F&W Forestry

480-A Management Plan
15-Year Full Revision
The Gunning Forest

Prepared for:

Shane Gunning

Certificate #15-078

Town of Ticonderoga
Essex County, New York

152.5 Tax Acres

February 2023

F&W Forestry Services, Inc.

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Summary of Plan

The management goals on the forest owned by Shane Gunning, is an overall improvement in forest stand conditions over the long term. Additional considerations will be to improve wildlife habitat across the forest and to maintain and improve access for timber management and recreational purposes. Both even-aged (including two-aged) and uneven-aged silvicultural systems may be employed for harvesting mature trees in addition to removing poor quality and low value trees during periodic harvests. Forest products to be grown for harvest include pulpwood, firewood, chipwood, sawlogs, and veneer in addition to any other marketable forest products.

Compatible Use and Support

The Gunning Forest may be used for a wide variety of recreational and educational uses including, but not limited to, hunting, trapping, camping, fishing, nature study, hiking, cross-country skiing, and foraging for berries, mushrooms, or other minor plants. Motorized forms of recreation, such as snowmobiling, which neither damage trees nor interfere with forest crop production, may be allowed at the owner's discretion. Recreational rights may be leased at the owner's discretion. The property may also be posted against trespass at the owner's discretion.

These and other more intensive uses, such as maintaining trails and roads, harvesting selected trees for firewood for personal use, or tapping sugar maple trees for syrup production, will comply with all the standards and requirements set forth in the provisions of Section 480a, the Rules and Regulations and the Forest Tax Law Certification Procedure Handbook. Under no circumstances will these compatible and / or supportive uses change, restrict, or prevent the application of the approved management plan for the certified eligible tract unless prior approval of the Regional Forester is obtained.

Property Description

The Gunning Forest is a 152.5-acre tract located in the Town of Ticonderoga, Essex County, New York. It is approximately 1.4 miles south of Chilson and is located along the Canfield Road, also known as the Armstrong Road. Access to the tract can be gained year-round. There are two C(ts) classified streams present on the tract. One is in the western portion of the property running along the Canfield Road. This stream will need to be crossed to gain operational access to the rest of the eligible stands. The second is in the eastern portion of the property and needs to be crossed to access stand 4. Both streams act as tributaries to Putnam Creek.

The Gunning Forest has a dominant northern aspect with a variable slope. The topography forms multiple drainages that feed a combination of perennial and intermittent streams. The tract is operationally feasible and should pose no difficulties when performing future management activities.

Threatened and Endangered Species

Upon review of the NYS DEC Resource Mapper and NY Heritage Program on February 9th, 2023, there are no known rare, threatened, or endangered species present on the Forest. A known bat hibernacula is located approximately 1.7 miles east of the tract; however, this distance is greater than the current restrictions placed on forest management practices to protect NELB habitat.

Recent Harvesting

There has been no timber harvesting on Gunning Forest within the past 15-year management plan cycle.

Boundary Lines

The boundary lines on the Gunning Forest are in variable condition and will be addressed to meet NYS 480A requirements. The landowner typically maintains the boundary lines.

Management Practices

Every effort will be made to maintain soil and water quality across the Gunning Forest. Provisions will be made to prevent excessive runoff and to prevent soil erosion that would result in siltation to surrounding waterways. Also, it is important to consider maintaining cool water temperatures across the forest. Timber harvesting and post-harvest cleanup will be conducted according to New York State Best Management Practices (BMP's). A complete explanation of BMP's can be found in the "New York State Forestry Best Management Practices for Water Quality" BMP Field Guide (www.nysbmpguidelines.com).

Forest Land Classification and Treatment Report

Eligible Acres

Stand Number	*Forest Type*	*Acres*	*Diam. Class*	*Site*	*Basal Area*	*Trees / Acre*	*Dominate Species Type (Nearest 10%)*	*Silviculture Prescription*
1	MW2D	24	PT	II	93	175	WP-20, HE-20, WA-20, RM-20, BF-20	Crop Tree Release (2025)
2	NH2B	43	PT	II	105	296	SM-30, BE-20, WA-20, YB-10, PB-10, ASP-10	Shelterwood (2025)
3	MW2C	48	PT	II	122	216	HE-50, SM-20, BE-20, PB-10	Shelterwood (2025)
4	NH2B	37.5	PT	II	97	185	SM-40, RM-10, ASP-10 BE-10, WP-10, RO-10, BW-10	Free-thinning (2025)
	Total:	152.5						

