



# Compartment Review Presentation

Atlanta Forest Management Unit

Compartment 54129

Entry Year 2018

Acreage: 1,264

County Presque Isle

Management Area: Thunder Bay Outwash

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**Revision Date:** 2016-06-10

**Stand Examiner:** Dale Parris

**Legal Description:**

T33N R04E Sections 18, 20, 21, 22, 23, and 24

**Identified Planning Goals:**

Multi-Resource management within Compartment 129 is guided by the Thunder Bay Outwash Management Area (TBOMA) Plan. All timber harvests have been prescribed following the direction indicated in the TBOMA Plan and Timber Analysis. In all cases the unique characteristics of the individual stand was taken into consideration when writing the prescription. The timber analysis completed on the TBOMA indicated that the harvesting of aspen, red pine, oak, and white pine cover types should be of focus for the purpose of balancing the age classes of these cover types across the Management Area (MA). Wildlife, recreation, aesthetics, adjacent stands and the larger landscape were considered in all management decisions.

**Soil and topography:**

The middle 900 acres within Compartment 129 is dominated by the Rubicon sand (excessively drained), and East Lake sand (somewhat excessively drained) with lesser but significant amounts of Graycalm sand (somewhat excessively drained), Croswell loamy sand (moderately well drained), Cheboygan loamy sand (well drained), Croswell sand (well drained), and Melita loamy sand (somewhat excessively drained). The lowland areas are mostly Lupton muck and Tawas muck. Both are very poorly drained soil.

The east 350 acres within Compartment 129 is dominated by the Rubicon sand (excessively drained). The lowland areas are mixture of Greenwood peat, Aquents and Histosols (ponded), Kinross muck, Burleigh mucky loamy fine sand, and Lupton muck, which are poorly drained to very poorly drained soil.

The west 16 acres of the Compartment is composed of East Lake sand, Ocqueoc fine sand, and Grayling sand; all are soils that drain well.

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

Compartment 129 is mostly surrounded by large parcel private land having cottages or summer vacation homes, with the exception of most of the adjacent land to the south, which is state owned. The presence of Lake Ferdelman, Sportsman Lake, Lake Emma, and two other lake-ponds make this a high use recreation area. Lake Emma and Lake Ferdelman both have state sponsored boat launches.

**Unique Natural Features:**

The Michigan State University Extension (MSUE), Michigan Natural Features Inventory (MNFI) database indicated that the bald eagle (*Haliaeetus leucocephalus*) uses the area in and around Compartment 129. The bald eagle is a special concerns species within Michigan. Areas around bald eagle nests should be protected from habitat damaging activities whenever possible. The Michigan DNR follows the US Fish and Wildlife Service "National Bald Eagle Guidelines" in regards to all operations that occur in habitat used by the bald eagle.

The MSUE, MNFI also indicated that the common loon (*Gavia immer*), a state threatened species, uses the area in and adjacent to Compartment 129. Possible impacts on the common loon should be considered and mitigated when performing timber harvests near lakes and waterways within this compartment.

In addition, the MSUE, MNFI lists the slippershell mussel (*Alasmodonta viridis*), a state threatened species, as being found in the lakes and waterways in and adjacent to Compartment 129. The slippershell requires clean, clear water for its well-being. Timber harvests in the area of Compartment 129 should be safe guarded against any erosion or run-off that could contaminate the lakes and waterways in this area.

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

The State Historic Preservation Office (SHPO) did have a hit within Compartment 129. For further information, contact the SHPO.

### **Special Management Designations or Considerations:**

Visual aesthetics and possible erosion issues need to be considered in all forest treatments that are planned near any of the lakes in the area. Most of the upland soils are well drained, therefore rutting is not a major concern. Due to the dominance of sandy soils, erosion is a concern where there are hills and slopes.

### **Watershed and Fisheries Considerations:**

The Fisheries Division of the DNR does not have any major concerns to speak of as timber harvesting relates to the bodies of water in Compartment 129.

### **Wildlife Habitat Considerations:**

This compartment is an excellent opportunity to manage for wildlife. It is part of a multiple compartment, large scale block of public land providing contiguous wildlife pathways that are necessary for many of our large game animals such as black bear. Habitat components of heavy aspen and oak provide food and cover for multiple species at a variety of age classes. We are working to maintain oak and other mast producing trees as well as keep a good age rotation of aspen in this compartment as well as adjacent compartments. Species which benefit from our management include white-tailed deer, black bear, ruffed grouse, woodcock, and many other game and non-game species.

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

Surface sediments consist of coarse-textured till, glacial outwash sand and gravel, and postglacial alluvium. The glacial drift thickness varies between 50 and 200 feet. Beneath the glacial drift is the Devonian Traverse Group. The Traverse is quarried for limestone and cement products near Alpena. A former sand/gravel pit is located over one mile to the east, in Section 19. The closest active pit is located three miles to the south. Sand and gravel potential is good on the upland areas. This area is located south of the Niagaran reef trend and north of the Antrim Shale play. None of the state minerals in the area are currently leased for oil and gas development and potential is limited.

### **Vehicle Access:**

The east 350 acres of Compartment 129 is accessible via Huntley Road and forest trails. The east end of the central 900 acres is accessible from County Road 634 and forest trails. The east-central portion of the central 900 acres is accessible from Bamma Road and forest trails. The Northwest portion of the central 900 acres that is north of Lake Ferdelman is only accessible from private forest road. This private forest road access runs north off of County Road 634 and enters this portion of state land from the west. The west 16 acres of Compartment 129 is accessible from West Hwy off of Lake Emma Road.

### **Survey Needs:**

Surveys will possibly be needed to facilitate the two proposed treatments east of County Road 634 in the central 900 acres of Compartment 129.

### **Recreational Facilities and Opportunities:**

Within Compartment 129 there are a number of lakes that offer fishing opportunities (Lake Ferdelman, Sportsman Lake, Lake Emma, and two other lake-ponds). Lake Emma and Lake Ferdelman both have state sponsored boat launches. Whitetail deer, turkey, grouse, woodcock, and rabbit can be hunted within the compartment. There are not any DNR sponsored recreational trails within Compartment 129.

### **Fire Protection:**

In the case of wildland fire, Compartment 129 is within the response area of the Alpena, Atlanta, and Onaway DNR Fire Taskforce. Due to the remote location of the compartment, DNR Fire would need approximately 40 minutes to an hour to report to a wildland fire in this area.

There are no major fire hazards within Compartment 129. Access to the compartment is mostly good and is described in the 'Vehicle Access' section above.

### **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:**

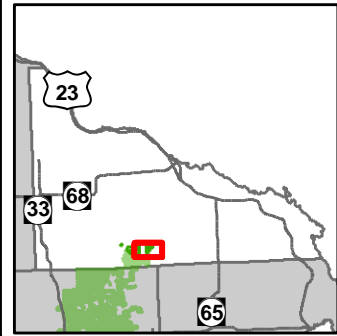
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**



