



Compartment Review Presentation

Shingleton Forest Management Unit

Compartment 41167

Entry Year 2018

Acreage: 3,459

County Schoolcraft

Management Area: Cusino Complex

Revision Date: 2016-08-31

Stand Examiner: Mario Molin

Legal Description:

T48N R16W Sections 31, 33

T47N R16W Sections 4-9, 16-20

Identified Planning Goals:

The main goal in this compartment is to conduct multiple resource management for current and future generations.

Soil and topography:

The topography in this compartment is flat to rolling in the hardwoods with areas of slopes occurring when the land moves into the lowland/swamp types. The soil types mainly consist of the Garlic Sand Series, for the high ground and the Dawson soil series, for the lower areas. The compartment is made up of the Munising Moraine II (west ½ of Sections 6, 7, 18 & 31) and the Cusino Swamp (Sections 4, 5, 8, 9 and the east ½ of sections 6, 7 & 18) LTA's.

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

Ownership within the compartment is mainly State lands with mixed ownerships in all directions. The compartment is just outside the PRNL boundary.

Unique Natural Features:

None

Archeological, Historical, and Cultural Features:

None

Special Management Designations or Considerations:

Deeryard management occurred in the 40's and 50's in the lowland conifer areas. The two islands in Long Lake are under the State's ownership. Stand 65 is under a long term lease for State Police Tower. Stand 400 is also under lease for the old Buck Hill Fire Tower.

Watershed and Fisheries Considerations:

This compartment contains Stoner Creek, which is designated as cold-water and does have a trout population. Aspen should be discouraged within 300' of the creek channel if possible. Standard BMP's should be implemented to control sediment sources from adjacent uplands. Fine sediments such as silt and sand negatively affect natural reproduction of fish, decrease the diversity of aquatic invertebrate and fish taxa, and result in lower overall fish populations.

Wildlife Habitat Considerations:

This is a large compartment that straddles the Alger/Schoolcraft county line that contains the headwaters of the Stoner Creek. The presettlement forest, based upon General Land Office Survey notes, contained a mixture of sugar maple, beech, yellow birch, hemlock, white pine, and balsam fir. Red maple, elm, and spruce were noted in lesser amounts. Lowland forests were heavy to cedar, spruce, and tamarack. White pine, white birch, balsam fir, and black ash were also noted. The current lowland forests appear to be very similar in species composition to those found during presettlement times. Upland forests are also similar in species composition to presettlement times. However, yellow birch and hemlock seem to be reduced in density. The wildlife habitat goals for this compartment include promoting the hemlock and yellow birch component with the hardwood forest systems and maintaining the closed canopy conifer forests. Additionally, hard mast production should be increased through the planting of oak. This compartment lies within the Cusino Complex Management Area and the featured species within this MA are American marten, moose, American black bear, gray jay, northern goshawk, ruffed grouse, and white-tailed deer.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of glacial outwash sand and gravel and postglacial alluvium and peat & muck. There is insufficient data to determine the glacial drift thickness. The Ordovician Prairie du Chien (PdC) and the Cambrian

Trempealeau Formations subcrop below the glacial drift. The PdC and Trempealeau could be used for stone. A gravel pit is located in Section 18 and there appears to be some potential. There is no commercial oil and gas production in the UP.

Vehicle Access:

The hardwood areas of the compartment contain some trail roads, especially if harvest operations have occurred. The lowland types in the compartment does not have vehicle access.

Survey Needs:

None

Recreational Facilities and Opportunities:

The sunrise grade, which is also a snowmobile trail, goes through the compartment. The grade is also used by ORV's and other vehicle traffic.

Fire Protection:

Fire response to the area would be out of the Shingleton Field Office. Access will be good on the high ground because of the number of drivable trail roads through the compartment. The majority of the timber is hardwood making fire potential low.

Additional Compartment Information:

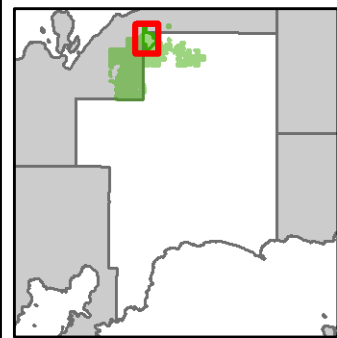
The following reports from the Inventory are attached:

- 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:

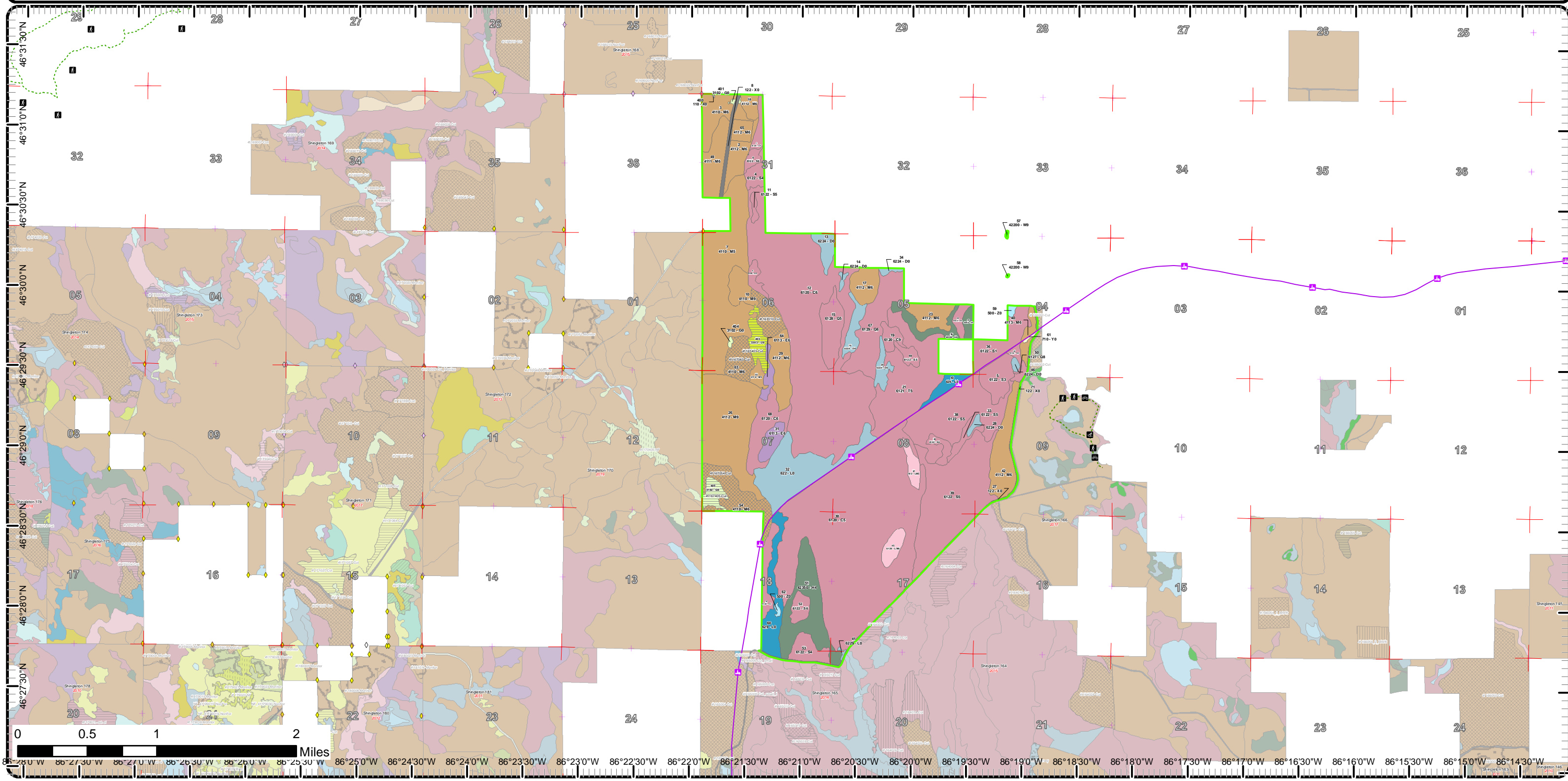
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments Map

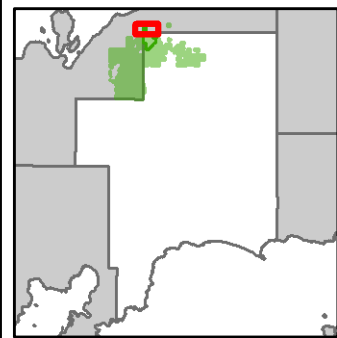


Compartment: 167
 T47N, R16W, Sec: 04-09, 17-20
 T48N, R16W, Sec: 31, 33
 County: Schoolcraft
 Unit: Shingleton
 Mgmt Area: Casino Complex
 YOE: 2018
 Acres: 3,459 GIS Calculated
 Examiner: Mario Molin
 Map Revised: 12/6/2016
 Map Phase: Post Review

