

**FOREST STEWARDSHIP PLAN
for the
WENTWORTH TOWN FORESTS**

PLUMMER, VAN DEUSEN, AND TURNER ROAD FORESTS

Wentworth, NH

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INTRODUCTION

This forest stewardship plan is prepared for the Town of Wentworth Conservation Commission with the purpose of preparing a management plan that applies to the three major town forests: Plummer, Van Deusen, and Turner. The Plummer lot is adjacent to the Van Deusen lot. These two lands are managed together as one off of Buffalo Road by the Baker River Flood Control Dam 11A. The other parcel is on the corner of Turner Road and Buffalo Road approximately ¼ mile from the southern tip of the Plummer lot. The three properties combine to approximately 179 total acres. This plan conforms to New Hampshire Current Use and NH Tree Farm Standards.

LANDOWNER GOALS AND OBJECTIVES

Sustainable long-term management that takes all uses of the land into account is the goal of this plan and of these forests. The Conservation Commission and the Selectmen have identified several primary goals and objectives for the ownership and management of this property (in no particular order):

- To generate income for the Town and the funds that the monies go towards (see Property Information) through sustainable harvests that meet standard silvicultural practices.
- To protect the aesthetic appeal and natural beauty of the forests for future generations to enjoy.
- To increase wildlife habitat for a variety of species.
- To protect or enhance recreational opportunities for the public.
- To protect the forests from all potential forest health problems.

PROPERTY INFORMATION

Plummer Forest:

Tax Map 8 Lot 11-32

130.57 Tax Map Acres

129.0 GIS Acres

GCRD Book 160 Page 441 July 25, 1944

Surveyed by John French in January 1976 (unrecorded)

This piece was donated to the Town by George Plummer in 1944. By deed, all monies from timber harvesting are to be managed by the Trustees of the Trust Funds, with the interest going to the Town Library and cemeteries. The principle balance can never be

touched. The interest can only be evenly dispersed to its specified beneficiaries.

Van Deusen (also known as the Ellsworth Lot):

Tax Map 8 Lot 11-33

35.5 Tax Map Acres

35 GIS Acres

GCRD Book 1360 Page 791 November 28, 1978

Surveyed by John French in January 1976 (unrecorded)

Donated by Hobart Van Deusen in 1978, Income from logging on this property goes into the Town General Fund.

Turner Road Forest:

Tax Map 11 Lot 6-19

15.31 Tax Map Acres

15 GIS Acres

GCRD: More research needed

No survey found

More deed research is needed for this property. Income from logging on this property goes into the Town General Fund.

PLANNING PROCESS

The timber volumes and values throughout this plan are based off of three separate appraisals (cruises). The Plummer and Van Deusen properties were inventoried in 2018. The Turner Road lot was cruised in 2017. The plot locations were identified prior to field work via a GIS system (Geographic Information System) and located on the ground using a navigation grade GPS (Global Positioning System) receiver. A map of the property including physical features and boundary evidence was developed, the finished version of which is included in this plan. Trees five inches and larger in diameter at breast height (DBH or 4.5 feet above ground) were measured at each sample plot to determine stocking (density), species, and timber volumes by forest product. This data was processed using the MULTICRUISE timber inventory program to produce the timber data presented later in this plan.

HISTORY

This property is typical of most tracts in this region. The majority of the property was likely cleared for agricultural use by the early settlers up to the early 1900's. The steeper

areas were probably used as pasture land for livestock such as cattle, horses, and sheep, while the more arable and gently sloped soils were likely used to cultivate hay and other crops. Slowly, the fields of New Hampshire were abandoned beginning in the mid 1800's when many changes were occurring in American history such as the Civil War and the Industrial Revolution. Early on in American history over 90% of the state was forested. The settlers cleared the land for farms and towns and by the mid-1800s only 45% of the state was covered by forest land. After the farm land was abandoned it reverted back to forest. Today, approximately 85% of the State is forested.

The Town Forests have received documented timber management dating back to the 1938 hurricane where timber was salvaged. This is prior to Town ownership of any of the parcels. Significant logging was noted in the 1950's on the Plummer lot. Logging has occurred periodically on each forest up to the present date. A Management plan for the Plummer Forest was written in 1989 by then UNH County Forester Northam Parr. John O'Brien was the forester for the property in the 1980's and 1990's. He oversaw the last timber harvest on the Plummer Forest in 1997 and 1998.

ACCESS

Access to the Plummer and Van Deusen Forests is gained via a landing off of Buffalo Road across from the Flood Control Dam 11A. This land is owned by the State of NH Water Resources Board who have been willing to allow the Town to use the landing in the past for logging. This land was originally Town owned but was taken by the State for the construction of the Dam in the 1970's. This is still the best access and can serve the entirety of both properties. Prior to any new harvest the Town would again need permission to use this area. If permission is denied, a new log landing on Town land could be established a few hundred feet south of the old landing which would then be located on the Plummer Forest. A second landing was used in the past off of Little Sweden Road. This landing is no longer needed. With minor excavation and one new wetland crossing all the timber can be skidded to the Buffalo Road landing.

