



# Compartment Review Presentation

Escanaba Forest Management Unit

Compartment 33020

Entry Year 2020

Acreage: 556

County Menominee

Management Area: Menominee End Moraine

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**Revision Date:** 2018-06-19

**Stand Examiner:** Dan Beaudou

**Legal Description:**

T35N R28W Sections 2 and 3

**Identified Planning Goals:**

This compartment is comprised mainly of aspen, lowland conifer/cedar, and a couple small red pine stands. The aspen stands have a good age class diversity. Lowland conifer stands have a higher concentration of cedar with one stand having historical cedar management in it. All of the red pine stands are younger plantations with one being recommended first thinning. There are 3 grass openings that have been actively managed with prescribed fire in the past but are now filling in with tree species. Three stands are currently on contract to be treated because of the presence of spruce budworm. One other stand has been identified through this inventory process to be treated due to spruce budworm infestation.

**Soil and topography:**

The topography within this compartment is level with a few rolling hills. In the upland portion of the stand the soils are primarily loamy sand and sandy loam. The lowland portions contain black muck over sandy loam. The primary soil series are Mancelona-Nadeau, Onaway Fine Sandy Loam, Lupton-Tawas, and Lupton-Cathro association.

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

This compartment is in the middle of a block of state land that is 11 miles long and 4 to 5 miles wide. This block of state land is fragmented by numerous private residences and camps. There are a number of farms in the near vicinity with large amounts of farmland. This compartment and the surrounding private land is primarily used for recreational activities and farming.

**Unique Natural Features:**

None known

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

None known sites

**Special Management Designations or Considerations:**

None known

**Watershed and Fisheries Considerations:**

The Little Shakey Creek connects Johnson Lake and Lake Ann and flows through the compartment. Lake Mary and Lake Ann border State lands but the majority of both are surrounded by private property. Johnson Lake is surrounded by State land. Primary fish species in the lakes are bluegill, largemouth bass and northern pike.

This compartment contains Lake Mary, Lake Ann, and Johnson Lake. A 100' plus 5' per 1% increase in slope; buffer is recommended to protect lake (i.e., Johnson Lake, Lake Ann, and Lake Mary) riparian areas in accordance with Best Management Practices (specifically stand 16).

Northern regions of this compartment contain Swanson Creek and Little Shakey Creek both of which join upstream of and serve as a tributary to Johnson Lake as Little Shakey Creek. Little Shakey Creek flows southwest into the east region of Johnson Lake and then continues out of the south end of Johnson Lake entering Lake Ann from the northeast. Little Shakey Creek flows out of Lake Ann from the southwest. Little Shakey Creek is a designated Type 1 trout stream less than 50' width. A 300' buffer is recommended for Little Shakey Creek in riparian areas susceptible to Aspen regeneration (specifically stands 16 and 41). For areas not susceptible to Aspen regeneration, 100' plus 5' per 1% increase in slope; buffers are recommended to protect these areas in accordance with Best Management Practices.

**Wildlife Habitat Considerations:**

- This compartment features Lake Mary, Lake Ann, and Johnson Lake on the west side.

- aspen forest (51% of the compartment), upland brush, grass openings, and intermixed swamp conifers. This combination of cover types provides excellent conditions for early successional wildlife, including popular game species. WLD encourages a variety of age classes for wildlife habitat. Two stands of non pine upland conifer, mixed deciduous types will be treated with retention.
- Forest openings support a growth of cherry, forbs, and bramble. This particular compartment may even have a seed source for plants that have a prairie affinity due to its nearness to the Shakey Lakes Savanna. As in past decades, these openings will be maintained with treatments that limit encroachment by trees, reduces thatch, and stimulates the native seed bank.
- Forest stands between Johnson Lake and Lake Ann have previously been left untreated to provide mature forest conditions (cavity trees, snags, dead woody debris) for wildlife in the riparian zone. WLD encourages maintaining mature trees and closed canopy when possible.

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

Compartment 20: Sections 2-3, T35N-R28W, Menominee County

Active sand/gravel pits are not located in the area. There appears to be some gravel potential within the compartment on the uplands. Bedrock is near the surface here, but there is not significant potential for crushed stone. No economic oil and gas production has been found in the UP. The western portion of the compartment is currently leased for metallic mineral exploration and some exploration work has been done in this area. The proposed Back Forty mine site is located less than four miles to the west.

### **Vehicle Access:**

Lake Mary has a boating access site off Broberg Lane which also provide access to the small chunk of State land west and south of the lake. Lake Ann is accessed by a two tracked road off County Road 356 to a boating access site at the south end of the lake. This two track road then continues on and provides access to the central south end of the compartment as well as a turn around on the Little Shakey Creek just south of Johnson Lake. Johnson Lake can also be walked into from a two tracked road off the Swanson Road that continues down in Compartment 18. Permission is needed for other access points through private property.

### **Survey Needs:**

Locate survey corner at the south end of Earls Lane which is the west 1/16th on the north section line of section 2. Determine if the State has legal access from that point using the County Road Right Of Way. Locate the 4 parcel corners around the trespass rectification just south of that corner. Set the center of the north west quarter in section 2.

