



# Compartment Review Presentation

## Grayling Forest Management Unit

Compartment 72009

Entry Year 2020

Acreage: 2,767

County Oscoda

Management Area: Kirtland's Warbler

**Revision Date:** 2018-07-18

**Stand Examiner:** Kevin Ehlert

### Legal Description:

(Greenwood Township) T27N, R01E, Sections 1, 2, and the north ½ of 12 (Elmer Township) T27N, R02E, Sections 6, 7, & 18

### Identified Planning Goals:

To maintain forest health, productivity, sustainability, species diversification, and structural diversity throughout the compartment while providing for multiple use and visual management. In addition, to maintain a healthy habitat for the endangered species *Dendroica kirtlandii* (Kirtland's Warbler), taking into account warbler management plan directives, species diversity, and visual management.

### Soil and topography:

Terrain is level to slightly rolling. Soils consist of primarily Grayling sand. This soil is excessively drained with a low water-holding capacity.

### Ownership Patterns, Development, and Land Use in and Around the Compartment:

This compartment is comprised of primarily State owned lands with some private parcels scattered throughout. This is a consistent ownership pattern for northwest Oscoda County. A 5 chain wide Consumer's Power owned right-of-way bisects the compartment.

### Unique Natural Features:

There is potential for dry prairie plants in grassy openings: Hill's thistle, rough fescue, Alleghany plum, and pale agoseris. There is potential for several animals of concern in this compartment: Kirtland's warbler, prairie warbler, secretive locust, dusted skipper, grizzled skipper, and the red-legged spittle bug.

### Archeological, Historical, and Cultural Features:

None known at this time.

### Special Management Designations or Considerations:

Compartment 9 is the Muskrat Lake Kirtland's Warbler Management Area. These areas are designated High Conservation Value Areas (HCVA).

### Watershed and Fisheries Considerations:

Muskrat Lake and the head waters to Wright Creek are found within the compartment. There are no intrusive activities scheduled to occur within the riparian management zones of either area.

### Wildlife Habitat Considerations:

Kirtland's warbler and prairie warbler could occur in the young jack pine. Along the lakes and streams there may be eagles, osprey, and great blue heron rookeries. There is potential for dusted skipper, grizzled skipper, and red-legged spittle bug to occur in grassy openings. Secretive locust may occur in bog habitat and surrounding uplands. Blanding's turtle, wood turtle, and massasauga rattle snake have potential to be found along the water ways.

### Mineral Resource and Development Concerns and/or Restrictions

An active sand/gravel pit is located four miles to the southeast, but sand & gravel potential is good within the compartment. There has been past Antrim Shale gas production in the area including in the northeast corner of the compartment. The wells have all been plugged and abandoned, but there may be additional Antrim gas potential beneath the compartment. Active Antrim production is occurring farther to the north, and the Antrim may be too deep here to be very productive. There are currently no active leases within the compartment. There is no known metallic mineral potential in this part of the state.

### Vehicle Access:

Access to the compartment is excellent by way of county roads.

### Survey Needs:

None at this time.

**Recreational Facilities and Opportunities:**

Muskrat lake rustic campground and boat access site occurs in section 7, stand 15, and Snowmobile trail 4/9 and Mio to Meadows Motorcycle trail occurs in section 6, 7, and 18. Due to the large jack pine interface of the compartment birding, and some hunting may be present. Most of the recreation pressures are likely near designated areas.(A.2018)

**Fire Protection:**

There is potential for extreme fire behavior due to fuel types. Stand 42 is a designated fuel break. The power line also serves as a potential fuel break.

**Additional Compartment Information:**

**The following reports from the Inventory are attached:**

- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

**The following information is displayed, where pertinent, on the attached compartment maps:**

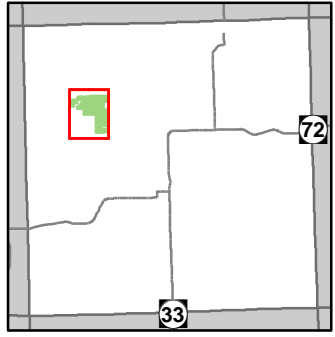
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**



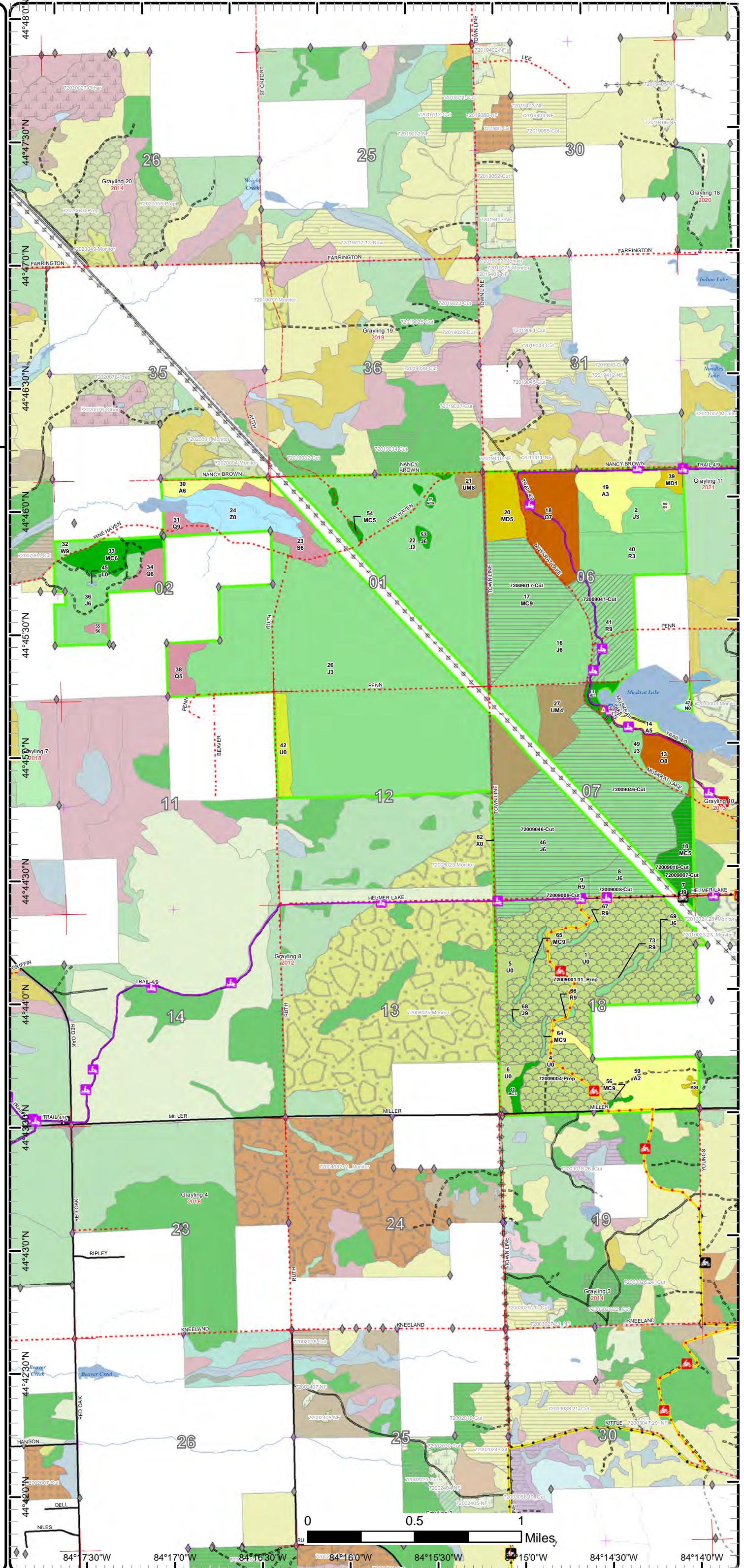
# Cover Type & Treatments Map

Compartment: 9  
 T27N, R01E, Sec. 1, 2, 12  
 T27N, R02E, Sec. 6, 7, 17, 18

County: Oscoda  
 Unit: Grayling  
 Mgmt Area: Kirtland's Warbler  
 YOE: 2020  
 Acres: 2,767 GIS Calculated  
 Examiner: Kevin Ehler  
 Map Revised: 2/1/2019  
 Map Phase: Post-Review



- Miris Corners
- Remonumented Section Corners
- Field Grade Corners
- Counties
- DNR - Primary Forest Road
- DNR - Secondary Forest Road
- DNR - Forest Access Route
- Federal / State / County - Paved Road
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- Lakes and Rivers All
- Berms
- Boating Access Site
- Campground
- Parking Lot
- Trailhead
- Pipeline
- Powerline
- Compartment Boundary
- Clearcut (w/Reserves)
- Thinning (Crown, Low, Systematic)
- Site Prep
- 412 - Oak Types
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 430 - Upland Mixed Forest
- 612 - Lowland Coniferous Forest
- 122 - Roads/Parking Lot
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low Density Trees
- 500 - Water
- 622 - Lowland Shrub
- 623 - Emergent Wetland
- Lakes