The Turner Road Forest is accessed through a small mowed field at the corner of Buffalo Road and Turner Road. This provides excellent access to the property. A small wetland does cut off approximately two acres along the southeast corner. If this wetland cannot be crossed, a small roadside landing would need to be established to harvest this small area.

WILDLIFE RESOURCES

A wide variety of wildlife species inhabit the forests of New Hampshire. Each species has its own habitat requirements, which often change from season to season or during

different portions of its life cycle. Thus, no area of forest can support all native wildlife species at all times. Large mammals such as bear, moose, and deer require large areas of habitat, each with its own needs for food and shelter. Smaller species usually require smaller habitat areas, but likewise often need a variety of habitats within that area to support their needs. Migratory birds are here for only part of the year, but also have specific needs. One goal of habitat management is to provide as many varied habitats and food sources as possible for the greatest number of species. Any forest habitat change or manipulation may be beneficial to some species, while being detrimental to others, at least for some time period, until the forest changes or grows. Specific logging recommendations are found in the stand descriptions and prescriptions page.

FOREST DISEASES

White pine canker (*Caliciopsis pinea*) and white pine blister rust were found in minor amounts in all pine areas. Pine canker is a fungus that attacks the tree and can be found in dense pine stands on sandy and well-drained soils. Signs of possible infection include significant pitching as well as crown thinning and decreases in crown density. Pine canker typically doesn't kill the tree. It does affect its growth rate and vigor. Trees with pine canker become more susceptible to other disease and insect issues. Mitigating the canker in a pine stand consists of removing unhealthy or heavily infected trees while opening up the crowns to sunlight and air flow.

White pine blister rust (*Cronartium ribicola*) is a fungal disease that was discovered in the early 1900's. Unlike the pine canker, blister rust severely effects the tree. The infection will appear as a large black area on the trunk and is usually accompanied by a deformed shape on a section of the stem. This area of the tree will decay and eventually lead to tree mortality or a weak point which can snap during a wind event. Trees that show signs of blister rust should be removed from the stand. See pages 22-24 for a blister rust facts sheet. More information can be found on the UNH Cooperative Extension website.

https://extension.unh.edu/resources/files/resource000413_rep435.pdf

THREATENED OR ENDANGERED SPECIES

No threatened or endangered plant or animal species were observed on any of the properties, and no such species were reported by a NH Natural Heritage Bureau database check. However, the documented occurrence of the wood turtle (*Glyptemys insculpta*) was reported nearby in the Heritage Bureau data check. This occurrence was found across the road in the Flood Control Dam and shouldn't impact any activities on the Town Forest. These turtles prefer sandy river banks and this turtle has been reported in several locations along the Baker River watershed. If any threatened or endangered species are

noted at any time a plan will be developed and implemented to protect and enhance their habitat.

INVASIVE SPECIES

No invasive species were noted during the field cruise on the Turner or Van Deusen lands. The majority of the Plummer Forest is also free of invasives. Some glossy buckthorn, Japanese barberry, and autumn olive were found along the Plummer/State log landing on Buffalo Road. The amount of invasives present is small and not alarming at this time. These should be dealt with prior to any timber harvest. A combination of pulling, burning, or burying these invasives mitigate their spread. Herbicides can also be used to aid in their removal.

WATER RESOURCES

There are no major wetlands or water resources on any of the Town lots. One small forested wetland is found on the Plummer forest identified as stand 108. Another is identified on the Turner forest as stand 303. Standard forestry practices will apply during any harvest. Sedimentation from soil erosion can cover and kill small water organisms and eggs, as well as deplete dissolved oxygen needed for aquatic life. Management activities should follow "Best Management Practices for Erosion Control on Timber Harvesting Operations in New Hampshire" (prepared by NH DRED) or other equivalent publication. Skid trail stream crossings should be kept to a minimum, and proper crossing structures used. Logging on frozen or snow-covered ground also minimizes ground disturbance and possible soil erosion (but sometimes may not meet silvicultural needs for seed germination on disturbed soil). Regeneration objectives for the next harvest dictate summer logging on bare ground for soil scarification. Skid trails should be located to maintain an acceptable buffer or filter zone along streams, wetlands, and vernal pools. Skid trails and landings should be water barred or smoothed, and critical areas seeded after use to stabilize the surface to prevent erosion.

SOIL RESOURCES

Each lot has multiple soil types found on it. Generally, each timber stand is well drained and suitable for summer logging with the exception of some small wetlands. The forest soils tend to be sandy and grow white pine with hemlock. The Van Deusen lot is at the highest elevation with the driest and rockiest soils which tend to grow red oak and beech. The Plummer forest, though generally well drained, does have some small seeps and poor soil inclusions to be protected. Some small wetland areas can be found on each

lot. If these small wetlands need to be crossed, the crossings will be kept to a minimum. All crossings will follow correct BMP's.

CULTURAL RESOURCES

The History section described several items relative to cultural resources on the property. Nothing significant has been found on any of the properties. As usual with any forest in New Hampshire, some stone walls from prior pastures and fields were found. If any cultural resources are found at any time they will be documented and protected during all activities.

