

Compartment 2

Compartment 2 Stand Map
Taconic Lake Association
Located in the Town of Grafton
County of Rensselaer
State of New York



Taconic Lake Drive






Stand C
Northern Hardwoods
75.30 Acres

Stand D
Eastern Hemlock
20.49 Acres

Stand D

Legend

-  Property Boundary
-  Stand Boundaries
-  Log Landing
-  Access Road

0 450 900 ft

*This is not a legal survey.
Data displayed in this map was obtained from the New York
State GIS Clearinghouse.*



**New England
Forestry Consultants, Inc.**
www.cforesters.com

Drafted by Nathan Piche
July 28, 2017
Tomhannock Center District Manager
209 Grogan Road
Hoosick Falls, NY 12090
(518) 859-2605

Existing Conditions for Compartment 2 – Stand C

Land area:	75.30 Acres
Land use history:	This area was harvested within the past 15 years. This harvest removed quality sugar maple, red maple and white ash individuals. A portion of the lower quality individuals that were designated for harvest were girdled which has resulted in dead standing trees. This has created additional wildlife habitat.
Forest Type:	
- Existing	Northern Hardwoods
- Potential	Northern Hardwoods
Successional trend:	This stand is an uneven aged stand dominated by sugar maple (37% of total BA) followed by red maple (18% of total BA), white ash (16% of total BA), American beech (12% of total BA), yellow birch (5% of total BA), eastern hemlock (3% of total BA), black cherry (3% of total BA), paper birch (2% of total BA), eastern white pine (1% of total BA), red spruce (1% of total BA), sweet birch (1% of total BA) and northern red oak (1% of total BA). The successional trend favors the dominance of northern hardwood species in the future.
Forest health:	<p>Beech bark disease is present on much of the American beech throughout the stand. As the American beech succumbs to disease they sprout readily from their roots. Therefore, much of the understory is now dense with American beech seedlings and saplings. For long term forest management, the difficulty in this stand is to establish desirable regeneration such as red maple, yellow birch and sugar maple among an understory dominated by disease prone American beech sprouts.</p> <p>Another major forest health issue in this stand is the decline of the white ash. Many white ash individuals show signs of dieback. This appears as dead branches, loss of leaves during summer months and having no leaves in the entire crown of a tree. Although not confirmed during the forest inventory of this stand, this dieback in the white ash is likely caused by the emerald ash borer (<i>Agrilus planipennis</i>). The emerald ash borer is a beetle native to northeastern Asia that feeds on ash tree species. Females lay eggs in the bark of ash trees and larvae feed underneath the bark until they mature into adults. Once they mature into adults they bore through the bark, fly to another host tree and the cycle continues. Signs of the emerald ash borer are horizontal galleries underneath the bark created by the larvae feeding as well as D shaped holes in bark created when adults bore through the bark. The larvae feeding underneath the bark cuts off the flow of water and nutrients to the rest of the tree and results in the mortality of the tree. The likely</p>

reason the borer was not confirmed during the forest inventory is because the emerald ash borer typically infests the crown of trees first, resulting in the dieback appearance. Unfortunately, at the scale of this stand, where there are an estimated 2,184 white ash trees, there is little that can be done to prevent mortality as a result of emerald ash borer. Common management practices are to implement a sanitation/salvage harvest. This type of harvest would remove the white ash, salvaging what value is left in these individuals and sanitizing the stand of the emerald ash borer. Another forest health issue in this stand is dense colonies of ferns. Ferns such as the New York Fern (*Parathelypteris noveboracensis*) are common native forest understory plants found nearly everywhere across the northeast. In many forest settings they are of little concern. The issue with ferns in this stand is that in some areas where timber was harvested last, the forest floor space once shaded by the crowns of trees is now occupied by a dense colony of ferns. These ferns have taken advantage of the additional sunlight hitting the forest floor, but now they completely shade out the first two feet above the soil. This prevents the establishment of desirable regeneration such as sugar maple, red maple and yellow birch seedlings and saplings. This issue is mostly concentrated to the southernmost extent of the stand. One feasible management option would be to treat the ferns with an herbicide. The last forest health issue in this stand is the presence of a low density of Japanese barberry (*Berberis thunbergii*). This understory plant is invasive and is extremely competitive, often threatening to displace native understory vegetation. The density of this plant in this stand is very low. The only individuals noticed during the inventory of the stand were along the eastern most property boundary line. Due to the infestation being so small, treating it by physically pulling it up is feasible. When pulling up invasive plants it is recommended that they are fully pulled up by the roots (one can use a “PV” or “Cant Hook”, which are log rolling tools, as levers to pull these plants up) and then hang the invasive plants up, roots facing upward, in a nearby tree. By doing this the roots have no contact with soil and will dry out and die, preventing the plant from re-rooting itself.

Site quality:
Inventory Data:

Site index is 57 for sugar maple.
Date of Inventory: July 29, 2017
Type of Sample: 20 BAF prism points
Number of Sample Points: 28

Approximate age:
Trees per acre:
Basal Area (BA):
Site Class:

70 Years	Size class: Poles (5.5 - 11.5")
185	Mean Stand Diameter: 11 in.
131	Acceptable BA: 69
II (Good)	Timber Quality: Good

<i>Size Class Distribution</i>	
<i>Size Class</i>	<i>BA/Acre (sq.ft.)</i>
Sapling (1" - 5.5")	1
Poles (5.5" - 11.5")	49
Small Sawlogs (11.5" - 17.5")	59
Medium Sawlogs (17.5" - 23.5")	21
Large Sawlogs (23.5" +)	1
Total	131

Stocking: According to stocking guidelines in the *Silvicultural Guide for Northern Hardwoods in the Northeast* published by the United States Department of Agriculture this stand is currently overstocked. The understory has a moderate density of advance regeneration which is primarily comprised of American beech seedlings and saplings.

