Compartment Review Presentation

Grayling Forest Management Unit

Compartment 72008
Entry Year 2022
Acreage: 1,934
County Oscoda
Management Area: Kirtland's Warbler

Revision Date: 2020-10-21

Stand Examiner: Colton Behrmann

Legal Description:

Oscoda County – Greenwood Township, T27N R01E Sections 11, 12, 13 and 14.

Identified Planning Goals:

To maintain forest health, productivity, sustainability, and diversity throughout the compartment while providing for multiple use within the area. 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:

Flat to gently rolling hills. Soils are mostly well-drained Grayling sand with some organic soils consisting of Rifle and Greenwood peat.

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

Mostly solid state ownership occurs in and around the compartment. There are several private ten acre parcels in the NE1/4 of section 11 and a privately owned forty acres in the SWSW. Section 14 has four ten acre private parcels in the NWNW. Section 13 has an eighty acre private parcel in the SE1/4.

Unique Natural Features:

Kirtland's Warbler (Dendroica kirtlandii) an endangered species and pale Agoseris (Agoseric glauca), a state threatened species are found in this compartment

Archeological, Historical, and Cultural Features:

None known at this time

Special Management Designations or Considerations:

The Muskrat KW Management Blocks 4, 15, and 22 are located within this compartment and are designated as a High Conservation Value Area (HCVA).

Watershed and Fisheries Considerations:

None at this time

Wildlife Habitat Considerations:

The east side of section 11 is a large deer yard and has a high water table.

Mineral Resource and Development Concerns and/or Restrictions

No known potential exists for commercial metallic mineral production in this part of the state. The nearest active sand/gravel pit is located roughly five miles away. Sand & gravel potential within the compartment appears to be good, especially on the upland areas. There has been some past Antrim Shale gas production two miles northeast of the compartment. However, the Antrim may be too deep beneath the compartment to have significant potential. No wells have been drilled within the compartment to date and there is no current mineral leasing activity. Oil & gas potential in the compartment is considered low at this time.

Vehicle Access:

The compartment can be accessed using county roads. Oil and gas right-of-ways provide multiple access opportunities for wheeled vehicles and foot traffic.

Survey Needs:

No survey requests are needed.

Recreational Facilities and Opportunities:

Designated Snowmobile Trail 4/9 occurs with in the compartment. Dispersed recreation for birding, hunting, and some ORV use is likely to occur due to the proximity of designate ORV trails in association with Mio Trail System near Muskrat Lake Campground and Miller Road.

Fire Protection:

This compartment contains “high hazard” fuel types, but access should be adequate for suppression activities.

Additional Compartment Information:

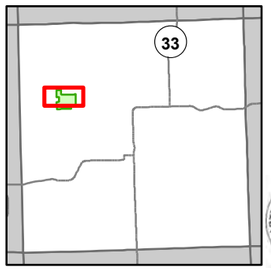
The following reports from the Inventory are attached:

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



N

Compartment: 8
T27N R01E 10-12, 13-14
County: Oscoda
Unit: Grayling
Mgmt Area: Kirtland's Warbler
YOE: 2022
Acres: 1934 GIS Calculated
Examiner: Colton Behrmann
Map Revised: 5/18/2021
Map Phase: Post-Review

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- Remonumented Section Corners
- Counties
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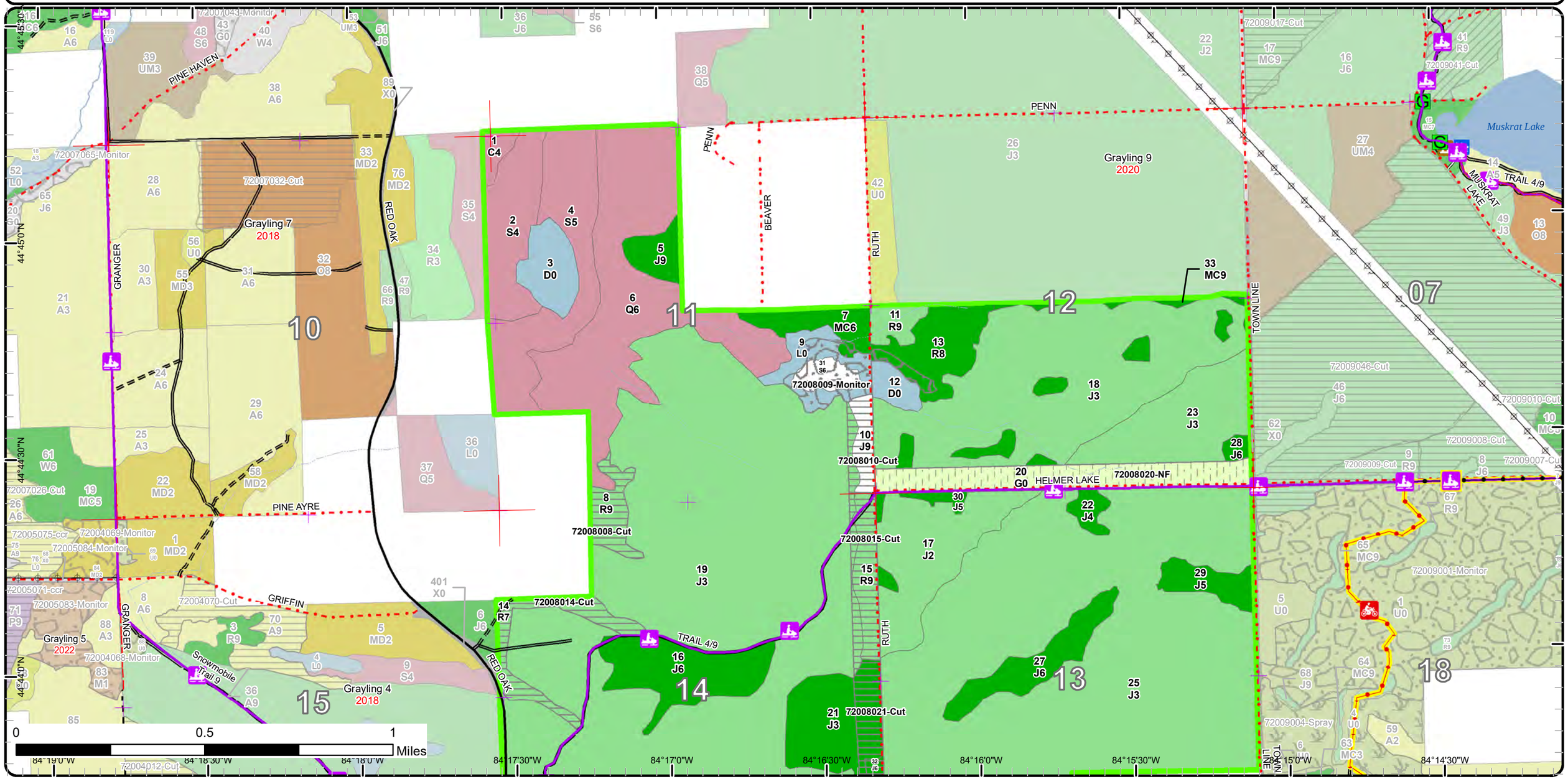
- Clearcut (w/Reserves)
- Regeneration Survey
- Opening Maintenance
- 421 - Planted Pines
- 422 - Natural Pines
- 612 - Lowland Coniferous Forest
- 310 - Herbaceous Openland
- 622 - Lowland Shrub



