



Compartment Review Presentation

Sault Ste. Marie Forest Management Unit

Compartment 45023

Entry Year 2018

Acreage: 3,205

County Chippewa

Management Area: Huron Patterned Outcrop

Revision Date: 2016-07-27

Stand Examiner: Jeff Wise

Legal Description:

T42N R2E, Sections 26, 27, 34, 35 T41N R2E, Sections 2, 3

Identified Planning Goals:

To develop an optimal age class distribution of aspen stands for sustainable forestry and wildlife values. To rotate hardwood treatments for optimum regeneration and stocking of all age classes. Maintain current openings as needed for diversity and enhancement of wildlife benefits. To provide reasonable public access for multiple use benefits such as hunting, trail riding, camping, and hiking, while protecting the natural resources. Cedar is to be maintained in the southern part of the compartment as it is known to hold wintering deer, however this YOE will emphasize the salvage of white spruce from some deer yard areas where cedar is not the dominant cover type.

Soil and topography:

Shelter-Posen-Summerville: deep and shallow, level to steep, poorly drained and well drained, loamy soils on ground moraines and glacial lake benches. Topography is gently rolling to flat with lower wet areas.

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

This compartment is surrounded by private land on all sides. The area is used primarily for hunting, and timber and wildlife management. Private land bordering the compartment contains several hunting camps, and is primarily used for hunting and timber management as well. This YOE about 640 acres was purchased from a local landowner with walk-in public access along M-48. In the future there are plans to build a road and parking lot.

Unique Natural Features:

Fulmer Lake is here and it has been discovered that the outlet disappears into a fissure and is not found again. Predominately an aspen compartment, there is a unique hemlock stand which has been coded for protection in IFMAP. Michigan Natural Features Inventory lists few species of concern here. See the MNFI website for details.

Archeological, Historical, and Cultural Features:

Nothing known at this time.

Special Management Designations or Considerations:

One hemlock stand has been coded for biodiversity. (AOI)

Watershed and Fisheries Considerations:

This compartment contains Fulmer Lake. We do not have any fisheries data on Fulmer Lake. A buffer boundary should be left in stand 20 next to the lake for large woody debris recruitment and shade. A buffer should also be left next to the karst outlet, which flows for approximately 300 feet.

Wildlife Habitat Considerations:

Compartment 23 is part of the Huron Patterned Outcrop Management Area where featured wildlife species include pileated woodpecker, ruffed grouse, snowshoe hare, and white-tailed deer. Most of the compartment is located in deer wintering complex. The compartment contains a mix of aspen and cedar stands with a few scattered northern hardwood stands throughout and some wetland types. The compartment borders Fulmer Lake, Ziegler Lake, and Big Trout Lake, while Trout Creek and Albany Creek both flow through parts of it. Past management has resulted in a variety of aspen age classes in this compartment, which benefits all of the featured wildlife species as well as others. It has also resulted in diversifying some northern hardwood patches. Management over the next 10 years will continue to diversify aspen age classes. Harvests will generally occur during the winter so tops are available as browse for wintering deer. Cedar and other lowland conifer stands will be retained to provide cover for wintering deer as well as other wildlife. Riparian areas will be protected to maintain wildlife travel corridors as well as the wetland and aquatic habitats.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of peat and muck, lacustrine sand & gravel, coarse-textured till sometimes thin to discontinuous over bedrock. The glacial drift thickness varies between 10 and 50 feet. The Silurian Engadine Group subcrops below the glacial drift. The Engadine is quarried for stone/dolomite six miles to the northwest. A pit is located two miles to the west and there should be some potential on the uplands. There is no current economic oil and gas production in the UP.

Vehicle Access:

South Springer Rd bisects the west part of the compartment. Various two tracks allow access up through the mid section and M-134 borders on the south side. No new roads needed for management.

Survey Needs:

Recreational Facilities and Opportunities:

Snowmobile trail #47 does traverse the east side of this compartment, but no ORV trails and consists of primarily hunting land.

Fire Protection:

Good access to most of the compartment with ponds and other wet areas throughout . Water sources are sufficient with Lake Huron nearby.