- Miris Corners
- + Remonumented Section Corners
- ◆ Survey Grade GPS Corners
- ◇ Field Grade GPS Corners
- 🚲 Bike Trails
- 🚶 Hiking Trails
- 🛷 Ski Trails
- 🛷 Snowmobile Trails
- Designated Hiking Trails
- Designated Bicycle Trails
- Designated Ski Trails
- Designated Snowmobile Trails
- ▭ Compartment Boundary
- ▭ Selection (Group, Single Tree)
- ▭ Clearcut (w/Reserves)
- ▭ 411 - Northern Hardwood
- ▭ 422 - Natural Pines
- ▭ 423 - Other Upland Conifers
- ▭ 611 - Lowland Deciduous Forest
- ▭ 612 - Lowland Coniferous Forest
- ▭ 613 - Lowland Mixed Forest
- ▭ 110 - Low Intensity Urban
- ▭ 122 - Roads/Parking Lot
- ▭ 310 - Herbaceous Openland
- ▭ 330 - Low Density Trees
- ▭ 500 - Water
- ▭ 622 - Lowland Shrub
- ▭ 629 - Mixed non-forested wetland
- ▭ 710 - Sand/Soil

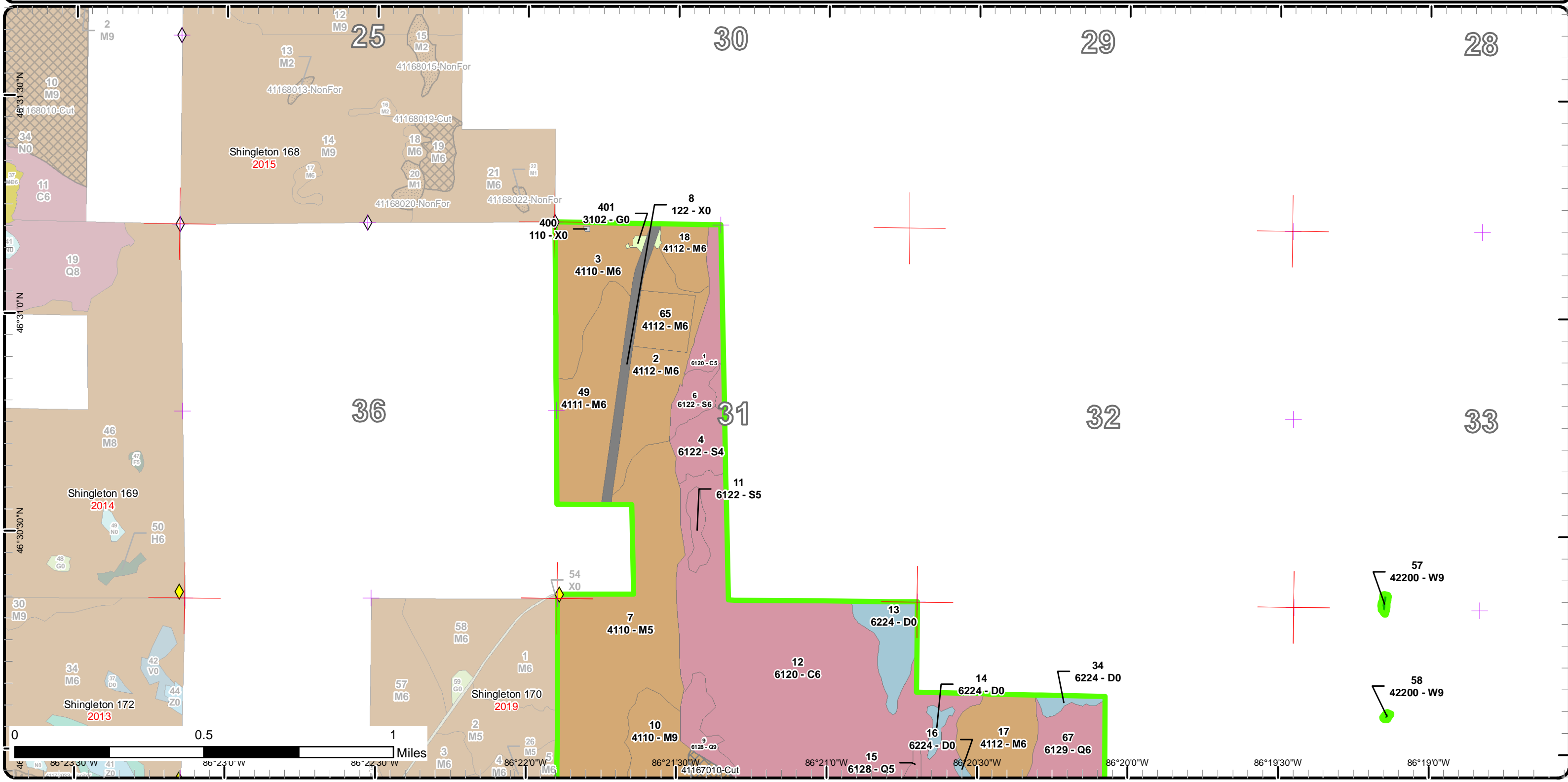


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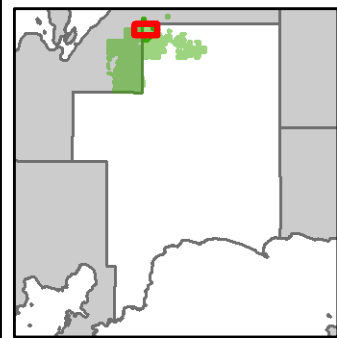


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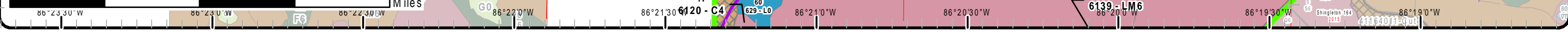
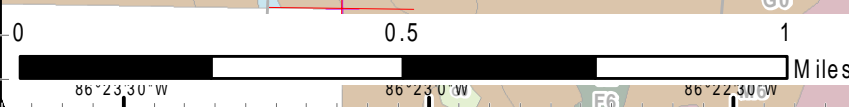
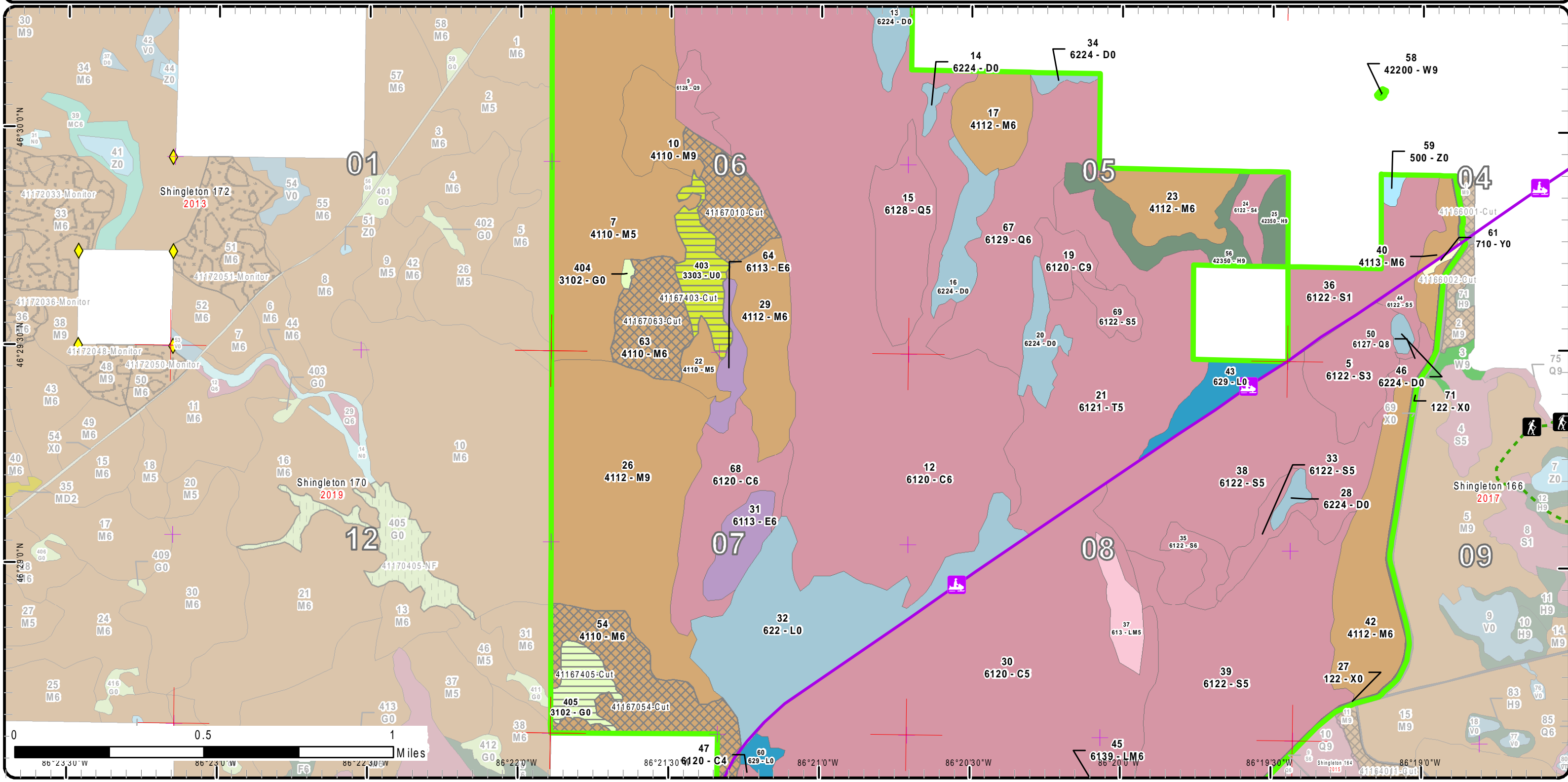


