Otsego County Forest #11 Cooperstown Junction Forest Management Plan

Daniel Zimmerman
February 2023

Table of Contents

Page Number

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 40 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.

Thank You

Thanks are hereby forwarded to Mr. Ronald Ross for allowing the Forester access to Otsego #11 through his property on the East of Otsego #11.

Property Attributes

Otsego #11 Cooperstown Junction is located in the town of Maryland. #11 has an access problem with the closest public road being Interstate 88 which forms the southerly boundary. Access cannot be realized off an Interstate. New York State Route 7 is the next closest public road.

The records that I have been able to access from Otsego Real Property indicate that this parcel was once part of a larger parcel totaling 377 acres calculated, 420 acres deeded. At or about 1979 the majority of this county owned parcel was acquired by New York State. A right of way was obtained for Interstate 88 which formed the southerly boundary of Otsego #11. 84.75 acres calculated, remain in ownership of Otsego County.

Access to this parcel remains to be located. A deeded right of way appears to exist as seen in the following section as found and sent by email September 23, 2021 by Jennifer Basile, Otsego County Deputy Clerk, 197 Main Street, Cooperstown, NY 13326.

Emily Putman is listed as the ad joiner to Otsego #11 on the North and West with Ronald Ross listed as the ad joiner on the East. In consultation with Hank Schecher of Otsego Real Property, it is postulated that the right of way to Otsego #11 Cooperstown Junction is through Emily Putman's property beginning at New York State Highway 7 heading southerly via a existing tractor road crossing the railroad and intersecting with Schenevus creek at an old bridge foundation located at the most westerly section of Cooperstown Junction. From that point, an old roadway travels southerly into or alongside Otsego #11.

Since the location of the right of way is speculation at this point, a survey by a licensed land surveyor is highly recommended. It is further recommended that a survey of the entire parcel be undertaken with blue blazing installed on the property lines.

The following Forest Management Plan implementation hinges upon successfully identifying the right of way and subsequent upgrading to allow public access and forest management activities as outlined in individual stand prescriptions. Possibility exists to obtain a different access that maybe easier.

Deeded Right of Way

part, his heirs and assigns forever.

And the said parties of the first part do covenant with the said party of the second part as follows:

First: That said party of the second part shall quietly enjoy the said premises.

Second: That the said John Graney, Clarence E. Holmes and George L. Gibbs, parties of the first part will forever Warrant the title to said premises.

In Witness Whereof, The said parties of the first part have hereunto set their hands and seals the day and year first above written.

In Presence of

John Graney	(L. S.)
Amelia P. Graney	(L. S.)
Clarence E. Holmes	(L. S.)
Elizabeth Holmes	(L. S.)
George L. Gibbs	(L. S.)

State of New York,
County of Otsego. ss.: On this 11th day of July in the year Nineteen Hundred and Seventeen, before me, the subscriber personally appeared John Graney, Amelia P. Graney, his wife, Clarence E. Holmes, Elizabeth Holmes, his wife, and George L. Gibbs, to me known and known to me to be the same persons described in and who executed the within istrument, and they severally acknowledged to me that they executed the same.

S. L. Huntington, Notary Public.

Recorded, examined and compared with the original July 12, 1917, 11:15 A. M.

Robert C. Marshall, Clerk. R

This Indenture, Made the fourth day of June in the year nineteen hundred and seventeen Between Ida E. Howe of Maryland, Otsego County, New York, party of the first part and John Hansen of the town of Dania, State of Florida, party of the second part,

Witnesseth, that the said party of the first part, in consideration of five thousand five hundred ($5,500) dollars, lawful money of the United States, paid by the party of the second part, does hereby grant and release unto the said party of the second part, his heirs and assigns forever,

All that tract or parcel of land situate in the town of Maryland, county of Otsego and State of New York near Cooperstown Junction being part of lots Nos. 4, 5, and 6 of Franklin Patent and more particularly described as follows: Beginning at the northwest corner of the farm hereby conveyed where the westerly bounds thereof intersects the southerly bounds of the Albany & Susquehanna Railroad Co. lands and running thence across the Schenevus Creek S. 23° E. 64.30 chains to a stake and stones set in the headline of the Franklin Patent and running thence N. 67° E. 44 chains and 36 links along said Patent line to a post

ent and running thence N. 67° E. 44 chains and 36 links along said Patent line to a post set for a corner; thence N. 30° W. 43 chains and 33 links to a corner; thence S. 76° 40' W. fifty links; thence N. 23° W. 18 links; thence S. 71° 10' W. 1.63 chains; thence along a woven wire fence as the same is now set upon the following courses and distances; S. 7° E. 1 chains; S. 4° 20' W. 1 chain; S. 19° W. 1 chain; S. 31° W. 1 chain; S. 40° W. 1 chain; S. 49° W. 1 chain; S. 56° W. 1 chain; S. 63° W. 1 chain; S. 83° 50' W. 2 chains; N. 88° 50' W. 1 chain; N. 77° 30' W. 1 chain; N. 74° 30' W. 1 chain; N. 71° 30' W. 1 chain; N. 60° 50' W. 1 chain; N. 45° 50' W. 1 chain; N. 36° W. 85 links; S. 80° 45' W. 2 chains; N. 67° 50' W. 1 chain; N. 37° W. 1 chain; N. 25° W. 3.06 chains to the road; thence N. 23° 40' E. along said road, 2 chains; thence N. 10° E. 1.63 chains to a corner on the side of said road; thence N. 89° W. 3.05 chains to an ash tree cornered; thence N. 30° 30' W. 1.23 chains to the high bank of the creek; thence along said high bank of said creek S. 74° 15' W. 5 chains; S. 84° 40' W. 1.95 chains; S. 76° 40' W. 1.80 chains to a corner; thence N. 23° W. across said Schenevus Creek to the lands of the Albany & Susquehanna Railroad Co.; thence westerly along said railroad company lands to the place of beginning, and containing 215 acres be the same more or less.

Also a right of way two rods in width in the course now travelled to the Schenevus Creek highway and passes over lands sold to Charles D. and Washington McLaury and reserved

in theirdeed.

Second party and his grantees and successors so long as they use said road shall as appurtenant thereto, keep up the gates at each end of say way and keep the same closed except while passing through.

Being a portion of the premises conveyed by William W. Burnside and wife to Ebenezer Webster and William H. Howe by deed recorded in the Otsego County Clerk's office in Book 204 of Deeds at page 342.