Forest Types

NH – Northern Hardwood

MW – Mixedwood

Diameter Class

PT – Pole Timber

Species Codes

SM-sugar maple, RM-red maple, YB-yellow birch, ASP-aspen, BE-beech, BW-basswood, WA-white ash, PB-paper birch, HE-hemlock, WP-white pine, SP-spruce

Ineligible Acres

Area	*Acres*	*NF Type*	*Town*	*Tax Parcel*

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Prescriptions and Descriptions

Stand	Acres
1	24

Description:
Species Composition: WP-16, HE-16, WA-14, RM-13, BF-11, PB-9, ASP-5, SP-4, YB-4, BE-4 SM-4, NC HWRD-1
Size Class: Pole Timber
Stocking: Understocked (At or below C-Line on a mixed-wood stocking guide)
Density: 93 ft^2per acre
AGS Density: 51 ft^2 per acre
AGS Density Ratio: 55%

The species composition above reflects a mixedwood stand that currently has a diameter distribution which indicates it is in the pole timber size class with an average diameter of 9.2 inches. The basal area of this stand is 93 ft^2 per acre with 51 ft^2 per acre being considered as acceptable growing stock quality, or approximately 55% of the standing density can produce sawlogs now or in the future. Current net merchantable volume is 3,351 board feet per acre of sawtimber and 19.4 cords per acre of pulpwood. Volumes were calculated using international ¼" log rule.

An understocked stand has ample growing space available. In these conditions, a lot of sunlight can reach the forest floor, regenerating new trees, *rubus spp,* and other new vegetation. Residual trees have a lot of growing space, which in return will cause them to focus on diameter growth instead of height. The result from increased diameter growth is a larger crown, which will begin to occupy more of the available growing space. Mortality in understocked stands is low, but the stand is susceptible to natural mortality from weather events.

Stand 1 is located along the town road and provides access to the rest of the forest. A C(TS) stream flows through the center of the stand which will need to be crossed to gain access to the rest of the stand and tract. This stand has a wetter soil complexion and would be better suited for winter access but may be operated on carefully during a dry summer. The species composition of the stand is dominated by mature white pine and hemlock with good quality northern hardwoods occupying the co-dominate crown class.

Stand 1 is a site class II.

Recommendations:

The recommendation for stand 1 is a crop tree release to be performed in 2025. The objective of this treatment is to release AGS quality red maple, sugar maple, yellow birch, spruce, and white pine. The basal area of the stand will be reduced to 50 ft^2 per acre through the removal of mature hemlock and white pine, beech, aspen, and UGS quality hardwoods.

Stand	Acres
2	43

Description:
Species Composition: SM-29, BE-19, WA-19, YB-9, PB-6, ASP-5, RM-3, HE-3, NC HWRD-2 BC-2, WP-2, BF-1
Size Class: Pole Timber
Stocking: Well-Stocked (Between A and B-Line on a northern hardwood stocking guide)
Density: 105 ft^2 per acre
AGS Density: 56 ft^2 per acre
AGS Density Ratio: 53%

The species composition above reflects a northern hardwood stand that currently has a diameter distribution which indicates it is in the pole timber size class with an average diameter of 7.6 inches. The basal area of this stand is 105 ft^2 per acre with 56 ft^2 per acre being considered as acceptable growing stock quality, or approximately 53% of the standing density can produce sawlogs now or in the future. Current net merchantable volume is 2,681 board feet per acre of sawtimber and 20 cords per acre of pulpwood. Volumes were calculated using international ¼" log rule.

A well-stocked stand has occupied all of the available growing, and the forest is growing at its maximum capacity. During this time, growth rates of all diameter groups will slow down as competition between trees is high. Well-stocked stands will begin to have mortality as the stand continues to develop, with the best, more vigorous trees surviving.

Stand 2 is located east of stand 1 and west of stand 3. Access into the stand is good, however, it does require traveling through stand 1 and crossing a C(TS) stream. The topography of the stand is a moderate slope with a northern aspect that will support summer or winter forest operations. The stand currently resembles an un-even aged structure which has led to a stronger presence of beech in the understory and small size classes. Future management will revert the stand to an even-aged structure that will promote more desirable species such as sugar maple, red maple, and yellow birch.

Stand 2 is a site class II.