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

There are two state maintained boating access sites(BAS) within this compartment. They are on Lake Ann and Lake Mary. There is also a rustic access site on to Johnson Lake. The access point on Johnson Lake is only for a small boat or canoe. A portion of the Little Shakey Creek also flows through part of this compartment, which provides another fishing opportunity. Hunting is the other primary recreational activity within this compartment.

### **Fire Protection:**

Fire potential is not very high. Two small red pine plantations in the compartment create a greater risk but there is an abundance of lowland in close proximity to these stands. The upland aspen and grass stands could have potential for wildfire in the spring or late fall, but after green-up the fire potential is minimal. There are a number of water access points throughout the compartment.

### **Additional Compartment Information:**

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

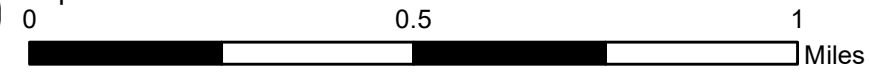
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

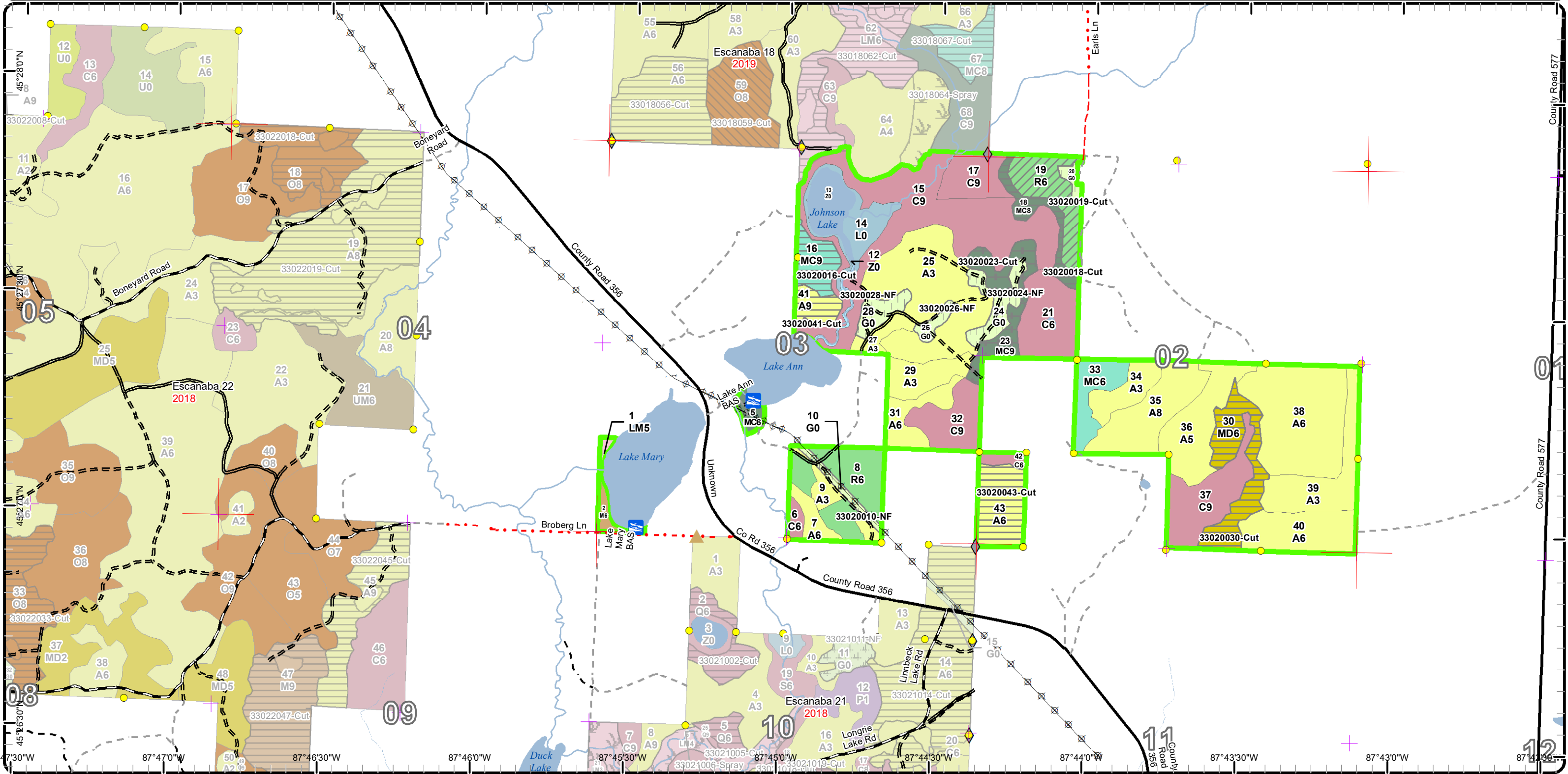
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

# Cover Type & Treatments Map

Compartment: 20  
 T35N - R28W Sec. 02, 03  
 County: Menominee  
 Unit: Escanaba  
 Mgmt Area: Menominee End  
 Moraine  
 YOE: 2020  
 Acres: 556 GIS Calculated  
 Examiner: Dan Beaudo  
 Map Revised: 6/21/2018  
 Map Phase: Web-Post



