



# Compartment Review Presentation

Grayling Forest Management Unit

Compartment 72272

Entry Year 2018

Acreage: 2,337

County Crawford

Management Area: Kirtland's Warbler

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**Revision Date:** 2016-04-28

**Stand Examiner:** Thomas Barnes

**Legal Description:**

T28N R1W Sections 13, 14, 15, 17, 20

**Identified Planning Goals:**

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

**Soil and topography:**

The terrain is flat to gently rolling on predominantly Grayling sand, with organic soils adjacent to wetlands and the Middle Branch of Big Creek. East of the Creek, there is also Croswell-AuGres, Croswell, Kinross-AuGres and Kellogg sands.

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

The ownership is all State, with the exception of an eighty of USF&WS property.

**Unique Natural Features:**

): Kirtland's warbler has been found throughout the compartment, as well as Eagle in Section 13 and an active Northern Goshawk nest in Section 15. In addition, there is the potential for massasauga rattlesnake, Blanding's turtle, and wood turtle along the Middle Branch Big Creek; eagle, osprey, and great blue heron rookeries; secretive locust in bogs; dry prairie plants and dusted skipper, grizzled skipper and red-legged spittlebug in grassy openings and open jack pine stands.

**Archeological, Historical, and Cultural Features:**

None known.

**Special Management Designations or Considerations:**

The compartment is part of the Lovells Kirtland's Warbler (KW) Management Block #52.

**Watershed and Fisheries Considerations:**

The Middle Branch of Big Creek is part of the AuSable's Natural River designation.

**Wildlife Habitat Considerations:**

While the primary focus is on maintaining habitat for the endangered Kirtland's Warbler, a variety of other game and non-game species benefit from the compartment's jack pine cover.

**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. There are not any gravel pits in the area, but there should be some potential. The compartment is mostly leased for oil and gas development of the Antrim Shale.

**Vehicle Access:**

County roads within the compartment include CR 612, F-97, Walsh Road, the bridge is out on Chiefs Trail and County Line Trail. There is also a network of forest roads, but access is limited within the large planted jack pine blocks.

**Survey Needs:**

None

**Recreational Facilities and Opportunities:**

The compartment is crossed by the Grayling-to-Lovells Loop and Roll Trail Loop snowmobile trails (Trails # 4, 47 & 409), the Midland-to-Mackinac Hiking Trail and the Shore-to-Shore Riding/Hiking Trail.

**Fire Protection:**

The compartment contains large contiguous blocks of densely-stocked jack pine. The bridge across the Creek on Chiefs Trail is a water source within the compartment. Pickeral Lake is also another water point just south of this compartment.

**Additional Compartment Information:**

None.

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

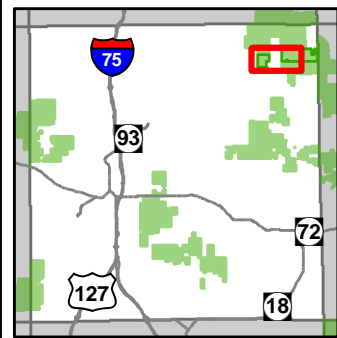
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

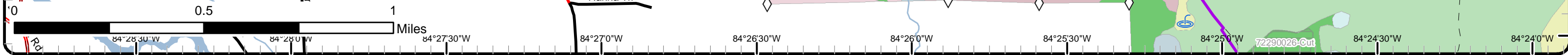
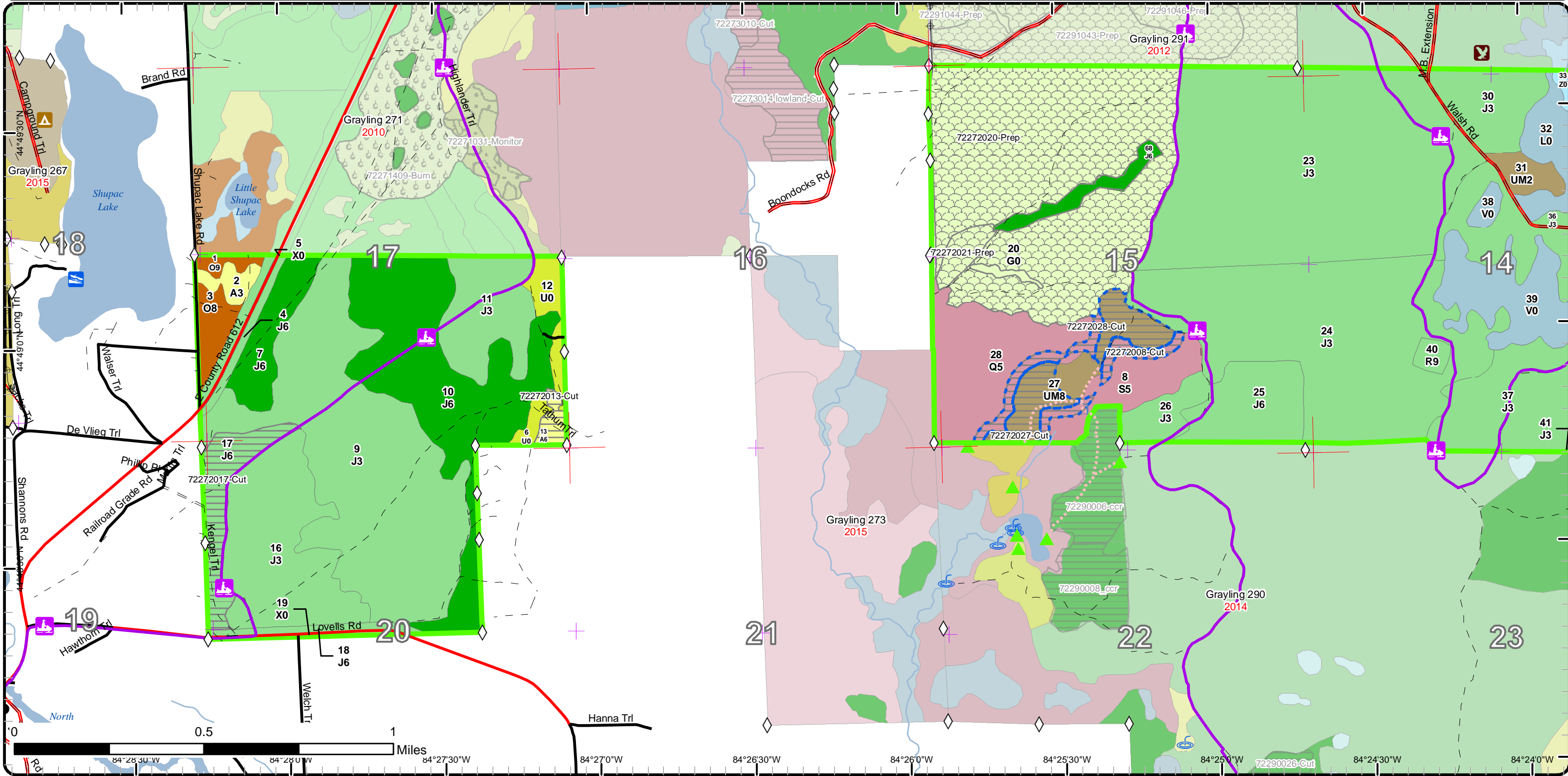
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

# Cover Type & Treatments Map

Compartment: 272  
 T28N, R01W, Sec: 13-15, 17, 20  
 County: Crawford  
 Unit: Grayling  
 Mgmt Area: Kirtland's Warbler  
 YOE: 2018  
 Acres: 2337 GIS Calculated  
 Examiner: Thomas Barnes  
 Map Revised: 3/9/2017  
 Map Phase: Post-Review

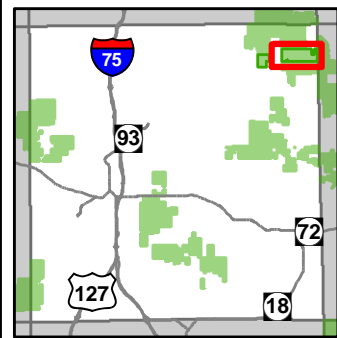


- Miris Corners
- Re monumented Section Corners
- Field Grade GPS Corners
- Culvert
- Boating Access Site
- Campground
- OFS Habitat
- OFS Human Impact
- OFS Hydro
- Snowmobile Trails
- Designated Snowmobile Trails
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Gravel Roads
- County Poor Dirt Roads
- Poor Dirt Roads
- Closed
- Streams
- Lakes and Rivers All
- Powerline
- Compartment Boundary
- Treatments with Site Conditions
- Site Prep
- Clearcut (w/Reserves)
- 412 - Oak Types
- 413 - Aspen Types
- 421 - Planted Pines
- 422 - Natural Pines
- 430 - Upland Mixed Forest
- 612 - Lowland Coniferous Forest
- 110 - Low Intensity Urban
- 122 - Roads/Parking Lot
- 310 - Herbaceous Openland
- 330 - Low Density Trees
- 500 - Water
- 622 - Lowland Shrub
- Lakes

