Compartment Review Presentation

Grayling Forest Management Unit

Compartment 72270
Entry Year 2026
Acreage: 1,739
County Crawford
Management Area: High Sand Plains

Stand Examiner: Cole Michaud

Legal Description:

T28N R1W Sections 4, 5, & 6
Northeast Lovells Township, Crawford County

Identified Planning Goals:

The primary goal for this compartment is to provide Kirtland's Warbler habitat in accordance with the Kirtland's Warbler Management Plan. Another is to maintain species and structural diversity while managing for health, productivity, and sustainability throughout the compartment. Also provide multiple use opportunities and incorporate any visual management needed to optimize these uses.

Soil and topography:

The majority of the soil in this compartment is Grayling Sand. There is a large pocket of Graycalm-Grayling Sand in the center of Section 4. Other soil types within the compartment consist of Leafriver Muck, Tawas-Leafriver, Tawas-Lupton Muck and AuGres-Kinross-Croswell complex, all found within the two small drainages and a few small pockets throughout the compartment. Topography within the compartment for the most part is level to gently rolling terrain.

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

This compartment consists of solid state ownership. Along County Road 612 and south of Section 4 there are a couple of private residences. There is also a couple of private residences located along Twin Bridge Road on the west side of compartment.

Unique Natural Features:

The Kirtland's Warbler (Kirtlandii dendroica) and Secretive locust (Appalachia arcane) are two endangered or threatened species that may be seen within this compartment and need to be considered in the management of this compartment. Another concern when managing this compartment is the Bald Eagle. The extreme southwest corner is part of the Shupac Dry Sand Prairie ERA.

Archeological, Historical, and Cultural Features:

No Archeological, Historical, or Cultural Features known.

Special Management Designations or Considerations:

Most all of the compartment falls within part of the Lovell's Kirtland Warbler Management Area. The compartment consists of 5 Kirtland's Warbler Cutting Blocks.The planting pattern for habitat has changed within the past ten years. Instead of planting 10 rows of weaving Jack Pine separated by a narrow strip of grass, current habitat is being planted in an interweave pattern. Old OI coded out these small strips of jack pine as separate stands. This inventory lumped the multiple stands of small strips with the grassy strips as one stand dedicated to KW management and will be treated the Western area or block 49 kept the jack pine and grassy areas separate.

Watershed and Fisheries Considerations:

The West Branch of Big Creek traverses through the very southeast portion of the compartment. The West Branch of Big Creek is designated as a trout stream. This stream has been site conditioned with the appropriate vegetative buffer. No other watercourses or lakes are contained within the compartment. A woody structure project is being planned by a local angling groups, to improve fish habitat in the reach for all trout life stages, purge and contain excess sediment, keep the channel open by removing beaver dams, and serve as a demonstration project for riparian zone management. This will be accomplished through the construction and placement of various in-stream fish habitat structures, large woody debris, and brush bundles; repositioning of existing downed large woody material in the river; and vegetative management near certain sections of the stream as part of a demonstration project. Trees and shrubs may be cut from adjacent state land for structures. FTP 72-714 is in place for beaver dam removal in this reach, and additional FTPs will be obtained for the cutting of trees and vegetation management.

Wildlife Habitat Considerations:

The Kirtland's Warbler habitat creation is the primary management objective for the compartment. Leaving snags and a few pockets of large super canopy Red Pine throughout the compartment will provide some diversity and habitat for other creatures.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of glacial outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 400 and 600 feet. Beneath the glacial drift is the Coldwater Shale. The Coldwater does not have a current economic use. The nearest gravel pit is located two miles to the south and potential is thought to be good on the upland areas. The Antrim Shale has been developed on some of the State minerals, but is near the southern limit of the Antrim Shale production. This is evidenced by several gas wells located throughout compartment.

Vehicle Access:

County Roads: F-97 – Twin Bridge Road, Big Creek Road, County Road 612, Jack Pine Plains Road, Shupac Trail along with a few two tracks off of these roads provide vehicle access to the compartment.

Survey Needs:

There are no survey needs within this compartment.

Recreational Facilities and Opportunities:

A designated snowmobile trail # 4 (Lovell's snowmobile trail), traverses through the very south portions of Sections 4 and 5 and than proceeds north up through Section 5 the compartment. Other recreational opportunities within this include fishing, bird-watching, and hunting.

Fire Protection:

The compartment falls under the fire protection of the Lovell's Volunteer Fire Department and the Grayling MDNR. Nearby water sources include Shupac Lake, North Branch of the Au Sable River, West Branch of Big Creek and the village of Lovells. For the most part, several county roads and two track roads surround or traverse into the compartment for fire protection accessibility.

