Plot Size: 10 BAF

Quadratic Mean Stand Diameter (inches): 10

Basal Area (ft²/acre):

Total: 123

Acceptable Growing Stock: 110

Unacceptable Growing Stock: 13

Regeneration Data: The understory contains a variety of hard and softwoods of various heights.

DESIRED FUTURE STAND CONDITION

Long Range Silvicultural Objectives: **even-age Management**

Current Age: 60 years

Rotation Age: 60-70 years

PLANNED TREATMENTS

Treatment Year: 2020-2026

Treatment: Area should undergo an overstory removal cut with reserves. This cut will remove all large spruce, hemlocks with ring shake, large hemlock, and cull hardwoods. Cut will leave younger hardwoods and spruce that are in the 6 to 8 inch diameter class.

Residual Basal Area: 40

Species favored for retention and regeneration: softwoods, red maple, yellow birch

Diameter Class 2 inch class	Current Total Basal Area (ft ² /acre)	Current Acceptable Basal Area(ft ² /acre)	Target Residual Basal Area(ft ² /acre)
6-10 inch	57	57	40
12-14 inch	27	27	
16 inch plus	39	26	

III. STAND DESCRIPTION & TREATMENT PLAN

EXISTING STAND DESCRIPTION

Stand Number: 4

Acres: 7.8

Stand Cover Type: mixed hard and softwoods

Age Class Structure: even

Site Class: II

Site Index or Soil Series: Fragiaquept and Haplaquept type, 45 for spruce, 50 for sugar maple

Significant Wildlife Habitat or Special Places and Sensitive Sites Description: Area includes some softwoods that provide some poor weather cover for deer and turkeys.

Stand History: Area was once utilized as pasture by a former owner. This farmland was abandoned in the 1950s. This allowed the area to revert into a mixed stand of hard and softwoods. Most of the Area underwent an individual tree selection cut in 2000. This consisted of a removal of mature spruce, cull hemlocks, and cull hardwoods.

Stand Health: Area is located on shallow soils and is susceptible to wind damage. It also contains some hemlocks that have ring shake.

Sampling Method: point sample

Sampling Date: 10/30/18

Number Points/Plots: 3

BAF/Plot Size: 10 BAF

Quadratic Mean Stand Diameter (inches): 9

Basal Area (ft²/acre):

Total: 153

Acceptable Growing Stock: 130

Unacceptable Growing Stock: 23

Regeneration Data: The understory contains yellow birch that are 1 to 4 inches in diameter and dense softwoods that are between 5 and 20 feet high.

DESIRED FUTURE STAND CONDITION

Long Range Silvicultural Objectives: **UNEVEN-age Management**

Cutting Cycle: 20 years

Desired diameter: 18 for hemlocks and non-maple hardwoods, 24 inches for maple

PLANNED TREATMENTS

Treatment Year: 2020-2026

Treatment: Area should undergo an individual tree selection cut. This will consist of a removal of mature hemlocks, hemlocks with ring shake, non-maple cull, and maple with stem flaws.

Residual Basal Area: 100

Species favored for retention and regeneration: softwoods, red maple, yellow birch

Target Q factor: 1.3-1.5

Present Q factor:

Diameter Class 2 inch class	Current Total Basal Area (ft ² /acre)	Current Acceptable Basal Area(ft ² /acre)	Target Residual Basal Area(ft ² /acre)
6-10 inch	63	53	50
12-14 inch	47	43	30
16 inch plus	43	34	20

III. STAND DESCRIPTION & TREATMENT PLAN

EXISTING STAND DESCRIPTION

Stand Number: 5

Acres: 20.7

Stand Cover Type: northern hardwoods

Age Class Structure: Uneven

Site Class: I,III

Site Index or Soil Series: Lyman-Tunbridge fine sandy loam very rocky type, 50 for sugar maple

Significant Wildlife Habitat or Special Places and Sensitive Sites Description: Area includes some beech that periodically produce a source of food for wildlife.

Stand History: Area was once utilized as a pastured sugarbush by a former owner. Livestock were fenced out of the area in the 1950s. This allowed the area to revert into a mixture of maples and hardwoods. It had been sugared into the early 1990s. It has seen a series of improvement and salvage cuts. The consisted of a removal of dead trees and competition from around maples. The last improvement/individual tree selection cut occurred in 2000. This consisted of a removal of diseased beech and non-maple competition.