The party of the second part assumes and agrees to pay two certain mortgages now existing against said premises: One mortgage bearing date November 25, 1902 and owned by Charity A. Denton upon which is due the sum of three thousand ($3,000) dollars, the payment of which, the said Charity A. Denton agrees to extend for the period of five years from May 15, 1917. The second mortgage existing against said premises bears date April 1st. 1907 now owned by Harriet J. Manning and Anna J. Manning for the sum of one thousand dollars, payment of which the said Harriet J. Manning agrees to extend for the period of three years from May 15, 1917.

Together with the appurtenances and all the estate and rights of the party of the first part in and to the same premises.

To Have and To Hold the above granted premises, unto the said party of the second part, his heirs and assigns forever.

And the said Ida E. Howe, party of the first part does covenant with the said party of the second part as follows:

First. - That the party of the second part shall quietly enjoy the said premises.

Second - That the said Ida E. Howe, party of the first part will forever warrant the title to said premises.

In Witness Whereof, the said party of the first part has hereunto set her hand and seal the day and year first above written.

In presence of Ida E. Howe (L. S.)

State of New York,

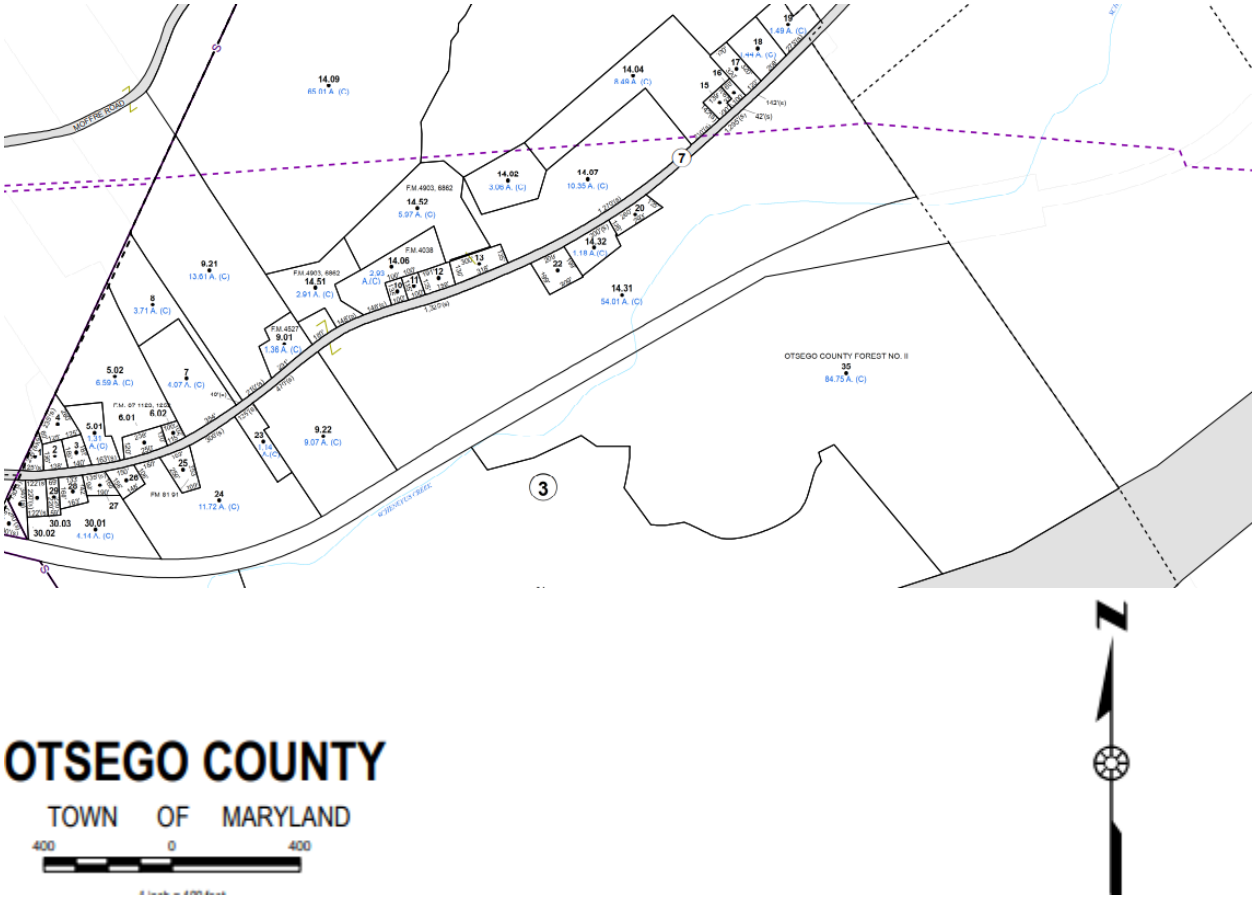
County of Otsego, ss.

City of Oneonta. On this 10th day of July in the year nineteen hundred and seventeen before me, the subscriber, personally appeared Ida E. Howe to me known and known to meto be the same person described in, and who executed the within instrument and she duly acknowleiged to me that she executed the same.

Alva Seybolt, Notary Public.