Additional Compartment Information:

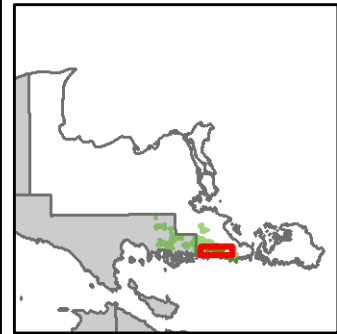
The following reports from the Inventory are attached:

- 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:

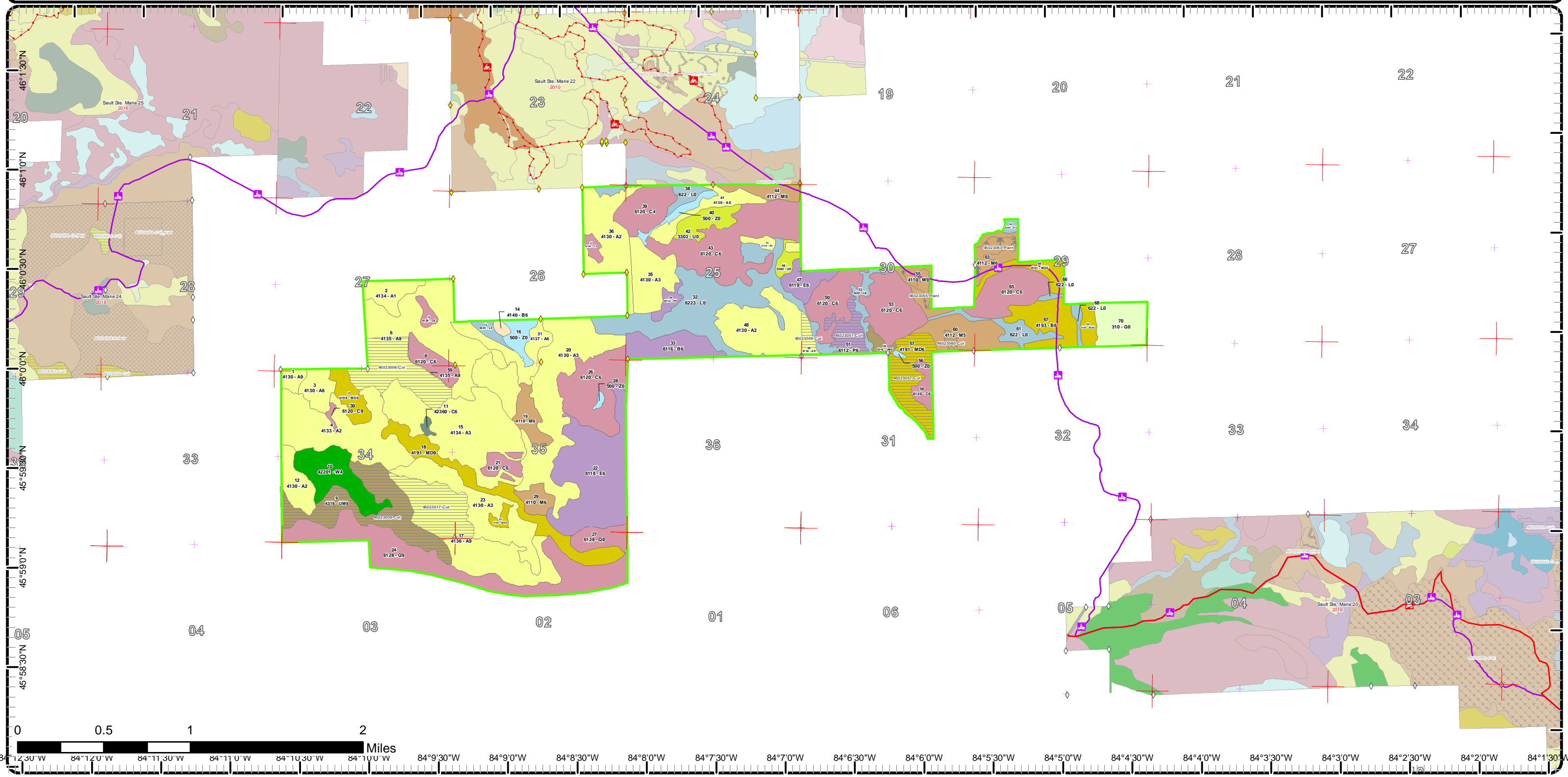
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments Map