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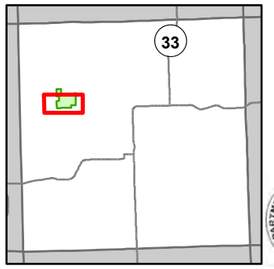

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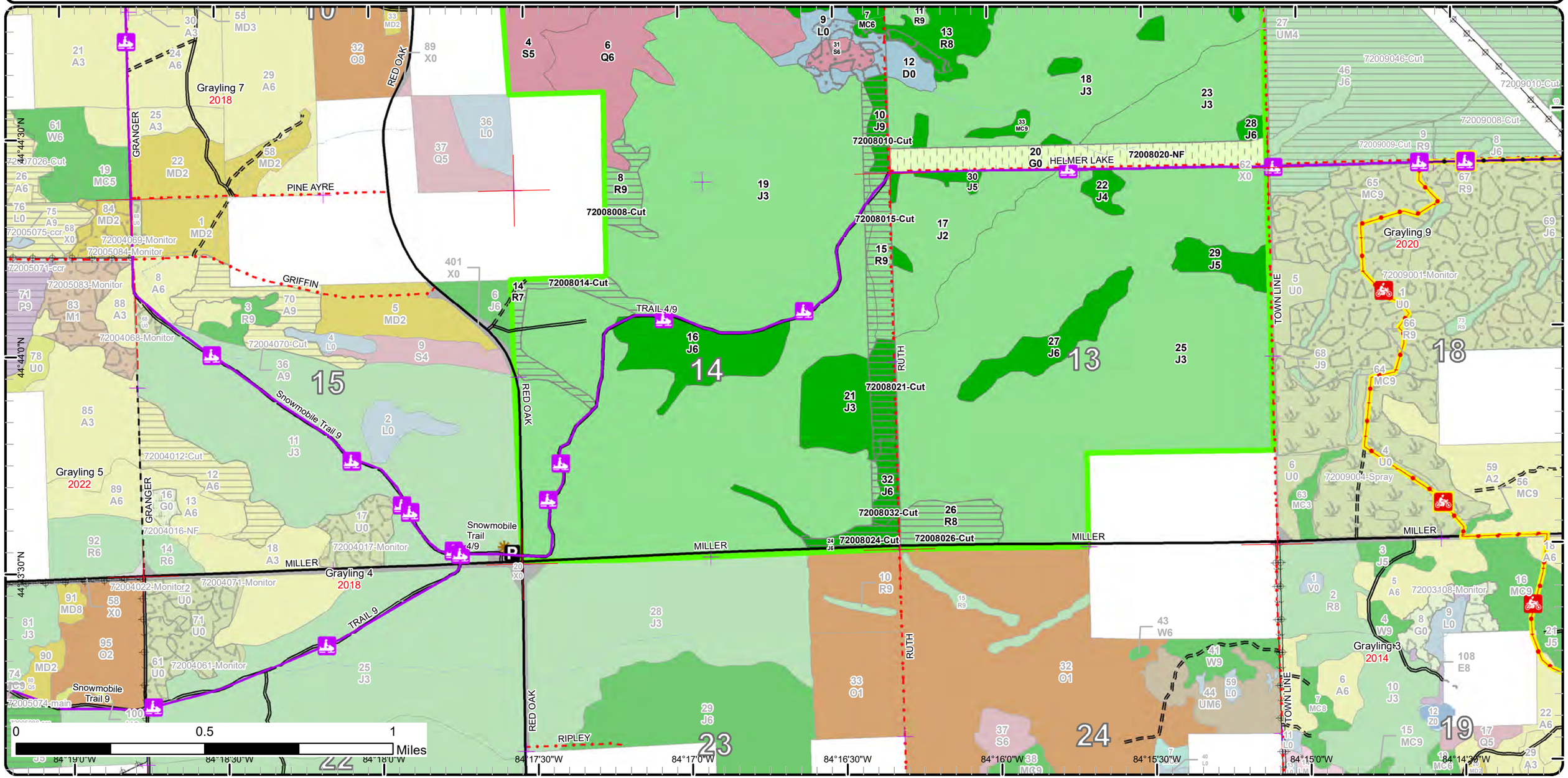
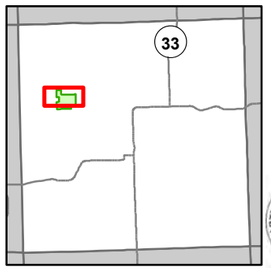