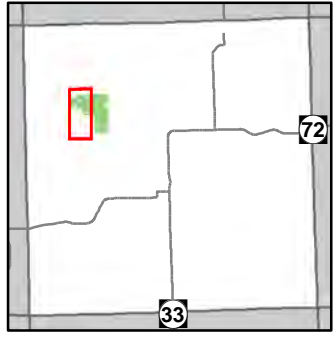
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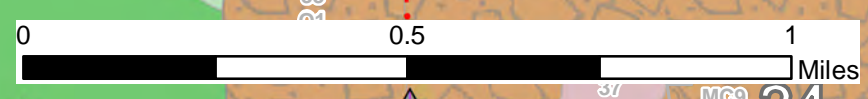
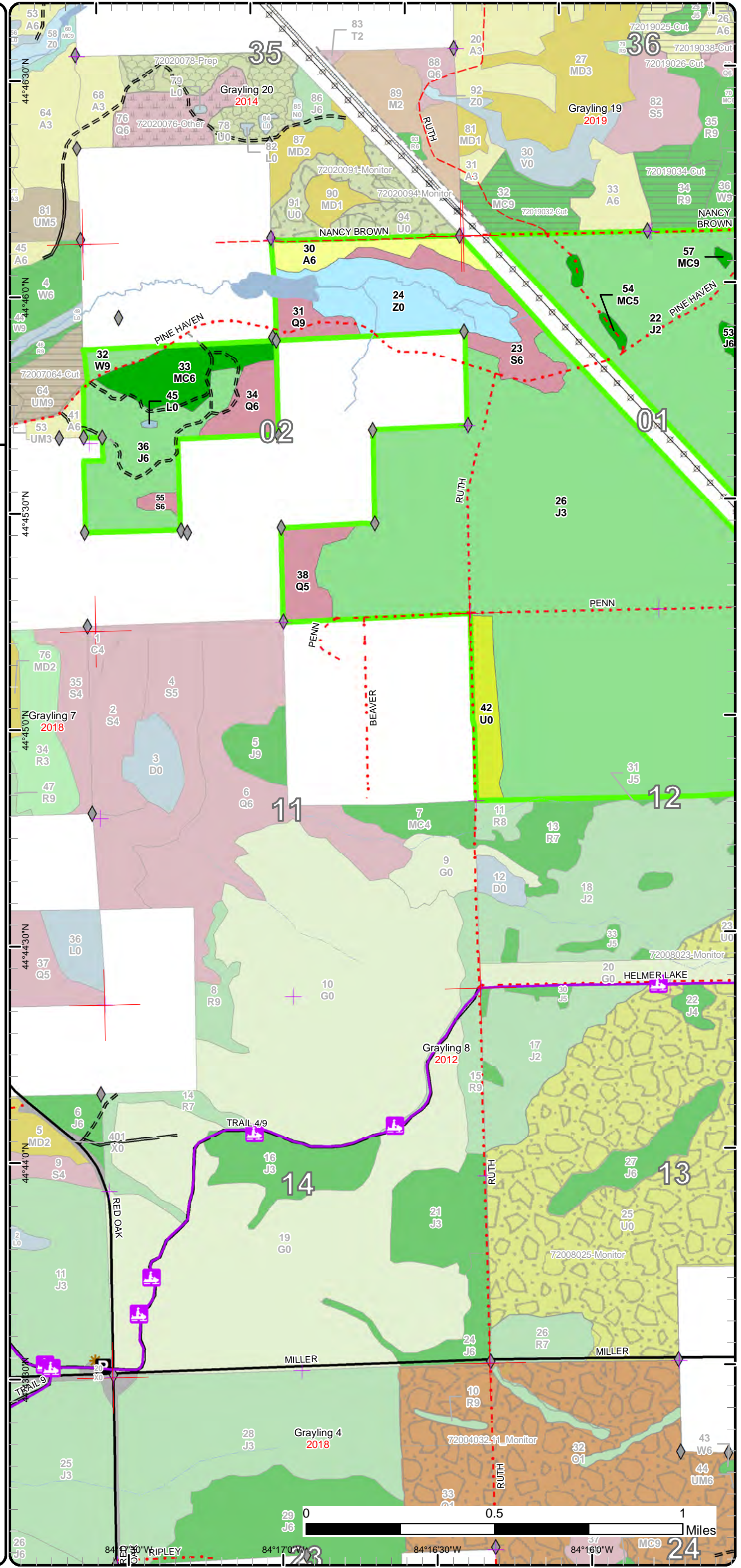
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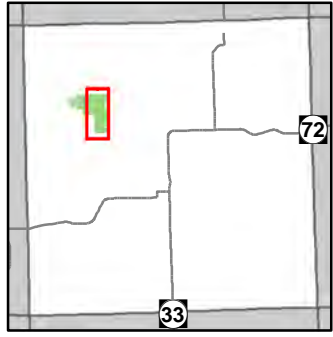
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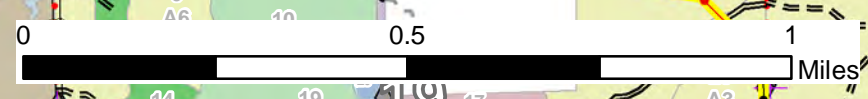
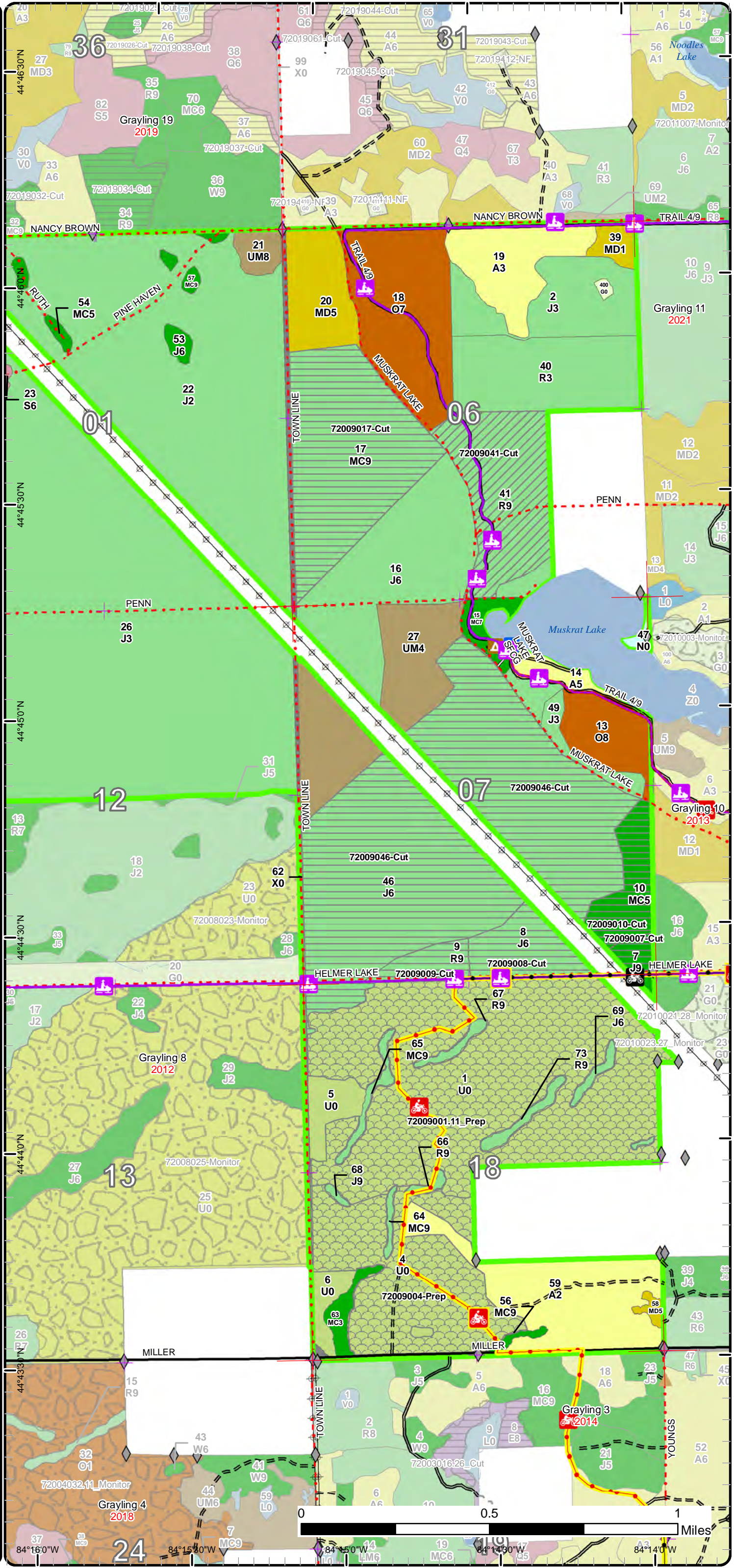
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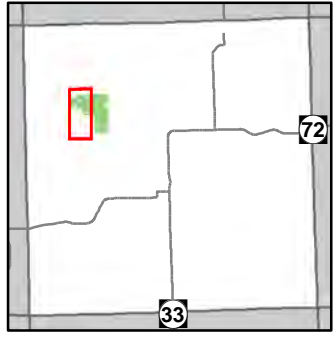
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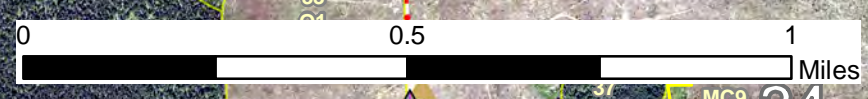
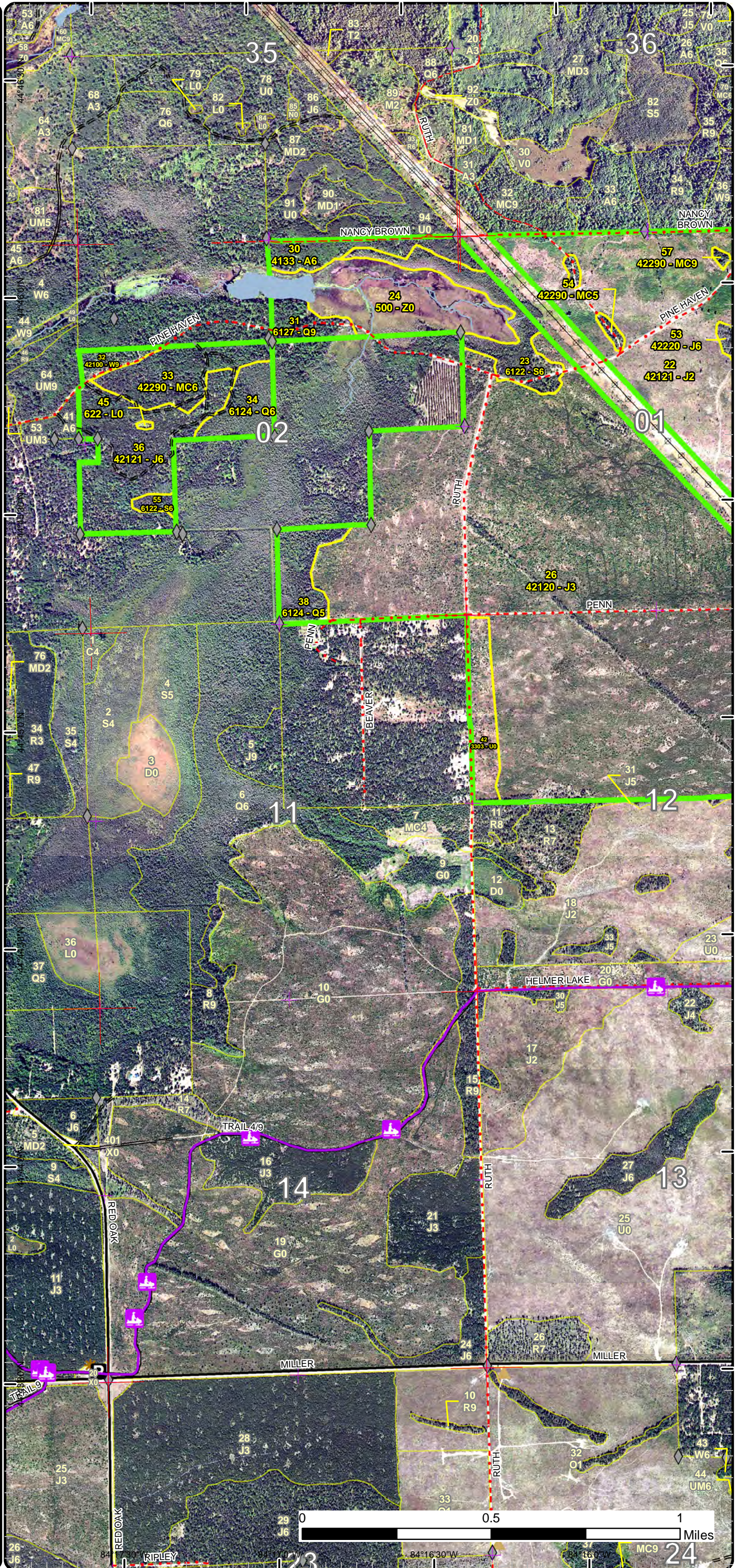
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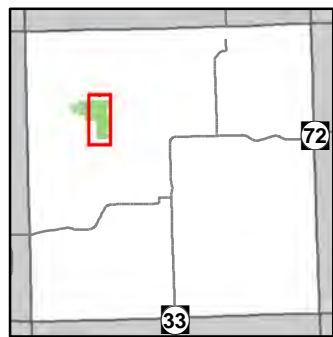
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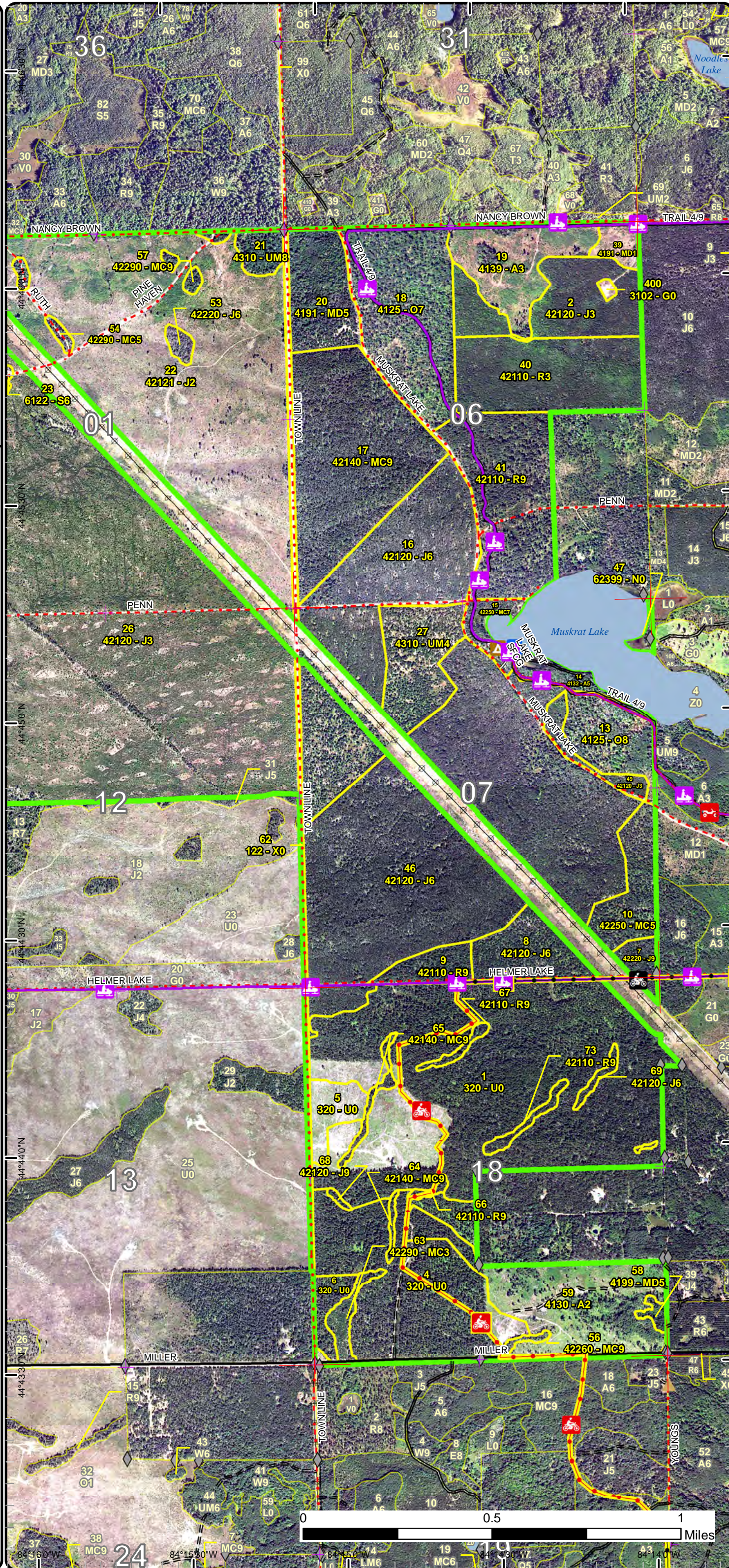
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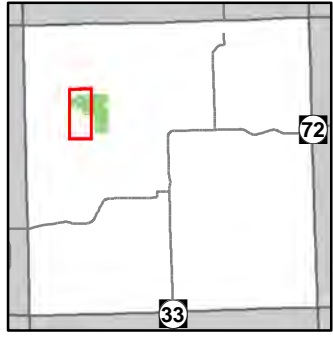




