



# Compartment Review Presentation

## Grayling Forest Management Unit

Compartment 72292

Entry Year 2021

Acreage: 1,211

County Crawford

Management Area: AuSable Outwash

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**Revision Date:** 2019-07-09

**Stand Examiner:** Kevin Ehlert

### Legal Description:

T28N, R01W, Sections 1 and 12, Lovell's Township

### 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.

### Soil and topography:

Topography is flat. The primary soil type is Grayling sand, this soil is somewhat excessively to excessively drained. This soil type poses low erosion concerns. The low areas and drainages have Rifle and Lupton organic soils along with some poorly drained Au Gres sand. These soils may require seasonal constraints limiting equipment operations.

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

This compartment is found within a large block of public ownership with minimal private parcels scattered around and within.

### 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, bald eagle, wood turtle, Massasauga rattle snake, 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:

This compartment is adjacent to a Kirtland's Warbler Management Area. The Middle Branch of Big Creek, a designated "Natural River" is found in this compartment. These designated areas are High Conservation Value Areas (HCVA).

### Watershed and Fisheries Considerations:

This compartment is in the Au Sable River watershed, and contains a portion of Middle Branch Big Creek as well as an unnamed tributary to that stream. The prescribed management activities are appropriate for the protection of these waterbodies.

### Wildlife Habitat Considerations:

WLD would like to create horizontal cover for snowshoe hares within stand 14 by hinge cutting and dropping conifer species, primarily black spruce and balsam fir. We will focus primarily along the edges and around canopy gaps within the stand. Two maintained wildlife openings are located in section 1.

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

The nearest active sand/gravel pits are located approximately six miles away, but there is good sand & gravel potential within the compartment. The compartment is located at the southern edge of the Antrim Shale gas play. Nearly all state mineral rights in the compartment are currently under lease and held by production in Antrim unitized areas. No other known oil & gas potential exists in this area. There is no known metallic mineral potential in this part of the state.

### Vehicle Access:

Access through out the compartment is limited by large tract of wetland. The compartment is bounded by County Road 612 on the north and by Pickerel Lake Road (a county road) on the east. The southeast portion of the compartment must be accessed by snowmobile trail or trail roads leading to gas well sites.

### Survey Needs:

None at this time.

### Recreational Facilities and Opportunities:

Part of the Roll Snowmobile trail #4 is located in section 12 as well as part of the Shore to Shore Riding and Hiking Trail. .  
Dispersed recreation occurs throughout the area.

**Fire Protection:**

The current road system is adequate where the fuel types are prone to wildfire. Equipment limitations are expected in the wetland areas.

**Additional Compartment Information:**

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

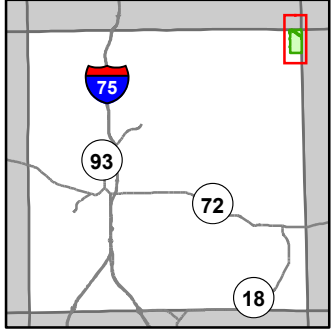
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

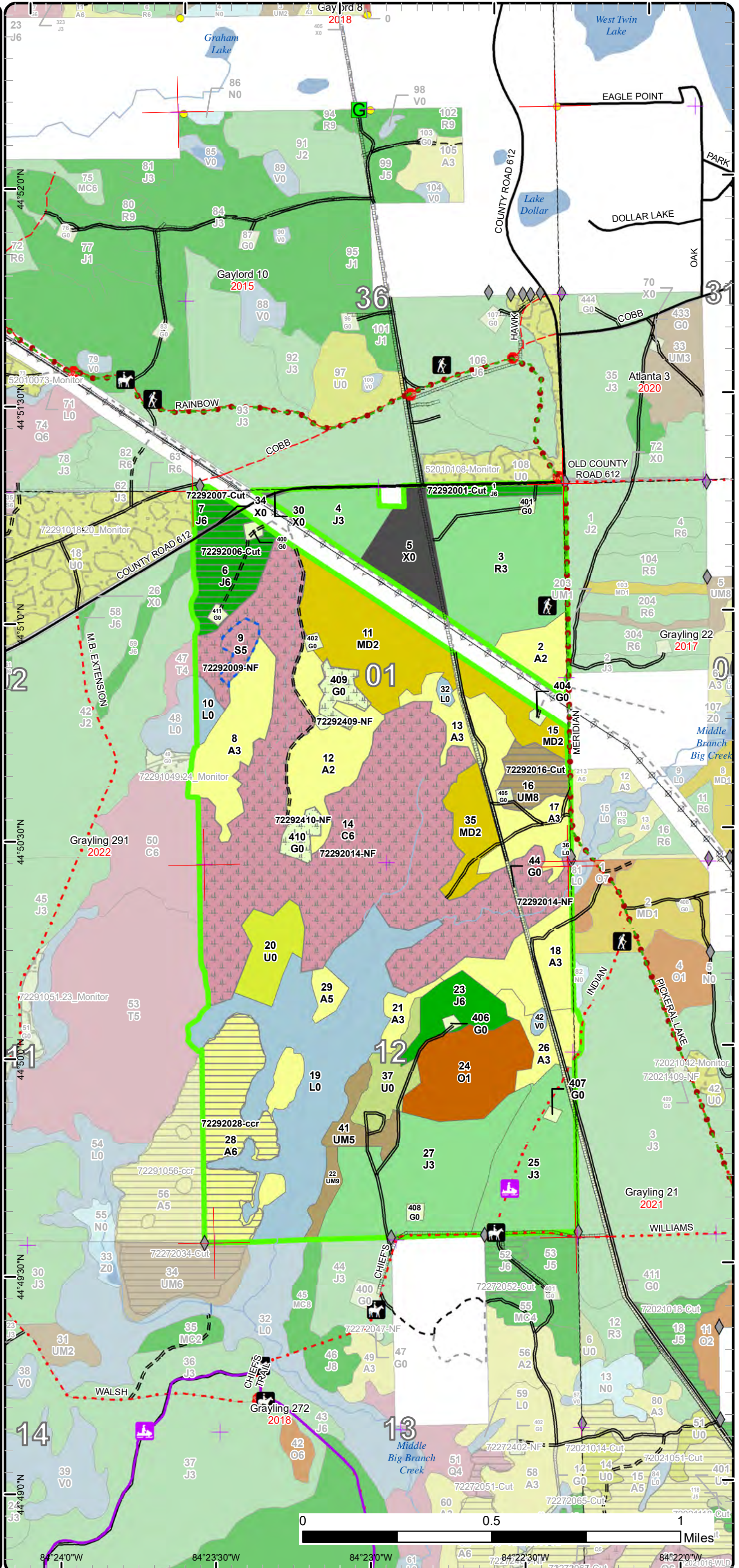
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

