



Compartment Review Presentation

Escanaba Forest Management Unit

Compartment 33022

Entry Year 2018

Acreage: 1,709

County Menominee

Management Area: Menominee End Moraine

Revision Date: 2016-06-24

Stand Examiner: Dan Beaudou

Legal Description:

T35N-R28W, sections 4, 5, 6, 8 and 9

T36N-R28W, section 32

Identified Planning Goals:

Two goals are being focused on this year of entry. First is to regenerate oak stands to create young, strong stands that will be less prone to oak wilt infection while maintaining stands for oak mast production. Second, diversify aspen age classes to ensure a sustainable harvest while enhancing habitat for a variety of wildlife species including ruffed grouse and deer. The compartment contains about 435 acres of oak and 897 acres of aspen this year of entry. The last inventory identified 558 acres oak and 765 acres aspen. This difference can be attributed to new inventory techniques, timber sale treatments and oak wilt treatments. All aspen stands do have a percentage of mast producing oak in the canopy. There is very little oak regeneration in the mature oak stands. Clearcut with patch retention will be utilized to promote oak stump sprouting. In recent treatments of this type, oak regeneration from stump sprouts are of comparable height and diameter as the aspen root sprouts. As shade increases in the treated stand (higher basal area retention), oak stump sprouts are shorter and fewer in number. Red maple is doing really well in the shaded oak stands while there is a greatly reduced presence of oak regeneration.

Soil and topography:

Topography is level to slightly rolling with some hills. Soils include well drained sand over loamy soils and excessively drained sands. The major soil series within this area is the Pemene-Rubicon Complex. Other soils present are Rousseau fine sands, Tawas-Deford Complex and Lupton-Tawas association.

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

This compartment lies on the western edge of Menominee County and is influenced by surrounding private properties. The majority of the surrounding private land is forested without permanent dwellings. However, just to the east there are some agriculture areas and lands with permanent homes. Aquila Resources Inc. has submitted a mine permit application for the Back Forty Project on the adjacent south west corner of the compartment. The Back Forty Project is a proposed mine site containing gold, silver, zinc and lead. The initial mine would be an open pit that would transition into underground mining if feasible.

Unique Natural Features:

This area has the potential to harbor many rare and endangered species including goshawk, great blue heron rookery, eagle, osprey, moose, wolf and wood turtle. In the form of vegetative natural features, this area has the potential for calypso, ram's head lady's-slipper and marsh grass-of-Parnassus.

Archeological, Historical, and Cultural Features:

The western edge of Menominee County has had several findings of Indian burial grounds and other significant findings. Extreme care should be taken when equipment is used around these areas.

Special Management Designations or Considerations:

Buffer the Shakey River when treating the adjacent stands.

Watershed and Fisheries Considerations:

The Shakey River flows between stands 19, 20 & 21 on the east edge of the compartment. The treatments on stands 19 & 20 will be set back from the river to provide a buffer.

Wildlife Habitat Considerations:

This compartment is comprised almost entirely of aspen and oak forest. These cover types, combined with scattered openings and upland brush, create exceedingly good early successional habitat for some of the area's most popular wildlife species (deer, grouse, bear, wild turkey). A portion of the aspen stands will be clearcut this decade which will provide early successional wildlife habitat. During the previous year of entry, several oak stands were harvested to

evaluate different methods of regeneration (final harvest vs. shelterwood). Preliminary results suggest that final harvests leaving 10% patch retention should be an effective way to begin regenerating oak stands while preserving wildlife food resources on the landscape. Using this information we will move forward with additional oak harvests to continue regenerating these stands.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of an end moraine of medium-textured till, glacial outwash sand & gravel and post glacial alluvium and peat and muck. The glacial drift thickness varies between 10 and 50 feet. Beneath the glacial drift is the Cambrian Munising Formation. The Munising may have been used as a building stone in the past and it overlaps Precambrian aged rocks. which may have metallic and nonmetallic mineral potential. All State land is currently leased for metallic mineral exploration. A gravel pit is located in Section 5 and potential appears to be good on the uplands. No economic oil and gas production has been found in the UP.

Vehicle Access:

Access to this compartment is off of River Road on the west side, the Boneyard Road and Broberg Lane off County Road 356 on the east side of the compartment. There is an abundance of forest two tracks throughout the area.

Survey Needs:

There would potentially be 6 survey corners that would need to be set for the treatment stands adjacent to private

Recreational Facilities and Opportunities:

There are no designated or maintained recreational trails or sites within the compartment. This area is heavily used for hunting, some dispersed camping and riding ATV's. The Lake Mary Boating Access Site is just over a half mile east of the compartment on Broberg lane.

Fire Protection:

There are no significant control problems foreseen due to the lack of explosive fuels. Most of the compartment is comprised of deciduous forest. However, some stands do have significant fuel loading due to tree mortality. With the well established road system making most areas accessible by fire equipment and a good water source at Lake Mary, fire suppression should bring minimal challenges unless conditions are extremely droughty.

Additional Compartment Information:

Yearly oak wilt monitoring has detected oak wilt epicenters within the compartment. Any oak wilt identification that occurs during this 10 year inventory period can be treated by using oak wilt treatment guidelines. The oak wilt epicenters will be identified and the appropriate distance away from the center will be cleared for vibratory plow operations, harvested and/or herbicide to minimize the spread of oak wilt.

The following reports from the Inventory are attached:

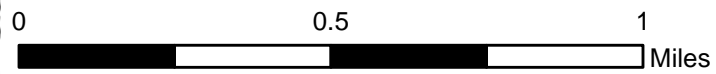
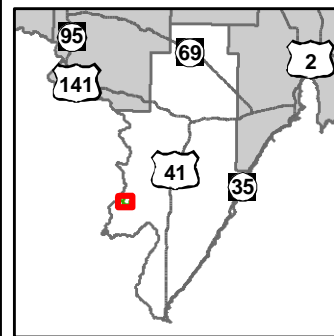
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

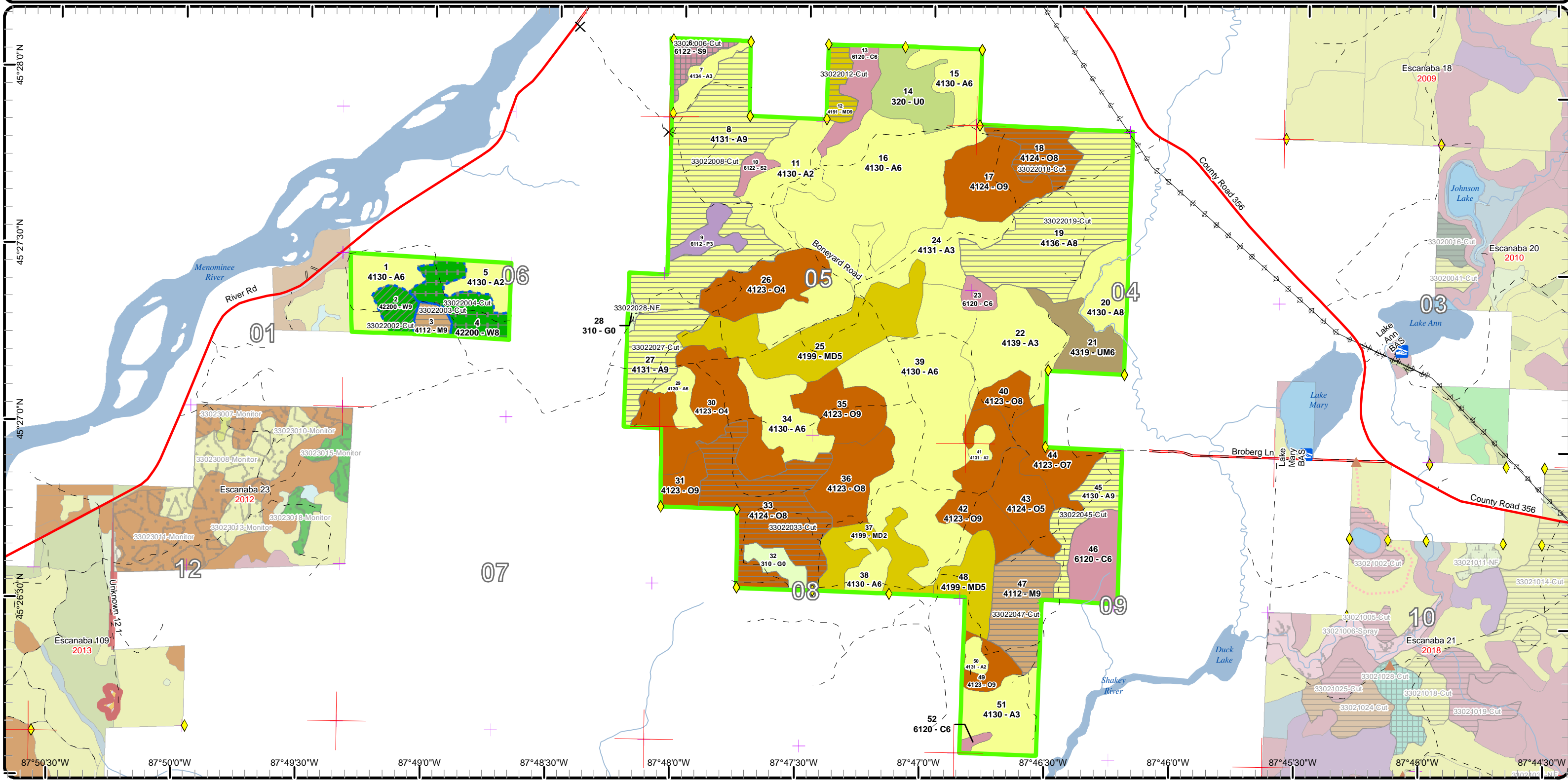
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments Map