<i>Compartment 2 - Stand C Volume & Value Summary Table</i>				
<i>Species</i>	<i>Board ft./Acre (Int'l 1/4")</i>	<i>Cords/Acre</i>	<i>Total Value/Acre (\$)</i>	<i>Total Stand Value (\$)</i>
Sugar maple	1437	7	396.90	29886.25
Red maple	461	4	128.23	9655.42
White ash	648	3	161.54	12164.26
American beech	0	3	28.40	2138.52
Yellow birch	77	1	23.57	1775.07
Eastern hemlock	108	0	5.34	401.93
Black cherry	142	1	50.58	3808.37
Paper birch	88	0	10.82	815.10
Eastern white pine	286	0	28.76	2165.55
Red spruce	0	0	0.12	9.04
Sweet birch	0	0	0.80	60.24
Northern red oak	70	0	25.11	1890.82
Total	3317	20	860.17	64770.58

*Dollar values given in this table are for all trees present within the stand that are 5 inches in diameter or larger. These values are given for informational purposes and are not intended to be the estimated proceeds of a timber sale.

Habitat and wildlife use:	Although American beech suffers from disease in this stand, it does produce an abundance of nuts. These nuts create important foraging opportunities for a variety of wildlife species.
Recreational opportunities:	There are several trails that run through this stand. These trails are concentrated in the northern and western most portions of the stand. These trails create excellent opportunities to recreate within the stand.
Potential for timber production:	Of all the management units that this property contains this stand is the most valuable in terms of monetary value. Nearly half the current stocking is taken up by Unacceptable Growing Stock (UGS) (47% of the stand is considered UGS). However, there are excellent sugar maple, red maple and white ash individuals scattered throughout the stand that have the potential to produce high quality sawlogs in the future. Markets for these forest products in New York State are strong and competitive, both of which benefit private landowners. The stand also shows good potential for producing low quality timber which can be used for firewood, mulch and paper products.
Potential for other uses:	This stand has the highest concentration of sugar maple found on the property (there are an estimated 4,593 sugar maple trees within this stand). As a result, there could be the potential to tap these trees for maple sap and syrup production. As a way to generate an annual revenue from the stand a maple syrup producer could tap sugar maples throughout the stand and pay a fixed fee per tap for the use of the trees. The pay per tap can vary greatly depending on access and topography of the stand, but on average one could expect between 30 and 50 cents per tap.
Water quality issues:	None noted.
Important natural features:	This stand is part of the Beech-Maple Mesic Forest.



Photo 2.0. Photo of the typical stocking levels within stand C.



Photo 2.1. Photo of how American beech can sprout from its roots, taking over the understory of a stand. Notice the stump in the foreground. That was an American beech tree cut during the last harvest, which initiated the sprouting of these young individuals.

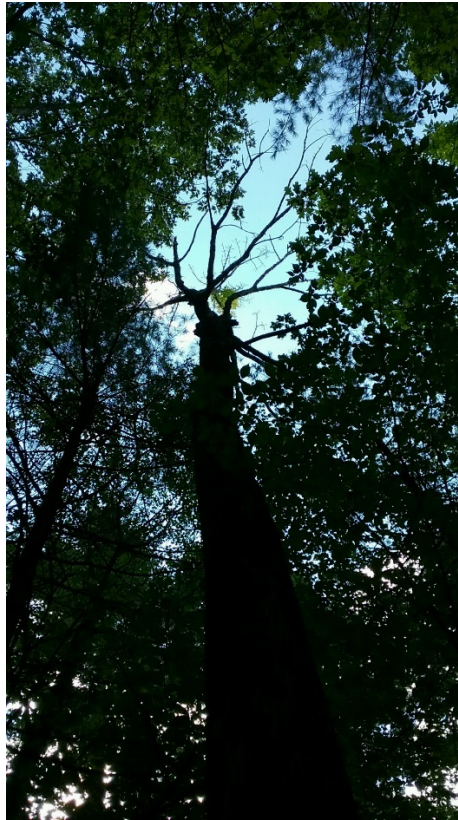


Photo 2.2. Photo of crown dieback on a white ash tree. This is likely caused by emerald ash borer.



Photo 2.3. Photo of a dense colony of ferns within the stand. Ferns growing this densely can inhibit regeneration from becoming established.

Management Plans for Compartment 2 – Stand C

Landowner's objectives for this stand: Salvage the value of white ash individuals. Sanitize the stand of emerald ash borer. Improve the growing space for the best quality individuals.

Silvicultural Prescription

Recommended silvicultural system: Uneven-aged management, favoring Sugar Maple. The desired cutting cycle is 20 years.

Details of the silvicultural prescription: In an effort to salvage the value of white ash trees within the stand before they succumb to rot and decay after being killed by the emerald ash borer a sanitation/salvage harvest is recommended. This harvest would salvage what value is left in the white ash and sanitize the emerald ash borer from the stand. This harvest would remove 21 ft.²/acre (approximately 29 trees per acre) in white ash individuals. Any portion of this timber that can only be used for low value wood products, such as firewood, cannot be sold more than 50 miles from the property. This is law, enacted and enforced through the state in order to slow and prevent the spread of emerald ash borer. Furthermore, any portion of this timber that can be sold as sawlogs cannot be sold out of state, as it is against the law to transport white ash logs across state lines. Local log markets would have to be utilized.