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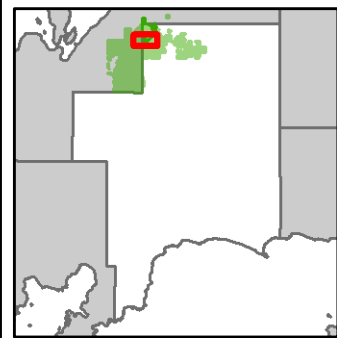


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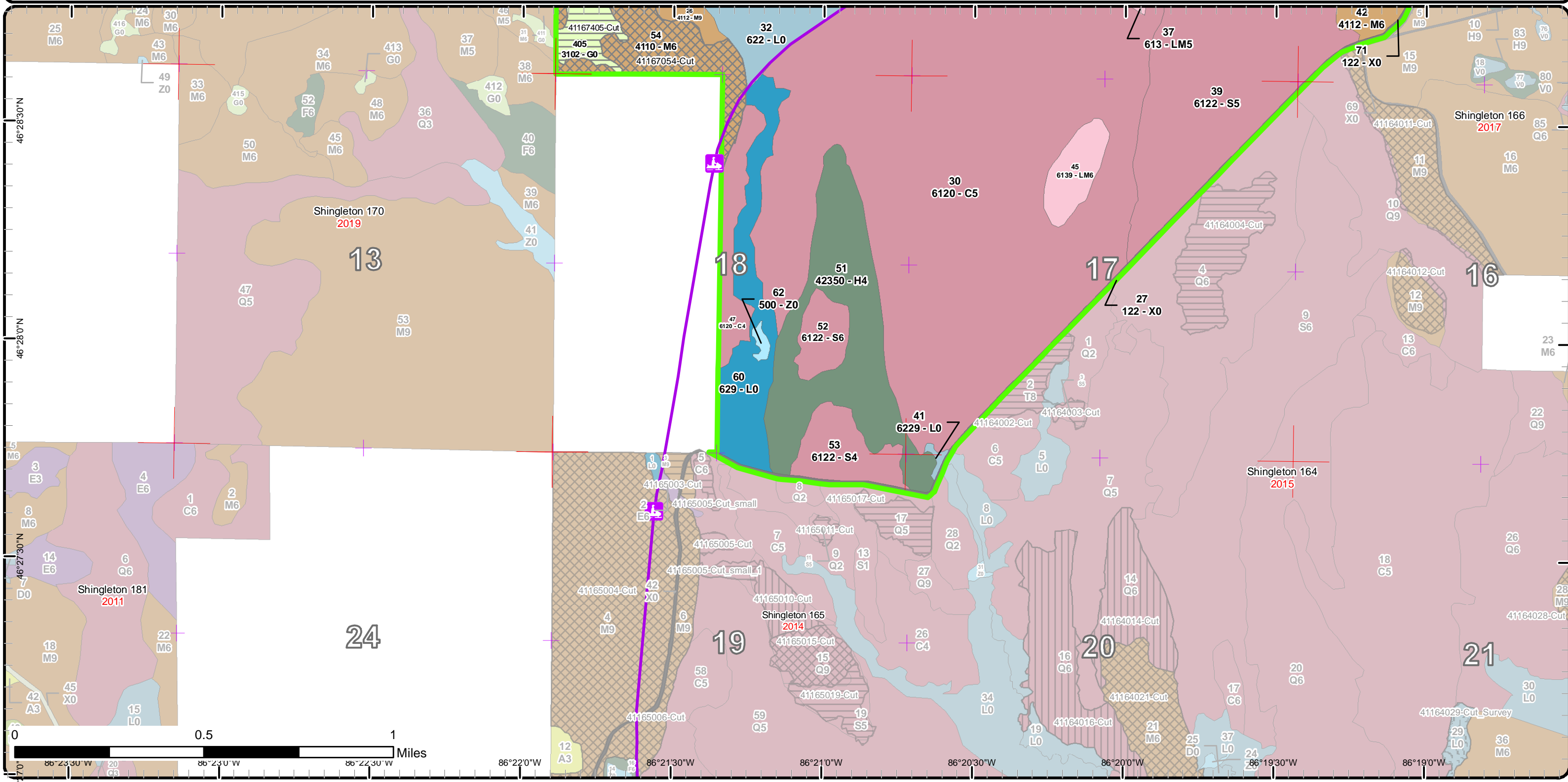


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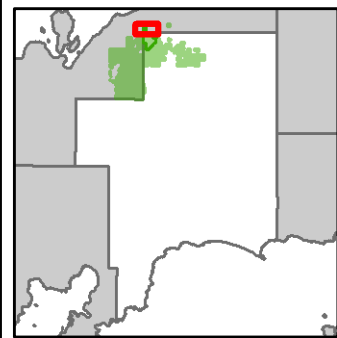


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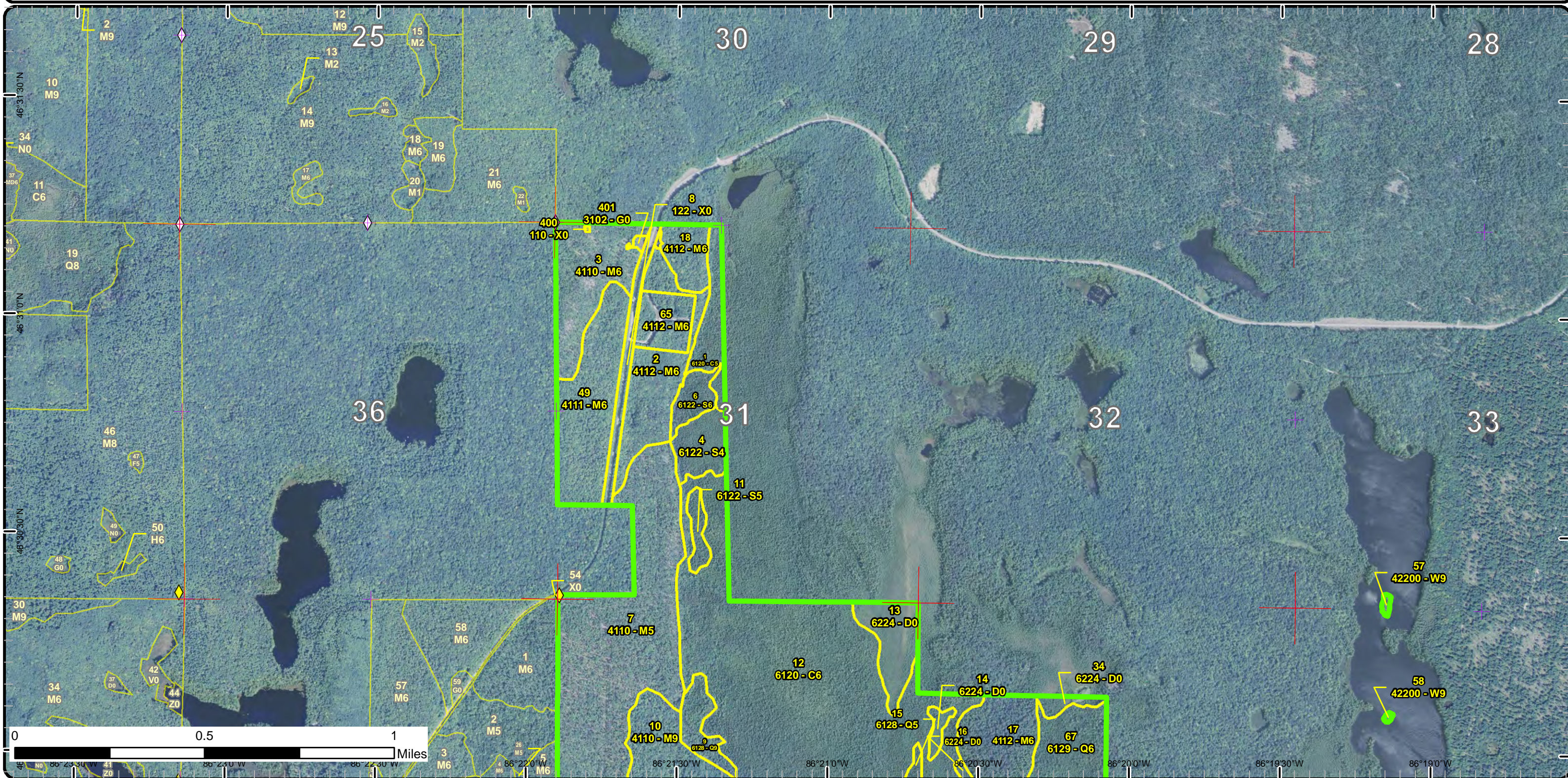