Additional Compartment Information:

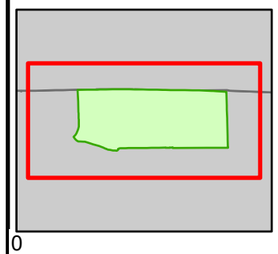
The following reports from the Inventory are attached:

- **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**

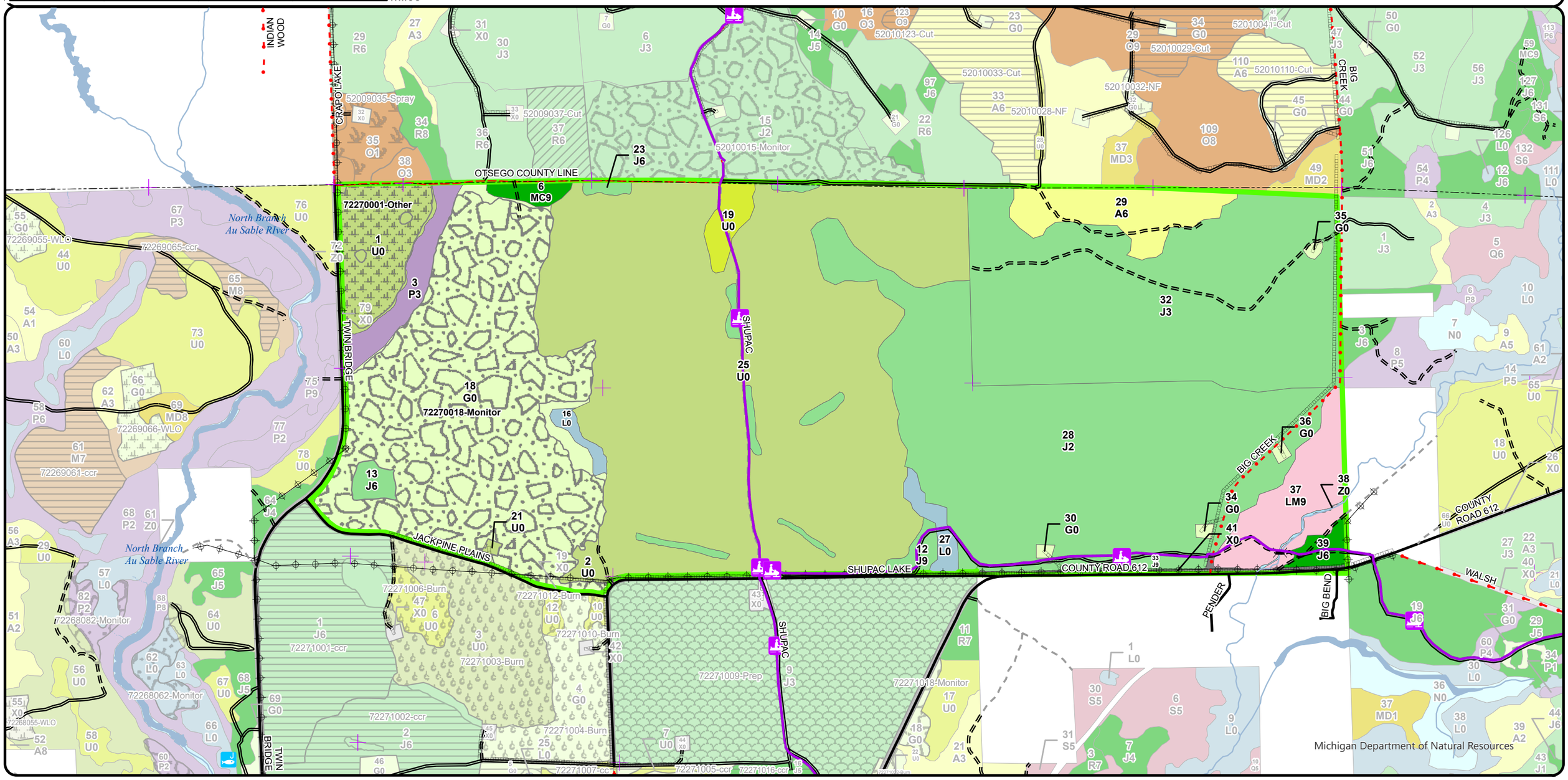
Cover Type & Treatments Map



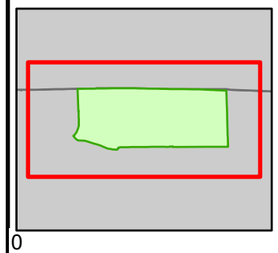
Compartment: 72270
T28N, R1W, Sec: 4-6
County: Crawford
Unit: Grayling
Mgmt Area: High Sand Plains
YOE: 2026
Acres: 1739.1 GIS Calculated
Examiner: Cole Michaud
Map Revised: 07/11/2024
Map Phase: Web-Post

0 0.5 1 Miles

- Bridges
- Fishing Access Site
- Remonumented Section Corners
- Snowmobile Trails
- Designated Snowmobile Trails
- DNR - Secondary Forest Road
- DNR - Forest Access Route
- Federal / State / County - Paved Road
- County - Gravel Road
- County - Dirt Road (Seasonal)
- Private - Dirt / Gravel Road
- Intermittent Stream
- Lake/Pond
- Perennial River
- Lakes and Rivers
- Pipeline
- Powerline
- Compartment Boundary
- Counties
- Other Treatment - See Comments
- Regeneration Survey
- 413 - Aspen Types
- 421 - Planted Pines
- 422 - Natural Pines
- 611 - Lowland Deciduous Forest
- 613 - Lowland Mixed Forest
- 122 - Roads/Parking Lot
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low Density Trees
- 500 - Water
- 622 - Lowland Shrub