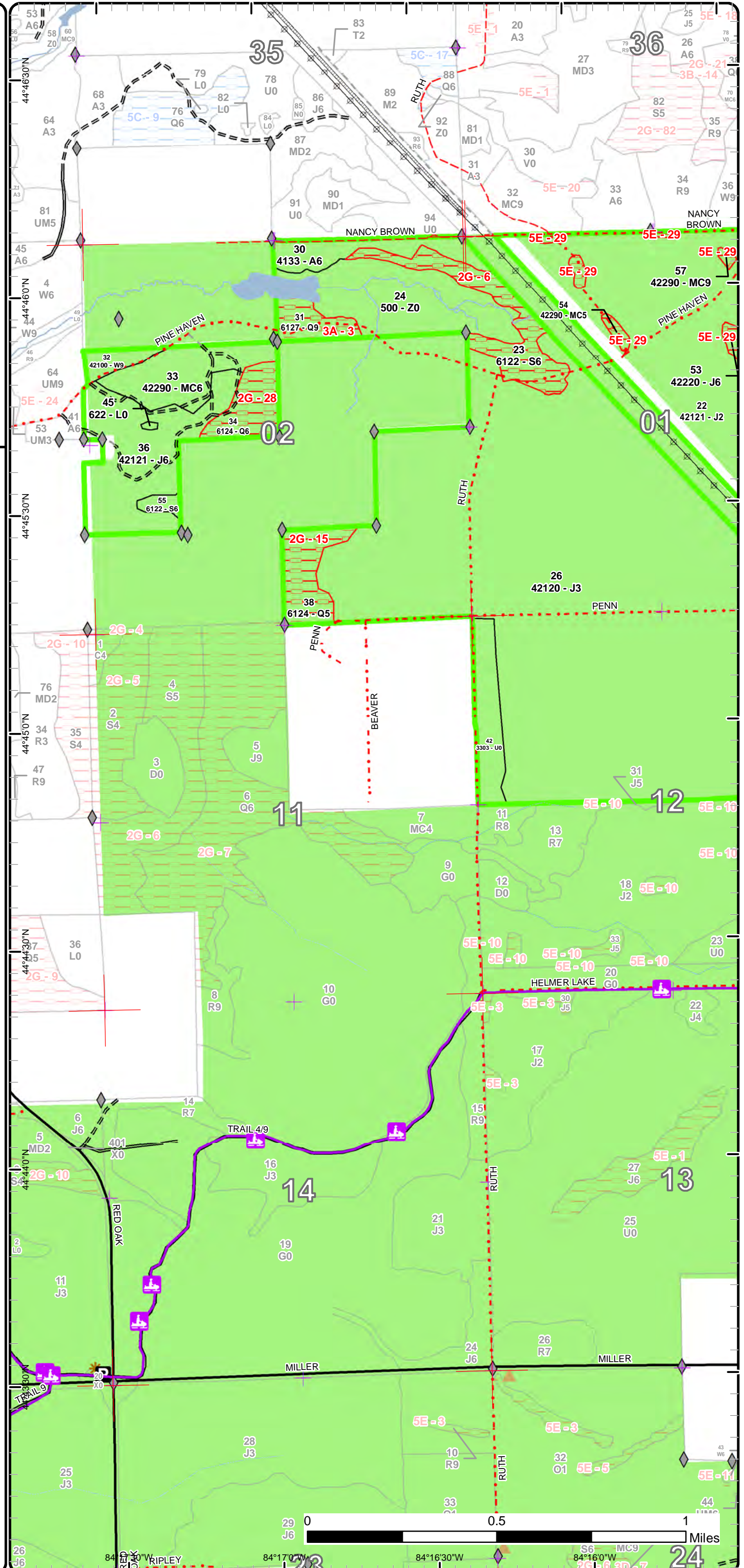
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- P Parking Lot
- ✱ Trailhead
- Pipeline
- ⊕ Powerline
- Compartment Boundary
- Unavailable
- 2G: Too wet (sensitive soils, does not include access issues)
- 3A: Conservation Values incompatible with harvest at this time
- 5E: Long-Term Retention
- Stand Boundaries
- Kirtland Warbler Habitat
- Cold Water Streams
- Cold Water Lakes