Stand Boundary Map



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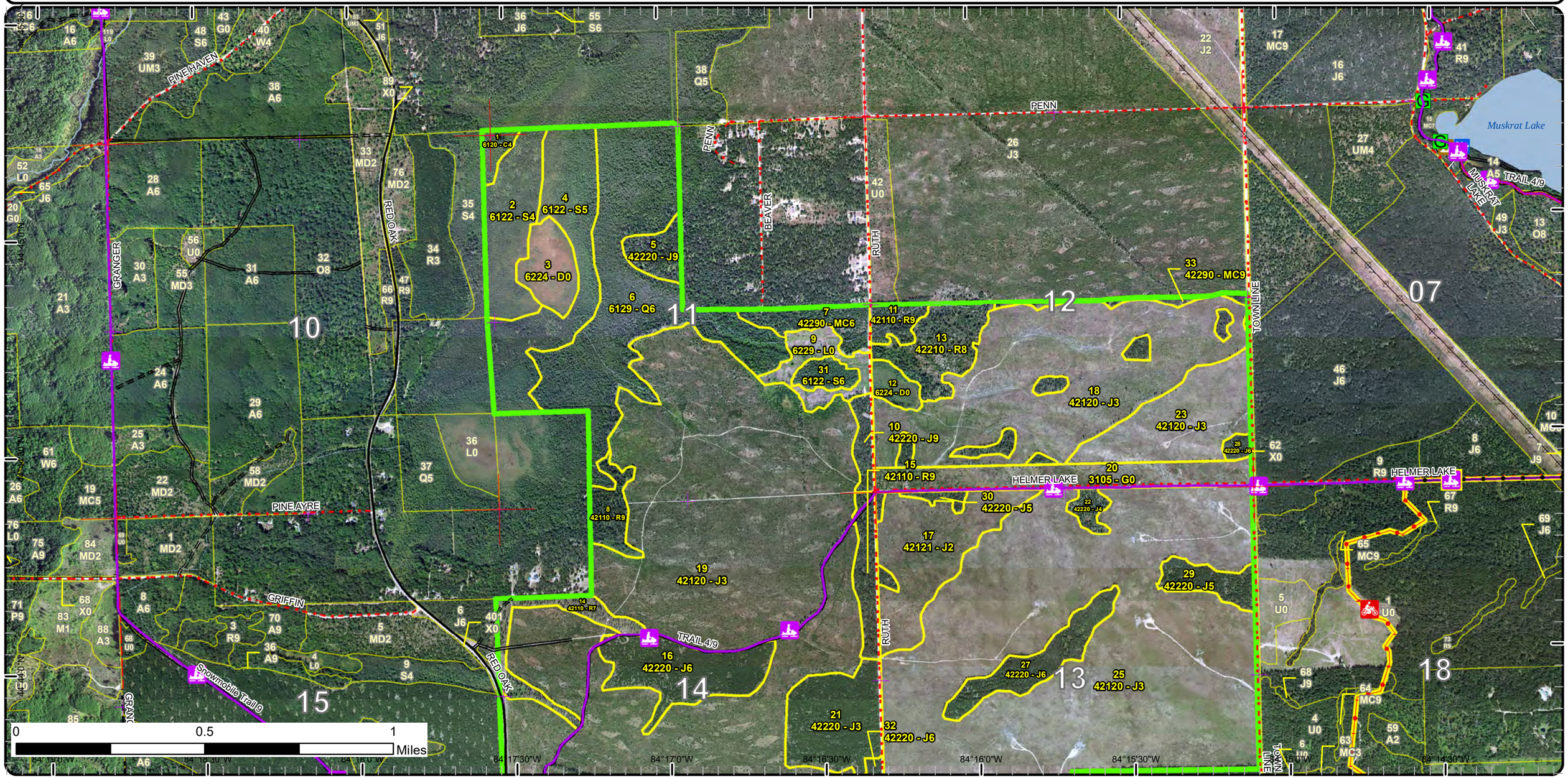

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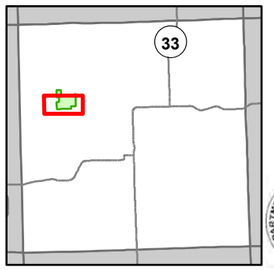

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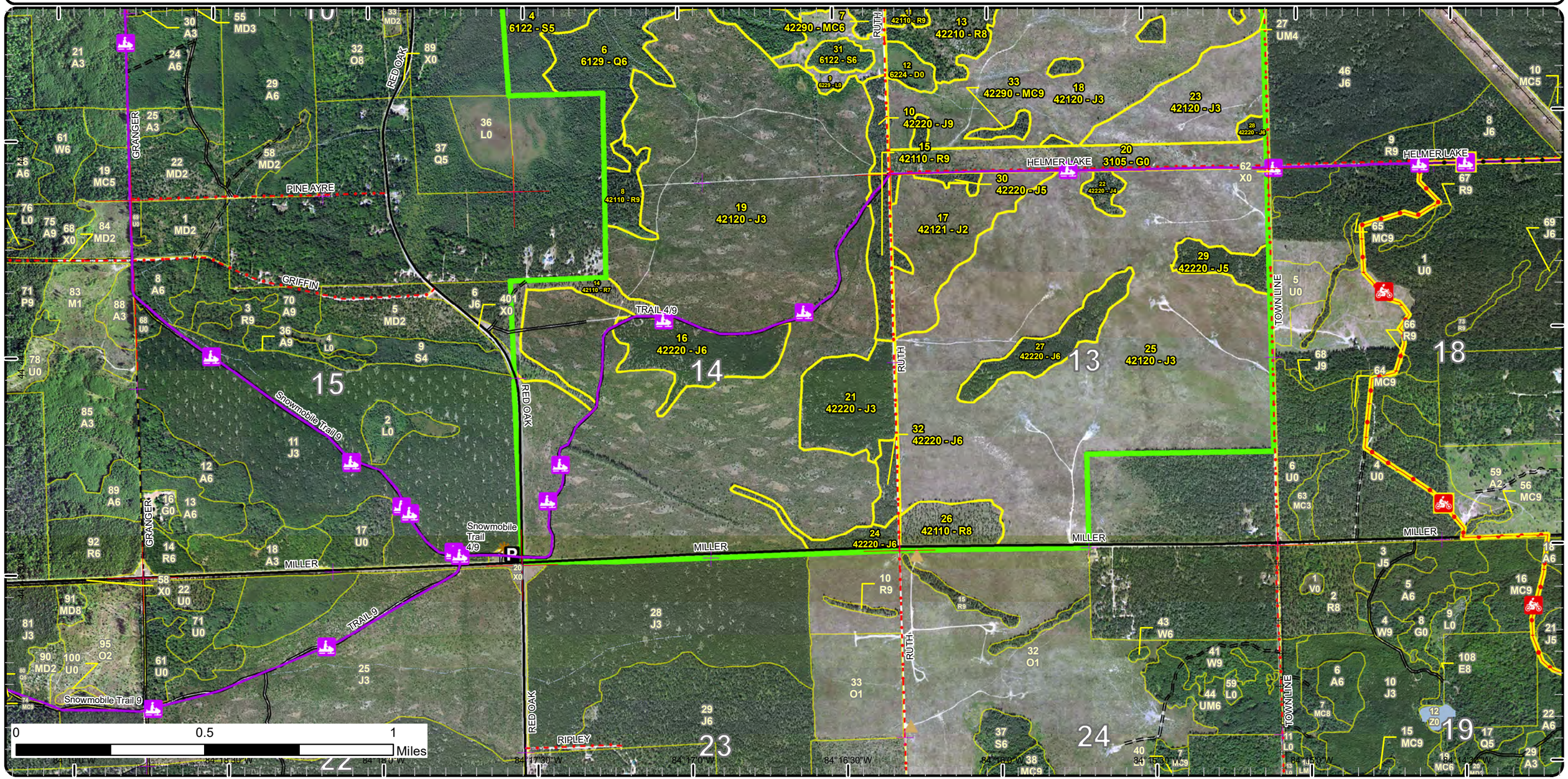
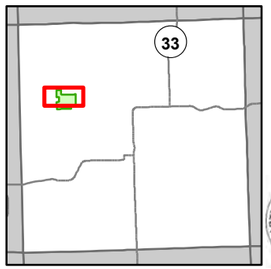