Stand Health: Area is located on shallow soils and is susceptible to wind damage. It also contains some beeches that have beech bark disease.

Sampling Method: point sample

Sampling Date: 10/30/18

Number Points/Plots: 5

BAF/Plot Size: 10 BAF

Quadratic Mean Stand Diameter (inches): 13

Basal Area (ft²/acre):

Total: 110

Acceptable Growing Stock: 80

Unacceptable Growing Stock: 30

Regeneration Data: The understory contains beech and yellow birch that are 1 to 4 inches in diameter or smaller with heights between 5 and 20 feet.

DESIRED FUTURE STAND CONDITION

Long Range Silvicultural Objectives: U**Neven-age Management**

Cutting Cycle: 20 years

Desired diameter: 18 for hemlocks and non-maple hardwoods, 24 inches for maple

PLANNED TREATMENTS

Treatment Year: 2020-2026

Treatment: Area should undergo an individual tree selection/improvement cut. This will consist of a removal of large hemlocks, mature non-maples, diseased beech, and maple with stem flaws.

Residual Basal Area: 90

Species favored for retention and regeneration: beech, maple, yellow birch

Target Q factor: 1.3-1.5

Present Q factor:1.3

Diameter Class 2 inch class	Current Total Basal Area (ft ² /acre)	Current Acceptable Basal Area(ft ² /acre)	Target Residual Basal Area(ft ² /acre)
6-10 inch	14	14	14
12-14 inch	28	18	20
16 inch plus	68	48	56

III. STAND DESCRIPTION & TREATMENT PLAN

EXISTING STAND DESCRIPTION

Stand Number: 6

Acres: 20.8

Stand Cover Type: mixed hard and softwoods

Age Class Structure: even

Site Class: I,III

Site Index or Soil Series: Lyman-Tunbridge fine sandy loam very rocky type, Peru fine sandy loam type,

Salmon very fine sandy loam type 57-65 for sugar maple, 71-75 for white pine, 45 for spruce

Significant Wildlife Habitat or Special Places and Sensitive Sites Description: Area includes some softwoods that provide poor weather cover for wildlife.

Stand History: Area was once utilized as a pasture by a former owner. It was abandoned in the 1950s.

This allowed the area to revert into a mixture of soft and hardwoods. It has seen no logging activity.

Stand Health: Area is located on shallow soils and is susceptible to wind damage. It also contains some hemlocks with ring shake, some weevil damaged pines and a few bush honeysuckles (invasive plant).

Sampling Method: point sample

Sampling Date: 10/30/18

Number Points/Plots: 8

BAF/Plot Size: 10 BAF

Quadratic Mean Stand Diameter (inches): 11

Basal Area (ft²/acre):

Total: 110

Acceptable Growing Stock: 98

Unacceptable Growing Stock: 12

Regeneration Data: The understory contains pockets of dense spruce, fir, and hemlocks that are between 5 and 30 feet high. It also includes a few pockets of young yellow birch that are 1 to 2 inches in diameter

DESIRED FUTURE STAND CONDITION

Long Range Silvicultural Objectives: **even-age Management**

Current Age: 60 years

Rotation Age: 80-100 years

PLANNED TREATMENTS

Treatment Year: 2020-2026

Invasive Control

Treatment: Area should undergo an extended irregular shelterwood cut. This will remove all large fir, mature spruce, aspen, cull hemlocks and cull hardwoods.

Residual Basal Area: 90

Species favored for retention and regeneration: spruce, fir yellow birch

Diameter Class 2 inch class	Current Total Basal Area (ft ² /acre)	Current Acceptable Basal Area(ft ² /acre)	Target Residual Basal Area(ft ² /acre)
6-10 inch	49	49	40
12-14 inch	30	26	25
16 inch plus	31	23	25