Recommendations:

The recommendation for stand 2 is a shelterwood to be performed in 2025. The goal of this treatment is to encourage desirable regeneration of sugar maple, red maple, and yellow birch while maintaining a sufficient overstory. The desired residual basal area is from 40 ft^2 to 50 ft^2 per acre with sugar maple, red maple, and yellow birch being the dominate species.

Species to be removed will be: beech, aspen, non-commercial, mature white pine, UGS quality hardwoods, and paper birch. UGS quality trees cannot produce a sawlog now or in the future or will likely naturally perish within next 15-years. As a preventive measure to the catastrophic impacts of emerald ash borer, all white ash within the stand will be harvested.

Stand	Acres
3	48

Description:
Species Composition: HE-45, SM-21, BE-13, PB-8, RM-6, WP-2, ASP-2, YB-1, WA-1, BW-1
Size Class: Pole Timber
Stocking: Stocked (B-Line on a mixedwood stocking guide)
Density: 122 ft^2per acre
AGS Density: 43 ft^2 per acre
AGS Density Ratio: 35%

The species composition above reflects a mixedwood stand that currently has a diameter distribution which indicates it is in the pole timber size class with an average diameter of 9.5 inches. The basal area of this stand is 122 ft^2 per acre with 43 ft^2 per acre being considered as acceptable growing stock quality, or approximately 35% of the standing density can produce sawlogs now or in the future. Current net merchantable volume is 2,987 board feet per acre of sawtimber and 24 cords per acre of pulpwood. Volumes were calculated using international ¼" log rule.

A stocked stand has majority of the growing space occupied. During this phase, trees are beginning to compete more for limiting resources causing the dominate and co-dominate crown class to become defined. Crowding is common in stocked stands causing crown abrasion and lower live crown ratios. A result of this is slowed growth rates. Mortality will be low, but as the forest continues to develop, remaining growing space will become occupied causing morality to increase among less vigorous trees.

Stand 3 is located in the center of the forest and can only be accessed through stands 1 and 2. Stand 3 has a rockier topography with some areas that may present some challenges. A C(TS) stream flows through stand 3 and will require a crossing during any future operations. This stand is dominated by hemlock and has developed with an even-aged structure. Due to the dense shade of hemlock, the only regeneration within the stand is found under hardwoods and consists primary of beech and non-commercial species.

Stand 3 is a site class II.

Recommendations:

The recommendation for stand 3 is a shelterwood treatment in 2025. The goal of this treatment is to encourage more desirable regeneration of sugar maple, red maple, white pine, and yellow birch. This will be achieved by reducing the basal area of the stand to 50-55 ft^2 per acre with trees to be harvested consisting of hemlock greater than 12", beech, aspen, non-commercial species, and UGS quality hardwoods.

Eastern hemlock is currently experiencing significant pressure from the hemlock woolly adelgid across NYS. Densely stocked stands are more susceptible to outbreaks and infestations. In light of this, hemlock will be the primary species removed during this treatment. Residual hemlock should be healthy, good quality trees.

Stand	Acres
4	37.5

Description:
Species Composition: SM-41, RM-11, ASP-10, BE-9, WP-8, RO-6, BW-5, WA-3, NC HWRD-2 HE-2, SP-2, YB-1
Size Class: Pole Timber
Stocking: Well-Stocked (Between A and B-Line on a northern hardwood stocking guide)
Density: 97 ft^2 per acre
AGS Density: 56 ft^2 per acre
AGS Density Ratio: 57%

The species composition above reflects a northern hardwood stand that currently has a diameter distribution which indicates it is in the pole timber size class with an average diameter of 9.2 inches. The basal area of this stand is 97 ft^2 per acre with 56 ft^2 per acre being considered as acceptable growing stock quality, or approximately 57% of the standing density can produce sawlogs now or in the future. Current net merchantable volume is 3,424 board feet per acre of sawtimber and 20.5 cords per acre of pulpwood. Volumes were calculated using international ¼" log rule.

A well-stocked stand has occupied all of the available growing, and the forest is growing at its maximum capacity. During this time, growth rates of all diameter groups will slow down as competition between trees is high. Well-stocked stands will begin to have mortality as the stand continues to develop, with the best, more vigorous trees surviving.