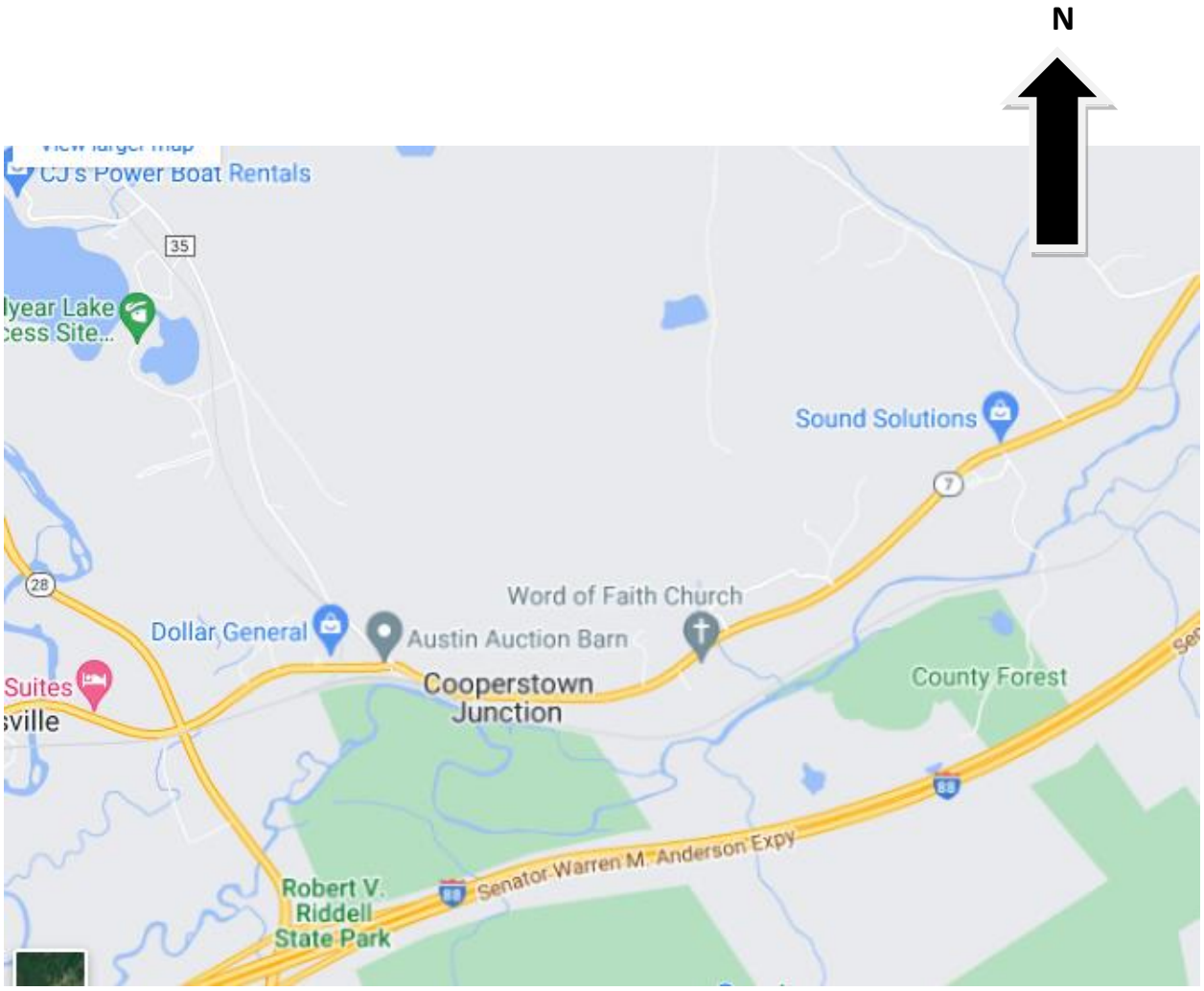
Jennifer Basile email
Otsego County Deputy Clerk
197 Main Street
Cooperstown, NY 13326
607-547-4276
Sep 23, 2021

Otsego #11
Cooperstown Junction
Tax Map



Parcel #277.00-3-14.31 directly North of Otsego #11 Ownership: Emily Putman
Parcel #261.00-1-13.01 directly East of Otsego #11 Ownership: Ronald Ross

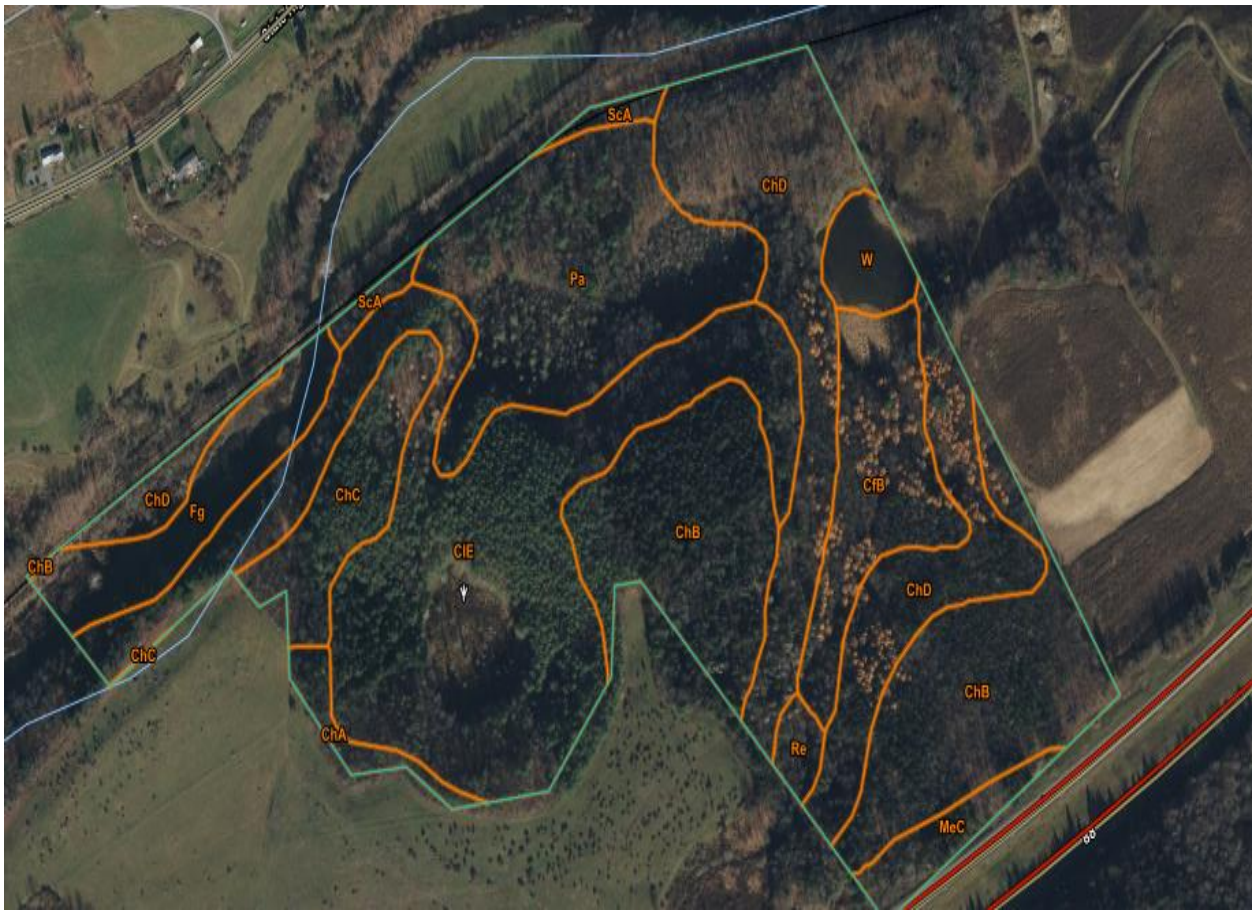
Otsego #11
Cooperstown Junction
Road Map