# Cover Type & Treatments Map

Compartment: 292  
 T28N, R01W, Sec. 1, 12  
 County: Crawford  
 Unit: Grayling  
 Mgmt Area: AuSable Outwash  
 YOE: 2021  
 Acres: 1,211 GIS Calculated  
 Examiner: Kevin Ehlert  
 Map Revised: 11/27/2019  
 Map Phase: Post-Review

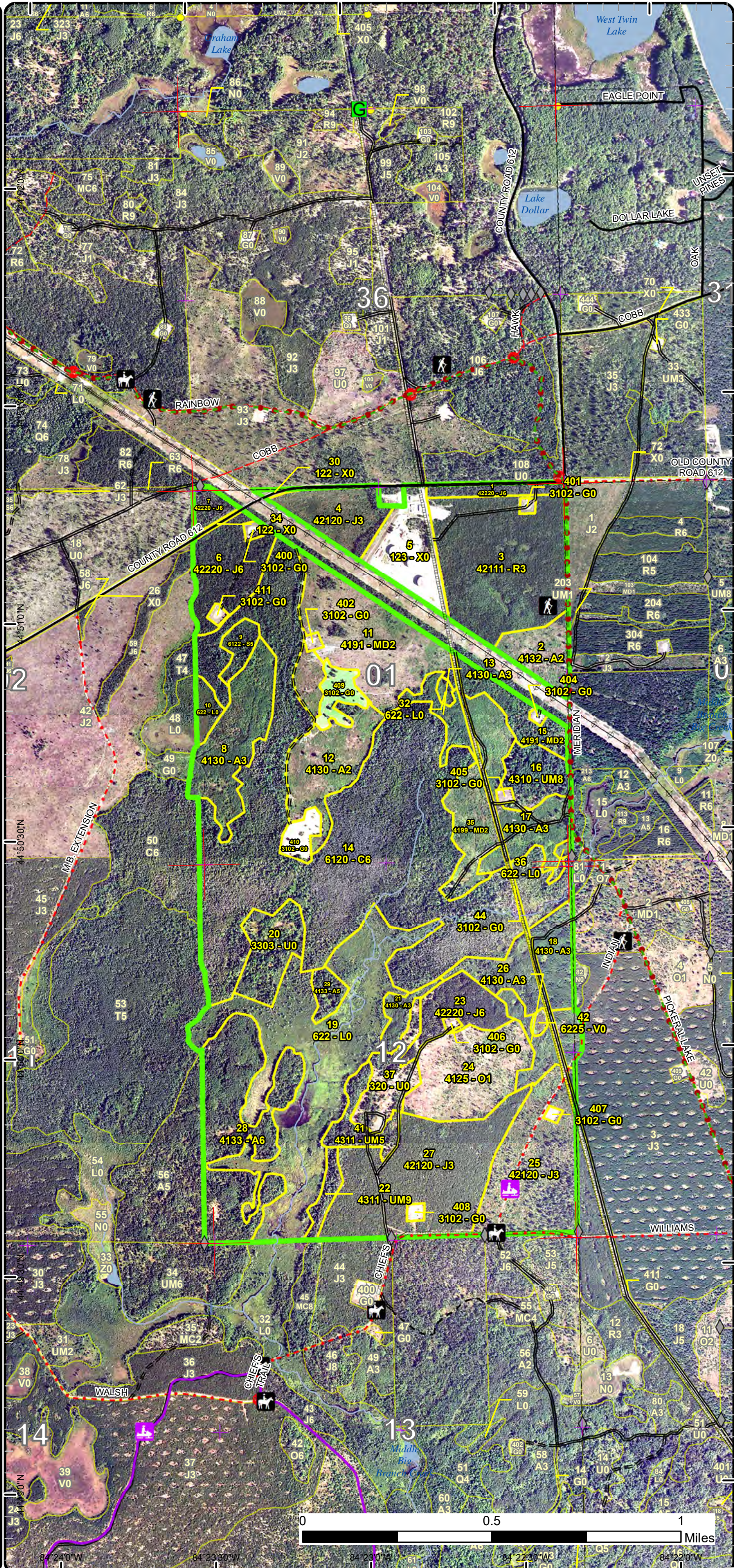
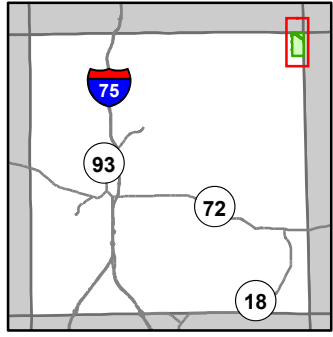