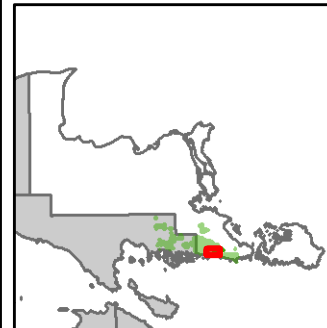


Compartment: 23
 T42N, R02E, Sec: 25-27, 34-36
 T42N, R03E, Sec: 29-31
 County: Chippewa
 Unit: Sault Ste. Marie
 Mgmt Area: Huron Patterned
 Outcrop
 YOE: 2018
 Acres: 3,205 GIS Calculated
 Examiner: Jeff Wise
 Map Revised: 12/6/2016
 Map Phase: Post Review

- Miris Corners
- + Remonumented Section Corners
- ◆ Survey Grade GPS Corners
- ◇ Field Grade GPS Corners
- ▣ Snowmobile Trails
- Designated ATV Trails
- Designated Snowmobile Trails
- Compartment Boundary
- Selection (Group, Single Tree)
- Clearcut (w/Reserves)
- Planting (tree species)
- 411 - Northern Hardwood
- 413 - Aspen Types
- 414 - Other Upland Deciduous
- 419 - Mixed Upland Deciduous
- 422 - Natural Pines
- 423 - Other Upland Conifers
- 430 - Upland Mixed Forest
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 310 - Herbaceous Openland
- 330 - Low Density Trees
- 500 - Water
- 622 - Lowland Shrub