Compartment: 22
 T35N R28W Sec. 04-06, 08, 09
 County: Menominee
 Unit: Escanaba
 Mgmt Area: Menominee End Moraine
 YOE: 2018
 Acres: 1709 GIS Calculated
 Examiner: Dan Beaudou
 Map Revised: Web-Post



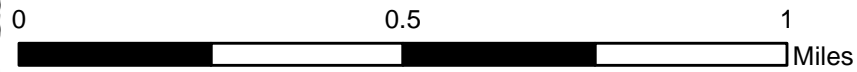
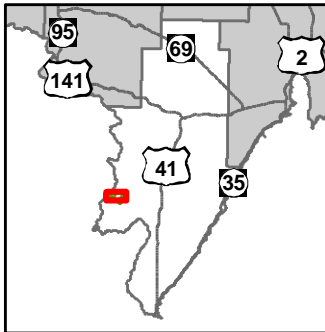
- Miris Corners
- Remonumented Section Corners
- ◆ Survey Grade GPS Corners
- ✕ Gate
- County Paved Roads
- County Gravel Roads
- Poor Dirt Roads
- Rivers
- Powerline
- Compartment Boundary
- Treatments with Site Conditions
- Clearcut (w/Reserves)
- Other Treatment - See Comments
- Harvest, Overstory Removal
- ▨ Thinning (Crown, Low, Systematic)
- ▨ Seed Tree (w/Reserves)
- 411 - Northern Hardwood
- 412 - Oak Types
- 413 - Aspen Types
- 419 - Mixed Upland Deciduous
- 422 - Natural Pines
- 430 - Upland Mixed Forest
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- Lakes



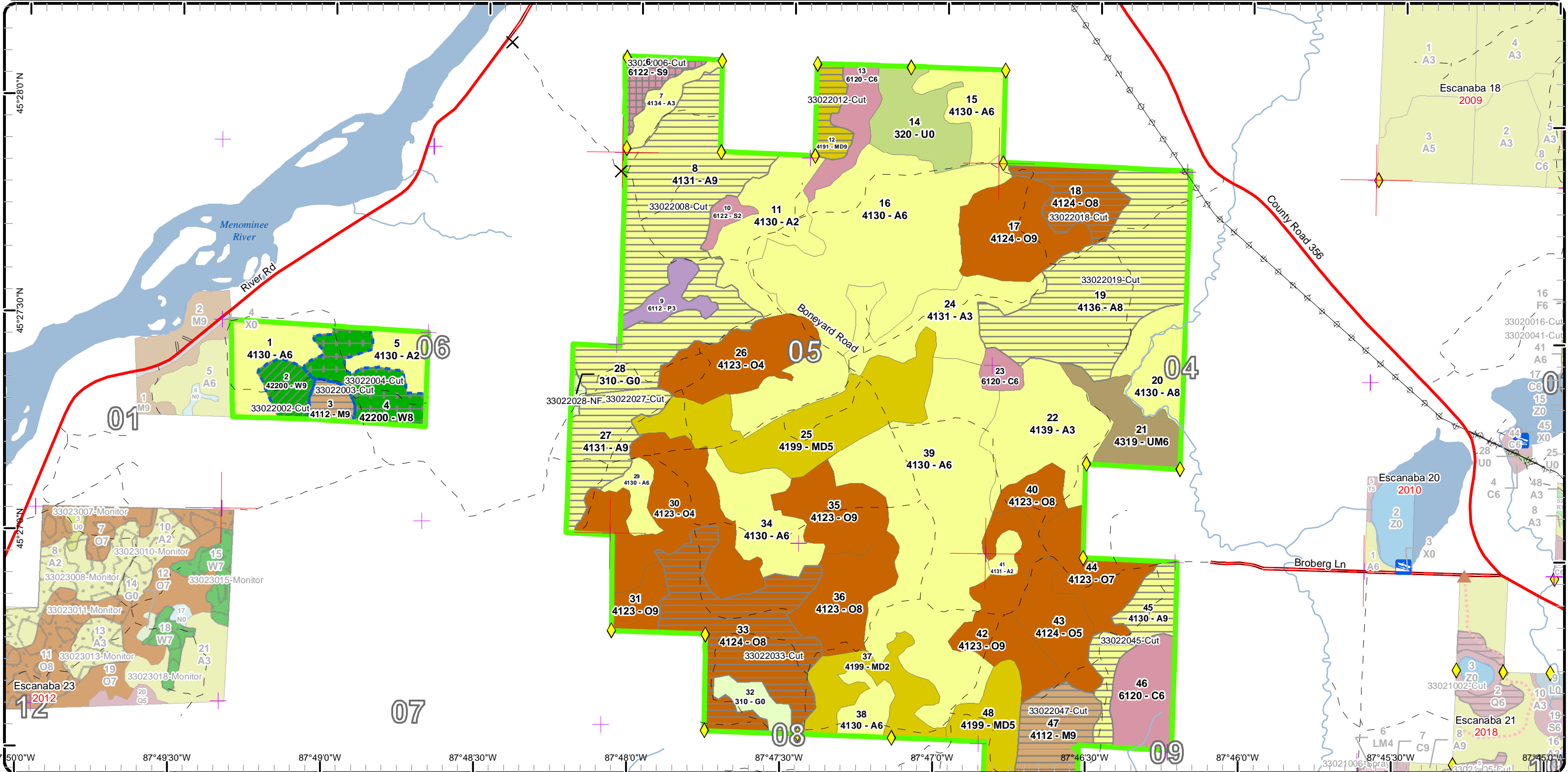
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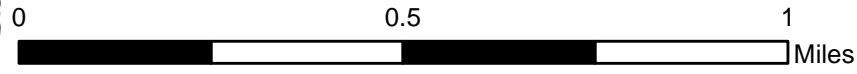
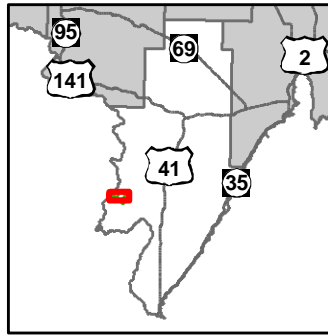
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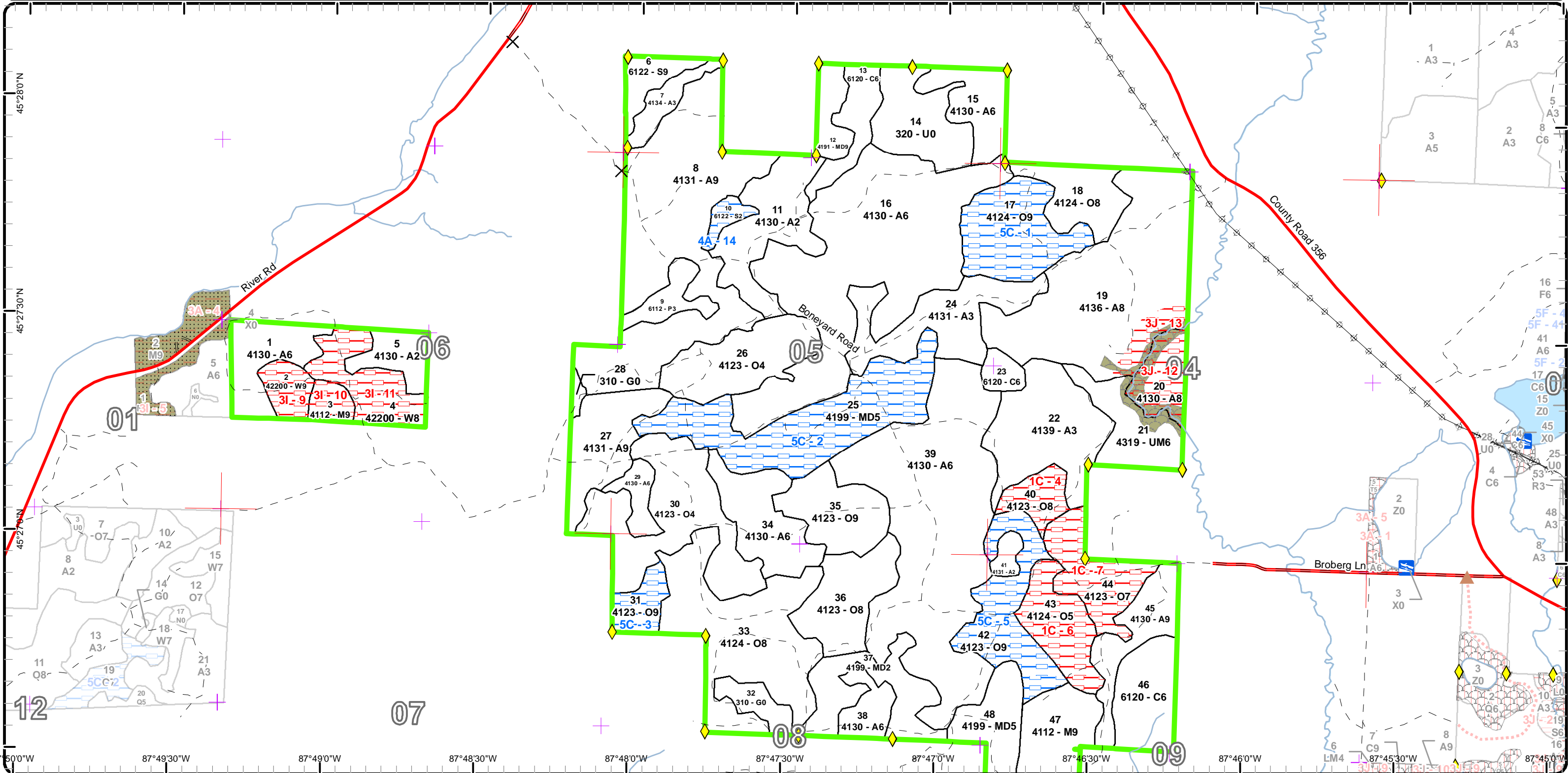
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Special Conservation Areas & Site Conditions Map