RECREATION

The Town Forests are open to the public for recreational activities such as hunting, hiking, wildlife viewing, cross country skiing, etc. ATV use is restricted. Timber harvesting should be careful to not damage or limit any permitted recreational use. The Conservation Commission has also requested that the main trail from the old log landing above Little Sweden to the Van Deusen parcel be kept open and free of brush for easier public access.

AESTHETICS

Timber harvesting can be disruptive and unsightly for a period of time, even when done to the highest quality. However, lopping the tops of trees and limbs low to the ground during harvesting operations softens the visual unsightliness of slash and accelerates the decay process, as the material is closer to the ground moisture and fungi. Biomass or whole tree harvesting removes much of the unsightly slash from the forest floor, but generally requires wider skid trails. Slash heights can be limited by contract to a specified height above the ground (usually four feet). Contract provisions may also require removal of slash accumulations from skid trails to be used for recreational purposes. Post-harvest erosion control practices could also utilize an excavator or hand methods to reduce slash accumulations, as well as to aid in the cleanup and seeding of main skid trails and landings. In the past the forests have not been whole tree harvested but were logged with conventional cable skidder and chain saws. This is also how the Conservation Commission would like to proceed with the 2018 summer harvest. The decision was made due to the smaller equipment and narrower skid trails. Also, the logging contract will specify that the largest pine will need to be cut in half to minimize residual stem damage from skidding. A small no-cut buffer will be left along Buffalo Road to keep the visual impact at a minimum from the road.

FORESTS OF RECOGNIZED IMPORTANCE

The Town of Wentworth does not possess any Forests of Recognized Importance (FORI) or High Value Conservation Forests as defined by the NH Tree Farm System.

BOUNDARIES

The Plummer Forest boundaries were blazed and painted in the Fall of 2016. The Van Deusen and Turner Forests were blazed and painted in the Spring of 2018. This maintenance usually needs to be performed every 10 to 15 years to keep brush from growing into the lines, and to repaint so that the lines are readily seen by anyone approaching them. Well-maintained boundaries not only aid the landowner, forester, and logger in restricting management activities to the intended property, but they also guard against intentional or unintentional encroachment or trespass by adjacent owners.

FOREST & TIMBER TAXATION

Current Use tax assessment places an equitable tax on the use of land held as “open space” and not for development. Current Use does not apply to the Town Forests.

The town assesses a timber yield tax of 10% of the stumpage value of timber harvested during a tax year (April 1 to March 31). An Intent to Cut must be filed prior to harvesting, and a Report of Cut is filed after harvesting is completed. The town Selectmen or Assessor establishes an assessment rate for each timber species/product, and a tax bill is issued by the town Tax Collector. A request for reconsideration or a tax appeal can be filed if the assessment is felt to be unreasonable according to the market conditions and specifics of the timber sale. Since these are Town owned properties the Selectmen have the right to waive the timber tax for any logging on the Town land. The timber tax would then be reflected in the stumpage prices given during the timber sale.

A number of references concerning the Federal tax treatment of timber income and related expenses can be found at the National Timber Tax website at www.timbertax.org.

FOREST STAND TYPE DESCRIPTIONS AND PRESCRIPTIONS

The following section describes in detail the current status and recommended management activities for each forest stand. Explanations for common forestry terminology can be found in the Glossary. Page 8 presents a graphic depiction of the general silvicultural prescriptions described below.

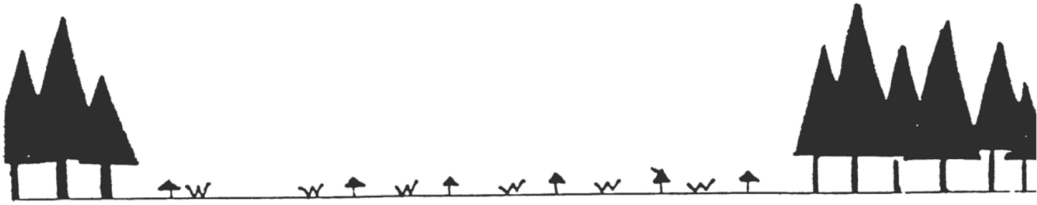
Stand prescriptions may contain the following silvicultural prescriptions:

The first three prescriptions allow regeneration to develop without being damaged by subsequent harvesting operations:

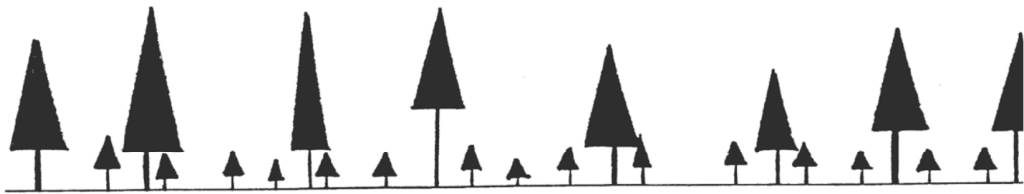
- * **Stand Clearcutting** - The removal of all or the majority of trees of an entire forest stand. As above, the objective is regeneration of a mature or low-quality stand under even-aged management.
- * **Patch Clearcutting** - The removal of all trees on areas larger than group selections, but smaller than the whole stand. Size generally ranges from 2 to 5 acres and is usually spread evenly through the stand. This is also used in stands that are basically mature or contain a very high percentage of low quality trees. The objective is regeneration, usually for shade intolerant species, under a modified form of even-aged management. It is sometimes used as an alternative to stand clearcutting for wildlife or aesthetic reasons.
- * **Shelterwood & Seed Tree** - The removal of all trees except a scattering of seed and shade trees of desirable species. Shelterwood leaves a higher number of overstory trees, sometimes favoring more shade tolerant species. Seed Tree leaves less overstory trees, favoring shade intolerant species. The objective is regeneration under even-aged management. After successful regeneration, the overstory trees are removed. Protection of regeneration during overstory removal can be difficult.
- * **Single Tree Selection** - The removal of individual trees in a stand with a goal of uneven-aged management. The improvement of stand quality and growth is a goal by removing low quality and mature trees and reducing competition to result in a relatively even-spaced stand. A goal is to create or leave a certain distribution of trees in each diameter class. To achieve the latter, some low quality or mature trees may need to be left.
- * **Group Selection** - The removal of groups of trees, in groups ranging from areas 1/16th of an acre to 2 acres. This is used in stands with groups or a high percentage of mature or low-quality trees where clearcutting is not an option. The objective is to regenerate the stand, usually for shade tolerant species such as sugar maple, yellow birch, and white ash. It may also be used as a technique in fostering uneven-aged stands.
- * **Thinning** - The removal of a certain percentage of the total number of trees in a stand, to leave a relatively even-spaced stocking of trees. Removals average around 30% of the stocking. Used in immature, even-aged stands, the goal is to increase growth by reducing competition, and to increase quality by removing the lowest quality with mature trees.

HARVESTING METHODS

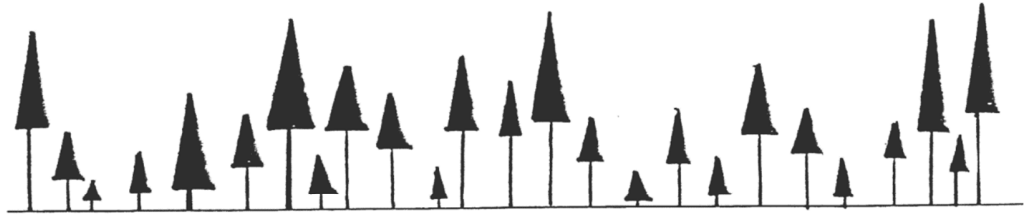
Clearcut



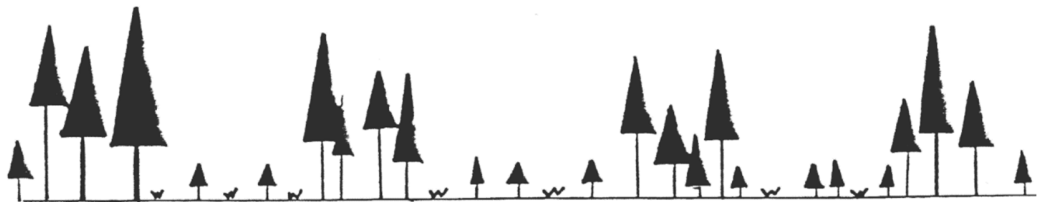
Shelterwood



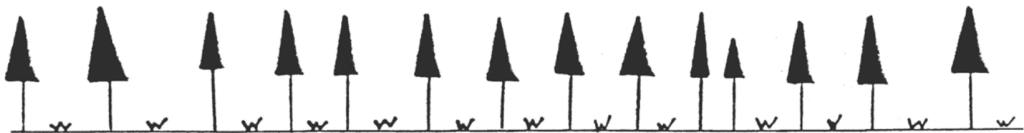
Single-Tree Selection



Group Selection

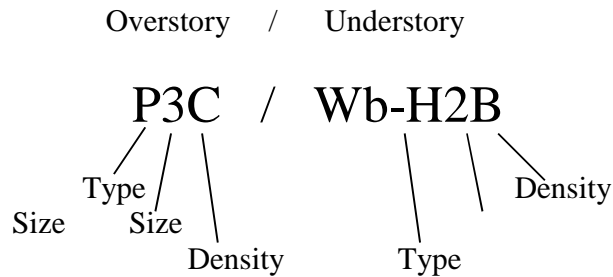


Thinning



TIMBER STAND DESIGNATIONS

Stand designations are made up of several parts depending on the situation. All parts are shown in the example below. The understory and remarks sections are sometimes omitted.



The first part before a slash is the overstory designation, the second part is the understory designation.