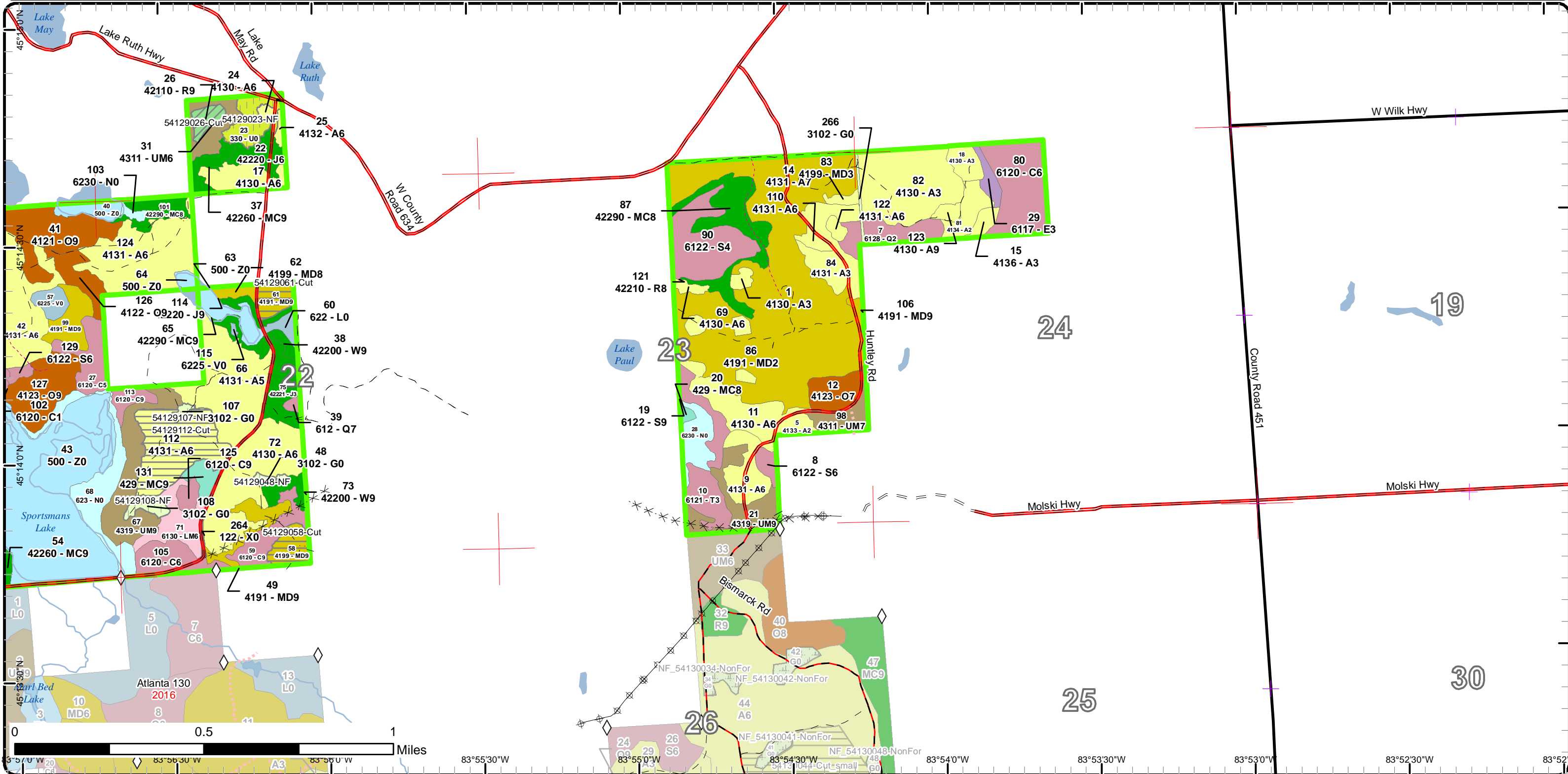


# Cover Type & Treatments Map

Compartment: 129  
 T33N, R04E, Sec: 18, 20-24  
 County: Presque Isle  
 Unit: Atlanta  
 Mgmt Area: Thunder Bay  
 Outwash  
 YOE: 2018  
 Acres: 1,264 GIS Calculated  
 Examiner: Dale Parris  
 Map Revised: 10/11/2016  
 Map Phase: Post Review

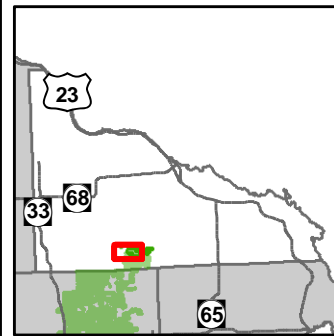


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|--|--|--|
| <ul style="list-style-type: none"> <li>— Miris Corners</li> <li>— Remonumented Section Corners</li> <li>◇ Field Grade GPS Corners</li> <li>— Paved Roads</li> <li>— County Gravel Roads</li> <li>— Gravel Roads</li> <li>— Poor Dirt Roads</li> <li>— County Poor Dirt Roads</li> <li>— Trail (Non-Recreation)</li> <li>— Closed Roads</li> <li>— Abandoned Railroad</li> <li>— Powerline</li> <li>— Compartment Boundary</li> </ul> | <ul style="list-style-type: none"> <li>□ Clearcut (w/Reserves)</li> <li>□ Opening Maintenance</li> <li>□ Thinning (Crown, Low, Systematic)</li> <li>□ 412 - Oak Types</li> <li>□ 413 - Aspen Types</li> <li>□ 419 - Mixed Upland Deciduous</li> <li>□ 421 - Planted Pines</li> <li>□ 422 - Natural Pines</li> <li>□ 429 - Mixed Upland Conifers</li> <li>□ 430 - Upland Mixed Forest</li> <li>□ 611 - Lowland Deciduous Forest</li> <li>□ 612 - Lowland Coniferous Forest</li> <li>□ 613 - Lowland Mixed Forest</li> <li>□ 122 - Roads/Parking Lot</li> <li>□ 310 - Herbaceous Openland</li> </ul> | <ul style="list-style-type: none"> <li>□ 330 - Low Density Trees</li> <li>□ 500 - Water</li> <li>□ 622 - Lowland Shrub</li> <li>□ 623 - Emergent Wetland</li> <li>□ Lakes</li> </ul> |
|--|--|--|

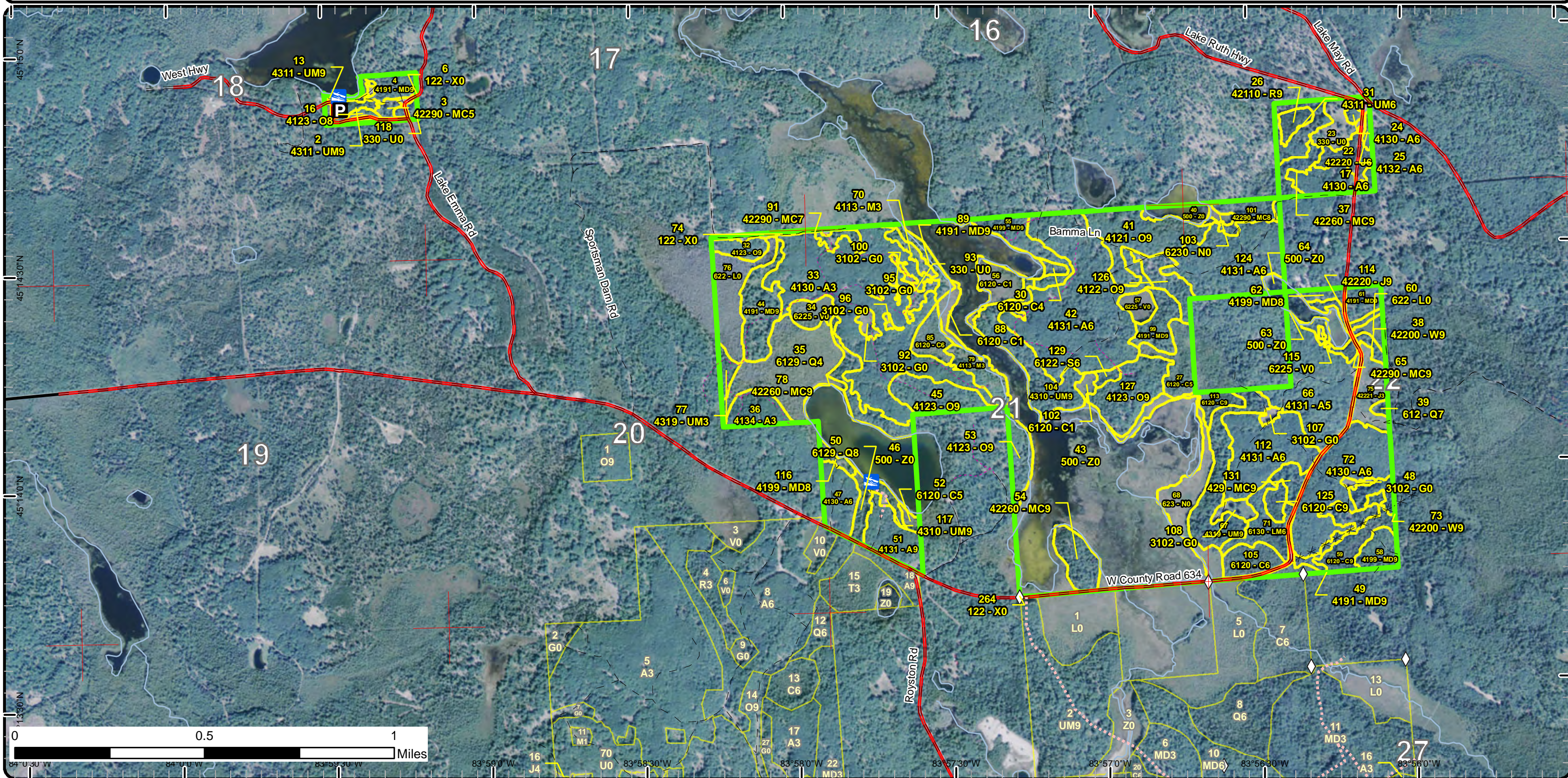


# Stand Boundary Map

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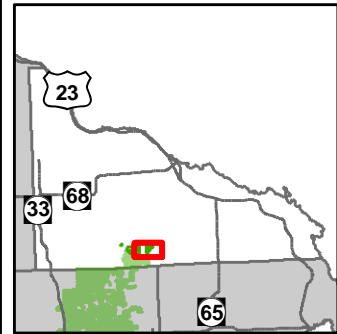


- Miris Corners
  - ◇ Field Grade GPS Corners
  - Boating Access Site
  - P Parking Lot
  - Paved Roads
  - County Gravel Roads
  - Gravel Roads
  - - Poor Dirt Roads
  - - - Trail (Non-Recreation)
  - - - - Closed Roads
  - ✕ Abandoned Railroad
  - Rivers
  - Compartment Boundary
  - Stand Boundaries
- 411 - Northern Hardwood
  - 412 - Oak Types
  - 413 - Aspen Types
  - 419 - Mixed Upland Deciduous
  - 421 - Planted Pines
  - 422 - Natural Pines
  - 429 - Mixed Upland Conifers
  - 430 - Upland Mixed Forest
  - 612 - Lowland Coniferous Forest
  - 613 - Lowland Mixed Forest
  - 122 - Roads/Parking Lot
  - 310 - Herbaceous Openland
  - 330 - Low Density Trees
  - 500 - Water
  - 622 - Lowland Shrub
  - 623 - Emergent Wetland