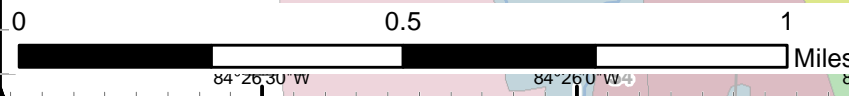
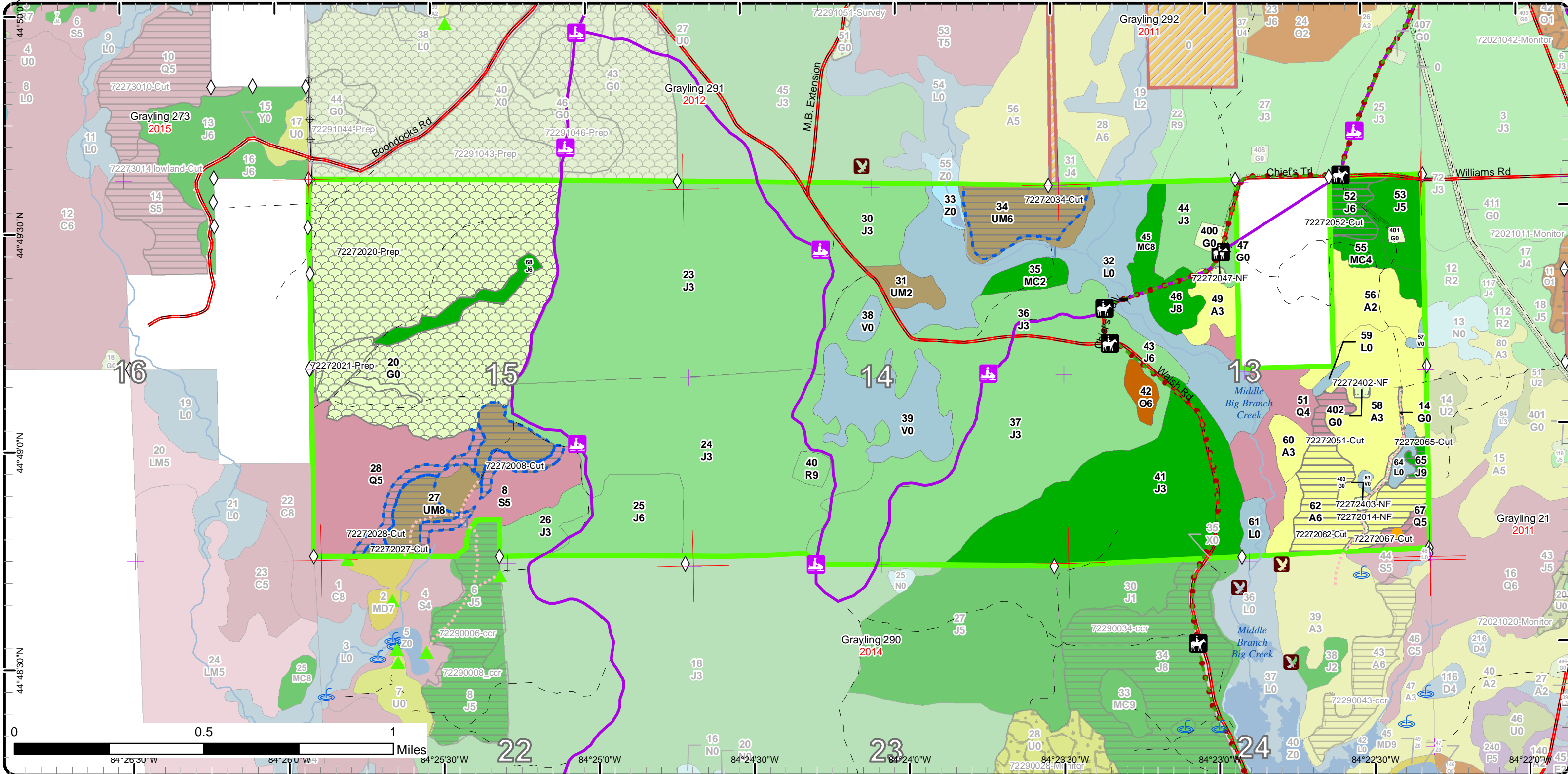


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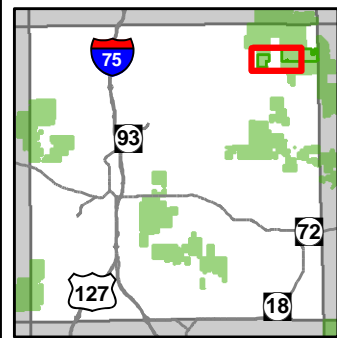
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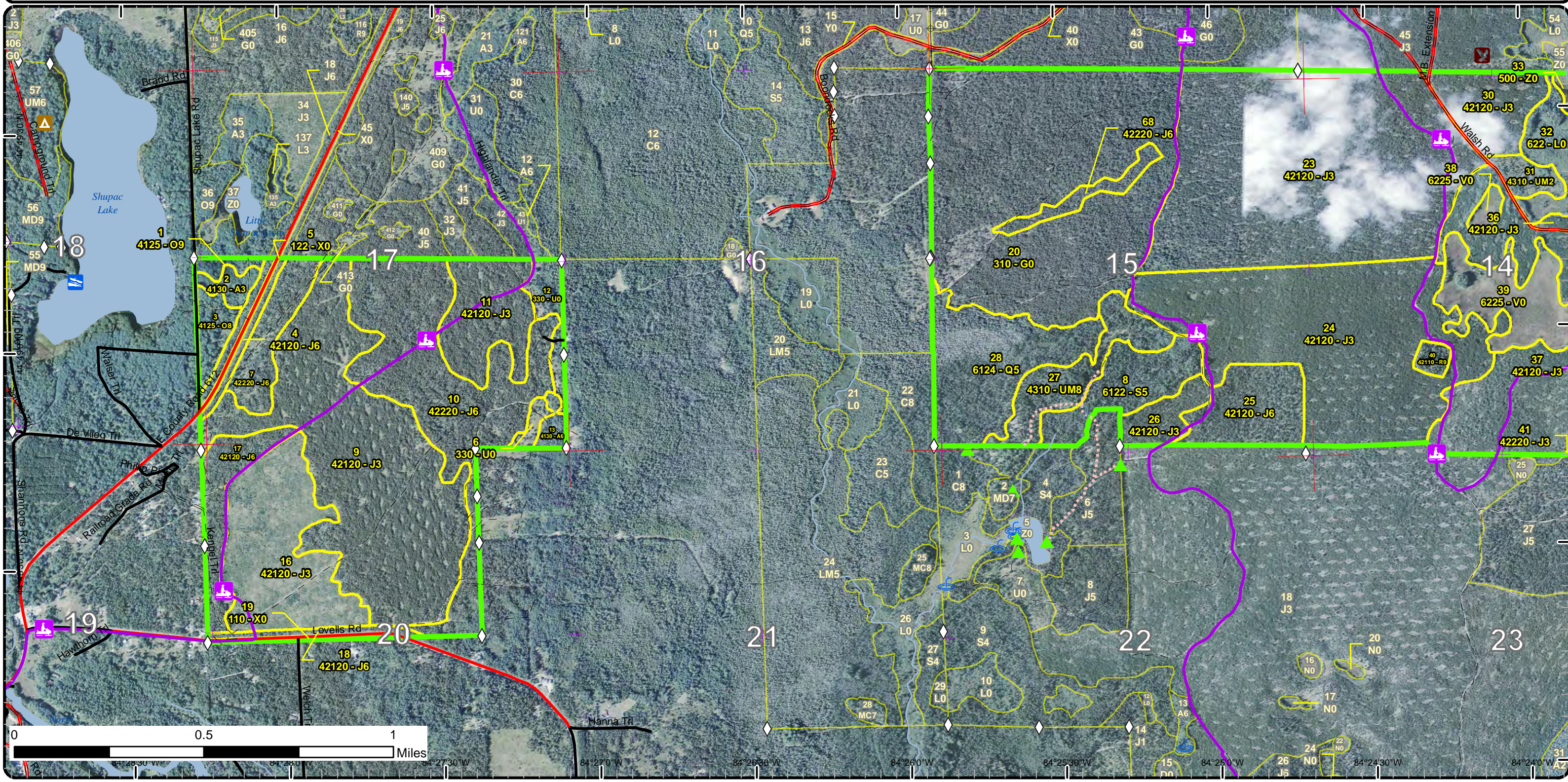