Special Conservation Areas



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- 5C: Delay treatment for age/size class diversity or exceptional site quality
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- 5E: Long-Term Retention
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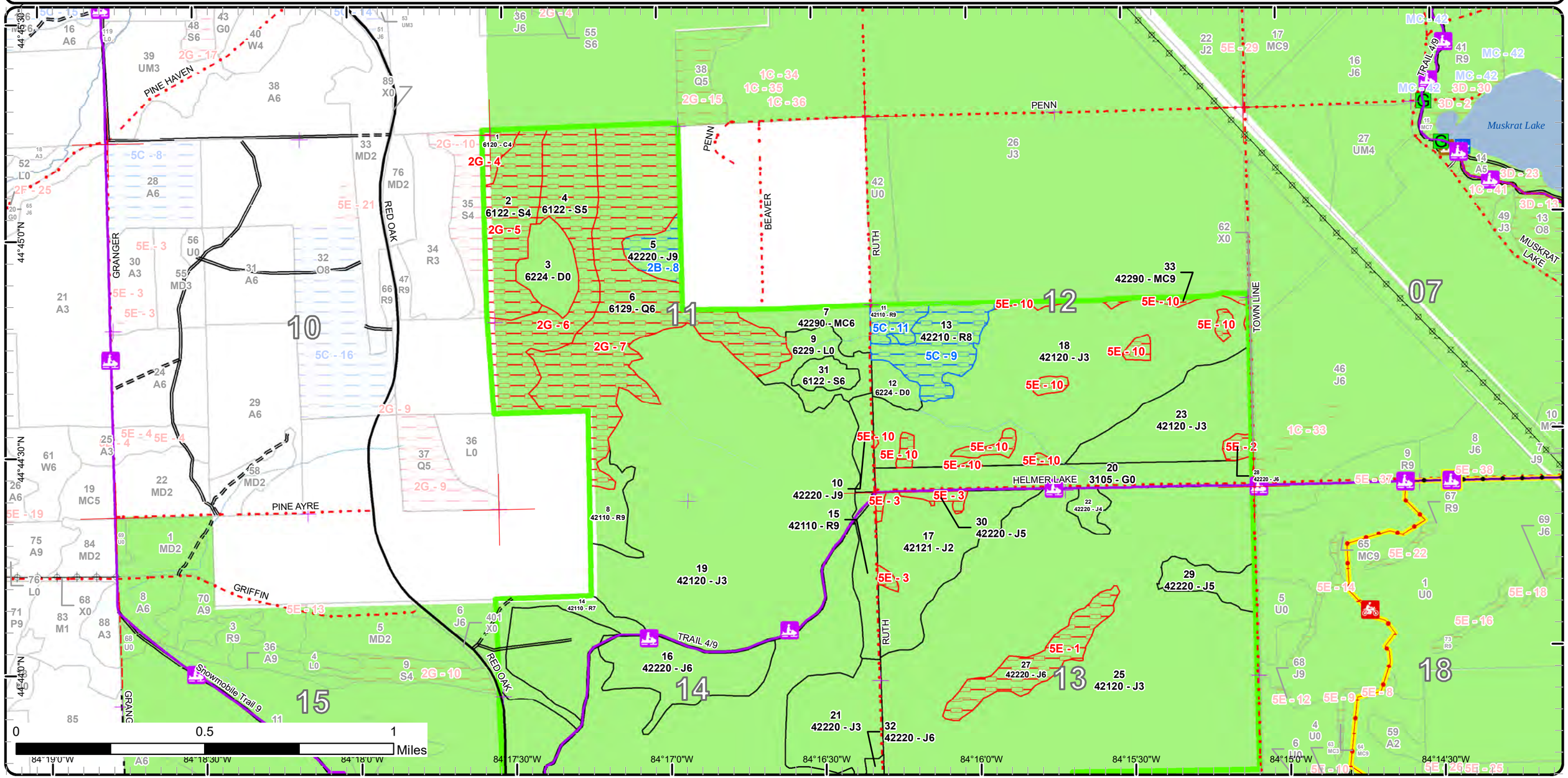
- Cold Water Streams



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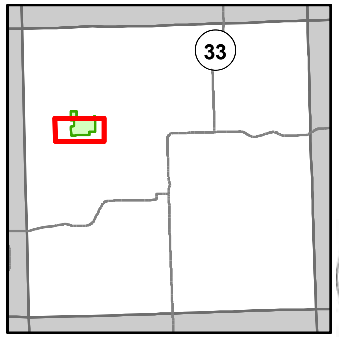