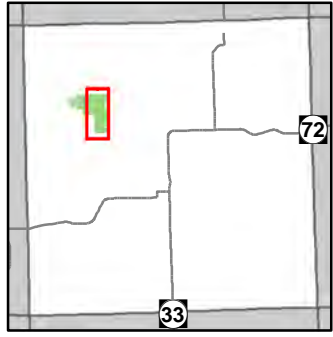
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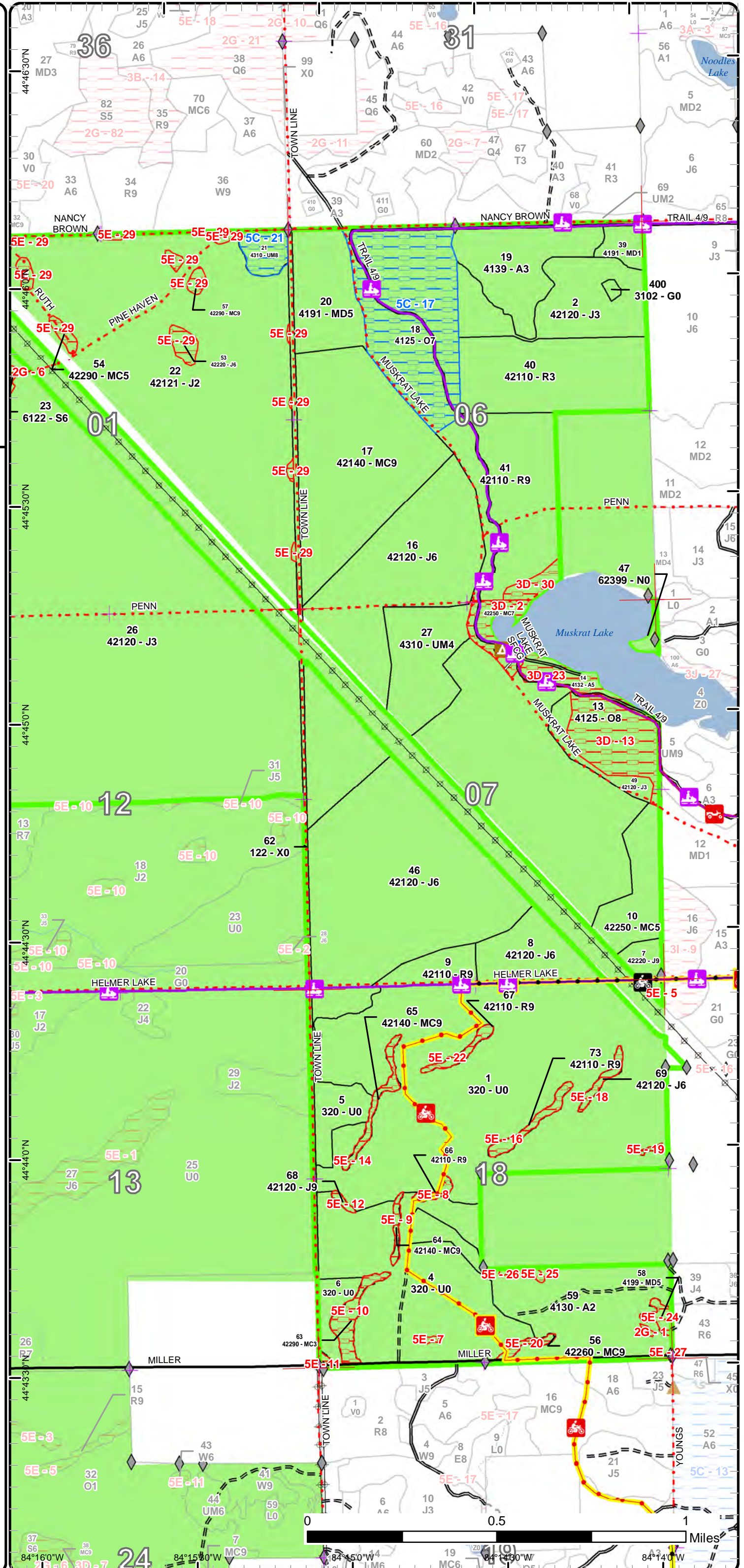
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- 🚤 Boating Access Site
- ▲ Campground
- ⊕ Powerline
- Compartment Boundary
- Available w/ Constraints
- Unavailable
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 2G: Too wet (sensitive soils, does not include access issues)
- 3D: Recreational / Scenic values
- 5E: Long-Term Retention
- Stand Boundaries
- Kirtland Warbler Habitat
- Cold Water Streams





