

Otsego County Forest #7

Taite Road

Forest Management Plan



Daniel Zimmerman
September 2021

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Introduction

Forest Management is a comprehensive science that allows for the maintenance of ecosystem health, sustainable growth and harvest of forest products, administration, aesthetics, and resource protection. Otsego County is dedicated to applying the principles of Silviculture to balance timber harvesting and forest growth to ensure the future viability of our forests. Otsego County forests are a public resource that is managed for timber production, outdoor recreation, wildlife, water, and natural resource conservation. By taking this multipurpose management approach we will be able to benefit the natural resources on county land and give residents the opportunity to enjoy their public land.

Forester Biography

Dan Zimmerman's experience revolves around procurement and consulting Forestry having worked extensively with landowners, timber harvesters, Foresters both public and private, trucking and construction firms, and the forest industry with over 35 years of experience. Presently, chapter chair of The New York Forest Owners Association's Central New York Chapter and past chapter chair of the Society of American Foresters Iroquois Chapter. Dan's education: Graduate of Morrisville State College, SUNY Polytechnic Institute, the University of Phoenix and Leadership Mohawk Valley.

Property Attributes

Otsego County Forest #7 is essentially a 176 acre +- forest located on Taite Road in the Town of Maryland, Otsego County, New York. #7 is comprised of two distinct sub parcels: Taite Road West with 32 acres and Taite Road East with 144 acres. There are no improvements to the property with access directly from Taite Road for both sub parcels. Public access parking is mainly limited to roadside with several areas that can be developed for off road parking.

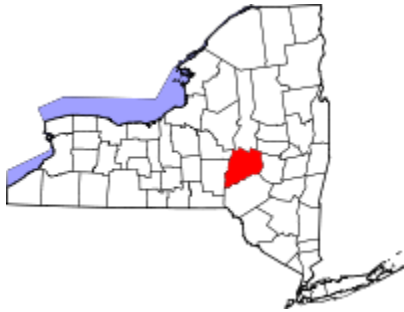
Most of Otsego #7 was agricultural land that was converted to reforestation in the 1930's. Otsego County purchased this property in 1930. Spending time in this forest is a journey through time with numerous old

homestead foundations still intact, wells, clearings, and stone walls existing around Taite Road and the forest as a whole. The primary species planted consisted of Norway Spruce, Larch, and Red Pine with the Norway dominating in acreage and volume.

Long ago (twenty, thirty, and longer years) forest stand thinning, and timber harvests have produced in many instances softwood forest stands that are now mature with growth slowing considerably and native hardwoods slowly taking over the stand stocking and densities through natural succession. These stands are now candidates for stand conversion. A distinct problem exists with natural regeneration within these stands – the White tailed deer. Deer are dramatically limiting and damaging the natural regeneration of our hardwoods thus affecting the present and future forest ecosystems.

A unique forest stand and ecosystem exists in stand T9 West, 3.1 acres in the West sub parcel of Otsego #7. Stand T9 consists of Black Spruce (*Picea mariana*) is most abundant in wet soils, especially swamps and bogs where few other species can survive. In this low-nutrient site, Black Spruce is very small and slow-growing, sometimes taking thirty years or more to grow an inch in diameter. A number of birds are known feed on Black Spruce and snowshoe hares, spruce grouse, chipmunks, and mice and voles feed on the spruce seeds and cones. Extremely rare in the southern tier of New York State, this ecosystem is much more common in the Adirondacks, at high elevations, and on acidic soils.

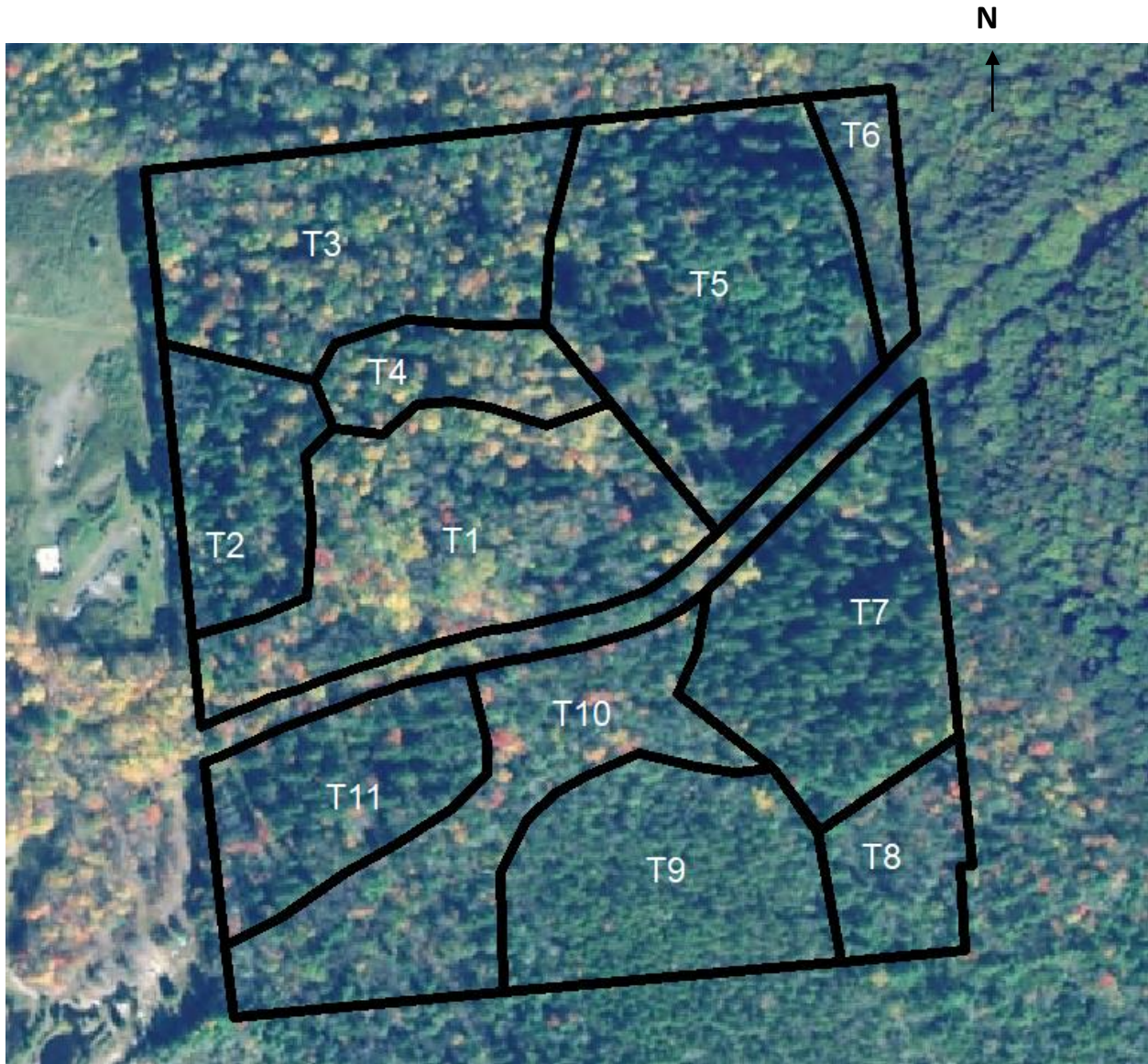
Otsego County, NY



Overview Map



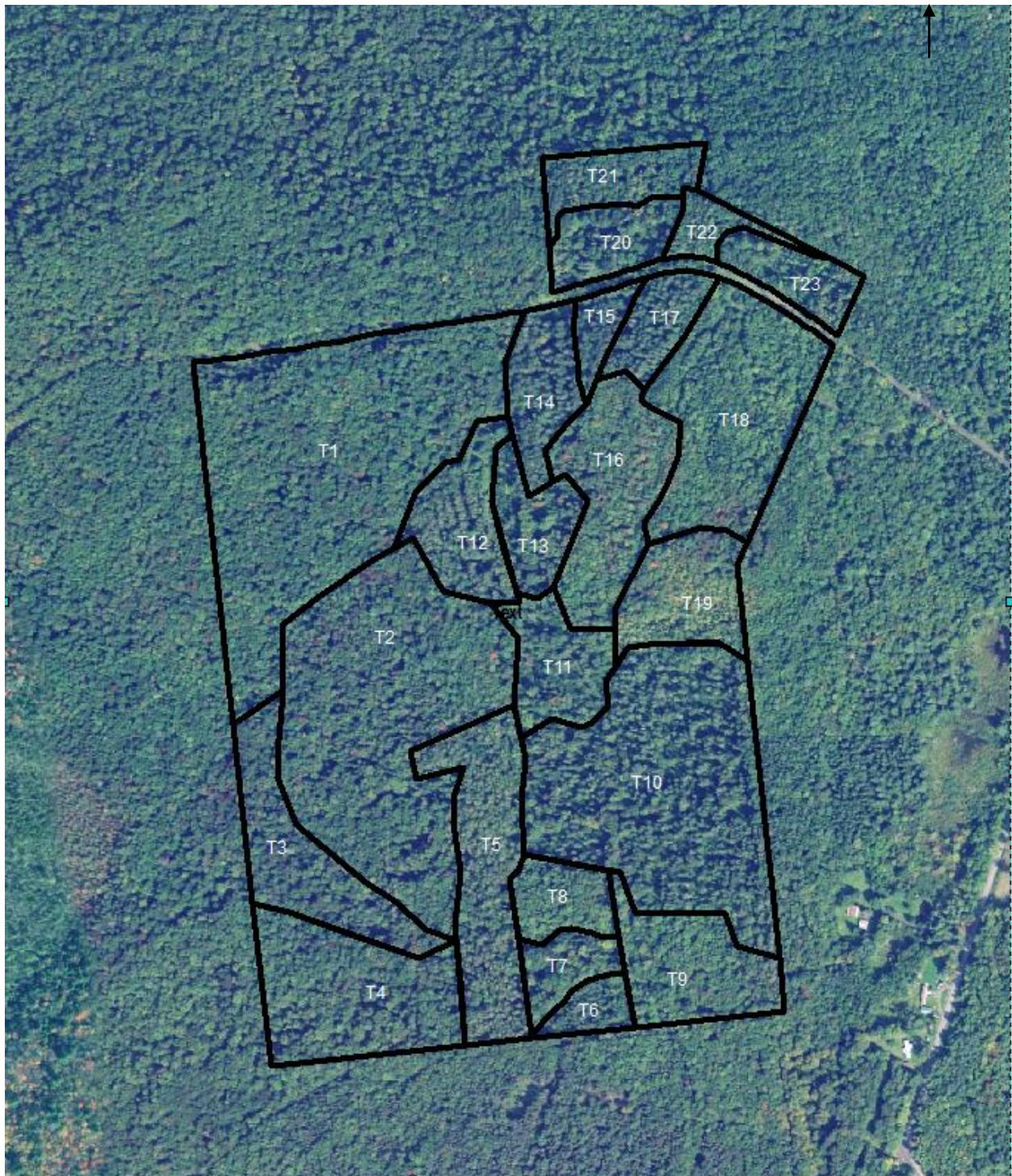
Otsego Parcel #7, Parcel #246.00-1-51.00
Taite Road West
Stand Map