III. STAND DESCRIPTION & TREATMENT PLAN

Stand Number: 7

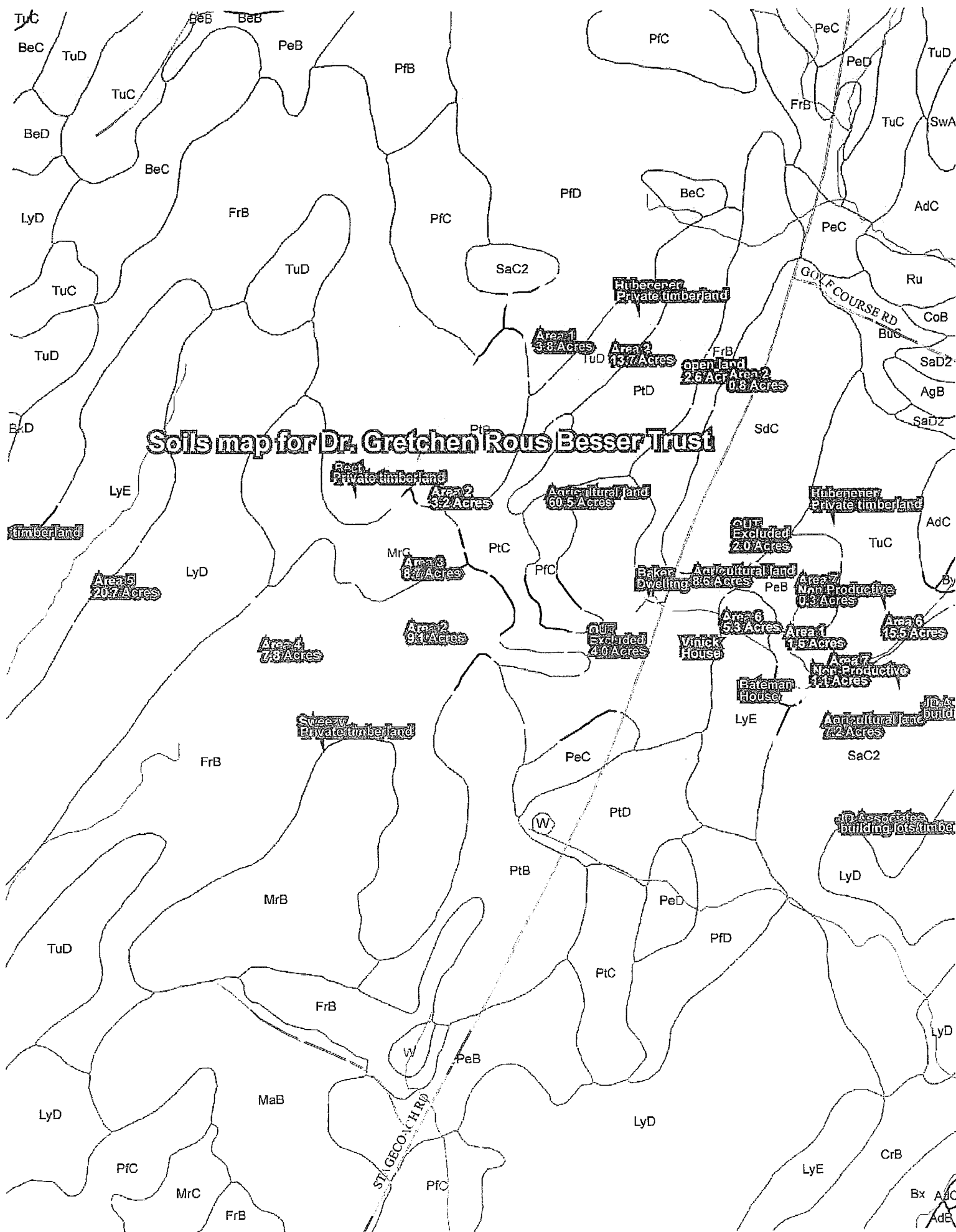
Acres: 1.4

UVA Category of Eligible Forest Land: Non-productive land that is located within a mile of a Class III
Town Road

Stand History: Area includes 1.1 acres of a swamp and a .3 acre farm pond

DESIRED FUTURE STAND CONDITION: Maintain in present conditions for habitat

PLANNED TREATMENTS: None Required.