Stand 4 is on the eastern edge of the forest. Approximately 6-acres of this stand were clearcut previously by an adjoining landowner, however, through review in the field it was decided not to separately delineate this area. Stand 4 has developed primarily as an even-aged forest with an older cohort white pine being emergent.

Stand 4 is a site class II.

Recommendations:

The recommendation for stand 4 is a free-thinning to be performed in 2025. The goal of this intermediate treatment is to remove the older cohort of white pine, while releasing crop trees to increase growth over the next 15-year planning period. This goal will be achieved through removing white pine greater than 20", beech, aspen, non-commercial hardwoods, hemlock, and spruce. The desired residual basal area will fall within 55 ft^2 to 60 ft^2 per acre with a species composition of sugar maple, red maple, yellow birch, and red oak.

Currently, sugar maple, red maple, yellow birch, and red oak are predominantly in the pole timber size class. At the time of the treatment, it can be expected that the size class of will resemble a mixture of small sawtimber and large poles. Red maple and sugar maple generally respond well to 4-sided release treatments, while yellow birch and red oak respond better under lighter crown releases. During the harvest, individual species preferences should be adhered to, and the intensity of the release should reflect the anticipated response.

15-Year Work Schedule

Year	Activity
2023	Boundary line maintenance
2024	
2025	Crop tree release (stand 1) Shelterwood (stand 2 - 3) Free-thinning (stand 4)
2026	
2027	5-year management plan update Boundary line maintenance as necessary
2028	
2029	
2030	
2031	
2032	5-year management plan update Boundary line maintenance as necessary
2033	
2034	
2035	
2036	
2037	15-year full management plan revision

Eligibility Certification

I hereby certify that the land described in this plan as eligible is legally eligible under the 480-A Forest Tax Law.

Trevor Keough

Trevor Keough, CCF
Forester

F&W Forestry

February 16th, 2023

Date:

Method of Estimate

Sampling

This estimate was made by the use of point sampling. On the 152.5 acres, 38 variable plot prism points were taken, representing 4 acres a plot for this sample. Diameter Breast Height (DBH) was measured, and sawlog / pulpwood heights were measured. All trees greater than 5" DBH which fell into the sampling area were measured and tallied. Information was taken on regeneration, sawlog height, tree quality and soundness.

Inventory Processing

Inventory processing was made utilizing Two Dog. Prescriptions were based on recommendations and stocking charts found in the U.S. Forest Service publications NE 603, NE-41, and other Forest Service Publications.

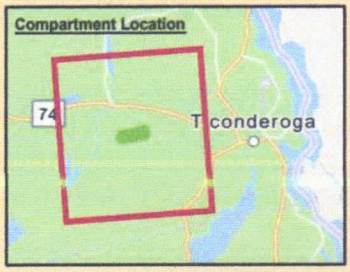
Forest Stand Map

The property lines and stand boundaries were compiled from:

- 2020 ortho photography
- Field Inspections including GPS data
- Tax maps

Site Class Determination

Site Class was determined for each stand based on site indicators. Many stands contain a range of site classes because site conditions vary within the stands based on topography, depth to bedrock, depth to water table and amount of surface stone. In stands where a variety of site classes exist, an overall average is used.



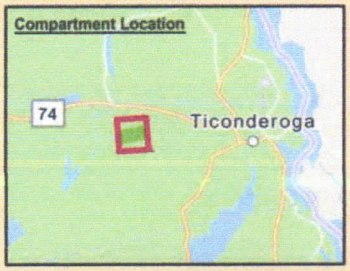
2023 - 480a Update - Location Map
Gunning Forest
Ticonderoga, Essex County, NY
Owned by: Shane Gunning
152.5 Tax Acres

Mapper: D. Barkley, forester
80 Park Street, Suite 4
Tupper Lake, NY 12986
Map Date: 2.15.23

Certification #:15-078
Shane Gunning
2335 Flint Hill Rd
Coopersburg, PA 18036

ArcGIS Map

F&W Forestry Services, Inc.