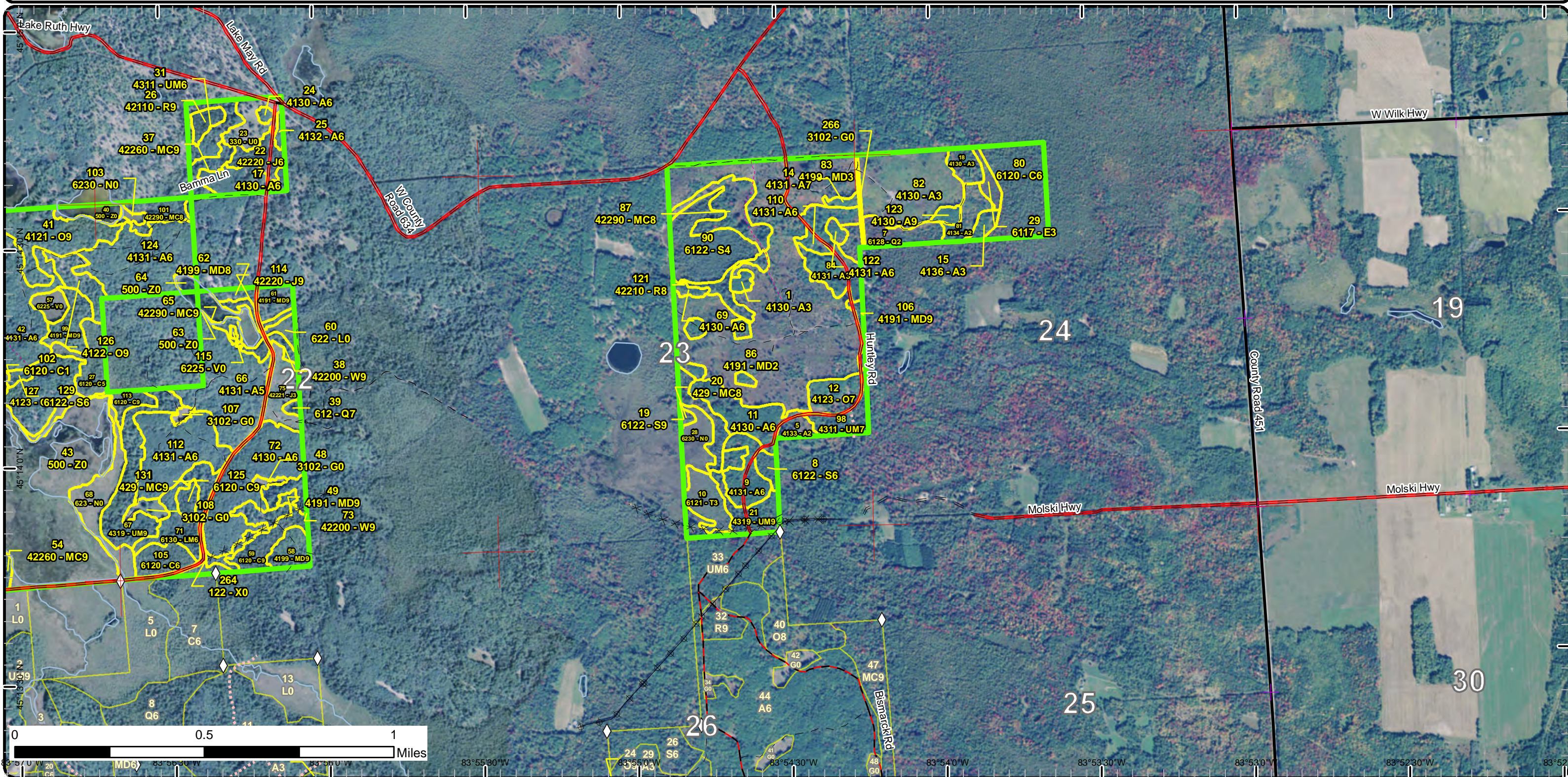


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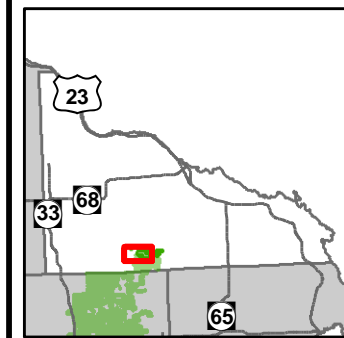
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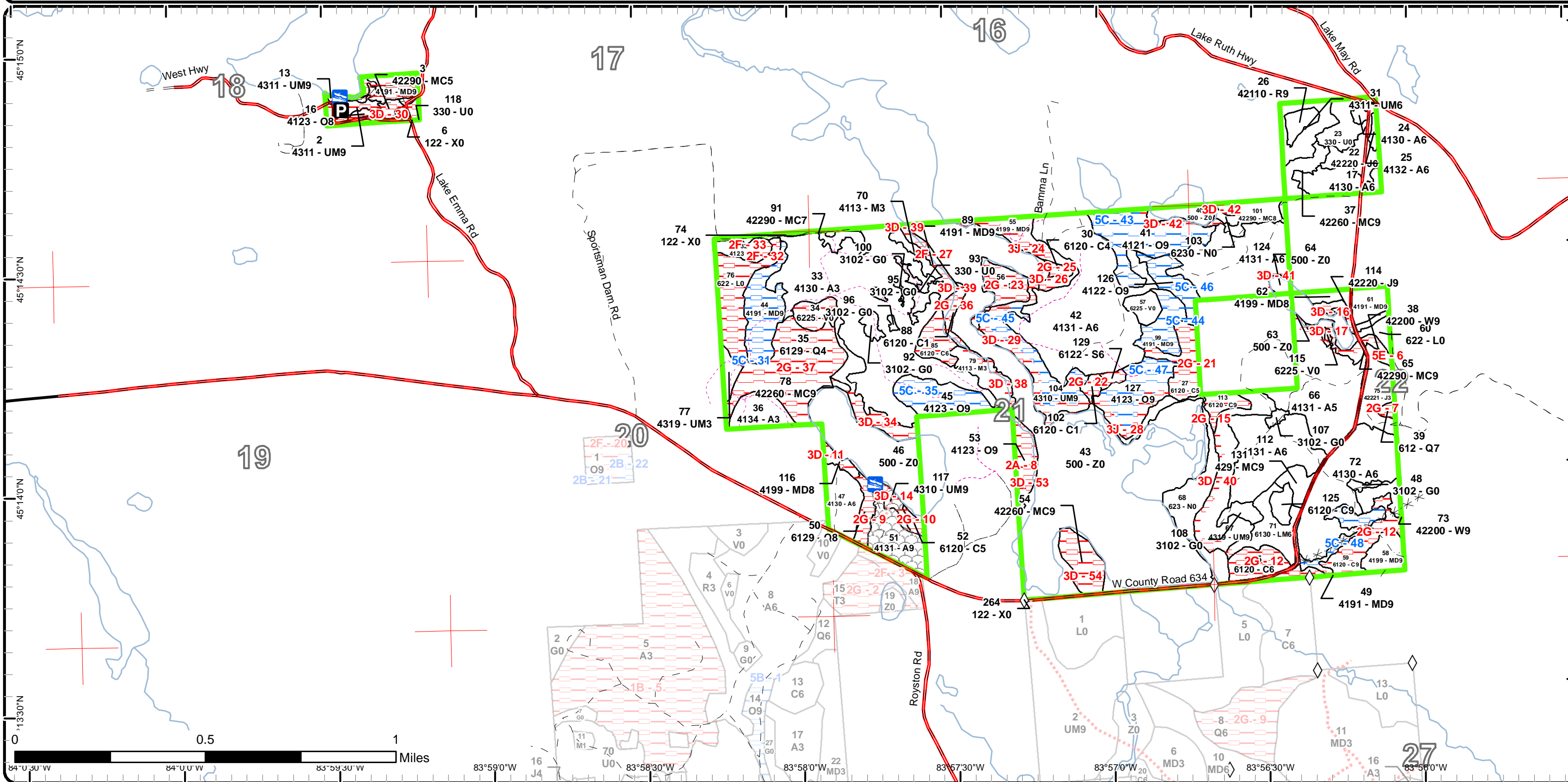


# Special Conservation Areas & Site Conditions Map

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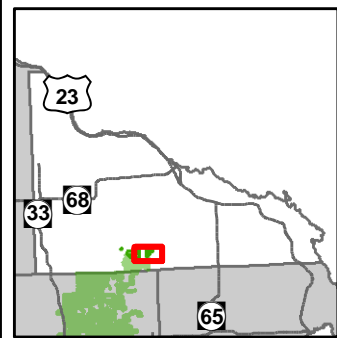