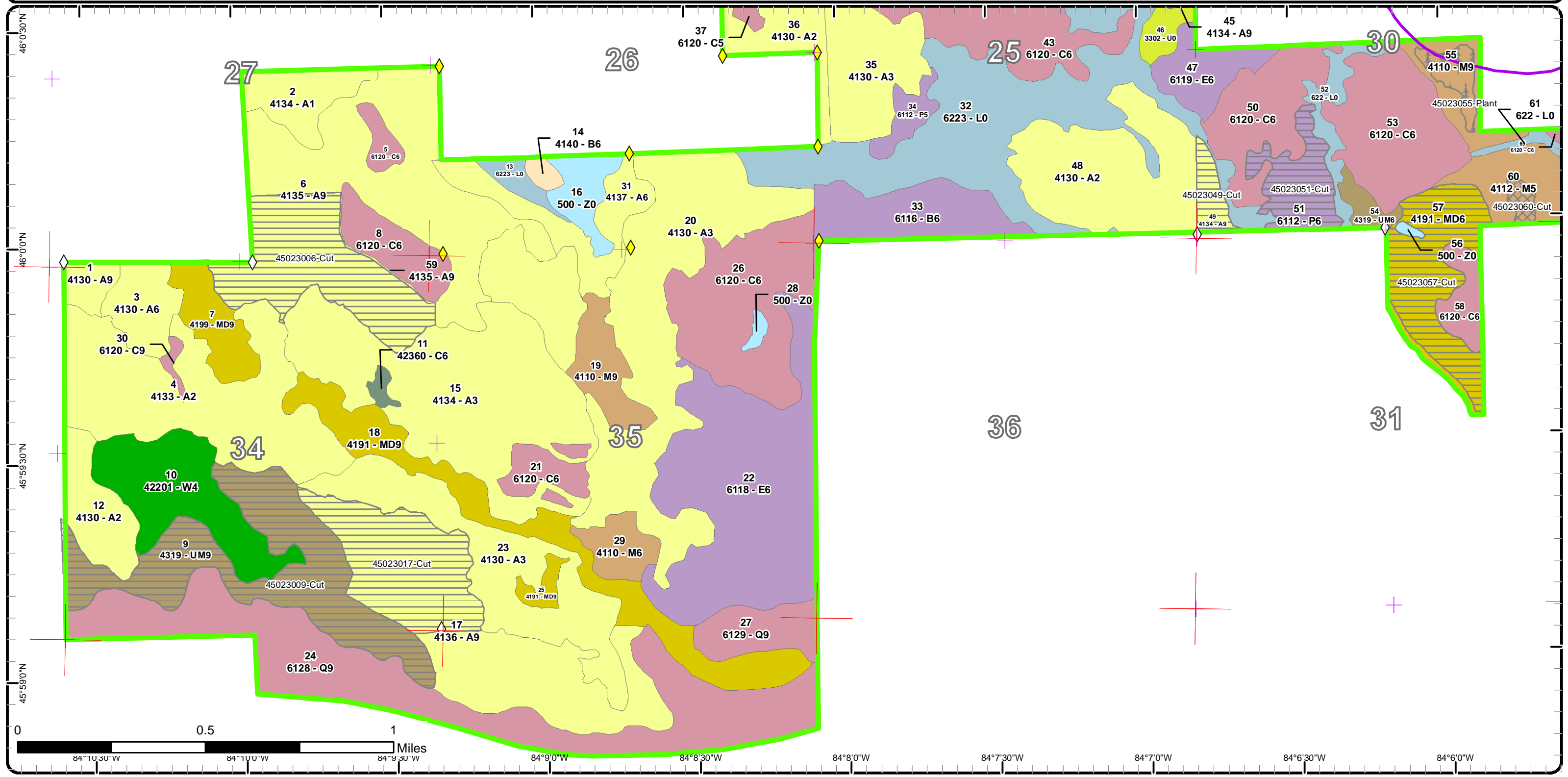


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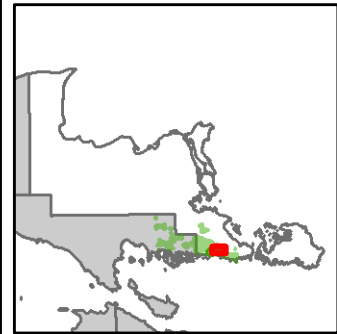