TYPE DESIGNATIONS:

Wp	Pine
H	Mixed Hardwood species
M	Mixed Hardwood and Softwood species
S	Softwood species
Pp	Pasture Pine
Hm	Hemlock
Ro	Red Oak

SIZE DESIGNATIONS (based on average stand diameter):

1	Sapling size	$\leq 4"$ DBH
2	Pole size	$> 4" \leq 10"$ DBH
3	Sawlog size	$> 10"$ DBH

DENSITY DESIGNATIONS:

A	Overstocked
B	Adequately stocked
C	Understocked

ACREAGE SUMMARY

FOREST LAND:

<u>Stand Number</u>	<u>Forest Type</u>	<u>Acres</u>
Compartment 1: Plummer		
101	Hm,H,Wp2-3A/M1B	15.9
102	Wp3-2A/M1A	23.2
103	Wp,Hm,H2-3A/M1B	51.9
104	H,Ro2-3A/M1A	14.8
105	Hm,H3-2A/M1B	16.3
106	Pp3-2A /H1A	3.7
107	Open	1.6
108	Wetland	1.6
Compartment 2: Van Deusen		
201	H,Ro2-3A/H1A	30.0
202	Hm,H2-3A/M1B	5.0
Compartment 3: Turner		
301	Wp3-2A/M1A	12.5
302	Open	0.7
303	Wetland	1.8
Total Commercial Forest Land		173.3
Total Open Land		2.3
Total Wetland		3.4
Total GIS Acres of All Three Properties		179.0

PLUMMER: 129

VAN DEUSEN: 35

TURNER: 15

Stand Descriptions and Prescriptions

***Note: All harvesting prescriptions include the removal of poor quality stems as well as mature timber. Dead snags and any other trees showing signs of wildlife use will be left as long as they are deemed to be safe to work and recreate around.**

COMPARTMENT 1: PLUMMER FOREST

Stand 101: Hm,Wp,H2-3A/M1B 15.9 Acres

Basal Area: 193 square feet per acre

Trees Per Acre: 269

Board Feet Per Acre: 5,830

Cords of Pulp Per Acre: 34

Composition: 41 % hemlock, 24% red maple, 10% beech, 7% white pine

This overstocked hemlock/pine/hardwood stand with a mixed understory is located on the east side of the Plummer lot along Buffalo Road. There is an out lot located in this stand with the boundaries marked. The soils are well-drained and the topography is steep in places leading from the ridge in stand 102 down to the road. The majority of the stocking is hemlock/hardwood with small pockets or single stems of large white pine.

Due to the aesthetic appeal of this stand a small no cut buffer will be left along Buffalo Road. The rest of the stand will be lightly treated. The focus will be on removing mature white pine in small groups and lightly thinning the hardwood and hemlock. This harvest should only remove approximately 25% of the overstory. The residual hemlock will provide wildlife cover and aesthetic appeal.

Stand 102: Wp3-2A/M1A 23.2 Acres

Basal Area: 160 square feet per acre

Trees Per Acre: 117

Board Feet Per Acre: 22,235

Cords of Pulp Per Acre: 8.5

Composition: 83% white pine, 10% hemlock, 5% sugar maple

This stand is overstocked with sawlog and pole-sized white pine with a thick mixed hardwood and softwood understory. White pine and other softwood regeneration from the last harvest is excellent. The stand is located on a ridge that runs parallel to Buffalo Road and has well-drained soils. The pine here is not as good quality as found in stand 103 which is growing with hemlock. The timber here ranges from average to poor quality. A main collector skid trail runs the top of the ridge towards stand 104. Some pine canker and blister rust were observed but overall does not pose significant problems and

wasn't prevalent in the stand. Previous logging opened up the crowns to sunlight and air flow which mitigated the canker well.

This stand can be harvested at any time. Summer logging would be best to maintain soil scarification to regenerate white pine. Care should be taken to limit damage to the significant advanced understory where possible. Sections of the stand already have proper crown spacing and has mature timber. These sections will be taken in groups with the hopes of releasing pine regeneration and limiting residual stand damage. Other sections have higher stocking and some low grade timber. These areas will receive an even aged thinning that improves the health of the stand and focuses on crown spacing and crop tree release.

Stand 103: Wp,Hm,H2-3A/M1B 51.9 Acres

Basal Area: 191 square feet per acre

Trees Per Acre: 225

Board Feet Per Acre: 15,610

Cords of Pulp Per Acre: 21

Composition: 48% white pine, 28% hemlock, 15% red oak

This stand is overstocked with sawlog sized pine overtopping hemlock and mixed hardwood with an adequately stocked mixed hardwood/softwood understory. The overstory varies from pockets of large mature pine to small almost pure hemlock inclusions. The soils are generally well-drained and summer operable with small poorly-drained inclusions that can be avoided and protected during a timber harvest. Some pine canker and blister rust were observed but not in large concentrations or alarming levels. The west end was historically skidded to a separate landing near Little Sweden. With modern equipment and one extra crossing timber can be brought to the single landing on the State land off of Buffalo Road. A skidder bridge may be needed to cross the one wet area to avoid having to use the second log landing. One or two small patch clear cuts should be harvested along the open field edge on the southern boundary of the property to encourage a "soft edge" for wildlife. Each cutting entry in the stand should maintain varying age classes along the fields in a spoke and wheel pattern for wildlife habitat. This creates a varied height class of trees which is excellent for wildlife habitat. Aspen will also be targeted in groups for grouse/woodcock habitat. By taking it in groups and adding sunlight to the soil the aspen will regenerate quickly. Woodcock and grouse feed on the buds of the young saplings.