Nearly half of the stands stocking is occupied by low quality individuals, mostly in the form of diseased American beech and poorly formed red maple and paper birch. The stand would benefit from a portion of these individuals being removed in addition to the salvage/sanitation operation. Therefore, a timber stand improvement harvest is also recommended. This timber stand improvement operation would aim to remove 20 ft.²/acre (approximately 28 trees per acre) in diseased American beech and poorly formed red maple and paper birch. The residual stand would be comprised of 90 ft.²/acre (approximately 128 trees per acre) in quality sugar maple, red maple, yellow birch and black cherry individuals.

By completing both the sanitation/salvage operation in conjunction with the timber stand improvement, the stand would be thinned out of its current overstocked state and residual trees would be given additional growing space. This will increase the growth rate of the stand and foster the growth of the best quality stems. Creating conditions conducive for regeneration is not a primary concern with this type of operation because the idea is to focus on improving the growing conditions for the best quality individuals that are already present on the site. This stand has a good amount of quality trees, making it possible to foster the growth of the quality stems through the next cutting cycle (20 years). At the end of the next cutting cycle then the goal would be to start thinking of ways to regenerate the stand.

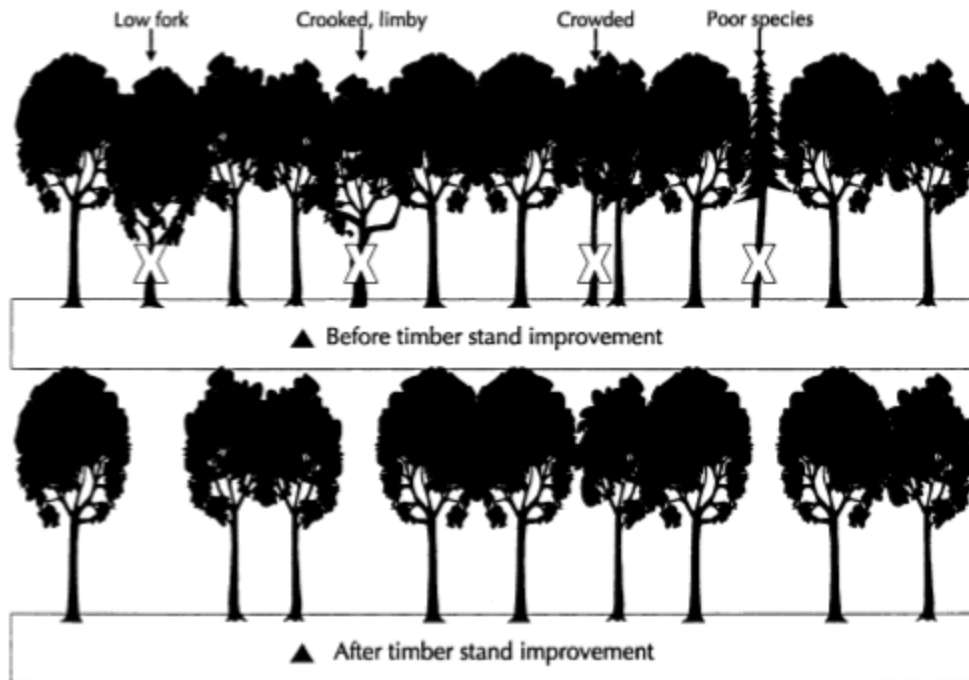


Figure 2.0. Diagram showing how timber stand improvement is implemented. Notice that the trees selected for harvest all have defects that prevent them from becoming more valuable in the future.

Planned Activities

2020: Sanitation/Salvage & Timber Stand Improvement

Estimated Gross Revenue of Sanitation/Salvage & Timber Stand Improvement: \$ 14,400.00

Existing Conditions for Compartment 2 – Stand D

Land area:	20.49 Acres	
Land use history:	A small amount of timber harvesting was done in this stand within the last 15 years. This harvest likely removed quality eastern hemlock individuals.	
Forest Type:		
- Existing	Eastern Hemlock/Mixed Hardwoods	
- Potential	Eastern Hemlock/Mixed Hardwoods	
Successional trend:	This is an even aged stand dominated by eastern hemlock (50% of total BA) followed by red maple (18% of total BA), sugar maple (13% of total BA), yellow birch (8% of total BA), black cherry (8% of total BA) and American beech (3% of total BA). The successional trend favors the dominance of eastern hemlock in the future.	
Forest health:	Beech bark disease is also present within this stand. However, the disease is less of an issue in this stand because American beech makes up a small percentage of the stands total stocking. No other major forest health issues were noted during the inventory of this stand.	
Site quality:	Site index is 67 for eastern white pine.	
Inventory Data:	Date of Inventory: July 29, 2017 Type of Sample: 20 BAF prism points Number of Sample Points: 5	
Approximate age:	80 Years	Size class: Small Sawlogs (11.5 - 17.5")
Trees per acre:	145	Mean Stand Diameter: 14 in.
Basal Area (BA):	152	Acceptable BA: 116
Site Class:	II (Good)	Timber Quality: Good

<i>Size Class Distribution</i>	
<i>Size Class</i>	<i>BA/Acre (sq.ft.)</i>
Sapling (1" - 5.5")	0
Poles (5.5" - 11.5")	24
Small Sawlogs (11.5" - 17.5")	108
Medium Sawlogs (17.5" - 23.5")	20
Large Sawlogs (23.5" +)	0
Total	152

Stocking: According to the stocking guidelines in *Managing Eastern Hemlock* published by the United States Department of Agriculture this stand is adequately stocked. Small sawlog and medium sawlog sized eastern hemlocks occupy dominant and co-dominant canopy positions. Pole sized northern hardwoods such as yellow birch and red maple are found in intermediate and overtopped canopy positions. In the understory, there is a low density of advance regeneration because the stand is quite dense, making the establishment of regeneration difficult.