Scale 1:3000

#7 Taite Road East Stand Map Parcel# 246.00-1-53.00

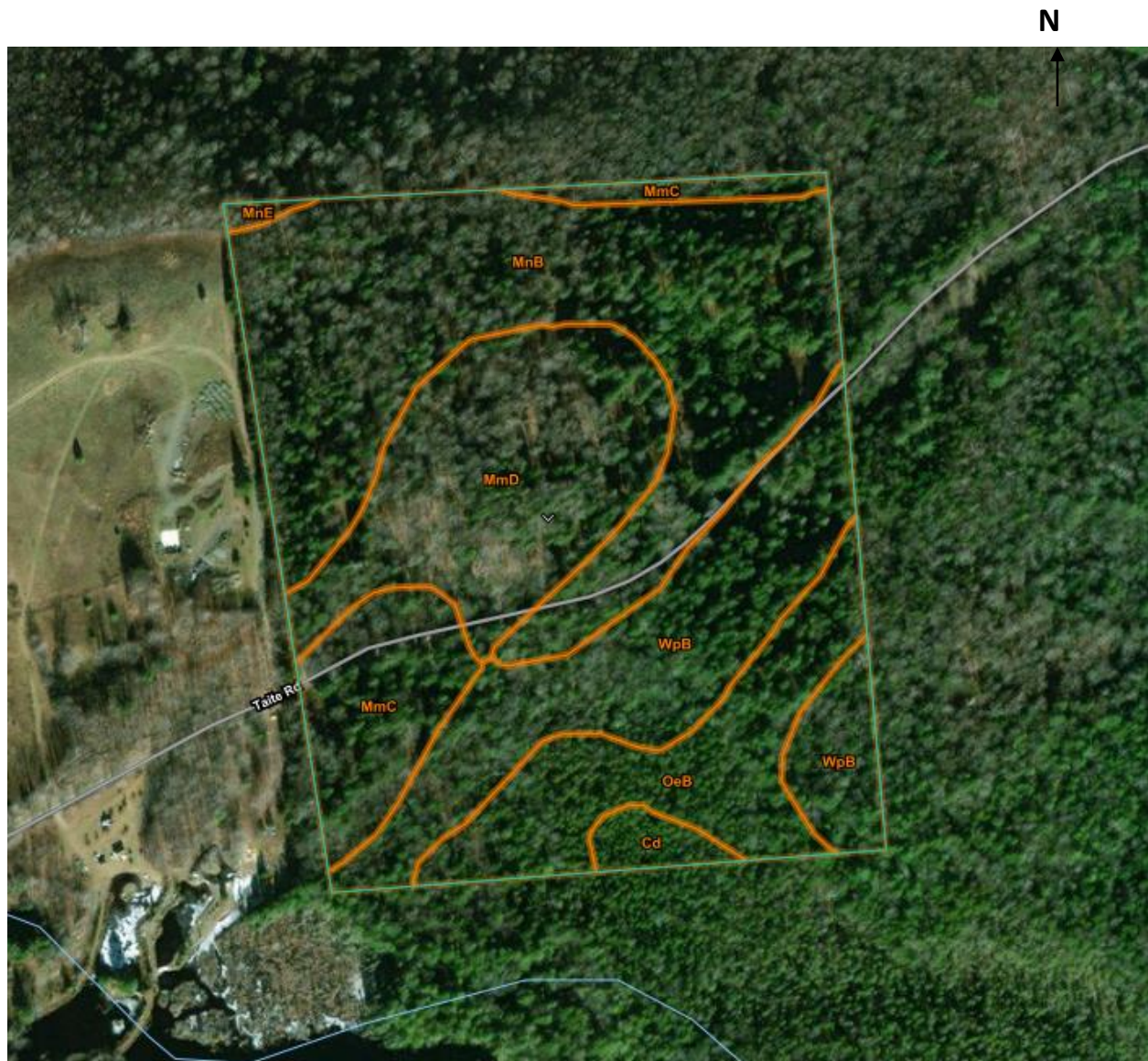
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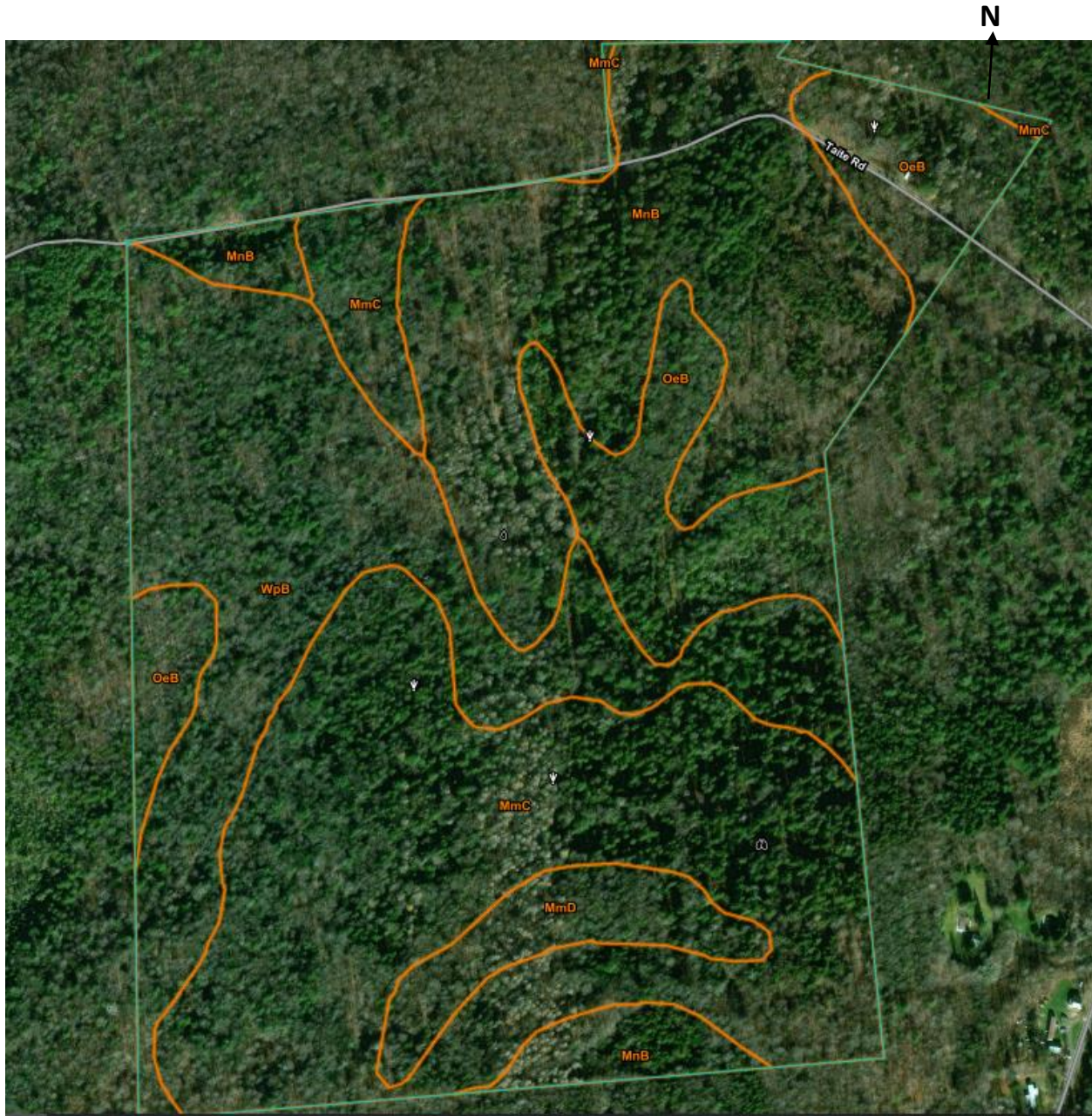
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**USGS Soils Map
Taite Road West**



Scale 1:3000

**USGS Soils Map
Taite Road East**



Scale 1:3000

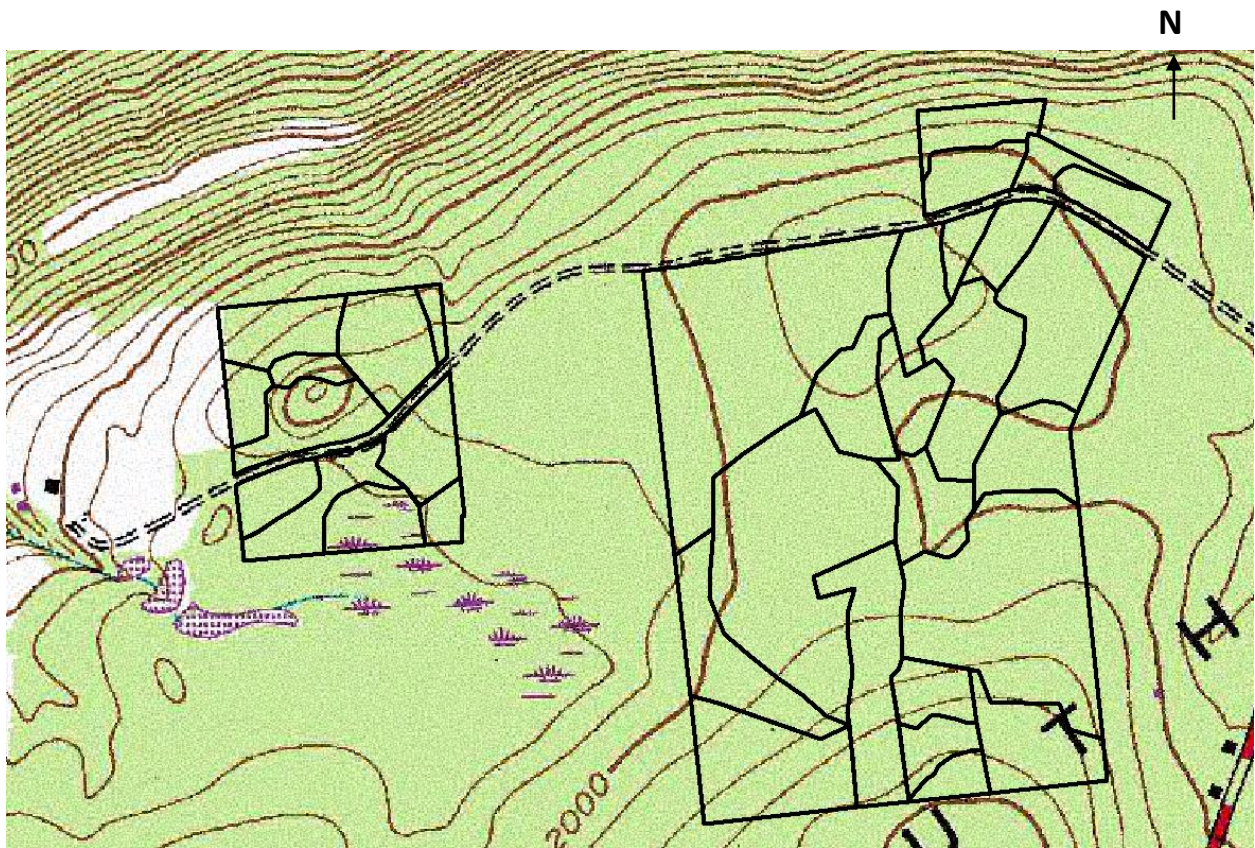
Soils Map Legend Parcel West

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Cd	Carbondale mucky peat	0.5	1.6%
MmC	Mongaup-Franklinville complex, 8 to 15 percent slopes well drained	3.1	9.4%
MmD	Mongaup-Franklinville complex, 15 to 25 percent slopes	6.1	18.6%
MnB	Mongaup-Hawksnest complex, 1 to 8 percent slopes, rocky	12.2	36.9%
MnE	Mongaup-Hawksnest complex, 25 to 50 percent slopes, rocky	0.1	0.4%
OeB	Ontusia channery silt loam, 2 to 8 percent slopes poorly drained	4.2	12.7%
WpB	Willdin channery silt loam, 3 to 8 percent slopes moderately well drained	6.7	20.4%

Soils Map Legend East

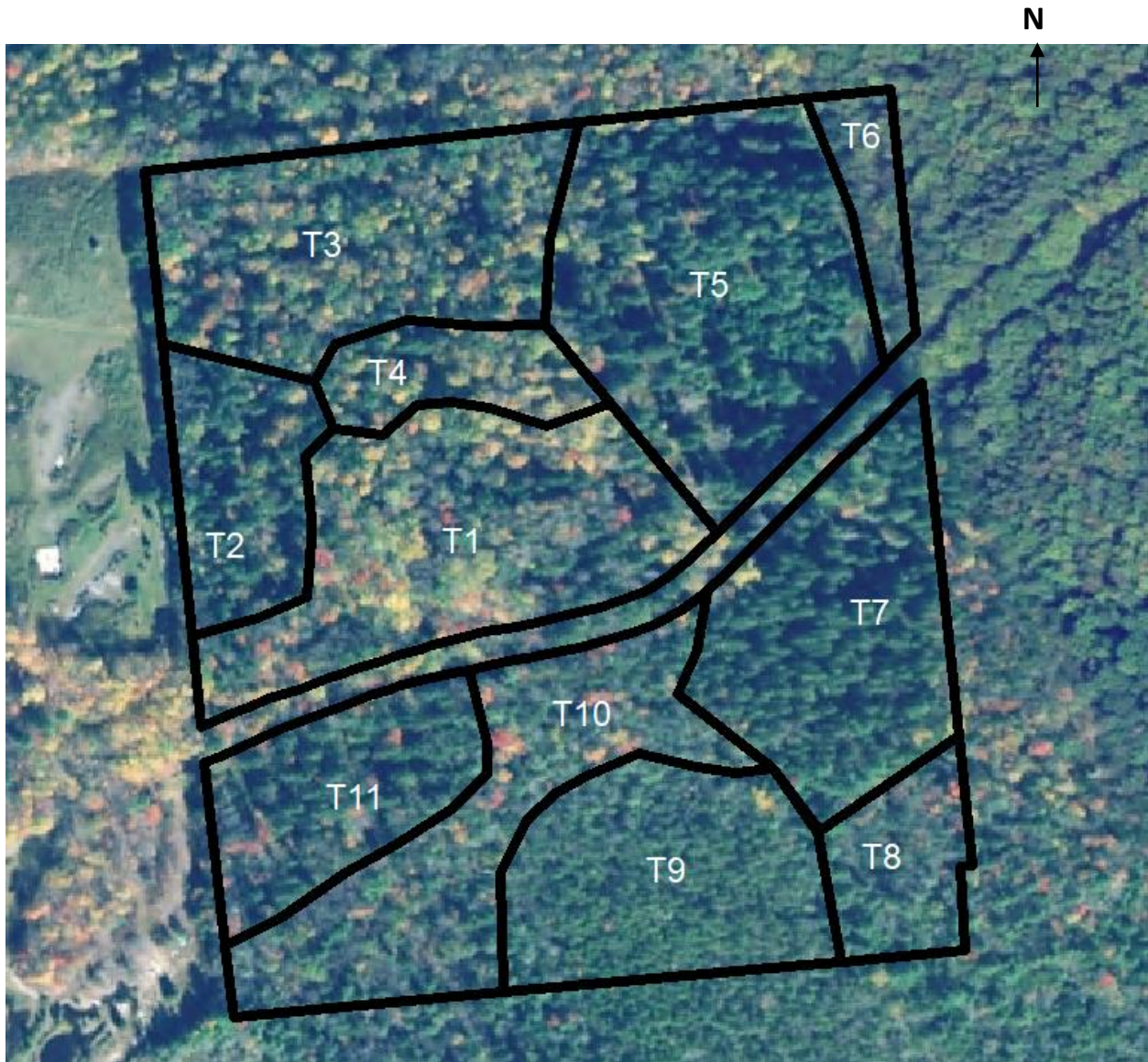
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MmC	Mongaup-Franklinville complex, 8 to 15 percent slopes. Well Drained	54.1	34.0%
MmD	Mongaup-Franklinville complex, 15 to 25 percent slopes. Well Drained	6.4	4.0%
MnB	Mongaup-Hawksnest complex, 1 to 8 percent slopes, rocky. Well Drained	41.9	26.4%
OeB	Ontusia channery silt loam, 2 to 8 percent slopes. Somewhat Poorly Drained	21.0	13.2%
WpB	Willdin channery silt loam, 3 to 8 percent slopes. Moderately Well Drained	35.7	22.4%

**Otsego #7 Taite Road
Topographic Map**



Scale 1:9000

Exposed Well West Parcel



Scale 1:3000

Old exposed well with no cover located at bend in Taite Road, north side, within ten feet of road. Within stand T1. Orange flagged; this well contains water and has no cover thus presenting a risk of injury to the public.