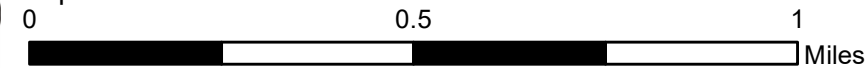
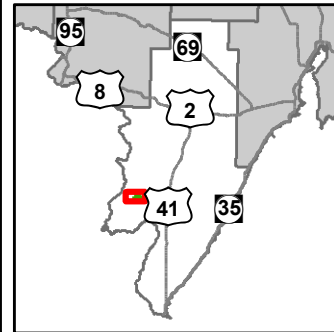
- Miris Corners
- Remonumented Section Corners
- Survey Grade Corners
- ◆ Field Grade Corners
- ▭ Compartment Boundary
- ▭ Clearcut (w/Reserves)
- ▭ Harvest, Overstory Removal
- ▭ Thinning (Crown, Low, Systematic)
- ▭ Opening Maintenance
- 411 - Northern Hardwood
- 413 - Aspen Types
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 423 - Other Upland Conifers
- 429 - Mixed Upland Conifers
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest
- 310 - Herbaceous Openland
- 500 - Water
- 622 - Lowland Shrub
- Lakes



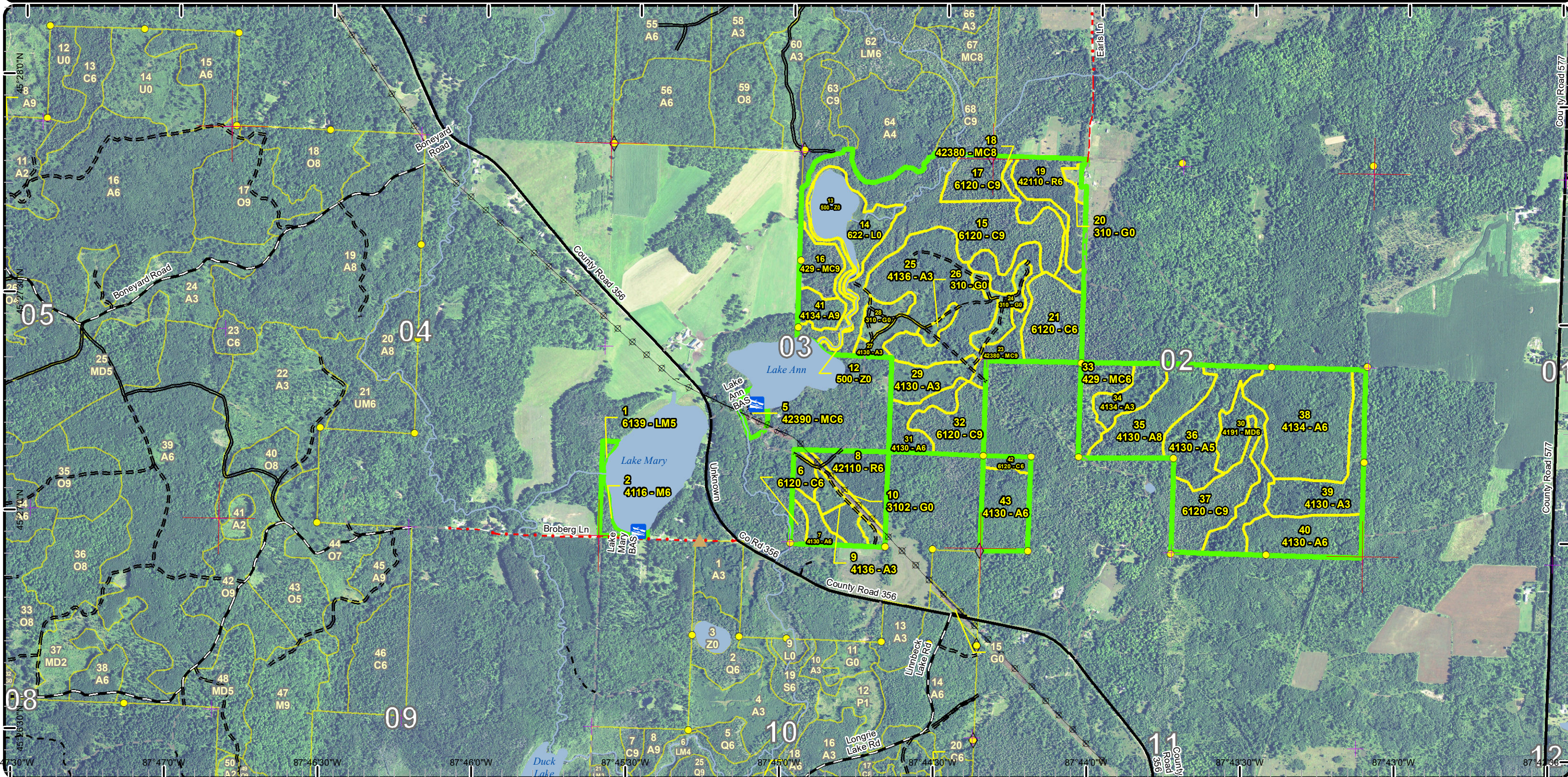
87°47'30"W 87°47'0"W 87°46'30"W 87°46'0"W 87°45'30"W 87°45'0"W 87°44'30"W 87°44'0"W 87°43'30"W 87°43'0"W 87°42'30"W