This stand could receive a single tree selection and group selection harvest at any time during the summer months. The focus of the harvest will be to remove mature pine along with an improvement cut that removes low grade timber and releases growing pine and young oak which are sprinkled throughout the stand. Some sections of mature wood will be taken in groups or small patch clearcuts and other areas will be left untouched to provide varying levels of height classes and residual stocking for wildlife and aesthetics. The target diameter of the white pine will be in the 22-24" range. The Conservation Commission has also expressed interest in regenerating a small percentage of the forest

with clear cuts with the goal of regenerating white pine. An excavator may be brought in to scarify the soil to promote white pine regeneration.

Stand 104: H,Ro2-3A/M1A 14.8 Acres

Basal Area: 120 square feet per acre
Trees Per Acre: 165
Board Feet Per Acre: 3,980
Cords of Pulp Per Acre: 20
Composition: 39% red maple, 28% red oak, 17% beech,

This red oak and mixed hardwood stand is located on the north boundary of the Plummer forest. The understory is significant with mixed softwood and hardwood and has a heavy balsam fir component. The soils here are well-drained and grow good quality oak but also show a tendency to grow balsam fir. The stand has sections with adequate stocking of small sawlog red oak which should be left to grow. Other areas have large oak that is excellent quality which should be taken in groups. Red oak is a moderately shade tolerant species and regenerates best when taken in groups that open up the soil to adequate sunlight. Summer logging and soil scarification also aid in oak regenerating. Some of the oak in the stand is veneer quality which is the highest log grade. Overmature or “wolf” oak will be left for wildlife acorn production.

This stand should be harvested in the summer in conjunction with logging on other areas of the property. Mature oak will be taken in groups which will also release pockets of mature fir regeneration. Areas of pole and small sawlog oak will either be lightly thinned to increase crop tree growth or will be left untouched. The red oak target diameter will be 18-20” depending on surrounding conditions.

Stand 105: Hm,H3-2A/M1B 16.3 Acres

Basal Area: 207 square feet per acre
Trees Per Acre: 303
Board Feet Per Acre: 10,300
Cords of Pulp Per Acre: 30
Composition: 71% hemlock, 10% red oak, 7% sugar maple, 7% white birch, 7% red maple

This hemlock stand is located on the southwest corner of the Plummer Forest along the Van Deusen boundary. This stand abuts a Van Deusen hemlock stand. Together they form a 21-acre area of dense hemlock cover with adequate stocking of hemlock and balsam fir understory. The abutters on two sides of the stands have logged their properties heavily. Some signs of a possible deer yard (wintering area) were observed during the field inventory. Deer strip the bark off of young hemlock saplings for food in the winter while they take cover in the dense hemlock crowns. The area doesn't seem to see prevalent winter deer use but there are some signs of yarding present.

Due to the heavy logging on the neighboring properties and the signs of winter deer habitat this stand will be left untreated in the 2018 summer harvest. Some light cutting along the stand edge with stand 103 will provide nearby browse for deer in the winter with the rest of the stand being left untreated. In the future a small group selection harvest that increases softwood regen for cover while releasing red oak for acorn production could be considered. A wildlife specialist should be consulted prior to that work being performed.

Stand 106: Pp3-2A/H1A 3.7 Acres

Basal Area: 110 square feet per acre
Trees Per Acre: 81
Board Feet Per Acre: 1,960
Cords of Pulp Per Acre: 25
Composition: 91% white pine, 8% black cherry

This stand is located on the southeast corner of the Plummer forest along Buffalo Road. The topography is gentle and the soils are well-drained. This stand is an old abandoned field and is comprised of low-grade “pasture pine”. This pine grew in full sun and as a result has numerous limbs and black knots as well as double or triple tops from old pine weevil damage. The majority of the timber is low grade pine pulp for which there is a very poor market. The understory is mostly mixed hardwood with some softwood present. If the State does not allow the Town to use the State-owned log landing at any time in the future a landing could be constructed in this stand. It has sandy soils and flat topography near the road.

Due to the proximity to the road and the extremely low value timber present this stand will be left untouched in the upcoming 2018 harvest as a visual buffer. The timber value is very low and not worth devaluing the aesthetic appeal of the property. An alternate prescription for the future would be to either remove the entire overstory and release the hardwood underneath to start over or to do a seed tree harvest which would leave a few pine per acre while clear cutting the understory to try and regenerate more white pine. This type of harvest would need to take place during the summer for soil scarification.

Stand 107: Open Fields 1.6Acres

Stand 108: Wetland 1.6 Acres

COMPARTMENT 2: VAN DEUSEN FOREST

Stand 201: H,Ro2-3A/H1A 30.0 Acres

Basal Area: 98 square feet per acre

Trees Per Acre: 135
Board Feet Per Acre: 4,295
Cords of Pulp Per Acre: 13
Composition: 42% red oak, 14% sugar maple, 12% beech, 12% red maple, 8% hemlock, 5% white pine.

This overstocked mixed hardwood and red oak stand is located at the height of land on the northwest corner of the Plummer lot. The oak is good to excellent quality and is the primary species to manage for. There were no significant forest health issues noted during the inventory. The soils are generally well-drained and in places may be shallow to bedrock. The understory is mixed hardwood with a strong beech component.