Stand Boundary Map



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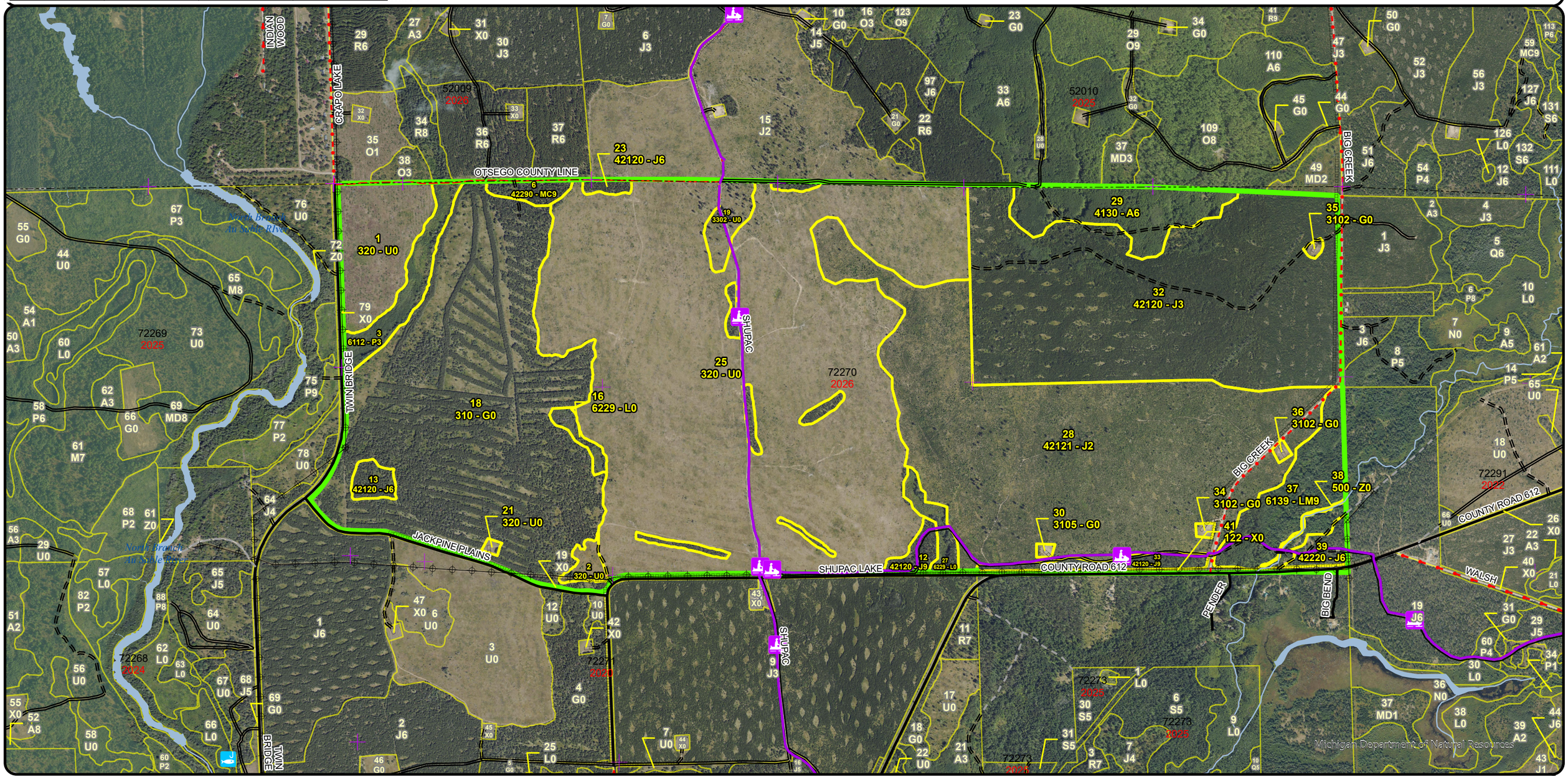
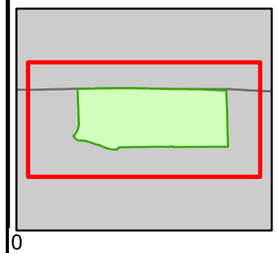
- State Forests