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- ◇ Field Grade GPS Corners
- 🚤 Boating Access Site
- P Parking Lot
- Paved Roads
- Gravel Roads
- - Poor Dirt Roads
- ⋯ Trail (Non-Recreation)
- ⋯ Closed Roads
- ✖ Abandoned Railroad
- Rivers
- ▭ Compartment Boundary
- Available w/ Constraints
- Unavailable
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 2A: Adjacent landowner denied access
- 2F: Too steep
- 2G: Too wet (sensitive soils, does not include access issues)
- 3D: Recreational / Scenic values
- 3J: Water quality / BMPs (stream, river, or lake)
- 5E: Long-Term Retention
- ▭ Stand Boundaries

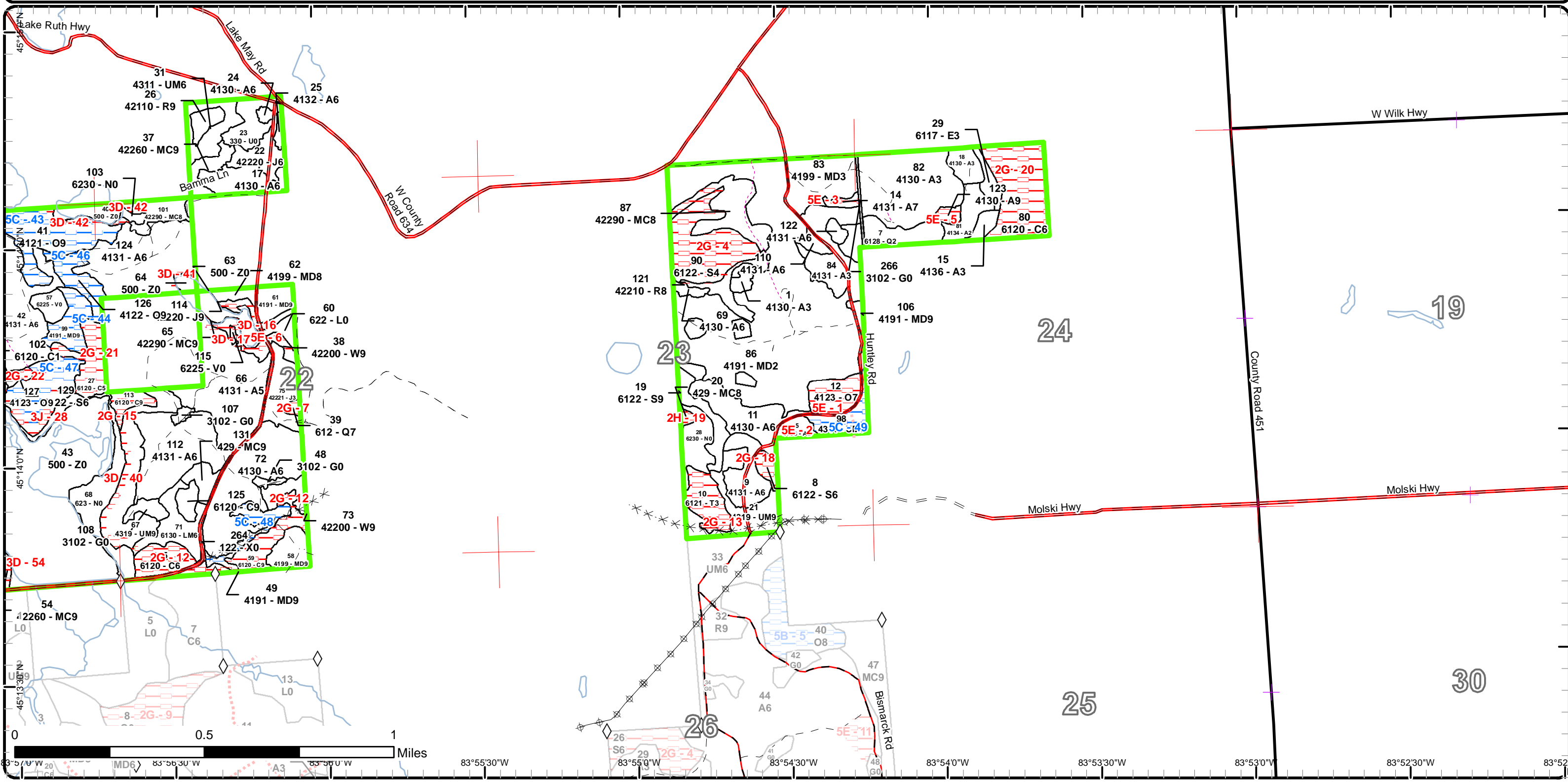


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- - - Closed Roads
- x Abandoned Railroad
- Powerline
- Compartment Boundary
- Available w/ Constraints
- - - Unavailable
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 2G: Too wet (sensitive soils, does not include access issues)
- 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
- 3D: Recreational / Scenic values
- 3J: Water quality / BMPs (stream, river, or lake)
- 5E: Long-Term Retention
- Stand Boundaries



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	32	22	117	31	166	5	0	0	0	11	0	0	0	0	0	0	0	384
Bog	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Cedar	0	0	0	2	10	0	0	0	0	23	0	9	27	1	0	4	0	0	76
Herbaceous Openland	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Jack Pine	0	9	0	0	0	6	0	0	0	3	0	0	0	0	0	0	0	0	18
Low-Density Trees	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
Lowland Conifers	0	0	0	10	0	0	29	0	0	1	4	0	0	0	0	0	0	0	44
Lowland Deciduous	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Lowland Mixed Forest	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	9
Lowland Shrub	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Lowland Spruce/Fir	0	0	0	0	0	0	6	1	24	0	0	0	0	0	0	0	0	0	30
Marsh	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
Mixed Upland Deciduous	0	122	0	0	0	0	0	2	0	29	8	25	0	0	0	0	0	0	186
Natural Mixed Pines	0	0	0	0	0	10	0	0	22	9	0	0	9	0	0	0	0	0	48
Northern Hardwood	0	0	7	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Oak	0	0	0	0	0	0	0	0	0	24	2	42	8	0	0	0	0	0	76
Red Pine	0	0	0	0	0	0	3	0	5	0	0	0	0	0	0	0	0	0	8
Tamarack	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	8
Upland Conifers	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	0	0	0	5
Upland Mixed Forest	0	0	0	0	3	8	0	20	0	0	23	0	3	19	0	0	0	0	76
Urban	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
Water	196	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	196
White Pine	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	6
<b>Total</b>	<b>278</b>	<b>163</b>	<b>32</b>	<b>132</b>	<b>44</b>	<b>190</b>	<b>60</b>	<b>23</b>	<b>51</b>	<b>90</b>	<b>48</b>	<b>76</b>	<b>53</b>	<b>24</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>1265</b>



## Report 2 – Treatment Summary

Atlanta Mgt. Unit

Year of Entry: 2018

Acres of Harvest

Compartment 129

Total Compartment Acres: 1,264

Commercial Harvest - 49  
 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	Oversory Removal	Salvage	Other	Total Acres
Aspen	35	0	0	0	0	0	0	0	0	35
Mixed Upland Deciduous	11	0	0	0	0	0	0	0	0	11
Red Pine	0	0	0	0	0	3	0	0	0	3
<b>Total</b>	<b>46</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>49</b>

### Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	49	0	0	0	0	0	0	17	0	66
Next Step	0	0	0	0	0	0	46	0	0	46
<b>Total</b>	<b>49</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>46</b>	<b>17</b>	<b>0</b>	<b>112</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
23	54129023-NF	7.9	330 - Low-Density Trees	Nonstocked	0	Unspec ified	NonForestMgt	Herbaceous/Crop/ Grass Planting	310 - Herbaceous Openland		Draft Field Boundary

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

Prescription Opening will be maintained on a rotational basis to produce wildlife forage through burning, mowing, planting, or other agriculture practices.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2017

26	54129026-Cut	3.1	42110 - Planted Red Pine	Sawtimber Well	55	141- 170	Harvest	Crown Thinning	4211 - Planted Red Pine	Even-Aged	Draft Field Boundary
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**Habitat Cut: No****Site Condition:**

Prescription Third row thin. Remove all jack pine.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

The rows are not very well defined in this stand and marking will be needed to define cut trees.

Comment:

Proposed Start Date: 10/01/2017

48	54129048-NF	1.0	3102 - Grass	Nonstocked	0	Unspec ified	NonForestMgt	Herbaceous/Crop/ Grass Planting	310 - Herbaceous Openland		Draft Field Boundary
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**Habitat Cut: No****Site Condition:**

Prescription Opening will be maintained on a rotational basis to produce wildlife forage through burning, mowing, planting, or other agriculture practices.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2017

51	54129051-Cut	10.3	4131 - Aspen, Oak	Sawtimber Well	92	81-110	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Draft Field Boundary
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**Habitat Cut: No****Site Condition:**

Prescription Clear-cut with retention. Retain 3-10% pocket retention in on or more pockets that are stand representative and focused around red and white oak with a preference for white oak. The retention will be placed to the north to protect the hill on the edge of Lake Ferdelman from off-road vehicle damage, and is already mapped out of the treatment.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventary)

Treatments:

Acceptable

Acceptable regeneration is a stand dominated by aspen with white pine, oak, and red maple components.