Desired Future Conditions

The overall future condition of this property should focus on the continuous production of high quality forest products from commercially important softwood and some hardwood species. Substantial amount of merchantable high quality, low value softwood is present in this parcel in varying degrees of density in many of the forest stands. It is envisioned that a harvesting program be instituted for the whole parcel. Control of interfering vegetation: mainly ferns and striped maple to be instituted prior to commencement of harvesting. Future end state would be: completed harvesting for the parcel as a whole, on a twenty year rotation before any additional substantial forest management activities. Encouraging and promoting biodiversity helps overall forest and ecosystem health. Resiliency of the forest through diversity is another future benefit in the face of possible threats from invasive species, native pathogens, and possible climate change. It is envisioned a future forest with three or more succession stages of forest stands.

Goals and Objectives

Forest Inventory

Complete a comprehensive inventory of the thirty four forest stands found in two parcels. Inventory was completed September 2021 that included assessment of commercially important timber species, acceptable growing stock (AGS), and also low grade or pulpwood that also includes interfering vegetation.

Problem identification

Results of the inventory, together with observations of the Forester on any threats or impediments that would mitigate the overall effort to achieve the desired future condition of the parcel or stand. The “Keep Forests Healthy” scorecard by The Nature Conservancy, Cornell Cooperative Extension of Onondaga County will be implemented also.

Trail Maintenance

There is a good set of skid roads on the property that are in good condition. A goal would be to continue the present condition and maybe mark possible hiking trails. Overall access is attained through Taite Road, a town maintained road. Access and parking is road side due to lack of developed parking areas.

Recommendations

Prescriptions on individual forest stand to be outlined and aligned with future desired conditions. Recommendations to include implementation and alignment with the desired future forest condition. Prescriptions will include considerations for basal area and trees per acre (TPA), volume (board feet and cords), Acceptable Growing Stock (A.G.S.), pulpwood, but also for species, vigor, invasive species, wildlife, ecology, and Forester experience.

Inventory Methodology

Forest inventory was conducted on the thirty four forest stands that compromise Otsego County Forest #7. Forest Stands were constructed based on species composition, basal area, forest cover type, geological considerations, and past cutting history. Each stand was inventoried by using variable plot radius data points with a 10 Basal Area Factor (BAF) wedge prism. Trees that fall into each data plot was measured for Diameter at Breast Height (DBH) with a Biltmore stick and their height will be determined by the judgment of the Forester. Species of every tree in the data plot will also be recorded. Recorded data will be averaged throughout the stand to determine the stand's basal area, trees per acre, species composition, product classification, and overall health. Each stand will have a different number of data plots based on their area measured in acres. The chart used to determine the number of data plots for each stand can be seen in Table 1.

Table 1 Ratio chart of plots in a stand

Acres	# Of Plots
0-4	3
5-7	4
7-10	5
10-15	7
15-25	10
26-30	14
31-40+	15

A Note on Otsego #7 East Parcel Boundaries

All four corners of the parcel have been located successfully and have been painted with blue paint. The western property line has been refreshed with blue paint on the existing old tree blazes. The southerly and easterly property lines are essentially old rock walls put in many, many years ago when this property was cleared and turned into field/pasture. These two lines blazes were refreshed with blue paint also, but the “problem” lies in the frequency of blazed trees. Very infrequent blazed trees were found on or near the rock walls making visual identification of these lines very difficult for those looking for blue blazes. The rock walls constitute the boundary line.

Property Line, Taite Road West

Otsego County’s common property line with Felipe Diaz (tax address 268 Mount Harmony Road, Bernardsville, NJ. 07924) could not be found. Located south of Taite Road this property line in part goes through wet lands that contain some standing water but no discernible survey markings such as blazes or flagging that could be found. The property line to the east going southerly from Taite Road is blazed and blue painted approximately three quarters of the distance to its termini at a blue painted corner pipe. From this corner heading westerly, no property line can be found. On the most westerly property line in common with Lomancino, heading southerly from Taite Road, no blue blazes were found and no corner where Lomancino, Otsego, and Diaz come together was found.

Forest stands T10, T9, and T8 border said unfound property line and judging from past forest activity, harvesting shied away from being in close proximity. Forest Stand T9 contains no valuable forest products and is a hydrophilic site. Forest management activity in stands T10 and T8 can possibly undertake past strategy of avoidance.

The decision as to survey this parcel rests with the county of Otsego and Otsego Soil and Water Conservation District.

Forest Stand T1 West

This stand is comprised of about 4.4 acres and is found in the central section bordering Taite Road on the north side of the road. Soils found here are: Mongaup-Franklinville complex, 15 to 25 percent slopes well drained. The ability to work this stand with forest equipment is good. This stand is partly an old Norway Spruce select cut and partly hardwood.

Forest Diversity and Composition

Species diversity within this stand is low with four commercial represented, three primary/dominant: Norway spruce, Red Maple, and Black Cherry. Species suitability to the growing site is good, with Red Maple and Cherry showing good general tree health. Norway spruce residual trees show subpar tree health. No insect or disease threats or infestations were observed.

Forest Structure

The Norway spruce segment of this stand shows varying structure: bands of Norway seedling, saplings, and poles found near and within existing parental tree shade, otherwise substantial presence of ferns. Hardwood component exhibits average to less average structural diversity with few pole and sapling class timber. Little to no standing dead wood was found in this stand, low amounts of down dead wood was observed thus limiting some wildlife cover.

Regeneration

Most of the desirable regeneration is found in Norway spruce in the acceptable growing stock portion of the data chart. Little to no hardwood regeneration is found in the seedling or sapling stages of growth. The Norway reproduction is suitable for the growing site. Noteworthy presence of interfering plants was not observed. Deer browsing is considered the main reason for lack of hardwood regeneration within this stand.

Site Level Risks

Moisture stress or drought conditions at this site are not a factor. Extreme rainfall or other extreme weather should not cause problems at this site. Shorter or milder winters should not present too many difficulties in harvesting or other management activities.

Stand T1 West Prescription

Overall basal area within this stand shows low density and occupation of available growing space, especially within the hardwood segmentation. Acceptable growing stock is limited to Norway spruce, hardwood regeneration seriously lacking. Deer browsing being the largest factor affecting the hardwood portion of this stand. It is recommended that this stand continue growing, possible forest management could focus on some reduction of the Norway spruce allowing for release of seedling and saplings found near parental stock. This would depend on neighboring stand harvesting activity because of volume concerns. Hardwood regeneration will depend on deer control.

Stand Data

Species	TPA (Trees Per Acre)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Norway Spruce	41.68	10.88	4012
Red Maple	28.02	7.47	2194
Black Cherry	15.34	8.33	2014
Yellow Birch	6.12	.55	112
Total	91.16	27.23	8332
Pulp	55.41	4.50	3.19 cords
Acceptable growing stock (AGS)	96.76	2.43	4 cords (Spruce)

Forest Stand T2 West

Stand T2 has approximately 1.7 acres and is located in the most westerly middle section of Otsego #7 west, north of Taite road. Soil type is Mongaup-Hawksnest complex, 1 to 8 percent slopes, rocky, well drained. Workability of this stand with forestry equipment is excellent. Primarily an old Norway spruce stand individual tree selection cut that has hardwood slowly succeeding the mature spruce.

Forest Diversity and Composition

Good species diversity is found within this small stand that has six commercial species represented. Species suitability and general tree health to the growing site is good with the trees showing good growth characteristics. No insect, disease, or invasive species were noted within the stand.

Forest Structure

Structure is good with most species showing different size individuals as well as vertical layering. Few standing dead trees or down dead wood were observed within this stand. Tree spacing was observed to be good lending to good tree crown development.

Regeneration

Acceptable growing stock was fairly represented by both the Norway's and hardwoods with trees per acre at 111 and basal area of 3.43 (sapling's less than 10 inches diameter), and ample seedlings were noted. Regeneration tree species suitability to the growing site was good. Little to no interfering plants was found in stand T2. Deer browsing was noted but judged to be not obsessive.

Site Level Risks

Moisture stress or drought conditions at this site are not a factor. Extreme rainfall or other extreme weather should not cause problems at this site. Shorter or milder winters should not present too many difficulties in harvesting or other management activities.

Stand T2 Prescription

Overall basal area in this small stand is about 45 square feet, thus exhibiting less utility of the available growing space. Recommendation is to let the stand continue to grow with the hardwood poles, saplings, and seedlings to eventually dominate the stand landscape. Eventuality in the future is to harvest the Norway spruce.

Stand Data T2 West

Species	TPA (Trees Per Acre)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Norway Spruce	51.76	14.59	5728
Red Maple	19.80	13.58	3095
Sugar Maple	11.95	2.84	713
Yellow Birch	3.12	1.10	243
White Ash	1.26	2.64	615
Black Cherry	1.69	1.97	353
Total	89.58	36.72	10,747

Pulp	17.85	5.15	2.72 cords
A.G.S.	111	3.43	1.44 cords

Forest Stand T3 West

Stand T3 west has about 3.9 acres and is located in the northwest corner of Otsego #7 west, north of Taite road. Soil type is Mongaup-Hawksnest complex, 1 to 8 percent slopes, rocky well drained. Workability of this stand with forestry equipment is excellent. Primarily a hardwood stand, T3 does have a subset of Norway spruce partially harvested long ago.

Forest Diversity and Composition

Good species diversity is found within this small stand that has seven commercial species represented. Species suitability and general tree health to the growing site is good with the trees showing good growth characteristics. No insect, disease, or invasive species were noted within the stand.

Forest Structure

Structure is good with most species showing different size individuals (though lacking larger DBH trees in excess of 18 inches) as well as vertical layering. Few standing dead trees or down dead wood were observed within this stand. Tree spacing was observed to be good leading to good tree crown development.

Regeneration

Acceptable growing stock was poorly represented by both the Norway's and hardwoods with trees per acre at 36.12 and basal area of 28.76 (sapling's less than 10 inches diameter), and a lack of seedlings were noted. Regeneration tree species suitability to the growing site was good. Little to no interfering plants was found in stand T2. Deer browsing was noted but judged to be not obsessive.

Site Level Risks

Moisture stress or drought conditions at this site are not a factor. Extreme rainfall or other extreme weather should not cause problems at this site. Shorter or milder winters should not present too many difficulties in harvesting or other management activities.

Stand T2 Prescription

Overall basal area in this stand is about 32 square feet, thus exhibiting less occupation of the available growing space. Recommendation is to let the stand continue to grow with the hardwood timber to dominate the stand landscape. A commercial thinning is possible in 10 years or so even with the low basal area to try to encourage regeneration.

Stand Data T3 West

Species	TPA (Trees Per Acre)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Sugar Maple	25.99	7.70	2383
Red Maple	21.61	6.72	1983
Norway Spruce	25.33	5.66	1935
White Ash	4.77	2.80	683
Red Oak	.90	3.69	475
Black Cherry	2.39	1.40	430
Yellow Birch	4.25	.79	238

Total	85.24	28.76	8127
AGS	36.12	1.09	.99 cords
Pulp	12.48	2.92	2.92 cords

Forest Stand T4 West

This stand is comprised of about 1.7 acres and is found in the central section bordering Taite Road on the north side of the road. Soils found here are: Mongaup-Franklinville complex, 15 to 25 percent slopes well drained. The ability to work this stand with forest equipment is good. This stand is an old heavily cut Norway Spruce stand that has a very scattered residual stand that is “clumpy”. This stand has not recovered from the heavy harvest of years ago; ferns occupy the majority of growing space.

Forest Diversity and Composition

Species diversity within this stand is extremely low with only two commercial represented, Norway Spruce and Red Maple. Species suitability to the growing site is judged to be fair, with Red Maple and Norway Spruce showing average general tree health. No insect or disease threats or infestations were observed.

Forest Structure

The Norway spruce and Red Maple show little or no structure due to open conditions and heavy prior cutting. Similar size and age for both species of trees residing in this stand. Little to no standing dead wood was found in this stand, low amounts of down dead wood was observed thus limiting wildlife cover.

Regeneration

Most of the desirable regeneration is found in Norway spruce and Red Maple mainly seedlings and few saplings. The Norway reproduction is fairly suitable for the growing site while the Red Maple reproduction is well suited. Noteworthy presence of interfering plants was noted to be a heavy presence of ferns. Deer browsing is considered the main reason for lack of hardwood regeneration within this stand.

Site Level Risks

Moisture stress or drought conditions at this site are not a factor. Extreme rainfall or other extreme weather should not cause problems at this site. Shorter or milder winters should not present too many difficulties in harvesting or other management activities.

Stand Prescription

Stand conversion is recommended as the Norway Spruce is mature and little regeneration or acceptable growing stock is present in any significant numbers or stocking levels. Immediately before liquidation of this stand, fern control through herbicidal treatment is suggested. Reforestation or natural regeneration can be applied for a new stand. Stand T5 to be converted at the same time as this stand.

Stand Data

Species	TPA (Trees Per Acre)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Norway Spruce	33.99	10.03	3343
Red Maple	16.32	6.32	1415
Pulp	39.86	1.79	2.60 cords
Total	50.31	16.35	3488

No AGS found in this stand

Forest Stand T5 West

Five acres more or less are found within the confines of stand T5 West. Located in the northeastern section north of Taite Road soils consist mainly of Mongaup-Hawksnest complex, 1 to 8 percent slopes, rocky, well drained. Forest management ability to work on the soil type is good. Mainly an old Norway Spruce plantation row thinning or harvest.

Forest Diversity and Composition

Species diversity within this stand is basically marginal with the Spruce making up most of the basal area (33.90 square feet), the other four species tallied do not constitute a really significant presence (7.88 square feet). Species suitability to the growing site is judged to be fair, with Norway Spruce showing average general tree health. No insect or disease threats or infestations were observed.