Special Conservation Areas & Site Conditions Map



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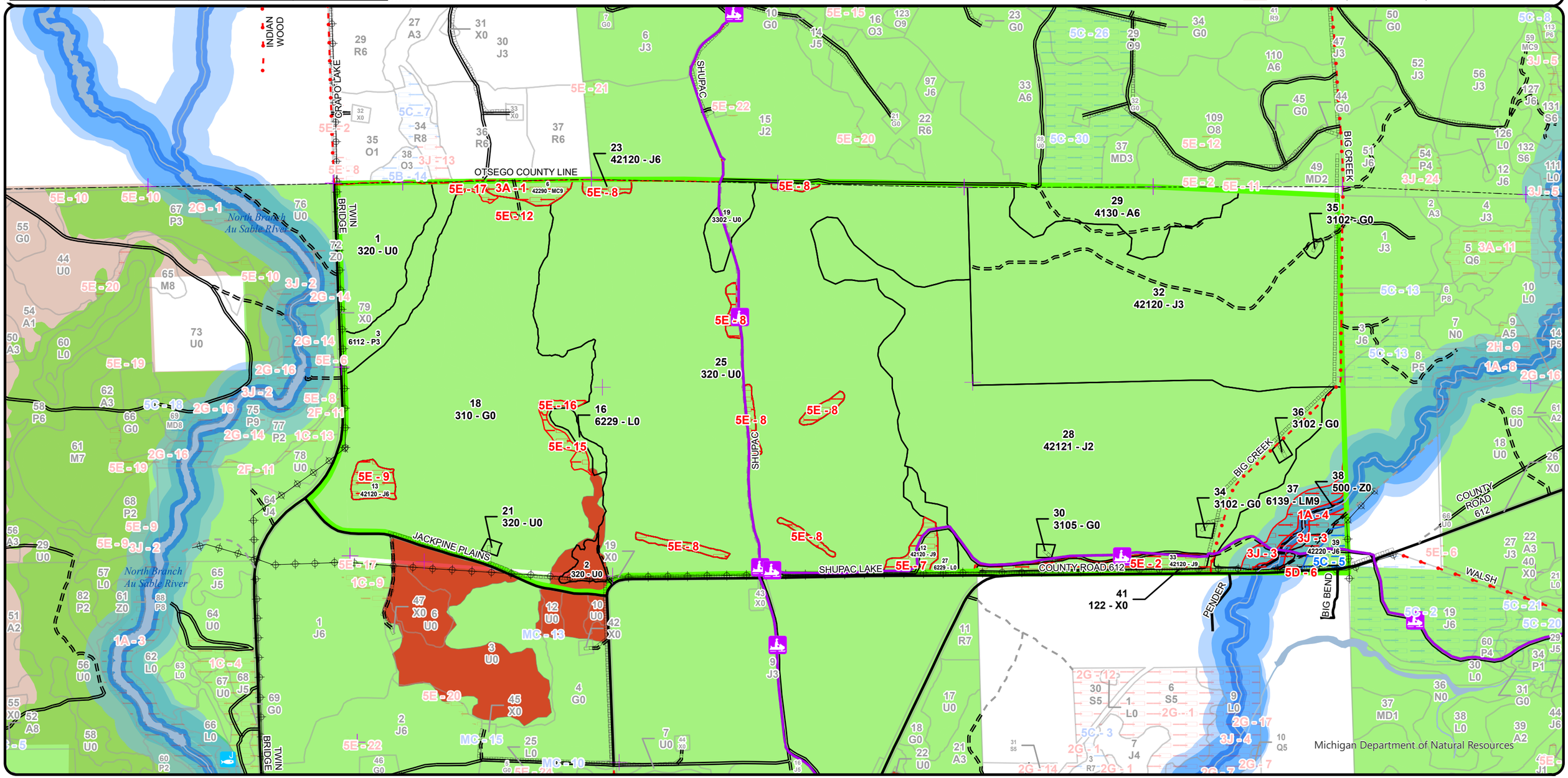
- Pipeline
- Powerline
- Compartment Boundary
- Counties
- Available w/ Constraints
- Unavailable
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 1A: Federal/State/Local Law
- 3A: Conservation Values incompatible with harvest at this time
- 3J: Water quality / BMPs (stream, river, or lake)
- 5D: Unproductive Forest Land
- 5E: Long-Term Retention
- Stand Boundaries
- Ecological Reference Areas
- Natural Rivers Vegetative Buffer
- Natural Rivers Zoning District
- Kirtland Warbler Habitat
- Cold Water Streams
- High Priority Trout Stream Buffer
- Research, Development, and Military Lands



Report 1 – Total Acres by Cover Type and Age Class

Grayling Mgt. Unit **Compartment 270 Year of Entry 2026**

Cole Michaud : 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
Aspen	0	0	0	0	42	0	0	0	0	0	0	0	0	0	0	0	0	0	**42**
Herbaceous Openland	309	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**309**
Jack Pine	0	0	613	0	0	0	17	6	0	27	0	0	0	0	0	0	0	0	**663**
Low-Density Trees	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**12**
Lowland Aspen/Balsam Poplar	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**22**
Lowland Mixed Forest	0	0	0	0	0	0	47	0	0	0	0	0	0	0	0	0	0	0	**47**
Lowland Shrub	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**14**
Natural Mixed Pines	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	**7**
Upland Shrub	615	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**615**
Urban	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**7**
Water	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Total	**958**	**0**	**635**	**0**	**42**	**0**	**64**	**13**	**0**	**27**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1739**

Report 2 – Treatment Summary

Grayling Mgt. Unit

Year of Entry: 2026

Acres of Harvest

Compartment 270

Total Compartment Acres: 1,739

Commercial Harvest -

Harvests with Site Condition - 0

Next Step Harvest - 0

Habitat Cut - 0

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	0	0	0	0	0	0	294	43	0	**337**
Next Step	0	294	294	0	294	43	294	0	0	**1219**
Total	**0**	**294**	**294**	**0**	**294**	**43**	**588**	**43**	**0**	**1556**

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:

1	**72270001-Other**	43.1	320 - Upland Shrub	Nonstocked	0	Unspecified	Other	Other	4191 - Mixed Upland Deciduous with Conifer	Even-Aged	No

Prescription Specs:

Next Step Treatments: Pesticide, Skidder - Release

Acceptable Regen: Stand should come back to a mixture of aspen, oak and other associated species with poor to moderate stocking levels and this is acceptable.