# Stand Boundary Map

Compartment: 20  
 T35N - R28W Sec. 02, 03  
 County: Menominee  
 Unit: Escanaba  
 Mgmt Area: Menominee End  
 Moraine  
 YOE: 2020  
 Acres: 556 GIS Calculated  
 Examiner: Dan Beaudo  
 Map Revised: 6/21/2018  
 Map Phase: Web-Post

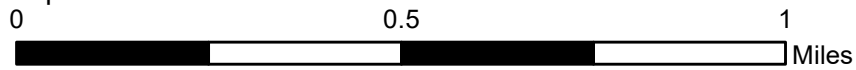


- Miris Corners
- + Remonumented Section Corners
- Survey Grade Corners
- ◆ Field Grade Corners
- Compartment Boundary
- Stand Boundaries
- 411 - Northern Hardwood
- 413 - Aspen Types
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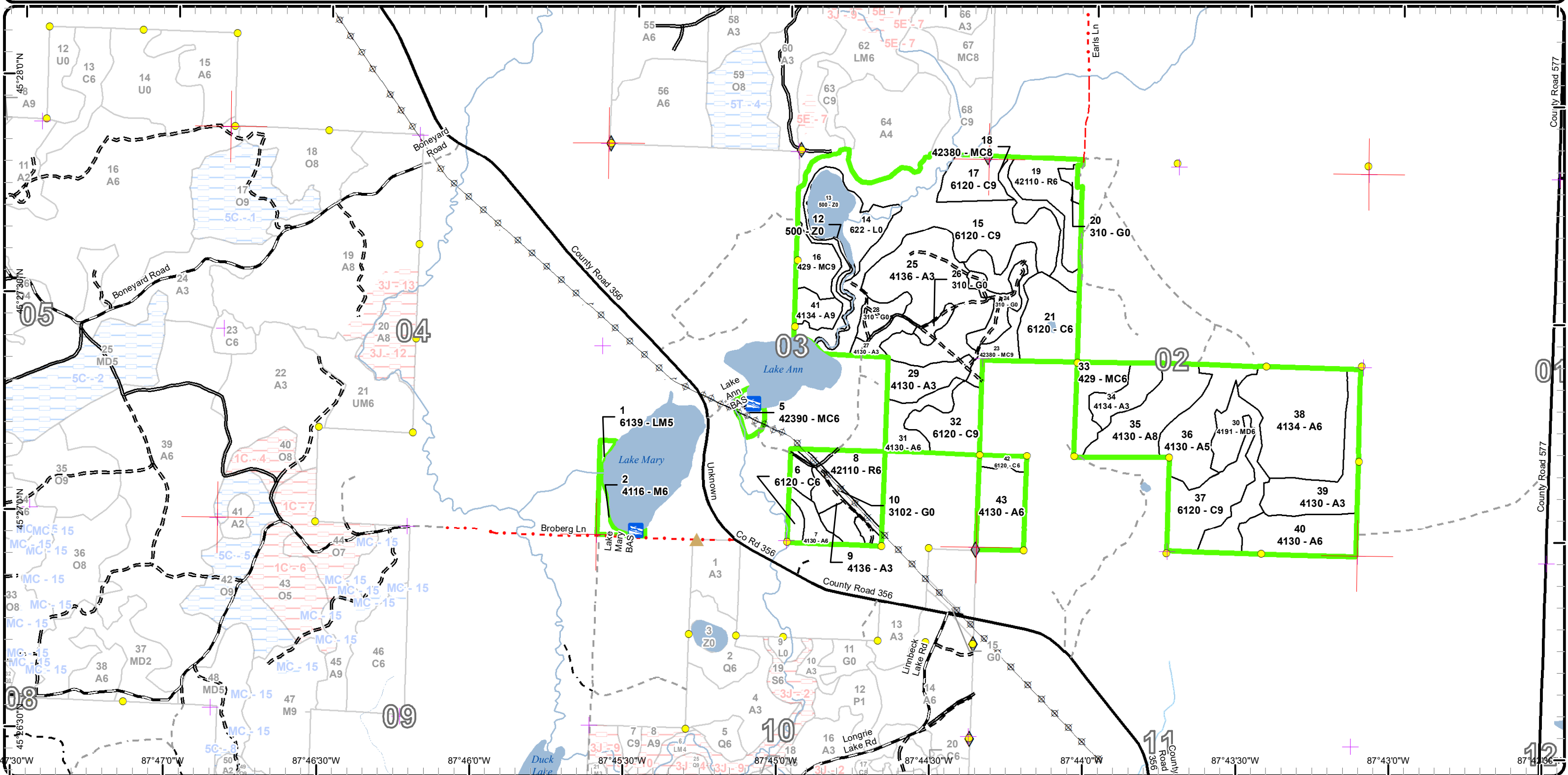


# Special Conservation Areas & Site Conditions Map

Compartment: 20  
 T35N - R28W Sec. 02, 03  
 County: Menominee  
 Unit: Escanaba  
 Mgmt Area: Menominee End  
 Moraine  
 YOE: 2020  
 Acres: 556 GIS Calculated  
 Examiner: Dan Beaudo  
 Map Revised: 6/21/2018  
 Map Phase: Web-Post