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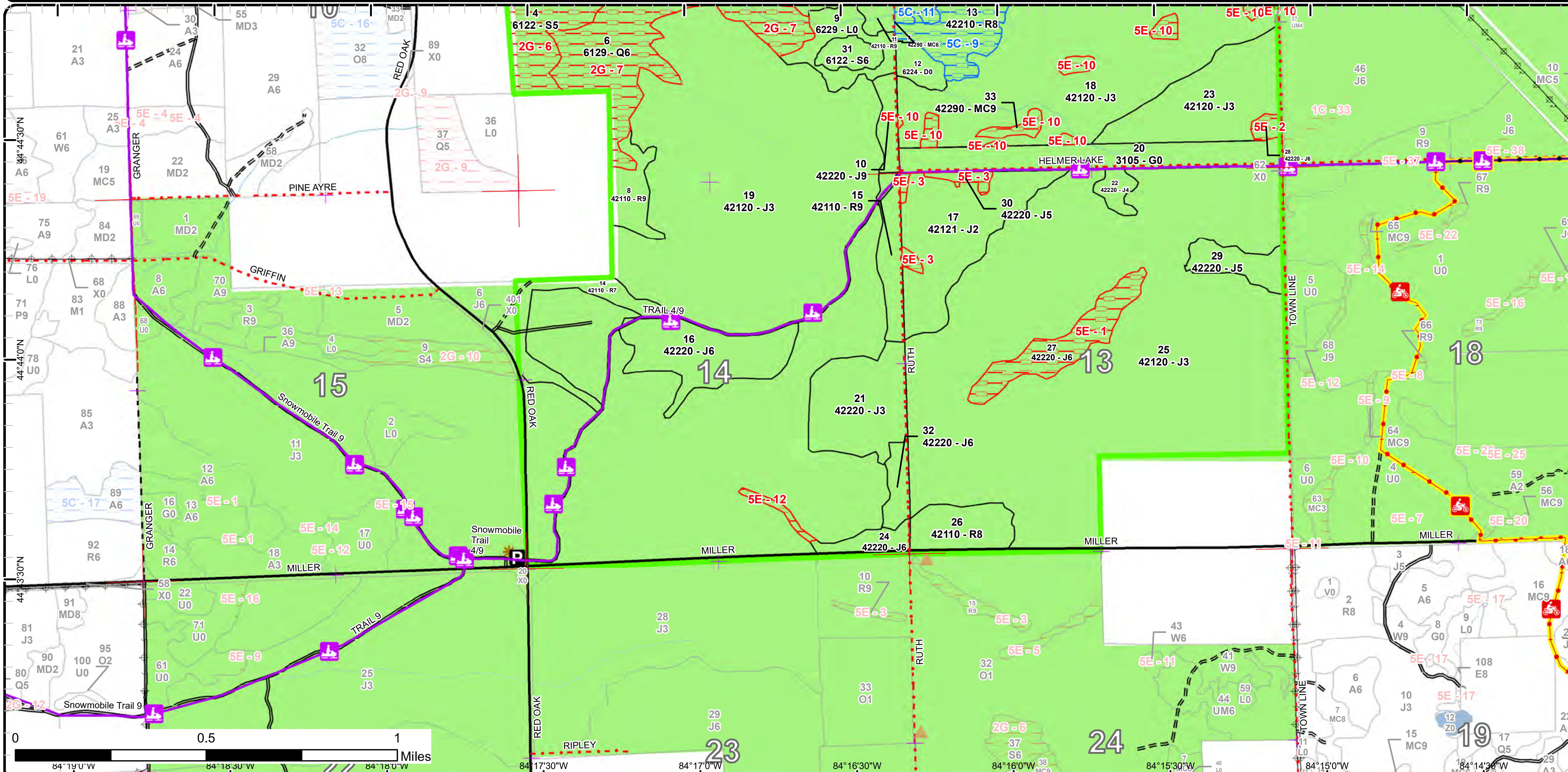

Report 1 – Total Acres by Cover Type and Age Class

Grayling Mgt. Unit **Compartment 8** **Year of Entry 2022**

Colton Behrmann : Examiner

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
Cedar	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	**6**
Herbaceous Openland	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**42**
Jack Pine	0	701	601	80	0	0	6	11	12	0	0	0	0	0	0	0	0	0	**1411**
Lowland Conifers	0	0	0	0	0	0	0	0	0	0	0	0	125	0	0	0	0	0	**125**
Lowland Shrub	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**18**
Lowland Spruce/Fir	0	0	0	0	0	0	0	0	0	97	0	0	0	0	0	0	0	0	**97**
Natural Mixed Pines	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**16**
Red Pine	0	0	0	0	0	0	0	0	0	0	106	0	0	0	0	0	0	0	**105**
Treed Bog	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**26**
Total	**87**	**701**	**601**	**96**	**0**	**0**	**6**	**11**	**12**	**97**	**106**	**0**	**131**	**0**	**0**	**0**	**0**	**0**	**1846**

Report 2 – Treatment Summary

Grayling Mgt. Unit

Year of Entry: 2022

Compartment 8

Total Compartment Acres: 1,934

Acres of Harvest

Commercial Harvest - 92

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	20	0	0	0	0	0	0	0	0	**20**
Red Pine	73	0	0	0	0	0	0	0	0	**73**
Total	**92**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**92**

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	92	0	0	0	0	0	23	0	43	**158**
Next Step	0	120	81	0	0	99	180	0	32	**512**
Total	**92**	**120**	**81**	**0**	**0**	**99**	**203**	**0**	**75**	**670**

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut

Approved Treatments:

8	**72008008-Cut**	13.3	42110 - Planted Red Pine	Sawtimber Well	90	81-110	Harvest	Clearcut with Retention	42260 - Natural Pine, Mixed Deciduous	Even-Aged	No

Prescription Specs: Final harvest all trees 2 inches and greater in diameter, following standard retention guidelines. Focus retention around lowland in southern portion of unit. If natural regeneration fails, plant to a fully stocked red pine plantation.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory); SitePrep, Roller Chopping; SitePrep, Trenching; Pesticide, Skidder - Site Prep; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr); Pesticide, Skidder - Rel

Acceptable Regen: A naturally regenerated stand of mixed pine and deciduous, meeting minimum stocking standards.

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2021

9	**72008009-Monitor**	23.2	6229 - Mixed lowland shrub	Nonstocked	0	Unspecified	Monitoring	Natural Regen (Re-Inventory)	6122 - Black Spruce	Even-Aged	No

Prescription Specs: regen survey

Next Step Treatments:

Acceptable Regen: spruce, pine fir

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2025

14	**72008014-Cut**	18.0	42110 - Planted Red Pine	Sawtimber Poor	90	51-80	Harvest	Clearcut	4221 - Natural Red Pine	Even-Aged	No

Prescription Specs: Final harvest all trees greater than 2 inches in diameter. No retention due to irregular stand shape. If natural regeneration fails, plant to a fully stocked red pine stand.