<i>Compartment 2 - Stand D Volume & Value Summary Table</i>				
<i>Species</i>	<i>Board ft./Acre (Int'l 1/4")</i>	<i>Cords/Acre</i>	<i>Total Value/Acre (\$)</i>	<i>Total Stand Value (\$)</i>
Eastern hemlock	5785	9	269.13	5514.47
Red maple	942	4	231.72	4748.02
Sugar maple	734	4	200.53	4108.85
Yellow birch	302	2	86.46	1771.57
Black cherry	635	2	207.25	4246.51
American beech	0	1	8.30	170.07
<i>Total</i>	<i>8398</i>	<i>21</i>	<i>1003.39</i>	<i>20559.50</i>

*Dollar values given in this table are for all trees present within the stand that are 5 inches in diameter or larger. These values are given for informational purposes and are not intended to be the estimated proceeds of a timber sale.

Habitat and wildlife use:	The overstory of this stand is dominated by eastern hemlock which creates excellent deer wintering habitat as well as habitat for a variety of other wildlife species that utilize coniferous forest stands.
Recreational opportunities:	There is a trail that runs parallel to the property boundary line in the southwestern most portion of this stand. However, this trail is actually not on the property and the stand itself has no existing walking trails. There is good potential to create walking trails through this stand in the future.
Potential for timber production:	Majority of this stand is made up of Acceptable Growing Stock (AGS) (76% of the total BA is considered AGS). Also, 95% of the eastern hemlock within the stand is considered AGS. Therefore, much of the stands growing stock has the potential to produce quality sawtimber in the future.
Potential for other uses:	None noted.
Water quality issues:	None noted.
Important natural features:	This stand is part of the Hemlock-Northern Hardwood Forest.



Photo 2.4. Photo of the typical stocking levels within stand D.

Management Plans for Compartment 2 – Stand D

Landowner's objectives for this stand: Maintain current stocking levels. Allow stand to grow and develop.

Silvicultural Prescription

Recommended silvicultural system: Even-aged management, favoring Eastern Hemlock. The desired rotation age is 100 years.

Details of the silvicultural prescription: Currently this stand is adequately stocked with good quality eastern hemlock. The eastern hemlock occupies dominant and co-dominant canopy positions while northern hardwoods such as red maple, sugar maple, yellow birch and black cherry occupy intermediate and overtopped/suppressed canopy portions. There is also a small amount of red spruce and balsam fir scattered throughout the stand, particularly in the southwestern most corner of the stand. Due to the high percentage of good quality trees already present on the site the stand would benefit little from timber harvesting at this time. It is recommended that no timber harvesting take place in this stand and that the current growing stock be allowed to grow and develop further for an additional 10 to 15 years. In 10 to 15 years it will be likely that majority of the dominant trees will be financially and biologically mature. At that time, creating a plan to harvest those trees and regenerate the stand would be a good course of action.

Planned Activities

There are no activities for this stand.

Compartment 3

Compartment 3 Stand Map
Taconic Lake Association
Located in the Town of Grafton
County of Rensselaer
State of New York



Stand F
Northern Hardwoods
39.07 Acres

Stand F

Stand E
Eastern Hemlock/Mixed Hardwoods
57.84 Acres

Stand F

Stand G
Black Spruce Swamp
3.50 Acres

Stand F

Pond View Way

Legend

- Property Boundary
- Stand Boundaries

0 450 900 ft

*This is not a legal survey.
Data displayed in this map was obtained from the New York
State GIS Clearinghouse.*



**New England
Forestry Consultants, Inc.**
www.cforesters.com

Drafted by Nathan Piche
July 28, 2017
Tomhannock Center District Manager
209 Grogan Road
Hoosick Falls, NY 12090
(518) 859-2605

Existing Conditions for Compartment 3 – Stand E

Land area:	57.84 Acres
Land use history:	No timber harvesting has been completed in this stand.
Forest Type:	
- Existing	Eastern Hemlock/Mixed Hardwoods
- Potential	Eastern Hemlock/Mixed Hardwoods
Successional trend:	This is an even aged stand dominated by eastern hemlock (56% of total BA) followed by red maple (21% of total BA), sugar maple (7% of total BA), yellow birch (4% of total BA), American beech (3% of total BA), white ash (3% of total BA), red spruce (3% of total BA), northern red oak (1% of total BA), black cherry (1% of total BA) and balsam fir (1% of total BA). The successional trend favors the dominance of eastern hemlock and a mix of northern hardwood species in the future.
Forest health:	Beech bark disease is also present within this stand. However, the disease is less of an issue in this stand because American beech makes up a small percentage of the stands total stocking. No other major forest health issues were noted during the inventory of this stand.
Site quality:	Site index is 71 for eastern white pine.
Inventory Data:	Date of Inventory: August 7 – 8, 2017 Type of Sample: 20 BAF prism points Number of Sample Points: 19
Approximate age:	80 Years
Trees per acre:	168
Basal Area (BA):	157
Site Class:	I (Excellent)
Size class:	Small Sawlogs (11.5 - 17.5")
Mean Stand Diameter:	13 in.
Acceptable BA:	105
Timber Quality:	Good

<i>Size Class Distribution</i>	
<i>Size Class</i>	<i>BA/Acre (sq.ft.)</i>
Sapling (1" - 5.5")	0
Poles (5.5" - 11.5")	40
Small Sawlogs (11.5" - 17.5")	66
Medium Sawlogs (17.5" - 23.5")	46
Large Sawlogs (23.5" +)	4
Total	157

Stocking: According to the stocking guidelines in *Managing Eastern Hemlock* published by the United States Department of Agriculture this stand is adequately stocked. Large sawlog sized eastern hemlocks are scattered throughout the site standing in dominant canopy positions. Small sawlog and medium sawlog sized eastern hemlocks occupy dominant and co-dominant canopy positions. Pole sized northern hardwoods such as red maple, sugar maple, yellow birch and American beech are found in intermediate and overtopped canopy positions. In the understory, there is a low density of advance regeneration because the stand is quite dense, making the establishment of regeneration difficult.