- Miris Corners
- Remonumented Section Corners
- Survey Grade Corners
- ◆ Field Grade Corners
- Counties
- DNR - Secondary Forest Road
- == DNR - Forest Access Route
- Federal / State / County - Paved Road
- - Federal / State - Dirt / Gravel Road
- - - County - Gravel Road
- - - County - Dirt Road (Seasonal)
- - - Private - Dirt / Gravel Road
- 🚶 Hiking Trails
- 🐎 Horse Trails
- 🚙 Snowmobile Trails
- Designated Hiking Trails
- Designated Equestrian Trails
- Designated Snowmobile Trails
- Intermittent Stream
- Lake/Pond
- Perennial River
- Lakes and Rivers
- 🚪 Gate
- 🚧 Culvert
- 🛑 Sign
- Pipeline
- ⚡ Powerline
- Compartment Boundary
- Treatments with Site Conditions
- Other Treatment - See Comments
- Clearcut (w/Reserves)
- 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
- 123 - Other High Intensity Urban
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low Density Trees
- 622 - Lowland Shrub



# Stand Boundary Map

Compartment: 292  
 T28N, R01W, Sec. 1, 12  
 County: Crawford  
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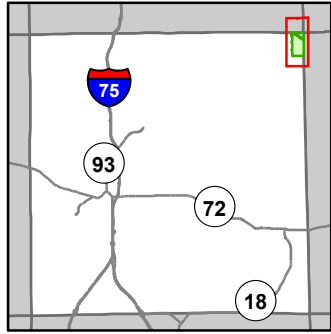
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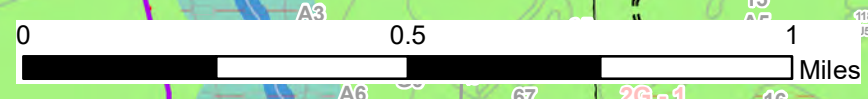
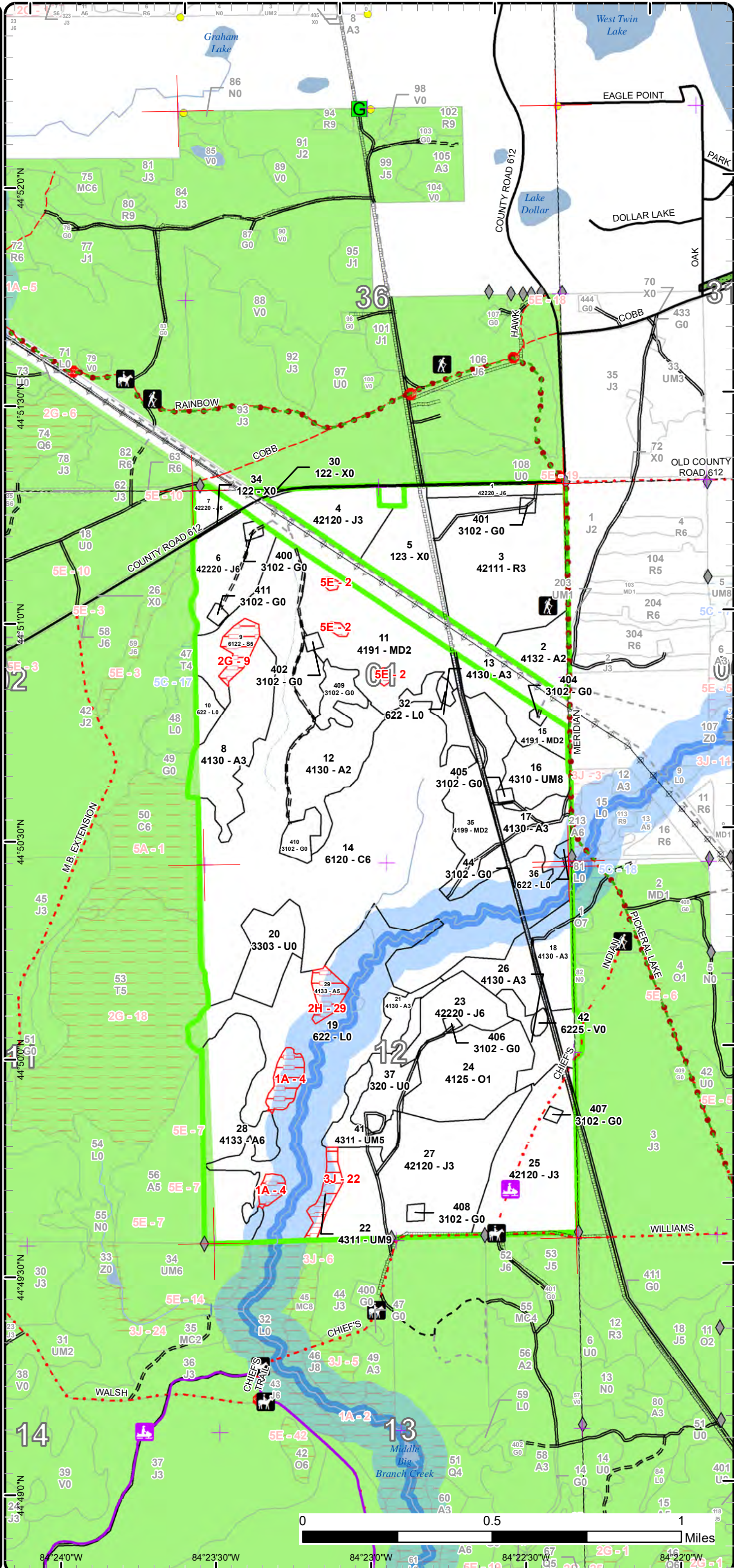
84°24'0"W 84°23'30"W 84°23'0"W 84°22'30"W 84°22'0"W