Next Step Treatments: SitePrep, Roller Chopping; Pesticide, Skidder - Site Prep; SitePrep, Trenching; Planting, Initial Plant; Pesticide, Skidder - Release; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr); Monitoring, Natural Regen (Re-Invent

Acceptable Regen: Mixed Red Pine and Oak with associated species. If natural fails then plant to red pine.

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2021

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
15	72008015-Cut	20.2	42110 - Planted Red Pine	Sawtimber Well	90	111-140	Harvest	Clearcut	330 - Low-Density Trees		No

Prescription Specs: Final harvest all trees greater than 2 inches in diameter. No retention due to irregular stand shape.Add snowmobile and ORV trail specs.

Next Step Treatments: NonForestMgt, Other - Specify

Acceptable Regen: Naturally regenerated low density trees managed as a fuel break.

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2021

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
20	72008020-NF	42.5	3105 - Mixed Upland Herbaceous	Nonstocked			NonForestMgt	Brush Cutting	310 - Herbaceous Openland		No

Prescription Specs: Mechanical harvest with Fecon to manage stand as a fuel break.

Next Step Treatments:

Acceptable Regen:

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2021

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
21	72008021-Cut	12.0	42220 - Natural Jack Pine	Sapling Well	28	Immature	Harvest	Clearcut	330 - Low-Density Trees		No

Prescription Specs: Final harvest all trees greater than 2 inches in diameter. No retention due to irregular stand shape.

Next Step Treatments: NonForestMgt, Other - Specify

Acceptable Regen: Natural regeneration managed for fuel break.

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2021

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
24	72008024-Cut	7.7	42220 - Natural Jack Pine	Poletimber Well	78	81-110	Harvest	Clearcut	4310 - Pine, Oak Mix	Even-Aged	No

Prescription Specs: Final harvest all trees 2 inches and greater in diameter. No retention due to stand size. If natural regeneration fails, plant to fully stocked red pine plantation.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory); SitePrep, Roller Chopping; SitePrep, Trenching; Pesticide, Skidder - Site Prep; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr); Pesticide, Skidder - Rel

Acceptable Regen: A naturally regenerated stand of mixed pine with at least 30% oak, meeting minimum stocking standards.

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2021

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
26	72008026-Cut	21.0	42110 - Planted Red Pine	Sawtimber Medium	90	51-80	Harvest	Clearcut	4221 - Natural Red Pine	Even-Aged	No

Prescription Specs: Final harvest all trees greater than 2 inches in diameter. No retention due to irregular stand shape. If natural regeneration fails, plant to a fully stocked red pine stand.

Next Step Treatments: Monitoring, Natural Regen (Re-Inventory); SitePrep, Roller Chopping; SitePrep, Trenching; Pesticide, Skidder - Site Prep; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Natural Regen (Re-Inventory)

Acceptable Regen: Natural red pine oak mix if this fails then plant to red pine.

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2021

Total Treatment Acreage Proposed: **157.9**

Report 4 – Site Conditions

Grayling Mgt. Unit

Colton Behrmann : Examiner

Compartment: 8

Year of Entry: 2022

Availability for Management

Total Acres	Acres Available	*Acres Avail With Condition*	Acres Not Available	Dominant Site Conditions
	0	***0***	0	**Cedar**
	0	***0***	0	**Herbaceous Openland**
	0	***0***	0	**Jack Pine**
	0	***0***	0	**Lowland Conifers**
	0	***0***	0	**Lowland Shrub**
	0	***0***	0	**Lowland Spruce/Fir**
	0	***0***	0	**Natural Mixed Pines**
	0	***0***	0	**Red Pine**
	0	***0***	0	**Treed Bog**
				Total Forested Acres
				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**	**5E: Long-Term Retention**	25	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: Vortice retention island left when the original stand 25 was final harvested (#043-12).							
2		**Unavailable**	**5E: Long-Term Retention**	3	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: Retention island left from original stand 23's harvest (#043-12).							
3		**Unavailable**	**5E: Long-Term Retention**	6	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: Retention islands left in 2011 harvest #011-10.							

4	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	6	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
5	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	37	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
6	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	60	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
7	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	125	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
8	**Available**	**2B: Unknown if access through adjacent landowner(s) is possible**	11	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						

9	**Available**	**5C: Delay treatment for age/size class diversity or exceptional site quality**	29	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

Hold stand until majority of jack pine reaches merchantable size. reevaluate next YOE.

10	**Unavailable**	**5E: Long-Term Retention**	19	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

Retention islands left in 2011 harvest #011-10.

11	**Available**	**5C: Delay treatment for age/size class diversity or exceptional site quality**	9	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

Hold stand until majority of jack pine reaches merchantability. Reevaluate next YOE.

12	**Unavailable**	**5E: Long-Term Retention**	3	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

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

Comments

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 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.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
1	6120 - Lowland Cedar	Poletimber Poor	5.6	112	Unspecified	N/A	Small pocket of cedar, very wet. High ground Island of white pine in the northern portion of stand.

Canopy Species	% Cover	Size Class	DBH	Age
Northern White Cedar	95	Pole/Log	8	112
White Pine	5	XLog/Log	18	

Sub-Canopy Species	Density	Avg. Height	Size
Tag Alder	Medium	Variable	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
2	6122 - Black Spruce	Poletimber Poor	37.2	82	Unspecified	N/A	Scattered pole size and medium/high dense saplings. Stand was harvested 1958 and we are looking at the residual/non-merchanable which probably 20 years old then.

Canopy Species	% Cover	Size Class	DBH	Age
Black Spruce	100	Pole/Sapling	5	82

Sub-Canopy Species	Density	Avg. Height	Size
Black Spruce	High	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
3	6224 - Treed Bog	Nonstocked	18.4		Unspecified	No	Very few trees waist high. Very wet.

Sub-Canopy Species	Density	Avg. Height	Size
Northern Bayberry	High		Tall Shrub
Black Spruce	High		Sapling
Sphagnum Moss	Full		Non-Wood

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
4	6122 - Black Spruce	Poletimber Medium	59.9	82	Unspecified	N/A	Stand appears to have had all of the cedar removed.