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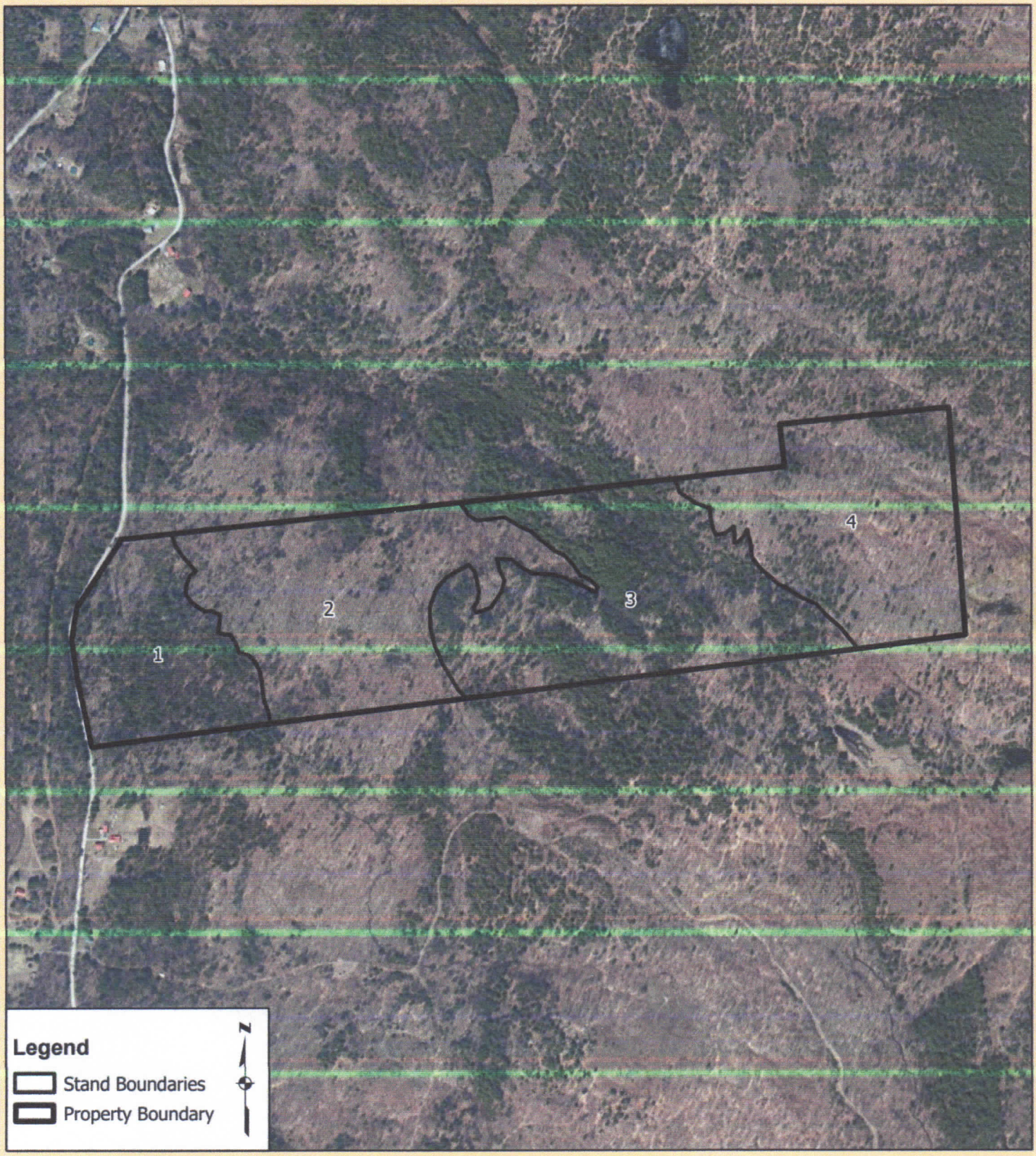

ArcGIS Map

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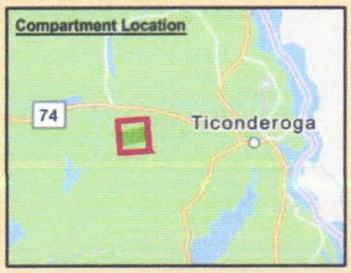

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Coopersburg, PA 18036

Legend

Stand Boundaries

Property Boundary

N

1,320 660 0 1,320 Feet

ArcGIS Map

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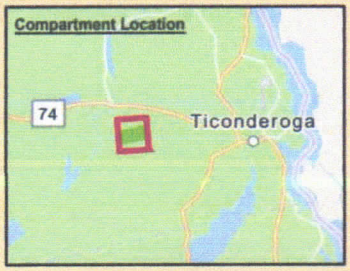