# Stand Boundary Map

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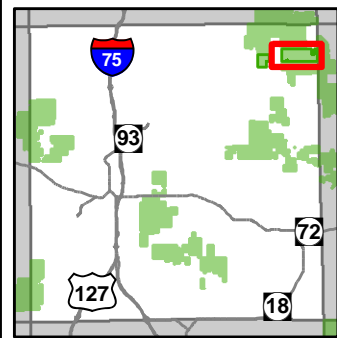
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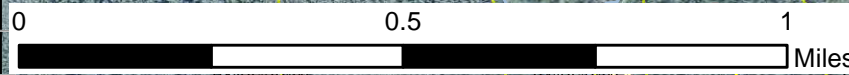
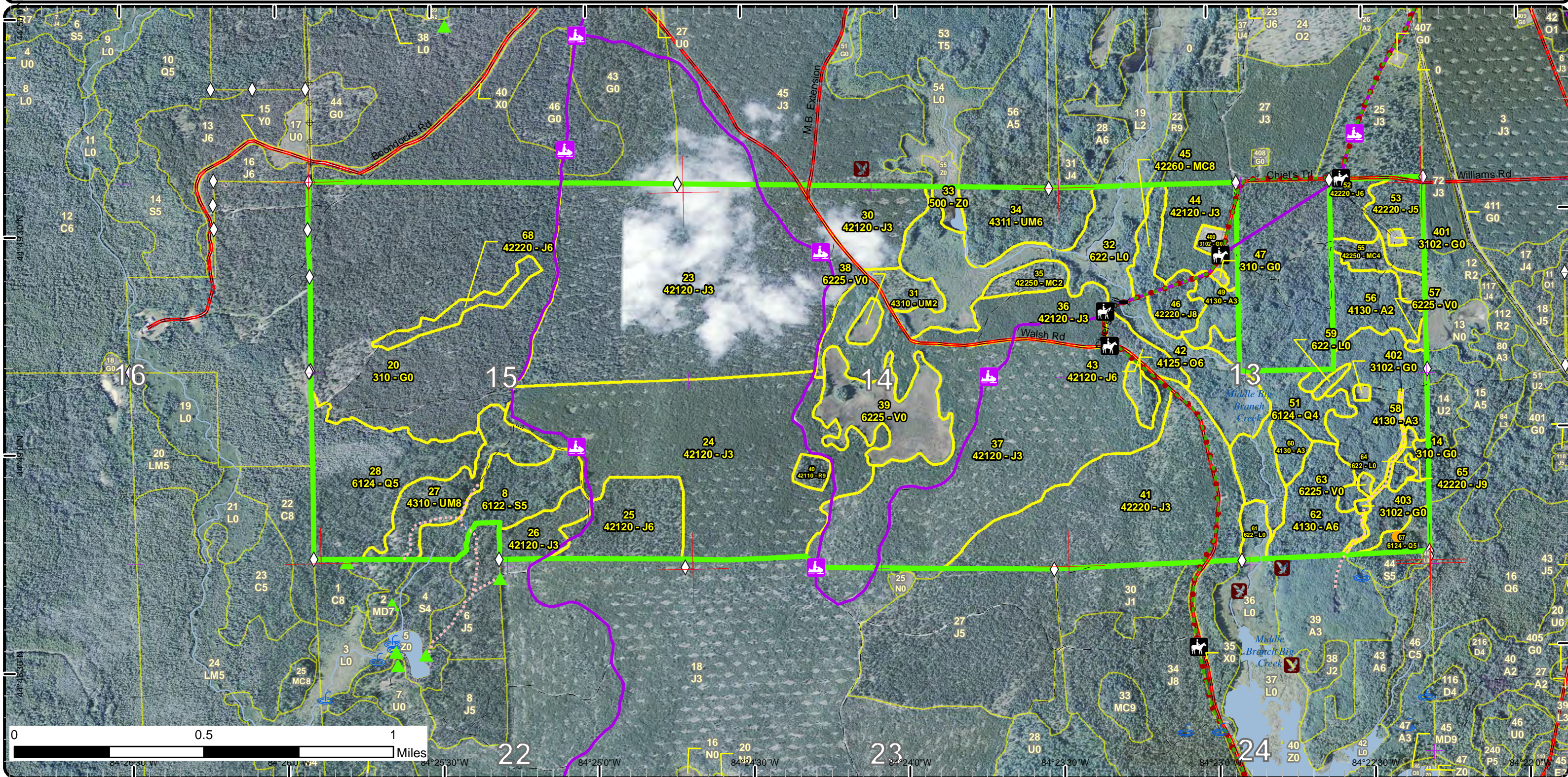


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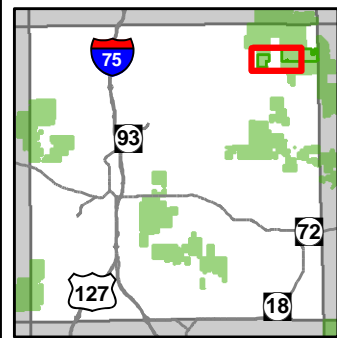


84°26'30"W 84°25'30"W 84°24'0"W 84°23'30"W 84°22'30"W 84°21'30"W

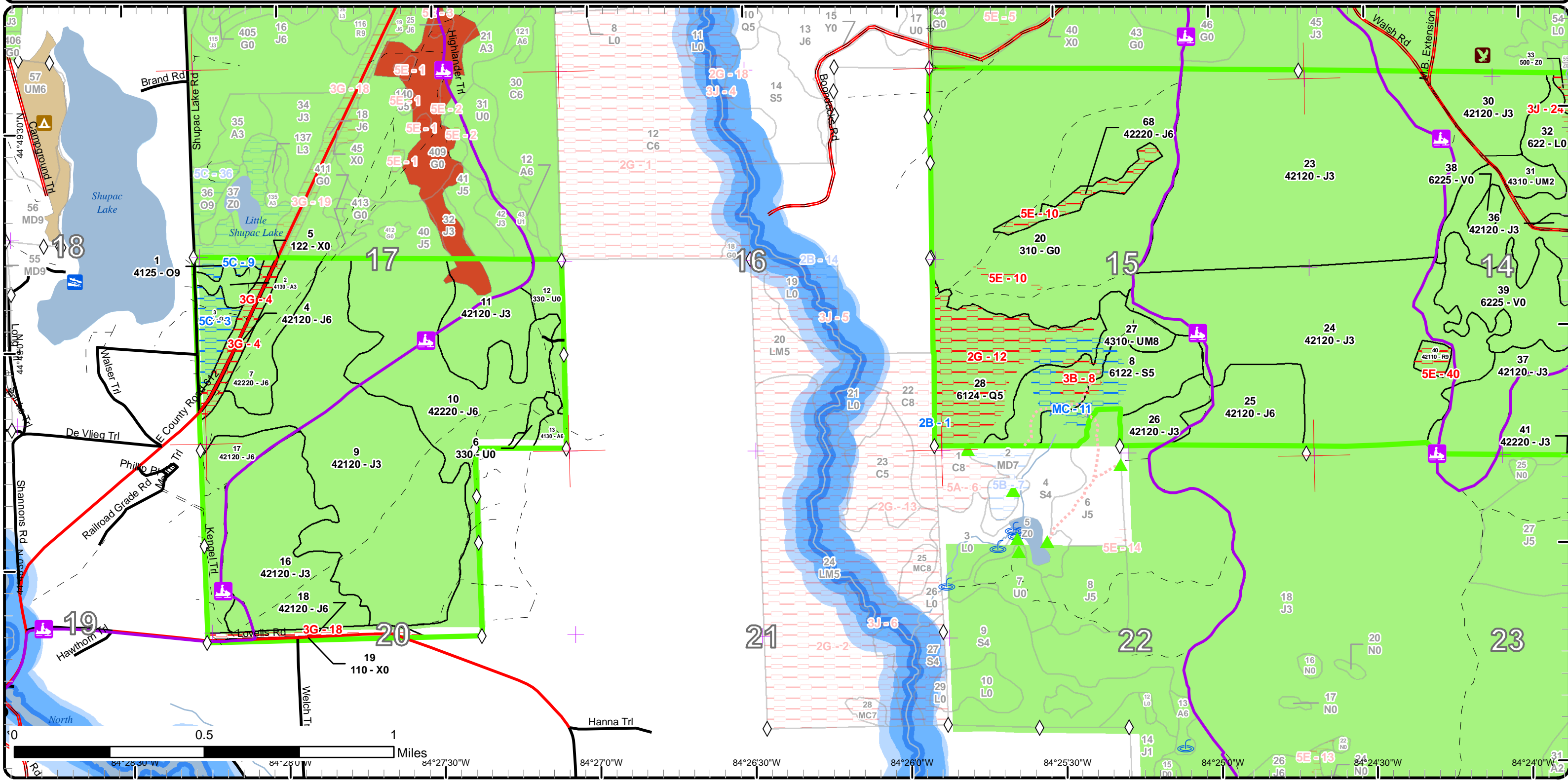


# Special Conservation Areas & Site Conditions Map

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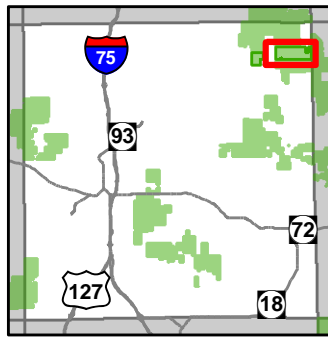


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- Compartment Boundary
- Available w/ Constraints
- Unavailable
- 2B: Unknown if access through adjacent landowner(s) is possible
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 2G: Too wet (sensitive soils, does not include access issues)
- 3B: Threatened, endangered, and special concern species/communities
- 3G: Other Influence zones - See comments
- 3J: Water quality / BMPs (stream, river, or lake)
- 5E: Long-Term Retention
- Stand Boundaries
- Ecological Reference Areas
- Natural Rivers Vegetative Buffer
- Natural Rivers Zoning District
- Kirtland Warbler Habitat
- Cold Water Streams
- Cold Water Lakes
- High Priority Trout Stream Buffer
- State Forest Campground