Canopy Species	% Cover	Size Class	DBH	Age
Black Spruce	60	Pole/Log/Sap	8	82
Tamarack	40	Pole/Sap/Log	8	82

Sub-Canopy Species	Density	Avg. Height	Size
Black Spruce	Medium	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
5	42220 - Natural Jack Pine	Sawtimber Well	11.2	66	81-110	N/A	Jack pine has lost some of it's percentage of canopy cover due to continued dieback. Red pine in the eastern portion of stand, with red maple and oak sporadic in the stand. More fir as the stand transitions into adjacent stand 6. This stand is a result of cut that occurred in the late 70's when the red pine was harvested. The JP was around 20 years old then. The adjacent private land owners are fuelwood cutting the oak. It appears to be personal use can see it stacked in their yards. Heavy BF and BS regen.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	5	Log	12	
Northern Pin Oak	5	Log	14	
White Pine	7	Log/Pole	12	
Red Pine	15	Log	14	
Jack Pine	60	Log	12	66
Balsam Fir	8	Pole/Log	8	

Sub-Canopy Species	Density	Avg. Height	Size
Balsam Fir	Medium	Variable	Sapling
Black Spruce	Medium	Variable	Sapling
White Pine	Low	Variable	Sapling
Red Pine	Trace	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
6	6129 - Mixed Coniferous Lowland Forest	Poletimber Well	125.1	115	141-170	N/A	Stand varies between cedar and spruce dominated canopy. Thick balsam regen in areas. Stand visited end of January & still has very saturated soils. Area in the center of stand has had all the cedar removed and has filled in with Black spruce ~(70 years old). Some nice cedar in places 12-16 DBH.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	5	Log/Pole	10	
Balsam Fir	10	Pole	7	
Black Spruce	30	Pole/Log	9	77
Northern White Cedar	35	Pole/Log	9	115
Black Ash	10	Pole	6	

Sub-Canopy Species	Density	Avg. Height	Size
Balsam Fir	High	Variable	Sapling
Tag Alder	Medium	5 - 10 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
7	42290 - Natural Mixed Pine	Poletimber Well	15.8	28	81-110	N/A	Stand salvage cut 1993. Pine has responded well to cut. There is a higher BA of residual log sized red & white pine in the western portion of stand. Pockets of dense jack & white pine regen throughout the stand.

Canopy Species	% Cover	Size Class	DBH	Age
White Pine	20	Log	14	45
Red Pine	8	Log	12	47
Jack Pine	29	Pole	7	
White Pine	35	Pole	7	28
Northern Pin Oak	8	Pole	6	

Sub-Canopy Species	Density	Avg. Height	Size
Jack Pine	Medium	>20 feet	Sapling
Northern Pin Oak	Low	10 - 20 feet	Sapling
Black Spruce	Low	>20 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
8	42110 - Planted Red Pine	Sawtimber Well	13.3	90	81-110	N/A	Red pine stand with a heavy understory of balsam fir, red pine and occasional white pine. Red pine varies anywhere from seedling/sapling/pole in understory. Southern portion of stand drops into a lowland drainage dominated by fir and spruce. Stand was planted 1931, Left as a visual barrier last YOE.

Canopy Species	% Cover	Size Class	DBH	Age
White Pine	10	Log	12	
Red Pine	75	Log/XLog	15	90
Jack Pine	10	Pole/Log	8	
Northern Pin Oak	5	Pole/Log	9	

Sub-Canopy Species	Density	Avg. Height	Size
Balsam Fir	Medium	>20 feet	Sapling
White Pine	Low	< 5 feet	Sapling
Red Pine	Medium	Variable	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
9	6229 - Mixed lowland shrub	Nonstocked	17.5	0	Unspecified	6122 - Black Spruce	Stand final harvested in 2014-2015 under T-sale 72-042-12. Tag alder and cattails are common in the stand. Visited in late January & ground is not froze. Waiting for snow melt to complete regen survey on spruce/pine/fir.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
11	42110 - Planted Red Pine	Sawtimber Well	8.5	90	51-80	N/A	Red pine planted 1931, jack pine seeded in after 1964 fire. Jack pine is pole sized, with some sapling sized mixed in. Jack pine regen is heaviest in the western and eastern portion of the stand. Much less sub canopy in the middle of stand.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	75	Log	14	90
Jack Pine	25	Pole/Sapling	7	57

Sub-Canopy Species	Density	Avg. Height	Size
White Pine	Low	5 - 10 feet	Sapling
Red Pine	Low	5 - 10 feet	Sapling
Jack Pine	Low	Variable	Sapling
Northern Pin Oak	Low	5 - 10 feet	Sapling
Balsam Fir	Trace	10 - 20 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
12	6224 - Treed Bog	Nonstocked	7.7			No	Treed bog surrounded by dead/dying jack pine. Heavy wildlife use around the bog. Wildlife did some habitat work along the northern edge.

Sub-Canopy Species	Density	Avg. Height	Size
Black Spruce	High		Sapling
Tag Alder	High		Tall Shrub
Jack Pine	Low	>20 feet	Pole

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
13	42210 - Natural Red Pine	Sawtimber Medium	28.8	90	51-80	N/A	Stand was final harvested 94-95 except for the red pine. Basal areas varied between 20-100 BA depending where plots fell. Red pine canopy with jack and red pine regeneration filling in canopy gaps. Jack pine is thick in most places, still sapling sized, pushing pole size.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	100	Log/XLog	14	90

Sub-Canopy Species	Density	Avg. Height	Size
Jack Pine	High	10 - 20 feet	Sapling
Red Pine	Medium	5 - 10 feet	Sapling
Northern Pin Oak	Low	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
14	42110 - Planted Red Pine	Sawtimber Poor	18.0	90	51-80	N/A	Stand thinned down to roughly 50 BA. Oak regen is heavily browsed. Some pockets of dense regen, other areas where there is little to no regen. Large majority of deciduous regen is still under 6' tall.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	100	Log	15	90

Sub-Canopy Species	Density	Avg. Height	Size
Northern Pin Oak	Medium	< 5 feet	Sapling
Jack Pine	Low	< 5 feet	Sapling
Red Pine	Low	< 5 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
15	42110 - Planted Red Pine	Sawtimber Well	15.4	90	111-140	N/A	Red pine stand with jack pine that is continuing to decline to vigor. More jack pine is in the canopy in the northern portion of stand. Stand left as a visual and snow barrier last YOE.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	75	Log	13	90
Jack Pine	20	Pole/Log	9	
Northern Pin Oak	5	Pole/Log	9	

Sub-Canopy Species	Density	Avg. Height	Size
Red Pine	Low	5 - 10 feet	Sapling
Jack Pine	Low	5 - 10 feet	Sapling
Northern Pin Oak	Medium	5 - 10 feet	Sapling
White Pine	Trace	5 - 10 feet	Sapling

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
16	42220 - Natural Jack Pine	Poletimber Well	39.3	28	51-80	N/A	Stand final harvested 1993. Naturally regenerated well with jack pine and some oak. Basal area will increase as stand grows.