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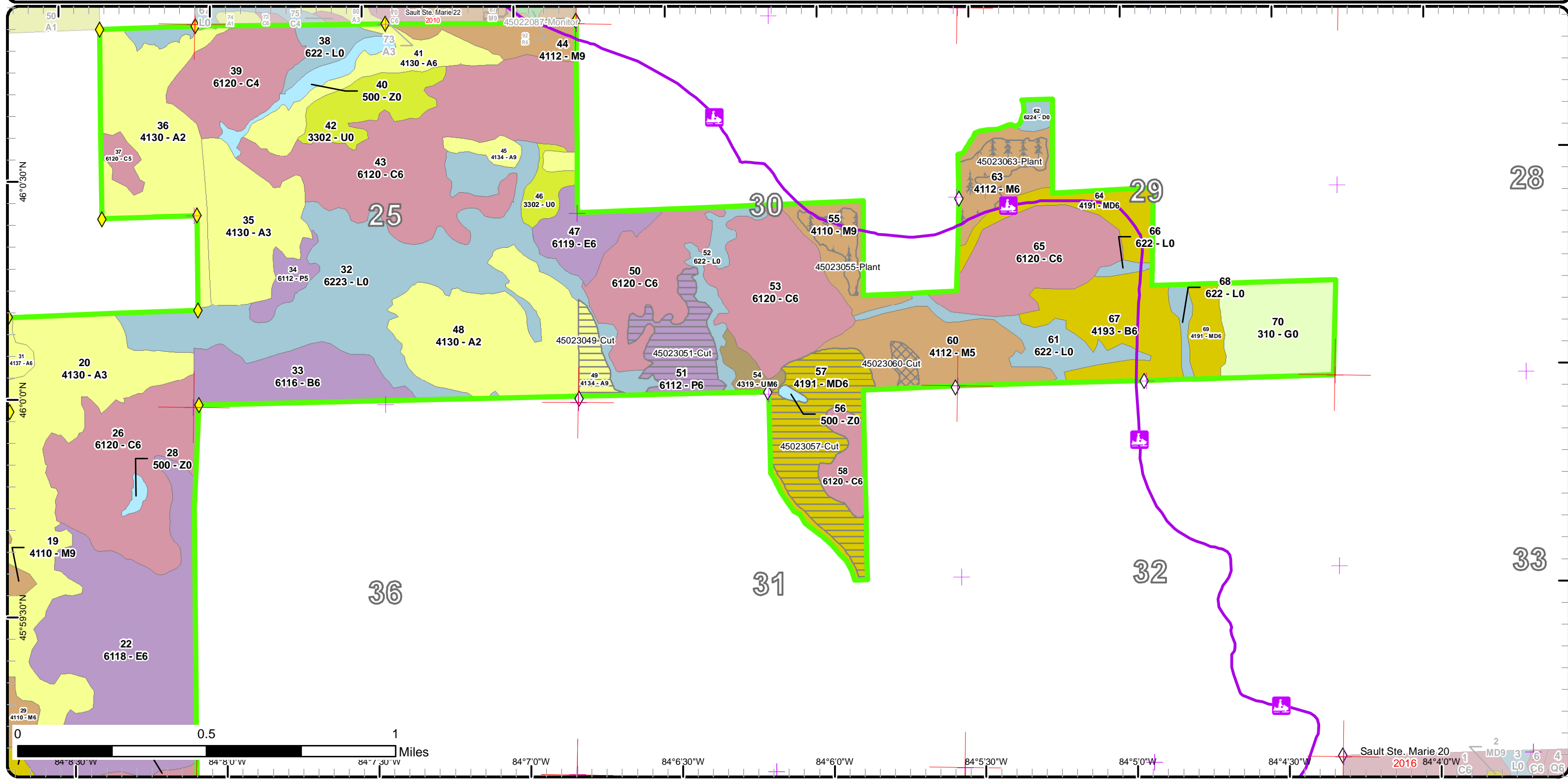


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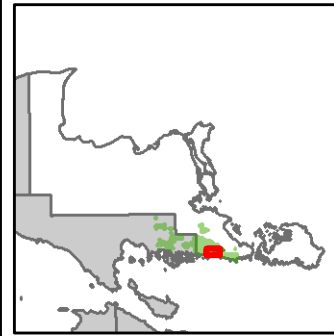