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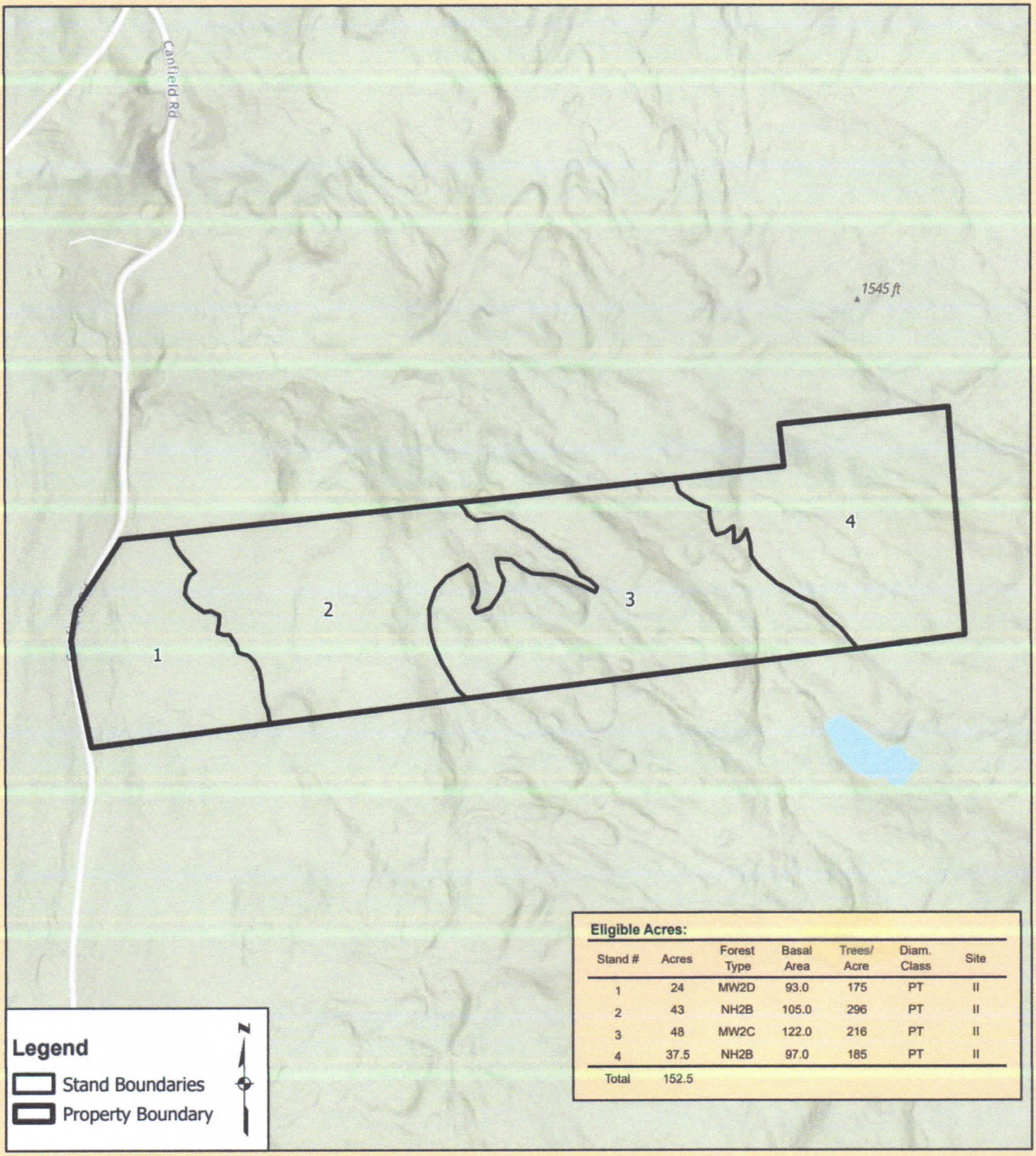


Eligible Acres:

Stand #	Acres	Forest Type	Basal Area	Trees/ Acre	Diam. Class	Site
1	24	MW2D	93.0	175	PT	II
2	43	NH2B	105.0	296	PT	II
3	48	MW2C	122.0	216	PT	II
4	37.5	NH2B	97.0	185	PT	II
Total	152.5					

Legend

Stand Boundaries

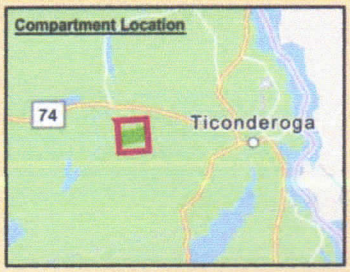
Property Boundary

N

1,320 660 0 1,320 Feet

ArcGIS Map

F&W Forestry Services, Inc.