Otsego #11
Cooperstown Junction
Topographic Map

Scale 1: 500

USGS Soils Map
Otsego 11 Cooperstown Junction



Scale: 1:3960

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USGS Soils Map Legend

Otsego #11 Cooperstown Junction

Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CfB	Castile channery silt loam, 3 to 8 percent slopes Moderately well drained	5.8	6.4%
ChA	Chenango gravelly silt loam, 0 to 3 percent slopes. Well drained	1.1	1.2%
ChB	Chenango gravelly silt loam, 3 to 8 percent slopes. Well drained	16.6	18.6%
ChC	Chenango gravelly silt loam, 8 to 15 percent slopes. Well drained	4.1	4.5%
ChD	Chenango gravelly silt loam, 15 to 25 percent slopes. Well drained	17.2	19.2%
ClE	Chenango, Howard, and Tunkhannock soils, 25 to 50 percent slopes. Well drained	23.6	26.3%

Fg	Fluvaquents-Udifluvents complex, frequently flooded. Poorly drained	4.4	4.9%
MeC	Mardin channery silt loam, 8 to 15 percent slopes. Moderately well drained	1.7	1.9%
Pa	Palms muck.	11.9	13.3%
Re	Red Hook silt loam. Somewhat poorly drained	0.7	0.8%
ScA	Scio silt loam, 0 to 2 percent slopes. Moderately well drained	0.9	1.0%
W	Water	1.6	1.8%
Totals for Area of Interest		**89.6**	**100.0**

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 hardwood species. Fair amount of merchantable high quality and low value hardwood and softwood is present in this parcel in varying degrees of density in some of the forest stands. It is envisioned that a harvesting program be instituted for the whole parcel, especially targeting stands containing White Ash. Control of any interfering vegetation to be instituted prior to commencement of harvesting. Significant acreage is recommended to be managed for wildlife. 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 fourteen forest stands. Inventory was completed December 2022 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 will be identified in each individual forest stand write up. The “Keep Forests Healthy” scorecard by The Nature Conservancy, Cornell Cooperative Extension of Onondaga County will be implemented also.

Trail Maintenance

There is a set of skid roads on the property that are in good condition. A goal would be to continue the present condition or upgrade where needed and maybe mark possible hiking trails.

Recommendations

Prescriptions on individual forest stand to be outlined and aligned with future desired conditions. Recommendations to include implementation and alignment with desired future parcel conditions with the individual forest stand. 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 fourteen forest stands that compromise Otsego County Forest #11. 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 was determined by the judgment of the Forester. Species of every tree in the data plot was 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

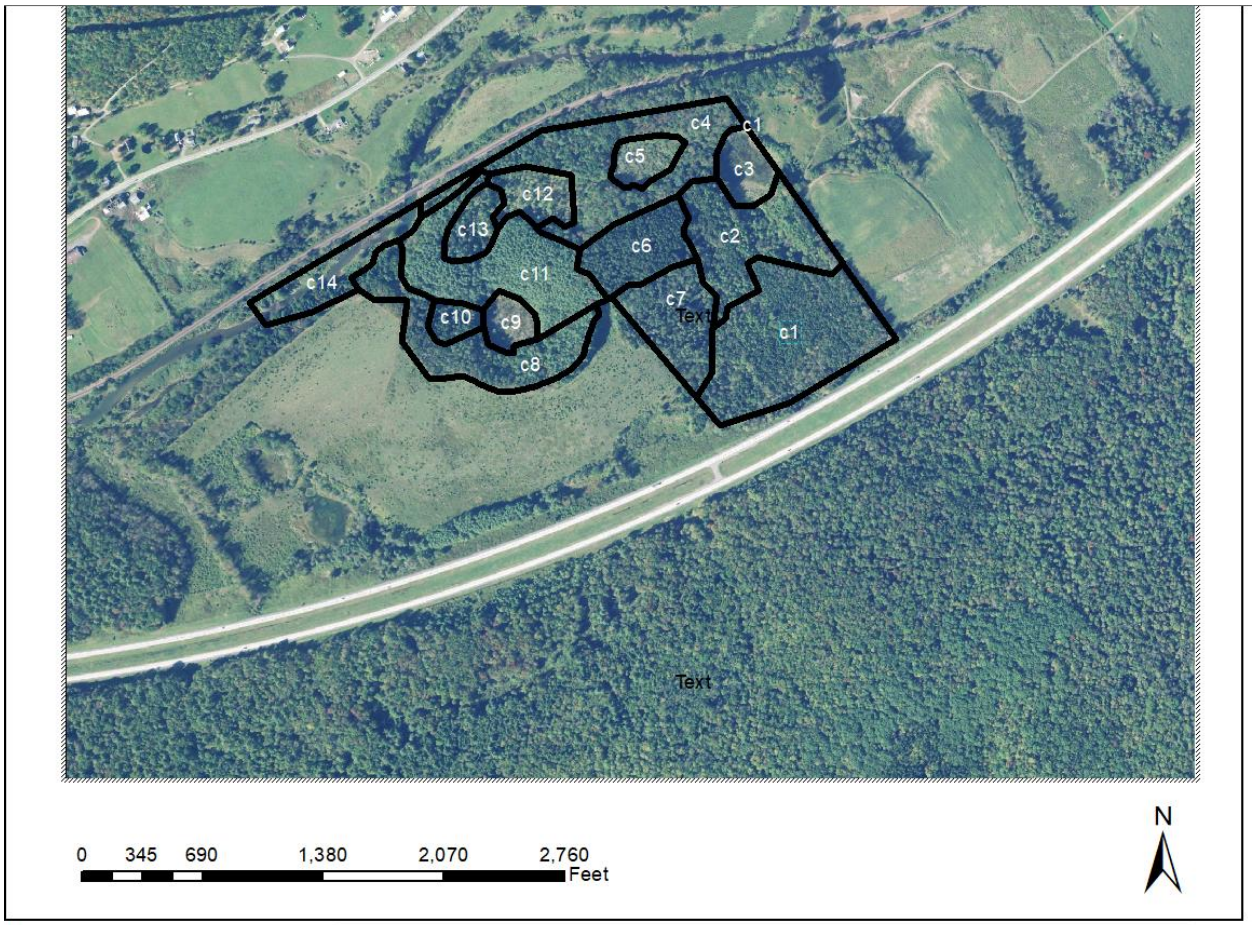
Acres	**# Of Plots**
0-4	3
5-7	4
7-10	5
10-15	7
15-25	10
26-30	14
31-40+	15