Regen:

Other

Ensure the access route to the Lake Ferdelman boat launch is open during all points during the harvest and make sure that it is protected and not used to forward wood. The landing will need to be off of County Road 634.

Comment:

Proposed Start Date: 10/01/2017



STAN	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
58	54129058-Cut	6.0	4199 - Other Mixed Upland Deciduous	Sawtimber Well	82	81-110	Harvest	Clearcut with Retention	4199 - Other Mixed Upland Deciduous	Even-Aged	Draft Field Boundary

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

Prescription Clearcut with retention. Leave 3-5% of stand representative retention in one or more pockets. Retain all oak and any pine present. Place retention on any steeper slopes along the cedar stand to the north and west.

Specs:

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

Acceptable Regen: Acceptable regeneration is any mix of red maple, paper birch, balsam fir, and aspen.

Other Comment:

Proposed Start Date: 10/01/2017

61	54129061-Cut	4.9	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	85	81-110	Harvest	Clearcut	4199 - Other Mixed Upland Deciduous	Even-Aged	Draft Field Boundary
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**Habitat Cut: No****Site Condition:**

Prescription Clear-cut with retention. Protect the pine regeneration for future stand diversity. Protect the red pine greater than 18 inches in DBH and larger Red Pine legacy trees. Retain 1-3 of the largest diameter red oak per acre as future mast and seed trees where they are present. Many of these oak will be 20+ inches in DBH.

Specs:

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

Acceptable Regen: Acceptable regeneration is a combination of red maple, red oak, aspen, and white pine.

Other Comment:

Proposed Start Date: 10/01/2017

92	54129092-NF	1.9	3102 - Grass	Nonstocked	Unspecified	NonForestMgt	Herbaceous/Crop/Grass Planting	310 - Herbaceous Openland			Draft Field Boundary
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**Habitat Cut: No****Site Condition:**

Prescription Opening will be maintained on a rotational basis to produce wildlife forage through burning, mowing, planting, or other agriculture practices.

Specs:

Next Step Treatments:

Acceptable Regen:

Other Comment:

Proposed Start Date: 10/01/2017

93	54129093-NF	3.0	330 - Low-Density Trees	Nonstocked	Unspecified	NonForestMgt	Herbaceous/Crop/Grass Planting	310 - Herbaceous Openland			Draft Field Boundary
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**Habitat Cut: No****Site Condition:**

Prescription Opening will be maintained on a rotational basis to produce wildlife forage through burning, mowing, planting, or other agriculture practices.

Specs:

Next Step Treatments:

Acceptable 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
95	54129095-NF	0.5	3102 - Grass	Nonstocked		Unspec ified	NonForestMgt	Herbaceous/Crop/ Grass Planting	310 - Herbaceous Openland		Draft Field Boundary

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

Prescription Opening will be maintained on a rotational basis to produce wildlife forage through burning, mowing, planting, or other agriculture practices.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2017

96	54129096-NF	0.5	3102 - Grass	Nonstocked		Unspec ified	NonForestMgt	Herbaceous/Crop/ Grass Planting	310 - Herbaceous Openland		Draft Field Boundary
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**Habitat Cut: No****Site Condition:**

Prescription Opening will be maintained on a rotational basis to produce wildlife forage through burning, mowing, planting, or other agriculture practices.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2017

100	54129100-NF	0.4	3102 - Grass	Nonstocked		Unspec ified	NonForestMgt	Herbaceous/Crop/ Grass Planting	310 - Herbaceous Openland		Draft Field Boundary
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**Habitat Cut: No****Site Condition:**

Prescription Opening will be maintained on a rotational basis to produce wildlife forage through burning, mowing, planting, or other agriculture practices.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2017

107	54129107-NF	1.0	3102 - Grass	Nonstocked		Unspec ified	NonForestMgt	Herbaceous/Crop/ Grass Planting	310 - Herbaceous Openland		Draft Field Boundary
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**Habitat Cut: No****Site Condition:**

Prescription Opening will be maintained on a rotational basis to produce wildlife forage through burning, mowing, planting, or other agriculture practices.

Specs:

Next Step

Treatments:

Acceptable

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
108	54129108-NF	2.7	3102 - Grass	Nonstocked		Unspecified	NonForestMgt	Herbaceous/Crop/ Grass Planting	310 - Herbaceous Openland		Draft Field Boundary

**Habitat Cut: No**

**Site Condition:**

Prescription Opening will be maintained on a rotational basis to produce wildlife forage through burning, mowing, planting, or other agriculture practices.  
Specs:

Next Step  
Treatments:

Acceptable  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2017

112	54129112-Cut	24.3	4131 - Aspen, Oak	Poletimber Well	43	111- 140	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Draft Field Boundary
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**Habitat Cut: No**

**Site Condition:**

Prescription Clear-cut with retention. Retain 3-10% of the stand in multiple pockets. Retention should be focused around healthy oak while being stand representative. Protect all red pine and white pine for future stand diversity. Retain 1-3 large crowned oak where present.  
Specs:

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

Acceptable Acceptable regeneration is a mix of aspen, oak, red maple, and white pine.  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2017

**Total Treatment  
Acreage Proposed: 67.5**



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### Availability for Management

Total Acres	Acres Available	Acres Avail			Dominant Site Conditions								
		With Condition	Not Available		5C	2A	2F	2G	2H	3D	3J	5E	
383	377	0	6	Aspen				0			2		3
9	4	0	5	Bog				5			0		
76	3	0	73	Cedar				73					
9	9	0	0	Herbaceous Openland									
18	16	0	2	Jack Pine							2		0
11	11	0	0	Low-Density Trees							0		
44	10	0	34	Lowland Conifers				34					
3	3	0	0	Lowland Deciduous									
9	9	0	0	Lowland Mixed Forest							0		
17	2	0	14	Lowland Shrub				14					
31	6	0	25	Lowland Spruce/Fir				25					
25	25	0	0	Marsh									
186	142	27	17	Mixed Upland Deciduous	27		2	0			10	5	
48	28	0	20	Natural Mixed Pines				2			18		
10	7	0	3	Northern Hardwood							3		
75	3	49	23	Oak	49	3	1				6	5	8
8	8	0	1	Red Pine				1					
8	0	0	8	Tamarack				8					
5	4	0	1	Upland Conifers						1			
75	38	17	20	Upland Mixed Forest	17						20		
11	8	0	3	Urban							3		
196	196	0	0	Water									
6	5	0	1	White Pine									1
1,264	915	93	256	Total Forested Acres	93	3	3	162	1	65	10	12	
	72%	7%	20%	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	Dominant Site Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	Unavailable	5E: Long-Term Retention		8	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>								
This is long term retention from Timber Sale No. 54-028-08-01.								

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2	<b>Unavailable</b>	<b>5E: Long-Term Retention</b>	0	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> This is long term retention from Timber Sale No. 54-028-08-01							
3	<b>Unavailable</b>	<b>5E: Long-Term Retention</b>	2	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> This is long term retention from Timber Sale No. 54-028-08-01.							
4	<b>Unavailable</b>	<b>2G: Too wet (sensitive soils, does not include access issues)</b>	23	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
5	<b>Unavailable</b>	<b>5E: Long-Term Retention</b>	2	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> This is long term retention from Timber Sale No. 54-028-08-01.							
6	<b>Unavailable</b>	<b>5E: Long-Term Retention</b>	1	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
<b>Comments:</b> This is long term retention from Timber Sale No. 54-007-08-01.							
7	<b>Unavailable</b>	<b>2G: Too wet (sensitive soils, does not include access issues)</b>	1	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> This is long term retention from Timber Sale No. 54-007-08-01.							
8	<b>Unavailable</b>	<b>2A: Adjacent landowner denied access</b>	4	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							

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9	<b>Unavailable</b>	2G: Too wet (sensitive soils, does not include access issues)	4	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
10	<b>Unavailable</b>	2G: Too wet (sensitive soils, does not include access issues)	1	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
11	<b>Unavailable</b>	3D: Recreational / Scenic values	2	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
<b>Comments:</b> This stand is a scenic recreation area and is often used as a camp site.							
12	<b>Unavailable</b>	2G: Too wet (sensitive soils, does not include access issues)	18	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
13	<b>Unavailable</b>	2G: Too wet (sensitive soils, does not include access issues)	8	5D: Unproductive Forest Land	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
14	<b>Unavailable</b>	3D: Recreational / Scenic values	3	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							

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15	<b>Unavailable</b>	<b>2G: Too wet (sensitive soils, does not include access issues)</b>	4	3D: Recreational / Scenic values	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
16	<b>Unavailable</b>	<b>3D: Recreational / Scenic values</b>	2	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
17	<b>Unavailable</b>	<b>3D: Recreational / Scenic values</b>	4	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
<b>Comments:</b> The west half of this BMP buffer is 150 feet wide because there is a 10-30 percent slope down to Lake Donna in this area.							
18	<b>Unavailable</b>	<b>2G: Too wet (sensitive soils, does not include access issues)</b>	3	5D: Unproductive Forest Land	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
19	<b>Unavailable</b>	<b>2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)</b>	1	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
20	<b>Unavailable</b>	<b>2G: Too wet (sensitive soils, does not include access issues)</b>	22	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							