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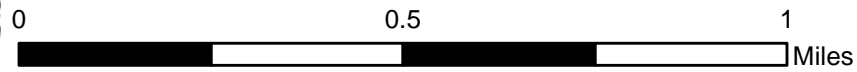
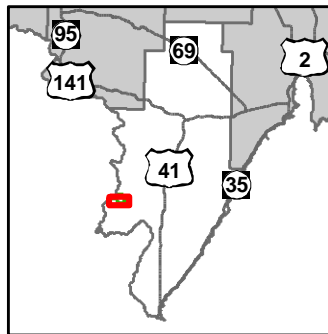


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- Compartment Boundary
- SCA Removal
- Available w/ Constraints
- Unavailable
- 4A: No Markets Available for these Forest Products
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 1C: Other dept or div proc/practices
- 3I: Historical / archeological (add locked comments)
- 3J: Water quality / BMPs (stream, river, or lake)
- Stand Boundaries
- Cold Water Streams
- Cold Water Lakes
- Potential Old Growth
- Other SCA (No Category Assigned)

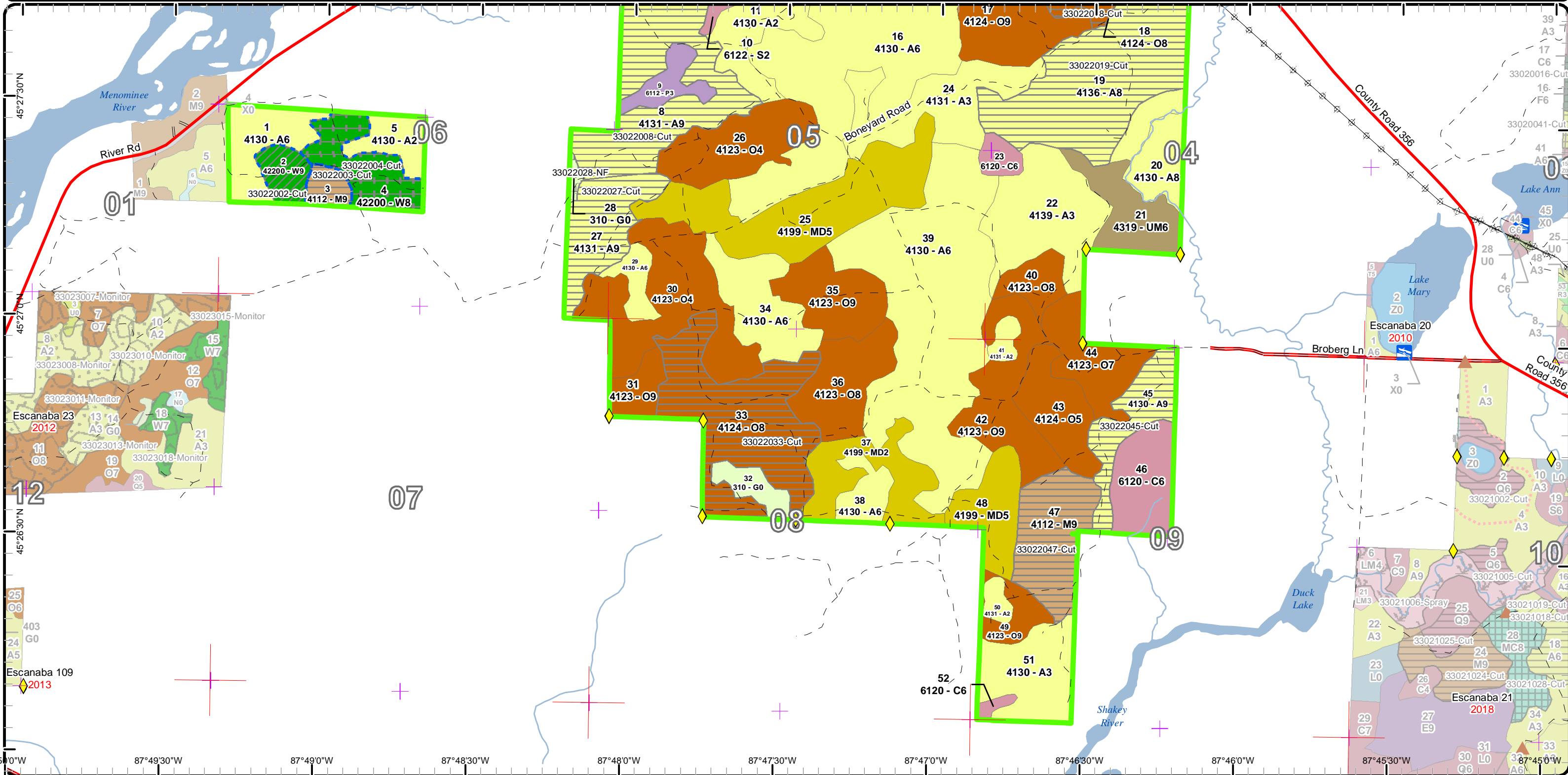


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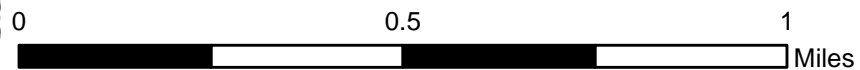
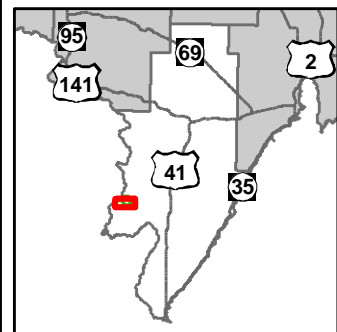
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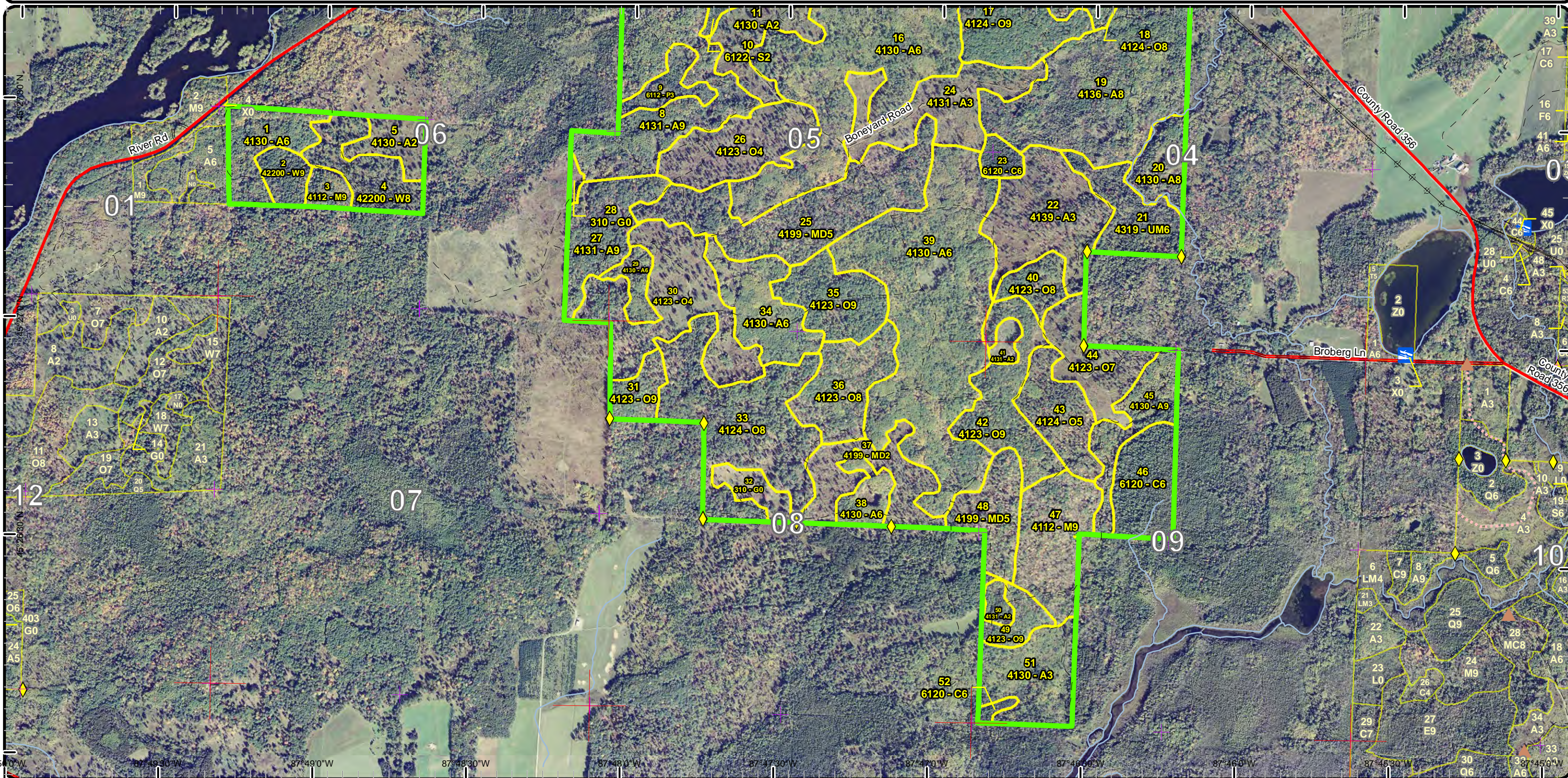
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Stand Boundary Map

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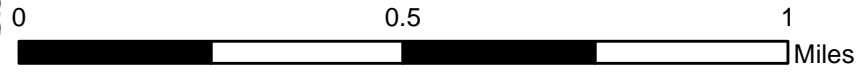
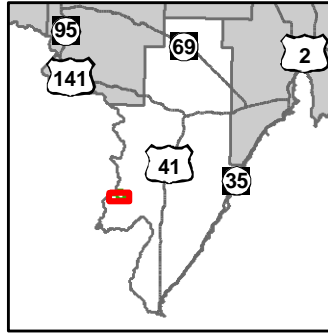
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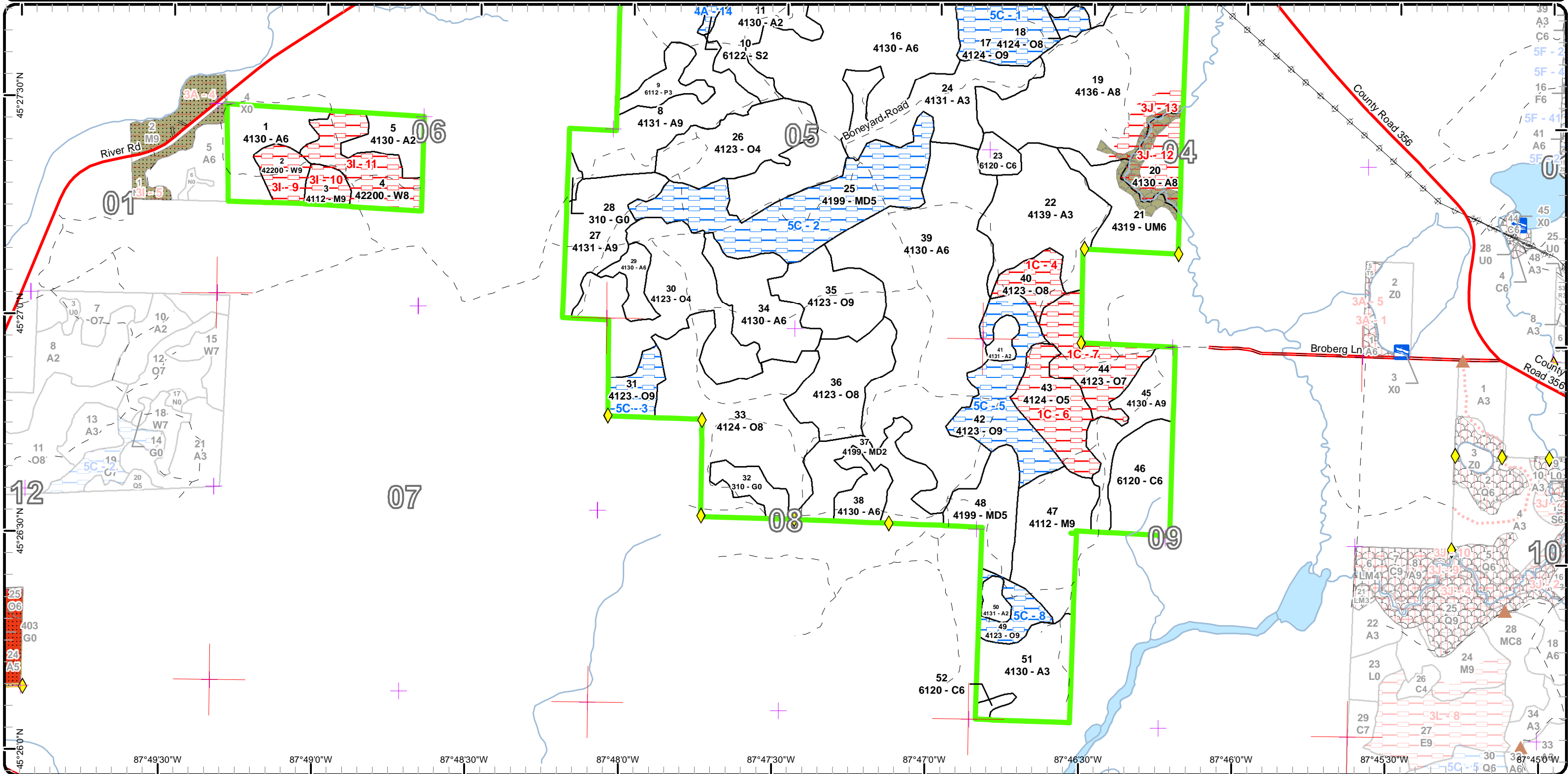
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- Stand Boundaries
- Ecological Reference Areas
- Cold Water Streams
- Cold Water Lakes
- Non-Dedicated Natural Areas and National Natural Landmarks
- Potential Old Growth
- Other SCA (No Category Assigned)