Stand Acreage & Plot Table

Forest Stand	Acres	# of Plots
C1	14.45	3
C2	8.72	5
C3	3.56	3
C4	12.75	10
C5	2.02	3
C6	4.92	3
C7	5.84	4

C8	8.21	5
C9	1.81	3
C10	1.17	3
C11	11.05	7
C12	2.95	3
C13	2.06	3
C14	4.33	3

Stand Map



Forest Stand C1

Forest Stand C1

C1 soils type are 1) Chenango gravelly silt loam, 3 to 8 percent slopes. Well drained and 2) Mardin channery silt loam, 8 to 15 percent slopes. Moderately well drained. The ability to work with forest equipment within this stand during fluctuating weather conditions is good. Approximately 14.4 acres are contained within this forest stand located adjacent to Interstate 88 in the southern most portion of Otsego #11. This stand is a stagnating Red Pine and Norway Spruce plantation that has seen no forest management activity. The Norway Spruce portion of this stand has experienced high mortality and is nearly gone. C1 is very slowly reverting to a northern hardwood stand.

Forest Diversity and Composition

Red Pine dominates the tree species in trees per acre, basal area, and board footage found within this stand. The pine is stagnating and mortality is slowly setting in. Hardwood species are slowly becoming more prevalent as this stand slowly converts to hardwood. Species diversity is increasing with eight sampled within this stand. Red Pine suitability to the growing site is judged as only moderate with the hardwood species best suited. General tree health is decreasing in the Pine, poor in the remaining Spruce, and good in the hardwoods. No insect or disease factors were observed within this stand.

Forest Structure

Diversity can best be described as evolving with a slow decrease of over story of Red Pine, Norway Spruce and moderate increase of hardwoods thus creating patches of varying vertical layering. The stand contains trees of different sizes in the timber class and also in the acceptable growing stock class (AGS). Tree crowns in the Pine and Spruce are poorly developed and spacing is moderately crowded. Hardwoods show good crown development and spacing. Good amounts of standing dead trees and down dead wood were observed in Pine and Spruce.

Regeneration

Little to no tree seedlings were observed within stand C1 but tree saplings of desirable hardwood species is present along with pole timber class AGS. Hardwood AGS and saplings suitability to the growing site is judged to be good. Interfering plants Honey Suckle and ferns are present in certain parts of this stand and contribute to the low amount of seedlings present. Deer browsing of hardwood seedlings is judged to be moderate, thus affecting the regeneration of this stands future forest along with the interfering plants.

Site Level Risks

Due to the soil type drainage classifications this stands site is judged to be not prone to moisture stress or drought conditions. Extreme rainfall is also judged to not be a factor. Other extreme weather such as ice storms or high wind events are judged to be high in affecting this stand due primarily to the stagnation of the coniferous plantation species of Red Pine and Norway Spruce.

Stand Prescription

It is recommended that the stand be allowed to go through natural succession to eventually evolve into a hardwood stand. This will entail a long period of time. A consideration to convert the stand through removal of the pine and spruce through mechanical means is a negative due to the poor value and quality of these two species. It may be feasible economically if enough value can be found in adjacent forest stands needing harvesting.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Red Pine	63.65	34.64	4346
Red Oak	11.12	9.97	693
Norway Spruce	5.51	4.33	419
White Ash	4.43	2.91	313
Red Maple	3.98	1.45	202
White Pine	1.34	1.07	105
White Birch	1.34	1.07	105

Popple	2.62	.55	94
Total	93.99	55.99	6277
AGS	55.51	3.88	2.37 cords
Pulp	5.88	2.78	.74 cords

Forest Stand C2

8.72 acres found within the confines of this stand are located in the center and easterly section of the main block of Otsego #11. Soil Properties: Chenango gravelly silt loam, 15 to 25 percent slopes. Well drained, and Castile channery silt loam, 3 to 8 percent slopes moderately well drained. Together these soils allow for fairly good ability to operate forest management equipment during most weather conditions. C2 contains merchantable Larch but the overall stand basal area is low. The stand is slowly reverting to a northern hardwood forest. No past forest management activity was observed.

Forest Diversity and Composition

Species diversity is high with nine species sampled within this stand. However, the dominant species Larch has 35.91 trees per acre out of a total of 73.62. More significant is the basal area of 24.92 square feet out of 37.75 and board footage of 4512' out of 6548'. Though there is a large number of species, this stands density is within the Larch. Species suitability to the growing site is good for the hardwoods with the conifers (mainly Larch) showing only moderate suitability as judged from growth characteristics. General tree health was noted to be average to good with no insect or disease factors observed.

Forest structure

Structural diversity varies throughout this stand with certain areas showing a strong dominance of Larch producing a simple canopy while other areas exhibiting multiple vertical layers with trees of different sizes. Average amounts of down dead wood and standing dead trees are present allowing good benefits to wildlife. Trees within this stand have average tree crowns and spacing.

Regeneration

Little to no seedlings is present within stand C2 due to deer browsing. Saplings represent the future forest and are amply present, exclusively hardwood species. Acceptable growing stock (AGS) in the 6 to 8 inch dbh class is sampled to be 22.92 trees per acre and is also hardwood. AGS together with the saplings observed form a good class that will ultimately form the future forest for this stand, northern hardwood. Species regeneration suitability to the growing site is judged to be good. Interfering plants were judged to be not a significant factor.

Site Level Risks

Due to the relatively low stocking of this stand, ice and wind storms are judged to be the highest risk; mainly to the Larch. Soils help mitigate risks of moisture stress, drought, and extreme rainfall to stand C2. Shorter and milder winters should be beneficial to this stand and any forest management activity.