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21	<b>Unavailable</b>	2G: Too wet (sensitive soils, does not include access issues)	9	Unspecified	<b>Unspecified</b>	Unspecified	Unspecified
<b>Comments:</b>							
22	<b>Unavailable</b>	2G: Too wet (sensitive soils, does not include access issues)	3	5D: Unproductive Forest Land	<b>Unspecified</b>	Unspecified	Unspecified
<b>Comments:</b>							
23	<b>Unavailable</b>	2G: Too wet (sensitive soils, does not include access issues)	7	5D: Unproductive Forest Land	<b>Unspecified</b>	Unspecified	Unspecified
<b>Comments:</b>							
24	<b>Unavailable</b>	3J: Water quality / BMPs (stream, river, or lake)	5	3D: Recreational / Scenic values	<b>Unspecified</b>	Unspecified	Unspecified
<b>Comments:</b> This portion of the stand has approximately a 25 to 40 degree slope down to the lake.							
25	<b>Unavailable</b>	2G: Too wet (sensitive soils, does not include access issues)	1	Unspecified	<b>Unspecified</b>	Unspecified	Unspecified
<b>Comments:</b>							
26	<b>Unavailable</b>	3D: Recreational / Scenic values	1	3J: Water quality / BMPs (stream, river, or lake)	<b>Unspecified</b>	Unspecified	Unspecified
<b>Comments:</b>							

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27	<b>Unavailable</b>	<b>2F: Too steep</b>	2	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
<b>Comments:</b> The boundary of this too steep site condition was GPSed on the ground.							
28	<b>Unavailable</b>	<b>3J: Water quality / BMPs (stream, river, or lake)</b>	5	3D: Recreational / Scenic values	Unspecified	Unspecified	Unspecified
<b>Comments:</b> This site condition was widened to the east where the slope down to the water is longest. Much of the east side of this site condition slopes down to the water at approximately a 25 to 30 percent slope. A small portion of ground just west of the point slopes down to the water.							
29	<b>Unavailable</b>	<b>3D: Recreational / Scenic values</b>	8	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
<b>Comments:</b> The slope to the water for most of this site condition is minimal.							
30	<b>Unavailable</b>	<b>3D: Recreational / Scenic values</b>	16	3D: Recreational / Scenic values	3G: Other Influence zones - See comments	Unspecified	Unspecified
<b>Comments:</b> This immediate area surrounds the boat launch for Lake Emma, and harvesting should be minimized to necessity due to the high amount of recreating that takes place in this area.							
31	<b>Available</b>	<b>5C: Delay treatment for age/size class diversity or exceptional site quality</b>	14	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> This stand adds coverytype diversity to the area, and offers open areas useful to multiple species of wildlife.							
32	<b>Unavailable</b>	<b>2F: Too steep</b>	1	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> This site condition was mapped out on the ground.							

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33	Unavailable	2F: Too steep	0	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> This site condition was mapped out on the ground.							
34	Unavailable	3D: Recreational / Scenic values	5	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
35	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	12	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> This stand adds diversity to the area in that much of the oak covertime to the north was harvested in the recent past and has low amounts of oak regeneration that made it due to the heavy amount of elk and deer browsing that used to take place in this area.							
36	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	9	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
37	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	48	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
38	Unavailable	3D: Recreational / Scenic values	3	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							

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39	Unavailable	3D: Recreational / Scenic values	1	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
40	Unavailable	3D: Recreational / Scenic values	5	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
41	Unavailable	3D: Recreational / Scenic values	1	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
42	Unavailable	3D: Recreational / Scenic values	2	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
43	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	18	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
44	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	8	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							



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45	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	10	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
46	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	7	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
47	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	11	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
48	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	6	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> This stand acts as a buffer to the cedar stand/lowlands to the south and it is suggested that it is protected at the present time to maintain diversity and edge in this area. The portion of the stand that forms the large north and west finger is a small oak Savannah inclusion that is beneficial to multiple wildlife species, adding another reason for retaining this stand for the present time.							
49	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	7	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> This stand adds covertime diversity to the area that is suggested be maintained at this time.							

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53	<b>Unavailable</b>	<b>3D: Recreational / Scenic values</b>	3	2A: Adjacent landowner denied access	Unspecified	Unspecified	Unspecified
<b>Comments:</b> The OIPC notes indicated that the private land owner has denied access to this land in the past.							
54	<b>Unavailable</b>	<b>3D: Recreational / Scenic values</b>	9	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							



**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>	Potential Old Growth		SCA Removal	13

Mgt. Unit

Compartment:

Year of Entry



## 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
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	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4130 - Aspen	Sapling Well	6.7	17	Immature	
2	4311 - Pine, Aspen Mix	Sawtimber Well	3.6	95	81-110	This stand surrounds the Lake Emma boat launch at the west end. The bigtooth can be seen in the imagery in a patch to the south-central portion of this stand. The quaking aspen are at the east end of the stand near the boat launch. The portion of the stand near the boat launch may eventually need to be harvested if the aspen or jack pine become hazard trees.
3	42290 - Natural Mixed Pine	Poletimber Medium	1.5	43	51-80	The age is flagged as even because this stand should be managed as an even age stand. There are trees of all sizes and age class present due to this stand being somewhat open and past disturbance.
4	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	6.3	95	51-80	
5	4133 - Aspen, Mixed Pine	Sapling Medium	3.0	6	1-50	The white pine, red pine, and red oak remaining from before the last harvest vary highly in age.
7	6128 - Lowland Coniferous, Mixed Deciduous	Sapling Medium	10.4	29	Immature	
8	6122 - Black Spruce	Poletimber Well	2.7	75	1-50	This stand is too wet to harvest and the timber volume is low.
9	4131 - Aspen, Oak	Poletimber Well	9.4	42	51-80	There are some low amounts of log sized jack pine, red pine, and red maple that were retained during the last harvest.
10	6121 - Tamarack	Sapling Well	8.2	58	1-50	The northern white cedar are dying likely due to the high moisture levels in the soil. The tamarack are stunted due to the high moisture in soil.
11	4130 - Aspen	Poletimber Well	13.6	25	1-50	The bigtooth look to be healthier than the quaking aspen. The bigtooth aspen are in the higher ground areas and the quaking aspen are in the lower areas, which is typical for these species.
12	4123 - Red Oak	Sawtimber Poor	7.8	111	51-80	This stand is retention from the large clear-cut that was done to the northwest. The sale number that this stand is retention for is 54-028-08-01. The understory is very open in this stand.
13	4311 - Pine, Aspen Mix	Sawtimber Well	0.3	95	81-110	This stand surrounds the Lake Emma boat launch at the west end. The bigtooth can be seen in the imagery in a patch to the south-central portion of this stand. The quaking aspen are at the east end of the stand near the boat launch. The portion of the stand near the boat launch may eventually need to be harvested if the aspen or jack pine become hazard trees.
14	4131 - Aspen, Oak	Sawtimber Poor	1.5	59	81-110	This stand is long term retention from sale no. 54-028-08-01.
15	4136 - Aspen, Mixed Conifer	Sapling Well	2.5	26	1-50	