UVA Management Data Entry Sheet

New Enrollment				Ten Year Update				X		Amendment				Change of Ownership			
PVR ID	0	0	0	-	0	0	0	-	0	Town				Morrisville			
Management Plan Prepared by: Fran Sladyk Butternut Mtn. Farm 37 Industrial Park Drive Morrisville, Vermont 05661									SPAN: 414-129-10200								
Year of Entry: 1987				Previous Owner:													
Date of Last Plan: 2007				Contiguous with: Bect, Sweezy				Last Inspection:		Ortho Photo Number(s): 140220,140224,136244				Ortho Year			
Landowner Name(s): Dr. Gretchen Rous Besser Trust Gretchen R. Besser Trustee									Mailing Address: 3679 Stagecoach Road Morrisville, Vermont 05661								
PF<1mi	PF>1mi	NPF 1 1.4	NPF 2	NPF 3	NPF 4	Active Ag 76.3	Open 2.6	Special (below)	Enrolled 170.5	Exclude 6.0	Total 176.5						
90.2																	
SWH	SP-SS	ESTA 1	ESTA 2	ESTA 3	ESTA 4	ESTA 5	ESTA 6	All ESTA	% PF								

Stand Data									
Stand/ Area #	Acres	Age Class	Site Class	Stand Type	MSD	Total BA	AGS BA	Mgt Activities	Scheduled Dates
1	5.4	even	I	10	7	37	17	12	
2	26.8	even	I,II	11	11	110	95	3	2023
3	8.7	even	I,II	11	10	123	110	4	2023
4	7.8	even	II	11	9	153	130	7	2023
5	20.7	uneven	I,III	6	13	110	80	7/14	2023
6	20.8	even	I,III	11	11	110	98	15/3	2023

If Mgt Activity is shown as 12, No Activity, explain why here. Remember to identify the stand/area:
Area 1 is young and is understocked

If Mgt Activity is shown as 13, Other, explain what the prescription is and why. Remember to identify the Stand/Area.

If the Timber Type is shown as 12, other, please describe it here. Remember to identify the stand/area

Please use the space below to briefly describe any open, agriculture or non-productive acres

Property contains 76.3 acres of agricultural land, 2.6 acres of old pasture that is starting to grow into hardwoods, and a 1.4 acres of non-productive land

Landowner or POA and date

Consulting Forester and date

County Forester and date

Definitions and directions:

Acres - round off to the nearest acre

Age Class

Evenaged - stands with two or less size and/or age classes

Unevenaged - stands with three or more size and/or age classes

Site Class - predominant site class as defined by UVA standards

MSD - Quadratic Mean Stand Diameter (Stems over 4.9" DBH)

Total BA - Basal Area to the nearest inch (stems over 4.9" DBH)

AGS BA - (Acceptable Growing Stock Basal Area) to nearest inch trees capable of producing #2 sawlog or better over 4.9" DBH (USDA Forest Service standards)

Timber Types	Code #	Timber Type	Code #
Aspen and/or White Birch	01	Beech, Red Maple	07
White Pine, Red Oak	02	Spruce	08
White Pine	03	Spruce/Fir	09
Hemlock	04	Pioneer Species	10
Sugar Maple	05	Mixed Wood (25% - 65% softwood)	11
Beech, Yellow Birch, Sugar Maple	06	Other (identify on front of sheet)	12

Management Activity Codes (if one of the following choices reasonably describes the planned management activity, use it. If not use #13 (other) and describe the management activity where indicated on the front side.

Management Activity Codes

01 Non-commercial forest stand improvement

Even-aged management

02 Intermediate Thinning

03 Shelterwood Cut

04 Overstory Removal Cut:

05 Clearcut:

06 Progressive Clear-cutting

Unevenaged Management

07 Single tree selection

08 Group selection

Miscellaneous Choices

09 Salvage Cut

10 Sugar-bush Management

11 Species Conversion

12 No Activity

13 Other

14 Crop Tree Release

15 Invasive Species Control

Category Codes from front of sheet:

PF<1mi - productive forest less than 1 mile from a town road

PF>1mi - productive forest greater than 1 mile from a town road.

NPF 1 - non-productive forest less than 1 mile from a town road and less than 20% of enrolled land.

NPF 2 - non-productive forest less than 1 mile from a town road and greater than 20% of enrolled land.

NPF 3 - non-productive forest more than a mile from a town road and less than 20% of enrolled land.

NPF 4 - non-productive forest more than one mile from a town road and more than 20% of the enrolled land

Special Areas

SWH - Significant Wildlife Habitat

SP-SS - Special Places and/or Sensitive Sites

ESTA 1 - Natural Communities of State-wide Significance.