Stand Boundary Map

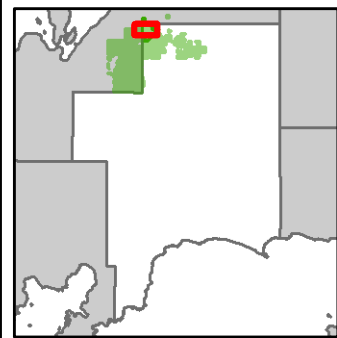


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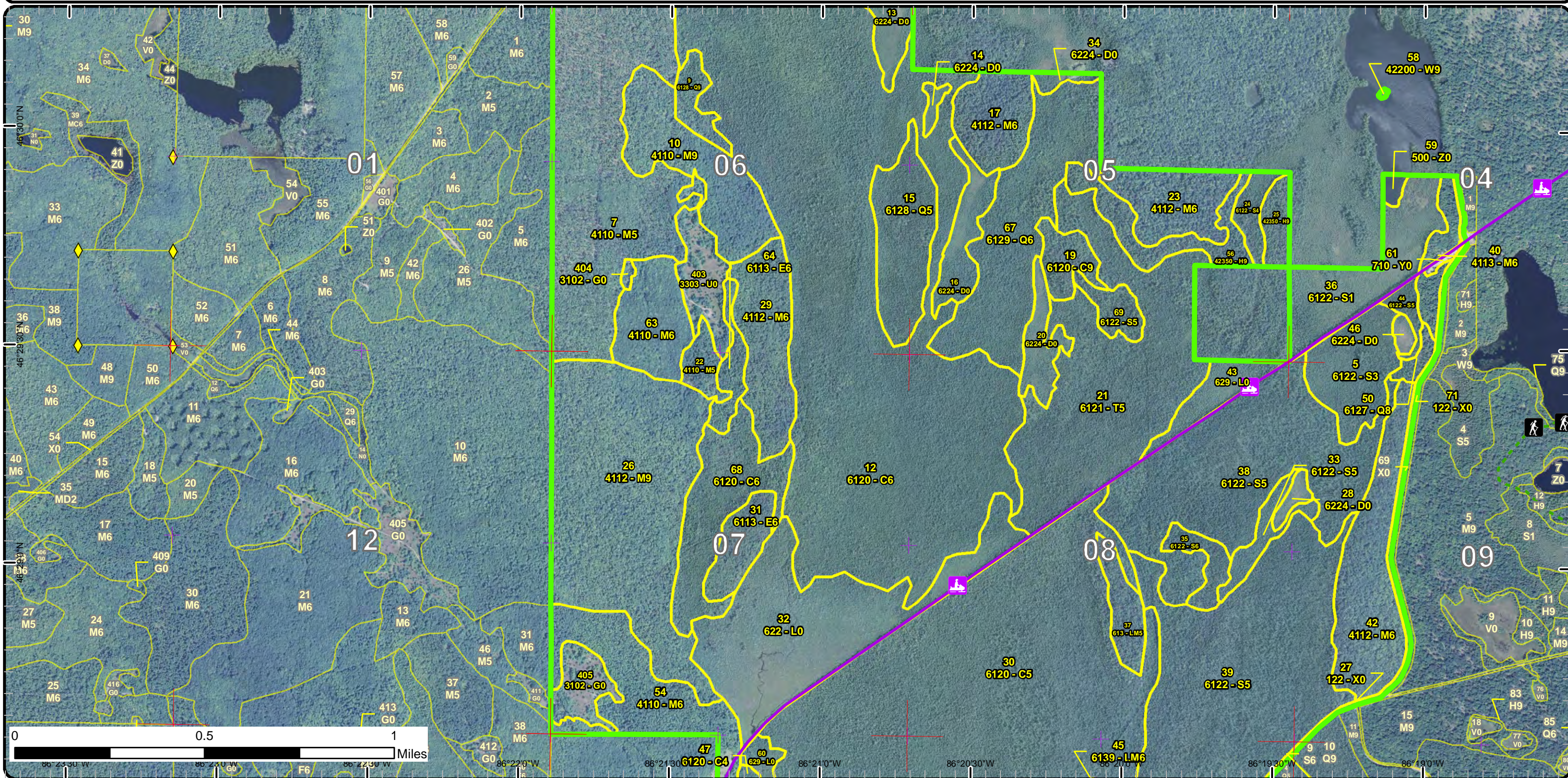


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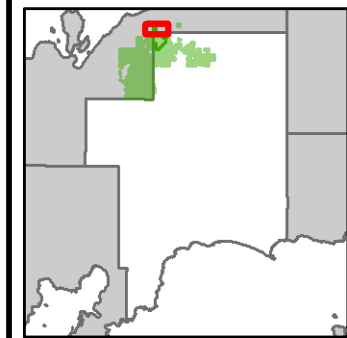
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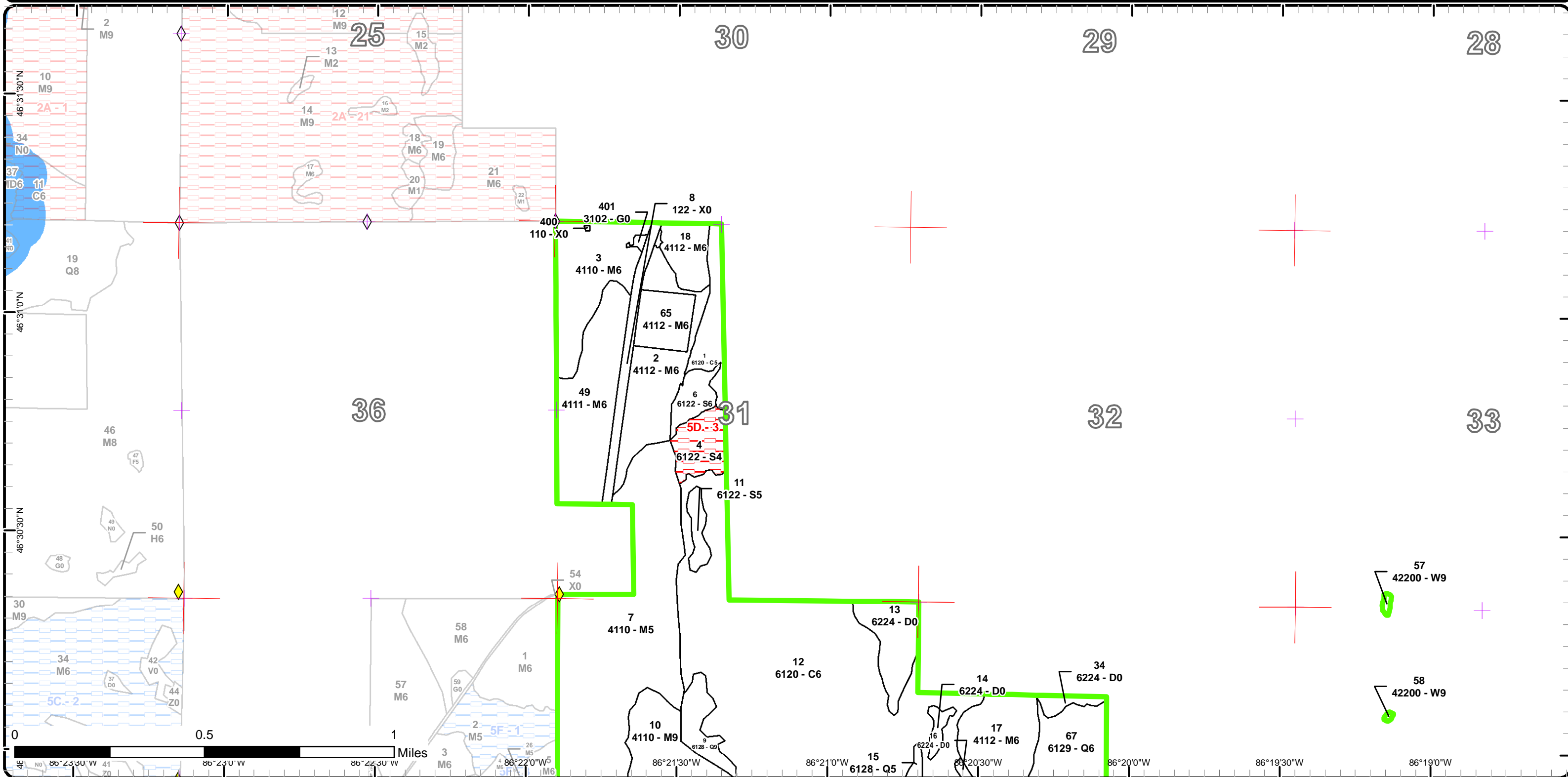


Special Conservation Areas & Site Conditions Map

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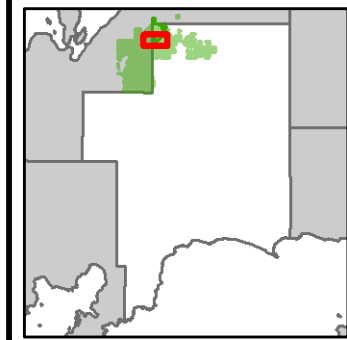