# Special Conservation Areas

Compartment: 292  
 T28N, R01W, Sec. 1, 12  
 County: Crawford  
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- Designated Equestrian Trails
- Designated Snowmobile Trails
- Intermittent Stream
- Lake/Pond
- Perennial River
- Lakes and Rivers
- G Gate
- Culvert
- Sign
- Pipeline
- Powerline
- Compartment Boundary
- Unavailable
- 1A: Federal/State/Local Law
- 2G: Too wet (sensitive soils, does not include access issues)
- 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
- 3J: Water quality / BMPs (stream, river, or lake)
- 5E: Long-Term Retention
- Stand Boundaries
- SCA
- Natural Rivers Vegetative Buffer
- Natural Rivers Zoning District
- Kirtland Warbler Habitat
- Cold Water Streams
- Cold Water Lakes
- Rail-Trail Corridor



84°24'0"W 84°23'30"W 84°23'0"W 84°22'30"W 84°22'0"W

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	85	66	30	0	61	0	6	0	0	0	0	0	0	0	0	0	0	248
Bog	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Cedar	0	0	0	0	0	0	0	0	0	0	0	0	280	0	0	0	0	0	280
Herbaceous Openland	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33
Jack Pine	0	0	76	76	0	19	27	0	8	6	0	0	0	0	0	0	0	0	211
Low-Density Trees	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
Lowland Shrub	125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	125
Lowland Spruce/Fir	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	6
Mixed Upland Deciduous	0	73	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89
Oak	0	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
Red Pine	0	0	0	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	76
Upland Mixed Forest	0	0	0	0	0	0	12	0	6	0	16	0	0	0	0	0	0	0	34
Upland Shrub	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Urban	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28
<b>Total</b>	<b>226</b>	<b>199</b>	<b>142</b>	<b>198</b>	<b>0</b>	<b>80</b>	<b>39</b>	<b>12</b>	<b>14</b>	<b>6</b>	<b>16</b>	<b>0</b>	<b>280</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1210</b>



## Report 2 – Treatment Summary

Grayling Mgt. Unit

Year of Entry: 2021

Acres of Harvest

Compartment 292

Total Compartment Acres: 1,211

Commercial Harvest - 106  
 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
Aspen	49	0	0	0	0	0	0	0	0	49
Jack Pine	41	0	0	0	0	0	0	0	0	41
Upland Mixed Forest	16	0	0	0	0	0	0	0	0	16
<b>Total</b>	<b>106</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>106</b>

### Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	106	0	0	0	0	0	0	0	301	407
Next Step	0	54	27	0	0	54	133	27	0	296
<b>Total</b>	<b>106</b>	<b>54</b>	<b>27</b>	<b>0</b>	<b>0</b>	<b>54</b>	<b>133</b>	<b>27</b>	<b>301</b>	<b>704</b>



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

<b>1</b>	<b>72292001-Cut</b>	8.0	42220 - Natural Jack Pine	Poletimber Well	71	81-110	Harvest	Clearcut	4122 - Oak, Pine	Even-Aged	No
<p><u>Prescription</u> Final harvest all species 4" DBH and up. Leave no retention due to small stand size. Recreation trail at East end of stand located along Meridian Road. Protect advanced regeneration. Shortwood operation, leave tops scattered evenly throughout sale.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable</u> Release the advanced oak regeneration and allow natural regeneration of mixed pines within the stand.</p> <p><u>Regen:</u></p> <p><u>Other</u></p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>											
<b>6</b>	<b>72292006-Cut</b>	27.2	42220 - Natural Jack Pine	Poletimber Well	51	51-80	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	No
<p><u>Prescription</u> Final harvest all species 2" and up. Use area based retention along East edge on lowland transition. Low stump spec to facilitate planting.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> SitePrep, Roller Chopping; SitePrep, Trenching; Pesticide, Skidder - Site Prep; Planting, Initial Plant; Monitoring, Artificial Regen(1yr);</p> <p><u>Treatments:</u> Monitoring, Artificial Regen(3yr); Pesticide, Skidder - Release; Other, Pre-Commercial Thinning - Han</p> <p><u>Acceptable</u> A fully stocked red pine plantation.</p> <p><u>Regen:</u></p> <p><u>Other</u> Two well sites within stand.</p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>											
<b>7</b>	<b>72292007-Cut</b>	5.9	42220 - Natural Jack Pine	Poletimber Well	81	81-110	Harvest	Clearcut	4122 - Oak, Pine	Even-Aged	No
<p><u>Prescription</u> Final harvest all species 4" DBH and up. Leave no retention due to small stand size. Recreation trail at East end of stand located along Meridian Road. Protect advanced regeneration. Shortwood operation, leave tops scattered evenly throughout sale.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable</u> Release the advanced oak regeneration and allow natural regeneration of mixed pines within the stand.</p> <p><u>Regen:</u></p> <p><u>Other</u></p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>											





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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
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9	72292009-NF	6.4	6122 - Black Spruce	Poletimber Medium	62	1-50	NonForestMgt	Other - Specify	6122 - Black Spruce	Even-Aged	No
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Prescription WLD would like to create horizontal cover for snowshoe hares within these stands by hinge cutting and dropping conifer species, primarily black spruce and balsam fir. We will focus primarily along the edges and around canopy gaps within these stands. No more than 5 trees/acre are to be felled within 150 feet of the Middle Br of Big Creek (Natural River) and no trees to be cut within 50 feet of it.