Forest Structure

The Norway spruce shows little or no structure due to open conditions and heavy prior cutting. Similar size and age for the Norway Spruce residing in this stand. Mature Spruce that has responded well to release in growing patterns. Little to no standing dead wood was found in this stand, low amounts of down dead wood was observed thus limiting wildlife cover.

Regeneration

Most of the desirable regeneration and acceptable growing stock (AGS) is found in Norway spruce in mainly seedlings and few saplings in close proximity to the parent trees. The Norway reproduction is fairly suitable for the growing site while not really abundant, is well suited to the site. Noteworthy presence of interfering plants was observed in high levels of ferns. Deer browsing and resulting fern occupation of growing space is considered the main reason for lack of hardwood and spruce regeneration within this stand.

Site Level Risks

Moisture stress or drought conditions at this site are not a factor. Extreme rainfall or other extreme weather should not cause problems at this site. Shorter or milder winters should not present too many difficulties in harvesting or other management activities.

Stand Prescription

Stand conversion is recommended as the Norway Spruce is mature and little regeneration or acceptable growing stock is present in any significant numbers or stocking levels. Immediately before liquidation of this stand, fern control through herbicidal treatment is suggested. Reforestation or natural regeneration can be applied for a new stand. Stand T4 to be converted at the same time as this stand.

Stand Data

Species	TPA (Trees Per Acre)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Norway Spruce	66.10	33.99	8620
Red Pine	2.46	4.18	911
Red Maple	4.77	2.37	439
Popple	3.19	.78	293
Yellow Birch	4.59	.55	165
Total	81.11	46.87	10,428

Pulp	6.93	1.62	.65 cords
AGS	25.51	.39	.77 cords

Forest Stand T6 West Parcel

.8 of an acre makes up this small stand located most easterly and also in the north eastern corner of Otsego #7 west parcel north of Taite road. A skid road forms its boundary on the west with forest stand T5, private ad joiners constitute boundaries on the east and north. This stand was harvested at the same time as stand T5 and was a Norway Spruce harvest. Mongaup-Hawksnest complex, 1 to 8 percent slopes, rocky, well drained is the primary soil type found within this stand. Being well drained and "hard" lend stand T6 to have excellent capabilities for forest management.

Forest Diversity and Composition

Species diversity within this stand is extremely low with only three commercial represented, Norway Spruce, Yellow Birch, and White Ash. Together, the Birch and Ash only constitute 3.15 square feet of basal area. Species suitability to the growing site is judged to be good, Norway Spruce showing good general tree health. No insect or disease threats or infestations were observed.

Forest Structure

Within this small stand, structural diversity is judged to be good with Spruce of varying sizes and showing multiple vertical layering. Standing dead trees and dead down wood presence was observed to be good. Tree crowns and their spacing were judged to be good also, with good growing characteristics leading to healthy crowns.

Regeneration

Desirable regeneration was mainly evident in the Norway Spruce and considered good with seedlings, saplings, poles, and mature timber. AGS (Acceptable growing stock) had a TPA (trees per Acre) of 99.28, basal area of 2.07 square feet (keep in mind these are small trees) and 3.98 cords per acres. The Spruce seemed most suitable to this site. Little to no interfering plants was noted and deer browsing was judged to be negligible.

Site Level Risks

Moisture stress or drought conditions at this site are not a factor. Extreme rainfall or other extreme weather should not cause problems at this site. Shorter or milder winters should not present too many difficulties in harvesting or other management activities.

Stand Prescription

Stand conversion is recommended for this stand to be done at the same time as forest stands T4 and T5. It is further recommended that the mature Norway Spruce and all of the Yellow Birch be harvested along with any mature White Ash thus leaving the established spruce regeneration to become the next stand.

Stand Data

Species	TPA (Trees Per Acre)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Norway Spruce	65.07	14.52	8674
Yellow Birch	12.74	1.57	1172
White Ash	3.18	1.58	881
Total	80.99	17.67	10,727
Pulp	9.18	.55	.68 cords
AGS	99.28	2.07	3.98 cords

Forest Stand T7 West

Two distinct soil types are found within this stand: Willdin channery silt loam, 3 to 8 percent slopes moderately well drained, and Ontusia channery silt loam, 2 to 8 percent slopes poorly drained. Selecting the correct stand conditions is important in deciding when to conduct forest management activities with equipment. Dry or frozen ground is recommended. 3.5 acres make up this stand situated south eastern section of Taite Road west parcel, just south of the road. This is a long ago commercially thinned I Norway spruce stand.

Forest Diversity and Composition

Species diversity within this stand is extremely low with only two commercial species represented: Norway spruce and White Pine. Species suitability to the growing site is judged to be excellent, with the spruce exhibiting excellent general tree health. No insect or disease threats or infestations were observed.

Forest Structure

The Norway spruce exhibit fair structural diversity, with the main stand of trees consisting of similar diameter, timber class, and age composition. There is some AGS, and a flourishing spruce and hemlock seedling presence and some beech and White Pine. Stand T7 has lots of standing dead wood together with a significant amount of down dead wood.

Regeneration

Desirable regeneration consisting mainly of Norway spruce and Eastern Hemlock is present in the understory and is acceptable for management goals. The amount of saplings and AGS is much less than the seedlings. The species suitability to the growing site is excellent with good growing characteristics and good stocking. Interfering plants and deer browse are judged to not be a significant factor affecting regeneration.

Site Level Risks

With the soil types and their drainage properties, moisture stress and extreme rainfall are major risks within this stand and could affect future growth potential and the ability to work this stand. Shorter and milder winters are a concern also and necessitate careful planning.

Stand Prescription

The Norway Spruce in this stand is of excellent timber quality, well suited to this site, growing well, and regenerating well. It is recommended that the stand continue in its present form for the next seven to ten years giving the seedlings good time to grow into saplings and AGS classification. However, this stand can be logged releasing the seedlings earlier if adjacent forest stands within the overall parcel are to be harvested and additional timber is needed.

Stand Data

Species	TPA (Trees Per Acre)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Norway Spruce	61.61	38.29	13,222
White Pine	1.53	2.18	734
Total	63.14	40.47	13,956
AGS	44.23	.74	1.74 cords

Forest Stand T8 West

1.2 acres make up this stand that contains soil type Willdin channery silt loam, 3 to 8 percent slopes, and is moderately well drained. The ability to work this stand is good. T8 is essentially a border stand that has not seen any forest management activity. This stand borders environmentally sensitive wet lands forest stand T9 West. This stand location is in the southeast corner of the parcel, south of Taite Road. Discussion of this stands property line with neighboring landowners is found within this management plan under “property Line”.

Forest Diversity and Composition

Species diversity within this stand is good with four commercial species represented: Eastern Hemlock, Red Maple, Norway spruce and White Pine. Species suitability to the growing site is judged to be good with three of four species showing adaptable growth characteristics. The Eastern Hemlock is showing slower growth due to lesser adaptability and age. General tree health is good with no insect or disease manifestations observed.

Forest Structure

Stand T8 shows multiple vertical layering with trees of different sizes in the mature timber class, pole timber, AGS, Saplings, and some seedlings. Crown development is good with adequate growing space between trees. Eastern Hemlock exhibits advanced age crown display. Little dead trees or down wood is found within this stand.

Regeneration

Species mix within this stand is adequate to meet management goals. Mostly Hemlock saplings with some Hemlock seedlings form the majority of the understory regeneration. No interfering plants were noted with deer browsing not a factor.

Site Level Risks

Access to this stand through T7 necessitates careful planning for dry or frozen ground with shorter and milder winters having an impact on accessibility but not workability of T8. Because of close proximity to wet lands, moisture stress and/or extreme rainfall can have a negative impact on this stand.

Stand Prescription

Close proximity to wetlands and past implemented border protection strategy make the continuation of said protective border feasible and practical. The main commercial specie, Eastern Hemlock is mature to over mature though not extremely large, is slow growing and shows signs of shake, thus reducing value and supporting the recommendation of a protective border.

Stand Data

Species	TPA (Trees Per Acre)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Eastern Hemlock	66.41	28.87	8802
Red Maple	28.56	13.76	2587
Norway Spruce	8.27	5.55	1456
Eastern White Pine	3.47	10.37	1341
Total	106.71	58.55	14,186
Pulp	10.36	1.34	1.22 cords
AGS	81.76	.74	3.41 cords

Forest Stand T9 West

3.1 acres make up this hydrophilic stand. Soil types found in this stand: Carbondale mucky peat poorly drained, and Ontusia channery silt loam, 2 to 8 percent slopes poorly drained. On field inspection of forest stand T9 west, Carbondale mucky peat is definitely the dominate soil if not the only soil type present in this stand. Very wet conditions with standing water, moss, and forest hummocks present within the confines of this stand. The ability to work within this stand is very poor. T9 is located south of Taite road, in the most southerly central section of parcel Otsego #7 west. See property line section within this forest management plan for discussion involving the property line in common with Diaz.

Forest Diversity and Composition

Species diversity within this stand is characterized by one commercial specie: Black Spruce in timber pole class, an occasional Red Maple and Yellow Birch is found in the AGS classification. Species suitability to growing site is basically acceptable. General tree health is poor with dense, overstocked conditions leading to stagnation and just poor growing site conditions. No insect or disease manifestations were observed.

Forest Structure

Structural diversity is poor with mostly spruce pole sized timber and AGS forming one layer of understory. Lots of standing and down dead trees found in stand T9. Tree crowns are poorly formed and not healthy and spacing is extremely tight exhibiting high density, small diameter, and over stocking.

Regeneration

Desirable regeneration mostly Spruce is in the AGS classification, Saplings, and little to no seedlings. Regeneration includes spruce that is suitable to the growing site. No interfering plants were observed. Deer browsing was not a factor within this stand.

Site Level Risks

The main risks to this stand are moisture stress and extreme rainfall. However, this stands soils are designed as a natural “sponge” for water, the main effect of increased surface water would be an increase in spruce mortality. Shorter and milder winters would not affect this stand as access and workability are extremely limited to non exist ant within these wet lands.

Stand Prescription

Some of the benefits of wetlands such as Stand T9 west are to act as a natural control of surface water within the overall forest parcel ecosystem. This stand also offers benefits to wildlife, possibly rare wetlands plants, carbon sequestration, and biodiversity. It is recommended that this stand continue as is with no forest management interaction.

Stand Data

Species	TPA (Trees Per Acre)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Black Spruce	64.80	11.62	4273
AGS	182.37	5.78	8.65 cords

Forest Stand T10 West

Located in both the central and most southwestern corner of Otsego #7 west parcel and south of Taite road, this stand contains 3.6 acres more or less. The dominant soils type is Willdin channery silt loam, 3 to 8 percent slopes moderately well drained with Mongaup-Hawksnest complex, 1 to 8 percent slopes, rocky, with well drained aspects, making up a small amount bordering the road. The ability to operate forest equipment on these two soil types is good. The first part of this stand bordering Taite Road is an old Norway row harvest. The majority of stand T10 west is Eastern Hemlock and northern hardwood mix. The southerly property line of this stand is description is to be found under property line section of this forest management plan.

Forest Diversity and Composition

Specie diversity is good with five commercial species represented. All species exhibit good suitability to the growing site and distinct soil types. Good general tree health was seen throughout the forest stand. There are no current forest pest or disease issues observed.

Forest Structure

Stand T10 West shows good structural diversity with multiple vertical layers: mature timber, poles, AGS, saplings, and some seedlings. Fair amounts of standing dead trees and down dead wood are found within this stand thus aiding wildlife to an average degree most commonly found. Tree crowns are of average quality and spacing varies throughout the stand with average to lower stocking levels and stand density.

Regeneration

Observation of desirable regeneration was chiefly within the AGS and sapling sectors with seedlings number below average. Chief species were northern hardwoods and Norway spruce with some Eastern Hemlock. Species suitability to the growing site as judged by growth characteristics was good. Little to no interfering plants was documented and deer browsing was average, chiefly on the northern hardwoods.

Site Level Risks

Being a well drained soil type, moisture and extreme rainfall were judged to be of lesser risk. This location is not at an elevated risk for extreme weather events. Shorter and milder winters will not have a substantial affect on this stand.

Stand Prescription

Judging from lower basal area and trees per acres measurements, lower stocking levels of mature commercial species and their corresponding forest product scale; it is recommended to allow this stand to continue on its present growth pattern for the next ten to twenty years without any management intervention.

Stand Data

Species	TPA (Trees Per Acre)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Norway Spruce	30.53	11.37	4080
Eastern Hemlock	16.57	10.92	2517
Red Maple	26.80	8.56	2484
Black Cherry	6.63	2.19	773
White Pine	2.39	1.40	430
Total	82.92	34.44	10,284

Pulp	7.16	1.40	.40 cords
AGS	74.31	2.29	3.38 cords

Forest Stand T11 West

Mongaup-Franklinville complex, 8 to 15 percent slopes with well Drained soils type is what makes up approximately 2.1 acres within this stand. Located south of Taite Road in the south western section of Taite Road West, this stand is an old combination of patch and row thinning of a predominately Norway Spruce stand. The ability to work this stand is good. The property line on the west may need surveying as blue blazes were not found.

Forest Diversity and Composition

Species diversity within this stand is about average with four commercial species represented: Norway spruce, Black Cherry, Red Maple, and Eastern Hemlock. Species suitability to the growing site is judged to be excellent, with the spruce exhibiting excellent general tree health. No insect or disease threats or infestations were observed.

Forest Structure

Good structural diversity with multiple layers consisting of seedlings, saplings, AGS, and mature timber in varying amounts throughout the acreage. Tree crowns are well developed with adequate spacing. Lots of standing dead wood and down dead wood were observed.

Regeneration

Desirable regeneration consisting mainly of Norway spruce and Red Maple is present in the understory and is acceptable for management goals. AGS and saplings form an excellent future forest stand. The species suitability to the growing site is excellent with good growing characteristics and good stocking. Interfering plants and deer browse are judged to not be a significant factor affecting regeneration.