- Miris Corners
- Remonumented Section Corners
- Survey Grade GPS Corners
- Field Grade GPS Corners
- Compartment Boundary
- Unavailable
- 5D: Unproductive Forest Land
- Stand Boundaries
- High Priority Trout Stream Buffer

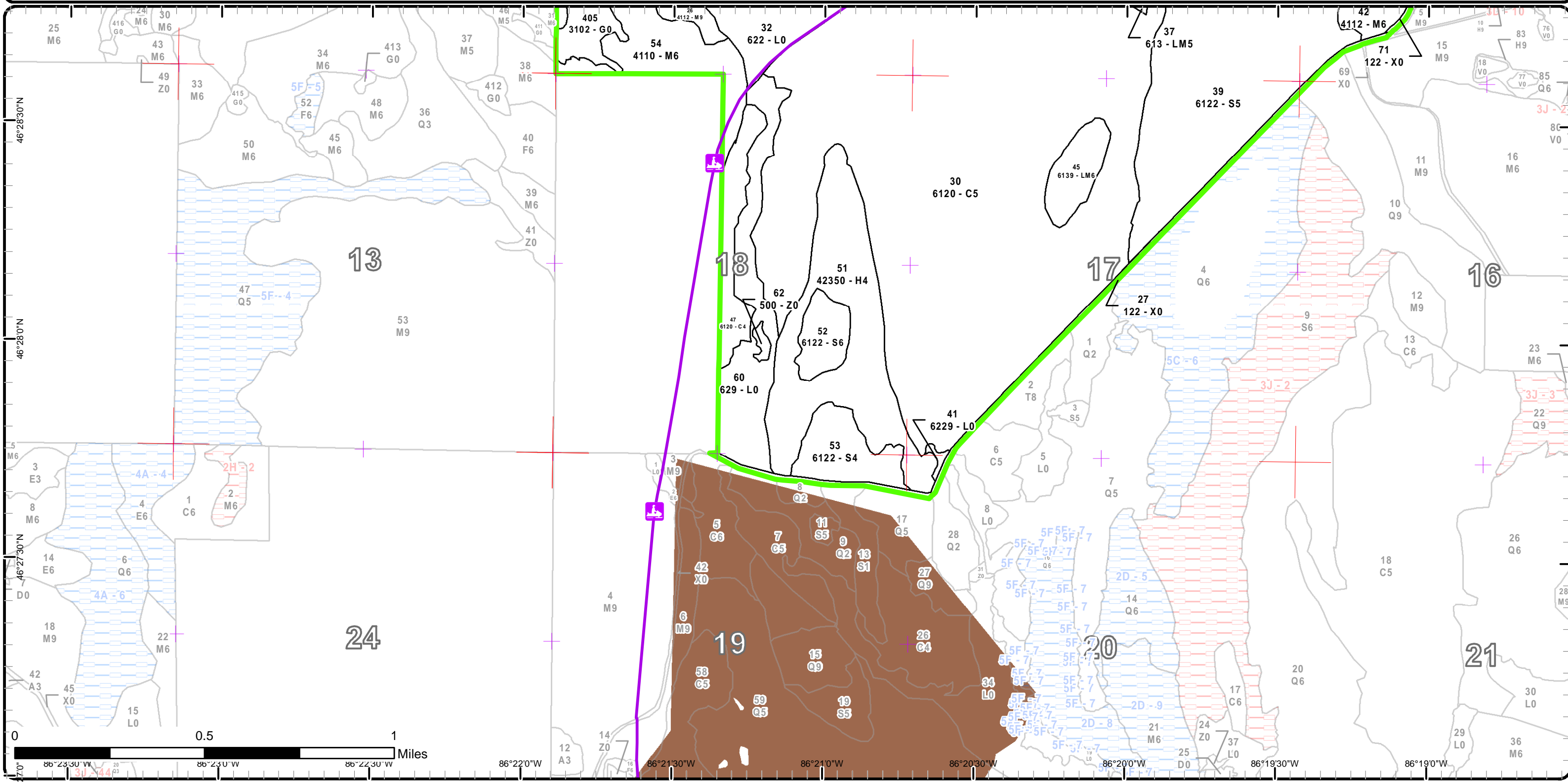


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- Snowmobile Trails
- Designated Snowmobile Trails
- Compartment Boundary
- Stand Boundaries
- Deer Winter Range



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
Cedar	0	0	0	0	0	0	0	626	0	39	0	0	0	0	0	0	573	1238	
Hemlock	0	0	0	0	0	0	0	0	0	95	0	0	0	0	0	25	10	130	
Herbaceous Openland	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	
Low-Density Trees	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
Lowland Conifers	0	0	0	0	0	43	87	0	0	0	0	0	0	0	0	0	16	146	
Lowland Deciduous	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	19	31	
Lowland Mixed Forest	0	0	0	0	0	0	0	33	0	0	0	0	0	0	0	0	0	33	
Lowland Shrub	184	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	184	
Lowland Spruce/Fir	0	0	0	0	42	24	10	427	37	14	0	0	0	0	0	0	0	554	
Northern Hardwood	0	0	0	0	0	0	0	0	0	33	0	0	0	0	0	0	810	843	
Sand, Soil	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Tamarack	0	0	0	0	0	149	0	0	0	0	0	0	0	0	0	0	0	149	
Treed Bog	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68	
Urban	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	
Water	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
White Pine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
Total	340	0	0	0	0	42	228	97	1086	37	181	0	0	0	0	25	1429	3463	



Report 2 – Treatment Summary

Shingleton Mgt. Unit
Year of Entry: 2018

Acres of Harvest

Compartment 167
Total Compartment Acres: 3,459

Commercial Harvest - 161
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
Herbaceous Openland	17	0	0	0	0	0	0	0	0	17
Low-Density Trees	24	0	0	0	0	0	0	0	0	24
Northern Hardwood	0	121	0	0	0	0	0	0	0	121
Total	40	121	0	0	0	0	0	0	0	161

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	161	0	0	0	0	0	0	0	0	161
Next Step	0	0	0	0	0	0	161	0	0	161
Total	161	0	0	0	0	0	161	0	0	321



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
10	41167010-Cut	28.4	4110 - Sugar Maple Association	Sawtimber Well	90	81-110	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven- Aged	Draft Field Boundary
Habitat Cut: No			Site Condition:								
<u>Prescription</u> Selection cut, mark to a residual of 80BA.											
<u>Specs:</u>											
<u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)											
<u>Treatments:</u>											
<u>Acceptable</u> Northern hardwoods.											
<u>Regen:</u>											
<u>Other</u>											
<u>Comment:</u>											
<u>Proposed Start Date:</u> 10/01/2017											
54	41167054-Cut	59.2	4110 - Sugar Maple Association	Poletimber Well	90	111- 140	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven- Aged	Draft Field Boundary
Habitat Cut: No			Site Condition:								
<u>Prescription</u> Mark down to 80, promote under represented species such as cherry or basswood when possible.											
<u>Specs:</u>											
<u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)											
<u>Treatments:</u>											
<u>Acceptable</u> Northern hardwoods											
<u>Regen:</u>											
<u>Other</u>											
<u>Comment:</u>											
<u>Proposed Start Date:</u> 10/01/2017											
63	41167063-Cut	32.9	4110 - Sugar Maple Association	Poletimber Well	90	111- 140	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven- Aged	Draft Field Boundary
Habitat Cut: No			Site Condition:								
<u>Prescription</u> Mark to 80 BA, promote cherry and other lesser occurring species where possible.											
<u>Specs:</u>											
<u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)											
<u>Treatments:</u>											
<u>Acceptable</u> Northern hardwoods.											
<u>Regen:</u>											
<u>Other</u>											
<u>Comment:</u>											
<u>Proposed Start Date:</u> 10/01/2017											
403	41167403-Cut	23.6	3303 - Mixed Low Density Trees	Nonstocked		Unspec ified	Harvest	Clearcut	310 - Herbaceous Openland		Draft Field Boundary
Habitat Cut: No			Site Condition:								
<u>Prescription</u> Wildlife opening, clearcut no retention.											
<u>Specs:</u>											
<u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)											
<u>Treatments:</u>											
<u>Acceptable</u> Grass											
<u>Regen:</u>											
<u>Other</u>											
<u>Comment:</u>											
<u>Proposed Start Date:</u> 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
405	41167405-Cut	16.5	3102 - Grass	Nonstocked		Unspec ified	Harvest	Clearcut	31022 - Warm Season Grass		Draft Field Boundary

Habitat Cut: No

Site Condition:

Prescription Maintain opening for wildlife with harvest of surrounding stand.