- Miris Corners
- + Remonumented Section Corners
- Survey Grade Corners
- ◆ Field Grade Corners
- Compartment Boundary
- Stand Boundaries
- Cold Water Streams
- Cold Water Lakes



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	22	10	68	104	24	17	7	0	0	0	0	0	0	0	0	0	0	251
Cedar	0	0	0	0	0	0	0	0	0	78	18	22	23	0	0	0	0	0	141
Herbaceous Openland	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23
Lowland Mixed Forest	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
Lowland Shrub	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
Mixed Upland Deciduous	0	0	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	21
Northern Hardwood	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3
Red Pine	0	0	0	23	17	0	0	0	0	0	0	0	0	0	0	0	0	0	40
Upland Conifers	0	0	0	0	0	0	25	0	8	0	0	16	0	0	0	0	0	0	49
Water	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
<b>Total</b>	<b>48</b>	<b>22</b>	<b>10</b>	<b>91</b>	<b>121</b>	<b>24</b>	<b>63</b>	<b>7</b>	<b>10</b>	<b>78</b>	<b>21</b>	<b>38</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>555</b>



## Report 2 – Treatment Summary

Escanaba Mgt. Unit

Year of Entry: 2020

Acres of Harvest

Compartment 20  
Total Compartment Acres: 556

Commercial Harvest - 94  
Harvests with Site Condition - 0  
Next Step Harvest - 0  
Habitat Cut - 0

### Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Aspen	39	0	0	0	0	0	0	0	0	39
Cedar	16	0	0	0	0	0	0	0	0	16
Red Pine	0	0	0	0	0	17	0	0	0	17
Upland Conifers	8	0	0	0	0	0	15	0	0	23
<b>Total</b>	<b>63</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>94</b>

### Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	94	0	0	0	0	0	0	23	0	118
Next Step	0	0	0	0	0	0	63	0	0	63
<b>Total</b>	<b>94</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>63</b>	<b>0</b>	<b>23</b>	<b>180</b>





Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
10	33020010-NF	3.5	3102 - Grass	Nonstocked		Unspecified	NonForestMgt	Herbaceous/Crop/ Grass Planting	310 - Herbaceous Openland		Proposal

**Habitat Cut: No**

**Site Condition:**

Prescription Prescribed fire, farming (dozing, disking, raking, herbiciding, seeding (native or naturalized species only)), fertilizing and liming, brushhog/saw removal  
Specs: of competing trees and establishment of native hard and soft mast producers such as red oak, crabapple or others.

Next Step  
Treatments:

Acceptable  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2019

15	33020016-Cut	9.7	6120 - Lowland Cedar	Sawtimber Well	88	171- 200	Harvest	Clearcut	4319 - Mixed Upland Forest	Even-Aged	Field Boundary
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**Habitat Cut: No**

**Site Condition:**

Prescription Clearcut: cut all trees 3" dbh and greater.  
Specs:

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

Acceptable Acceptable regeneration will produce a mixed stand of conifer and deciduous tree species that are currently on site.  
Regen:

Other This stand was evaluated for SBW in January 2016 and proposed to treat. No retention due to forest health recommendations not to leave moth  
Comment: inceptor trees. Wildlife approves.

Proposed Start Date: 01/22/2016

18	33020018-Cut	8.0	42380 - Non Pine Upland Conifer, Mixed Deciduous	Sawtimber Medium	78	51-80	Harvest	Clearcut with Retention	4319 - Mixed Upland Forest	Even-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription Cut all trees 3" dbh and greater except leave hemlock, oak and some scattered large white pine. Aspen, balsam, cherry and maple will root or stump  
Specs: sprout while the conifers will seed in from the adjacent stand since this is a long narrow harvest in the transition. This stand is being prescribed for harvest due to most of species being over mature with mortality already taking place. This harvest will provide opportunity to get young, diverse regeneration between a cedar swamp and red pine plantation

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

Acceptable Acceptable regeneration will produce a mixed forest which may include pine, spruce, balsam, tamarack, cedar, hemlock, aspen, balsam, maple and  
Regen: cherry.

Other  
Comment:

Proposed Start Date: 10/01/2019

19	33020019-Cut	16.7	42110 - Planted Red Pine	Poletimber Well	35	141- 170	Harvest	Crown Thinning	4211 - Planted Red Pine	Even-Aged	Proposal
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**Habitat Cut: No**

**Site Condition:**

Prescription Open crown by row selection removal during first thinning of red pine plantation. Remove one row, leave two rows in areas where equipment can  
Specs: operate by one row removal. Adjust tree removal in denser areas of the stand for equipment operation. This plantation is at the 2-3 stick height and crown competition is tight. This first thinning will open one side of the trees canopy to grow and keep green needles for about a third of the tree height for best growth.