Site Level Risks

With well drained soils, this stand has few risks - moisture stress and extreme rainfall together with other extreme weather events are judged to be not a major risk. Shorter and milder winters would have a very small impact.

Stand Prescription

The Norway Spruce in this stand is of excellent timber quality, well suited to this site, growing well, and regenerating well. It is recommended that the stand continue in its present form for the next seven to ten years giving the seedlings good time to grow into saplings and AGS classification. However, this stand can be logged releasing the seedlings earlier if adjacent forest stands within the overall parcel are to be harvested and additional timber is needed.

Stand Data

Species	TPA (Trees Per Acre)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Norway Spruce	39.28	15.10	5927
Black Cherry	17.34	8.16	1494
Red Maple	15.35	2.17	853
Eastern Hemlock	2.39	1.40	253
Total	74.36	26.83	8527
Pulp	41.6	1.48	1.98 cords
AGS	341.63	1.83	2.55 cords

Forest Stand T1 East

Approximately 23.4 acres make up this stand located in the North Western section of Otsego #7 Eastern parcel. The dominant soil type is Willdin channery silt loam, 3 to 8 percent slopes. Moderately Well Drained with a much smaller amount of Mongaup-Hawksnest complex, 1 to 8 percent slopes, rocky. Well Drained. With these types, stand T1 East can be worked by forest management equipment fairly well. Basically a northern hardwood and hemlock stand, harvesting occurred a very long time ago with old stumps exhibiting very pronounced decay. There is some Norway Spruce occurring within this stand,; basically natural regeneration from adjoining spruce stands.

Forest Diversity and Composition

Six commercial tree species were tallied during field work resulting in good to excellent species diversity. The dominant tree species or forest type is well suited to the growing site. Tree growth characteristics are average or typical for this type of site, thus supporting the assertion of average general tree health. No insect, disease, or invasive organisms were noted on field inspection.

Forest Structure

Structural diversity within stand T1 East is average. Most of the vertical layering is comprised of AGS, pole timber, and mature/developing timber class. This stand lacks seedlings and sapling layering in any substantial amounts. Average amounts of standing and down dead wood were observed. Adequate to average tree spacing was observed but diminishing due to gradual growth that is slowly increasing stocking levels and density.

Regeneration

Desirable regeneration is mostly lacking within this stand due to two factors: deer and a closing canopy limiting available sunlight to the forest floor. American beech was noted in parts of this stand. Ferns are the second interfering plant found within this stand and is slowly increasing in density.

Site Level Risks

Moisture or drought stress is judged to be of lesser value due to soils but extreme rainfall could become prominent considering the flat topography of this stand of trees. Access is good, shorter and milder winters should not present a higher risk.

Stand Prescription

Primarily two considerations: 1) Regeneration and (2) increasing density/stocking levels as measured by basal area and Trees per Acre (TPA) guide these recommendations. It is proposed a commercial timber thinning or harvest be conducted within the next 5 years or so removing approximately 20 to 30 square feet of basal area within the timber class and another 4 to 5 square feet within the pulp class. Timber class removals to be careful to harvest across the species composition, discriminating for lower occurring hardwood species (like Black Cherry and Yellow Birch) with the object of increasing biodiversity. Secondly, marking to take into account AGS densities and encourage sunlight penetration to the forest floor. Application of herbicide is possible before harvesting to control ferns and give seedlings a chance to seed in. The deer browsing is a recurring problem also.

Stand Data

Species	TPA (Trees Per Acre)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Red Maple	45.90	34.38	3062
Eastern Hemlock	13.14	19.79	2441
Eastern White Pine	4.83	22.19	1620
Norway Spruce	7.36	5.01	618
Black Cherry	5.42	7.83	558
Yellow Birch	2.79	1.45	141
Total	79.44	90.65	8440

Pulp	27.18	12.47	2.31 cords
AGS	105.18	6.43	3.74 cords

Forest Stand T2 East

19.8 acres more or less make up this stand. Located in the west central sector south of Taite road in Otsego #7 East Parcel, the soil type found here is Mongaup-Franklinville complex, 8 to 15 percent slopes and is considered well drained. The ability to operate forest equipment in this stand is good. Essentially a Norway spruce stand that was row thinned many years ago.

Forest Diversity and Composition

Six commercial species of trees are found within the confines of forest stand T2 East with Norway Spruce and Red Maple constituting dominance in stacking and density. Therefore, species diversity is good with suitability to the growing site judged to be good for the maple and average at best for the spruce. General tree health is judged well, however the spruce exhibits slow growth characteristics. No insect or disease agents were noticed.

Forest Structure

Structural diversity was observed to be good with multiple vertical layers existing throughout the stand. The forest includes many trees of differing sizes but large, mature trees were basically lacking. Average amounts of standing dead trees and down dead wood are present thus benefitting wildlife. Tree spacing is best described as clumpy. Throughout this stand, clumps containing most of the trees are found, but the distance between clumps is small, an effect of long ago thinning activities. Tree crowns best described as average with the overall tree size small. It is postulated that the Norway spruce is slow growing and the Red Maple is a result of sunlight reaching the forest floor after long ago thinning, showing good growth.

Regeneration

Desirable regeneration is found in a plethora of both seedlings and saplings distributed throughout this stand as a response to prior thinning. Main species represented are Eastern Hemlock, Norway spruce, and Eastern White Pine. AGS is well represented also with 100 trees per acre and 6.23 square feet of basal area yielding 3.58 cords per acre. Regeneration appears to be well suited to growing site conditions. Ferns were noted occurring haphazardly and repressed through this stand. Deer browse was noteworthy in the fact little hardwood regeneration is present with browsing evidence distinct.

Site Level Risks

Moisture stress and extreme rainfall were judged not high risk; this stand is judged to be not at an elevated risk of damage from extreme weather events. Shorter and milder winters would not present undue difficulty in forest management activities.

Stand Prescription

Despite higher levels of stand density and stocking, it is recommended to allow this stand to continue to develop along the current path for seven to ten more years. The Norway spruce exhibits slow growth with most trees having a smaller tree diameter while in the timber class. It is judged additional time is needed to hopefully develop greater diameter growth. The Red Maple is also small timber diameter but is growing well, a result of natural seeding after stand thinning. With additional time, judgment is to promulgate a commercial harvest or thinning primarily centering on the spruce and releasing the Red Maple, and excellent regeneration and AGS.

Stand Data

Species	TPA (Trees Per Acre)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Norway Spruce	44.83	35.96	4267
Red Maple	29.16	30.70	2558
Larch	6.03	12.45	1293
Black Cherry	2.44	3.90	333
Eastern White Pine	.12	5.59	149
White Ash	.82	1.23	128
Total	83.40	89.83	8728

Pulp	29.22	6.61	1.48 cords
AGS	100.10	6.23	3.58 cords

Forest Stand T3 East

This stand is located on the east border, just below the midpoint of said border, south of Taite Road, in the Eastern parcel of Otsego #7. T3 East contains 6.1 acres more or less and is primarily a northern hardwood stand that was lightly harvested years ago. Three soil types make up the basis for the growing site of this stand: Primary: Willdin channery silt loam, 3 to 8 percent slopes. Moderately Well Drained, followed by Ontusia channery silt loam, 2 to 8 percent slopes. Somewhat Poorly Drained, and Mongaup-Franklinville complex, 8 to 15 percent slopes. Well Drained. With these three contrasting soil types, care as to ground conditions will dictate time of year and what equipment can be used.

Forest Diversity and Composition

Five commercial tree species are present with two – Red Maple and Eastern Hemlock dominating basal area thus rendering diversity within this stand average at best. Species suitability to the growing site is average with the Red Maple showing the best growth characteristics. General tree health is good with the most concern centering in on some of the Hemlocks due to over maturity. These large trees exhibit symptoms of shake and have been accounted for in the board footage determinations. No insect or disease issues were detected.

Forest Structure

Structural diversity is characterized by a distinct lack of any AGS! Therefore structural judgment is poor to below average since AGS is the next or succeeding future forest stand. The over story is good and the understory contains good seedling and sapling amounts but lacks the aforementioned AGS. Average amounts of standing dead wood and down dead wood are found here. Tree crowns are healthy except in the vicinity of over mature Hemlock where neighboring tree crowns are retarded, and the Hemlock crowns are receding. Throughout most of the stand, tree spacing is relatively good due to past logging.

Regeneration

Desirable regeneration is basically hemlock – found in both the seedling and sapling stages. Remarkable lack of hardwood regeneration due primarily to deer browsing in forest stand T3. The hemlock suitability to the growing site varies throughout the stand due to the changing soil types and their respective drainage class. Red Maple regeneration would be the most suitable regeneration within this stand if deer browse could be controlled. Interfering plants within this stand: 1) patchy ferns and 2) striped maple, both judged as to not be consequential.

Site Level Risks

The greatest risk to the overall health of stand T3 East is moisture stress and extreme rainfall. With the varying drainage classes in this stand, the Hemlock, Cherry, and Ash could be adversely affected. Other extreme weather events do not seem to pose a high threat risk. Milder and shorter winters will affect the ability to work this stand, reducing the time frame to effectively implement forest measures. Careful planning required.

Stand Prescription

It is recommended that when harvest activity commences on stand T1East and good logging conditions are prevalent, individual tree selection methodology be employed centering on 1) removal of over mature hemlock where residual stand damage is negligible, and 2) removal of some Red Maple (not to exceed 10 square feet). The correct removal of said Red Maple will provide the economic incentive for the harvest of said hemlock and at the same time thin the residual stand allowing for more sunlight to spark some more regeneration and residual growth.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Red Maple	63.33	25.74	5359
Eastern Hemlock	24.92	27.97	4768
Black Cherry	12.40	6.77	1334
Yellow Birch	9.10	2.87	669
White Ash	2.71	.92	182
Total	112.46	64.27	12,312
Pulp	6.84	2.32	.88 cords

Forest Stand T4 East

8.20 acres more or less are found in this stand located in the extreme south western corner of Parcel #2 East in Otsego #7. There are two soil types found in stand T4: Predominately: Mongaup-Franklinville complex, 8 to 15 percent slopes. Well Drained, and Willdin channery silt loam, 3 to 8 percent slopes, Moderately Well Drained. Despite these classifications, field inspection showed a dominantly wet site characterized by not only water but also flora commonly associated with wet sites. It is recommended that in order to work within this stand, the correct conditions need to apply: frozen or dry ground. This is a hardwood site that was commercially logged long ago.

Forest Diversity and Composition

Six commercial tree species are found in this stand with two being dominant: Red Maple and Yellow Birch. Therefore it is surmised that the species diversity is average. Species suitability to the growing site is basically good with the Red Maple in particular liking wet sites. General tree health is judged poor with growth characteristics showing poor growth and also poor quality due to growing site characteristics. No insect or diseases were noted.

Forest Structure

The forest contains trees of different sizes. Mostly in the timber class, some poles (AGS); saplings, and seedlings were either nonexistent or in very low numbers. Plenty of dead down wood and standing dead trees were observed. Tree crowns were poor to average in shape and there was too much space noted between trees.

Regeneration

Desirable regeneration is lacking in the following categories: Poles (AGS), Saplings, and Seedlings. Species suitability could not be gauged due to low numbers/ not present. Fern presence was substantial and along with deer browsing has had a significant negative influence on regeneration.

Site Level Risks

Obviously, Moisture stress and extreme rainfall are high in risk for this stand. Shorter and milder winters will have a substantial affect on the ability to work this stand and also to gain access.

Stand Prescription

Due to the poor site index or growing site conditions, not much can be done at present. It is recommended that to revisit this stand in ten years time to gauge crown closure, stocking levels, and stand density. It is promulgated that this stand be managed primarily for wildlife where it is felt the greatest benefit lies.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Red Maple	28.99	27.51	3708
Yellow Birch	21.88	7.95	1235
Eastern Hemlock	6.23	8.34	852
White Ash	1.75	3.99	538
American Basswood	4.34	1.07	146
Black Cherry	1.87	1.07	146
Total	65.06	49.93	6625

Pulp	12.99	12.46	2.38 cords
AGS	26.14	.55	.88 cords

Forest Stand T5 East

This stand is a long ago Larch select cut that centered on removal of primarily the largest specimens. 7.4 acres approximately constitute this stand located in the south central portion of the east parcel of Otsego #7 south of Taite road. Soils found here are: Mongaup-Franklinville complex, 8 to 15 percent slopes. Well Drained and Mongaup-Franklinville complex, 15 to 25 percent slopes. Well Drained. Excellent soils for forest equipment to work.

Forest Diversity and Composition

Five commercial tree species are found here with two primary. The Larch is dominant with Red Maple seeding into the thinned plantation and slowly gaining share of growing space and basal area. Good to excellent growing characteristics indicate good species suitability to the growing site. Overall general tree health is good for the same reasons. No insect or disease issues were present upon stand inspection.

Forest Structure

Fair structure exists with patchy open areas having no structure and forested areas having good structure that includes understory of seedlings, saplings, and AGS. Little to no standing dead trees; some down dead wood offering some wildlife habitat within this south central stand. Spacing is good in stand T5East, but the Larch crowns are showing narrowing and thinning despite expressing dominance within the forest canopy.

Regeneration

In the open areas, interfering ferns dominate with little to no commercial tree reproduction. In the more forested, Red Maple, White Pine, and Norway spruce form the majority of regeneration in both the seedling and sapling forest classifications. No Larch was noticed. Species suitability to the growing site appears to be good. Deer browsing is a factor in the patchy open areas of this stand.

Site Level Risks

The greatest risk is in the accessibility of this stand through wetter stand types from the road. Shorter and milder winters would be a negative factor. Actual soil types within the stand being well drained would lesson risks associated with moisture stress and extreme rainfall.