Stand Prescription

Due to low basal area of this stand, the recommendation is to allow natural succession to evolve to a northern hardwood stand with the Larch providing conditions to promote the quality and quantity of hardwood growth. The Larch is merchantable but of lower value and the harvesting could damage the residual hardwood future forest. Careful timber stand improvement cutting centering in on the hardwood pulp class can be undertaken anytime in the future that would promote the growth of quality trees.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Larch	35.91	24.92	4512
Norway Spruce	4.18	2.02	398
Red Maple	5.10	1.58	286
Red Pine	5.10	1.58	286
Black Cherry	5.30	1.78	280
Red Oak	6.22	1.34	275
White Ash	8.13	2.21	225
Northern White Cedar	1.13	1.77	154
Popple	2.55	.55	132
Total	73.62	37.75	6548
AGS	22.92	1.40	1.15 cords
Pulp	23.41	2.39	1.39 cords

Forest Stand C4

This stand is actually made up of two stands with very different ecosystems, soils, and access. The easterly section can be accessed from the northeast corner below the pond (C3), contains mostly Chenango gravelly silt loam, 15 to 25 percent slopes. Well drained and is easily worked with equipment. In addition this section contains a northern hardwood ecosystem that contains some mature harvestable timber. The westerly section has Palms muck which upon field inspection does not correlate with the USGS designation but seems to be more better drained and workable. The westerly section contains a dying Red Pine plantation with access from the north with established trails. Overall location of this stand is in the northeastern section of Otsego #11 Cooperstown Junction.

Forest Diversity and Composition

The easterly section of forest stand C4 has good species diversity with six species sampled without a single tree species being overly dominant. The westerly section is the opposite with one tree species – Red Pine dominating both the canopy and throughout the forest. In the east, species suitability to the growing site is good with good growth characteristics present. In the westerly section species suitability to the growing site is poor with poor growth characteristics, diminishing crowns, and stagnation present. General tree health is good east, poor west. No insect or disease factors were observed in forest stand C4.

Forest Structure

Multiple vertical layers within the easterly section are found in abundance with good representation of trees of different sizes in the timber class and a good representation of AGS (acceptable growing stock) resulting in a more complex structure. In the western section, structural diversity is poor with the forest containing trees of the same age and size forming a simple canopy. Standing dead trees and down dead wood were noticed to occur at varying intensities throughout C4Eastern section hardwoods show good, robust tree crowns resulting from more than enough spacing. The Red Pine in the west shows trees too crowded (no thinning), and stagnation occurring.

Regeneration

Desirable regeneration is present in the eastern section with ample hardwood seedlings and saplings observed. Regeneration suitability to the growing site is excellent with a good future forest composed of desirable species present. No interfering plants were observed and deer browsing was judged to be minimal. In the western section of C4 no desirable regeneration was found due to stagnating plantation conditions. No interfering plants were observed and deer browsing was nonexistent.

Site Level Risks

Moisture stress and extreme rainfall were judged to be the highest risk to stand C4 but wind storms could pose a definite high risk to the western section of C4 due to stand stagnation and onset of higher mortality instances. Shorter and milder winters would pose a shorter access and working window of opportunity for this stand.

Stand Prescription

Overall basal area for this stand including both east and west section exhibits low stand density and stocking. Even though merchantable hardwood timber is present it is proposed that the hardwood section be left to grow and the ample AGS and regeneration to eventually occupy more of the basal area and stocking to allow for a future harvest way into the future. A timber stand improvement (TSI) could be undertaken removing some of the pulp at the time of forest management activity in the easterly section. It is further proposed that stand conversion (clear cutting) the westerly section be undertaken and allow for conversion to northern hardwood. Due to little value of forest products in this section, this initiative to be undertaken in conjuncture with work in other stands within this parcel.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Black Cherry	12.75	22.62	2016
Red Oak	9.46	16.80	1353
Red Pine	16.31	9.58	1272
Red Maple	13.64	7.61	970
Northern White Cedar	4.44	1.34	196
White Ash	2.62	.55	94
Sugar Maple	1.82	.79	102

Total	61.04	59.29	6003
AGS	35.94	2.64	1.66 cords
Pulp	23.43	6.40	1.53 cords

Forest Stand C6

Chenango gravelly silt loam, 3 to 8 percent slopes well drained is the soil type that makes up stand C6. Being well drained, this stand can offer good working conditions for forest management equipment throughout most of the year. Approximately 4.92 acres are found within the boundaries of this stand. Located in the central portion of Otsego #11, this is a Norway Spruce plantation that has not seen any management activity but has attained economic and biologic maturity.

Forest Diversity and Composition

Being a plantation, this stand has low species diversity, mainly one species: Norway Spruce. The Black Cherry is naturally occurring primarily where plantings did not take or a forest disturbance had occurred. Species suitability to the growing site is excellent with good to exceptional growth patterns seen on both species. General tree health is good to excellent with no insect or disease factors observed.

Forest Structure

Structural diversity defined as including trees of different sizes as well as containing multiple vertical layers within a stand does not exist in forest stand C6. This plantation as is the case for most has poor structure with uniform tree sizes and no vertical layering. Occasional standing dead trees and down dead wood was observed but frequency was not high or even moderate. Tree crowns and spacing was found to be excellent thereby promoting excellent growth and tree health.

Regeneration

Desirable regeneration is not found within the confines of forest stand C6. Interfering plants ferns and black berry are very pronounced under the stands canopy. Deer browsing was a factor in the past (hence the ferns) but at present is not a factor as there is no reproduction to feed upon.

Site Level Risks

Being well drained this stands risks to extreme rainfall and moisture stress or drought are judged to be low. The highest risk is presented by wind and/or ice storms due to the maturity of this stand trees and also the characteristics of mature Norway Spruce. Shorter and milder winters would affect this stands accessibility depending on where within the parcel the actual access is presented.

Stand Prescription

Excellent quality and good maturity was observed of the Norway Spruce Timber within this stand. Even though the basal area is low with 61.97 square feet, this stand should be harvested and replanted to Norway Spruce or other acceptable native coniferous specie. The timber is at optimal size and quality and should be harvested upon good market pricing and demand. Excellent board footage per acre. Partial harvesting will subject this stand to damage from wind throw or ice storm.