Next Step  
Treatments:

Acceptable This is a first thinning where no regeneration is expected but with opening the canopy, some species might start germination process.  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2019



Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
20	33020020-NF	2.0	310 - Herbaceous Openland	Nonstocked	0	Unspecified	NonForestMgt	Herbaceous/Crop/Grass Planting	310 - Herbaceous Openland		Proposal

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

Prescription Prescribed fire, farming (dozing, disking, raking, herbiciding, seeding (native or naturalized species only)), fertilizing and liming, brushhog/saw removal  
Specs: of competing trees and establishment of native hard and soft mast producers such as red oak, crabapple or others.

Next Step  
Treatments:

Acceptable  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2019

23	33020023-Cut	15.0	42380 - Non Pine Upland Conifer, Mixed Deciduous	Sawtimber Well	53	81-110	Harvest	Overstory Removal	4319 - Mixed Upland Forest	Uneven-Aged	Proposal
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**Habitat Cut: No****Site Condition:**

Prescription Cut all balsam, spruce and tamarack greater than 3" dbh due to SBW and ELB. Cut all aspen, balm, maple and birch trees greater than 4" dbh.  
Specs: Leave pine, cedar, hemlock and oak. Spruce budworm and eastern larch beetle are within the stand causing defoliation and mortality. Harvest to remove these species while removing other merchantable species to allow operation and quick regeneration through root and stump sprouting.

Next Step  
Treatments:

Acceptable Current regeneration to be protected. Aspen, maple, balsam and spruce will regenerate.  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2019

24	33020024-NF	9.1	310 - Herbaceous Openland	Nonstocked	0	Unspecified	NonForestMgt	Herbaceous/Crop/Grass Planting	310 - Herbaceous Openland		Proposal
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**Habitat Cut: No****Site Condition:**

Prescription Prescribed fire, farming (dozing, disking, raking, herbiciding, seeding (native or naturalized species only)), fertilizing and liming, brushhog/saw removal  
Specs: of competing trees and establishment of native hard and soft mast producers such as red oak, crabapple or others.

Next Step  
Treatments:

Acceptable  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2019

26	33020026-NF	2.8	310 - Herbaceous Openland	Nonstocked	0	Unspecified	NonForestMgt	Herbaceous/Crop/Grass Planting	310 - Herbaceous Openland		Proposal
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**Habitat Cut: No****Site Condition:**

Prescription Prescribed fire, farming (dozing, disking, raking, herbiciding, seeding (native or naturalized species only)), fertilizing and liming, brushhog/saw removal  
Specs: of competing trees and establishment of native hard and soft mast producers such as red oak, crabapple or others.

Next Step  
Treatments:

Acceptable  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2019



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
28	33020028-NF	5.7	310 - Herbaceous Openland	Nonstocked	0	Unspecified	NonForestMgt	Herbaceous/Crop/Grass Planting	310 - Herbaceous Openland		Proposal

**Habitat Cut: No**

**Site Condition:**

Prescription Prescribed fire, farming (dozing, disking, raking, herbiciding, seeding (native or naturalized species only)), fertilizing and liming, brushhog/saw removal  
Specs: of competing trees and establishment of native hard and soft mast producers such as red oak, crabapple or others.

Next Step  
Treatments:

Acceptable  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2019

35	33020030-Cut	21.3	4130 - Aspen	Sawtimber Medium	46	Unspecified	Harvest	Clearcut	413 - Aspen	Even-Aged	Field Boundary
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**Habitat Cut: No**

**Site Condition:**

Prescription Clearcut: cut all trees 3" dbh and greater.  
Specs:

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

Acceptable Acceptable regeneration of aspen and other species currently of site.  
Regen:

Other This stand was evaluated for SBW in January 2016 and proposed to treat. No retention due to forest health recommendations not to leave moth  
Comment: inceptor trees. WLD approves.

Proposed Start Date: 01/21/2016

15	33020041-Cut	6.5	6120 - Lowland Cedar	Sawtimber Well	88	171-200	Harvest	Clearcut	413 - Aspen	Even-Aged	Field Boundary
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**Habitat Cut: No**

**Site Condition:**

Prescription Clearcut: cut all trees 3 " dbh and greater.  
Specs:

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

Acceptable Acceptable regeneration of aspen and other species currently of site.  
Regen:

Other This stand was evaluated for SBW in January 2016 and proposed to treat. No retention due to forest health recommendations not to leave moth  
Comment: inceptor trees. Wildlife approves.

Proposed Start Date: 01/22/2016

43	33020043-Cut	17.2	4130 - Aspen	Poletimber Well	56	81-110	Harvest	Clearcut	413 - Aspen	Even-Aged	Field Boundary
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**Habitat Cut: No**

**Site Condition:**

Prescription Clearcut: cut all trees 3 " dbh and greater.  
Specs:

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

Acceptable Acceptable regeneration of aspen and other species currently of site.  
Regen:

Other This stand was evaluated for SBW in January 2016 and proposed to treat. No retention due to forest health recommendations not to leave moth  
Comment: inceptor trees. WLD approves.

Proposed Start Date: 01/21/2016

**Total Treatment Acreage Proposed: 117.5**

Mgt. Unit

Compartment: #Type!

Year of Entry:



## Report 5 – PROPOSED SPECIAL CONSERVATION AREA\* (SCA) DETAILS

\* This is a partial list of SCAs for this compartment. Not included are those areas identified under other Department initiatives (Natural Rivers, Deer Wintering Areas, etc.). Those will be identified in separate, future map and report products.