Report 1 – Total Acres by Cover Type and Age Class



Age Class

	Non-Forest	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130-139	140-149	150+	Uneven-Aged	Total
Aspen	0	112	0	0	0	0	29	0	0	0	0	0	0	0	0	0	0	0	141
Herbaceous Openland	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Jack Pine	0	282	641	55	178	0	285	8	0	6	0	0	0	0	0	0	0	0	1455
Low-Density Trees	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
Lowland Conifers	0	0	0	0	0	0	0	0	0	0	37	12	0	0	0	0	0	0	49
Lowland Shrub	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lowland Spruce/Fir	0	0	0	0	0	0	0	0	0	0	33	0	0	0	0	0	0	0	33
Marsh	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Mixed Upland Deciduous	0	8	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0	45
Natural Mixed Pines	0	0	7	0	26	0	0	4	0	47	0	0	0	0	0	0	0	0	84
Oak	0	0	0	0	0	0	0	0	0	77	28	0	0	0	0	0	0	0	105
Planted Mixed Pines	0	0	0	0	0	0	0	4	0	107	0	0	0	0	0	0	0	0	111
Red Pine	0	0	0	63	0	0	0	0	0	94	0	0	0	0	0	0	0	0	157
Upland Mixed Forest	0	0	0	0	69	0	0	0	0	0	9	0	0	0	0	0	0	0	77
Upland Shrub	396	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	396
Urban	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
Water	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57
White Pine	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	7
<b>Total</b>	<b>504</b>	<b>402</b>	<b>648</b>	<b>118</b>	<b>310</b>	<b>0</b>	<b>314</b>	<b>16</b>	<b>7</b>	<b>331</b>	<b>107</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2767</b>





## Report 2 – Treatment Summary

Grayling Mgt. Unit

Year of Entry: 2020

Acres of Harvest

Compartment 9

Total Compartment Acres: 2,767

Commercial Harvest - 523  
 Harvests with Site Condition - 0  
 Next Step Harvest - 0  
 Habitat Cut - 0

### Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Jack Pine	312	0	0	0	0	0	0	0	0	312
Natural Mixed Pines	26	0	0	0	0	0	0	0	0	26
Planted Mixed Pines	105	0	0	0	0	0	0	0	0	105
Red Pine	13	0	0	0	0	68	0	0	0	80
<b>Total</b>	<b>455</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>68</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>523</b>

### Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	523	364	0	0	0	0	0	0	0	887
Next Step	0	554	819	0	0	98	1743	0	0	3214
<b>Total</b>	<b>523</b>	<b>917</b>	<b>819</b>	<b>0</b>	<b>0</b>	<b>98</b>	<b>1743</b>	<b>0</b>	<b>0</b>	<b>4101</b>





S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
1	72009001.11_ Prep	265.6	320 - Upland Shrub	Nonstocked		Unspec ified	SitePrep	Trenching	42120 - Planted Jack Pine	Even-Aged	Draft Field Boundary

**Habitat Cut: No**

**Site Condition:**

Prescription Trench to the opposing wave pattern. Protect the ORV trail that crosses through the treatment area. Trench across all temporary haul routes  
Specs: from the recently completed and prior harvests.

Next Step ; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr)  
Treatments:

Acceptable Well-stocked jack pine for KW management.  
Regen:

Other Percent to Treat = 100%  
Comment:

Proposed Start Date: 11/17/2017

4	72009004- Prep	98.3	320 - Upland Shrub	Nonstocked		Unspec ified	SitePrep	Roller Chopping	42110 - Planted Red Pine	Even-Aged	Draft Field Boundary
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**Habitat Cut: No**

**Site Condition:**

Prescription Prepare site through trenching, roller chopping, aerial spraying herbicide as needed to establish a fully stocked red pine plantation. Trench  
Specs: across all temporary haul routes from the recently completed and prior harvests. Do not trench over motorcycle trail.

Next Step Pesticide, (Inactive)Aerial; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr); SitePrep, Trenching  
Treatments:

Acceptable Fully stocked stand of planted red pine.  
Regen:

Other Percent to Treat = 100%  
Comment:

Proposed Start Date: 11/29/2018

7	72009007-Cut	6.2	42220 - Natural Jack Pine	Sawtimber Well	66	51-80	Harvest	Clearcut with Retention	4212 - Planted Jack Pine	Even-Aged	Draft Field Boundary
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**Habitat Cut: No**

**Site Condition:**

Prescription Final harvest all species 2"and up, follow standard retention guidelines. Replant to jack pine for KW habitat. Retention is designated in part of  
Specs: the stand which is South of Helmer Lake Road. Snowmobile Trail occurs on Helmer Lake Road; use appropriate trail specs.

Next Step SitePrep, Trenching; Planting, Replant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr)  
Treatments:

Acceptable Jack pine meeting requirements specified for KW Habitat.  
Regen:

Other Plan Timber Sale Contract expiration to allow for trenching in 2024 and planting in 2025.  
Comment:

Proposed Start Date: 10/1 /2019

8	72009008-Cut	26.7	42120 - Planted Jack Pine	Poletimber Well	36	1-50	Harvest	Clearcut with Retention	4212 - Planted Jack Pine	Even-Aged	Draft Field Boundary
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**Habitat Cut: No**

**Site Condition:**

Prescription Final harvest all species 2"and up, follow standard retention guidelines. Replant to jack pine for KW habitat. Focus retention along edge near  
Specs: Helmer Lake Road. Snowmobile Trail occurs on Helmer Lake Road; use appropriate trail specs.

Next Step SitePrep, Trenching; Planting, Replant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr)  
Treatments:

Acceptable Jack pine meeting requirements specified for KW Habitat.  
Regen:

Other Plan Timber Sale Contract expiration to allow for trenching in 2024 and planting in 2025.  
Comment:

Proposed Start Date: 10/1 /2019





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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
9 72009009-Cut	12.6	42110 - Planted Red Pine	Sawtimber Well	81	111-140	Harvest	Clearcut with Retention	4212 - Planted Jack Pine	Even-Aged	Draft Field Boundary

**Habitat Cut: No**

**Site Condition:**

Prescription Final harvest all species 2" and up, follow standard retention guidelines. Replant to jack pine for KW habitat. Focus retention around mature red pine near Helmer Lake Road. Snowmobile Trail occurs on Helmer Lake Road; use appropriate trail specs.

Next Step SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr)  
Treatments:

Acceptable Jack pine meeting requirements specified for KW Habitat.  
Regen:

Other Plan Timber Sale Contract expiration to allow for trenching in 2024 and planting in 2025.  
Comment:

Proposed Start Date: 10/1 /2019

10 72009010-Cut	25.6	42250 - Pine, Oak	Poletimber Medium	37	1-50	Harvest	Clearcut with Retention	4212 - Planted Jack Pine	Even-Aged	Draft Field Boundary
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**Habitat Cut: No**

**Site Condition:**

Prescription Final harvest all species 2" and up, follow standard retention guidelines. Replant to jack pine for KW habitat.  
Specs:

Next Step SitePrep, Trenching; Planting, Replant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr)  
Treatments:

Acceptable Jack pine meeting requirements specified for KW Habitat.  
Regen:

Other Plan Timber Sale Contract expiration to allow for trenching in 2024 and planting in 2025.  
Comment:

Proposed Start Date: 10/1 /2019

17 72009017-Cut	105.1	42140 - Planted Mixed Pine	Sawtimber Well	85	111-140	Harvest	Clearcut with Retention	4212 - Planted Jack Pine	Even-Aged	Draft Field Boundary
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**Habitat Cut: No**

**Site Condition:**

Prescription Final harvest all species 2" and up. Follow standard retention guidelines using area based retention. Focus retention in areas of mature red pine. May also mark individual super canopy trees with green paint for retention.  
Specs:

Next Step Monitoring, Natural Regen (Intermediate); SitePrep, Trenching; Planting, Replant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr)  
Treatments:

Acceptable Planted jack pine. Accept natural regeneration in areas where it meets full stocking requirements, and plant around these pockets.  
Regen:

Other Delineate areas to allow natural regen/artificial regen during 3 yr natural regen survey which should coincide with 1 yr artificial regen survey for stand 46.  
Comment:

Proposed Start Date: 10/1 /2019

41 72009041-Cut	67.6	42110 - Planted Red Pine	Sawtimber Well	89	111-140	Harvest	Low Thinning	4211 - Planted Red Pine	Even-Aged	Draft Field Boundary
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**Habitat Cut: No**

**Site Condition:**

Prescription Thin stand from below to a residual Basal Area of 120sqft per acre. Some areas, mainly in the South portion of the stand are currently at or near the target and may not need to be marked.  
Specs:

Next Step  
Treatments:

Acceptable  
Regen:

Other Protect snowmobile trail. Southeast corner of stand removed from treatment due to proximity to Muskrat Lake State Forest Campground.  
Comment: PVT boundary on East side of stand.