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	97	Pole/Sapling	5	28
Northern Pin Oak	3	Sapling/Pole	4	

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
17	42121 - Planted Jack Pine, Mixed Deciduous	Sapling Medium	55.0	8	Immature	N/A	Jack pine stand with oak filling in any gaps well. Stand will continue to grow into a 75-100% canopy cover. Was final harvested by 2011 (#011-10), cutting stems 2"+ DBH except ~40 pink-marked trees, and retention islands. Was trenched by FRD and planted in 2012 (W72-693, Wx hot & dry, high mortality), and replanted 2013. Passed Year 3 regen survey with 976 JP & 200 NPO per acre. FTP completed.

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	80	Sapling	1	8
Northern Pin Oak	20	Sapling	1	10

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
18	42120 - Planted Jack Pine	Sapling Well	162.2	8	Immature	N/A	Planted jack pine stand. Very thick in most portions of the stand. Was final harvested by 2011 (#011-10), cutting stems 2"+ DBH except retention islands. Was trenched by FRD and planted in 2012 (W72-693, Wx hot & dry, high mortality), and replanted 2013. Passed Year 3 regen survey with 976 JP & 200 NPO per acre. FTP completed.

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	80	Sapling	2	8
Northern Pin Oak	17	Sapling	2	10
White Pine	1	Sapling	2	
Red Pine	2	Sapling	2	

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
19	42120 - Planted Jack Pine	Sapling Well	601.0	13	Immature	N/A	KW jack pine. Thick, with more of an oak component than the planting to the east.

Canopy Species	% Cover	Size Class	DBH	Age
Northern Pin Oak	15	Sapling	3	
Choke Cherry	1	Sapling	2	
Jack Pine	84	Sapling	2	13

Stand 20

3105 - Mixed Upland Herbaceous | Nonstocked | 42.5 | Managed Opening

Sub-Canopy Species	Density	Avg. Height	Size
Mixed Grasses	High		Non-Wood
Conifers	Medium	10 - 20 feet	Sapling
Canada Blueberry	Medium		Tall Shrub
Northern Pin Oak	Medium	10 - 20 feet	Sapling

Oak and jack pine is beginning to fill in the stand. The western end has a higher density of oak and pine. Close to 25% canopy closure. Cut in 2004.

Stand 21

42220 - Natural Jack Pine | Sapling Well | 40.9 | 28 | Immature | N/A

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	97	Sapling	3	28
Northern Pin Oak	3	Sapling	2	

Sub-Canopy Species	Density	Avg. Height	Size
Red Pine	Trace	< 5 feet	Sapling

Stand was final harvested 1993. Dense jack pine stand with single oak clumps.

Stand 22

42220 - Natural Jack Pine | Poletimber Poor | 5.6 | 53 | 51-80 | N/A

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	95	Pole/Sapling	5	53
Northern Pin Oak	5	Pole	8	

Sub-Canopy Species	Density	Avg. Height	Size
Northern Pin Oak	Low	< 5 feet	Sapling
Jack Pine	Low	5 - 10 feet	Sapling

Fire spring 1971, salvage cut fall 71, all merchantable trees were harvested. The remaining trees had plenty of space to grow, very branchy with lots of male buds, easy to see the Budworm damage.

Stand 23

42120 - Planted Jack Pine | Sapling Well | 49.8 | 6 | Immature | N/A

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	95	Sapling	1	6
Northern Pin Oak	5	Sapling	1	

Was final harvested by 2015 (#043-12) except for island retention. Trenched in opposing wave pattern for KW habitat (W72-762) and planted in 2015. Passed Yr 1 regen survey with 1617 JP & 300 Oak per acre

Stand 24

42220 - Natural Jack Pine | Poletimber Well | 11.8 | 78 | 81-110 | N/A

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	75	Pole/Log	9	78
Northern Pin Oak	15	Log	14	
Red Pine	10	Log	14	

Sub-Canopy Species	Density	Avg. Height	Size
Northern Pin Oak	Medium	5 - 10 feet	Sapling
Red Pine	Low	5 - 10 feet	Sapling
Jack Pine	Trace	5 - 10 feet	Sapling
White Pine	Low	Variable	Sapling

New stand split from stand 32 to the north. Jack pine is dying out, and oak is starting to decline as well. Stand has patchy regen recruiting, mostly oak.

Stand left for visual and wind break last YOE.

Stand 25

42120 - Planted Jack Pine | Sapling Well | 433.5 | 6 | Immature | N/A

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	95	Sapling	1	6
Northern Pin Oak	5	Sapling	1	

Was final harvested by 2015 (#043-12) except for island retention. Trenched in opposing wave pattern for KW habitat (W72-762) and planted (majority in 2015, 88 acres in 2016). Passed Yr 1 regen survey with 1617 JP & 300 Oak per acre. Passed Yr 3 regen survey in 2020 with 1472 JP & 156 Oak TPA. FTP is complete. Previous comments: Fire occurred spring 1971. Stand was salvaged fall 71. The remaining trees were final harvested 1976. Stand is mostly one-two stick with very few larger/older trees.

Stand 26

42110 - Planted Red Pine | Sawtimber Medium | 21.0 | 90 | 51-80 | N/A

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	100	Log	14	90

Sub-Canopy Species	Density	Avg. Height	Size
Red Pine	Trace	< 5 feet	Sapling
Northern Pin Oak	High	5 - 10 feet	Sapling
Jack Pine	Low	5 - 10 feet	Sapling

Stand thinned down to 50 BA average. Minimal red pine regeneration, mostly oak with a low amount of jack pine. Stand was planted 1931, and pruned in 1967. A fire burned along the back side, appears to have caused heavier branching less self-pruning.