2023 - 480a Update - Harvest Map
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Ticonderoga, Essex County, NY
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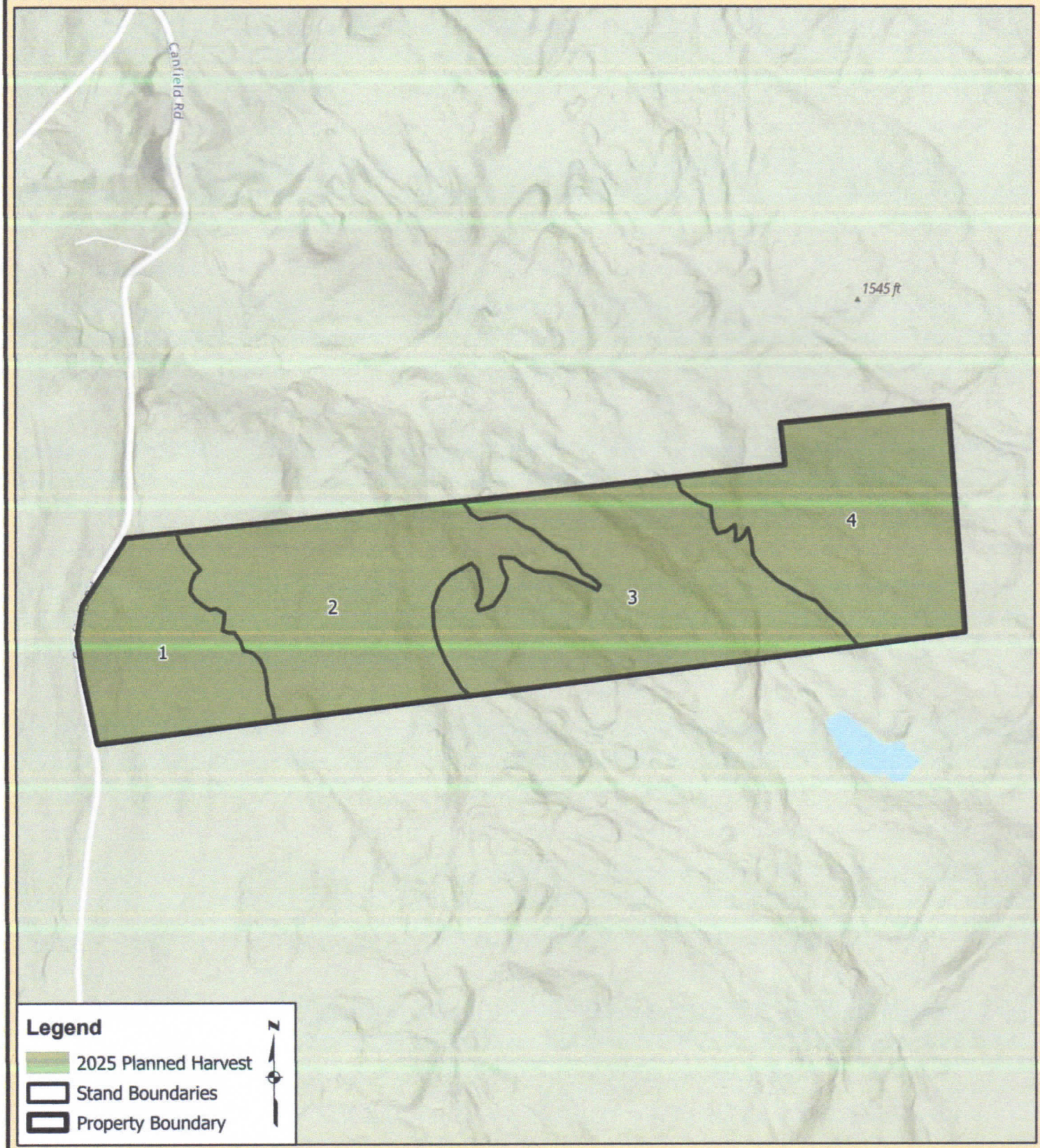

ArcGIS Map

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