<i>Compartment 3 - Stand E Volume & Value Summary Table</i>				
<i>Species</i>	<i>Board ft./Acre (Int'l 1/4")</i>	<i>Cords/Acre</i>	<i>Total Value/Acre (\$)</i>	<i>Total Stand Value (\$)</i>
Eastern hemlock	6317	11	295.06	17066.04
Red maple	519	6	167.42	9683.69
Sugar maple	191	2	59.73	3454.73
Yellow birch	68	1	26.84	1552.25
American beech	0	1	9.50	549.48
White ash	76	0	20.07	1160.85
Red spruce	155	0	12.67	732.76
Northern red oak	0	0	3.90	225.58
Black cherry	189	0	59.45	3438.41
Balsam fir	0	0	0.22	12.72
<i>Total</i>	<i>7515</i>	<i>23</i>	<i>654.85</i>	<i>37876.51</i>

*Dollar values given in this table are for all trees present within the stand that are 5 inches in diameter or larger. These values are given for informational purposes and are not intended to be the estimated proceeds of a timber sale.

Habitat and wildlife use:	The overstory of this stand is dominated by eastern hemlock which creates excellent deer wintering habitat as well as habitat for a variety of other wildlife species that utilize coniferous forest stands.
Recreational opportunities:	There is a trail that runs through the southern end of this stand that leads to the nearby Dyken Pond trails. Other than this trail leading off the property there are no other walking trails. However, there are great opportunities to create recreational infrastructure, such as trails, through this stand in the future.
Potential for timber production:	Majority of this stand is made up of Acceptable Growing Stock (AGS) (67% of the total BA is considered AGS). Also, 85% of the eastern hemlock within the stand is considered AGS. Therefore, much of the stands growing stock has the potential to produce quality sawtimber in the future.
Potential for other uses:	None noted.
Water quality issues:	None noted.
Important natural features:	This stand is part of the Hemlock-Northern Hardwood Forest.



Photo 3.0. Photo of the typical stocking levels within stand E.

Management Plans for Compartment 3 – Stand E

Landowner's objectives for this stand:	Improve the growth rate of the stand. Regenerate a new cohort of eastern hemlock.
---	---

Silvicultural Prescription

Recommended silvicultural system:	Even-aged management, favoring Eastern Hemlock. The desired rotation age is 100 years.
--	--

Details of the silvicultural prescription:	<p>This stand has good quality growing stock that is reaching its biological and financial maturity (with eastern hemlock this occurs when the trees reach 16 to 18 inches in diameter). The stand is also quite dense and as a result there is a low density of advance regeneration. It is important to make efforts to establish regeneration on the site so there will be young growing stock to take the place of older age classes over time. In an effort to create more growing space for the best quality stems, remove a portion of the financially and biologically mature individuals while creating conditions conducive to establishing eastern hemlock regeneration, a shelterwood harvest is recommended. The shelterwood harvest is a method that uses two or three harvests over the course to 20 to 30 years as a way to gradually open the stand and stimulate natural reproduction of shade tolerant species. Eastern hemlock is a shade tolerant species, making the shelterwood method an excellent way to naturally regenerate it. The harvest method is called shelterwood because it removes trees, allowing sunlight to penetrate to the forest floor, stimulating the establishment of regeneration while there are trees left remaining in the overstory to shelter the regeneration from sun scalding, snow, ice and wind. When harvesting this stand, not more than a third of the total basal area should be removed at any one time, openings in the canopy should not be larger than one-half the height of main canopy trees and only co-dominant, intermediate and overtopped/suppressed canopy position trees should be removed. It's imperative these guidelines are followed when harvesting in this stand. If the stand was excessively cut, the residual stocking would have reduced growth, increased mortality and windthrow would likely become an issue. It is also important that the best quality, dominant trees are left well distributed over the area. This is because these are the individuals most likely to produce the most amount of seed and they are the strongest trees and will be able to withstand the initial shock of the harvest. This harvest would remove 47 ft.²/acre (approximately 51 trees per acre) and would leave 110 ft.²/acre (approximately 117 trees per acre). By completing this harvest, the conditions would be established to regenerate a new cohort of eastern hemlock.</p>
---	---

Planned Activities

2025: Shelterwood Harvest

Estimated Gross Revenue of Shelterwood Harvest: \$ 11,000.00



Photo 3.1. Photo of a forest in Wells, VT that was harvested using the shelterwood method 10 years ago. Notice the abundance of young growing stock in the understory being sheltered by an overstory of mature trees. In this photo sweet birch, yellow birch and red maple were the primary species regenerated. In stand E, eastern hemlock, red maple and American beech would be the species regenerated through this method.

Existing Conditions for Compartment 3 – Stand F

Land area:	39.07 Acres
Land use history:	No timber harvesting has been completed in this stand.
Forest Type:	
- Existing	Northern Hardwoods
- Potential	Northern Hardwoods
Successional trend:	This is an uneven aged stand dominated by red maple (33% of total BA) followed by sugar maple (22% of total BA), yellow birch (16% of total BA), American beech (10% of total BA), black cherry (9% of total BA), eastern hemlock (6% of total BA) and red spruce (4% of total BA). The successional trend favors the continued dominance of northern hardwoods in the future.
Forest health:	Beech bark disease is present on much of the American beech throughout the stand. As the American beech succumbs to disease they sprout readily from their roots. Therefore, much of the understory is now dense with American beech seedlings and saplings. For long term forest management, the difficulty in this stand is to establish desirable regeneration such as red maple, yellow birch and sugar maple among an understory dominated by disease prone American beech sprouts. No other major forest health issues were noted during the inventory of this stand.
Site quality:	Site index is 57 for sugar maple.
Inventory Data:	Date of Inventory: August 7 – 8, 2017 Type of Sample: 20 BAF prism points Number of Sample Points: 12
Approximate age:	65 Years
Trees per acre:	157
Basal Area (BA):	128
Site Class:	II (Good)
	Size class: Small Sawlogs (11.5 - 17.5")
	Mean Stand Diameter: 12 in.
	Acceptable BA: 58
	Timber Quality: Poor