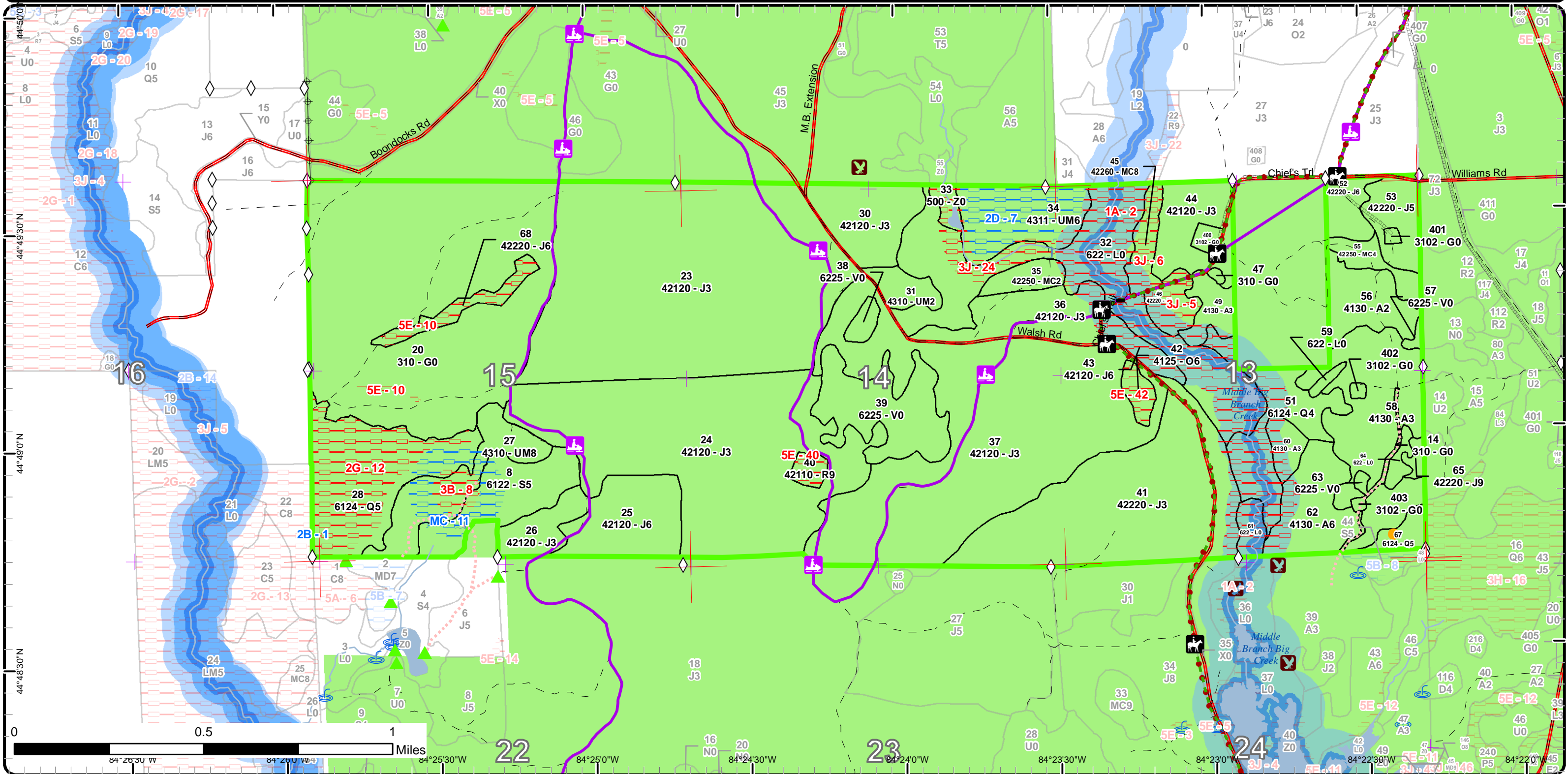


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- Pipeline
- ⊕ Powerline
- ▭ Compartment Boundary
- Available w/ Constraints
- Unavailable
- 2B: Unknown if access through adjacent landowner(s) is possible
- 2D: Portable Bridge Needed (Dept. bridge will be adequate)
- 1A: Federal/State/Local Law
- 2G: Too wet (sensitive soils, does not include access issues)
- 3B: Threatened, endangered, and special concern species/communities
- 3J: Water quality / BMPs (stream, river, or lake)
- 5E: Long-Term Retention
- ▭ Stand Boundaries
- ▭ Natural Rivers Vegetative Buffer
- ▭ Natural Rivers Zoning District
- ▭ Kirtland Warbler Habitat
- ▭ Cold Water Streams
- ▭ Cold Water Lakes
- ▭ High Priority Trout Stream Buffer







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	11	90	0	0	49	0	0	0	0	0	0	0	0	0	0	0	150
Bog	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
Herbaceous Openland	248	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	248
Jack Pine	0	0	295	422	487	37	129	50	30	0	0	0	0	0	0	0	0	25	1475
Low-Density Trees	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Lowland Conifers	0	0	0	0	0	0	35	65	0	7	0	0	0	0	0	0	0	0	107
Lowland Shrub	110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	110
Lowland Spruce/Fir	0	0	0	0	0	0	0	34	0	0	0	0	0	0	0	0	0	0	34
Natural Mixed Pines	0	0	0	19	0	0	0	0	0	0	0	11	0	0	0	0	0	0	30
Oak	0	0	0	0	0	0	0	0	0	15	0	6	0	0	0	0	0	0	21
Red Pine	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	4
Upland Mixed Forest	0	0	0	10	0	36	0	0	0	0	34	0	0	0	0	0	0	0	80
Urban	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Water	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
<b>Total</b>	<b>435</b>	<b>0</b>	<b>306</b>	<b>541</b>	<b>487</b>	<b>73</b>	<b>213</b>	<b>149</b>	<b>30</b>	<b>22</b>	<b>39</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>2336</b>





## Report 2 – Treatment Summary

Grayling Mgt. Unit

Year of Entry: 2018

Acres of Harvest

Compartment 272

Total Compartment Acres: 2,337

Commercial Harvest - 90  
 Harvests with Site Condition - 74  
 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	42	0	0	0	0	0	0	0	0	42
Jack Pine	41	0	0	0	0	0	0	0	0	41
Lowland Conifers	16	0	0	0	0	0	0	0	0	16
Lowland Spruce/Fir	8	0	0	0	0	0	0	0	0	8
Upland Mixed Forest	57	0	0	0	0	0	0	0	0	57
<b>Total</b>	<b>164</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>164</b>

### Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	164	226	0	0	0	0	0	4	0	395
Next Step	0	107	279	0	0	54	670	0	0	1109
<b>Total</b>	<b>164</b>	<b>333</b>	<b>279</b>	<b>0</b>	<b>0</b>	<b>54</b>	<b>670</b>	<b>0</b>	<b>4</b>	<b>1504</b>





S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
8	72272008-Cut	8.3	6122 - Black Spruce	Poletimber Medium	68	51-80	Harvest	Clearcut	612 - Lowland Coniferous Forest	Even-Aged	Draft Field Boundary

**Habitat Cut:** No      **Site Condition:** Minor Change in Acreage

Prescription Final harvest without retention do to small size. Harvest 1-2 chains into stand along stand 27. Distance may be limited by water. Snow trail  
Specs: timing restriction.

Next Step Monitoring, Natural Regen (Re-Inventory)  
Treatments:

Acceptable Mixture of lowland species meeting minimum stocking levels.  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2017

13	72272013-Cut	5.2	4130 - Aspen	Poletimber Well	59	51-80	Harvest	Clearcut	413 - Aspen	Even-Aged	Draft Field Boundary
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**Habitat Cut:** No      **Site Condition:**

Prescription Final harvest without retention do to small size. Add snow trail specs and drumming log spec.  
Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)  
Treatments:

Acceptable Aspen with mixed associated species meeting minimum stocking levels  
Regen:

Other Hoping to expand aspen into adjacent U type stand with harvest.  
Comment:

Proposed Start Date: 10/01/2017

14	72272014-NF	2.5	310 - Herbaceous Openland	Nonstocked	0	Unspec ified	NonForestMgt	Mowing	31021 - Cool Season Grass		Draft Field Boundary
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**Habitat Cut:** No      **Site Condition:**

Prescription Gate and convert this trail into a hunter walking trail. Brush/Cut trees along two track as needed to facilitate planter and maintenance. Wildlife  
Specs: division will plant trail with desirable vegetation.

Next Step  
Treatments:

Acceptable  
Regen:

Other This trail will still be used for forest management activities when needed.  
Comment:

Proposed Start Date: 01/01/2017

17	72272017-Cut	26.2	42120 - Planted Jack Pine	Poletimber Well	69	1-50	Harvest	Clearcut with Retention	4212 - Planted Jack Pine	Even-Aged	Draft Field Boundary
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**Habitat Cut:** No      **Site Condition:**

Prescription Clearcut with retention follow standard retention guidelines. Add snow trail specs.  
Specs:

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

Acceptable Jack pine planted at levels ensuring a well stocked stand.  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2017





S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
20	72272020-Prep	225.9	310 - Herbaceous Openland	Nonstocked	0	Unspecified	SitePrep	Trenching	42499 - Jack Pine (OI)	Even-Aged	Draft Field Boundary

**Habitat Cut: No**                      **Site Condition:**

Prescription Trench for KW habitat.

Specs:

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

Treatments:

Acceptable Jack Pine

Regen:

Other Percent to Treat = 100%

Comment:

Proposed Start Date: 02/17/2015

27	72272027-Cut	27.3	4310 - Pine, Oak Mix	Sawtimber Medium	97	81-110	Harvest	Clearcut	4211 - Planted Red Pine	Even-Aged	Draft Field Boundary
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**Habitat Cut: No**                      **Site Condition: Minor Change in Acreage**

Prescription Final harvest without retention. Retention is left as Northern Goshawk buffer (8 acres). Add snow trail and goshawk time restriction. Low stump

Specs: and chipping spec to aid replanting efforts. Only access is via snow trail.

Next Step SitePrep, Roller Chopping; SitePrep, Trenching; Pesticide, Aerial; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring,

Treatments: Artificial Regen(3yr)

Acceptable Well Stocked red pine stand

Regen:

Other Active Goshawk nest in center of red pine, 5 chain buffer has been site conditioned as per our guidelines, additional 5 chain season restriction is

Comment: also site conditioned as minor acreage (nothing else fit that showed acre available)

Proposed Start Date: 10/01/2017

28	72272028-Cut	8.7	6124 - Lowland Spruce-Fir	Poletimber Medium	68	51-80	Harvest	Clearcut	612 - Lowland Coniferous Forest	Even-Aged	Draft Field Boundary
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**Habitat Cut: No**                      **Site Condition: Minor Change in Acreage**

Prescription Final harvest without retention do to size. Harvest up to 2 chains into stand or until to wet which ever comes first, along stand 27. Include snow

Specs: trail timing restriction. No chipping leave tops for wildlife.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Mixture of lowland species meeting minimum stocking levels.