Next Step  
Treatments:

Acceptable  
Regen:

Other This work will be done during the winter.

Comment: Variance approved January 2016. Initial hinge cutting done winter 2016 (W72-797)

Site Condition Too Wet

Proposed Start Date: 10/1 /2020

14	72292014-NF	280.2	6120 - Lowland Cedar	Poletimber Well	111	51-80	NonForestMgt	Other - Specify	6120 - Lowland Cedar	Even-Aged	No
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Prescription WLD would like to create horizontal cover for snowshoe hares within these stands by hinge cutting and dropping conifer species, primarily black spruce and balsam fir. We will focus primarily along the edges and around canopy gaps within these stands. No more than 5 trees/acre are to be felled within 150 feet of the Middle Br of Big Creek (Natural River) and no trees to be cut within 50 feet of it.

Next Step  
Treatments:

Acceptable  
Regen:

Other This work will be done during the winter.

Comment: Variance approved January 2016. Initial hinge cutting done winter 2016 (W72-797)

Site Condition

Proposed Start Date: 10/1 /2020

16	72292016-Cut	15.5	4310 - Pine, Oak Mix	Sawtimber Medium	97	51-80	Harvest	Clearcut with Retention	4319 - Mixed Upland Forest	Even-Aged	No
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Prescription Final harvest all species. Follow standard retention guidelines using area based retention.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Mixed upland stand containing mixed pine, oak, aspen and red maple meeting minimum required stocking level.

Regen:

Other

Comment:

Site Condition

Proposed Start Date: 10/1 /2020



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
<b>28 72292028-ccr</b>	49.3	4133 - Aspen, Mixed Pine	Poletimber Well	49	51-80	Harvest	Clearcut with Retention	4133 - Aspen, Mixed Pine	Even-Aged	No
<p><u>Prescription</u> Final harvest with standard retention. Exclude as retention the 150-foot wide Natural Rivers restricted cutting zone along the Middle Branch of Big Creek, and the peninsulas that are isolated by lowland swales (treatment boundary has been edited to approximate the intended exclusions). Create horizontal cover for grouse (ie: spec 5.2.4.4). Apply snowmobile trail protection specs.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u> Moderate stocking in aspen, pine and oak.</p> <p><u>Other Comment:</u> Set up concurrent with comp 291 stand 56 and comp 272 stand 34. A portable bridge will be needed to access this covertype. This treatment was approved by variance on February 5, 2018.</p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 2 /5 /2018</p>										
<b>409 72292409-NF</b>	8.5	3102 - Grass	Nonstocked			NonForestMgt	Other - Specify	3102 - Grass		No
<p><u>Prescription</u> Periodic opening maintenance, as needed, that may include disking, fertilizing, food plot seeding, no-till prairie grass drill seeding, mowing, brushing, tree and shrub planting, Rx burning and herbicide application.</p> <p><u>Specs:</u></p> <p>2011 YOE FTP opening maintenance C72-672</p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u></p> <p><u>Other Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										
<b>410 72292410-NF</b>	6.2	3102 - Grass	Nonstocked			NonForestMgt	Other - Specify	3102 - Grass		No
<p><u>Prescription</u> Periodic opening maintenance, as needed, that may include disking, fertilizing, food plot seeding, no-till prairie grass drill seeding, mowing, brushing, tree and shrub planting, Rx burning and herbicide application.</p> <p><u>Specs:</u></p> <p>2011 YOE FTP opening maintenance C72-672</p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u></p> <p><u>Other Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										

**Total Treatment** 407.2  
**Acres Proposed:**

## Report 4 – Site Conditions

Grayling Mgt. Unit  
Kevin Ehlert : Examiner

Compartment: 292  
Year of Entry: 2021

### Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	Dominant Site Conditions					
		With Condition	Not Available		1A	2G	2H	3J	5A	5E
247	232	0	15	Aspen	10	0	6		0	0
1	1	0	0	Bog						
280	280	0	0	Cedar						
34	34	0	0	Herbaceous Openland						
212	212	0	0	Jack Pine						
20	20	0	0	Low-Density Trees						
125	125	0	0	Lowland Shrub	0		0	0		
6	0	0	6	Lowland Spruce/Fir		6				
89	86	0	3	Mixed Upland Deciduous						3
41	41	0	0	Oak						
76	76	0	0	Red Pine						
34	28	0	6	Upland Mixed Forest	0			6		
17	17	0	0	Upland Shrub						
28	28	0	0	Urban						
1,211	1,180		30	Total Forested Acres	10	6	6	6	0	3
	97%		2%	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
2	Unavailable	5E: Long-Term Retention	3	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Three retention islands for sale #72-027-11-01.							
4	Unavailable	1A: Federal/State/Local Law	10	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Islands of the aspen stand cut off by low swales and partially within the 150' Natural Rivers restricted cutting zone along the Middle Branch of Big Creek. Also serves as stand retention.							