Other Comment: Percent to Treat = 100%

Site Condition

Proposed Start Date: 10/1 /2024

18	**72270018-Monitor**	294.0	310 - Herbaceous Openland	Nonstocked	0	Unspecified	Monitoring	Natural Regen (Intermediate)	4212 - Planted Jack Pine	Even-Aged	No

Prescription Specs: Evaluate natural regen and ground flora composition after two growing seasons.

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

Acceptable Regen: KW habitat on the spectrum between dry sand prairie and pine barrens natural communities. Delay planting for 2 growing seasons post-harvest in order to evaluate natural regen and the abundance of pine barrens indicator species. Areas where acceptable plant communities are found may be merged into the Shupac Prairie ERA.

Other Comment: Percent to Treat = 100%

Site Condition

Proposed Start Date: 10/1 /2024

Total Treatment Acreage Proposed: 337.1

Report 4 – Site Conditions

Grayling Mgt. Unit

Cole Michaud : Examiner

Compartment: 270

Year of Entry: 2026

Availability for Management

Total Acres	Acres Available	*Acres Avail With Condition*	Acres Not Available		Dominant Site Conditions *5C*	1A	3A	3J	5D	5E
42	42	***0***	0	**Aspen**						
309	303	***0***	7	**Herbaceous Openland**						7
663	613	***5***	45	**Jack Pine**	***5***			3	0	42
12	12	***0***	0	**Low-Density Trees**						
22	22	***0***	0	**Lowland Aspen/Balsam Poplar**						0
47	29	***0***	18	**Lowland Mixed Forest**	***0***	5		13		
14	14	***0***	0	**Lowland Shrub**						
7	0	***0***	7	**Natural Mixed Pines**			7			
615	615	***0***	0	**Upland Shrub**						
7	2	***1***	4	**Urban**	***1***	0		1	0	3
1	0	***0***	1	**Water**		1				
1,739	1,651	***6***	82	Total Forested Acres	***6***	6	7	17	0	51
	95%	***0%***	5%	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**	**3A: Conservation Values incompatible with harvest at this time**	7	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
2	**Unavailable**	**5E: Long-Term Retention**	14	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
3	**Unavailable**	**3J: Water quality / BMPs (stream, river, or lake)**	17	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: Buffer for high quality trout stream.						

4	**Unavailable**	**1A: Federal/State/Local Law**	6	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified

Comments:
Natural Rivers Vegetative Buffer Strip.

5	**Available**	**5C: Delay treatment for age/size class diversity or exceptional site quality**	6	Unspecified	Unspecified	Unspecified	Unspecified

Comments:
Hold stand, much of the area has been clear cut in prior years. One third of stand is already limited due to RMZ for blue ribbon trout stream.

6	**Unavailable**	**5D: Unproductive Forest Land**	1	Unspecified	Unspecified	Unspecified	Unspecified

Comments:
Small sliver of forested land not commercially viable or large enough to support logging operation.

7	**Unavailable**	**5E: Long-Term Retention**	7	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

8	**Unavailable**	**5E: Long-Term Retention**	17	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

9	**Unavailable**	**5E: Long-Term Retention**	6	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

12	**Unavailable**	**5E: Long-Term Retention**	0	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