Regen:

Other

Comment:

Proposed Start Date: 10/01/2017

34	72272034-Cut	29.4	4311 - Pine, Aspen Mix	Poletimber Well	48	1-50	Harvest	Clearcut with Retention	4133 - Aspen, Mixed Pine	Even-Aged	Draft Field Boundary
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**Habitat Cut: No**                      **Site Condition: Portable Bridge Needed**

Prescription Final harvest with retention following standard retention guidelines. Add grouse spec. Chipping is optional. Put boundary line on top of banks

Specs: were applicable. Temp bridge will be necessary to access this stand from the south.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Aspen with mixed pine to meet minimum stocking levels.

Regen:

Other Only access to this stand is from the south off walsh rd and thru stand 35 and 36 trail road will need widened to accommodate logging equip.

Comment:

Proposed Start Date: 10/01/2017





S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
47	72272047-NF	0.8	310 - Herbaceous Openland	Nonstocked	0	Unspecified	NonForestMgt	Other - Specify	310 - Herbaceous Openland		Draft Field Boundary

**Habitat Cut: No**

**Site Condition:**

Prescription Periodic opening maintenance, as needed, that may include disking, fertilizing, food plot seeding, no-till prairie grass drill seeding, mowing, Specs: brushing, tree and shrub planting, Rx burning and herbicide application.

Next Step  
Treatments:

Acceptable  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2017

51	72272051-Cut	5.0	6124 - Lowland Spruce-Fir	Poletimber Poor	53	1-50	Harvest	Clearcut	613 - Lowland Mixed Forest	Even-Aged	Draft Field Boundary
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**Habitat Cut: No**

**Site Condition:**

Prescription Final harvest without retention do to small size. Include low stump specs. Add either drumming log or hare spec as per wildlife direction. Specs: Chipping is optional.

Next Step Monitoring, Natural Regen (Re-Inventory)  
Treatments:

Acceptable Mixture of aspen, red maple and conifers to meet minimum stocking levels.  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2017

52	72272052-Cut	11.7	42220 - Natural Jack Pine	Poletimber Well	64	51-80	Harvest	Clearcut	4319 - Mixed Upland Forest	Even-Aged	Draft Field Boundary
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**Habitat Cut: No**

**Site Condition:**

Prescription Final harvest without retention do to small size. Include low stump. Also include contacting pipeline company. Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)  
Treatments:

Acceptable Jack pine with a mixture of red pine, aspen and other species, will accept poorly stocked stand of these species.  
Regen:

Other Main access is off a two track with a pipeline running parallel to the two track.  
Comment:

Proposed Start Date: 10/01/2017

62	72272062-Cut	36.8	4130 - Aspen	Poletimber Well	54		Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Draft Field Boundary
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**Habitat Cut: No**

**Site Condition:**

Prescription Final harvest with retention, follow standard retention guidelines. Add drumming log, low stump. Leave all red and white pine greater than Specs: 16"DBH.

Next Step Monitoring, Natural Regen (Re-Inventory)  
Treatments:

Acceptable Meduim to well stocked stand of aspen with other associated species.  
Regen:

Other Restore landings with a wildlife seed mix and convert haul road so it can be re-vegetated to a hunter walking trail. Close off to vehicle traffic via Comment: gates so we have management access. Two track leading into stand could be part of a hunter walking trail, this would require a gate.

Proposed Start Date: 10/01/2017





S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
65	72272065-Cut	3.0	42220 - Natural Jack Pine	Sawtimber Well	61	81-110	Harvest	Clearcut	42260 - Natural Pine, Mixed Deciduous	Even-Aged	Draft Field Boundary

**Habitat Cut: No**

**Site Condition:**

Prescription Final harvest without retention do to small size. Low stump spec.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventry)

Treatments:

Acceptable Mixed conifer with aspen and other mixed deciduous species meeting poor to minimum stocking levels.

Regen:

Other

Comment:

Proposed Start Date: 10/01/2017

67	72272067-Cut	2.6	6124 - Lowland Spruce-Fir	Poletimber Medium	86	1-50	Harvest	Clearcut	612 - Lowland Coniferous Forest	Even-Aged	Draft Field Boundary
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**Habitat Cut: No**

**Site Condition:**

Prescription Final harvest without retention do to small size. Low stump spec, also include hare and or grouse spec per wildlife direction.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventry)

Treatments:

Acceptable Mixed lowland conifer species with aspen meeting minimum stocking levels.

Regen:

Other No chipping to leave tops for habitat cover unless wildlife would like it chipped. Only cutting 1.5 chains into stand.

Comment:

Proposed Start Date: 10/01/2017

402	72272402-NF	1.1	3102 - Grass	Nonstocked	Unspec ified	NonForestMgt	Other - Specify	3102 - Grass			Draft Field Boundary
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**Habitat Cut: No**

**Site Condition:**

Prescription Periodic opening maintenance, as needed, that may include disking, fertilizing, food plot seeding, no-till prairie grass drill seeding, mowing,

Specs: brushing, tree and shrub planting, Rx burning and herbicide application.

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2017

403	72272403-NF	0.8	3102 - Grass	Nonstocked	Unspec ified	NonForestMgt	Other - Specify	3102 - Grass			Draft Field Boundary
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**Habitat Cut: No**

**Site Condition:**

Prescription Periodic opening maintenance, as needed, that may include disking, fertilizing, food plot seeding, no-till prairie grass drill seeding, mowing,

Specs: brushing, tree and shrub planting, Rx burning and herbicide application.

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2017

**Total Treatment Acreage Proposed: 395.3**



## Report 4 – Site Conditions

Grayling Mgt. Unit

Thomas Barnes : Examiner

Compartment: 272

Year of Entry: 2018

### Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	Dominant Site Conditions										
		With Condition	Not Available		2D	5C	MC	1A	2G	3B	3G	3J	5E		
150	137	0	13	Aspen				13							
50	50	0	0	Bog											
248	245	0	3	Herbaceous Openland										3	
1473	1415	0	58	Jack Pine				22			19	6	10		
17	17	0	0	Low-Density Trees											
108	25	6	77	Lowland Conifers			6	24	52	1					
110	34	0	76	Lowland Shrub				64					11		
34	24	9	1	Lowland Spruce/Fir			9			1					
30	19	0	11	Natural Mixed Pines				3					8		
22	0	16	6	Oak		16									6
4	0	0	4	Red Pine											4
79	30	36	12	Upland Mixed Forest	29		7	3		6			3		
6	6	0	0	Urban							0				
4	0	0	4	Water									4		
2,336	2,002	68	266	Total Forested Acres	29	16	23	130	52	8	19	33	24		
	86%	3%	11%	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	Available	2B: Unknown if access through adjacent landowner(s) is possible	0	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
2	Unavailable	1A: Federal/State/Local Law	130	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Natural Rivers vegetation RMZ							



## Report 4 – Site Conditions

Grayling Mgt. Unit

Thomas Barnes : Examiner

Compartment: 272

Year of Entry: 2018

3	<b>Available</b>	<b>5C: Delay treatment for age/size class diversity or exceptional site quality</b>	11	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
4	<b>Unavailable</b>	<b>3G: Other Influence zones - See comments</b>	12	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Maintain as a visual buffer along CR 612 - although the JP is declining - per Lovells Twp agreement.							
5	<b>Unavailable</b>	<b>3J: Water quality / BMPs (stream, river, or lake)</b>	7	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
6	<b>Unavailable</b>	<b>3J: Water quality / BMPs (stream, river, or lake)</b>	8	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
7	<b>Available</b>	<b>2D: Portable Bridge Needed (Dept. bridge will be adequate)</b>	29	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
8	<b>Unavailable</b>	<b>3B: Threatened, endangered, and special concern species/communities</b>	8	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Active Northern Goshawk no harvest buffer of 5 chains.							



## Report 4 – Site Conditions

Grayling Mgt. Unit

Thomas Barnes : Examiner

Compartment: 272

Year of Entry: 2018

9	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	4	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
10	Unavailable	5E: Long-Term Retention	13	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
11	Available	Minor Change in Acreage	23	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Northern Goshawk active nest seasonal restriction zone.							
12	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	52	5F: Evaluated for Forest Health Considerations	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Site was looked at during inventory process. Site had several areas of standing water and would take a very cold winter to freeze in. The edge along stand 27 is included in stand 27's treatment to harvest. That portion of stand 28 does have a treatment on it.							
18	Unavailable	3G: Other Influence zones - See comments	7	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Maintain as a visual buffer along F-97- per Lovells Twp agreement.							
24	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	19	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Water body and small stream, 100 foot RMZ on either side of stream.							