Proposed Start Date: 10/1 /2019





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Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
46	72009046-Cut	279.0	42120 - Planted Jack Pine	Poletimber Well	52	51-80	Harvest	Clearcut with Retention	4212 - Planted Jack Pine	Even-Aged	Draft Field Boundary

**Habitat Cut: No**

**Site Condition:**

Prescription Final harvest all species 2"and up. Leave no long term retention because of KW management objectives and to avoid future forest health susceptibility due to age. Do leave the section of the stand North of Muskrat Lake Rd and a fire vortex running NE from Townline Rd as visual management. Replant to jack pine for KW habitat. Part of the retention has already been Designated in the N most section of Stand 46. Focus additional retention where it will reduce visual impact. Snowmobile Trail occurs on Helmer Lake Road; use appropriate trail specs.

Next Step SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr)  
Treatments:

Acceptable Jack Pine meeting requirements specified for KW Habitat.  
Regen:

Other Plan Timber Sale Contract expiration to allow for trenching in 2024 and planting in 2025.  
Comment:

Proposed Start Date: 10/1 /2019

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**Total Treatment Acreage Proposed: 886.7**



## Report 4 – Site Conditions

Grayling Mgt. Unit  
Kevin Ehlert : Examiner

Compartment: 9  
Year of Entry: 2020

### Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	Dominant Site Conditions							
		With Condition	Not Available		5C	2G	3A	3D	3I	3J	5E	
141	130	0	11	Aspen		0		10				1
1	1	0	0	Herbaceous Openland								
1456	1446	0	10	Jack Pine	0	0		0	0			10
21	21	0	0	Low-Density Trees								
48	0	0	48	Lowland Conifers		37	12					
0	0	0	0	Lowland Shrub								
33	3	0	30	Lowland Spruce/Fir		30						
3	3	0	0	Marsh						0		
44	42	0	3	Mixed Upland Deciduous								3
83	56	0	27	Natural Mixed Pines		0		11	0			16
105	0	77	28	Oak	77			28				
111	105	0	6	Planted Mixed Pines								6
157	144	0	13	Red Pine				5				8
78	69	8	0	Upland Mixed Forest	8			0				
396	394	0	2	Upland Shrub								2
25	24	0	1	Urban	0							1
57	57	0	0	Water			0					
7	7	0	0	White Pine								
2,767	2,502	85	179	Total Forested Acres	85	67	12	55	0	0		46
	90%	3%	7%	Relative Percent								

*\*Due to limitations in the current Site Conditions Analysis tool, all nonforested acres are considered available. Future development will enable analysis of nonforested types.*

Site No.	Dominant Site Cond Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	0	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							



## Report 4 – Site Conditions

Grayling Mgt. Unit  
Kevin Ehlert : Examiner

Compartment: 9  
Year of Entry: 2020

2	<b>Unavailable</b>	<b>3D: Recreational / Scenic values</b>	11	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Muskrat lake State Forest Campground Snowmobile Trail							
3	<b>Unavailable</b>	<b>3A: Conservation Values incompatible with harvest at this time</b>	12	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Unique area of X-log red and white pine on ridge which drops down to lower ground transitioning to adjacent lowlands. Much of the stand is too wet to operate equipment.							
5	<b>Unavailable</b>	<b>5E: Long-Term Retention</b>	1	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Retention for stand 7 of compartment 72009							
6	<b>Unavailable</b>	<b>2G: Too wet (sensitive soils, does not include access issues)</b>	30	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
7	<b>Unavailable</b>	<b>5E: Long-Term Retention</b>	1	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
8	<b>Unavailable</b>	<b>5E: Long-Term Retention</b>	2	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							



## Report 4 – Site Conditions

Grayling Mgt. Unit  
Kevin Ehlert : Examiner

Compartment: 9  
Year of Entry: 2020

9	Unavailable	5E: Long-Term Retention	2	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
10	Unavailable	5E: Long-Term Retention	7	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
11	Unavailable	5E: Long-Term Retention	0	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
12	Unavailable	5E: Long-Term Retention	1	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
13	Unavailable	3D: Recreational / Scenic values	28	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Snowmobile trail on North boundary of stand. Close proximity to KW management and Muskrat Lake State Forest Campground.							
14	Unavailable	5E: Long-Term Retention	4	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
15	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	20	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							



## Report 4 – Site Conditions

Grayling Mgt. Unit  
Kevin Ehlert : Examiner

Compartment: 9  
Year of Entry: 2020

16	Unavailable	5E: Long-Term Retention	4	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
17	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	77	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
18	Unavailable	5E: Long-Term Retention	3	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
19	Unavailable	5E: Long-Term Retention	0	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
20	Unavailable	5E: Long-Term Retention	2	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
21	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	9	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Leave for age class diversity within KW management area. Sub canopy will eventually recruit into canopy.							
22	Unavailable	5E: Long-Term Retention	3	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							



## Report 4 – Site Conditions

Grayling Mgt. Unit  
Kevin Ehlert : Examiner

Compartment: 9  
Year of Entry: 2020

23	Unavailable	3D: Recreational / Scenic values	10	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Narrow stand with snowmobile trail running through. Adjacent to Muskrat Lake and the Muskrat Lake State Forest Campground.							
24	Unavailable	5E: Long-Term Retention	3	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
25	Unavailable	5E: Long-Term Retention	1	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
26	Unavailable	5E: Long-Term Retention	0	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
27	Unavailable	5E: Long-Term Retention	0	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
28	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	17	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
29	Unavailable	5E: Long-Term Retention	14	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Designated long-term retention islands left in 2011 harvest #010-10.							



## Report 4 – Site Conditions

Grayling Mgt. Unit  
Kevin Ehlert : Examiner

Compartment: 9  
Year of Entry: 2020

30	Unavailable	3D: Recreational / Scenic values	5	Unspecified	Unspecified	Unspecified	Unspecified
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**Comments:**

Buffer for recreation site which is part of Muskrat Lake State Forest Campground in Southeast corner of stand and Muskrat Lake.



Mgt. Unit

Compartment: #Type!

Year of Entry:



### Report 5 – PROPOSED SPECIAL CONSERVATION AREA\* (SCA) DETAILS

\* This is a partial list of SCAs for this compartment. Not included are those areas identified under other Department initiatives (Natural Rivers, Deer Wintering Areas, etc.). Those will be identified in separate, future map and report products.

SCA Name	SCA Category	Detail Type	Recommendation	Acres
<b>Comments</b>				





**Report 6 – EXISTING SPECIAL CONSERVATION AREA DETAILS**

\* This is a list of SCA's for this compartment along with a 1/4 mile buffer surrounding the compartment. Refer to the Special Conservation Area Map for locations of the below listed Conservation Areas.

ERA = Ecological Reference Area  
 HCVA = High Conservation Value Area  
 SCA = Special Conservation Area

Conservation Area	Type	Description
SCA	Cold Water Lake	A coldwater lake has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species to persist from year to year. Suitable conditions for coldwater fishes may occur in Michigan lakes if they are relatively deep, have substantial groundwater inflows, or are located in colder (northern) areas of the state. Such lakes are established by Director's action and designated as trout resources by Fisheries Order 200.
SCA	Cold Water Stream	A coldwater stream has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species (e.g., slimy sculpin) to persist from year to year. Coldwater streams in Michigan typically provide these conditions due to substantial contributions of groundwater to their stream flows. Such streams are established by Director's action and designated as trout resources by Fisheries Order 210.
HCVA	Designated Critical Habitat	Critical habitat areas are established via a consultative and cooperative process between the DNR and the U.S. Fish and Wildlife service for the recovery of threatened and endangered species, as governed by Part 365, Endangered Species Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, and the Federal Endangered Species Act of 1973. This is an active program, with proposed species plans in various stages of review. As of now only two exist, Kirtland Warbler Habitat and Piping Plover Habitat.