## Report 4 – Site Conditions

Grayling Mgt. Unit  
Kevin Ehlert : Examiner

Compartment: 292  
Year of Entry: 2021

9	<b>Unavailable</b>	2G: Too wet (sensitive soils, does not include access issues)	6	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
22	<b>Unavailable</b>	3J: Water quality / BMPs (stream, river, or lake)	6	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
29	<b>Unavailable</b>	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	6	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Small stand size and long distance across wetland makes harvest unfeasible.							

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.
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. To view specific Zoning Districts and Vegetative Buffers for each Natural River see the table located on the I:\Documentation\GDSE data folder.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																															
1	42220 - Natural Jack Pine	Poletimber Well	8.0	71	81-110	N/A	Jack pine poles and logs. Some red pine and oak. Advanced regen oak in sub canopy.																															
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2	4132 - Aspen, Jack Pine	Sapling Medium	15.4	5	Immature	N/A	Stand was harvested under 72-017-11-01 Pickeral Lake Mix. Regen is a mix of oak, aspen, and jack pine. Scattered super canopy red pine, jack pine, white pine, oak, and aspen.  OPIC - FMD: A few open areas. Some of the bigger stems of oak actually look fairly healthy. 99 = mixed aspen and oak. Final harvest w/ reserves. Leave 3 - 5 BA representing all species present within stand. Management objective is a moderately to fully stocked stand with jack pine, pockets of aspen regen, and an oak component. If stocking is not found to be adequate after regen survey - plant to jack pine around natural regeneration.																															
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3	42111 - Planted Red Pine, Mixed Deciduous	Sapling Well	75.9	24	Immature	N/A	Red pine plantation. Some areas in transition to pole class but most is still sapling size. Jack pine, aspen, cherry, and oak also present. Pockets of aspen over top the red pine in some areas. A couple small areas of lowland.																															
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4	42120 - Planted Jack Pine	Sapling Well	22.8	13	Immature	N/A	Jack pine plantation. Oak stump sprouts scattered throughout. Cherry and red maple also present. An uncut strip left along eastern edge. Previous stand cut in Nov/Dec 2004 under sale 720420301 Hired Guns Aspen Jack Mix. Stand was planted to jack pine in may of 2006 under FTP C72-518. A small low pocket with leatherleaf in the SW edge of the stand that was excluded from planting.																															
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5	123 - Other High Intensity Urban	Nonstocked	26.2			No	Lakehead pipeline facility, storage tanks.																															
6	42220 - Natural Jack Pine	Poletimber Well	27.2	51	51-80	N/A	Pole size jack pine stand. Patch along Q type is 20 yrs older than the rest of the stand. Red pine and pin oak present. 2 well sites within this stand. Pin oak regen at a low to medium density.																															
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7	42220 - Natural Jack Pine	Poletimber Well	5.9	81	81-110	N/A	Small stand containing over-mature jack pine and pin oak. Stand is declining. Advanced regen of mixed oak and jack pine are filling in the gaps created by mortality of canopy trees. Old notes indicated to treat with adjacent stand in compartment 72291 which was not done.																															
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																												
8	4130 - Aspen	Sapling Well	35.5	14	Immature	N/A	Cut in Nov/Dec 2004 under sale 720420301 Hired Guns Aspen Jack Mix. Sale boundary around this upland aspen stand was incorrectly run down into the cedar swamp to the south. Harvesting contractor got stuck while trying to cut the boundary. Ten acres of swamp were removed from the sale area by running a new red line on the high ground and browning out that portion of the old line that was visible from the new line. Parent stand was cut by KG blade 1967. Access is from comp 291 to the West.																												
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9	6122 - Black Spruce	Poletimber Medium	6.4	62	1-50	N/A	Lowland spruce stand. Flooded areas with lots of tag alder. Variance to create horizontal cover was approved in January 2016, with no more than 5 trees/acre to be felled within 150 feet of the Middle Br of Big Creek (Natural River) and no trees to be cut within 50 feet of it. Initial hinge cutting was done that winter (W72-797).																												
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10	622 - Lowland Shrub	Nonstocked	5.3			No	L2 east side, bog type to west in com 291																												
11	4191 - Mixed Upland Deciduous with Conifer	Sapling Medium	53.2	6	Immature	N/A	Stand was harvested under contract 72-027-11-01 Its a Merrickal this got done. Regeneration contains quaking aspen, jack pine, red maple, and pin oak. Three retention islands are present, which are a mix of red pine, jack pine and pin oak. Regeneration is a mosaic of aspen clones, mixed deciduous, jack pine and upland brush inclusions. Some areas more open where regen is sparse.  Treatment notes: Final harvest with reserves. Follow retention guidelines - use islands (2-5 acres total) and mark various trees to leave throughout. Try to open up the areas w/ aspen as much as possible to encourage aspen regen. Try to attempt natural regen. The objective is a moderate to fully stocked mixed stand with aspen, jack pine, oak, and red pine present. If natural regen fails-plant jack pine around existing regen.																												
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12	4130 - Aspen	Sapling Medium	37.9	6	Immature	N/A	Harvested under sale 72-027-11-01 Its a merrickal this got done. Quaking aspen is the dominant species in the regeneration. This section seems to have regenerated slightly better than the part split off as stand 11, but still has some U/G inclusions. Retention islands located in the section split off as stand 11.  Treatment Notes: Final harvest with reserves. Cut all trees 2" and up. Use leave islands for retention (1-3 acres total). Position islands adjacent to the openings for cover and structure. Management objective is an aspen stand with a component of mixed hwdws and conifer. There is potential for edge habitat creation within the q-type. If possible extend sale into stand 14 and have the boundary line trees dropped into 14 for horizontal structure. (per -pre review - run boundary line to encompass as much of stand 410 as possible and use the sale as an opportunity for brush maintenance. Make efforts to grab aspen clones along edge of q-type surrounding stand 410)																												
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13	4130 - Aspen	Sapling Well	9.2	14	Immature	N/A	Seasonal wet areas. Mixed aspen stand. 20-30' tall. Oak, rm, and conifer present. Was cut in Nov/Dec 2004 under sale 720420301 Hired Guns Aspen Jack Mix.																																																							
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14	6120 - Lowland Cedar	Poletimber Well	280.2	111	51-80	N/A	Areas of open water and saturated soils. Multiple drainages/tributaries to Middle Branch, Big Creek. Stand is a mixture, there are areas of p-type, C6, F3, S6, F6, L-types too. A few areas are so thick w/ fir -you could swim across. A lot of stunted spindly trees and tag alder in the more heavily flooded areas. Variance to create horizontal cover was approved in January 2016, with no more than 5 trees/acre to be felled within 150 feet of the Middle Br of Big Creek (Natural River) and no trees to be cut within 50 feet of it. Initial hinge cutting was done that winter (W72-797).																																																							
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15	4191 - Mixed Upland Deciduous with Conifer	Sapling Medium	15.5	26	Immature	N/A	Highly variable stand. Patchy, lower quality. Pine, oak, aspen and fir present. Some residual from prior harvest present, but majority is saplings, wit some of te regen transitioning to the pole class.																																																							
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16	4310 - Pine, Oak Mix	Sawtimber Medium	15.5	97	51-80	N/A	Open sawlog size oak w/ scattered mixed pine. On the edge of converting to a mixed pine stand. Aspen, maple, cherry present. Open areas of upland brush. Older oak and quaking aspen declining rapidly.																																																							
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17	4130 - Aspen	Sapling Well	31.5	7	Immature	N/A	Stand was cut under 72-017-11-01 Pickeral lake mix. A portion just SE of the gas well was previously split out as stand 33. The two stands were harvested at the same time and have regenerated as a single aspen dominated stand with oak, aspen and cherry mixed in. Trace amounts of saw size residual oak and pine present.																																																							
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18	4130 - Aspen	Sapling Well	29.7	26	Immature	N/A	Mixed aspen stand. Oak, red maple, cherry, and mixed conifer also present. Average quality. Some small bogs that do not meet mapping standards present. Bisected by pipeline.																																																							
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19	622 - Lowland Shrub	Nonstocked	117.3			No	Middle branch of Big Creek flows through this stand. Tag alder and marsh grasses. Areas of L3. Also scattered Q-type.																																																							