# Report 4 – Site Conditions

Grayling Mgt. Unit  
Thomas Barnes : Examiner

Compartment: 272  
Year of Entry: 2018

40	Unavailable	5E: Long-Term Retention	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
42	Unavailable	5E: Long-Term Retention	6	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
<b>Comments</b> In KW SCA	Potential Old Growth		<b>SCA Removal</b>	45
<b>Comments</b> In KW SCA	Potential Old Growth		<b>SCA Removal</b>	56
<b>Comments</b> In KW SCA	Potential Old Growth		<b>SCA Removal</b>	489
<b>Comments</b> In KW SCA	Potential Old Growth		<b>SCA Removal</b>	1298



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





	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4125 - Black, N. Pin Oak	Sawtimber Well	4.3	87	51-80	<p>Small oak stand with log red pine. Diverse little stand, leave for diversity. Three BA swings were taken with a stand average of 65.</p> <p>OPIC - FMD: Split from stand 3 by aspen cut. More or less hybridized RO saw clumps, open below except for RM &amp; WP saps &amp; small poles. Heavy deer use. Park-like &amp; open except where WP is filling in, can see across stand from E to W. Deer would obliterate any oak stump sprouts under current conditions. Oak is in surprisingly good shape, probably due to low competition for light &amp; space. Retain for hard mast in KW compt..</p>
2	4130 - Aspen	Sapling Well	6.6	26	Immature	<p>Young aspen stand sandwiched between two oak stands. Good stem densities resulting from the cut in 1991.</p> <p>OPIC - FMD: 10-20' TA regen. Cut in '91 under sale #0019001 in compt 271. Some clones unhealthy with high mortality. Oak &amp; RM stump sprouts &amp; seedlings w/in. Used stand 13's SI.</p>
3	4125 - Black, N. Pin Oak	Sawtimber Medium	11.4	89	51-80	<p>Sparse oak stand wedged between Shupac Lk rd and Co rd 612. Park like conditions with heavy evidence of deer activity. Overall stand looks to be healthy. Three BA swings were taken with average BA being 60. Leave for diversity and mast production.</p> <p>OPIC - FMD: More or less hybridized RO saw clumps, park-like &amp; open below with U/G inclusions (cherry, juneberry &amp; witchhazel) &amp; scattered &lt;1 ac. Aspen clones of varying ages. RM in pole-size stump clumps, some isolated super-canopy RP, some WP saps. Heavy deer use (turfing ground for acorns, browsing the RM &amp; U seedlings). Can see across stand from Shupac Lk Rd to CR 612. Deer would obliterate any oak stump sprouts under current conditions. Oak is in good shape, probably due to low competition for space. Retain for hard mast in this KW compt.</p>
4	42120 - Planted Jack Pine	Poletimber Well	11.9	72	81-110	<p>JP &amp; Scotts pine planted as windbreak along CR 612. Narrow to S1/2 with more TA &amp; oak. Mortality in the JP; Scotts pine in surprisingly good form. NPO &amp; TA scattered w/in. Maintain as a visual buffer along CR 612 - although the JP is declining - per Lovells Twp agreement.</p>
7	42220 - Natural Jack Pine	Poletimber Well	24.7	61	51-80	<p>Various ages in this stand ranging from treatments in 1944 to 1980 and then natural ingrowth in open areas. Stand also has diverse size classes with majority in the pole stage. Stand can be held for another 10 years. RR grade runs diagonally thru this stand. Part of KW Block 51.</p> <p>OPIC - FMD: Stand filling in from a few scattered stems in the 1930's. Result is a wide range of age &amp; size classes, from minority overmature JP saw, to poles in their 40's &amp; 50's, to small poles and lg saps (especially around the stand's perimeter). Averaged age to get stand year of origin on this uneven-aged JP stand. Old car at S end. Old RR grade parallels two-track along the stand's E edge. SC:8 since in KW mgt block #51, warbler entry 2018.</p>



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
8	6122 - Black Spruce	Poletimber Medium	34.1	68	51-80	<p>Lowland conifer stand with some old cedar. Health of overstory is in good shape, understory seeing some natural mortality. Stand has standing water with muck soils and sphagnum moss ground cover, very spongy. Good signs of wildlife activity with in stand from hares to deer. Stand is a very good wildlife wintering area. Portion of stand was private and was purchased in 2010.</p> <p>OPIC - FMD: Swamp conifer stand with minority older component (~100 year old NWC with significant mortality, dieback &amp; windthrow except at far SW corner, &amp; spruce &amp; tamarack in the 70's &amp; 80's) over majority younger spruce poles (40-50 years old) and lg spruce saps. Stand age based on weighted average of the older minority &amp; younger majority components. Stand incorporates pockets of overmature JP along its margins, particularly along the snowmobile trail where there are also a few small TA clones. Open water and small drains occur within the stand. Let the spruce sm poles and regen continue to develop.</p>
9	42120 - Planted Jack Pine	Sapling Well	183.3	37	Unspecified	<p>Not much understory present, snow covered the ground vegetation. Healthy looking KW stand.</p> <p>OPIC - FMD: KW planted JP 10-15' tall, 3-5" DBH, lower branches dead. Was planted in that part of a large U/G type that hadn't filled in with natural JP regen like the adjacent stands to W &amp; E. Result is a very irregular boundary, with scattered inclusions of older JP saps &amp; poles that had been planted around (mostly on the stand's margins). Vague records indicate that some portion was replanted by hand in 1984 with MCC labor. SC-8 since in KW mgt block #51, warbler entry 2018. Used stand 10's SI &amp; previous OI's year of origin.</p>
10	42220 - Natural Jack Pine	Poletimber Well	118.5	55	51-80	<p>Pole sized stand with both sapling and log sized stems, majority is pole. Stand can hold for another 10 years or whenever KW plan calls for cutting. Some areas have lesser stem density. Part of KW block 51. OPIC - FMD: Stand occupies former large U/G area that has been slowly but progressively filling in w/ JP from a few initial scattered stems in the 1930's. Stand is multi-aged, ranging from lg saps, to small poles (mid 30's) to lg poles (40's), to overmature saw. KW mgt block #51, warbler entry 2018.</p>
11	42120 - Planted Jack Pine	Sapling Well	41.1	37	Unspecified	<p>Young KW plantation part of block 51.</p> <p>OPIC - FMD: Part of former large U/G type that had been slowly filling in by natural regen. Areas not adequately stocked were KW planted. Result is a real mosaic of KW saps planted around pockets of lg natural regen saps &amp; small - med sized poles. Dated the stand to the KW planting, but there are older stems. Used stand 10's SI. KW mgt block #51, warbler entry 2018.</p>
13	4130 - Aspen	Poletimber Well	5.2	59	51-80	<p>Small stand of aspen with jack pine and oak. Poor quality stems abuts private on two sides. OPIC - FMD: Mostly mature TA poles w/ decadent saw component. FTF present on declining stems and top break-up occurring. Overmature JP along W edge w/ individual stem mortality. Regen of aspen cover type of adjacent PVT came back nicely, despite heavy deer use in the area. Core difficult to age, taken on mature pole &amp; not on the older, less common pioneer component. Small stand: hold &amp; treat with adjacent KW stands in 2018, mgt block #51.</p>





	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
16	42120 - Planted Jack Pine	Sapling Well	80.2	14	Immature	<p>KW plantation cut in 1999 and planted in 2003 stand is looking good and healthy.</p> <p>OPIC - FMD: Cut in 1999 under sale #720049801 &amp; planted to JP in 2003. Planting avoided areas w/ thick U3 &amp; A3. There are well-developed oak stump sprouts &amp; cherry brush throughout. Even with planting, this stand will be a mix of JP, TA &amp; NPO. Used Stand 17's SI. KW mgt block #51, 2018 warbler entry.</p>
17	42120 - Planted Jack Pine	Poletimber Well	26.2	69	1-50	<p>Stand was left as a visual buffer between PVT and snow trail. Good oak regen along with maple and pine. Adjacent KW plantation is greater than 5' tall green up should not be an issue. Part of KW BLock 51.</p> <p>OPIC - FMD: Was originally scheduled for final harvest last YOE as part of stand 16. Was split off and left as a buffer - per compt rev - between the PVT &amp; the snowmobile trail. With green-up requirements, can't be treated until regen in Stand 16 is 5' tall. Stand is a mixed-age JP stand w/ an overmature, declining component, but also younger poles &amp; lg saps. Has very nice WO lg sap regen, despite more recent deer browsing. KW mgt block #51, 2018 warbler entry.</p>
18	42120 - Planted Jack Pine	Poletimber Well	7.2	75	51-80	<p>Strip of JP &amp; a little Scotts pine planted as a windbreak along F-97. Slow growth &amp; mortality occurring. Can't cut per green-up requirement for Stand 16, and also per Lovells Twp agreement. Part of KW Block 51.</p>
23	42120 - Planted Jack Pine	Sapling Well	246.8	37	Unspecified	<p>Young KW planted in 1980 part of KW Block 54.</p> <p>OPIC - FMD: KW planting, 15'+ JP saps. Cut in '79 under sales 51-78A &amp; 52-78A, and planted in 1980. Lower branches dead on majority of stems. Minor amount of gall rust. KW mgt block #54.</p>
24	42120 - Planted Jack Pine	Sapling Well	185.1	26	Immature	<p>Young KW planted in 1991 part of block 54.</p> <p>OPIC - FMD: KW planted in 1991. Generally 8-10' JP. Lowest branches beginning to die in close rows, branches green to ground around openings. Some spots overstocked within rows (sigma seeded?). KW mgt block #54.</p>
25	42120 - Planted Jack Pine	Poletimber Well	36.9	44		<p>Young KW stand with some scattered red pine. OPIC - FMD: J4/J2: large JP saps below scattered small JP poles, along with NPO &amp; RP poles and small saw. NPO is dead/dying. Oak is seeding in O1-O3 in localized patches. More RP mixed in west of the snow trail. Was diameter-limit cut in 1973 under sale #7-71A, all merchantable JP removed, all oak left. Dated stand to harvest, although there are older stems, and used previous SI. KW mgt block #54.</p>
26	42120 - Planted Jack Pine	Sapling Well	15.4	37	Unspecified	<p>This is a young KW stand planted in 1980.</p> <p>OPIC - FMD: 10-20' JP saps, J3 with areas of J1/J2. Appearance of rows at times, but very irregular spacing in general. Most likely cut in '73 under sale #7-71A. 1974 FTP to scarify with skidder &amp; chains, then seed. 1980 FTP to machine plant. No completion report or follow-up info on either FTP. Note on an old map indicate it was planted in 1980. Includes narrow strip of older JP along the Q-type. KW mgt block #54.</p>