15	**Unavailable**	**5E: Long-Term Retention**	3	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
16	**Unavailable**	**5E: Long-Term Retention**	1	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
17	**Unavailable**	**5E: Long-Term Retention**	2	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 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.
SCA	Research and Military Areas	These areas provide facilities and lands specifically dedicated for research, or other purposes. They include the 5,847 acre Forest Fire Experiment Station, the 12,000 acre Houghton Lake Wildlife Research Area, the Beaver Islands Archipelago Wildlife Research Area (that includes most of Garden Island, all of High and Hog Islands, all state owned land on Beaver, South Fox and North Fox Islands), the Cusino Wildlife Research Area, the 3,000 acre Hunt Creek Fisheries Research Station, the 125 acre Wyman Nursery, and over 144,000 acres of Military Lands.
SCA	Riparian Area	A transitional area between aquatic and terrestrial ecosystems in which the terrestrial ecosystem influences the aquatic ecosystem and vice-versa. Because of the unique conditions adjacent to lakes, streams and open water wetlands, riparian areas harbor a high diversity of plants and wildlife. Riparian communities are ecologically and socially significant in their effects on water quality and quantity, as well as aesthetics, habitat, bank stability, timber production, and their contribution to overall biodiversity.
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.
HCVA	Natural Rivers	There are two Natural Rivers datasets which are derived from spatial buffers set from an established and approved distance from the river centerlines. The Natural Rivers Zoning District is a 400 foot buffer for most Natural Rivers. The Vegetative Buffer ranges from 25 to 100 feet.
ERA	Ecological Reference Areas	Ecological Reference Areas (ERAs) are high quality examples of natural communities that have been identified as Element Occurrences (EOs) by the Michigan Natural Features Inventory (MNFI) within the context of their natural community classification system. Element Occurrences with viability ranks of A (Excellent) or B (Good) and a Global (G) or State (S) element (rarity) ranking of endangered (1), threatened (2), or rare (3) serve as an initial base of ERAs. They may be located upon any ownership in the State. The system is comprised of individual or associations of natural community types that are managed for restoration and maintenance of natural ecological processes and values. The public may submit recommendations for lands as ERAs using the DNR Conservation Area Recommendation Form.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
1	320 - Upland Shrub	Nonstocked	46.3	0	Unspecified	4211 - Planted Red Pine	Stand was harvested in 2017 (52-003-16-01). Was trenched in 2018 (C72-839) concurrent with adjacent Gaylord planting site C52-456. Pockets of advanced oak regen were excluded from the follow-up treatment. Site prep sprayed by FRD skidder August 2020. Planted 950 TPA PRT RP April 2021. FRS Oct 2021 Yr 1 survey: 815 TPA, 82% FTG, 7.5% mortality. Cherry is the primary competitor, oak secondary. Sept 2021 PUER found overall success, with some linear skips and the large BC unphased. Oct 2023 Yr 3 survey: 779 TPA, 76% FTG, 15% mortality, BC primary competitor, oak secondary, elk browse & seedling mortality. PCT scheduled.
2	320 - Upland Shrub	Nonstocked	5.5	0		No	Harvest completed August 2019. Lovells KW Sale contract# 26225(1).Jack pine stand of poor to fair quality, 1-3 stick trees. Stand is part of Lovells KW Plan Block 48. Stand is PVCd.
3	6112 - Lowland Aspen	Sapling Well	21.8	13	Immature	N/A	Narrow stand of aspen, lowland drainage between two stands. Mature red pine found in stand. Was cut in Dec 2010 under 72-030-06-01. Kotar listed as unclassified lowland.
6	42290 - Natural Mixed Pine	Sawtimber Well	7.2	69	51-80	N/A	Stand is super canopy red pine with jack, aspen and red pine in the pole size category as well. Stand is part of Block 49 of the Lovells KW Plan. Stand is PVCd. We met with nearby landowner re: timber harvesting and landowner pointed out this stand has some historical significance. It is the location where Morten Kneff often filmed his hunting shows and his old tree stand still remains. Locals call it the "Forty Pines" as there were at one time 40 large old growth red pine in the stand. The residents asked this stand not be cut. In visiting the stand, the red pine appear to qualify as legacy trees. It is part of a KW unit scheduled to be harvested in 2016. I am coding a site condition on it to call attention to the legacy red pine in the stand. It is recommended they be protected as retention when the adjacent KW stand is harvested. SJ ThielAs it's own stand, heavy to jack pine in the east and heavy to red pine in the west. With a mix of white pine and a few scattered oak. Understory has a more even mix of overstory species. The aspen that was in the stand has been outcompeted by red pine and jack pine.
12	42120 - Planted Jack Pine	Sawtimber Well	6.8	83		N/A	Harvest completed August 2019. Lovells KW Sale contract# 26225(1). Jack pine stand of poor to fair quality, 1-3 stick trees. Stand is part of Lovells KW Plan Block 48. Stand is PVCd.
13	42120 - Planted Jack Pine	Poletimber Well	6.4	66	Unspecified	N/A	Retention island greater than 5 acres split from parent stand following harvest of Collin of Ktulu #72-006-20. Old comments - Stand is part of Lovell KW Plan Block 49. Jack pine is pole to log size with poor to fair quality. There really is not much for a sub canopy and snow depth prevented any ground cover documentation. Stand is PVCd/PArVHa.

Sub-Canopy Species (Stand 1)

Sub-Canopy Species	Density	Avg. Height	Size
Red Pine	Trace	< 5 feet	Seeding
Black Cherry	Low	< 5 feet	Tall Shrub
Northern Pin Oak	Low	< 5 feet	Sapling

Canopy Species (Stand 3)

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	5	Log	14	
Quaking Aspen	90	Sapling	1	13
Northern Pin Oak	5	Sapling	1	

Canopy Species (Stand 6)

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	41	Pole	7	69
Quaking Aspen	1	Pole	7	
Red Pine	13	XLog	20	112
Red Pine	40	Log/Pole	10	
White Pine	2	Pole/Sapling	5	
Northern Pin Oak	3	Log	16	

Sub-Canopy Species (Stand 6)

Sub-Canopy Species	Density	Avg. Height	Size
Black Cherry	Low	Variable	Sapling
White Pine	Low	Variable	Sapling
Oak (spp.)	Low	Variable	Sapling
Jack Pine	Low	Variable	Sapling
Red Pine	Low	Variable	Sapling
Sweet Fern	Medium	< 5 feet	Tall Shrub

Canopy Species (Stand 12)

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	98	Log/Pole	10	83
Quaking Aspen	2	Pole	7	

Canopy Species (Stand 13)

Canopy Species	% Cover	Size Class	DBH	Age
Northern Pin Oak	2	Pole	7	
Jack Pine	98	Pole/Log/Sap	8	66

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
16	6229 - Mixed lowland shrub	Nonstocked	4.9			No	Low land depression with associated lowland shrubs. Aspen is found around the perimeter.