<i>Size Class Distribution</i>	
<i>Size Class</i>	<i>BA/Acre (sq.ft.)</i>
Sapling (1" - 5.5")	0
Poles (5.5" - 11.5")	43
Small Sawlogs (11.5" - 17.5")	60
Medium Sawlogs (17.5" - 23.5")	23
Large Sawlogs (23.5" +)	2
Total	128

Stocking: According to stocking guidelines in the *Silvicultural Guide for Northern Hardwoods in the Northeast* published by the United States Department of Agriculture this stand is currently overstocked. The understory has a moderate density of advance regeneration which is primarily comprised of American beech seedlings and saplings.

<i>Compartment 3 - Stand F Volume & Value Summary Table</i>				
<i>Species</i>	<i>Board ft./Acre (Int'l 1/4")</i>	<i>Cords/Acre</i>	<i>Total Value/Acre (\$)</i>	<i>Total Stand Value (\$)</i>
Red maple	484	9	182.44	7128.09
Sugar maple	669	4	194.95	7616.86
Yellow birch	298	3	93.54	3654.65
American beech	0	2	23.40	914.24
Black cherry	86	3	51.31	2004.68
Eastern hemlock	405	1	19.34	755.81
Red spruce	537	1	43.45	1697.76
Total	2479	22	608.45	23772.08

*Dollar values given in this table are for all trees present within the stand that are 5 inches in diameter or larger. These values are given for informational purposes and are not intended to be the estimated proceeds of a timber sale.

Habitat and wildlife use: Although American beech suffers from disease in this stand, it does produce an abundance of nuts. These nuts create important foraging opportunities for a variety of wildlife species.

Recreational opportunities: There is no current recreational infrastructure within this stand. However, there is great opportunity to create such features in the future.

Potential for timber production: Only 45 % of the current stocking is considered Acceptable Growing Stock. This means that only 45 % of the current growing stock has the potential to produce a sawlog of at least eight feet long and 10 inches in diameter at the small end now or in the future. The other 55 % of the stand is mostly comprised of diseased American beech or poorly formed red maple. Therefore, this stand has a relatively low potential for high quality timber production at this time. However, the stand shows good potential for producing low quality timber which can be used for firewood, mulch and paper products.

Potential for other uses: None noted.

Water quality issues: None noted.

Important natural features: This stand is part of the Beech-Maple Mesic Forest.



Photo 3.2. Photo of the typical stocking levels within this stand.

Management Plans for Compartment 3 – Stand F

Landowner's objectives for this stand: Improve the growth and quality of the stand.

Silvicultural Prescription

Recommended silvicultural system: Uneven-aged management, favoring Sugar Maple. The desired cutting cycle is 20 years.

Details of the silvicultural prescription: Due to the stand being currently overstocked and more than half of the stocking being taken up by low quality individuals, mostly in the form of diseased American beech and poorly formed red maple, the stand would benefit from a portion of these individuals being removed. Therefore, a timber stand improvement operation is recommended. This harvest would aim to remove 30 ft.²/acre (approximately 38 trees per acre) in diseased American beech and poorly formed red maple. The residual stand would be comprised of 98 ft.²/acre (approximately 119 trees per acre) in quality sugar maple, red maple, yellow birch and black cherry individuals. By completing a timber stand improvement harvest, the stand would be thinned out of its current overstocked state and residual trees would be given additional growing space. This will increase the growth rate of the stand and foster the growth of the best quality stems. Creating conditions conducive for regeneration is not a primary concern with this type of operation because the idea is to focus on improving the growing conditions for the best quality individuals that are already present on the site. This stand does contain good quality trees but they are crowded by lower quality associates. Therefore, a timber stand improvement cutting would foster the growth of the quality stems through the next cutting cycle (20 years). At the end of the next cutting cycle then the goal would be to start thinking of ways to regenerate the stand.

Planned Activities

2025: Timber Stand Improvement

Estimated Gross Revenue of Timber Stand Improvement: \$ 2,500.00



Photo 3.3. On the left is a photo of a timber stand improvement operation that took place on a forest in Pittstown, NY. This operation removed poorly formed red maple and left quality eastern white pine. On the right is a photo of a primary skid trail from the same property. This trail was used to skid out the harvested material. Horses were used for this operation which minimized damage to the residual stand.

Existing Conditions for Compartment 3 – Stand G

Land area:	3.50 Acres
Land use history:	No timber harvesting has been completed in this stand.
Forest Type:	
- Existing	Black Spruce Swamp
- Potential	Black Spruce Swamp
Successional trend:	This is an even aged stand of black spruce. Black spruce occupies 100% of the current basal area. The successional trend favors the dominance of black spruce in the future.
Forest health:	There are no significant forest health issues in this stand.
Site quality:	Site index is 15 for black spruce.
Inventory Data:	Date of Inventory: August 8, 2017 Type of Sample: 20 BAF prism points Number of Sample Points: 1
Approximate age:	90 Years Size class: Poles (5.5 - 11.5")
Trees per acre:	701 Mean Stand Diameter: 6 in.
Basal Area (BA):	120 Acceptable BA: 120
Site Class:	IV (Poor) Timber Quality: medium

<i>Size Class Distribution</i>	
<i>Size Class</i>	<i>BA/Acre (sq.ft.)</i>
Sapling (1" - 5.5")	60
Poles (5.5" - 11.5")	60
Small Sawlogs (11.5" - 17.5")	0
Medium Sawlogs (17.5" - 23.5")	0
Large Sawlogs (23.5" +)	0
Total	120

Stocking: According stocking guides found in *A Silvicultural Guide for Spruce-Fir in the Northeast* published by the United States Department of Agriculture this stand is currently adequately stocked.