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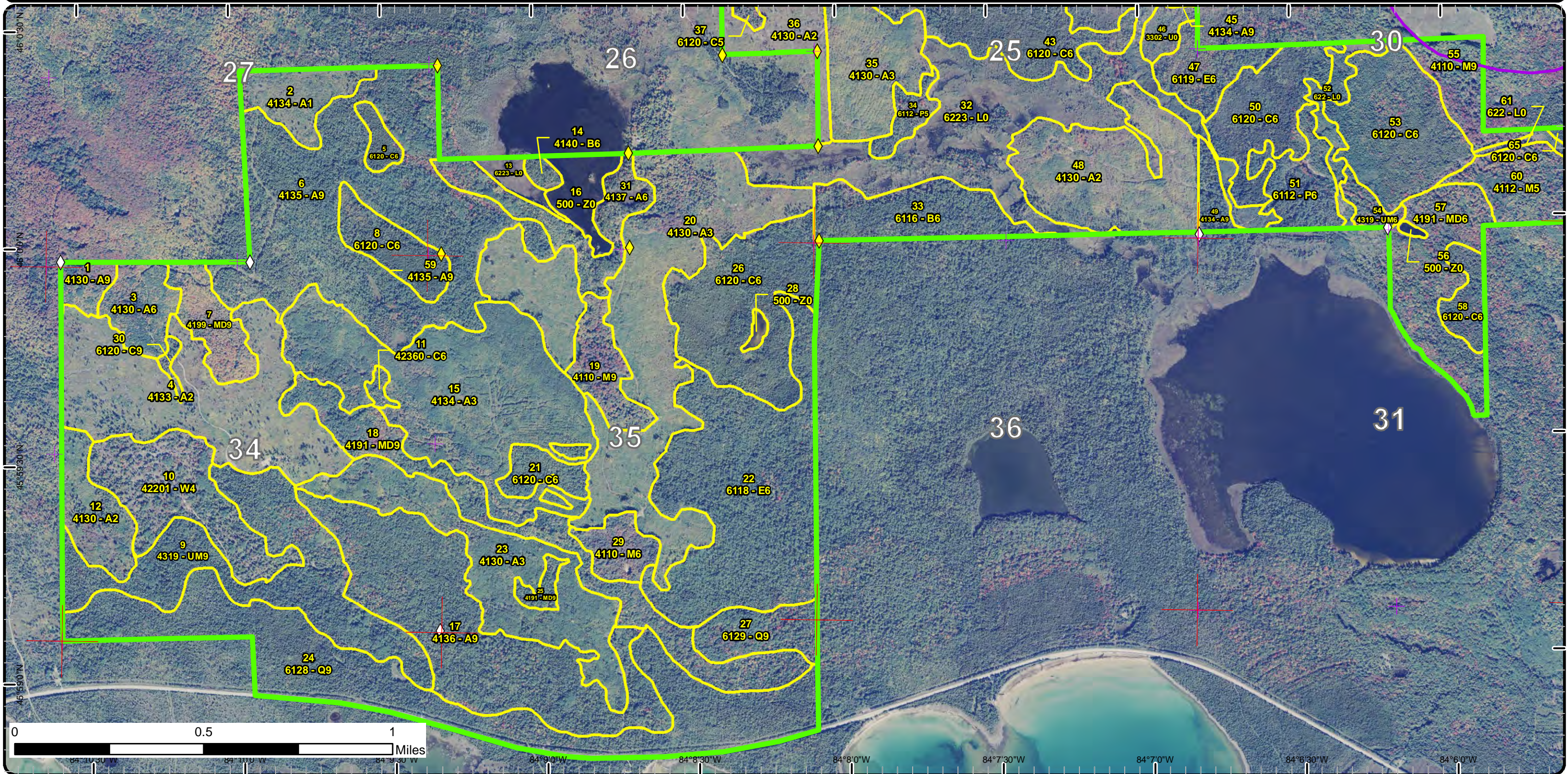
Sault Ste. Marie 20
 2016
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 C6 L0 C6 Q6