Stand Data

Species	Trees Per Acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Norway Spruce	103	57.48	19,876
Black Cherry	4.1	4.49	717
Total	107.1	61.97	20,593

Forest Stand C7

The soil type found within the confines of this stand is Chenango gravelly silt loam, 3 to 8 percent slopes. Well drained, making application of forest management equipment good. Approximately 5.84 acres are found in this stand that has seen no forest management since planting years ago. Basically a Norway Spruce plantation that is in the final stages of decline with significant mortality and resulting blow down present making for very difficult conditions for forest sampling and assessment.

Forest Diversity and Composition

Species diversity in stand C7 is poor, typical of plantations! Species suitability to the growing site is judged to be good with good growth characteristics present on surviving trees. Overall health of the Spruce population is declining – poor due to maturity and no thinning of this stand. No insect or disease vectors were observed except for those commonly found in dead/declining trees, decomposition.

Forest Structure

Structural diversity is typical of plantations, little to none with the stand comprised of trees that are primarily even aged creating a simplistic canopy. Significant blow down exists providing some avenues for some past Black Cherry and Red Maple mature growth, present hardwood saplings, some hardwood AGS and pulp. Significant standing dead trees are present along with considerable down dead wood. Extensive spacing exists among surviving individual trees with tree crowns judged mature to borderline over mature.

Regeneration

Some desirable hardwood regeneration exists chiefly in the sapling and AGS classes with good suitability to the growing site. Interfering plant fern is present significantly as a combined result of tree dieback and deer browsing resulting in a pronounced lack of seedlings.

Site Level Risks

The highest level of risk to this stand is obviously wind and ice storm. This has already occurred and has significantly reduced the ability of the surviving trees to resist another storm. Moisture stress and extreme rainfall are judged to be insignificant. Shorter and milder winters should not affect this stand adversely when it comes to workability. Access would be the primary concern.

Stan Prescription

Stand conversion to hardwood or a new spruce plantation is recommended as this stand is in significant decline. The surviving spruce trees are of good timber quality and should be harvested before more over mature decline factors present.

Stand Data

Species	Trees per acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
Norway Spruce	30.65	39.16	8333
Black Cherry	11.12	3.72	663
Red Maple	8.72	3.02	538
Total	50.49	45.90	9534
AGS	21.49	1.05	1.07 cords
Pulp	12.74	.79	.32 cords

Forest Stand C8

8.21 acres are found within the confines of forest stand C8. The major soil types are: Chenango, Howard, and Tunkhannock soils, 25 to 50 percent slopes. Well drained, Chenango gravelly silt loam, 0 to 3 percent slopes. Well drained, and Chenango gravelly silt loam, 8 to 15 percent slopes. Well drained. This stand is located in the most westerly section of C8 and borders an agricultural field in a semicircular pattern. This stand sits in a “bowl” and its geographic signature is unique. Originally a White Pine and Red Pine plantation, this stand has evolved largely into a White Pine plantation with the Red Pine largely gone and good quality Black Cherry and Red Maple taking its place.

Forest Diversity and Composition

Fairly good species diversity with six tallied especially when considering this stand originally was a two specie coniferous plantation. Species suitability to the growing site and general tree health is very good with the exception of the Red Pine which is very poor. No insect or disease problems were observed.

Forest Structure

Only fair structural diversity was appraised for C8 due in part to its plantation history and in part to moderate to low amounts of seedlings, saplings, and hardwood AGS. Standing dead trees and down dead wood were mostly Red Pine, and not present in high amounts. Tree crowns and spacing is very good for the hardwood with the White Pine showing some crowding/maturity and lower crown development.

Regeneration

Low amounts of hardwood seedlings and saplings together with plantation origins have effectively produced low reproduction of desirable species. The hardwood regeneration is well suited to the growing site. Interfering plants are absent in forest stand C8. Deer browsing is considered to be high and having a pronounced effect on the hardwood regeneration but not the White Pine.

Site Level Risks

Highest risk factor due to the stands geographic properties is extreme rainfall. Sitting in a bowl, this stand could experience copious amounts of rain runoff that could affect its viability. With good soil drainage, the effect of milder winters would be low allowing for excellent workability.

Stand Prescription

It is recommended that a reduction of 20 square feet plus or minus from the White Pine, Black Cherry, and Red Maple be undertaken through timber harvest. The Pine is showing maturity and crowding, the hardwood exemplify high quality and maturity. Silvical methodology: individual tree selection method.

Stand Data

Species	Trees per Acre (TPA)	Basal area/acre (Sq. Ft.	Volume/acre (int.1/4) BdFt F.C. 78
Eastern White Pine	88.64	55.34	7954
Black Cherry	10.16	21.41	2604
Red Pine	5.76	5.61	1121
Red Maple	5.07	10.06	945
Yellow Birch	2.55	.79	143
White Ash	5.05	.66	139
Total	117.23	93.87	12,906

AGS	21.66	.90	.88 cords
Pulp	8.28	1.04	.55 cords

Forest Stand C10

Approximately 1.17 acres make up this stand located in the westerly portion of Otsego #11 Cooperstown Junction. Soil type Chenango, Howard, and Tunkhannock soils, 25 to 50 percent slopes. Well drained. Operation of forest management machinery within this stand is good. Primarily an old Norway Spruce plantation this stand is characterized by extensive blow down and difficult traversing. The surviving Spruce trees are merchantable timber quality. This stand is slowly undergoing natural succession to hardwood with some prominent problems.

Forest Diversity and Composition

Species diversity is very low within stand C10 containing three commercial species. Species suitability to the growing site is questionable due to the high amount of blow down. However, general tree health is judged to be good due to growth characteristics found in the residual stand of Spruce. Insect and disease problems were not observed within this stand.

Forest Structure

Structural diversity within forest stand C10 is low with trees that are primarily even aged – plantation with few other trees coming into the canopy at the blow down openings. Substantial down dead wood litters the forest floor with few standing dead trees present. Tree crowns are well developed on the surviving Spruce trees with substantial spacing existing between trees.

Regeneration

Little to no tree seedlings was found within this small stand. Some hardwood saplings were found dispersed throughout the stand. The growing site is judged to be primarily hardwood but also conducive to Norway Spruce. Interfering plant fern is dominant in the open spaces formed by the blow down and as such is an indicator of heavy deer browsing within this stand.