ESTA 2 - Rare, Threatened and Endangered Species

ESTA 3 - Riparian Areas

ESTA 4 - Vernal Pools with Amphibian Breeding Habitat

ESTA 5 - Forested Wetlands

ESTA 6 - Old Forests

VALLEY VIEW FARMS, INC. TO GRETCHEN R. BESSER

VERMONT WARRANTY DEED

Book 110

KNOW ALL PERSONS BY THESE PRESENTS, THAT Valley View Farms, Inc., Grantor, a Massachusetts corporation, with its principal place of business in North Andover, in the County of Essex, and Commonwealth of Massachusetts, by and through Harriett Osgood, of North Andover, County of Essex, Commonwealth of Massachusetts

in consideration of TEN AND MORE DOLLARS

paid to its full satisfaction by Gretchen R. Besser, Grantee, of 1911 Stagecoach Road, Morristown, in the County of Lamoille, and State of Vermont

by these presents, does freely GIVE, GRANT, SELL, CONVEY AND CONFIRM unto the said Grantee, Gretchen R. Besser, and her heirs and assigns forever, a certain piece of land in Morristown, in the County of Lamoille and State of Vermont, described as follows, viz:

"Being all of the same land and premises as was deeded to Valley View Farms, Inc. by the Warranty Deed of Osgood Associates, Inc., which deed is dated March 23, 1987, and recorded in the Land Records for the Town of Morristown in Book 86, at Pages 488-490, and being further described therein as follows:

Being all and the same land and premises as was deeded to Kenneth W. Sulham (now deceased) and Marjorie R. Sulham by the Warranty Deed of Clyde L. Wood and Ella S. Wood dated June 17, 1965 and recorded in Book 60, Page 7 of Morristown Land Records. Also, being all and the same land and premises as was deeded to Kenneth W. Sulham and Marjorie R. Sulham by the Warranty Deed of Clyde L. Wood and Ella S. Wood dated June 17, 1965 and recorded in Book 60, Page 6 of Morristown Land Records, with the exception of the following described parcel of land which is excepted and reserved by the Grantor herein:

Beginning at the center of Stagecoach Road at a point in line with the southwesterly edge of a right of way running across the parcel herein reserved; thence N 45° 52' W along the southwesterly edge of the right of way, a distance of 42 feet to an iron rod; thence continuing on the same bearing along the southwesterly edge of the right of way a distance of 189 feet to an iron rod; thence N 36° 08' E, a distance of 165 feet to an iron rod; thence S 45° 52' E, a distance of 206 feet to an iron rod on the northwesterly edge of the right of way of Stagecoach Road; thence continuing on the same bearing a distance of 25 feet to the center of Stagecoach Road; thence S 36° 08' W along the center of Stagecoach Road, a distance of 165 feet to the place of beginning.

Also, granting a right of way along the southwesterly boundary of the parcel reserved herein and next northeasterly thereof from Stagecoach Road to the parcel conveyed herein, which right of way shall be used as a right of way in common by the Grantor herein, the Grantee herein and the heirs and assigns of each. The Grantor herein reserves a right of way from the northwesterly end of the right of way reserved herein across the property conveyed herein to that parcel of land which was deeded by the Grantor herein to Morris Sulham, Mabel Sulham and Marjorie Sulham by Warranty Deed dated February 22, 1980 and recorded in Book 76, Page 176 of Morristown Land Records. Such right of way shall run along the existing access road and shall be used as a right of way in common by the Grantor herein, the Grantee herein and the heirs and assigns of each. This right of way shall be limited in use for agricultural purposes and for caring for and removing timber from that parcel of land owned by Morris Sulham, Mabel Sulham and Marjorie Sulham and for not more than one single family residential unit on that parcel of land owned by Morris Sulham, Mabel Sulham and Marjorie Sulham.

Also, granting a right of way across the southerly corner of that parcel of land owned by Morris Sulham, Mabel Sulham and Marjorie Sulham from one parcel conveyed herein to the other parcel conveyed herein, which right of way shall become fixed on its establishment and use by the Grantee herein or its heirs or assigns.

Also, granting a right of first refusal on that parcel of land reserved by the Grantor herein.

Morris Sulham and Mable Sulham join in the execution of this deed for the purposes of conveying their interest in any of the rights conveyed herein.

Reference is made to the above mentioned deeds and their records and to all former deeds and their records for a more complete description of the property conveyed herein.