This stand should receive a single tree and group selection harvest at any time. The focus will be removing mature oak, releasing crop trees, and removing beech and other poor quality stems in an improvement cut. Approximately 1/3 of the trees in the stand will be removed in this harvest. The target diameter for the oak should be in the 18-20" range. One to two patch clearcuts could be considered to start regenerating the stand for the future to combat the beech regeneration which is undesirable. These patches would be 1-3 acres each. Logging should take place in the summer to scarify the soil with a goal of regenerating oak. The Conservation Commission has requested to keep the old access road from Little Sweden to the lot be kept clear of debris to maintain easier walking access.

Stand 202: Hm,H2-3A/M1B 5.0 Acres

Basal Area: 203 square feet per acre
Trees Per Acre: 367
Board Feet Per Acre: 3,145
Cords of Pulp Per Acre: 36
Composition: 63% hemlock, 11% red maple, 11% yellow birch, 7% beech

This hemlock stand with mixed hardwood is located on the southern end of the Van Deusen lot, which is the lowest elevation. The soils and drainage here are poor. The two neighboring properties have been cut heavily recently. It appears this stand was not harvested with stand 201 during the last entry. Most of the timber quality here is poor outside of some mature hemlock that may have ring shake or rot. This stand abuts another dense hemlock stand on the Plummer Forest. Some signs of deer wintering habitat have been found.

Since this stand is wet and of low value it should be left untreated for wildlife and aesthetics. Some of the east side of the stand along stand 201 is drier and could receive a light thinning to remove some poor quality trees along with stand 201. The majority of the acreage will be left untouched.

COMPARTMENT 3: TURNER ROAD FOREST

Stand 301: Wp3-2A/M1A 12.5 Acres

Basal Area: 143 square feet per acre

Trees Per Acre: 150

Board Feet Per Acre: 16,150

Cords of Pulp Per Acre: 13

Composition: 65% white pine, 12% red pine, 7% red maple, 7% hemlock, 7% red oak

This overstocked even-aged white pine stand makes up the majority of the Turner Road Forest. The understory is overstocked with mixed hardwood and softwood. The soils are moderately well-drained and the topography is flat. The stand hasn't received any treatment in some time and needs to be thinned. Some of the pine tops appear thin and unhealthy. There are also occurrences of double tops, pine canker, blister rust, and black knots which are typical in pine stands. Pine canker and blister rust were found in normal amounts and do not require any special practices or prescriptions to mitigate.

This stand should receive an even-aged thinning at any time. This type of logging focuses on spacing and releasing healthy crowns to additional sunlight. Mature pine as well as poor quality stems will be removed to improve the overall health of the stand. If possible, logging should be done in the summer to scarify the soil to try to regenerate pine. The soils appear to be suited for summer logging except near the wetland mapped as stand 303. A winter harvest could alleviate concerns of soil damage, especially if the small wetland (stand 303) needs to be crossed to access some of the pine. A small buffer should be left around that wet area. Crown spacing and removing poor quality and mature trees will be the goal of the harvest. Since it's overstocked, approximately 40% of the overstory should be removed to promote crown growth and vigor.

Stand 302: Open Field/Landing 0.7 Acres

Stand 303: Wetland 1.8 Acres

ESTIMATED TOTAL TIMBER VOLUMES AND VALUES

From data collected during the field cruise and information calculated from that data, a summary of the timber volumes and values for this woodlot has been prepared. The summary lists the timber volumes and value by species and forest product for the area cruised.

The Estimated Total Timber Volumes and Values summary represents the total of all standing growing stock on the commercial acreage of the property. It is an estimate of the current market stumpage value of the total volumes. It is a useful guide in measuring the investment potential and resale value of the timber on a tract of land. This value reflects only current market conditions, which may fluctuate widely over time. This fluctuation can occur for a single species or product, or for the market as a whole, much as the stock market fluctuates. The timber values are derived from items such as mill delivered prices, and logging and trucking costs. These values do not include deductions for expenses such as timber yield taxes, road and landing construction, or professional forest management fees. See the timber data spreadsheets listed later in this plan.

MANAGEMENT ACTIVITY TIME SCHEDULE

- **Summer 2018:** Harvest stands 101, 102, 103, 104, 201, and 301.
- **2023:** Tree Farm Update.
- **2028:** Blazing and painting boundaries on Plummer, Van Deusen, Turner forests. Timber health evaluation on each forest.

Periodic/Ongoing:

- Mow Turner log landing (stand 302) once per year after August 1st to allow birds to nest in the tall grasses.
- Assess the benefits of acquiring permanent access to the Plummer forest through the State Water Resources Board property where the existing landing is located. Either buying or trading for this access would be beneficial in the long-term.

Glossary of Forestry Terms

Basal Area: Sum of the cross-sectional areas (at 4.5 ft high) of all trees on an acre. A measure of stand density or crowding.

BMPs: Best Management Practices – The proper methods for the control and dispersal of water and runoff on truck haul roads, skid trails, and log landings to minimize erosion and reduce sediment and temperature changes in streams.

DBH: Diameter at breast height, 4.5 feet above the ground.

Cavity Tree/Snag: A living tree with a hollow cavity large enough to shelter wildlife. Also called a den tree.