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	156	179	199	35	110	43	121	0	32	0	0	0	0	0	0	0	25	897
Cedar	0	0	0	0	0	0	0	0	0	0	0	0	9	0	45	0	0	0	54
Herbaceous Openland	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
Lowland Aspen/Balsam Poplar	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
Lowland Spruce/Fir	0	0	0	0	0	0	0	0	0	0	0	5	11	0	0	0	0	0	16
Mixed Upland Deciduous	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	129	140
Northern Hardwood	0	0	0	0	0	0	0	0	47	0	0	0	0	0	0	0	0	0	46
Oak	0	0	0	0	0	0	0	0	0	129	78	0	65	0	0	0	0	163	434
Upland Mixed Forest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	27
Upland Shrub	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32
White Pine	0	0	0	0	0	0	0	0	11	0	0	0	0	27	0	0	0	0	38
Total	44	156	179	211	35	110	43	121	58	161	78	17	85	27	45	0	0	344	1708



Report 2 – Treatment Summary

Escanaba Mgt. Unit
Year of Entry: 2018

Acres of Harvest

Compartment 22
Total Compartment Acres: 1,709

Commercial Harvest - 442
Harvests with Site Condition - 44
Next Step Harvest - 23
Habitat Cut - 23

Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Aspen	279	0	0	0	0	0	0	0	0	279
Lowland Spruce/Fir	0	0	0	11	0	0	0	0	0	11
Mixed Upland Deciduous	12	0	0	0	0	0	0	0	0	12
Northern Hardwood	47	0	0	0	0	0	0	0	0	47
Oak	102	0	0	0	0	0	0	0	0	102
White Pine	0	0	0	0	0	11	27	0	0	37
Total	438	0	0	11	0	11	27	0	0	487

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	487	0	0	0	0	0	0	2	0	489
Next Step	23	0	0	0	0	0	453	0	0	476
Total	509	0	0	0	0	0	453	0	2	964



Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
2	33022002-Cut	10.8	42200 - Natural White Pine	Sawtimber Well	71	171-200	Harvest	Crown Thinning	4220 - Natural White Pine	Even-Aged	Proposal
Habitat Cut: No			Site Condition: Historical/Archaeological								
<u>Prescription</u> Crown thinning of white pine stand. Reduce basal area of stand down to 100-120 by individually marking trees to cut. Cut all deciduous trees except											
<u>Specs:</u> leave some scattered oak for mast production.											
<u>Next Step</u>											
<u>Treatments:</u>											
<u>Acceptable</u> Pine, oak, beech and aspen.											
<u>Regen:</u>											
<u>Other</u> Majority of stand is white pine with some oak, beech and aspen. Beech scale is present in stand therefore remove all beech for forest health											
<u>Comment:</u> concerns.											
<u>Proposed Start Date:</u> 10/01/2017											
3	33022003-Cut	7.1	4112 - Maple, Beech, Cherry Association	Sawtimber Well	73	111-140	Harvest	Clearcut	4319 - Mixed Upland Forest	Even-Aged	Proposal
Habitat Cut: No			Site Condition: Historical/Archaeological								
<u>Prescription</u> Cut all trees greater than 3" dbh.											
<u>Specs:</u>											
<u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)											
<u>Treatments:</u>											
<u>Acceptable</u> oak, pine, spruce, maple, beech.											
<u>Regen:</u>											
<u>Other</u> Cut all trees due to forest health concerns with beech scale present on all beech trees. Stand is small where surrounding stands and private property											
<u>Comment:</u> adjacent to south have mast producing oak and/or beech.											
<u>Proposed Start Date:</u> 10/01/2017											
4	33022004-Cut	26.6	42200 - Natural White Pine	Sawtimber Medium	126	51-80	Harvest	Overstory Removal	4319 - Mixed Upland Forest	Even-Aged	Proposal
Habitat Cut: No			Site Condition: Historical/Archaeological								
<u>Prescription</u> Mark pine and oak leave trees so residual basal area is 10 or less, leaving some oak for mast production.											
<u>Specs:</u>											
<u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)											
<u>Treatments:</u>											
<u>Acceptable</u> Advanced regeneration of pine and aspen in place from previous treatment. Stand composed of pine, aspen and oak regeneration.											
<u>Regen:</u>											
<u>Other</u> This stand was treated in 2010 on contract 031-08-01. The basal area is 50-70. White pine seedlings and aspen sprouts are filling in. Recommend											
<u>Comment:</u> opening the canopy to release the regeneration but allowing for some shade to reduce pine weevil. Cut oak to promote stump sprouting while leaving some scattered mature oak for mast production.											
<u>Proposed Start Date:</u> 10/01/2017											
6	33022006-Cut	11.0	6122 - Black Spruce	Sawtimber Well	115	Unspecified	Harvest	Seed Tree with Retention	6122 - Black Spruce	Even-Aged	Field Boundary
Habitat Cut: No			Site Condition: Historical/Archaeological								
<u>Prescription</u> Seed Tree cut with reserves - Cut all species greater than three inches; except leave seed tree clumps (5 to 10 trees) of spruce and cedar scattered											
<u>Specs:</u> throughout the stand. In addition within the transition zone to stand 23 retain the majority of the good quality cedar in the transition zone. Either mark the good quality cedar to retain or place the red line(treatment boundary) on the inside of the transition zone.											
<u>Next Step</u> Harvest, Seed Tree with Retention											
<u>Treatments:</u>											
<u>Acceptable</u> Spruce, tamarack, and cedar.											
<u>Regen:</u>											
<u>Other</u> Good quality black spruce, with poor quality cedar.											
<u>Comment:</u>											
<u>Proposed Start Date:</u> 10/01/2013											



Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
8	33022008-Cut	120.5	4131 - Aspen, Oak	Sawtimber Well	63	111-140	Harvest	Clearcut with Retention	4131 - Aspen, Oak	Even-Aged	Proposal
Habitat Cut: No			Site Condition:								
<u>Prescription</u>			Cut all trees 3" dbh and greater except leave pine and 5% acreage in multiple patch retention. Individual patches should be no larger than 2.5 acres,								
<u>Specs:</u>			contain oak mast trees and be scattered throughout the stand.								
<u>Next Step</u>			Monitoring, Natural Regen (Re-Inventory)								
<u>Treatments:</u>											
<u>Acceptable Regen:</u>			Aspen, oak, maple, pine, spruce and fir.								
<u>Other Comment:</u>			Mature stand starting to show decline. South half of stand heavier to aspen but lower BA.								
<u>Proposed Start Date:</u>			10/01/2017								
12	33022012-Cut	11.6	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	102	81-110	Harvest	Clearcut with Retention	4191 - Mixed Upland Deciduous with Conifer	Even-Aged	Field Boundary
Habitat Cut: No			Site Condition:								
<u>Prescription</u>			Clearcut with reserves - Cut all species; except leave a mix of seed trees for diversity and for retention.								
<u>Specs:</u>											
<u>Next Step</u>			Harvest, Clearcut with Retention								
<u>Treatments:</u>											
<u>Acceptable Regen:</u>			Maple, aspen, balm, ash, spruce/fir, and mix of pine.								
<u>Other Comment:</u>			This stand is a mix of lowland and upland and there is a wide variety of species.								
<u>Proposed Start Date:</u>			10/01/2013								
18	33022018-Cut	23.5	4124 - Red with White Oak	Sawtimber Medium	110	81-110	Harvest	Clearcut with Retention	4121 - Oak, Aspen	Even-Aged	Proposal
Habitat Cut: No			Site Condition:								
<u>Prescription</u>			Cut all trees 3" dbh and greater except leave pine and 10% acreage in multiple patch retention. Individual patches should be no larger than 2.5 acres,								
<u>Specs:</u>			contain oak mast trees and be scattered throughout the stand.								
<u>Next Step</u>			Monitoring, Natural Regen (Re-Inventory)								
<u>Treatments:</u>											
<u>Acceptable Regen:</u>			Oak, aspen, maple and pine.								
<u>Other Comment:</u>			This stand is similar to stand 17 but lower density of large trees. There has been past "dead oak salvage" sales in this stand and creating a conversion to red maple. Very little oak regeneration taking place at this time with red maple saplings present. Clearcut to promote oak regeneration.								
<u>Proposed Start Date:</u>			10/01/2017								
19	33022019-Cut	100.9	4136 - Aspen, Mixed Conifer	Sawtimber Medium	46	Unspecified	Harvest	Clearcut with Retention	4131 - Aspen, Oak	Even-Aged	Proposal
Habitat Cut: No			Site Condition:								
<u>Prescription</u>			Cut all trees 3" dbh and greater except leave pine, cedar and 5% acreage in multiple patch retention. Individual patches should be no larger than 2.5 acres,								
<u>Specs:</u>			contain oak mast trees and be scattered throughout the stand. Buffer the stream.								
<u>Next Step</u>			Monitoring, Natural Regen (Re-Inventory)								
<u>Treatments:</u>											
<u>Acceptable Regen:</u>			Aspen, oak, maple, spruce, fir and pine.								
<u>Other Comment:</u>			There is a variable diameter in the aspen. Most of conifer in the drainage/lowland areas.								
<u>Proposed Start Date:</u>			10/01/2017								



Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
27	33022027-Cut	31.8	4131 - Aspen, Oak	Sawtimber Well	89	Unspecified	Harvest	Clearcut with Retention	4131 - Aspen, Oak	Even-Aged	Proposal

Habitat Cut: No **Site Condition:**

Prescription Cut all trees 3" dbh and greater except leave pine and 5% acreage in multiple patch retention. Individual patches should be no larger than 2.5 acres,
Specs: contain oak mast trees and be scattered throughout the stand.

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

Acceptable Aspen, oak, maple and pine.
Regen:

Other This aspen stand has a higher percentage of oak in canopy than stand 8 to the north. An oak wilt pocket had been cut out of the middle.
Comment:

Proposed Start Date: 10/01/2017

28	33022028-NF	2.0	310 - Herbaceous Openland	Nonstocked	0	Unspecified	NonForestMgt	Other - Specify	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. Also sharecropping could be considered for this opening.

Next Step
Treatments:

Acceptable
Regen:

Other
Comment:

Proposed Start Date: 10/01/2016

33	33022033-Cut	78.0	4124 - Red with White Oak	Sawtimber Medium	96	111-140	Harvest	Clearcut with Retention	4121 - Oak, Aspen	Even-Aged	Proposal
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Habitat Cut: No **Site Condition:**

Prescription Cut all trees 3" dbh and greater except leave pine and 10% acreage in multiple patch retention. Individual patches should be no larger than 2.5 acres,
Specs: contain oak mast trees and be scattered throughout the stand.

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

Acceptable Oak, aspen, maple and pine.
Regen:

Other This stand has a lower basal area of oak due to past "dead oak salvage" taking place and oak wilt treatments. Part of the stand has also been burned
Comment: in the past to promote a savanna setting but red maple is really shooting up. Most probable that this stand will convert to red maple if left alone. Not much oak regeneration appearing. Oak wilt epicenters are becoming more numerous with the old age and more susceptible to wind damage during the transmission period. Recommend a harvest to promote oak regeneration through stump sprouting to compete with the advanced red maple regeneration. Oak mast trees are located in adjacent oak stands and on private land.

Proposed Start Date: 10/01/2017

45	33022045-Cut	25.4	4130 - Aspen	Sawtimber Well	50	Unspecified	Harvest	Clearcut with Retention	4131 - Aspen, Oak	Even-Aged	Proposal
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Habitat Cut: No **Site Condition:**

Prescription Cut all trees 3" dbh and greater except leave some scattered large pine seed trees and 3% acreage in patch retention.
Specs:

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

Acceptable Aspen, oak, maple, fir, pine and spruce.
Regen:

Other
Comment:

Proposed Start Date: 10/01/2017



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
47 33022047-Cut	39.4	4112 - Maple, Beech, Cherry Association	Sawtimber Well	75	81-110	Harvest	Clearcut with Retention	4319 - Mixed Upland Forest	Even-Aged	Proposal

Habitat Cut: No

Site Condition:

Prescription Cut all trees 3" dbh and greater leaving 3% in retention patch.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Regen: Aspen, birch, maple, oak, fir, pine and spruce.

Other Comment: Old oak stumps probably from "dead oak salvage" days. These stumps do not show any sign of stump sprouts. Very little oak regeneration taking place. There are a few scattered live oak remaining. Stand has converted to red maple. Clear cut to promote oak stump sprouting that will compete with red maple sprouts.

Proposed Start Date: 10/01/2017

Total Treatment Acreage Proposed: 488.6

Report 4 – Site Conditions

Escanaba Mgt. Unit
Dan Beaudou : Examiner

Compartment: 22
Year of Entry: 2018

Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	Dominant Site Conditions				
		With Condition	Not Available		4A	5C	1C	3I	3J
897	871	0	27	Aspen					27
54	54	0	0	Cedar					
12	12	0	0	Herbaceous Openland					
12	12	0	0	Lowland Aspen/Balsam Poplar					
16	11	5	0	Lowland Spruce/Fir	5				
140	68	72	0	Mixed Upland Deciduous		72			
47	39	0	7	Northern Hardwood				7	
434	263	102	68	Oak		102	68		
27	27	0	0	Upland Mixed Forest					
32	32	0	0	Upland Shrub					
37	0	0	37	White Pine				37	
1,709	1,389	179	140	Total Forested Acres	5	174	68	45	27
	81%	10%	8%	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	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	41	Unspecified	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Delay stand regeneration to promote age class diversity in the compartment.								
2	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	72	Unspecified	Unspecified	Unspecified	Unspecified	Unspecified
Comments:								

Report 4 – Site Conditions

Escanaba Mgt. Unit
Dan Beaudou : Examiner

Compartment: 22
Year of Entry: 2018

3	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	12	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Delay stand regeneration to promote age class diversity in the compartment.							
4	Unavailable	1C: Other dept or div proc/practices	12	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Stand was thinned to 70-80 basal area in 2012 under contract 029-08-01. This is part of a basal area oak thinning Wildlife Division study. An acre oak wilt epicenter was detected within stand during 2014 surveillance and treated. This stand will be left alone for study purpose. Poor oak stump sprouting has taken place. Red maple sprouts doing well and most common in areas of greater canopy. Aspen sprouting nice in less canopy areas.							
5	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	38	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Mature oak stand with shorter lived species dying out. Red maple saplings are present with no other regeneration observed. Hold this stand for Wildlife mast production and provide age class diversity within the compartment.							
6	Unavailable	1C: Other dept or div proc/practices	27	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Stand was shelterwood thinned in 2012 on contract 029-08-01. It had a residual basal area of 47 after thinning. This is part of a Wildlife Division oak shelterwood study. Red maple saplings doing really well, oak and aspen sprouts are fewer and half the size of no shaded cut to east.							
7	Unavailable	1C: Other dept or div proc/practices	29	Unspecified	Unspecified	Unspecified	Unspecified
Comments: This stand was thinned as part of Wildlife Division oak shelterwood study in 2012 under contract 029-08-01. The northwest part of stand has 10-20 basal area of oak. The east half of stand has 30-40 basal area of oak. The south west half contains 50 basal area of oak. There was an oak wilt epicenter treated in this stand winter 2015.							