Stand Prescription

Basal area and Larch maturity both lend themselves to a select cut of the Larch similar to the commercial harvest that occurred long ago. Larch crowns are thinning while being dominant in the canopy, thus lending credence to a select harvest. Harvest should be in conjuncture with neighboring stands harvesting activities. Large individual trees to be harvested while not inducing more widespread open areas within stand T5. 20 square feet recommended.

Another prudent option would be to wait another 7 to 10 years for the Red Maple to grow into more prominence, thus insuring the next stands viability, density, and stocking. Keeping an appraisal of the over story Larch crown health would be important also.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Larch	52.85	64.92	12.878
Red Maple	27.72	13.83	2492
Norway Spruce	11.80	2.78	740
Black Cherry	2.26	3.53	418
Eastern White Pine	.76	2.64	458
Total	95.39	87.70	16,986

Pulp	4.13	4.61	1.09 cords
AGS	17.09	1.05	.29 cords

Forest Stand T6 East

Approximately 1.3 acres are found within this stand which is comprised Mongaup-Hawksnest complex, 1 to 8 percent slopes, rocky. Well Drained Stand T6 is located in the extreme south central section of Otsego #7, parcel east, south of Taite road bordering private property. T6 is primarily a small Norway spruce plantation that has not seen any forest management activity due basically to very slow growth bordering on stagnation.

Forest Diversity and Composition

Being a single specie plantation, T6 has no species diversity with Norway spruce the only specie represented. Species suitability to the growing site is very poor, little to no growth and stagnated. General tree health is poor due to poor growth and some damage from a black fungal infection occurring on the main bole of the tree. This infection has not been identified but is prevalent throughout the stand.

Forest Structure

Lack of an understory dictates poor diversity. Little to no seedlings or saplings are found within this stand. The AGS is actually the poorest growing spruce trees being slowly overtopped and in various stages of succumbing to the poor growing conditions. Ironically, little to no standing dead trees or down dead wood are found here due to the very slow growth of these trees and their longevity under adverse conditions. Tree crowns are poorly developed and there is high density of spacing (the basal area of 12 to 13 square feet is a reflection of the small size of the trees).

Regeneration

No desirable regeneration present within this stand as no thinning has occurred that would generate sunlight to the forest floor. No interfering plants or deer browsing were observed or even possible.

Site Level Risks

Due to the well drained soils, it is judged that moisture stress and extreme rainfall are not a significant risk to this stand. Greatest risk would be other extreme weather: chiefly high wind in gusty form occurring in an unusual direction that would cause blow down of poorly developed spruce trees. Shorter and milder winters would affect accessibility of this stand.

Stand Prescription

Given the poor growth bordering on stagnation of this stand coupled with no regeneration and fungal infection; it is recommended that this stand be converted to a northern hardwood stand or a different coniferous species reforestation. This should occur when neighboring stands are undergoing management activity. Clear cutting this small stand is recommended and utilization of the spruce would probably be in the form of chips.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Norway Spruce	52.23	6.86	2447
AGS	316.59	6.04	11.41 cords

Forest Stand T7 East

Mongaup-Franklinville complex, 8 to 15 percent slopes, well drained soils make up the 2.0 acres more or less found in this stand. Workability of forest equipment within this stand is good. Located in the south central section of the second parcel east in Otsego #7, south of Taite road, T7 is a northern hardwood stand.

Forest Diversity and Composition

Four commercial species are present in this stand with Red Maple dominating in trees per acre, basal area, and overall volume. Therefore, species diversity is seen as fair to below average. Species suitability to the growing site is good with good growth characteristics and good quality attributes. General tree health is also judged good for the same reasons. No current forest insect or disease issues that would affect this stand ecology were identified.

Forest Structure

The dominant tree species, Red Maple exhibits good structural diversity with trees of varying sizes from ten inch diameter at breast height (dbh) through twenty four inch dbh. The AGS is not so well represented with only 1.5 cords per acre, and little seedlings and saplings. Average amounts of standing dead trees and down dead wood were observed. Tree crowns were average with adequate spacing.

Regeneration

Desirable regeneration in the form of commercial tree seedlings and sapling were noticeably lacking due to heavy deer browsing. Some AGS was present but not in good amounts. Interfering plants not a factor.

Site Level Risks

Due to the well drained soils, it is judged that moisture stress and extreme rainfall are not a significant risk to this stand. Shorter and milder winters would affect accessibility of this stand.

Stand Prescription

Recommendation is for this stand to continue on with its growth pattern due to low stocking levels. Revisiting this stand in 7 to 10 years to gauge growth, density, and stocking levels.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Red Maple	27.25	14.84	3370
White Ash	5.00	2.84	837
Eastern White Pine	1.39	2.41	748
Black Cherry	1.26	2.64	615
Total	34.90	22.73	5570
Pulp	15.84	8.80	2.50 cords
AGS	43.56	.74	1.50 cords

Forest Stand T8 East

2.5 acres more or less make up this stand located in the south central section, south of Taite Road, within the eastern parcel of Otsego #7. Mongaup-Franklinville complex, 15 to 25 percent slopes, well drained soils make up the majority of the soil type found within this stand. Being well drained, this stand's workability for forest equipment is excellent. Basically a naturally seeded in Norway spruce stand in late early stages of succession development.

Forest Diversity and Composition

Species diversity is best described as low with Norway spruce and Red Maple pronounced in dominance within the timber class, and Norway spruce exclusively found in AGS, saplings, and seedlings. Both Norway spruce and Red Maple are well suited to the growing site with the Norway spruce having the greatest suitability. General tree health is good and no insect or disease manifestations were found within this stand.

Forest Structure

Since this stand is in the later early stage of development, structural diversity is best described as average with a developing timber class, poles, saplings, and seedlings. Little standing dead wood was observed and average amounts of down dead wood were found in the confines of this stand. Tree crowns are average in size and development for a Spruce stand at this stage of development together with adequate spacing.

Regeneration

Basically regeneration consists of one specie: Norway Spruce. Seedlings, saplings, and AGS are composed of Norway spruce. Species suitability to the growing site is judged to be excellent due to the profuse and healthy Spruce reproduction. No interfering plants were noted and deer browsing very limited.

Site Level Risks

Soil conditions together with topography lend themselves to limitation of risk factors of moisture stress and extreme rainfall. Other extreme weather risks could be ice storm damage to the developing stand. Shorter and milder winters affect would be in the accessibility to the stand.

Stand Prescription

It is obvious that with this type of stand that no action be undertaken and the stand to continue its journey of development into future maturity. Monitoring of this stand in seven to ten years to gauge development is recommended.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Norway Spruce	26.3	4.96	1416
Red Maple	10.89	3.34	527
Popple	1.84	1.77	440
Black Cherry	3.12	1.07	243
Total	42.20	11.14	2626

Pulp	2.39	1.40	.4 cords
AGS	87.13	1.48	3.00 cords

Forest Stand T 9 East

Mongaup-Franklinville complex, 8 to 15 percent slopes, well drained is the soil type found on the approximately 5.2 acres within the confines of this stand. The ability to employ forest equipment to obtain management goals is good. Located in the south eastern corner of Otsego #7 East parcel south of Taite road this stand is naturally seeded Norway spruce. Long ago thinning occurred in stand T9 resulting in a patch work of open spaces and dense conglomeration of trees.

Forest Diversity and Composition

Four commercial species of trees occur within this stand with Norway spruce easily dominating the landscape in trees per acre, basal area per acre, and board footage per acre within the timber class. Therefore, diversity of species is deemed to be low. Species suitability to the growing site is judged to be average to good along with overall general tree health. No insect or disease factors were noted upon inspection of this stand.

Forest Structure

Within the tree sections of this stand structure is excellent with multiple layers of understory and over story: developing timber class, good AGS, sapling and seedlings of Norway spruce well represented. Structural diversity is lacking in the patchy open areas (results of past thinning) of this stand. Tree crowns are normal with somewhat closing spacing as the trees grow and develop. No standing dead trees were found but some down dead wood was observed in stand T9 East.

Regeneration

Desirable regeneration is present in the understory in the form of AGS, saplings, and seedlings primarily Norway spruce. AGS trees per acre of 153.93, basal area per acre 4.01, and .74 cords per acre constitutes excellent reproduction within the tree sections of this stand. Fairly good growth characteristics support good specie regeneration suitability to the growing site. Interfering plant fern was very dominant in the patchy open areas of this stand and as such indicate heavy past browsing by white tailed deer.

Site Level Risks

Due to the excellent drainage characteristics of the soil type found in T9, moisture and extreme rainfall are judged to be not significant risks. Ice storm damage to this developing stand is thought to be the highest risk factor along with blow down. Shorter and milder winter's chief affect would be limiting accessibility.

Stand Prescription

A developing stand with only 16.75 basal area per acre timber, open patchy areas of ferns, and good regeneration within tree sections necessitates little management actions. The primary problem is the ferns and it is difficult to prescribe herbicidal applications that would pay a good return on investment given the cost. After application, one would still have the deer problem. If activity is present in neighboring stands, it might be possible to initiate herbicidal applications or scarification to mineral soil of fern dominated areas.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Norway Spruce	36.78	9.16	2434
Black Cherry	2.42	4.15	796
White Birch	3.03	2.65	511
Red Oak	3.19	.79	178
Total	46.32	16.75	3919
Pulp	14.97	5.11	.92 cords
AGS	153.93	4.01	.74 cords

Forest Stand T 10 East

18 acres more or less defines stand T10 East. Two soils types are found here: Mongaup-Franklinville complex, 8 to 15 percent slopes. Well Drained, and Willdin channery silt loam, 3 to 8 percent slopes, Moderately Well Drained. The ability to work within this stand is good. Stand T10 is located on the easterly border, southerly section, and south of Taite road. This stand is the residual Norway spruce plantation from row thinning long ago.

Forest Diversity and Composition

Four commercial species of trees occur within this stand with Norway spruce easily dominating the landscape in trees per acre, basal area per acre, and board footage per acre within the timber class. Therefore, diversity of species is deemed to be low. Species suitability to the growing site is judged to be average to good along with overall general tree health. No insect or disease factors were noted upon inspection of this stand.

Forest Structure

Within the row tree sections of this stand structure is average with multiple layers of understory and over story: developing timber class, AGS, sapling and seedlings of Norway spruce and Red Maple represented. Structural diversity is lacking in the old row open areas (results of past thinning) of this stand. Tree crowns are normal with somewhat closing spacing as the trees grow and develop. No standing dead trees were found but some down dead wood was observed in stand T10 East.

Regeneration

Desirable regeneration is present in the understory in the form of AGS, saplings, and seedlings primarily Norway spruce and Red Maple (seedlings). Fairly good growth characteristics in the tree rows support good specie regeneration suitability to the growing site. Interfering plant fern was very dominant in the row open areas of this stand and as such indicate heavy past browsing by white tailed deer.

Site Level Risks

Due to the excellent drainage characteristics of the soil types found in T10, moisture and extreme rainfall are judged to be not significant risks. Ice storm damage to this developing stand is thought to be the highest risk factor along with blow down. Shorter and milder winter's chief affect would be limiting accessibility.

Stand Prescription

Stand basal area of 48.04 timber indicates only moderate growth from release by row thinning employed years ago. It is recommended that continuance of the present growth model of succession continue as is. Possibility of another row thinning or harvest exists in ten years time depending on the future measurements. The primary problem is the ferns and it is difficult to prescribe herbicidal applications that would pay a good return on investment given the cost. After application, one would still have the deer problem. If activity is present in neighboring stands, it might be possible to initiate herbicidal applications or scarification to mineral soil of fern dominated row areas.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Norway Spruce	26.30	30.38	3382
Black Cherry	2.11	12.15	874
Red Maple	1.07	3.74	268
Popple	.56	1.77	133
Total	30.04	48.04	4657
AGS	39.21	2.23	.29 cords

Forest Stand T11 East

3.7 acres approximately make up this long ago heavily cut mixed wood stand. The dominant soil type is Willdin channery silt loam, 3 to 8 percent slopes, Moderately Well Drained with Mongaup-Franklinville complex, 8 to 15 percent slopes, well drained forming the secondary soils type. The workability of these soils is good. This stand is located in the central section of Otsego #7 east parcel, south of Taite Road.

Forest Diversity and Composition

Species diversity is judged to be fair with four species tallied upon field inspection. Suitability of species to the growing site is average with fair growth characteristics except Red Maple exhibiting poorer patterns. General tree health is judged average/fair with the Red maple judged to be of lesser health. White Pine weevil was noted as affecting some of the White Pine and Norway spruce saplings.

Forest Structure

Diversity of structure was average to subpar with a notable absence of AGS in the understory. Average amounts of down dead wood and standing dead wood were observed. Tree crowns were over developed on the Eastern White Pine due to very wide spacing from logging, Norway spruce crowns exhibited normal development, Red Maple crowns showed poor development in response to too much sunlight from past harvesting.

Regeneration

Desirable regeneration is best described as profuse with natural seeding of Norway spruce seedlings and saplings, some White Pine. No AGS. The Norway obviously is best suited to the growing site. Little to no interfering plants were noted and deer browsing not a factor.

Site Level Risks

Few risks present themselves in this stand with moisture and extreme rainfall not presenting. Wind throw could be a lesser risk to the widely spaced, large crowned White Pine. Shorter and milder winters could present some difficulty in accessibility to this stand.

Stand Prescription

It is hypothesized that the White Pine was left as seed trees when last logged. Very little White Pine regeneration has occurred with the Norway spruce seeding in instead. It is recommended that to allow this stand to continue on its present succession course with the spruce becoming ever more pronounced and dominant. It is possible to cut the red maple but the value is not present as an incentive. The elimination of the red maple would have to be as

pulp or firewood and done in conjuncture with neighboring stands activities in a manner so as not to damage the regeneration.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Red Maple	10.15	5.72	1522
Norway Spruce	7.39	4.24	1428
Eastern White Pine	1.68	7.97	1269
Eastern Hemlock	4.25	.79	238
Total	23.47	18.72	4457

Forest Stand T12 East

4.2 acres approximately are found in this central stand of Otsego #7 east parcel south of Taite road. Mongaup-Hawksnest complex, 1 to 8 percent slopes, rocky. Well Drained is the soil type found in this stand. Basically, an old individual tree selection cut within a larch plantation that centered on removal of the largest, mature larch resulting in alternating dense (larch residual) and open areas devoid of most trees. Workability of this stand with forest equipment is good.