<i>Compartment 3 - Stand G Volume & Value Summary Table</i>				
<i>Species</i>	<i>Board ft./Acre (Int'l 1/4")</i>	<i>Cords/Acre</i>	<i>Total Value/Acre (\$)</i>	<i>Total Stand Value (\$)</i>
Black spruce	0	6	5.64	19.74
<i>Total</i>	<i>0</i>	<i>6</i>	<i>5.64</i>	<i>19.74</i>

*Dollar values given in this table are for all trees present within the stand that are 5 inches in diameter or larger. These values are given for informational purposes and are not intended to be the estimated proceeds of a timber sale.

Habitat and wildlife use: This stand is very dense with sapling and pole sized black spruce. As a result, the trees are of little value for wildlife habitat. However, there are some areas in this stand that have standing water. This water is likely an important breeding site for many species of amphibians such as the red spotted salamander and tree frogs.

Recreational opportunities: This stand presents poor prospects for recreational opportunities because it is very wet making recreating in the stand difficult.

Potential for timber production: This stand is very wet which severely limits productivity. The site index for this stand is 15. This means that on average it takes black spruce 50 years to grow 15 feet tall. Therefore, the stand does not have a high enough productivity to support timber production.

Potential for other uses: None noted.

Water quality issues: Due to saturated soils in this stand it is recommended that no equipment is operated within the stand in order to protect this spruce swamp.

Important natural features: This stand is part of the Spruce-Fir Swamp.



Photo 3.4. Photo of the typical stocking levels within this stand.

Management Plans for Compartment 3 – Stand G

Landowner's objectives for this stand: Maintain current stocking levels. Leave stand in a natural state.

Silvicultural Prescription

Recommended silvicultural system: No management.

Details of the silvicultural prescription: This stand is part of the Spruce-Fir Swamp natural community. This natural community is not very common in the area and could be considered a unique site. It is very wet which limits the sites productivity. As a result, the stand is dominated by sapling and pole sized black spruce. Although many of these trees are less than 6 inches in diameter, they are likely upwards of 70 to 90 years old. Therefore, because of the stands low productivity and its unique characteristics it is recommended that the stand is not managed in any way.

Planned Activities

There are no activities for this stand.

Property Boundary Lines

Maintaining well marked property boundary lines is very important as it is the best way to avoid potential property boundary disputes and to keep uninvited guests off the property. It is also important to mark boundary lines permanently through blazing and painting so that boundary line location markers can never be lost or taken. A blaze is an oval shaped incision made into a tree on or within 5 feet of the boundary line. These blazes are made using an axe and are found 4 to 5 feet above the ground. The side of the tree that the blaze is on will indicate the exact location of the boundary line and where the boundary line is in proximity to the tree. Blazes are painted to make them more visible. The paint will wear away in time but the scar created through blazing will last with the tree for the rest of its life, making it a permanent monument of the boundary line location.

The property boundary lines on the Taconic Lake Association property were surveyed, blazed and painted with red paint approximately 20 years ago. Since then the red paint has faded and it has become difficult to locate the boundary lines. Therefore, the property boundary lines were re-marked in the summer of 2017. Since the boundary lines were already blazed it was not necessary to re-blaze them. It was only necessary to re-paint the old blazes. It is recommended that this re-painting is done once every 10 years to ensure that the lines are always clearly visible. Below is a collection of picture and narratives which describe how the boundary is marked and what each marking means.



Photo 4.0. Photo of an old blaze on a sugar maple tree. Notice the oval shape and residual red paint. Time has almost completely erased the paint but the blaze remains as a monument of the boundary line location.



Photo 4.1. The boundary line run directly through the middle of this American beech tree. Therefore, it was blazed and painted on two sides opposite of each other. This indicates that the boundary line enters the tree on one blazed side and exits the tree on the other blazed side.



Photo 4.2. The boundary line runs through one side of this white ash tree. Therefore, it was blazed and painted on three sides. Two sides were blazed and painted opposite each other indicating that the boundary line enters the tree on one blazed side and exits the tree on the other blazed side. The third blaze indicates which side of the tree the boundary line passes through. Therefore, in this case the boundary line is running from left to right through this tree but on the side of the tree closest to where the photo was taken.



Photo 4.3. These two trees only have one blaze each and the blaze points in the direction of the boundary line. These are known as side blazes because they are marks along the sides of the boundary line. Any tree that is within 5 feet of the boundary line, but is not directly on the line, should have a side blaze indicating its proximity to the line. In this case the line runs in between the yellow birch on the left and the paper birch on the right.



Photo 4.4. The blazes are also located so that if your standing at one you should always be able to see the last blaze on the line and the next one. This makes the boundary lines easy to follow. In the photo above the line runs directly through the sugar maple tree in the background and to the side of the sugar maple tree in the foreground.



Photo 4.5. Property corners on the Taconic Lake Association property are well marked with rebar stakes or iron pipes. To make these corners more visible and easily discernable, additional markings were added. First, three pink colored ribbons were hung on a tree branch over hanging the corner stake or pipe. These ribbons blow in the wind making them catch ones' eye easily from a considerable distance. Second, witness marks were added to two trees within 15 feet of the corner. Witness marks are three blazes on top of each other that face the corner. They are called witness marks because they are markings that are standing as witness to the location of the corner. In the event that the corner stake or pipe was ever lost the witness marks would remain as evidence of the corners location. In the above photo, the witness marks are visible on a small American beech tree in the background. Lastly, the stake or pipe marking the corner was painted with red paint.