Report 4 – Site Conditions

Escanaba Mgt. Unit
Dan Beaudou : Examiner

Compartment: 22
Year of Entry: 2018

8	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	11	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Delay stand regeneration to promote oak age class diversity and provide mast in the compartment.							
9	Unavailable	3I: Historical / archeological (add locked comments)	11	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Request for archeological survey							
10	Unavailable	3I: Historical / archeological (add locked comments)	7	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Request for archeological survey							
11	Unavailable	3I: Historical / archeological (add locked comments)	27	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Request for archeological survey							
12	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	18	5E: Long-Term Retention	Unspecified	Unspecified	Unspecified
Comments: Shakey River is a trout stream and requires 300' buffer with aspen present. Buffer takes in 13.5 acres of the stand. Unfeasible to access remaining 4 acres through private property to east.							
13	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	10	5E: Long-Term Retention	Unspecified	Unspecified	Unspecified
Comments: This is the 300' buffer to Shakey River due to stand 19 containing aspen and Shakey River is a trout stream.							

Report 4 – Site Conditions

Escanaba Mgt. Unit
Dan Beaudou : Examiner

Compartment: 22
Year of Entry: 2018

14	Available	4A: No Markets Available for these Forest Products	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Black spruce with small diameter.							



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
	Potential Old Growth		SCA Removal	14
Comments Does not meet SCA criteria.				
Unspecified	Potential Old Growth		SCA Removal	3
Comments SCA - POG - Shakey River riparian corridor.				
Unspecified	Potential Old Growth		SCA Removal	10
Comments POTENTIAL OLD GROWTH, no cut due to water influence. There is one trail that 4 wheelers are using during low water periods. This has been reported on an BMP form and the trail should be closed to the best of our ability.				



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.