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## Grayling Mgt. Unit

## Report 7 – Forested Stands

Compartment: 9  
Year of Entry: 2020

	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
2	42120 - Planted Jack Pine	Sapling Well	46.3	24	Immature	Planted in 1995. Jack pine around 15-20' tall in most areas. Some damage to shoots. Pin oak and aspen scattered in some spots. This is part of the Muskrat Lake Warbler Management Area a HCVA.
7	42220 - Natural Jack Pine	Sawtimber Well	7.6	66	51-80	Mature jack pine and pin oak. An old fence line and corner evidence found in the stand. Decent advanced oak regen. This is part of the Muskrat Lake Warbler Management Area a HCVA.
8	42120 - Planted Jack Pine	Poletimber Well	26.7	36	1-50	Planted 1983. The jack pine is mostly small poles/ large sapling. . Not as dense as some of the other planted areas. This is part of the Muskrat Lake Warbler Management Area a HCVA.
9	42110 - Planted Red Pine	Sawtimber Well	12.6	81	111-140	A patchy stand - but does have some nice areas of red pine (poor areas too). A very nice component of standing and down woody debris. Understory is poor quality oak and jack pine. This is part of the Muskrat Lake Warbler Management Area a HCVA.
10	42250 - Pine, Oak	Poletimber Medium	25.6	37	1-50	Rolling topo. Scattered oak throughout. A pine barren type stand. This is part of the Muskrat Lake Warbler Management Area a HCVA.
13	4125 - Black, N. Pin Oak	Sawtimber Medium	28.3	99	1-50	Oak in decline. Jack pine was under planted in 1996. Previous sale was in 1992. Some pockets of aspen in understory. Areas without oak canopy cover filled on with planted jack pine or quaking aspen. This is part of the Muskrat Lake Warbler Management Area a HCVA. This stand borders the snowmobile trail and is near the campground and lake.
14	4132 - Aspen, Jack Pine	Poletimber Medium	10.0	56	1-50	Stand is near campground and lake. Snowmobile trail runs through it. Poor quality aspen, several nice cavity tree opportunities. Aspen size and quality is somewhat variable throughout stand. Conifer is starting to pop up in understory. This is part of the Muskrat Lake Warbler Management Area a HCVA.
15	42250 - Pine, Oak	Sawtimber Poor	11.2	89	51-80	Muskrat Lake Campground. Remove high risk trees as needed. STATE FOREST CAMPGROUND--(SCA)
16	42120 - Planted Jack Pine	Poletimber Well	90.7	34	1-50	Planted to the warbler weave 1985. A couple over story red pine. Clumps of stump sprout oak, scrub cherry and aspen. Will transition to J6 once diameter increases. This is part of the Muskrat Lake Warbler Management Area a HCVA. Part of KW Management Block 62. Treatment postponed because stand is not merchantable at this time. Re-assess next YOY.
17	42140 - Planted Mixed Pine	Sawtimber Well	105.1	85	111-140	Budworm damage in this area. Quite a bit of decline in the jack pine. The northern most and southern most ends of this stand are R9's the middle is a J6. A lot of advanced regen pin oak. Some small pockets of red pine regen. This is part of the Muskrat Lake Warbler Management Area a HCVA.





	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
18	4125 - Black, N. Pin Oak	Sawtimber Poor	76.8	88	1-50	Cut in 1999 due to JP budworm attack. Cut in 2001 contract #72-027-99-01 Muskrat Jack. The residual oak is poor quality and has declined rapidly. Aspen regen responding in open areas. Muskrat Lk Warbler Management Area (HCVA) Snowmobile trail bisects stand.
19	4139 - Aspen, Mixed Deciduous	Sapling Well	40.8	8	Immature	Harvested 2011 Sale # 720091001. Stand regenerated to a mix of bigtooth aspen, red maple and oak. A nice mixed stand. Would like to try and maintain the diversity. Final harvest w/ reserves. Leave 10% of the stand in islands for retention. Also mark some scattered red pine to leave throughout the sale area. The management objective for this stand is oak but any mixture of species currently present at medium to full stocking is acceptable. If natural regeneration is not adequate, the open areas should be planted to jack pine. This is part of the Muskrat Lake Warbler Management Area a HCVA.
20	4191 - Mixed Upland Deciduous with Conifer	Poletimber Medium	33.8	39	51-80	Very Diverse Stand. Several small sales have taken place in this stand over the last 30 - 40 years. There are pockets of several age and species classes. There are areas of moderately stocked jack pine, a pocket of sawlog size aspen, a pocket of A3, and the north end of the stand turns into a R7/R8. White pine is starting to seed in the under story. This is part of the Muskrat Lake Warbler Management Area a HCVA.
21	4310 - Pine, Oak Mix	Sawtimber Medium	8.5	99	51-80	Thinned 2002 contract #72--050-01-01 Townline Road Oak. Residual varies from 40 - 80 BA. Under story is primarily red maple and clones of aspen, white pine, some stump sprout oak too. Smaller diameter red pine throughout. This is part of the Muskrat Lake Warbler Management Area a HCVA.
22	42121 - Planted Jack Pine, Mixed Deciduous	Sapling Medium	281.9	6	Immature	Was final harvest by 2011 (#010-10), cutting stems 2"+ DBH except unit line and green-marked trees and island retention. Was trenched to the opposing wave pattern for KW habitat and planted to JP in 2012 (W72-692). Was hot and dry during planting. Year 1 regen survey found high mortality. Was replanted in 2013. Passed year 3 regen survey with 1278 JP & 425 aspen/RP stems per acre. North end of stand is dominated mostly by aspen. FTP is completed. Sirex woodwasp trap trees (herbicide) were noted in the stand's NW (within 2010 YOE stand 54; unclear if they were captured in a retention island or green-marked to leave. Stand is bisected by Pine Haven Road.
23	6122 - Black Spruce	Poletimber Well	29.6	99	51-80	Pockets of sawlog cedar, and areas with super canopy white and red pine, especially on edge in transition to higher ground. Very wet. Some areas of Q3 with very old but small spruce. Some E and P - types present through out. Some tamarack.
26	42120 - Planted Jack Pine	Sapling Well	640.6	13	Immature	Harvested 2002. Planted to 2-0 jack pine under FTP W72-494 in 2006. Failed areas present. Some stump sprout oak. A 4 acre u-type was left unplanted within the stand boundary. Strips of uncut timber present within the stand. Warblers have been identified in stand. An illegal trail road has been created in stand to access a pvt parcel (needs to be closed). This is part of the Muskrat Lake Warbler Management Area a HCVA.