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
27	4310 - Pine, Oak Mix	Sawtimber Medium	33.5	97	81-110	<p>Recently acquired private in 2010. Small red pine plantation with high stem density BA ranging 250-330 and also some scotch pine planting as well. Narrow planting with random rows. Rest of stand is open grown maple, oak, jack pine and some red pine. Also pockets of b aspen found as well. Stand is ridge between to lowland conifer stands. Stand is a mixture of PVCd and PARVHa.</p> <p>OPIC - FMD: Higher ground between swamp swales: U/G with scattered branchy JP, cherry brush, and a few RM &amp; NPO.</p>
28	6124 - Lowland Spruce- Fir	Poletimber Medium	65.3	68	51-80	<p>Mixed lowland conifer stand. Sapling sized spruce and fir naturally dying out, sphagnum ground cover with standing water. Transition zone is where jack and red pine come in. Good wildlife stand. Wet area difficult to operate in. OPIC - FMD: Swamp conifer stand with minority older component (~100 year old NWC with significant mortality, dieback &amp; windthrow except at far SW corner, &amp; spruce &amp; tamarack in the 70's &amp; 80's) over majority younger spruce poles (40-50 years old) and lg spruce saps. Stand age based on weighted average of the older minority &amp; younger majority components. Stand incorporates pockets of overmature JP along its margins, particularly along the snowmobile trail where there are also a few small TA clones. Open water and small drains occur within the stand. Let the spruce sm poles and regen continue to develop.</p>
30	42120 - Planted Jack Pine	Sapling Well	31.3	26	Immature	<p>young KW stand cut in 1989 and planted in 1991 part of block 54. OPIC - FMD: Cut in 1989 under sale #0798801, and KW planted in 1991. ~8-12' JP saps. Branches generally to ground, but starting to self-prune within interior rows. Gall rust common. Used previous SI. KW mgt block #54.</p>
31	4310 - Pine, Oak Mix	Sapling Medium	9.8	26	Immature	<p>Naturally regenerated stand bordered by lowland types. Mixture of jack pine, oak and aspen with some red pine. OPIC - FMD: Cut in 1989 under sale #0798801, but was not planted along with rest of sale area to N (stand 30). Natural regen: clumpy 10' JP saps, J1 overall, with U2 inclusions (cherry), &lt;1 acre A3 pockets near wetland/stream, and scattered NPO stump sprouts. Gall rust common on the JP. Leatherleaf bog inclusion. Used previous SI. KW mgt block #54.</p>
34	4311 - Pine, Aspen Mix	Poletimber Well	35.5	48	1-50	<p>Small isolated stand with mixed aspen on east and west flanks and mixed jack and red pine with scattered aspen in the middle. Aspen and jack pine are poor to fair quality red pine isn't to bad. J pine is open grown.</p> <p>OPIC - FMD: Marked RP removed in 1975; resulting stand is a mix of RP small saw &amp; poles, 1 &amp; 2 stick JP, &amp; scattered aspen clones (particularly along the river corridor). Culvert across stream is plugged and long-ago washed out around. Edge of stand is within Natural River zone, so SC-8.</p>
35	42250 - Pine, Oak	Sapling Medium	9.1	28	Immature	<p>Mixed stand of jack pine and oak cut in 1989 and naturally regenerating. Ground cover is sweet fern and blue berry.</p> <p>OPIC - FMD: Cut in 1989 under sale #0798801, but not planted with the rest of the sale area (stand 36). Natural regen: inconsistent stocking, varies from U1-O1-J2, averaging out to J1 overall, but barely, if you factor in the NPO regen. JP ranges from 8-15' tall. SC-8 since NE corner is within the Natural Rivers zone, and also because it is in KW mgt block #55.</p>





	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
36	42120 - Planted Jack Pine	Sapling Well	34.0	24	Immature	Young KW Stand planted in 1993 and cut in 1989. OPIC - FMD: Cut in 1989 under sale #0798801, and KW planted in 1993. JP 6-10' tall in general & maintaining most of lower branches. KW mgt block #55.
37	42120 - Planted Jack Pine	Sapling Well	214.4	19	Immature	Young KW planted in 1998 part of Block 55. Snow trail runs thru stand. OPIC - FMD: Cut in early 1998 under sale #0329701, except for long sliver at the SW corner that was cut with adjacent comp to the S, and KW planted in 1998. JP 3-6' tall. Terminal leader weevil damage locally high in small pockets, but overall <5%. Gall rust uncommon. JP rows are variable: sometimes have excessive stocking within rows, other rows have large gaps or rows lose any coherency (sigma seeded?). NPO stump sprouts and other oak regen common throughout. KW mgt block #55.
40	42110 - Planted Red Pine	Sawtimber Well	4.5	90	81-110	Small pocket of red pine left from prior harvest as retention. Three BA swings were taken with average being 110.  OPIC - FMD: Varying density RP saw over poles. O1/J1 below. Scattered small openings. Was intentionally retained along the snowmobile trail for vertical diversity - is surrounded by KW plantation. Within KW mgt block #54.
41	42220 - Natural Jack Pine	Sapling Well	125.6	24	Immature	Naturally established jack pine stand with numerous openings and pockets of associated species listed. Stand is on lower end of canopy closure. Part of KW Block 55.  OPIC - FMD: Salvage cut after wind shear event that left most trees broken off or uprooted in 1993 (sale #0309301). Allowed to regenerate naturally. Variable stocking of JP saps 5-10' tall, with scattered small openings (including an area of U2/O1 at the far N end), but averages out to J2. A minor amount of gall rust & weevil damage. Oak stump sprouts & other oak regen common, along with scattered small RP poles. Thicker JP E of Walsh Rd near stream/wetland corridor. Used stand 37 SI. KW mgt block #55.
42	4125 - Black, N. Pin Oak	Poletimber Well	6.1	101	51-80	Stand was left from prior harvest, stand is steep knoll in places. Poor quality stems. Continue to leave for wildlife and mast production.  OPIC - FMD: Hybridized RO: short poles with mortality & dieback. RM stump clumps and scattered BTA. Stand occupies short, steep ridge and was intentionally left uncut when the surrounding JP stand was cut in 1998. Was originally part of the timber sale, but per WLD, this was left for visuals and because of the density of the oak and steepness of the slope. Used previous SI. Within KW mgt block #55.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
43	42120 - Planted Jack Pine	Poletimber Well	9.2	66	51-80	<p>Small mix stand of jack pine with associated species and pockets of aspen. More red pine in southern portion of stand. Gaps are filling in with oak, aspen and maple regen. Leave for structural diversity.</p> <p>OPIC - FMD: Update: Stand planted to JP in May 2003 per C72-459. OLD: S 2/3 of stand is on ground with shallow water table. Overmature JP &amp; TA, along with younger JP &amp; TA poles. Wind-throw common on the lower ground. Nice advanced oak regen below. N 1/3 of stand in on one terrace up and most of the JP saw is already dead, with denser young JP poles, and only O1 below. Occasional RP pole. Averaged age between younger and older poles in the river corridor stands 43 &amp; 46. Within KW mgt block #55 and also is within a Natural River zone. Was left for vertical diversity given adjacent intense KW management and riparian buffer. Allow adjacent KW JP to grow 10 more years before cutting this stand.</p>
44	42120 - Planted Jack Pine	Sapling Well	28.1	22	Immature	<p>Young Jack Pine plantation with some aspen along river corridor. OPIC - FMD: Cut in '89 under sale #0378801, and planted in 1995. JP 6-10' tall, J3/J2 with pockets of U2 (cherry) and TA saps. Has a narrow strip of 15-20' TA regen along the river corridor where no JP was planted. Snowmobile trail runs through stand.</p>
45	42260 - Natural Pine, Mixed Deciduous	Sawtimber Medium	10.9	103	51-80	<p>Small stand next to Middle branch big creek, Xlog white pine scattered throughout. Understory is sapling poles of above species. Average BA was 80. Portion of stand falls within RMZ for natural rivers.</p> <p>OPIC - FMD: Very mixed stand adjacent to Middle Branch Big Creek. 40 BA of overstory saw: scattered supercanopy WP along with RP, JP &amp; TA saw, with good WP sm poles and lg saps &amp; pockets of RP saps/poles. Also an occasional oak, RM. Cored an SC-WP, so overall stand age is much lower than that (it is 2+ aged). Retain overstory supercanopy pine for continued seed source within the stand &amp; also down-wind in stands along the Natural River corridor. SW corner of stand is within a Natural River zone.</p>
46	42220 - Natural Jack Pine	Sawtimber Medium	10.9	70	1-50	<p>Small stand of log sized jack pine with mixture of maple oak and some white pine. Older jack pine starting to naturally die, gaps are somewhat filling in with regen of jack pine maple and shrubs. Half of stand falls within natural rivers zone.</p> <p>OPIC - FMD: Mix of overmature scattered JP saw over short younger JP poles &amp; lg saps. Mortality in the OM-JP. Nice oak saps below. Old JP is concentrated to the S &amp; W along the river corridor, with younger JP to the N. Edge of stand is within a Natural River zone. Stand age averaged between the younger &amp; older poles in river corridor stands 43 &amp; 46. Allow younger JP component to grow 10 more years before harvesting.</p>
49	4130 - Aspen	Sapling Well	11.4	18	Immature	<p>Young aspen stand cut in 1998.</p> <p>OPIC - FMD: TA regen from fall '98 cut (sale #0039801) for the most part, with slightly older A3 to NE &amp; even older A3 added as an inclusion N of the snowmobile trail. Will all be treated at the same time for operational efficiency in the future. SW corner of the stand is within the Natural River zone. Used previous SI.</p>