Stand	Escanaba Mgt. Unit		Report 7 – Forested Stands			Compartment: 22 Year of Entry: 2018
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4130 - Aspen	Poletimber Well	24.6	44	Unspecified	This stand is part of contract 19-72 that was cut in 1972-1975. There were other small contracts for peeled aspen that produced an uneven aged stand. A small strip of northern hardwood in along the north property line. The rest of the stand is a mixture of species with majority a mixed age of aspen.
2	42200 - Natural White Pine	Sawtimber Well	10.8	71	171-200	This is a nice white pine dominated stand with basal area 180-200.
3	4112 - Maple, Beech, Cherry Association	Sawtimber Well	7.1	73	111-140	Beech is the major species in this stand and almost all have beech scale on them. Low mortality noticed from beech bark disease at this time so the scale must be in a recent infestation.
4	42200 - Natural White Pine	Sawtimber Medium	26.6	126	51-80	This stand was treated in 2010 on contract 031-08-01. The basal area is 50-70. White pine seedlings and aspen sprouts are filling in. Recommend opening the canopy to release the regeneration.
5	4130 - Aspen	Sapling Medium	14.0	6	Immature	Stand was treated in 2010 under contract 031-08-01. It was an A6 stand prescribed for clear cut leaving pine and oak. There remains some large oak and pine scattered throughout the stand.
6	6122 - Black Spruce	Sawtimber Well	11.0	115	Unspecified	
7	4134 - Aspen, Spruce/Fir	Sapling Well	10.4	20	Immature	Stand was treated in 1996 under contract number 023-94-01. All trees > 4" were cut except cedar and oak.
8	4131 - Aspen, Oak	Sawtimber Well	120.5	63	111-140	Mature stand starting to show decline. South half of stand heavier to aspen but lower BA. An oak wilt epicenter was found in 2014 and treated with vibratory plow and harvest.
9	6112 - Lowland Aspen	Sapling Well	11.9	21	Immature	Stand was cut in 1995 with good stocking and diversity at present.
10	6122 - Black Spruce	Sapling Medium	5.4	100	1-50	This stand is a small black spruce stand/bog.
11	4130 - Aspen	Sapling Medium	39.3	4	Immature	Stand was cut in 2012 with the larger diameter trees being retention. Small, scattered openings with cherry in them. Thick aspen regeneration with sprouting of oak stumps and some oak seedlings.
12	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	11.6	102	81-110	Stand is currently on contract # 026-14-01.
13	6120 - Lowland Cedar	Poletimber Well	16.7	132	201+	Nice quality stand with little mortality. Larger composition of stand is cedar with mix of other lowland species. Fresh deer tracks and trails present.
15	4130 - Aspen	Poletimber Well	22.3	36	Unspecified	Majority of stand is pole size but there is a range in diameter and age. Hazel brush is thick in understory.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
16	4130 - Aspen	Poletimber Well	143.6	19	Immature	This stand was cut between 1995-97 on contract 33-006-93-01. Nice aspen stand with oak mast trees scatter throughout.
17	4124 - Red with White Oak	Sawtimber Well	41.2	110	141-170	Dead oak was removed from the stand during past "dead oak salvage" sales. Red maple saplings present with no oak regeneration. Stand still has a healthy appearance but oak wilt in surrounding stands. Hold for 10 years to promote age class diversity, mast production for wildlife and due to harvesting adjacent stands to east.
18	4124 - Red with White Oak	Sawtimber Medium	23.5	110	81-110	This stand is similar to stand 17 but lower density of large trees. There has been past "dead oak salvage" sales in this stand and creating a conversion to red maple. Very little oak regeneration taking place at this time with red maple saplings present.
19	4136 - Aspen, Mixed Conifer	Sawtimber Medium	110.4	46	Unspecified	There is a variable diameter in the aspen. Most of conifer in the drainage/lowland areas. Oak wilt epicenters found in 2013 and 1014 with both treated with vibratory plow and harvest.
20	4130 - Aspen	Sawtimber Medium	17.5	56	Unspecified	Open areas with hazel and cherry making the canopy 50-75%. Large aspen in decline.
21	4319 - Mixed Upland Forest	Poletimber Well	26.6	22	Immature	Stand was cut in 1993 under contract 49-92-01. Larger diameter species were the retention trees.
22	4139 - Aspen, Mixed Deciduous	Sapling Well	50.7	4	Unspecified	Stand was cut in fall of 2011 under contract 029-08-01. Part of this stand has large oak retained for mast in a shelterwood appearance as part of Wildlife Division oak basal area retention experiment. About 40 basal area of oak on the ridge with red maple sprouting seeming to be the most benefited as the shading increases. Thick aspen regeneration in the valley where few large trees are present.
23	6120 - Lowland Cedar	Poletimber Well	6.6	111	Unspecified	Stand in good condition with about 150 basal area of cedar.
24	4131 - Aspen, Oak	Sapling Well	41.7	5	Immature	Stand was cut in 2011 under contract 028-08-01. Good regeneration of aspen and oak. Oak stump sprouts are same height as the aspen root sprouts. Individual oak seedlings are half the height of the rest. Oak wilt epicenters found in 2013 and 2015 (3.1 acre) with both treated with vibratory plow and harvest.
25	4199 - Other Mixed Upland Deciduous	Poletimber Medium	71.9	20	111-140	Stand has gone through different treatment methods including "Dead oak salvage" sales. It is now a mixed age, specie and diameter stand. Hold for ten years to allow smaller timber to grow into a more merchantable category. This will also allow the stand to be clear-cut with retention to promote oak regeneration through stump sprouts. Stand with current level of sub-merchantable timber will shade stump sprouts and set back oak regeneration. Two oak wilt epicenter were found in 2014 and treated with vibratory plow and harvest.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
26	4123 - Red Oak	Poletimber Poor	37.7	104	1-50	This stand was cut in 2012 under contract 030-08-01. About 10-20 basal area of oak was retained. Good aspen, red maple and oak regeneration. Oak stump sprouts are same height as aspen with oak seedlings about half the height. An oak wilt epicenter was found in 2015 (6.1 acre) and treated with vibratory plow and harvest.
27	4131 - Aspen, Oak	Sawtimber Well	31.8	89	Unspecified	This aspen stand has a higher percentage of oak in canopy than stand 8 to the north. An oak wilt pocket had been cut out of the middle. Two oak wilt epicenters were found in 2014 and treated with vibratory plow and harvest.
29	4130 - Aspen	Poletimber Well	9.2	26	Immature	Cut in 1990 on contract 32-88-01. Thick aspen stand with large oak trees scattered throughout.
30	4123 - Red Oak	Poletimber Poor	61.9	90	1-50	This was cut in 2013-14 on contract 030-08-01 which included a supplement to cut oak wilt epicenter. In the oak wilt epicenters, all trees were cut except white oak and pine. In the rest of the sale, there is a 10-20 basal area of large oak and pine. An oak wilt epicenter was found in 2014 and treated with vibratory plow and harvest.
31	4123 - Red Oak	Sawtimber Well	11.8	89	111-140	Nice oak stand looking healthy. The only regeneration is a small amount of red maple seedlings/saplings. No treatment this cycle to provide age diversity and mast trees for wildlife.