Summary Tables

<i>Volume & Value Summary Table</i>					
<i>Compartment</i>	<i>Stand</i>	<i>Board ft./Acre (Int'l 1/4")</i>	<i>Cords/Acre</i>	<i>Total Value/Acre (\$)</i>	<i>Total Stand Value (\$)</i>
1	A	3605	18	873.94	46309.99
	B	4424	18	509.12	25206.59
2	C	3317	20	860.17	64770.58
	D	8398	21	1003.39	20559.50
3	E	7515	23	654.85	37876.51
	F	2479	22	608.45	23772.08
	G	0	6	5.64	19.74
<i>Totals/Averages</i>		4564	20	731.55	218514.99

<i>Forest Stewardship Plan Activity Schedule & Budget</i>			
<i>Year</i>	<i>Activity</i>	<i>Revenue (\$)</i>	<i>Cost (\$)</i>
2017	Forest Stewardship Plan Developed	0.00	4500.00
2017	Property Boundaries Re-Painted	0.00	1900.00
2018	No Activity	0.00	0.00
2019	No Activity	0.00	0.00
2020	Marking, contracting & work supervision fees in Stand C	0.00	2160.00
2020	Sanitation/Salvage in Stand C	14400.00	0.00
2020	Timber Stand Improvement in Stand C		0.00
2021	No Activity	0.00	0.00
2022	No Activity	0.00	0.00
2023	No Activity	0.00	0.00
2024	No Activity	0.00	0.00
2025	Marking, contracting & work supervision fees in Stand E & F	0.00	2025.00
2025	Shelterwood Harvest in Stand E	11000.00	0.00
2025	Timber Stand Improvement in Stand F	2500.00	0.00
2026	No Activity	0.00	0.00
2027	No Activity	0.00	0.00
2028	No Activity	0.00	0.00
2029	No Activity	0.00	0.00
2030	Marking, contracting & work supervision fees in Stand A & B	0.00	1950.00
2030	Single Tree Selection in Stand A	10000.00	0.00
2030	American beech stump treatment in Stand A	0.00	6250.00
2030	Shelterwood Harvest in Stand B	3000.00	0.00
Totals		40900.00	18785.00

Appendix

Appendix includes the following:

Glossary.....57

Glossary

Acre: An area of land containing 43,560 square feet, approximately equal to the playing area of a football field.

AGS: Acceptable Growing Stock. A tree must be able to produce a sawlog of at least eight feet long and 10 inches in diameter at the small end now or in the future in order to be considered acceptable growing stock.

Aspect: The compass direction a slope faces.

Basal Area: One measure of tree density. It is determined by estimating the total cross-sectional area of all trees measured at breast height (4.5 feet above ground) and expressed in square feet per acre.

Cutting Cycle: The time interval between harvesting operations when uneven-aged methods are employed using group or single-tree selection.

DBH: Diameter at Breast Height which is 4.5 feet above the ground. Measuring a tree's diameter at this point is the standard within the forestry industry.

Forest land: Land that is currently supporting forest ecosystems, whether or not trees are present.

Forestry: The art and science of growing and managing forests and forest lands so as to sustain their ability to provide benefits.

Forest Health: A somewhat controversial term among foresters, ecologists, and others; as used here, it implies that a healthy forest is one in which essential ecosystem integrity is maintained largely within the limits imposed by nature. The term also implies that careless or excessive human use can lead to a degradation of ecosystem integrity.

Forest Type: A natural group or association of different species of trees that commonly occur together over a large area. Forest types are defined and named after one or more dominant species of trees in the type, such as the Douglas-fir and the birch-beech-maple types.

Habitat: A place where a plant or animal can live and maintain itself.

Harvesting: Felling, extracting, loading, and transporting products from forests.

Mast: Fruits or nuts used as a food source by wildlife. Soft mast includes most fruits with fleshy coverings, such as persimmon, dogwood seed, or black gum seed. Hard mast refers to nuts such as acorns, beech, pecan and hickory.

Northern Hardwoods: A forest region composed of forest types that include sugar maple, yellow birch, and American beech, and may also include red maple, white ash, black cherry, and softwoods such as red spruce and hemlock.

Rotation Age: The age at which a stand is considered ready for harvest under the adopted plan of management or the culmination of mean annual increment.

Silviculture: The art and science of growing forests for timber and other values.

Site Index: A measure of the relative productive capacity of an area based on total tree height relative to age.

Stand: A local expression of a forest type (usually one that has been disturbed in the past) occupying a specific area and sufficiently uniform in composition, age, arrangement, and condition as to be distinguishable from adjacent areas.

Stocking: An indication of the number of trees in a stand as compared to the optimum number of trees to achieve some management objective, usually improved growth rates or timber values.

Succession: The orderly and predictable replacement of one plant community by another over time in the absence of disturbance.

UGS: Unacceptable Growing Stock. A tree is considered unacceptable growing stock if it cannot produce a sawlog of at least eight feet long and 10 inches in diameter at the small end now or in the future.

Wildlife Habitat: The sum total of environmental conditions of a specific place occupied by a wildlife species or a combination of such species.

Glossary Definitions Sourced from the Following Forestry Resources

McEvoy, T. J. (2004). *Positive impact forestry*. Washington, DC: Island Press.

Nyland, R.D. (2007). *Silviculture: Concepts and applications* (2nd ed.). Long Grove, IL: Waveland Press, Inc.