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																	
20	3303 - Mixed Low Density Trees	Nonstocked	20.2	65	1-50	No	Clumps of maple, scattered conifer, and a couple clones of aspen. Lots of cherry, service berry, and grass. Nice pockets of aspen on the N and S ends. A few oak. Cut in 1954, followed by FTP in 1967.																																	
21	4130 - Aspen	Sapling Well	6.7	14	Immature	N/A	Immature quaking aspen. Upland more to East, transitions to lowland as it grades to swamp to West. Cut in Nov/Dec 2004 under sale 720420301 Hired Guns Aspen Jack Mix.																																	
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22	4311 - Pine, Aspen Mix	Sawtimber Well	6.0	76	51-80	N/A	Transition ground from upland to swamp, appears to be buffer from prior cut to the East. Mix of log size red pine and log/pole aspen. Narrow stand. Barbed wire in some trees. Signs indicating possible former military activity.																																	
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23	42220 - Natural Jack Pine	Poletimber Well	18.5	47	51-80	N/A	Pole size jack pine stand. FIRE OCCURED 1966. A couple aspen clones.																																	
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24	4125 - Black, N. Pin Oak	Sapling Poor	40.8	6	Immature	N/A	3-5 sqft/acre of jack pine poles, and a mixture of regeneration, both advanced and resulting from the 2013 harvest. Advanced regen was primarily oak. Regen since the harvest is a mix of mainly oak and aspen, with jack pine slowly seeding in to the more open areas. Several dead trees throughout. Management objective is a moderately to fully stocked mixed pine stand with an oak/aspen component. If stand fails to regenerate naturally. Plant to jack pine. Harvested May of 2013 through timber sale contract 72-044-11-01, Juggernaut Jack. Protected understory and residual trees well.																																	
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25	42120 - Planted Jack Pine	Sapling Well	53.2	13	Immature	N/A	Cut in Nov/Dec 2004 under sale 720420301 Hired Guns Aspen Jack Mix. Was final harvested 2" & up, except all red pine was left. Red pine is mostly log size, present throughout stand but slightly mor in East half. FTP was submitted to trench and replant to jack pine. (Stand was planted to jack pine in may of 2006 under FTP C72-518.)																																	
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26	4130 - Aspen	Sapling Well	14.8	14	Immature	N/A	Stand varies from an A1 to an A3. Several small bogs present in the stand. KW habitat block to the east. Cut in Nov/Dec 2004 under sale 720420301 Hired Guns Aspen Jack Mix. Some jack pine saplings under the aspen and in areas where aspen was not as thick. Mixedoak and red maple mixed in throughout.																																	
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27	42120 - Planted Jack Pine	Sapling Well	76.0	24	Immature	N/A	Planted jack pine with scattered cherry, aspen, oak, and red pine present. Jack pine is stating to transition to pole class, but overall sapling this YO. UPDATE: 70 ACRES OF JACK PINE PLANTED 1993 AND 26 ACRES PLANTED 1995.																																	
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<b>28</b>	4133 - Aspen, Mixed Pine	Poletimber Well	60.7	49	51-80	N/A	Sawlog Rp in islands. Aspen quality seems to decline in the south. A handfull of open areas, and some wet ones as well. Some oak regen and scattered fir in the understory. Treated by FTP 1961 and cutting in 1970 with scattered residual red and white pine logs. Variance approved in 2018 to harvest stand as part of timber sale #72-009-18 in adjacent compartment. Portable bride necessary to access these stands.																																					
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<b>29</b>	4133 - Aspen, Mixed Pine	Poletimber Medium	5.8	65	51-80	N/A	An inclusion of slightly higher ground in the floodplain. Has a mix of aspen, lowland conifer and log size red and white pine. Small stand size and limited access.																																					
<b>30</b>	122 - Road/Parking Lot	Nonstocked	1.1	0		No	Small stand, taken up mostly by the County Road 612 and a small section that was managed with adjacent stand 93 of compartment 52010 in the Gaylord Unit.																																					
<b>32</b>	622 - Lowland Shrub	Nonstocked	1.6			No	Tag alder with low density trees.																																					
<b>34</b>	122 - Road/Parking Lot	Nonstocked	1.0			No	County Road 612																																					
<b>35</b>	4199 - Other Mixed Upland Deciduous	Sapling Medium	20.1	7	Immature	N/A	Immature mixed deciduous stand. Some areas of good regeneration, other areas are more patchy. A temporary access route at the South end of the stand was bermed shut at the time of sale closure.  Stand was cut under 720171101 pickerel lake mix. Parent stand was noted as very poor quality over-mature oak over miscellaneous poles. Stand was final harvested with no retention. Boundary was pushed into stand 14 where feasible. Management objective is a mixed stand containing oak, red maple, aspen, mixed pine and misc conifer. If regen fails to meet standards - consider planting to jack pine, red pine, or spruce around established regen.																																					
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<b>36</b>	622 - Lowland Shrub	Nonstocked	1.1			No	Small lowland pocket with tag alder and other shrubs.																																					
<b>37</b>	320 - Upland Shrub	Nonstocked	17.1	53	1-50	No	Grass, moss, juneberry, sweet fern. Mostly open. JP, RP, Oak, Cherry, service berry present																																					
<b>41</b>	4311 - Pine, Aspen Mix	Poletimber Medium	12.2	54	51-80	N/A	Mixed stand. Aspen is dominant on the West end on the transition ground into the adjacent lowland. On the higher ground to the East, it turns to a section that is mixed jack and red pine.																																					
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<b>42</b>	6225 - Bog	Nonstocked	1.5	0		No	Bog, dominated by leatherleaf. There are a few other smaller similar bogs scattered throughout stand 26 and 18 that do not meet mapping standards.																																					