Specs:

Next Step Monitoring, Other - Specify

Treatments:

Acceptable Grass

Regen:

Other

Comment:

Proposed Start Date: 10/01/2017

**Total Treatment
Acreage Proposed: 160.6**

Report 4 – Site Conditions

Shingleton Mgt. Unit

Mario Molin : Examiner

Compartment: 167

Year of Entry: 2018

Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	5B	5D
		With Condition	Not Available			
1237	1237	0	0	Cedar		
130	105	25	0	Hemlock	25	
19	19	0	0	Herbaceous Openland		
24	24	0	0	Low-Density Trees		
146	146	0	0	Lowland Conifers		
30	30	0	0	Lowland Deciduous		
33	33	0	0	Lowland Mixed Forest		
184	184	0	0	Lowland Shrub		
552	501	0	51	Lowland Spruce/Fir		51
842	842	0	0	Northern Hardwood		
1	1	0	0	Sand, Soil		
149	149	0	0	Tamarack		
68	68	0	0	Treed Bog		
39	39	0	0	Urban		
4	4	0	0	Water		
1	1	0	0	White Pine		
3,459	3,383	25	51	Total Forested Acres	25	51
	98%	1%	1%	Relative Percent		

**Due to limitations in the current Site Conditions Analysis tool, all nonforested acres are considered available. Future development will enable analysis of nonforested types.*

Site No.	Dominant Site Cond Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	Unavailable	5D: Unproductive Forest Land	37	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
2	Available	5B: Maintain for regeneration purposes	25	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Hemlock stand, large diameter hemlock with good regeneration.							

Report 4 – Site Conditions

Shingleton Mgt. Unit
Mario Molin : Examiner

Compartment: 167
Year of Entry: 2018

3	Unavailable	5D: Unproductive Forest Land	14	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

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



Report 6 – EXISTING SPECIAL CONSERVATION AREA DETAILS

* This is a list of SCA's for this compartment along with a 1/4 mile buffer surrounding the compartment. Refer to the Special Conservation Area Map for locations of the below listed Conservation Areas.

ERA = Ecological Reference Area
HCVA = High Conservation Value Area
SCA = Special Conservation Area

Conservation Area	Type	Description
SCA	Cold Water Lake	A coldwater lake has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species to persist from year to year. Suitable conditions for coldwater fishes may occur in Michigan lakes if they are relatively deep, have substantial groundwater inflows, or are located in colder (northern) areas of the state. Such lakes are established by Director's action and designated as trout resources by Fisheries Order 200.
SCA	Cold Water Stream	A coldwater stream has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species (e.g., slimy sculpin) to persist from year to year. Coldwater streams in Michigan typically provide these conditions due to substantial contributions of groundwater to their stream flows. Such streams are established by Director's action and designated as trout resources by Fisheries Order 210.
SCA	Habitat Area	An area that provide some specific need for the life cycle of wildlife species, including State Wildlife Areas and Waterfowl Production Areas, deer wintering complexes in lowland conifer communities, grassland openings and savannas. Habitat areas are distinct from critical habitat designated for recovery of endangered or threatened species (such as Kirtland's warbler or piping plover areas) in that they are more general in nature, are not primarily associated with threatened or endangered species, and are not covered by species recovery plans that are developed in cooperation with Federal agencies.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	6120 - Lowland Cedar	Poletimber Medium	14.9	93	51-80	Stand varies in structure throughout, varying in size classes and species densities. Like all the swamp conifer stands in the compartment the area was picked through for crop cuttings in the 40's.
2	4112 - Maple, Beech, Cherry Association	Poletimber Well	32.3	90	81-110	OPIC - FMD: MID 1980'S DROUGHT HAS KILLED GOOD NUMBER OF HARD MAPLE AND CAUSED SOME DEAD TOPS. NO CUT FOR 20 YEARS. [1-29-04 RFT] FTP C41-819 for wp/oak planting was written but now cancelled. This stand has white pine coming in on its own. [4/7/06 jb] Understory is mainly beech with scattered fir and white pine. There is a slope (15-20%) on the east side of the stand going into the swamp. This area would be difficult to harvest. The edge contains large white pine, hemlock and sometimes spruce. Stand is within the Garlic Soils Series.
3	4110 - Sugar Maple Association	Poletimber Well	36.2	81	51-80	Thinned in 1983 and select cut in in 2015 [12/5/12 RFT] Stand is now under contract 41-028-12-01 167 Pilot.
4	6122 - Black Spruce	Poletimber Poor	13.7	92	1-50	OPIC - FMD: Area is bog-like in the center, what trees are there are very suppressed from the high water table. Tamarck is over the spruce but the rotation with go back and forth. I believe the outside edges of the stand were picked through in the 40's for crop cuttings.
5	6122 - Black Spruce	Sapling Well	36.8	85	1-50	Stand can be very open or have pockets of water suppressed tamarack, spruce and occasional white pine. Ground vegetation can be blueberry, cranberry, pitcher plant and other spp found in bog areas.
6	6122 - Black Spruce	Poletimber Well	8.2	58	81-110	
7	4110 - Sugar Maple Association	Poletimber Medium	201.2	81	51-80	OPIC - FMD: NOT FDF QUALTY, INMATE FIREWOOD QUALITY PLANT WHITE PINE AND OAK[1-29-04 RFT] FTP C41-819 for wp/oak planting was written but now cancelled. This stand has white pine coming in on its own. [4/7/06 jb] FTP W41-1052 is still open for the same treatment, close and make a new FTP when stand is treated again. Understory in all plots is mainly beech with the occasional small white pine and hemlock clumps. I did not see any BBD on the larger trees, however the front is too close for it to not be there. Large white pine and spruce is found on the slope (15 - 20%) into the swamp. Thin area to promote spp diversity. The trees are fair to good quality. 99 = a mix of hard maple logs, yellow birch and beech pulp. Stand is within the Garlic Soils Series.[11/08/06] FTP W41-1052 cancelled on 10/09/06.[12/5/12 RFT] Stand is now under contract 41-028-12-01 167 Pilot.
9	6128 - Lowland Coniferous, Mixed Deciduous	Sawtimber Well	10.9	125	111-140	2016: Lot of terrain on a small scale, very wet low spots, old grade in stand. OPIC - FMD: Some of the hemlock and white pine were removed in the 50's - 70's. There are some areas where there is hemlock and white pine regeneration present (1-4' tall). Thin to promote white pine, yellow birch and hemlock. Logging on non snow covered ground will help with seeding in. Cut with stand 10. When cut the fir and maple will automatically come in. Yellow birch is starting to die out. There are some large black spruce and white pine in the stand. Stand is within the Garlic Soils Series.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
10	4110 - Sugar Maple Association	Sawtimber Well	53.4	90	81-110	2016: Most log trees are poor quality with only 1 log in them, very good densities of poles and saplings in stand. 2006: The west edge of the stand has large trees but are of poor quality. There is scattered spruce and fir of all DBH in the stand. There is more maple than beech in the understory than the surrounding stands. The regen holes are coming in very well with a mix of spp. Paquin/Finch soils. ATFD
11	6122 - Black Spruce	Poletimber Medium	5.3	58	51-80	
12	6120 - Lowland Cedar	Poletimber Well	507.7	60	51-80	OPIC - FMD: MUCH OF LARGE CEDAR IS HOLLOW [1/03/06 jb] This stand was cut through in the 50's for crop cuts. Using the '53 and '64 photos some areas of cut can be picked up. However, all trees were not removed so actual outlines of the cuts can not be distinguished. The better timber is what was removed. Some of the regen can be 18' tall. There are scattered cedar poles. Fir is ready to be cut but scattered and of low quality. The yellow birch is dead or dying out. The red maple and black ash are regenerating from crop cuts. There are small areas of cedar regeneration with scattered large, water stressed white pine. Areas of poor quality and the cedar SI is 22.
15	6128 - Lowland Coniferous, Mixed Deciduous	Poletimber Medium	43.3	55	1-50	2006: Stand was cut in '61 but as a crop cut. Any trees 5" or less were probably left (what is merchantable now). Mostly spruce was removed the stand is going to come back well to mainly spruce or a q- type. White pine are water stressed. Ground cover is mainly peat moss, labrador tea with leather leaf.
17	4112 - Maple, Beech, Cherry Association	Poletimber Well	29.4	90	51-80	OPIC - FMD: Area was cut heavily in '92 but it has helped with good regeneration of hard maple, white pine, some yellow birch and hemlock 1 - 15 feet tall. There is scattered merchantable fir left. Edge of the stand is rimmed with large white pine and hemlock. These were also thinned through. ATFD habitat type.
18	4112 - Maple, Beech, Cherry Association	Poletimber Well	12.1	85	51-80	Stand was thinned in '92.
19	6120 - Lowland Cedar	Sawtimber Well	13.9	150	81-110	OPIC - FMD: This stand was picked through in '61 with surrounding swamp cuts. There is some regeneration coming in but only in the areas where some disturbance has occurred. Not all of the "log" tree hemlocks are sawlog quality. There are a couple large white pine. The hardwood is of poor quality.
21	6121 - Tamarack	Poletimber Medium	148.8	55	1-50	OPIC - FMD: Stand was cut in '61 but as a crop cut. Any trees 5" or less were probably left (what is merchantable now). Mostly spruce was removed the stand is going to come back well to mainly spruce or a q- type. White pine are water stressed. Ground cover is mainly peat moss, labrador tea with leather leaf.
22	4110 - Sugar Maple Association	Poletimber Medium	9.6	81	51-80	OPIC - FMD: Better run of wood than the surrounding stands. There is good potential to improve the quality of the wood. There is also scattered large spruce and fir. Remove the fir and some of the spruce. Stand will come back to the same spp mix that is present now. Garlic Sand Soil Series. [12/5/12 RFT] Stand is now under contract 41-028-12-01 167 Pilot.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
23	4112 - Maple, Beech, Cherry Association	Poletimber Well	32.8	85	81-110	<p>OPIC - FMD: Area was cut heavily in '92 but it has helped with good regeneration of hard maple, white pine, some yellow birch and hemlock 1 - 15 feet tall. There is scattered merchantable fir and spruce left. Edge of the stand is rimmed with large white pine and hemlock. These were also thinned through. ATFD habitat type.</p> <p>[11/8/12 bb] Stand was added to the 2014 Compartment Review as an Out of Entry Treatment due to the rapid spread of BBD and overall decline of the species within the stand. Stand was part of a Unit wide analysis. The harvest is a salvage cut in which all the beech and ash will be designated unless retained for mast or resistance.</p> <p>[4/16/13 bb] After a more thorough look the stand is being dropped as a salvage cut because, Stand was thinned heavy last entry and has a current BA of 80-90, pockets of nice White Pine, Hemlock, and Sugar Maple regen throughout along with some Beech brush. Not much Beech volume for harvest and the regen is too far advanced for any kind of spraying of the Beech brush.</p>
24	6122 - Black Spruce	Poletimber Poor	9.8	63	1-50	<p>OPIC - FMD: Stand is of extremely poor quality because of the high water table. There are some scattered white pine, especially near the edges, also tamarack and cedar. Stand will probably not become a merchantable site.</p>
25	42350 - Upland Hemlock	Sawtimber Well	10.2	150	171-200	<p>2016: Stand appears to meet type 2 old growth requirements except for the minimum acreage. Stand is comprised of very large diameter Hemlock and White pine, stand is isolated and somewhat remote, access is through private property. Consider doing no management allowing to continue moving towards a late successional forest.</p> <p>OPIC - FMD: A seed tree was done in '78 with a high residual BA left and looks more like a very light thin. The regeneration in the understory has maple, white pine and hemlock but is not a large amount so more of the over story could have been removed to promote better regeneration. Not all of the "log" tree hemlocks are sawlog quality. There are a couple large white pine. The hardwood is of poor quality. Even though the cut is seed tree more BA should be left to protect the regeneration that will come in from the cut. The East PVT line is not in and would have to be re-established. Paquin/Finch Soil series. ATFD habitat type. Access can be through stand 23 and PVT to the south or through stand 44 like the first time it was cut. Stand was prescribed, however wildlife is requesting the stand is not cut.</p>
26	4112 - Maple, Beech, Cherry Association	Sawtimber Well	165.2	90	81-110	<p>OPIC - FMD: HARD MAPLE SCATTERED; DEAD TREES EVIDENT[4/28/06 j]b] Not all pulp trees are small. Some are large "wolf" trees. Parts of the stand was thinned in '85 and/or'90, however the regen and quality remain about the same as the areas untreated. There are also scattered pulp fir, yellow birch, white pine and spruce. The occasional large hemlock, beech and cherry are in the stand. When thinned try and promote this diversity. Garlic Soil Series.</p>
29	4112 - Maple, Beech, Cherry Association	Poletimber Well	44.3	90	51-80	<p>OPIC - FMD: HARD MAPLE SCATTERED; DEAD TREES EVIDENT[4/28/06 j]b] Not all pulp trees are small. Some are large "wolf" trees. Parts of the stand was thinned in '85 and/or'90, however the regen and quality remain about the same as the areas untreated. There are also scattered pulp fir, yellow birch, white pine and spruce. The occasional large hemlock, beech and cherry are in the stand. When thinned try and promote this diversity. Garlic Soil Series.</p>