	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
27	4310 - Pine, Oak Mix	Poletimber Poor	69.1	36	1-50	Failed portion of plantation. A couple spots where rows are identifiable, but mostly patchy pin oak/jack pine mix. This is part of the Muskrat Lake Warbler Management Area a HCVA. Part of KW Management Block 62. Treatment postponed because stand is not merchantable at this time. Re-assess next YOE.
30	4133 - Aspen, Mixed Pine	Poletimber Well	19.1	50	81-110	The stand has areas of pure aspen, a couple acres of M3 with some merchantable sticks. The aspen is mixed with pine on the edges of the stand. More red pine component on West end of stand. A nice mix of early successional species. Treat adjacent Q-type along the edge when this stand is harvested.
31	6127 - Lowland Pine	Sawtimber Well	11.5	105	81-110	Large white and red pine along road. Stand is very wet once you get away from the road and elevation drops in transition to adjacent lowlands. Dense sub canopy of balsam fir, white pine, and black spruce. (old comments) Consider removing stand from any treatments - manage for "large trees" along road and PVT property. Easement granted to private owner for driveway 4 chains east of the northwest corner of the southwest 1/4 of the said northeast 1/4. Easement number L-9229
32	42100 - Planted White Pine	Sawtimber Well	6.7	71	81-110	Mostly pole/logsize white pine with some Quaking aspen, Jack pine, and red pine. Jp, maple, and oak 4" and up removed in 1991. Some stump sprout oak but very little. Jack pine filling into openings from prior harvest. The bigger pine in stand is around 110yrs old. Red pine influence in the east portion of stand. variable density throughout with many more open pockets.
33	42290 - Natural Mixed Pine	Poletimber Well	29.9	80	81-110	mixed conifer stand. Pockets heavy to red pine, but slightly more jack pine and white pine. Pin oak is poor quality. several pockets of pole size aspen. Areas a of weevil and porky damage.
34	6124 - Lowland Spruce- Fir	Poletimber Well	17.2	94	51-80	Areas w/ heavy fir understory. Some scattered spruce regen. Wolfy red and white pine. Aspen and red maple mixed in. Some clumps of cedar. Tag alder present in some of the low spots throughout stand. Elevation drops in stand as you move South and East. Overall, the stand is very wet. Future treatments in adjacent stands may be able to incorporate wildlife habitat improvement along edges for horizontal cover.
36	42121 - Planted Jack Pine, Mixed Deciduous	Poletimber Well	60.8	36	51-80	Jack pine planted 1983. Oak stump spouts scattered throughout. Some pockets of bigtooth and quaking aspen up to 3.5 acres in size.
38	6124 - Lowland Spruce- Fir	Poletimber Medium	19.6	98	51-80	Mix of spruce and balsam fir with pockets of dense cedar. Some white, red and jack pine along transition to higher ground on edge. Ground is very wet.
39	4191 - Mixed Upland Deciduous with Conifer	Sapling Poor	7.7	8	Immature	OPIC - FMD: Harvested 2011 Sale# 720091001. Mature jack pine w/ pockets of smaller trees. Two age classes present 70ish and 40ish. Aspen clones found in stand. Final harvest w/out reserves. Try to achieve natural regen- this may be an excellent stand to manage as a barron area. Management objective is jack pine. Minimal stocking is acceptable. If stand does not properly regenerate, plant to jack pine. This is part of the Muskrat Lake Warbler Management Area a HCVA.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
40	42110 - Planted Red Pine	Sapling Well	63.1	24	Immature	Planted in 1995. Mostly red pine, 2-3" diameter. Scattered jack pine and pin oak with a couple pockets of immature aspen. This is part of the Muskrat Lake Warbler Management Area a HCVA.
41	42110 - Planted Red Pine	Sawtimber Well	72.8	89	111-140	Cut 2002 contract #72-027-99-01 Muskrat Jack. Historical issues w/ budworm in stand. Section of stand South of Penn Road is slightly lower basal area on average than the section North of the road. Typical oak regen found throughout (not recruiting to next canopy layer). Excellent jack pine regen at the old landing areas. This is part of the Muskrat Lake Warbler Management Area a HCVA.
46	42120 - Planted Jack Pine	Poletimber Well	285.4	52	51-80	Some over topping red pine and jack pine, mostly pole size. Little to no understory-but some oak present. This is part of the Muskrat Lake Warbler Management Area a HCVA.
49	42120 - Planted Jack Pine	Sapling Well	9.0	23	Immature	Portion of stand 13 that was underplanted with little to no residual oak or other over story. Jack and red pine 15-20' tall. Also contains a small pocket of aspen along road. Stand is along Muskrat Lake Road and near the campground. This is part of the Muskrat Lake Warbler Management Area a HCVA.
53	42220 - Natural Jack Pine	Poletimber Well	3.4	86	81-110	Retention island (the only one that met minimum mapping standards) left when the original stand 56 was final harvested in 2011. Canopy data was roughed-in from the old OI data sheet.
54	42290 - Natural Mixed Pine	Poletimber Medium	3.8	69	51-80	This stand encompasses two retention islands (those meeting minimum mapping standards) that were left when the original stands 53 & 54 were final harvested in 2011. Canopy data was roughed-in from the old OI data sheets.
55	6122 - Black Spruce	Poletimber Well	3.3	94	51-80	Wet ground. Mostly pole/sapling Size spruce. In the drier portions of the stand tend to have more fir and cherry. A fair amount of down woody debris. Dense sub canopy of spruce and balsam fir.
56	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	1.9	82	51-80	Long Term Retention for Sale # 72-011-15. Mixture of Jack pine, pin oak, white pine, red pine and aspen. Motorcycle trail crosses Southwest corner of stand. This is part of the Muskrat Lake Warbler Management Area a HCVA.
57	42290 - Natural Mixed Pine	Sawtimber Well	4.0	88	81-110	This stand encompasses most of the retention islands (those meeting minimum mapping standards) that were left when the original stand 22 was final harvested in 2011. Canopy data was roughed-in from the old OI data sheet.
58	4199 - Other Mixed Upland Deciduous	Poletimber Medium	2.8	36	1-50	Stand that was left as retention during the Good Buy red Pine KW sale. Consists of mostly pole/sapling size pin oak, red maple and aspen with a few scattered conifers. North end of stand contains an area that is seasonally flooded. This is part of the Muskrat Lake Warbler Management Area a HCVA





Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
59	4130 - Aspen	Sapling Medium	71.0	3	Immature	Cut in spring 2016 and 2017 as part of the Good Buy Red Pine KW sale. Aspen is regenerating. Some areas have filled in better than others, but progressing well. Aspen has started to expand along the North and South boundary of the stand. Adjacent KW planting boundary may be adjusted to allow stand to expand. Stand contains a small lowland in the East end, which was excluded from harvest. This is part of the Muskrat Lake Warbler Management Area a HCVA.
63	42290 - Natural Mixed Pine	Sapling Well	6.8	18	1-50	Retention island in Good Buy Red Pine sale. Contains sawlog size red pine on edges and immature red and jack pine mixed with pin oak interior. Immature trees are a result of previous thinning in 2001. This is part of the Muskrat Lake Warbler Management Area a HCVA.
64	42140 - Planted Mixed Pine	Sawtimber Well	1.7	88	111-140	Retention Island from Good Buy Red Pine KW sale. Mixture of mature red pine and jack pine.
65	42140 - Planted Mixed Pine	Sawtimber Well	4.4	69	81-110	Retention island for Good Buy Red Pine KW sale. Mixture of mature jack and red pine. This is part of the Muskrat Lake Warbler Management Area a HCVA.
66	42110 - Planted Red Pine	Sawtimber Well	1.7	88	111-140	Retention island for Good Buy Red Pine KW sale.
67	42110 - Planted Red Pine	Sawtimber Well	2.8	88	111-140	Retention Island from Good Buy Red Pine KW sale. Mixture of jack and red pine.
68	42120 - Planted Jack Pine	Sawtimber Well	0.8	69	81-110	Retention island of Good Buy Red Pine KW sale. Mixture of jack and red pine. This is part of the Muskrat Lake Warbler Management Area a HCVA.
69	42120 - Planted Jack Pine	Poletimber Well	3.0	88	51-80	Retention for Good Buy Red Pine KW sale. Small diameter/height and relatively old. This is part of the Muskrat Lake Warbler Management Area a HCVA.
73	42110 - Planted Red Pine	Sawtimber Well	4.2	88	111-140	Retention island for Good Buy Red Pine KW sale.



Stand	Cover Type	Acres	Managed Site	General Comments:
1	320 - Upland Shrub	272.0		Part of planned KW planting block. This section of the planting block will be planted to jack pine with the opposing weave pattern for Kirtland's Warbler habitat. Natural regeneration levels of oak and aspen are much lower than in stand 4 to the South. This is part of the Muskrat Lake Warbler Management Area, a HCVA
4	320 - Upland Shrub	102.3		Was originally part of planned KW planting block. Due to competition from aspen and pin oak requiring more intensive site prep, decision agreed on between FRD and WLD to establish red pine in lieu of jack pine. This is part of the Muskrat Lake Warbler Management Area, a HCVA
5	320 - Upland Shrub	13.0		Part of planned KW planting block. Quite a bit of competition due to aspen expansion and oak regeneration. Stand scheduled for planting in 2018. FTPW72-834. Ongoing discussion with WLD on whether site should be planted to Jack Pine, Red Pine, allowed to convert to oak and aspen, or some combination of the three. Old Notes: This stand is mature - over mature, some mixed pine and misc. hardwoods are starting to establish themselves in the under story. The NW corner of this stand is a J6 type. If it is decided that an oak component is to be maintained, it would be prudent to remove the oak this year of entry and try to establish regeneration through root sprouts. Pine could be left, may want to mark selectively to enhance regeneration of oak (regen gaps). Stand has had some improvement cutting in the past resulting in areas of two age classes represented in the stand. This is part of the Muskrat Lake Warbler Management Area a HCVA
6	320 - Upland Shrub	8.6		Part of planned KW planting block. Quite a bit of competition due to aspen expansion and oak regeneration. Stand scheduled for planting in 2018. FTPW72-834. Ongoing discussion with WLD on whether site should be planted to Jack Pine, Red Pine, allowed to convert to oak and aspen, or some combination of the three. Old Notes: This stand is mature - over mature, some mixed pine and misc. hardwoods are starting to establish themselves in the under story. The NW corner of this stand is a J6 type. If it is decided that an oak component is to be maintained, it would be prudent to remove the oak this year of entry and try to establish regeneration through root sprouts. Pine could be left, may want to mark selectively to enhance regeneration of oak (regen gaps). Stand has had some improvement cutting in the past resulting in areas of two age classes represented in the stand. This is part of the Muskrat Lake Warbler Management Area a HCVA
24	500 - Water	56.8	No	Head waters of wright creek. Beavers have a fairly nice size flooding. The rest of the area is a marsh meadow
42	3303 - Mixed Low Density Trees	20.7	No	Fuelbreak- this portion of sale was not planted. Scattered sapling size stump sprout oak, some jack pine and cherry also. HCVA KW Management Area. May reach 25% canopy cover in future.
45	622 - Lowland Shrub	0.5	No	Low area within a jack pine stand. Covered with huckle/blue berry and grass
47	62399 - Marsh (OI)	3.1	No	Flooded area on edge of muskrat lake. Scattered low density trees along edges.
62	122 - Road/Parking Lot	24.7	No	Cleared County Road corridor including Miller Road and Townline Road.
400	3102 - Grass	1.2	No	Abandoned wellsite covered in grass, spotted knapp weed and sweetfern. HCVA - Warbler Management Area