	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
51	6124 - Lowland Spruce- Fir	Poletimber Poor	35.4	53	1-50	Eastern portion of stand along stand 58 higher drier ground with harvestable stems. Scattered tall spindly spruce with spruce/fir small poles & lg saps below, clumps of NWC that is dying out, many wind-thrown cedar stems. A lot of snowshoe hare use with that horizontal cover. Within Natural River zone.
52	42220 - Natural Jack Pine	Poletimber Well	11.7	64	51-80	Mature jack pine pole/log size with scattered aspen and red pine. Understory is coming back well.  OPIC - FMD: Mix of age/size classes of JP poles & lg saps, some sm TA clones. Part of area was damaged by windstorm & salvaged in '93 under sale #409302, leaving sparse open patches w/ J3. Almost O1 in nice oak saps. There is an overmature JP component, but a majority of the stand is younger. Let majority small poles grow for at least 10 more years.
53	42220 - Natural Jack Pine	Poletimber Medium	18.3	24	1-50	Open grown stand with scattered balsam poles. Salvage cut after windstorm in 1993, sale #409302. Tipped/leaning stems removed. Left scattered, mostly small pole JP, RP, TA, oak & Balsam fir. Some JP regen but not enough to call J1. Balsam regen to N1/2. Some TA regen to S. Cherry brush/grassy openings most common.
55	42250 - Pine, Oak	Poletimber Poor	10.1	24	Immature	Mixed stand of jack pine and oak natural regen. Ground cover is sweet fern and blueberry. OPIC - FMD: Part of 1993 windstorm salvage area (sale #409302). Short shrubby JP with almost-merchantable JP saps, with U/G mixed in. J4/J1. Dated stand to wind event, but the small poles are obviously older. Used stand 52 SI.
56	4130 - Aspen	Sapling Medium	23.5	24	Immature	Mixed size class of aspen with associated species, poles size left from salvage harvest following wind event.  OPIC - FMD: 1993 blow-down area. Salvaged tipped stems in sale #409302. Varying density TA regen, 10-20' tall with scraggly TA, JP, RP poles left standing after the storm. A lot of CWD from blow-downs; rough-looking, but a tremendous amount of structural diversity. Used stand 62 SI.
58	4130 - Aspen	Sapling Well	52.0	27	Immature	Young aspen stand with several small wet lowland areas. Paper birch more abundant in the SW portion of the stand. Stand was cut in 1990. OPIC - FMD: cut in 1990 under sale #0418801. 15-25' tall TA regen on ground close to the water table, especially to the S & W. S1/2 dotted with <1 acre L/V depressions. Paper birch saplings mixed in to S in those lower areas. Used stand 62 SI.
60	4130 - Aspen	Sapling Well	7.8	24	Immature	Small stand half of which falls within natural rivers. Young aspen regenerating well with scattered red and white pine. Red maple clumps throughout stand as well.  OPIC - FMD: Appears to have been w/in 1993 wind shear zone, and salvaged? 15-20' tall TA regen with scattered RM, WP & RP poles and lg saps. A lot of downed wood adjacent to the river bottom. Used stand 62 SI, dated age to wind event.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
62	4130 - Aspen	Poletimber Well	43.4	54		Poor quality stand with pockets of lowland areas and standing water. OPIC - FMD: Records show much of the stand was K-G bladed in 1963, cutting "poor quality aspen". Most TA is around 40 years old, with some older stems at the S edge. RM lg saps/sm poles and balsam fir understory common associates on lower ground, with RP saw & poles more common on the higher ground. Also has scattered large WP saw. Stand has low swales interspersed with "higher" ground that is also relatively close to the water table. Dated stand to the K-G blade event. SW corner of the stand is within the Natural River zone.
65	42220 - Natural Jack Pine	Sawtimber Well	3.0	61	81-110	JP poles & a few saw w/ RP saw and pockets of nice RP poles with lg WP saps below. All on site close to the water table. Lowland species appear along west boundary.
67	6124 - Lowland Spruce- Fir	Poletimber Medium	7.1	86	1-50	Small lowland conifer stand with scattered red and white pine in drier areas or mounds. A lot of standing water which would make operating in very difficult.  OPIC - FMD: Spindly small diam spruce, off-site WP on small mounds (especially to S), RP on higher ground to SE, nice spruce regen colonizing open areas, tag alder swales with open water.
68	42220 - Natural Jack Pine	Poletimber Well	10.9	57	51-80	Jack pine retention island that meets minimum mapping standards. Adjacent stands were harvested under contract 72-024-12-01. Data was estimated from adjacent stands.



Stand	Cover Type	Acres	Managed Site	General Comments:
5	122 - Road/Parking Lot	2.9	No	County Rd 612 & Shupac Lake Rd OPIC - FMD: CR 612 cleared corridor.
6	330 - Low-Density Trees	4.1	No	U/G type with cherry brush (younger sprouts heavily deer-browsed) & scattered pockets of short, brushy JP poles. KW mgt block #51.
12	330 - Low-Density Trees	12.6	No	U/G with cherry brush (lower stems heavily deer-browsed) & scattered short, brushy JP poles. Stand includes a small area of the adjacent cedar swamp as well as isolated pockets of small JP poles along the PVT line. KW mgt block #51.
14	310 - Herbaceous Openland	2.5	Yes	Stand was delineated in order to facilitate the creation of a non-forested treatment to maintain the 2-track as a hunter walking trail.
19	110 - Low Intensity Urban	3.3	No	F-97 Lovells Rd OPIC - FMD: F-97 cleared corridor.
20	310 - Herbaceous Openland	238.7		Harvested under contract 72-024-12-01, Wanna-Buk Jack, stand is to be planted to KW habitat.  OPIC - FMD: Notes on old map indicate this area was "cut over in 1964". Wide range of age & size classes, with a majority of the area in small poles/lg saps with low density mature poles, along with islands that apparently were passed over in '64 that have 70-80 year JP poles. Those uncut islands (including former stands 30 & 31) were lumped into this stand since the entire NW quarter of Section 15 is pre-determined for KW harvest. Stand year of origin based on weighted average between 1964 origin regen & the older stems uncut in '64. Is part of KW mgt block #52, to be planted in 2015, with delay in harvesting to 2012 so that it can be cut with parts of block #52 in Compt 291 to the north.
32	622 - Lowland Shrub	97.4	No	Tag alder floodplain, some spirea, salix, w/ marsh grass below. Pockets w/ tamarack saps, large area of flood-killed snags. Scattered TA along margins, with inclusion at NW corner of stand on narrow peninsula of immature TA poles, scattered cull RM & 1/2 dozen super-canopy RP, all in riparian buffer zone. Site condition placed on majority of this stand because it falls within the natural rivers RMZ.
33	500 - Water	4.4	No	Open water flooding with tag alder & marsh grass at margins.
38	6225 - Bog	4.4	No	Bog dominated by leatherleaf.  OPIC - FMD: Sedge bog with leatherleaf, spirea, swamp birch and TA regen at margins.
39	6225 - Bog	43.2	No	Sedge bog with leatherleaf & spirea clumps. Includes ~1 acre island of RP saw & JP poles with thick WP regen below. Stand boundary also includes <1 acre uncut pockets of R & JP at the margins.





Stand	Cover Type	Acres	Managed Site	General Comments:
47	310 - Herbaceous Openland	0.8	No	Open area between aspen and jack pine stands, no mature trees left on this stand as described in old OI notes.  OPIC - FMD: Split from stand 46 by stand 49 cut, left for vertical diversity. Mostly mature JP. Treat with stand 46 in the future.
57	6225 - Bog	1.5	No	Sedge bog with lowland brush filling in.
59	622 - Lowland Shrub	1.9	No	Spirea, salix and other lowland brush in linear swale, with cattails, balsam fir regen.
61	622 - Lowland Shrub	6.7	No	Northern edge of impoundment, grasses, tag and lowland conifer regen. Some beaver activity in the area.  OPIC - FMD: Tag alder floodplain with spruce regen seeding in. SC-8 due to Natural River crossing through the stand.
63	6225 - Bog	1.1	No	Bog  OPIC - FMD: Sedge bog (wool grass) with leatherleaf at edges along with ring of bog shrubs (salix, alnus, spirea, cornus).
64	622 - Lowland Shrub	3.9	No	Mostly tag alder, some spirea & salix, over marsh grass.
400	3102 - Grass	3.2	No	Well Site operated by LinnState Lovells A2-13Well 6250Permit 45137Telephone 231-922-7302OPIC - FMD: Grass, spotted knapweed on cleared well pad. Little to no piping on site -- inactive or in process of being decommissioned?
401	3102 - Grass	1.1	No	Well Site Operated by LinnState Lovells A4-13MPSC 6326Permit 45502Telephone 231-955-7302OPIC - FMD: Grass, spotted knapweed on cleared well pad. Little to no piping on site -- inactive or in process of being decommissioned?
402	3102 - Grass	1.1	Yes	Old well site with not equipment on site old OI notes below state it is grass with knapweed, to much snow to confirm.  OPIC - FMD: Grass, spotted knapweed on cleared well pad. Little to no piping on site -- inactive or in process of being decommissioned? WLD: will do opening maintenance (cut brush & mow) via FTP.
403	3102 - Grass	0.8	Yes	Old well site with no equipment, manage as wildlife opening. Ground cover is grass and knapweed as per old OI notes.  OPIC - FMD: Grass, spotted knapweed on cleared well pad. Little to no piping on site -- inactive or in process of being decommissioned? WLD: will do opening maintenance (cut brush & mow) via FTP.