Forest Diversity and Composition

Species diversity is average for a select logged coniferous plantation stand with four commercial species represented. Species suitability to the growing site is average with the larch showing typical good height growth patterns but lacking the diameter growth that would be found in excellent suitability to the site considering the amount of elapsed time from the prior cutting. General tree health is good. No insect or disease issues were noted.

Forest Structure

Forest structure is one of contrast due to past logging. In the open area component of this stand, no structure exists as no trees exist. In the grouped tree sections, good structure – mature larch timber with spruce seedling and saplings present, Red Maple constitutes the AGS. Average amounts of down dead wood, some standing dead wood was observed. Average tree crown development was noted due to the spacing left by past logging.

Regeneration

Desirable regeneration in the form of Norway spruce seedlings and saplings was found primarily in close proximity to the residual larch, was nonexistent in open areas. No larch regeneration was found. Norway regeneration at this site was well suited to the growing site. Red Maple forms all of the AGS, a direct response to long ago logging and is found in close proximity to the larch residuals. Interfering plant ferns and striped maple were prevalent within the open areas of this stand. Deer browsing was deemed the major factor for fern dominance in the open areas of this stand.

Site Level Risks

Moisture, extreme rainfall, other extreme weather, and shorter and milder winters were not deemed as substantial risk to stand T12 east.

Stand Prescription

The response of the residual larch to prior selective logging that produced additional space and sunlight is only minimal with height growth typical of larch but lacking the diameter growth that should have occurred. Removal of the remaining larch residual stand is proposed together with planting Norway spruce in the open areas where ever possible together with herbicidal treatment or scarification of the ferns and striped maple. The option exists to remove the Red Maple also and plant these areas additionally.

Stand Data

Species	Trees Per Acre (TPA	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Larch	22.56	18.67	7195
Eastern White Pine	4.75	11.65	2911
Red Maple	36.57	4.68	1321
Black Cherry	7.44	2.06	485
Total	71.32	37.06	11,942
Pulp	10.08	3.09	1.31 cords
AGS	102.04	1.18	.51 cords

Forest Stand T13 East

Soil type found within the confines of this stand is Ontusia channery silt loam, 2 to 8 percent slopes. Stand T13 somewhat poorly Drained. Good dry or frozen ground is recommended for working with equipment within this stand. 3 acres more or less make up this stand located centrally within parcel #7 east, south of Taite Road. T13 is an old Red Pine individual tree selection cut that is more or less narrow in shape containing a high quality Red Pine residual stand plantation.

Forest Diversity and Composition

Primarily a Red Pine plantation, species diversity is relatively low. Unusual species found here seeded in after the plantation thinning is Northern White Cedar. Species suitability to the growing site is excellent for the Red Pine which exhibits excellent growth characteristics and high quality. General tree health for the Red Pine is excellent. The Northern White Cedar tree health is poor with insect infestations and very prevalent wood pecker activity on approximately 30 to 40 percent of individuals tallied.

Forest Structure

Forest structure is good with varying understory layering consisting of good populations of seedlings, saplings, and AGS. Average amounts of down dead wood and standing dead wood exist within the stand. Tree crowns are well developed on the Red Pine due to good spacing in relationship to past tree selection harvesting.

Regeneration

Desirable regeneration can be found in the seedling, sapling, and AGS components of stand T13. Species found are Norway spruce, Northern White Cedar, and some Red Pine. Suitability to the growing site is good for both the Norway spruce and Red Pine but questionable for the Cedar. No problems were observed with interfering plants or deer browsing.

Site Level Risks

Highest significant risk is assigned to both moisture stress and extreme rainfall due to soil type. However, no sign of past water problems were evident upon stand inspection. Shorter and milder winter will significantly affect both the access and window of opportunity for working in this stand.

Stand Prescription

This stand consists mostly of mature, high quality Red Pine though limited in area (3 acres) and total volume present. Stand has excellent regeneration in the seedling, sapling, and AGS classifications. It is recommended that this stand be harvested in conjuncture with neighboring stands and be allowed to: 1) become a future stand composed of the species found in regeneration or 2) replant or reforest Red Pine (which will require additional) site work.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Red Pine	40.74	29.75	11,254
Northern White Cedar	19.03	2.92	933
Norway Spruce	6.12	.55	220
Black Cherry	3.12	1.07	412
Total	69.01	34.29	12,819
AGS	155.15	2.27	5.02 cords

Forest Stand T14 East

Norway spruce plantation patch/group selection harvest years ago, this stand boasts tremendous high quality spruce trees. This stand has significant open areas and contrasting areas of dense Norway spruce. Stand T14 is located on 3.4 acres more or less in the north center bordering Taite road within the east parcel of Otsego #7. Soil Type is Mongaup-Hawksnest complex, 1 to 8 percent slopes, rocky. Well Drained. The ability to work this stand is very good.

Forest Diversity and Composition

Species diversity is severely lacking as this is a plantation stand. Species suitability to the growing site is excellent with magnificent individual tree specimens exhibiting exceptional growth patterns. General tree health is excellent. No insect or disease issues were noted.

Forest Structure

Forest structure is one of contrast due to past logging. In the open area component of this stand, no structure exists as no trees exist. In the grouped tree sections, fair structure – mature timber with seedling and saplings present, no AGS. Average amounts of down dead wood, however no standing dead wood was observed. Exceptional tree crown development was noted due to the spacing left by past logging.

Regeneration

Desirable regeneration in the form of Norway spruce seedlings and saplings was found primarily in close proximity to parental stock, was nonexistent in open areas. Norway regeneration at this site was well suited to the growing site. Interfering plant ferns was extremely prevalent within the open areas of this stand. Deer browsing was deemed the major factor for fern dominance in the open areas of this stand.

Site Level Risks

Moisture, extreme rainfall, other extreme weather, and shorter and milder winters were not deemed as substantial risk to stand T14 east.

Stand Prescription

Very high quality, mature Norway spruce is found in this stand. It is recommended that this stand have a final harvest of all mature spruce. Because of the small acreage and number of trees per acre (though high volume), harvesting will have to take place in conjuncture with harvesting in other stands within this parcel. It is further recommended if economically feasible, that the ferns be treated or opened up and the open areas be reforested with Norway spruce.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Norway Spruce	21.89	47.12	12,313
Black Cherry	2.39	1.40	430
Total	24.28	48.52	12,743

Forest Stand T15 East

This stand is composed of 1.3 acres and is located south of and bordering Taite Road, east parcel near centrally positioned. The soil type is Mongaup-Hawksnest complex, 1 to 8 percent slopes, rocky. Well Drained and is easily worked and accessed. This is a two species plantation commercially thinned years ago.

Forest Diversity and Composition

Five commercial tree species are found in this stand with Red Pine and Norway spruce making up most of the basal area: 45 square feet per acre out of 53 total and 80 trees per acre out of 107. Species diversity can be characterized as average for a plantation, basically a thinned plantation stand. Species suitability to the growing site and general tree health is excellent with excellent growth characteristics. No insect or disease issues were identified.

Forest Structure

Structural diversity can be characterized as being average with trees of different sizes in that make up the understory (seedlings, saplings, and AGS) and some variance in the timber class. No dead trees or down dead wood was observed making difficult habitat for certain wildlife species. Tree crowns and spacing is excellent due to prudent prior thinning years ago. Excellent crowns and height observed on the spruce and Pine.

Regeneration

One specie makes up the profuse natural reproduction found in the understory of this stand. Norway spruce regeneration and overall growth, suitability to the stand growing site can best be described as excellent. The Spruce grows exceeding well here. Little to no interfering plants was found and deer browsing is not a consideration.

Site Level Risks

Moisture and extreme rainfall are judged to not be of substantial risk. Blow down and ice storm were deemed a higher risk to this stand. Shorter and milder winters should not be a significant factor due to soils and location of this stand.

Stand Prescription

This stand contains excellent, high quality mature Red Pine and Norway Spruce with excellent profuse regeneration in Spruce seedlings and saplings. Red Maple and other hardwoods are in the small timber diameter class waiting together with the regeneration for release, more sunlight. It is recommended that the Pine and Spruce be harvested fully. Because of the small size (1.3 acres) harvesting will have to take place in conjuncture with other harvesting in this parcel.

Stand Data

Species	TPA (Trees Per Acre)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Red Pine	37.52	22.33	8051
Norway Spruce	43.66	23.05	7916
Red Maple	15.47	3.96	1138
Black Cherry	4.38	3.67	865
White Birch	6.12	.55	220
Total	107.15	53.50	18,190
AGS	34.13	.39	.51 cords

Forest Stand T16 East

Approximately 7.1 acres containing Mongaup-Hawksnest complex, 1 to 8 percent slopes, rocky. Well Drained and Ontusia channery silt loam, 2 to 8 percent slopes. Somewhat Poorly Drained are the soil types found in this stand. A study in contrasts, these two conflicting soil drainage classes make for difficult planning for forest management equipment usage. T16 is located in the northerly central section south of Taite road in the East parcel of Otsego #7. This is the residual stand resulting from a very heavy timber harvest of large Norway Spruce years ago.

Forest Diversity and Composition

This stand is made up primarily of two commercial species: Norway Spruce residual plantation and naturally seeded Red Maple resulting from open space prior logging. Three other species occur but are very sporadic throughout the stand. Species diversity is low. Species suitability to the growing site is below average to poor for the Spruce and good for the Red Maple judging from growth patterns. General tree health is average for the Spruce and good for the hardwoods. No insect or disease issues were observed.

Forest Structure

Structural diversity is observed to be average to above average that includes seedlings, saplings, AGS, and mature timber (however, larger trees in excess of 14 inches dbh were very few). No standing dead trees were found; down dead wood was present in small amounts. Tree crowns were average in size with the hardwood showing the largest, well developed crowns and the Spruce showing smaller less development. Spacing was good throughout this stand.

Regeneration

Desirable regeneration was profuse, made up of mostly Spruce and White Pine. Suitability to the growing site was good. Little to no interfering plants was noted within this stand. Deer browsing was not a factor.

Site Level Risks

Moisture stress and extreme rainfall were judged to be significant risk due to soil type and drainage found in the southern part of this stand. Shorter and milder winters will affect this stands workability and access negatively.

Stand Prescription

It is recommended that this stand continue to develop naturally with the hardwoods (mostly Red Maple) to continue to increase their dominance in both timber stocking and density while the Spruce plantation residuals decrease through poor growth response to prior thinning. It is judged the natural softwood regeneration will continue to develop and this stand maybe ready for harvest in 20 years or so.

Stand Data

Species	TPA (Trees Per Acre)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Norway Spruce	38.95	11.89	3161
Red Maple	44.75	11.91	2990
Yellow Birch	5.90	1.71	361
Eastern Hemlock	2.71	.92	182
Black Cherry	3.79	.66	174
Total	96.10	27.09	6868
AGS	74.07	2.35	.74 cords

Forest Stand T17 East

2.40 acres make up this stand located centrally within the Eastern parcel of Otsego #7 bordering Taite road. Soil type is Mongaup-Hawksnest complex, 1 to 8 percent slopes, rocky. Well drained, making for excellent access and workability with equipment. This is a long ago thinned Norway Spruce stand that has responded well with excellent quality and growth in the residual stand.

Forest Diversity and Composition

Species diversity is poor with only three species tallied, two of which constitute only 3.79 square feet of basal area out of 32.60 per acre total. The Norway spruce exhibits excellent suitability to the growing site and also excellent tree health. No insect or disease issues were observed.

Forest Structure

Structural diversity is lacking mainly in the AGS category, the Norway spruce is mostly in the 17inch dbh and greater classes of mature timber. Little to no standing or down dead wood was found in this stand. Tree crowns and spacing is excellent due to prior thinning and can continue as is for the foreseeable future.

Regeneration

Regeneration is predominately Norway spruce found in the sapling and seedling stages. Suitability of regeneration is excellent to the growing site. Interfering plants are mainly striped maple and to a much lower degree beech. Deer browsing is a factor, noting lack of hardwood regeneration and the proliferation of the Norway spruce.

Site Level Risks

With well drained soils, moisture and extreme rainfall risks to this stand are judged to be significantly low. Ice storm damage is of higher risk to this stand. Shorter and milder winter's affects are largely negligible due to location and soils.

Stand Prescription

This stand is ready for the final harvest with excellent quality Norway spruce. It is also recommended that either reforestation occur with Norway spruce or other spruces be undertaken or let the naturally seeded regeneration make up the future T17 East stand. This stand's harvesting/conversion will have to coincide with other stands located in close proximity.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Norway Spruce	34.94	28.81	8793
Red Maple	4.60	3.00	864
White Birch	4.25	.79	157
Total	43.79	32.60	9814
AGS	26.56	.55	.99 cords

Forest Stand T18 East

Two soils types make up the 16.3 acres more or less in stand T18: Mongaup-Hawksnest complex, 1 to 8 percent slopes, rocky. Well Drained and Ontusia channery silt loam, 2 to 8 percent slopes, somewhat Poorly Drained. The presence of two polarized soil types makes for more difficult working conditions for forest management equipment. T18 is located in the east parcel of Otsego #7, bordering and south of Taite road, in the most eastern part of the parcel – additionally bordering private land. This is a two specie plantation that was thinned long ago and is characterized by poor growth and substantial brush through substantial parts of the stand.

Forest Diversity and Composition

Species diversity is very low with only two commercial species represented: Red Pine and Norway spruce, an old plantation. Species suitability to the growing site is poor, characterized by very poor growth indicators. General tree health is poor for the same reasons. No insects or diseases were found in this stand.