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
16	4123 - Red Oak	Sawtimber Medium	1.5	95	Unspecified	
17	4130 - Aspen	Poletimber Well	8.6	44	81-110	
18	4130 - Aspen	Sapling Well	4.4	25	1-50	About 20 square feet of basal area in white pine and red oak was retained during the previous harvest.
19	6122 - Black Spruce	Sawtimber Well	6.3	56	81-110	According to the state compartments layer the private wire is approx. 80 ft. onto state land.
20	429 - Mixed Upland Conifers	Sawtimber Medium	0.9	80	51-80	The private wire looks like it is 130 ft. too far east on to state land. This stand is blocked off by wetlands and cannot be harvested. The age of this stand was estimated using red pine ages in nearby stands and was not taken due to the size and remoteness of the stand.
21	4319 - Mixed Upland Forest	Sawtimber Well	13.3	62	81-110	There is a lowland spot dividing the east and west portions of the stand. This stand is a combination of inclusion pockets.
22	42220 - Natural Jack Pine	Poletimber Well	6.4	42	81-110	There is a narrow run-off through the center of this stand surrounded by tag alder. This could be planted jack pine, but rows were not evident. There were no records found stating that this was planted jack pine.
24	4130 - Aspen	Poletimber Well	0.9	46	51-80	
25	4132 - Aspen, Jack Pine	Poletimber Well	1.1	39	1-50	There is one very large white oak present in this stand towards the north end by the road.
26	42110 - Planted Red Pine	Sawtimber Well	3.1	55	141-170	Records show that this stand was planted in 1955 and aging verifies this. The live crown ratio is on average 20 percent. This stand needs to be thinned to open up the canopy, maintain live crown, and maximize growth on the remaining stems. This stand is barely a log stand/borderline pole stand. This stand was not third row thinned. Rows are evident in some areas and not in others. The rows vary in spacing but will allow room for equipment to thin out the stand without doing a third row thin.
27	6120 - Lowland Cedar	Poletimber Medium	9.3	113	51-80	This stand is mostly unproductive and too wet to harvest. Most of the cedar is small diameter, dying, and stunted due to the highly saturated soil. There are some larger log sized cedar in the southern third of the stand.
29	6117 - Lowland Deciduous, Mixed Coniferous	Sapling Well	3.0	19	Immature	This stand is lower than the surrounding stands to the west and south and was therefore divided out. The tag alder actually are as tall as the trees and make up about 20 percent of the canopy.
30	6120 - Lowland Cedar	Poletimber Poor	1.3	86	1-50	This stand is a drainage into the lake to the west.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
31	4311 - Pine, Aspen Mix	Poletimber Well	7.6	46	81-110	The basal area varies from 50 to 150 square feet per acre. Pockets of red pine and aspen alternate throughout.
32	4123 - Red Oak	Sawtimber Well	4.2	86	111-140	Red pine from sapling to pole size are coming in very well under the oak. At some point these red pine will need release to do well.
33	4130 - Aspen	Sapling Well	73.5	25	1-50	The timber sale for this stand was closed out in 1991. Per the OIPC notes, in 1996, early in the regeneration of this stand, the oak regeneration was consumed by deer and elk; in addition the maple was browsed hard.
35	6129 - Mixed Coniferous Lowland Forest	Poletimber Poor	29.1	56	1-50	70% of the black spruce is dead. There would be 75-100% canopy if all the trees were alive.
36	4134 - Aspen, Spruce/Fir	Sapling Well	7.8	23	1-50	
37	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	4.7	45	51-80	The red pine grown in the open have larger diameter and less height. There are older remnant red pine, white pine, and oak present that were not cut during the last harvest.
38	42200 - Natural White Pine	Sawtimber Well	1.7	116	51-80	This stand is long term retention from Timber Sale No. 54-007-08-01.
39	612 - Lowland Coniferous Forest	Sawtimber Poor	1.0	86	1-50	This is a sparsely stocked lowland stand with a large white pine component in the canopy. Another visit will need to be made to this stand to get more accurate stand data.
41	4121 - Oak, Aspen	Sawtimber Well	20.1	84	81-110	The majority of this stand slopes down to Lake Ruth. All slopes are harvestable. The oak have medium sized crowns, and vary from about 6" to 18" in DBH.
42	4131 - Aspen, Oak	Poletimber Well	59.9	45	51-80	The aspen and oak are healthy.
44	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	13.5	103	51-80	The basal area and the percent canopy cover area highly variable throughout the stand. The age of the trees are variable due to the open nature of the stand. The aspen are found in a couple of log sized pockets and a pole sized pocket. This stand adds covertype diversity to the area, and has some open areas that are beneficial to wildlife.
45	4123 - Red Oak	Sawtimber Well	12.0	103	81-110	OPIC - FMD: OAK NOT REGENERATING IN ADJACENT STAND. Oak Management Guideline (June 2000) recommends no treatment.
47	4130 - Aspen	Poletimber Well	9.3	26	1-50	The stand year of origin is 1990.
49	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	6.2	82	51-80	This stand is mostly a transition zone from the aspen to the north to the cedar to the south. The northwestern wing of the stand is like an old oak savannah with open canopy and grass.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
50	6129 - Mixed Coniferous Lowland Forest	Sawtimber Medium	3.9	99	81-110	This is a drainage into Lake Ferdelman. This stand is too wet to harvest. The red pine are along the edge of the stand. The basal area is low in spots.
51	4131 - Aspen, Oak	Sawtimber Well	11.2	92	81-110	
52	6120 - Lowland Cedar	Poletimber Medium	1.4	128	51-80	Most of the cedar has little foliage remaining and all is close to being dead. The basal area is highly variable due to windthrow.
53	4123 - Red Oak	Sawtimber Well	6.6	103	51-80	OPIC - FMD: Oak Management Guideline (June 2000) recommends no treatment. Back in the mid 1990's they were not cutting oak in this area because even large areas or regeneration were being consumed by elk and deer. During the last inventory it was noted that the adjacent private land owner would not allow access. The south 1/3 of the stand has 40% white pine in the canopy. The red pine is in the north half of the stand.
54	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	8.5	75	81-110	This is a nice mixed stand that makes for a good scenic recreational area.
55	4199 - Other Mixed Upland Deciduous	Sawtimber Well	9.8	84	81-110	Most of this stand is on a 25-40 degree western aspect slope down to the lake. The understory is more dense in the northern half of the stand. The canopy is open enough in some areas to allow red pine to regenerate.
56	6120 - Lowland Cedar	Sapling Poor	7.2	39	1-50	The northern white cedar are stunted due to the highly saturated soil. There is a finger of slightly higher ground that parallels the northern edge of the stand growing mainly log and pole sized cedar, with a few red and white pine mixed in. This is unproductive stand that is too wet to harvest.
58	4199 - Other Mixed Upland Deciduous	Sawtimber Well	6.0	82	81-110	Trace large X-log to log sized red oak are present.
59	6120 - Lowland Cedar	Sawtimber Well	8.8	113	171-200	The cedar are in good health.
61	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	4.9	85	81-110	This stand gently slopes down to the lowland shrub to the south. The bigtooth aspen are old and need to be harvested before they are on the ground.
62	4199 - Other Mixed Upland Deciduous	Sawtimber Medium	2.3	84	51-80	This stand is sparse with a highly variable basal area. There might be a trespass at the north end of this stand where the private land owner to the north has a small brick building, a log pile shelter, and miscellaneous other materials that are likely on state land. The private wire also looks to be too far to the south.
65	42290 - Natural Mixed Pine	Sawtimber Well	2.9	80	81-110	This stand acts as a buffer to the pond/small lake to the north.