The Grantor reserves the right to maintain her spring and pipeline in its present location, serving the property reserved herein. In the event the Grantor or its assigns desires to terminate this spring and pipeline right, it may do so by drilling an artesian well on the property of the Grantor, which has the capacity to supply a sufficient quantity and quality of water for a single family residential unit."

This conveyance is made subject to and with the benefit on any utility easements; spring rights, easements for ingress and egress and rights incident to each of the same as may appear more particularly of record, provided that this paragraph shall not reinstate any such encumbrance previously extinguished by the Marketable Record Title Act, Subchapter 7 of Title 27 of the Vermont Statutes Annotated.

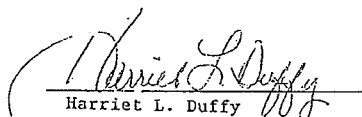
TO HAVE AND TO HOLD said granted premises, with all the privileges and appurtenances thereof, to the said Grantee, Gretchen R. Besser, and her heirs and assigns, to her own use and behoof forever;

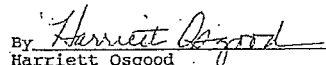
And it the said Grantor, Valley View Farms, Inc., for itself and its successors and assigns does covenant with the said Grantee, Gretchen R. Besser, her heirs and assigns, that until the enrolling of these presents it is the sole owner of the premises, and have good right and title to convey the same in manner aforesaid, that they are free from every encumbrance; except as aforesaid; and hereby engage to WARRANT AND DEFEND the same against all lawful claims whatever, except as aforesaid;

IN WITNESS WHEREOF, Valley View Farms, Inc., set its seal this 17th day of October, A.D., 1996.

IN PRESENCE OF

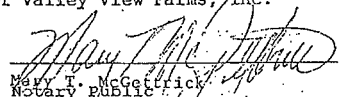
Valley View Farms, Inc.


Harriet L. Duffy

By 
Harriett Osgood
its President
Duly authorized

COMMONWEALTH OF MASSACHUSETTS
ESSEX COUNTY, ss.

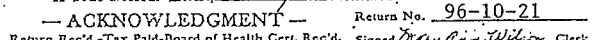
At this 17th day of October, A.D., 1996, Harriett Osgood, President duly authorized to act on behalf of Valley View Farms, Inc., personally appeared and she acknowledged this instrument, by her sealed and subscribed, to be her free act and deed, and the free act and deed of Valley View Farms, Inc.


Mary T. McGettrick
Notary Public
My Commission Expires: 2-16-2001

Morristown, VT., Town Clerk's Office October 24 A.D. 19 96, at 9 o'clock 30 minutes AM.
Received for record a Deed, of which the foregoing is a true copy.

A True Record. Attest,  Clerk.

Vermont Property Transfer Tax
32 V.S.A. Chap. 231

— ACKNOWLEDGMENT —
Return Rec'd.-Tax Paid-Board of Health Cert. Rec'd. Signed  Clerk.
Vt. Land Use & Development Plans Act Cert. Rec'd. Date October 24, 1996



State of Vermont

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation

AGENCY OF NATURAL RESOURCES
BARRE REGIONAL OFFICE
324 North Main Street
Barre, Vermont 05641

October 15, 1996

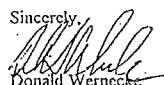
Sharon Green
Williams and Green, P.C.
P.O. Box 800
Morrisville, VT 05661-0800

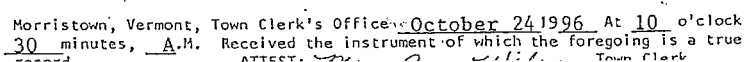
RE: EC-5-1104-1 (revised) Brook-N-Pine Subdivision, Morristown

Dear Sharon,

I'm sorry it took so long to respond to your request. My review of the file indicates that I had approved the plan by Phil Jones, then of the On-Site Program, with the well in the present location. Therefore, that approval satisfies the need for a revised permit for the well location. Nothing further is required from this office for Lot 3A at this time, and the well is not a violation. It should be noted that Lot 3A is the only lot which has satisfied the permit condition for an inspection report on the construction of the wastewater disposal system, making the other lots an apparent violation of the permit.

Sincerely,


Donald Wernecke,
Regional Engineer

Morristown, Vermont, Town Clerk's Office October 24 1996 At 10 o'clock
30 minutes, A.M. Received the instrument of which the foregoing is a true
ATTEST:  Town Clerk