Stand Boundary Map

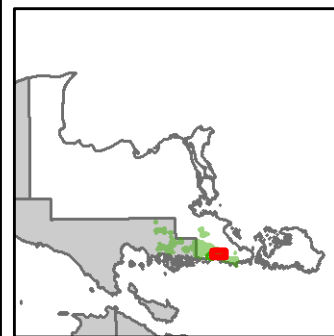


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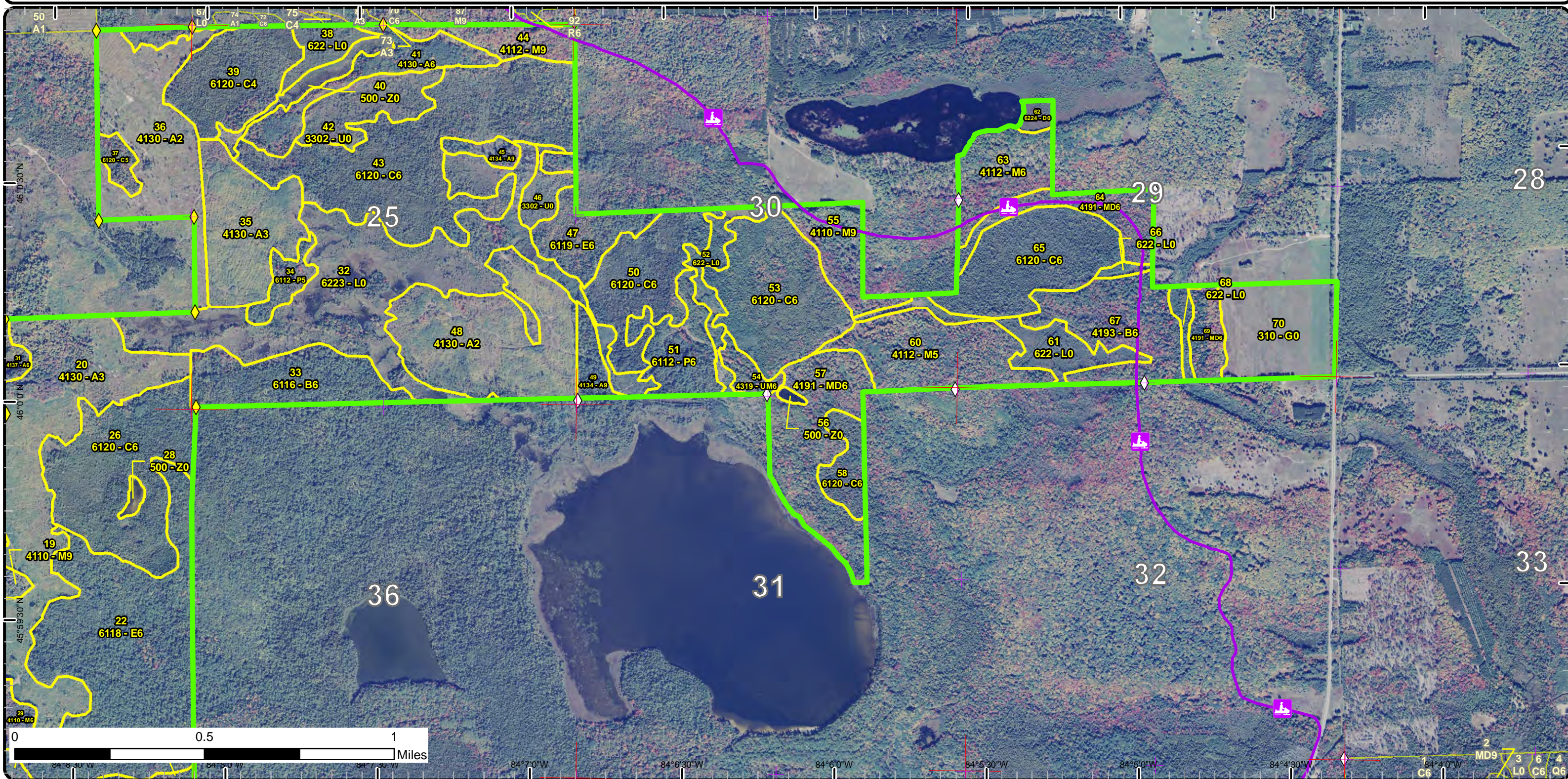