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
30	6120 - Lowland Cedar	Poletimber Medium	625.7	73	1-50	2006: The stand is a patch work of areas that were logged for crop in the 40's and 50's with areas that were left untouched and are being thinned out naturally from water stress and old age. There are snags of all size classes and large white pine that are water stressed. The cedar in the understory is 1-10 feet tall. There are also areas where nothing is regenerating in the understory. Areas that have the tall regeneration must have already been established before the overstory was cut. North boundary is the Sunrise Grade Snowmobile Trail. Stand is within the Garlic Soils Series. 98= cedar bolts and fir.
31	6113 - Lowland Maple	Poletimber Well	18.7	90	111-140	
33	6122 - Black Spruce	Poletimber Medium	12.0	77	1-50	OPIC - FMD: Stand is stunted by high water table. Some areas were cut in the 40's for crop. There are scattered large spruce, tamarack, cedar and white pine that were not harvested (Age of spruce is an estimate from photos, SI was from a mature spruce). When stand hits rotation age it will still be low volume because of the low number of trees/acre.
35	6122 - Black Spruce	Poletimber Well	10.9	75	111-140	22016: Slightly higher ground, trees are noticeably larger than in the surrounding stands.
36	6122 - Black Spruce	Sapling Poor	47.7	77	1-50	OPIC - FMD: Stand can be very open or have pockets of water suppressed tamarack, spruce and white pine. Ground vegetation can be blueberry, cranberry, pitcher plant and other spp found in bog areas.
37	613 - Lowland Mixed Forest	Poletimber Medium	15.3	73	1-50	2006: There is about 1/2 foot elevation change with the surrounding stands. The hardwoods that you can see on the photo are small white birch, very poor quality red maple, bam and some black ash. There are some water stressed white pine. The ground cover is peat moss, leather leaf. Cut with surrounding stands.
38	6122 - Black Spruce	Poletimber Medium	140.9	77	51-80	2016: Composition switches back and forth from spruce and tamarack, overall volume and size is probably low for commercial harvest. OPIC - FMD: Stand was patch cut in the 40's for crop and then in the 70's. When cut they left most of the white pine. The pine is water stressed but still hanging on. Larger fir has died out but there is some in the understory. Other spp. Look healthy, there is some blow down because of the shallow soils. North boundary is the snowmobile trail.
39	6122 - Black Spruce	Poletimber Medium	208.9	73	51-80	OPIC - FMD: Patch cuttings for crop in the 40's and 70's in this area also. The trees are healthy looking except for the aspen, which is almost dead and of poor quality. Some areas have good spruce. The stand is changing from a cedar to a q-type because there is so much spruce volume and the presence of tamarack and fir. SI for spruce is 31. Grand Marais Very Fine Sandy Soil Series.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
40	4113 - R.Maple, Conifer	Poletimber Well	13.6	90	51-80	OPIC - FMD: LOON ACTIVITY ON NEARBY LAKES. NOISEY ACTIVITY SHOULDN'T OCCUR BETW4/15 - 7/15 WITHIN A 1/4 OF NESTING SIGHTS. UPDATED TCR 1/12/99 - 075-97-02. [4/10/06 jb] Hemlock is present but of poor quality. White pine is mainly near the west edge and is nice. Majority of the hardwood in the understory is beech. Cut to promote other spp. Accuracy of the private line needs to be checked. Snowmobile trail cuts through center of the stand on the Sunrise Grade. 98= hemlock, white pine and fir. 99=beech, hardmaple pulp. Regeneration when cut needs to be the same as spp that are present now. [05/14/14] Stand was select cut by DOC under TS 41-022-08-02. This sale was completed with a TCR dtd 12-15-08.
42	4112 - Maple, Beech, Cherry Association	Poletimber Well	60.9	90	81-110	OPIC - FMD: There are a couple "super canopy" white pine in the stand, especially near the swamp edge. North part of the stand has a bit higher BA. Stand was treated in '92. 99=hard maple, yellow birch and cherry. 98=spruce, fir, white pine and hemlock.
44	6122 - Black Spruce	Poletimber Medium	5.7	76	51-80	OPIC - FMD: Scattered white pine and hemlock in the stand. Stand was harvested in the 40's for crop. Edges near the bog are water stressed but still doing well. The area is subject to high water table so havesting could be delayed. The snowmobile trail/ Sunrise Grade is on the north boundary. Grand Sable Soils.
45	6139 - Mixed Lowland Forest	Poletimber Well	17.7	73	51-80	2016: unable to get to this stand, using data from last entry. 2006: The hardwoods that you can see on the photo are small white birch, very poor quality red maple, bam and some black ash. There are some water stressed white pine. The ground cover is peat moss, leather leaf. Cut with surrounding stands. This stand is a bit better quality than stand 37. Paquin/Finch Soil Series.
47	6120 - Lowland Cedar	Poletimber Poor	23.5	93	1-50	2006: Area consists of poor quality cedar, water suppressed white pine and spruce mixed in with lows from following the Stoner Creek boundary. Access is through the private to the west. Soil type, Grand Marais VF Sandy Soil may keep stand from becoming fully stocked.
49	4111 - S.Maple, Hard Mast Association	Poletimber Well	45.5	85	51-80	2016: Stand is comprised of poor quality maple and beech. BBD is in stand and heavy beech regeneration throughout. OPIC - FMD: Many areas in the understory contains mainly beech with some fir. There are scattered large white pine and spruce, especially near the old openings that have filled in to M5/M4's. Trees are of poor to fair quality.
50	6127 - Lowland Pine	Sawtimber Medium	4.6	90	51-80	OPIC - FMD: LOON ACTIVITY ON NEARBY LAKES. NOISEY ACTIVITY SHOULD NOT OCCUR BET4/15 - 7/15 WITHIN 1/4 MILE OF NESTING SIGHTS. [1/19/06 jb] Ground has potential to be wet, winter harvest to protect soils. Scattered fir and hemlock in understory. Thinned in '72. Thin to promote white pine. [06/07/09] Stand is now under contract TS # 41-037-08-01 No More Hardwood. Residual BA: y. birch = 2; w.pine = 46; hemlock = 14; total = 62 sq.ft/acre. [11-8-12] Sale is closed/completed TCR dtd 10/29/12. Check for regen in 2016 during YOE 2018 inventory.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
51	42350 - Upland Hemlock	Poletimber Poor	95.0	90	1-50	[06/07/09] Stand is now under contract TS # 41-037-08-01 No More Hardwood. Residual BA: red maple = 18; y. birch = 6; cedar = 2; w.pine = 3; hemlock = 28; total = 57 sq.ft/acre. [11-8-12] Sale is closed/completed TCR dtd 10/29/12.
52	6122 - Black Spruce	Poletimber Well	15.6	46	51-80	OPIC - FMD: Did a seedtree cut in the 70's. Removed all spp, leaving some large hemlock and white pine. Understory is coming in very thick to spruce, fir, white pine, hemlock and mixed hardwood. Old winter road to the stand. Very wet ground. regen check done 2015, fully stocked.
53	6122 - Black Spruce	Poletimber Poor	25.7	45	1-50	OPIC - FMD: CUT TS# 50-98 TCR dtd 8-31-00; KEPT ALL HEMLOCK, SOME WHITE PINE. [1/6/06 jb] Understory is coming in nicely with white birch, white pine, hemlock, fir, spruce and cedar. Regeneration is 1 - 10' tall. There are some of the residual pine and hemlock that has blown over. regen check done stand is fully stocked.
54	4110 - Sugar Maple Association	Poletimber Well	59.2	90	111-140	Corners are in, FLG put lines in and cut. OPIC - FMD: Rolling terrain. Some fire and white pine in the understory 1 - 3" DBH. Cherry quality is fair quality. RM is good with hard maple in the understory. Thin to promote the same spp present. Garlic Sand Soil Series. [05/14/14] Stand was select cut by DOC under TS 41-022-08-02. This sale was completed with a TCR dtd 12-15-08.
56	42350 - Upland Hemlock	Sawtimber Well	25.0	150	81-110	
57	42200 - Natural White Pine	Sawtimber Well	0.6	100	81-110	2006: Stand is .08 acres. US Gov. Land transfer from unclaimed land and recreation land. There was a fire in 1985 on the east side of the island. Couldn't get to the islands but saw them from the shore. They are similar to the west edges of stand 40.
58	42200 - Natural White Pine	Sawtimber Well	0.3	100	81-110	2006: Stand is .03 acres. US Gov. Land transfer from unclaimed land and recreation land. Couldn't get to the islands but saw them from the shore. They are similar to the west edges of stand 40.
63	4110 - Sugar Maple Association	Poletimber Well	32.9	90	111-140	Very little to no regen in the stand.
64	6113 - Lowland Maple	Poletimber Well	11.5	50	51-80	2016: Some of the area looks like it was picked through with surrounding timber sales in the past.
65	4112 - Maple, Beech, Cherry Association	Poletimber Well	13.8	90	81-110	OPIC - FMD: MID 1980'S DROUGHT HAS KILLED GOOD NUMBER OF HARD MAPLE AND CAUSED SOME DEAD TOPS. NO CUT FOR 20 YEARS. [1-29-04 RFT] FTP C41-819 for wp/oak planting was written but now cancelled. This stand has white pine coming in on its own. [4/7/06 jb] Understory is mainly beech with scattered fir and white pine. Stand is under long term lease because of the MSP tower on the property. Stand is within the Garlic Soils Series.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
67	6129 - Mixed Coniferous Lowland Forest	Poletimber Well	87.1	60	51-80	OPIC - FMD: MUCH OF LARGE CEDAR IS HOLLOW [1/03/06 jb] This stand was cut through in the 50's for crop cuts. Using the '53 and '64 photos some areas of cut can be picked up. However, all trees were not removed so actual outlines of the cuts can not be distinguished. The better timber is what was removed. Some of the regen can be 18' tall. There are scattered cedar poles. Fir is ready to be cut but scattered and of low quality. The yellow birch is dead or dying out. The red maple and black ash are regenerating from crop cuts. There are small areas of cedar regeneration with scattered large, water stressed white pine. Areas of poor quality and the cedar SI is 22.
68	6120 - Lowland Cedar	Poletimber Well	51.1	73	81-110	2016: Area is healthy cedar. There is good, thick regeneration of cedar, spruce, fir and maple, wide transition zone.
69	6122 - Black Spruce	Poletimber Medium	10.6	55	1-50	OPIC - FMD: Stand was cut in '61 but as a crop cut. Any trees 5" or less were probably left (what is merchantable now). Mostly spruce was removed the stand is going to come back well to mainly spruce or a q- type. White pine are water stressed. Ground cover is mainly peat moss, labrador tea with leather leaf.