SCA Name	SCA Category	Detail Type	Recommendation	Acres
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Comments

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**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.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	6139 - Mixed Lowland Forest	Poletimber Medium	1.5	70	Unspecified	Lake Mary riparian zone. It appears that ELB has caused mortality to the majority of tamarack which changed the stand type from last Year Of Entry.
2	4116 - Mixed N. Hardwood - Aspen	Poletimber Well	3.4	95	51-80	Lake Mary riparian zone. Majority is maple and aspen with trace of other species. Some wood duck nesting boxes have been placed along the shoreline. This stand should start producing some natural tree cavities as time progresses.
5	42390 - Mixed Non-Pine Upland Conifers	Poletimber Well	4.2	105	111-140	Small parcel of land that contains the Boating Access Site for Lake Ann, electric transmission line, access road and about 75% mixed forest.
6	6120 - Lowland Cedar	Poletimber Well	2.7	90	Unspecified	In 1965-66, the stand had small diameter cedar and short lived trees removed and open strips were cut about width of skidder. Spruce and fir has filled in the open strips but Spruce Budworm appears to be defoliating them. The rest of stand is good quality with larger diameter cedar. Little Shakey Creek flows through south west corner of stand.
7	4130 - Aspen	Poletimber Well	5.3	32	Immature	Stand was clear cut in 1986 under contract 30-85-02. This aspen stand has thick underbrush of sand cherry and mixed conifer. A trace of oak mast trees along eastern edge and cedar along western edge of stand. Spruce budworm is present but low volume of spruce/fir.
8	42110 - Planted Red Pine	Poletimber Well	22.7	26	111-140	Stand was planted to red pine in 1992 under FTP C33-269. The majority of red pine seedlings lived producing a pretty thick stand with few open areas. Some areas growing better with trees being 2 to 3 sticks high, while other areas are smaller diameter with 1 or 2 sticks. Recommend to conduct first thinning next year of entry. Trace of large oak, white pine and maple with some smaller cherry.
9	4136 - Aspen, Mixed Conifer	Sapling Well	5.8	7	Immature	This stand was final harvested in 2010 on contract 023-10-01. Good regeneration throughout most of the stand. The white pine, red pine, oak, and cherry were retained giving a trace amount within the current stand.
15	6120 - Lowland Cedar	Sawtimber Well	66.1	88	171-200	A large expanse of swamp conifer with the majority being cedar. Some strip cuts and what appears to be thinning out small diameter has taken place in parts of this stand. Stand 17 is a patch that had small diameter and short lived species remove creating a higher percentage of cedar with larger diameter than the rest of the stand.
16	429 - Mixed Upland Conifers	Sawtimber Well	9.7	51	51-80	Stand was cut on contract 29-89-01 where birch, maple, aspen and larger balsam and spruce were harvested. White pine, oak, cedar, hemlock and balsam seed trees were retained.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
17	6120 - Lowland Cedar	Sawtimber Well	12.2	88	111-140	This stand is part of the larger stand 15. It was thinned under contract 64-81-01. Small diameter cedar and short lived species were removed. All trees were cut in the skid trails. These are filling in with mixed spruce, fir, birch, some balsam and maple. After the cut, a few enclosure fences made of 5 foot chicken wire were erected. Currently these fences are falling apart and open, no longer serving their purpose of keeping herbivores out of the small area as regeneration controls. Spruce and fir seedlings are present above the snow within these.
18	42380 - Non Pine Upland Conifer, Mixed Deciduous	Sawtimber Medium	8.0	78	51-80	This is the transition zone between the upland red pine plantation and the lowland swamp. Short lived species are mature with mortality setting in. There is a trace amount of hemlock and oak.
19	42110 - Planted Red Pine	Poletimber Well	16.8	35	141-170	Stand was planted during the spring of 1983. Density varies throughout the stand with some areas having a basal area around 250 and other areas around 120. There are some large, limby red maple and white pinet within the stand.
21	6120 - Lowland Cedar	Poletimber Well	20.3	115	Unspecified	Dense stand with cedar 30-40' tall and white pine 50-60' tall. Low productivity swamp cedar stand with smaller diameter and mix of other conifers.
23	42380 - Non Pine Upland Conifer, Mixed Deciduous	Sawtimber Well	15.0	53	81-110	Parts of this stand were cut on permit 29-85-02 where all species were removed except cedar, hemlock, white pine and white spruce. This stand is variable in size but spruce budworm is creating some serious defoliation.
25	4136 - Aspen, Mixed Conifer	Sapling Well	45.9	28	Immature	Stand was harvested in 1990 under contract 20-90-01. Oak and some large white pine were retained along with some large aspen along the grass opening edge to help stop further aspen encroachment. Spruce budworm is present but scattered merchantable areas make it not very feasible.
27	4130 - Aspen	Sapling Well	5.1	8	Immature	This stand was final harvested in 2010 on contract 023-10-01, retaining white pine, red pine, oak, and cherry.
29	4130 - Aspen	Sapling Well	11.5	8	Immature	This stand was final harvested in 2010 on contract 023-10-01 retaining the white pine, red pine, oak and cherry. Good aspen regeneration produced a dense stand.
30	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	21.3	53	81-110	This stand was clear cut in 1965 under permit 15-78 with oak and some pine being retained. Stand was identified during the spruce budworm surveillance and treated through the Chapter 7 process. There is trace amounts of balsam and elm.
31	4130 - Aspen	Poletimber Well	10.3	32	Immature	This stand was clearcut under contract 29-85-02 in 1986. Some larger balsam and spruce scattered throughout the stand with spruce budworm but not enough to make feasible. Trace of jack pine and cherry.
32	6120 - Lowland Cedar	Sawtimber Well	15.5	98	Unspecified	East side of the stand has majority of ash. Trace amounts of white pine, tamarack, balsam, and birch. Small creek flows through southern part of stand.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
33	429 - Mixed Upland Conifers	Poletimber Well	11.9	108	1-50	This stand was cut in 2007-2008 under contract 023-05-01. Cedar and oak were retained along with some of the pine and some various seed trees. There is a trace of balm, black spruce and paper birch. Aspen, balsam, white spruce and white pine seedlings are growing good throughout the stand.
34	4134 - Aspen, Spruce/Fir	Sapling Well	10.0	10	Immature	This stand was cut the winter of 2007-2008 under contract 023-05-01. Large white pine and oak were retained. Good aspen regeneration with a mix of other species including trace amounts of cedar, balm and cherry.
35	4130 - Aspen	Sawtimber Medium	24.1	46	Unspecified	Some of this stand was cut early 70's, rest cut late 70's. Red maple and aspen are still smaller diameter than what would be expected for almost meeting rotational age. Trace amounts of cherry, oak, white pine and white ash within the stand. Southern part of stand has a larger conifer component showing signs of spruce budworm defoliation but should make it till next year of entry.
36	4130 - Aspen	Poletimber Medium	22.8	39	Unspecified	The majority of the stand was cut 1973-79 with the very southern portion cut 1985. There is a old grass opening that is filling in. Scattered oak, pine and some cedar were retained during the previous cuts. Overall, the stand is filling in with aspen, red maple, spruce, balsam and birch.
37	6120 - Lowland Cedar	Sawtimber Well	22.0	107	141-170	Parts of the stand were thinned under contract 9-85-2. There were also 5 strips cut out of this stand between 1963 and 1973. The strips are filling in with tamarack, black spruce, balsam, birch and black ash.
38	4134 - Aspen, Spruce/Fir	Poletimber Well	45.0	34	Immature	Stand was cut between 1978-84, on contract 34-78. They started on the north end and worked their way south. Oak and some large pine were retained. Good aspen stocking density.
39	4130 - Aspen	Sapling Well	21.7	21	Immature	Stand was cut on Contract 036-95-01, in 1997. Good regeneration with smaller dbh than adjacent stand cut 10 years later. Large oak and some white pine seed trees. Trace amount of white spruce, balsam, white pine, cherry and paper birch.
40	4130 - Aspen	Poletimber Well	20.8	31	Immature	Stand was cut in 1987 under contract 43-85. Variable diameter aspen with some larger conifers and oak scattered about. Trace amounts of large red pine, oak, spruce, balsam, and white pine.
41	4134 - Aspen, Spruce/Fir	Sawtimber Well	6.5	61	Unspecified	Mature aspen stand with red maple, oak and mixed conifer. Trace of balm, cherry, elm, cedar and birch. Stand was indicated to be mature and should be cut last year of entry. There is dense patches of buckthorn in the more open areas of this stand.
42	6120 - Lowland Cedar	Poletimber Well	2.8	113	Unspecified	Smaller diameter stand that is mostly cedar with a mix of other species including trace amounts of balm, red maple and white pine. Small creek flowing along the northern part of the stand.
43	4130 - Aspen	Poletimber Well	17.2	56	81-110	Aspen stand with aspen, maple and mixed conifer. Trace amounts of pine, black ash, cherry and cedar.