Forest Structure

Structural diversity varies throughout this stand with areas having residual plantation stock lacking larger, mature timber sizes that should be present considering the past thinning. This part of the stand also exhibits both softwood AGS and White Birch AGS with the softwood AGS essentially stagnating/dying/slow growth individuals. The frequent open areas of the stand have no structure, brush. Standing dead trees and down dead wood were amply observed. Tree crowns are poorly developed and spacing varies from dense to too open spaces in the residual plantation; especially in the Norway spruce locations.

Regeneration

Regeneration in the non brush sections is primarily Red Maple and White Birch in seedling, and sapling stages. AGS class in the same area consists mostly of stagnating pine and spruce and White Birch with all three unacceptable. The suitability to the growing site is good for the Red Maple and White Birch seedlings and saplings. Wild blueberry bushes dominate the frequent more open areas of this stand and pose a significant interference to natural tree regeneration. Deer browsing was judged to be present but difficult to quantify.

Site Level Risks

Moisture stress and extreme rainfall are judged to be significant risk factors to this stand due to the soil type's present and significant wet areas in this stand. Blow down is also of high risk to the residual plantation stand due to poor growth, stagnation, and some dying trees. Shorter and milder winters would also negatively affect this stand as frozen ground or dry ground would best benefit management activities.

Stand Prescription

Two options stand out: 1) clear cut the residual Red Pine and Norway spruce, and doze the blueberry bushes to mineral soil and allow natural hardwood seeding to occur or 2) leave as is and allow the residual plantation stock to slowly dissipate thereby allowing the maple and birch to succeed through natural succession.

It is recommended that the second option be employed as the forest products existing on this site would not pay for the stand conversion costs of equipment and manpower and would actually incur costs to the tax payer. It is of opinion this stand is best suited for wildlife and has some intrinsic unique characteristics that would/is benefitting wildlife considerably!

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Red Pine	36.07	15.20	1579
Norway Spruce	10.16	5.23	485
Red Maple	1.84	.55	66
Total	48.07	20.98	2130
AGS	89.25	5.34	.29 cords
Pulp	10.84	4.66	.94 cords

Forest Stand T19 East

4.40 acres more or less are found in this stand located south of Taite Road in the most easterly section bordering private lands in the east parcel of Otsego #7. Soil type is Ontusia channery silt loam, 2 to 8 percent slopes, Somewhat Poorly Drained. Essentially wetland, this stand contains significant standing water and hummocks throughout most of its surface area. The hemlock data found within the following data chart results from the beginning plot which fell in the protective border for this stand and the data from the hemlock should be utilized cautiously.

Forest Diversity and Composition

Species diversity is low, primarily Red Maple with four species registered. The Red Maple is suitable to wet conditions therefore the species suitability is average. General tree health is average to poor due to poor site growing conditions. No insect or diseases were observed.

Forest Structure

Diversity of structure is poor with few seedlings, saplings, and no AGS. Some structure exists in the Red Maple timber class with dbh ranging from ten inches to seventeen. Some standing dead trees and down dead wood was observed but was sporadic. Tree crowns were poor due to hydrophilic growing conditions.

Regeneration

Little to no regeneration was found in stand T19, interfering plant fern was very pronounced and occupies most of the open spaces. Deer browsing not a factor.

Site Level Risks

Moisture and extreme rainfall constitute the highest risk to this stand. Shorter and milder winters would have negligible effects on this stand due to its wetlands category.

Stand Prescription

Recommendation is to allow this stand to continue forward in its present state. This stand has excellent properties for wildlife and water control and mitigation.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Red Maple	35.63	10.76	2617
Eastern Hemlock	14.64	4.51	1328
Black Cherry	5.00	2.84	852
Norway Spruce	1.89	1.77	594
Total	57.16	19.58	5391

Forest Stand T20 East

2.8 acres more or less are found within this stand that has the soil type: Mongaup-Hawksnest complex, 1 to 8 percent slopes, rocky, Well Drained. With this type of soils, workability of the stand is excellent. Located north of and bordering Taite Road, this stand is found in the easterly parcel of Otsego #7. This stand is an older plantation of Larch and Norway Spruce that was thinned rather heavily years ago and is now producing excellent growth hardwoods growing in or near the open spaces (now grown in) created by the thinning.

Forest Diversity and Composition

T20 has excellent species diversity with six commercial species that were sampled upon forest inventory. Species suitability to the growing site is excellent with the exception of the Larch. General tree health is excellent for the Norway Spruce and hardwoods with excellent growth characteristics, essentially a hardwood site. The larch tree health is poorer with poor diameter growth and thinning crowns. No insect or disease issues were noted. However, invasive Japanese Knotwood was significantly present at the interface between the stand and the road.

Forest Structure

AGS is lacking within this stand with only one tree sampled in inventory. Therefore, structural diversity would be characterized as below average. Seedlings, saplings, and timber class trees were sampled. Some standing dead trees (mostly Larch) were noted along with average amounts of dead down wood. Tree crowns and spacing were good to excellent on the Norway spruce and hardwoods. The Larch showed thinning crowns, poor diameter growth, and poor spacing.

Regeneration

Tree seedlings and saplings, primarily Spruce and Hardwoods are present in the understory, and the specie mix is good for management goals and objectives. Primarily a hardwood growing site, T20 East regeneration species suitability to the growing site is excellent. Regeneration is hardwood and spruce. Interfering plants noted are Striped Maple and ferns and are considered moderate on their influence on the commercial regeneration. Deer browse is similar in effect with moderate amounts noted.

Site Level Risks

Moisture stress, drought, and excess rainfall are considered to be low risk. Other extreme weather blow down and ice storms are considered highest risk, especially to the Larch. Shorter and milder winters should not affect this stands viability.

Stand Prescription

The Larch has not responded well to past thinning and is in effect declining. Thinning crowns, some standing dead specimens, slow diameter growth, and poor characteristics define the recommendation to harvest all the Larch of value. The detriment is the size of the stand and the resulting lower volume that dictates harvesting the Larch with neighboring stand activity. If no activity in the adjacent stands, recommendation is to let succession take place, the Larch will continue to decline and the stand will become mostly hardwood/Norway spruce.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Larch	29.73	10.44	4396
Norway Spruce	16.43	10.42	3191
Sugar Maple	20.29	8.59	1688
Red Maple	12.64	4.51	1130
Black Cherry	10.48	2.93	725
White Ash	14.61	2.12	696
Total	104.18	39.01	11,826

AGS	17.01	.20	.51 cords
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Forest Stand T21East

Approximately 3 acres make up this stand located in the eastern parcel north of Taite road in Otsego #7. This stand is the most northerly stand within the parcel and borders private land on three sides. Mongaup-Hawksnest complex, 1 to 8 percent slopes, rocky, well drained is the soil type that makes up part of the growing site properties. The ability to utilize forest equipment within this stand is very good. This stand is a mixed wood stand containing many species with the hardwoods becoming increasingly dominant in the timber class and AGS. This stand was thinned long ago.

Forest Diversity and Composition

Many tree species are present with nine species tallied. Sugar Maple is well represented with a basal area of 14.05 out of 37.45 total in the timber class. Species suitability and general tree health to the growing site is good with the hardwood in particular showing good growth characteristics, the Larch showing the poorest. No insect or disease issues were noted upon stand inspection.

Forest Structure

Structural diversity within stand T21 East is excellent with trees of different sizes and multiple vertical layers. This stand has lots of down dead wood but few standing dead trees thus limiting tree cavity wildlife but providing substantial ground cover for other wildlife species. Tree crowns and spacing is good for all species except for the Larch which exhibits thinning crowns.

Regeneration

AGS and hardwood saplings are well represented in this stand with Sugar Maple becoming more pronounced over time. Tree seedlings are lacking in stand T21. Regeneration suitability (saplings and AGS) to the growing site is good as this is mainly a hardwood growing site. Interfering plant Striped Maple is common within this stand and is exerting an influence on regeneration. Deer browsing was judged to be substantial and the reason for seedling low numbers and the presence/success of the Striped Maple.

Site Level Risks

Extreme rainfall and moisture stress are considered low risk with ice storms or blow down being the highest risk factors. Climate change as seen through shorter and milder winters would not adversely affect this stand through either accessibility or workability.

Stand Prescription

It is recommended that the Larch be harvested when adjacent stands are undergoing management activity. The Larch is slowly being removed from this stand through natural succession factors. There is not a large amount of Larch present but its removal from the stand will act as a thinning measure. The rest of the stand should be allowed to grow and develop into future viable forest products.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Sugar Maple	41.10	14.05	2929
Red Pine	8.52	3.96	1408
Popple (Aspen)	2.43	5.87	1267
Larch	6.23	2.14	824
Norway Spruce	8.50	1.95	796
Red Oak	.42	7.07	268
White Birch	3.12	1.07	412
Black Birch	4.25	.79	238
Yellow Birch	6.12	.55	220
Total	80.69	37.45	8062
AGS	70.12	1.29	.99 cords

Forest Stand T22East

1.5 acres of Ontusia channery silt loam, 2 to 8 percent slopes, Somewhat Poorly Drained is the soil type found in stand T22 East. Workability of this stand is limited; care to be taken in consideration of dryness and time of year. This stand is located north and also bordering Taite Road in the Easterly sub parcel of Otsego #7. This is a commercially thinned or harvested Larch stand (done long ago) that is reverting to a hardwood stand in direct response to the prior harvest.

Forest Diversity and Composition

Many tree species are present with six species tallied. Sugar Maple is well represented with a basal area of 19.43 out of 62.46 square feet total in the timber class. Species suitability and general tree health to the growing site is good with the hardwood in particular showing good growth characteristics, the Larch showing the poorest. No insect or disease issues were noted upon stand inspection.

Forest Structure

Structural diversity within stand T21 East is excellent with trees of different sizes and multiple vertical layers within the hardwood component. This stand has lots of down dead wood but few standing dead trees thus limiting wildlife diversity. Tree crowns and spacing is good for all species except for the Larch which exhibits thinning crowns and some crowding.

Regeneration

AGS and hardwood saplings are well represented in this stand with Sugar Maple and Black Cherry becoming more pronounced over time. Tree seedlings are lacking in stand T22. Regeneration suitability (saplings and AGS) to the growing site is good as this is mainly a hardwood growing site. Interfering plant Striped Maple is common within this stand and is exerting an influence on regeneration. Deer browsing was judged to be substantial and the reason for seedling low numbers and the presence/success of the Striped Maple.

Site Level Risks

Extreme rainfall and moisture stress are considered higher risk with ice storms or blow down being the lower risk factors. Climate change as seen through shorter and milder winters would adversely affect this stand through workability.

Stand Prescription

It is recommended that the Larch be harvested when adjacent stands are undergoing management activity. The Larch is slowly being removed from this stand through natural succession factors. In removing the Larch, actual thinning will enhance the stand overall growth that will be brought onto the hardwood.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Sugar Maple	74.97	19.43	5528
Larch	45.00	26.50	9620
Black Cherry	20.58	8.62	2346
White Ash	5.50	2.47	842
Red Pine	5.83	2.30	836
Red Maple	1.06	3.14	266
Total	152.94	62.46	19,438

AGS	96.68	1.83	.99 cords
Pulp	4.25	.79	.43 cords

Forest Stand T 23 East

Ontusia channery silt loam, 2 to 8 percent slopes, somewhat poorly drained is the soil type found in the approximate 2.6 acres in stand T23 East. The location of this stand is found north east of and bordering Taite Road in Otsego #7 Eastern parcel. Heavily cut years ago, this stand is wet, hard to work with equipment, has low stocking levels, and the residual stand of softwood species has not recovered.

Forest Diversity and Composition

Four commercial species have been sampled; three of the four are softwood, coniferous. Species diversity is low. Species suitability to the growing site is poor: very wet conditions and soil types not conducive to the Norway spruce, Larch, and Red Pine planted here. General tree health is judged poor. No insect or disease issues were observed.

Forest Structure

Forest structure is very poor with little to no understory in most areas, plantation trees forming a simple canopy where present. Tree crowns poorly formed and too widely spaced, a result from past heavy cutting. Small amounts of standing dead trees and down dead wood were found within this stand.

Regeneration

Desirable regeneration was sporadic throughout stand T23 and largely consisted of Norway spruce, Red Pine, and red Maple saplings and seedlings. Species regeneration suitability to the growing site is poor for the Norway and Pine. Interfering plant Striped Maple was very pronounced, occupying considerable growing space. Deer browsing was judged to be average in nature. Japanese Knotweed was present in the road/stand interface.

Site Level Risks

Highest risk factors were moisture stress and extreme rainfall due to the soil type and considerable wetness of the site. Shorter and milder winters would have a significant effect on both access and workability of the stand.

Stand Prescription

Simply put, no action to be undertaken as this stand main benefit seems to be for wildlife. Poor tree growing conditions as evidenced by poor growth, poor regeneration, and poor quality of the residual stand. It is surmised that the past heavy cut was in effect a silvical system called seed tree which did not obtain its purpose.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Norway Spruce	17.51	7.58	1497
Larch	3.58	3.74	1316
Red Pine	6.63	2.19	668
Red Maple	1.89	1.77	440
Total	29.61	15.28	3921
AGS	17.01	.20	.51 cords

Tree Species Common and Latin Names

Common Name	Latin Name
American Basswood	Tilia americana
American Beech	Prunus serotina
American Beech	Fagus Grandifolia
Black Birch	Betula lenta
Black Cherry	Prunus serotina
Eastern Hemlock	Tsuga canadensis
Eastern White Pine	Pinus Strobus

Eastern Larch, Tamarack	Larix laricina
Northern Red Oak	Quercus rubra
Norway Spruce	Picea abies
Red Maple	Acer rubrum
Red Pine	Pinus resinosa
Striped Maple	Acer pensylvanicum
Sugar Maple	Acer saccharum
White Ash	Fraxinus americana

Yellow Birch	Betula alleghaniensis
Black Spruce	Picea Mariana