Sub-Canopy Species	Density	Avg. Height	Size
Dogwood (spp.)	Medium	Variable	Tall Shrub
Quaking Aspen	Low	Variable	Pole

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
18	310 - Herbaceous Openland	Nonstocked	305.1	0	Unspecified	4212 - Planted Jack Pine	Multiple stands merged into 1 following harvest summer 2023, Collin of Ktulu #72-006-20. Natural regeneration for KW jack pine monitoring to be completed 2 full growing seasons after harvest (FY 25, to be completed October 2025). MNFI rare species survey also needs to be completed concurrent with jack pine regen survey to determine barrens natural community boundary prior to planting. Old comments- Mature stand of JP of marginal quality. Stand does have some open areas, but none are large enough for separate stands. Stand is within Block 49 of the Lovells KW Plan. Stand is PVCd. Immature Jack Pine Plantation. Stand is actually strips of Jack Pine 1chain (7-10 rows) with strips of Grass 1 chain wide between the Jack Pine. Experiment for Kirtlands Warbler. Stand is part of the Lovells Kirtland Warbler Management Unit, Cutting Block 49. (2027). The grassy strips are part of stand 31 no forested with low density trees. Diameters ranging from 4-10 inches and an average height of 1 to 2 8 foot sticks. Stand is PVCd.
19	3302 - Low Density Conifer Trees	Nonstocked	12.0	0		No	JP-RP stand was final harvested by 2019 (#002-16), cutting stems 2"+ DBH except RP greater than 18" DBH. Fall 2020 walk-through regen check found volunteer JP seedlings beginning to fill in, along with NPO, WO, BTA & BC regen, and xlog residual RP scattered above. The stand is developing pine barrens natural community characteristics that are on the spectrum of suitable habitat for the Kirtland's warbler. Lovells KW Management Unit, Block 48. Variance approved March 7, 2022 to not trench/plant JP, and to accept pine barrens conditions. The cover meets that criteria.

Sub-Canopy Species	Density	Avg. Height	Size
Bigtooth Aspen	Trace	< 5 feet	Sapling
White Oak	Trace	< 5 feet	Seeding
Red Pine	Low	>20 feet	Log
Northern Pin Oak	Medium	< 5 feet	Sapling
Jack Pine	Trace	< 5 feet	Seeding
Black Cherry	Low	< 5 feet	Tall Shrub

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
21	320 - Upland Shrub	Nonstocked	0.9	0	Unspecified		Well site
23	42120 - Planted Jack Pine	Poletimber Well	17.2	52	51-80	N/A	Harvest completed August 2019. Lovells KW Sale contract# 26225(1). Jack pine stand of poor to fair quality, 1-3 stick trees. Stand is part of Lovells KW Plan Block 48. Stand is PVCd.

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	100	Pole/Sapling	5	52

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
25	320 - Upland Shrub	Nonstocked	561.9	0	Unspecified	4212 - Planted Jack Pine	Harvested by 2019 (#002-16). Lovells KW Block 48. Contract trenched 2020 (W72-881). Planted 987 TPA PRT JP in April 2021. SW corner of harvested area was excluded from FTP due to expansion of ERA there. Oct 2021 Yr 1 survey: 1139 TPABC-NPO main competitors. Oct 2023 Yr 3 survey: 854 TPA planted JP, 1761 BC-O-JP volunteers. FTP is complete.

Sub-Canopy Species	Density	Avg. Height	Size
Black Cherry	Medium	< 5 feet	Tall Shrub
Northern Pin Oak	Medium	< 5 feet	Sapling
Jack Pine	Trace	< 5 feet	Seeding

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
27	6229 - Mixed lowland shrub	Nonstocked	9.3			No	Aspen clones/clumps are found along the perimeter and within the depression. Mixed lowland shrubs are found through depression.

Sub-Canopy Species	Density	Avg. Height	Size
Deciduous Saplings	High	Variable	Tall Shrub
Quaking Aspen	Low	Variable	Pole

28	42121 - Planted Jack Pine, Mixed Deciduous	Sapling Medium	330.6	11	Immature	N/A	Was final harvested in 2011 (#021-10), cutting stems 2"+ DBH except RP greater than 18" DBH and island retention. Was trenched to the opposing wave pattern for KW habitat in 2012 (W72-705) and planted to JP in 2013. Passed Yr 3 regen survey with JP and a significant stump-origin NPO component (899 JP & 843 NPO per acre). FTP is completed.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	1	XLog	20	
Jack Pine	60	Sapling	1	11

29	4130 - Aspen	Poletimber Well	42.2	35	1-50	N/A	Young dense stand of aspen with a good mixture of oak and maple. There are red pine scattered throughout as well. Stand was final harvested in 1988. Stand is PArVHa/PArVVb.