	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
66	4131 - Aspen, Oak	Poletimber Medium	29.6	36	81-110	The timber sale records show that this stand was harvested with the exception of oak in 1971 which would give an aspen age of 45, but coring the aspen shows that these aspen are 36 years old. The oak and aspen are in good health. The oak are low to medium quality.
67	4319 - Mixed Upland Forest	Sawtimber Well	18.7	128	81-110	This stand is a buffer to the marsh and flooded area to the west.
69	4130 - Aspen	Poletimber Well	1.5	52	51-80	This is a borderline log stand. The stand sits on a harvestable moderate slope that runs down to a black spruce stand to the north.
70	4113 - R.Maple, Conifer	Sapling Well	2.8	20	1-50	This stand is 5 years younger than the aspen dominated stand to the west. This stand was separated from the aspen stand to the west due to the dominance of red maple.
71	6130 - Fir, Aspen, Maple	Poletimber Well	9.3	50	81-110	
72	4130 - Aspen	Poletimber Well	29.3	46	81-110	There is a strip of log sized red pine and white pine running east west through the center of the stand. Within this strip there is a pocket of legacy type red pine and white pine in the East-Central portion of the stand that is about 1/2 acre in size. The red maple regeneration is highly browsed. The white pine regeneration is mostly in the northern half of the stand and the balsam fir regen is mostly in the southern half.
73	42200 - Natural White Pine	Sawtimber Well	4.1	116	111-140	The red pine and white pine are really tall having about 8-10 sticks. The age of this stand was estimated using the age from the white pine dominated stand to the north. There is a nice 1/10 acre pocket of red pine (14" DBH) in the south east corner of the stand.
75	42221 - Natural Jack Pine, Mixed Deciduous	Sapling Well	9.1	7	Immature	There is a 1/10 acre lowland inclusion pocket to the southeast. The red maple has seen medium to heavy browse.
77	4319 - Mixed Upland Forest	Sapling Well	2.7	30	1-50	The basal area is mainly from residual trees not cut during the last harvest.
78	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	8.6	116	81-110	There are some large fire scarred red pine at the north end of the stand. This stand acted as a lowland/lake buffer during the adjacent harvest. The buffer is wider to the south where the slope to the lake is longer and steeper. All of the red oak are in the south end of the stand near the water. The jack pine are in the northern third of the stand. The red pine are acquiring bark that is plate like and reminiscent of legacy trees.
79	4113 - R.Maple, Conifer	Sapling Well	7.3	15	1-50	This stand does not have much if any aspen in the regeneration, therefore it was separated out from the aspen stand to the west. The red pine and white pine are of various age and size. All basal area in the stand is due to red pine, white pine, and balsam fir. A majority of the red pine and white pine are within 45 feet of the shoreline and were retained as a buffer to the lake when the stand was last harvested.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
80	6120 - Lowland Cedar	Poletimber Well	22.1	80	141-170	The soil is highly saturated and this is killing the northern white cedar most of which is almost dead.
81	4134 - Aspen, Spruce/Fir	Sapling Medium	6.2	25	Immature	This is a lesser quality stand than adjacent stands 18 and 15.
82	4130 - Aspen	Sapling Well	29.1	6	Immature	This stand was successfully regenerated and is off to a good start.
83	4199 - Other Mixed Upland Deciduous	Sapling Well	14.6	5	Immature	The red oak and red maple regeneration are predominately from stump sprouts. A majority of the bigtooth aspen is in the southern half of the stand. All white pine and red pine were left when this stand was harvested in sale no. 54-028-08-01.
84	4131 - Aspen, Oak	Sapling Well	14.8	16	1-50	This stand was harvested in 2000 and 20 sq.ft. of oak was retained.
85	6120 - Lowland Cedar	Poletimber Well	6.0	105	81-110	OPIC - FMD: OI Stand Year Origin was 1911. The cedar is dying through out although 95% of the cedar is still alive.
86	4191 - Mixed Upland Deciduous with Conifer	Sapling Medium	107.1	6	Immature	A 5-spot was started in this stand. The 5-spot was aborted. 10 years after the original 5-spot cutting the rest of the stand was clear-cut except for some scattered red pine and white pine. The original 5-spots cut at the west end of the stand were different enough to separate them out into a different stand.
87	42290 - Natural Mixed Pine	Sawtimber Medium	13.1	73	81-110	This is a mixed covertime stand with a number aspen inclusions all of which was not included in adjacent harvests.
88	6120 - Lowland Cedar	Sapling Poor	3.0	37	1-50	This stand along the lake shore is highly saturated. This stand is too wet to harvest and will not grow trees with significant volume. Trees are dying due to the high moisture level.
89	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	4.0	103	81-110	Most of this stand is on a steep slope down to the lake. The red pine are located at the north and south ends of the stand.
90	6122 - Black Spruce	Poletimber Poor	20.5	77	51-80	This stand consists of small trees on a bog mat.
91	42290 - Natural Mixed Pine	Sawtimber Poor	2.5	49	1-50	This stand is a nice open diversity pocket that was not harvested with the surrounding area.
98	4311 - Pine, Aspen Mix	Sawtimber Poor	7.0	69	141-170	Some of the white pine and red pine in this stand grew fast. A 17" DBH white pine aged at 62 and a 18" red pine cored at 76. These ages were averaged for the stand age since age is highly variable in this stand.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
99	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	7.9	104	81-110	This stand makes a nice diversity pocket with the forest succession that it has seen and the diversity of tree species that it contains. This stand is unique in that it has many white pine, red pine, and red oak that are over 18" in DBH. The basal area of this stand is highly variable. Overall the stand is healthy. This stand adds diversity to the area. This is really an uneven aged stand with a wide range of tree ages/sizes within and across intermediate shade tolerant tree species. The majority of the 18 plus inch DBH red pine and white pine border the edge of the lowlands to the east.
101	42290 - Natural Mixed Pine	Sawtimber Medium	6.3	85	51-80	There is a lowland tamarack pocket in the northwest portion of the stand that makes up about a third of the stand. This lowland pocket drains through the center of the stand into Lake Ruth to the west.
102	6120 - Lowland Cedar	Sapling Poor	1.7	29	Immature	This is unproductive stand that is too wet to harvest.
104	4310 - Pine, Oak Mix	Sawtimber Well	19.0	98	81-110	The red oak in the southern half of the stand have approximately a 19" average DBH. Overall the age of the trees in this stand are all over the board, but this stand covertime is generally managed on an even aged basis.
105	6120 - Lowland Cedar	Poletimber Well	9.0	112	141-170	
106	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	2.0	60	51-80	This is a small stand so ages were estimated using ages from adjacent stands. The aspen are present in all sizes so the aspen age is a middle estimate.
110	4131 - Aspen, Oak	Poletimber Well	2.0	44	1-50	The west 1/5 of this stand is log sized aspen and red oak. This is a borderline log stand that should be managed as a pole stand.
112	4131 - Aspen, Oak	Poletimber Well	24.3	43	111-140	
113	6120 - Lowland Cedar	Sawtimber Well	3.7	140	141-170	This northern white cedar age is approximate because the last half inch of rings were so close together that an estimate had to be made. The neighbors wire cuts 300+ feet off of the northwest corner of the stand. This neighbor to the north had a survey done and stakes from the survey can still be seen. This neighbor needs to move their wire to reflect their survey.
114	42220 - Natural Jack Pine	Sawtimber Well	2.7	80	81-110	This stand is along the north edge of a small lake and lowland brush.
116	4199 - Other Mixed Upland Deciduous	Sawtimber Medium	2.0	95	81-110	The age of the oak was estimated using the oak age of nearby stands. This stand is used as a camp site. A pocket of lowland shrub is at the west end of the stand.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
117	4310 - Pine, Oak Mix	Sawtimber Well	2.7	111	111-140	This stand has the public access site for Lake Ferdelman, as well as the footings for an old fire tower. There has been significant ORV (Off-Road Vandalism) damage. Boulders have been placed to attempt to control ORVs, but some of these have been circumvented. After buffering for water, the access site, the tower site and steep slopes, there is little left to harvest. Also, removing trees will make ORV control very difficult/expensive
121	42210 - Natural Red Pine	Sawtimber Medium	5.2	70	81-110	This stand is in a transition zone on the edge of a lowland black spruce stand.
122	4131 - Aspen, Oak	Poletimber Well	1.6	44	1-50	This is a borderline log stand but it should be managed as pole timber.
123	4130 - Aspen	Sawtimber Well	1.8	54	111-140	This stand is retention from timber sale no. 54-007-08-01.
124	4131 - Aspen, Oak	Poletimber Well	29.7	44	81-110	The aspen and oak are healthy. The oak are large crowned. The aspen vary in size from 3" to 9" in DBH. On average the aspen are largest in size to the northwest but there are pockets of larger pole sized aspen in the south portion of the stand.
125	6120 - Lowland Cedar	Sawtimber Well	2.9	103	171-200	
126	4122 - Oak, Pine	Sawtimber Well	7.1	104	51-80	The majority of the stand sits on a 20-40 degree western aspect slope. This stand is mostly harvestable, but it does make a nice diversity pocket with the forest succession that it has seen and the diversity of tree species that it contains.
127	4123 - Red Oak	Sawtimber Well	16.0	102	1-50	The majority of the oak in this stand are large diameter. Much of the southern border of this stand slopes towards the lake.
129	6122 - Black Spruce	Poletimber Well	1.4	62	1-50	This is unproductive stand that is too wet to harvest.
131	429 - Mixed Upland Conifers	Sawtimber Well	3.7	128	51-80	A 17" DBH white pine cored at 128 years old. There are scattered Legacy white pine by age and scattered red pine by the appearance of the bark. This stand is actually more uneven aged with all age classes represented evenly throughout.



Stand	Cover Type	Acres	Managed Site	General Comments:
6	122 - Road/Parking Lot	3.1	No	This is the location of the Lake Emma boat launch and parking lot.
23	330 - Low-Density Trees	7.9	No	
28	6230 - Cattail	7.7	No	OPIC - FMD: Huntly Road
34	6225 - Bog	4.9	No	This is a bog with a low density of sapling black spruce, tamarack, and white pine. There is enough tree density to call this low density trees but since these trees are stunted and lack volume, bog is a better description. The health of the saplings is poor.
40	500 - Water	4.2	No	OPIC - FMD: Lake Ruth.
43	500 - Water	156.0	No	OPIC - FMD: Floodwater.
46	500 - Water	28.1	No	OPIC - FMD: Lake Ferdelman.
48	3102 - Grass	1.0	No	Some raspberry is present.
57	6225 - Bog	3.8	No	OPIC - FMD: OI Stand Year Origin was 1912
60	622 - Lowland Shrub	2.4	No	There are is some transition area with low volume forest to the east.
63	500 - Water	5.9	No	OPIC - FMD: Portion of "Lake Donna."
64	500 - Water	1.5	No	This is the northwest portion of "Lake Donna."
68	623 - Emergent Wetland	16.3	No	OPIC - FMD: On east shore of flooding.
74	122 - Road/Parking Lot	2.3	No	OPIC - FMD: OAK REGENERATION CONSUMED BY DEER/ELK, MAPLE HIT HARD in 1996.
76	622 - Lowland Shrub	14.3	No	This stand is pole/sap sized tamarack (20%) and northern white cedar (80%) that is all dead. The understory is mainly cattail and tag alder.
92	3102 - Grass	1.9	No	
93	330 - Low-Density Trees	3.0	No	



Stand	Cover Type	Acres	Managed Site	General Comments:
95	3102 - Grass	0.5	No	
96	3102 - Grass	0.5	No	This stand is at the top of a hill and was inventoried under full snow cover.
100	3102 - Grass	0.4	No	
103	6230 - Cattail	1.1	No	
107	3102 - Grass	1.0	No	OPIC - FMD: OI Stand Year Origin was
108	3102 - Grass	2.7	No	
115	6225 - Bog	0.3	No	OPIC - FMD: MOSTLY WITHIN BUFFERS FOR WETLAND AND POND
118	330 - Low-Density Trees	0.0	No	There are some scattered shrub like jack pine and black cherry present.
264	122 - Road/Parking Lot	5.4	No	
266	3102 - Grass	1.0	No	OPIC - FMD: ELECTRIC DISTRIBUTION LINE.