Site Level Risks

The obvious highest risk to this stand is blow down and ice storms as evidence that this has already happened in the history of this stand. Well drained soils reduce the risk of moisture stress and extreme rainfall at the same time negating many of the impediments of shorter and milder winters.

Stand Prescription

Forest stand conversion to hardwood or Norway Spruce plantation. Harvesting the surviving Spruce trees that are merchantable and are threatened by the adverse affects of the past blow down. Herbicidal application to control/manage the ferns is a secondary consideration. Actively disturbing the forest floor to mineral soil is a better option for fern control due to the proximity to C9 wetland that would be the primary choice.

Stand Data

Species	Trees per Acre (TPA)	Basal area/acre (Sq. Ft.	Volume/acre (int.1/4) BdFt F.C. 78
Norway Spruce	45.25	32.88	10,353
Black Cherry	4.06	8.46	1594
White Pine	11.18	9.19	904
Total	60.49	50.53	12,855
Pulp	5.66	1.77	.39 cords

Forest Stand C11

Chenango, Howard, and Tunkhannock soils, 25 to 50 percent slopes. Well drained and Chenango gravelly silt loam, 8 to 15 percent slopes. Well drained are the soil types found within the stand boundaries of C11. The ability to work this stand with forest equipment is good. 11.5 acres more or less make up this Eastern White Pine plantation stand. No forest management activity has occurred in forest stand C11 and this stand has very high density in square feet of basal area and also in marketable board feet per acre. Stand stagnation is slowly setting in, and growth and overall stand/tree health is beginning to decline.

Forest Diversity and Composition

Being a plantation, C11 has low species diversity with only three commercial species sampled, with White Pine very pronounced. The White Pine exhibits very good growth characteristics thus supporting it's suitability to the growing site (very good). General tree health is good but due to high density factors is starting to exhibit health decline, especially in the crowns and branching. No insect or disease problems were observed.

Forest Structure

This stand exhibits a simplistic canopy of trees that are primarily the same age and size (more or less). Very few standing or down dead trees were found within this stand thus limiting biodiversity through lack of species that require this specific habitat. Tree crowns are noticeably thinning with increasing dead branching and needle thinning and discoloring due to very crowded and dense conditions.

Regeneration

Being a plantation that has not been thinned and showing high density, desirable regeneration does not exist within forest stand C11. It is postulated that this site would support/ be most suitable to both White Pine and hardwood regeneration. Few saplings were observed. Interfering plant fern is present as a result of lack of sunlight reaching the forest floor. The ferns could pose a regeneration problem when thinning does occur. It is recommended that mineral soil exposure (primary selection) or herbicidal treatment occur when or before thinning happens. Deer browsing is not a present factor.

Site Level Risks

Highest level of risk is to wind throw/ice storms especially after thinning due to the present high levels of density and no thinning in the past. Moisture stress and extreme rainfall are deemed to be a lower threat due to soils, topography, and stand row compass orientation. Shorter and milder winters would affect this stands accessibility.

Stand Prescription

A commercial thinning of approximately 80 square feet of basal area utilizing row harvesting in forest stand C11. Object is to counter decline in forest growth and health at the same time allowing enough residual basal area to help protect against wind throw/ice storm damage while encouraging Pine or hardwood regeneration.

Stand Data

Species	Trees per acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
White Pine	93.97	198.77	17,337
Black Cherry	2.02	6.82	627
Black Birch	2.16	.66	100
Total	98.15	206.25	18,064

Forest Stand C12

2.95 acres comprise forest stand C12. Soil type: Palms muck, poorly drained. This stand is an old mixed conifer stand thinned long ago. Poorly drained two coniferous species: Scotch Pine, and Red Pine have died out with only remnants in poor health left. The conifers have not responded well to the past thinning. Stand is located in the north central portion of Cooperstown Junction parcel.

Forest Diversity and Composition

Seven species were sampled in forest stand C12 leading to good diversification but the species suitability to the growing site is poor for the old plantation conifer species. General tree health is fair for the hardwoods and poor/rapidly declining for the softwoods. No insect or disease factors were observed in this stand.

Forest Structure

Structural diversity can be described as fair with the White Pine serving as the top vertical layer (though widely spaced) and the hardwoods forming different lower vertical layers. Considerable down dead wood and standing dead wood was observed in the Red and Scotch pine sections. Wide tree spacing leading to some large crown formations especially among the Red Oak and White Pine within stand C12.

Regeneration

Good desirable regeneration in the hardwood species is found within this stand. Hardwood species suitability to the growing site is good with AGS, saplings, and seedlings showing good growth characteristics with Red Maple dominating

the hardwood regeneration. Interfering plants were judged to be not a factor. Deer browsing was observed to be present on an average scale.

Site Level Risks

Extreme rainfall was judged to be the highest risk to this stand due to soils and topography. Shorter and milder winters will have a high impact on the ability to work this stand with forest management equipment, lessening the time available.

Stand Prescription

Harvesting the remaining conifer species and converting this stand to hardwoods. Much of the conifers have experienced high mortality as this site is not well matched to their requirements.

Stand Data

Species	Trees per acre (TPA)	Basal area/acre (Sq. Ft.)	Volume/acre (int.1/4) BdFt F.C. 78
White Pine	10.61	15.35	2672
Red Oak	4.59	7.83	1184
Red Pine	5.23	2.65	1001
Scotch Pine	8.39	3.73	926
Norway Spruce	4,25	.79	343
Black Cherry	3.12	1.07	243
Red Maple	3.12	1.07	243

Total	39.31	32.49	6612
AGS	20.02	.71	.95 cords

Forest Stand C6

C6 is not a forest stand but a pond. Approximately 4.92 acres make up this fresh water pond. Excellent topographic diversity, this pond has excellent attributes for both wildlife and water. Any forest management activity should take into account all the aquifers that contribute to this pond.

Forest Stands C5, C9, and C13

These “stands” are significant wetlands containing a rich flora and fauna diversity. These stands have excellent wildlife habitat and a diverse expression of the water table. Forest management activity in neighboring forest stands have to plan carefully so as not to compromise these stands viability. Acreage: C5 2.02 acres, C9 1.81 acres, and C13 2.06 acres more or less.

Forest Stand C14

Schenevus creek, a protected trout stream. An old bridge foundation and tractor road is found in this area and could be the deeded right of way for access to Otsego #11. 4.33 acres more or less are contained within the areas boundary.