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
44	3102 - Grass	Nonstocked	9.1	0		No	Cleared portion of pipeline. Access route passes through except where it crosses Middle Branch of Big Creek.
400	3102 - Grass	Nonstocked	1.3			No	Well site:Linn Operating, LLC,State Lovells A4-1NW/NW Sec 1, T28N R1W, PMT 45975Emergency #: 231-922-73026252
401	3102 - Grass	Nonstocked	1.1			No	Well site:Linn Operating, LLC,State Lovells A4-1NE/NE Sec 1, T28N R1W, PMT 45715Emergency #: 231-922-73026251
402	3102 - Grass	Nonstocked	1.1			No	Well site:Linn Operating, LLC,State Lovells B2-1SE/NW Sec 1, T28N R1W, PMT 45712Emergency #: 231-922-73026400
404	3102 - Grass	Nonstocked	1.0			No	Well site:Linn Operating, LLC,State Lovells AC4-1NE/NE Sec 1, T28N R1W, PMT 45976Emergency #: 231-922-73026349
405	3102 - Grass	Nonstocked	1.0			No	Well site:Linn Operating, LLC,State Lovells D4-1SE/NSE Sec 1, T28N R1W, PMT 45716Emergency #: 231-922-73026383
406	3102 - Grass	Nonstocked	0.9			No	Active well site. Some JP saps.Linn Operating, LLCState Lovells B3-12SE/SW/NE Sec 12, T28N R1W, Pmt 45501Emergency #: 231-922-7302well: 6325
407	3102 - Grass	Nonstocked	0.9			No	Active well site. Linn Operating LLCState Lovells, C4-12NE/SE Sec 12, T28NR1W, PMT 45503Emergency #: 231-922-7302
408	3102 - Grass	Nonstocked	1.3			No	Active well site.Linn Operating, LLCState Lovells D3-12SW/SE Sec 12, T28N R1W, Pmt 45504Emergency #: 231-922-7302well: 6327
409	3102 - Grass	Nonstocked	8.6			Managed Opening	WLD maintained opening. Oak and u-type also present. Was mowed in 2014, herbicided (knapweed) in 2015, and mowed, herbicided and mast planted in 2016 (C72-672).
410	3102 - Grass	Nonstocked	6.2			Managed Opening	WLD maintained opening. Clumps of shrubs and oak present. JC update: Was mowed in 2014, herbicided (knapweed) in 2015, and mowed, herbicided and mast planted in 2016 (C72-672).
411	3102 - Grass	Nonstocked	1.2	0	Unspecified	No	Well site: Linn Operating, LLC, State Lovells B1-1 NW/SW Sec 1, T28N R1W, PMT 59890 Emergency #: 231-922-7302 12754