Stand	Cover Type	Acres	Managed Site	General Comments:
10	3102 - Grass	3.5	No	Electric transmission line right of way. Herbicide was applied 2017 to eliminate woody vegetation. Most or all sand cherry, and other shrubs previously reported have been eliminated.
12	500 - Water	2.4	No	Little Shakey Creek flowing between Johnson Lake and Lake Ann.
13	500 - Water	9.6	No	Johnson Lake
14	622 - Lowland Shrub	12.8	No	Transition area to waters edge containing grasses, rushes, lowland brush and mixed tree species.
20	310 - Herbaceous Openland	2.0	No	This is open area that was either pasture or occupied historically by adjacent landowner to the east. The building trespass was rectified by transferring 0.52 acres over to the current landowner to the east. Within this stand there is still old post, wire, building debris, iron and other materials scattered throughout.
24	310 - Herbaceous Openland	9.1	Yes	Grass opening that had been maintained by prescribed burning but filling in with trees species. Some autumn olive noticed in the stand now.
26	310 - Herbaceous Openland	2.8	Yes	Grass opening that has been maintained in the past by prescribed burning. Tree species are filling in the area.
28	310 - Herbaceous Openland	5.7	Yes	Grass opening that has been maintained by prescribed fire in the past. Aspen, cherry, spotted knapweed and sweet fern