Canopy Species	% Cover	Size Class	DBH	Age
Red Pine	5	Sapling	4	
Jack Pine	2	Sapling	4	
Red Maple	5	Sapling	4	
Quaking Aspen	73	Pole/Sapling	5	35
Black Cherry	5	Sapling	4	
Northern Pin Oak	10	Sapling	4	

Sub-Canopy Species	Density	Avg. Height	Size
Jack Pine	Low	Variable	Sapling
Oak (spp.)	Low	Variable	Sapling
Red Maple	Low	Variable	Sapling
Cherry (spp.)	Low	Variable	Sapling

30	3105 - Mixed Upland Herbaceous	Nonstocked	1.0		Immature		Gas well site.

32	42120 - Planted Jack Pine	Sapling Well	282.0	19	1-50	N/A	Young jack pine plantation with two retention vortices and one gas well site. Dense stand of planted jp with a good componenent of oak regeneration. Appears to be some natural jack pine as well due to DBH size differences. Cut in 1998 KW Vortex block 72-012-96-01, SEEDED TO JACK PINE IN JUNE 2002, PROPOSAL NO. W72-413 Close off roads by planting. Under the same FTP, the area was planted to JP in 2004 after the seeding failed. Majority of stand is PArVHa/PArVVb, eastern third is PVCd.

Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	1	Sapling	2	
Jack Pine	83	Sapling	2	19
Northern Pin Oak	10	Sapling	2	25
Quaking Aspen	1	Sapling	2	
Red Pine	5	Sapling	2	

33	42120 - Planted Jack Pine	Sawtimber Well	11.1	83	51-80	N/A	This stand was left as retention for the timber harvest 72-021-10-01 and has been factor limited for that reason. Stand is sandwiched in between county rd 612 and snowmobile trail.

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	70	Log/Pole	10	83
Black/Red (Hybrid) Oak	10	Log/Pole	10	
Red Pine	20	Log/Pole	10	

Sub-Canopy Species	Density	Avg. Height	Size
Oak (spp.)	Low	Variable	Sapling

34	3102 - Grass	Nonstocked	1.1				Gas Well Site

35	3102 - Grass	Nonstocked	1.1				Gas Well Site

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
36	3102 - Grass	Nonstocked	1.1				Gas Well Site
37	6139 - Mixed Lowland Forest	Sawtimber Well	47.0	56	51-80	N/A	Stand has West Branch Big Creek, Snowmobile trail and portions of the former Big Creek State Forest Campground. Stand is composed of a variety of species dominated by aspen. Stand has super canopy red and white pine and prior OI listed stand as potential old growth. Didn't think the portion of large red pine was unique enough to make own stand. Roughly one third of this stand is factor limited due to the riparian management zone needed for Big Creek.
38	500 - Water	Nonstocked	0.9				West Branch Big Creek.
39	42220 - Natural Jack Pine	Poletimber Well	8.7	80	51-80	N/A	Stand is a mixture of jack and red pine with some oak and aspen mixed in. Stand is just entering the log size for dbh and mets the criteria for overall log size. There is an open area that was part of Big Creek State Forest Campground that appears is still being utilized for a fishing and deer camp sight. Signage trespass and potential gate and fence trespass. Snowmobile trail also runs thru this stand.Roughly one third of this stand is factor limited because of the RMZ for Big Creek.
41	122 - Road/Parking Lot	Nonstocked	7.1	0			Clear road and pipeline corridor.

Stand 37 – Canopy Species

Canopy Species	% Cover	Size Class	DBH	Age
Northern White Cedar	8	Pole/Log	9	
White Spruce	2	Pole	6	
Black/Red (Hybrid) Oak	5	Log/Pole	10	
Jack Pine	10	Pole/Log	8	
Red Pine	20	Log/XLog/Pole	14	121
Quaking Aspen	50	Pole	7	56
White Pine	5	XLog/Log	18	

Stand 37 – Sub-Canopy Species

Sub-Canopy Species	Density	Avg. Height	Size
Red Pine	Medium	Variable	Sapling
Cherry (spp.)	Medium	Variable	Sapling
Serviceberry (Juneberry)	Medium	Variable	Sapling
White Pine	Medium	Variable	Sapling
Red Maple	Low	Variable	Sapling
Oak (spp.)	Medium	Variable	Sapling
Hawthorn (spp.)	Medium	Variable	Tall Shrub
Aspen (spp.)	Medium	Variable	Sapling
Jack Pine	Medium	Variable	Sapling

Stand 39 – Canopy Species

Canopy Species	% Cover	Size Class	DBH	Age
Jack Pine	70	Pole/Log	9	80
Quaking Aspen	5	Pole/Log	9	
Red Pine	20	Log/Pole	10	
Northern Pin Oak	5	Log/Pole	10	

Stand 39 – Sub-Canopy Species

Sub-Canopy Species	Density	Avg. Height	Size
Oak (spp.)	Low	5 - 10 feet	Sapling
Jack Pine	Low	< 5 feet	Sapling
White Pine	Low	Variable	Sapling
Cherry (spp.)	Low	< 5 feet	Sapling
Red Pine	Low	5 - 10 feet	Sapling