Forest Type: A distinctive association or community of trees, shrubs, and herbaceous plants. They are named for the predominant tree species occurring in the type.

High Conservation Forests: Forests of outstanding and critical importance due to their environmental value

Mast: The seed and fruit of a tree or shrub. Hard mast includes nuts; and soft mast includes catkins, berries and other fruits.

Prescription: A course of action to effect change in a forest stand.

Regeneration: Seedlings and saplings established in the understory.

Silviculture: The art and science of growing trees.

Size Classes: Trees are classified by size into four classes: Seedlings; trees less than 4.5 feet tall and less than 1 inch in diameter. Saplings; trees 1-4 inches in diameter and at least 4.5 feet tall. Poles; trees between 5-10 inches in diameter. Sawtimber; trees larger than 10 inches in diameter at breast height.

Special Sites: Those areas offering unique historical, archeological, cultural, geological, biological or ecological value.

Stocking: An indication of the number of trees in a stand as compared to the optimum number of trees to achieve some management objective. (i.e. overstocked, adequately stocked, under stocked).

Overstory: The trees in the main canopy. Pole and sawtimber sized trees.

Understory: The seedlings and saplings that grow on the forest floor, including tree

species that have not grown large enough to enter the main canopy.

Vernal Pool: Small, temporary wetlands that form in the spring from rain or snowmelt. They are important to many wildlife species but are especially critical to amphibian reproduction. Because the pools are seasonal, fish are not present as predators.

Uneven Aged: A stand of trees that contain at least 3 well defined age classes (20 or more years apart).

Even Aged: A stand of trees where most of the trees are the same age (within 20 years) or in the same size class.

Good Forestry in the Granite State: A free publication by the NH Division of Forests and Lands, DRED which outlines BMP's to be followed during timber harvesting operations.

Crop Tree: A pole or sawlog sized tree that is healthy and free of defects that should be released to extra sunlight to increase growth for future harvest.

WHITE PINE BLISTER RUST

Description and Damage



Canker and Aecia (fruiting structure) on Eastern White Pine (*Pinus strobus*)
Photo: Maine Forest Service

White pine blister rust is the most serious disease of white pine in Maine. Its most commonly observed symptom is the presence of cankered (dead and sunken) areas on tree trunks and branches. Pitch commonly flows from these cankered areas and, in May, conspicuous yellowish-orange spores may be produced. Infected small trees are usually killed quickly, but large trees may survive for many years. In the woodlot the disease strikes indiscriminately, often taking the best crop trees or trees at critical spacings. White pine blister rust may effectively eliminate white pine regeneration on some sites.

Host Plants



Infected *Ribes* sp.

Photo: Maine Forest Service

Eastern white pine is the only native tree species affected, but all five needle pines are susceptible. All species of currants and gooseberries (*Ribes* spp.) are susceptible [see Guide for Identifying Ribes Bushes ([.3 MB pdf](#))]. Currants and gooseberries are significant because of their role in disease spread. [The white pine blister rust fungus (*Cronartium ribicola*) cannot spread from pine to pine, but must infect a currant or gooseberry plant first].

Controls

Most efforts to control this disease in pine stands involve attempts to eliminate its alternate host plants (Ribes). The fungal spore which carries the disease organism from Ribes to pine is fragile, rarely surviving airborne transport for distances exceeding 900 feet, even less where vegetation interferes with spore movement. So if all Ribes plants can be killed ("eradicated") within 900 feet of pine to be protected, new infections are rarely a problem.

The most effective way to kill alternate host plants is through use of herbicides, although currants and gooseberries may be physically uprooted instead. For homeowners and small landowners, the easiest herbicide to use is glyphosate (Roundup). It is sold as a ready to use spray formulation but is most economical when purchased as concentrate (41% glyphosate) and diluted at the rate of 2 oz./per gallon of water. For larger landowners, triclopyr (Garlon 4) is recommended at 2-4 oz./per gallon of water. Ribes should be sprayed to wet, not to runoff, during the growing season between May and September. Be careful spray does not drift to desirable plants.

It is also sometimes possible to prune infected areas (cankers) from trees, thereby eliminating the disease. Branches are infected before main stems; therefore if a diseased branch is removed before infection spreads to the main stem, the disease is effectively eliminated from the tree. For this reason pruning of low branches is sometimes recommended in young plantations; this practice has the added bonus of

permitting the production of knot free lumber. When pruning be sure not to remove more than one-third of the live crown at any one time.

It is also sometimes possible to excise (cut out) a canker on the stem of a high value ornamental tree, so long as the canker affects less than half the circumference of the tree. Make an elliptical-shaped cut through the bark around the canker extending 4 inches above and below the margin of the discolored zone and two inches out from either side. Remove the diseased bark and buffer zone of healthy bark. If the wound does not start to heal after the first year, additional bark may have to be removed.

Quarantines are in place to help control this disease. Maine law prohibits the planting and cultivation of currants and gooseberries in most of southern Maine and prohibits the planting and cultivation of European black currants and their hybrids anywhere within the state. Please contact the Maine Forest Service for more specific information.

MAINE DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY

Maine Forest Service - Forest Health and Monitoring Division

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