Stand	Cover Type	Acres	Managed Site	General Comments:
8	122 - Road/Parking Lot	12.1	No	Adams Truck Trail or H-58. Used heavily by tourists in the summer months to get to the lake shore and camping. Used heavily in the winter by snowmobilers riding the shoulder and logging trucks year round.
13	6224 - Treed Bog	18.1	No	2006: Stand can be very open or have pockets of water suppressed tamarack, spruce and white pine. Ground vegetation can be blueberry, cranberry, pitcher plant and other spp found in bog areas.
14	6224 - Treed Bog	3.0	No	2006: Stand can be very open or have pockets of water suppressed tamarack, spruce and white pine. Ground vegetation can be blueberry, cranberry, pitcher plant and other spp found in bog areas.
16	6224 - Treed Bog	20.2	No	2006: Stand can be very open or have pockets of water suppressed tamarack, spruce and white pine. Ground vegetation can be blueberry, cranberry, pitcher plant and other spp found in bog areas.
20	6224 - Treed Bog	15.4	No	2006: Stand can be very open or have pockets of water suppressed tamarack, spruce and white pine. Ground vegetation can be blueberry, cranberry, pitcher plant and other spp found in bog areas.
27	122 - Road/Parking Lot	15.6	No	: Creighton Truck Trail ROW. Used heavily by hunters, snowmobiles and logging traffic. Some traffic from tourists can occur. Snowmobile trail crosses road in section 4.
28	6224 - Treed Bog	4.2	No	2006: Stand can be very open or have pockets of water suppressed tamarack, spruce and white pine. Ground vegetation can be blueberry, cranberry, pitcher plant and other spp found in bog areas.
32	622 - Lowland Shrub	116.7	No	OPIC - FMD: South end of the stand gets occasional beaver activity. Snowmobile trail is the south boundary of the stand. Some scattered, water stressed cedar, tamarack and fir.
34	6224 - Treed Bog	3.6	No	2006: Stand can be very open or have pockets of water suppressed tamarack, spruce and white pine. Ground vegetation can be blueberry, cranberry, pitcher plant and other spp found in bog areas.
41	6229 - Mixed lowland shrub	1.3	No	
43	629 - Mixed non-forested wetland	16.1	No	2016: Flooding, some scattered cedar and tamarack struggling to survive.
46	6224 - Treed Bog	3.0	No	OPIC - FMD: Stand can be very open or have pockets of water suppressed tamarack, spruce and white pine. Ground vegetation can be blueberry, cranberry, pitcher plant and other spp found in bog areas.
59	500 - Water	2.7	No	OPIC - FMD: South edge of LONG LAKE
60	629 - Mixed non-forested wetland	50.2	No	OPIC - FMD: Some scattered, water stressed cedar, tamarack and fir.



Stand	Cover Type	Acres	Managed Site	General Comments:
61	710 - Sand, Soil	1.4	No	2006: OLD BORROW AREA FROM SUNRISE GRADE ERA. [1/19/06 jb] Starting to fill in with some white pine (bushy), birch and cherry brush mostly on the edges. Used heavily by the snowmobilers as a place to stop on the trail.
62	500 - Water	1.8	No	OPIC - FMD: Pond area from the Stoner Creek.
71	122 - Road/Parking Lot	10.7	No	
400	110 - Low Intensity Urban	0.1	No	Stand is actually 0.15 acres and is leased for the PRNL fire tower.
401	3102 - Grass	1.1	No	2016: Area is starting to fill in with hardwood spp and scattered white pine and fir.
403	3303 - Mixed Low Density Trees	23.6	No	2016: There are some places where cherry brush and red maple are coming in 1 - 2 sticks. Stand is mainly grass but the edges are starting to fill in. .
404	3102 - Grass	1.3	No	2016- areas are clean but there are some places where cherry brush and red maple are coming in. Stand is mainly grass but the edges are starting to fill in.
405	3102 - Grass	16.5	No	2016: Cherry brush and maple are coming in. Stand is mainly grass but the edges are starting to fill in.