33	4124 - Red with White Oak	Sawtimber Medium	78.0	96	111-140	This stand has a lower basal area of oak due to past "dead oak salvage" taking place and oak wilt treatments. Part of the stand has also been burned in the past to promote a savanna setting but red maple is really shooting up. Most probable that this stand will convert to red maple if left alone. Not much oak regeneration appearing. Oak wilt epicenters are becoming more numerous with the old age and more susceptible to wind damage during the transmission period. Recommend a harvest to promote oak regeneration through stump sprouting to compete with the advanced red maple regeneration. Oak mast trees are located in adjacent oak stands and on private land. Six oak wilt epicenters were found in this stand, three in 2014 and three in 2015, with all treated by vibratory plow and harvest.
34	4130 - Aspen	Poletimber Well	32.5	25	Immature	Stand is thick aspen with some large oak mast trees.
35	4123 - Red Oak	Sawtimber Well	29.7	94	81-110	Nice oak stand with excellent acorn production last year. Deer really pawing up the stand foraging on acorns. Red maple and pockets of aspen are in the understory filling in where the past "dead oak salvage" took place. No treatment this cycle for age diversity and mast production while stand 33 to west is being treated.
36	4123 - Red Oak	Sawtimber Medium	32.5	89	81-110	Nice oak stand with excellent acorn production last year. Deer really pawing up the stand foraging on acorns. Red maple and pockets of aspen are in the understory filling in where the past "dead oak salvage" took place. No treatment this cycle for age diversity and mast production while stand 33 to west is being treated.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
37	4199 - Other Mixed Upland Deciduous	Sapling Medium	31.8	5	51-80	Stand was shelterwood cut in 2011 under contract 029-08-01. All oak greater than 16" dbh was retained along with all pine for a residual basal area of 20. Several of the oak leave trees contracted oak wilt in 2015 and treated by vibratory plow and harvest.
38	4130 - Aspen	Poletimber Well	12.2	36	Unspecified	Thick aspen stand with larger oak trees mast trees. An oak wilt epicenter was found in 2014 and treated with vibratory plow and harvest.
39	4130 - Aspen	Poletimber Well	146.7	26	Immature	There is a wide range in aspen diameter from 2-8". Large oak mast trees along with some pole and sapling sized are scattered throughout the stand. Deer actively foraging for acorns. Three oak wilt epicenters were found in this stand with one during 2013 and two during 2015 which were treated by vibratory plow and harvest.
40	4123 - Red Oak	Sawtimber Medium	12.4	89	51-80	Stand was thinned to 70-80 basal area in 2012 under contract 029-08-01. This is part of a basal area oak thinning Wildlife Division study. An acre oak wilt epicenter was detected within stand during 2014 surveillance and treated. This stand will be left alone for study purpose. Poor oak stump sprouting has taken place. Red maple sprouts doing well and most common in areas of greater canopy. Aspen sprouting nice in less canopy areas.
41	4131 - Aspen, Oak	Sapling Medium	4.6	1	Immature	During the 2014 oak wilt surveillance, there were two oak wilt epicenters detected in the parent stand that were close together creating this peanut shaped stand. The oak wilt epicenters were treated in the winter of 2015 on contract 021-15-01. All species were removed except for white oak. Good sprouting has taken place but most of which have browse evidence. There is a clone of bigtooth aspen that is 5-10 feet tall that must have grown out of the deer reach and has not been browsed on.
42	4123 - Red Oak	Sawtimber Well	38.0	89	111-140	Mature oak stand with shorter lived species dying out. Red maple saplings are present with no other regeneration observed. Hold this stand for Wildlife mast production. An oak wilt epicenter was found in 2013 and treated with vibratory plow and harvest.
43	4124 - Red with White Oak	Poletimber Medium	27.0	89	1-50	Stand was shelterwood thinned in 2012 on contract 029-08-01. It had a residual basal area of 47 after thinning. This is part of a Wildlife Division shelterwood experiment. Red maple saplings doing really well, oak and aspen sprouts are fewer and half the size of no shaded cut to east. An oak wilt epicenter was found in 2015 and treated with vibratory plow and harvest.
44	4123 - Red Oak	Sawtimber Poor	29.0	89	1-50	This stand was thinned as part of Wildlife Division basal area study in 2012 under contract 029-08-01. The northwest part of stand has 10-20 basal area of oak. The east half of stand has 30-40 basal area of oak. The south west half contains 50 basal area of oak. An oak wilt epicenter was found in each year of 2013 and 2015 with both treated by vibratory plow and harvest.
45	4130 - Aspen	Sawtimber Well	25.4	50	Unspecified	Mixed aspen stand ready for harvest.
46	6120 - Lowland Cedar	Poletimber Well	28.7	136	171-200	Largest cedar on the west and south ends of stand, it gets smaller as move to east. Black spruce in patches with some larger scattered trees.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
47	4112 - Maple, Beech, Cherry Association	Sawtimber Well	39.4	75	81-110	Old oak stumps probably from "dead oak salvage" days. These stumps do not show any sign of stump sprouts. Very little oak regeneration taking place. There are a few scattered live oak remaining. Stand has converted to red maple. Clear cut to promote oak stump sprouting that will compete with red maple sprouts.
48	4199 - Other Mixed Upland Deciduous	Poletimber Medium	24.8	65	51-80	Variable age and size of trees in this stand. Basal area around 60. Another stand that seems to have been converted to red maple due to the "dead oak salvage" days.
49	4123 - Red Oak	Sawtimber Well	11.2	89	81-110	Oak stand mixed with aspen and red maple. In 2014, an oak wilt epicenter was treated within this stand. Leave this stand for age class diversity/oak mast production this cycle while stand 47 is being treated.
50	4131 - Aspen, Oak	Sapling Medium	4.6	1	Immature	Oak wilt epicenters were detected in the parent stand during 2014 oak wilt surveillance. This stand was created by oak wilt treatment (vibratory plow and harvest) in 2015 on contract 021-15-01. Young sprouts from various species are scattered throughout the stand at this time.
51	4130 - Aspen	Sapling Well	35.4	19	Immature	Stand was cut in 1997 under contract 005-94-01. Cutting specifications were to cut all trees except pine, cedar, spruce and oak that will yield one or more 100 inch pulpsticks to a 4 inch top. Oak in stand are producing mast forage.
52	6120 - Lowland Cedar	Poletimber Well	2.3	111	Unspecified	This is a healthy looking mixed cedar stand. Leave for wildlife cover.



Stand	Cover Type	Acres	Managed Site	General Comments:
14	320 - Upland Shrub	31.8	No	The original upland brush parent stand has been expanded from last inventory cycle due to the treatment of oak wilt epicenters in 2015. Mostly hazel, choke cherry and other shrubs making up this stand with aspen and some oak sprouts appearing in the oak wilt treated areas. The original upland brush stand has been prescribed burned in the past to promote wildlife food and cover.
28	310 - Herbaceous Openland	2.0	No	Grass opening with ferns and cherry filling it in. Some spotted knapweed and what might be little blue stem.
32	310 - Herbaceous Openland	10.0	No	Grass open that has expanded due to oak wilt epicenter treatments. An oak wilt epicenter was found in 2015 and treated with vibratory plow and harvest. Stand is part of previous prescribed burns. Regeneration of tree species consists of cherry and red maple.