Stand Boundary Map



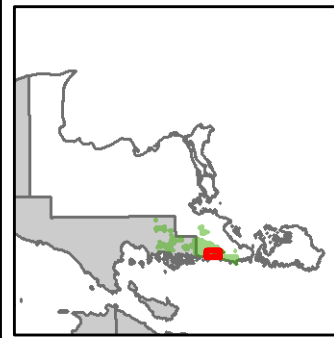
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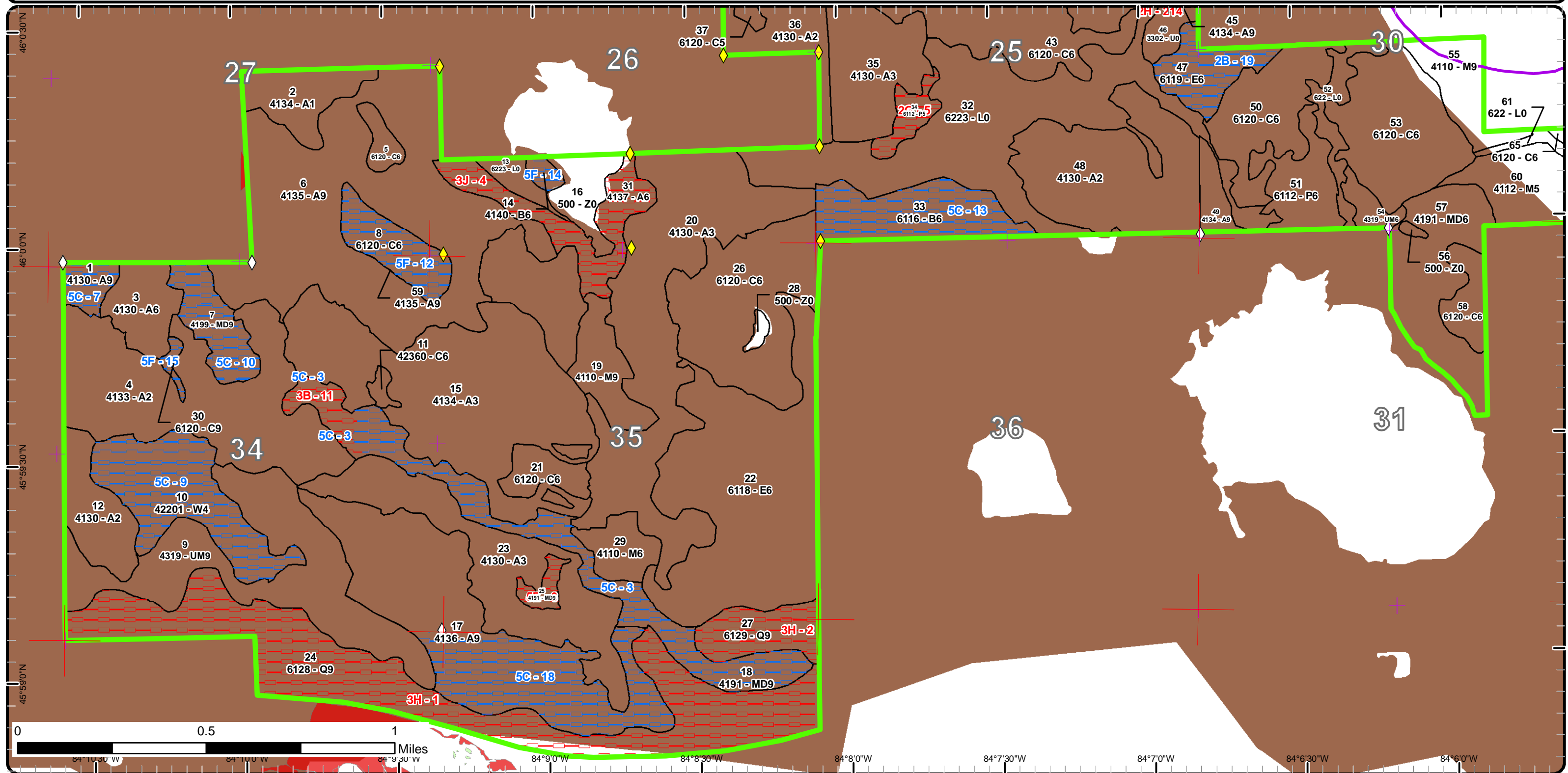


Special Conservation Areas & Site Conditions Map

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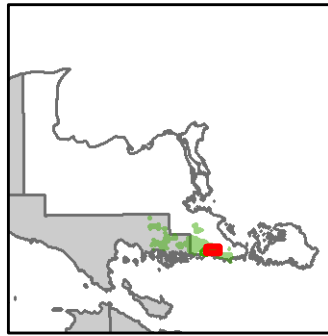


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- ◆ Survey Grade GPS Corners
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- Designated Snowmobile Trails
- Compartment Boundary
- Available w/ Constraints
- Unavailable
- Stand Boundaries
- Ecological Reference Areas
- Deer Winter Range
- Great Lakes Islands
- 3B: Threatened, endangered, and special concern species/communities
- 3H: Deer Wintering Areas
- 3J: Water quality / BMPs (stream, river, or lake)
- 5E: Long-Term Retention
- 2B: Unknown if access through adjacent landowner(s) is possible
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 2G: Too wet (sensitive soils, does not include access issues)

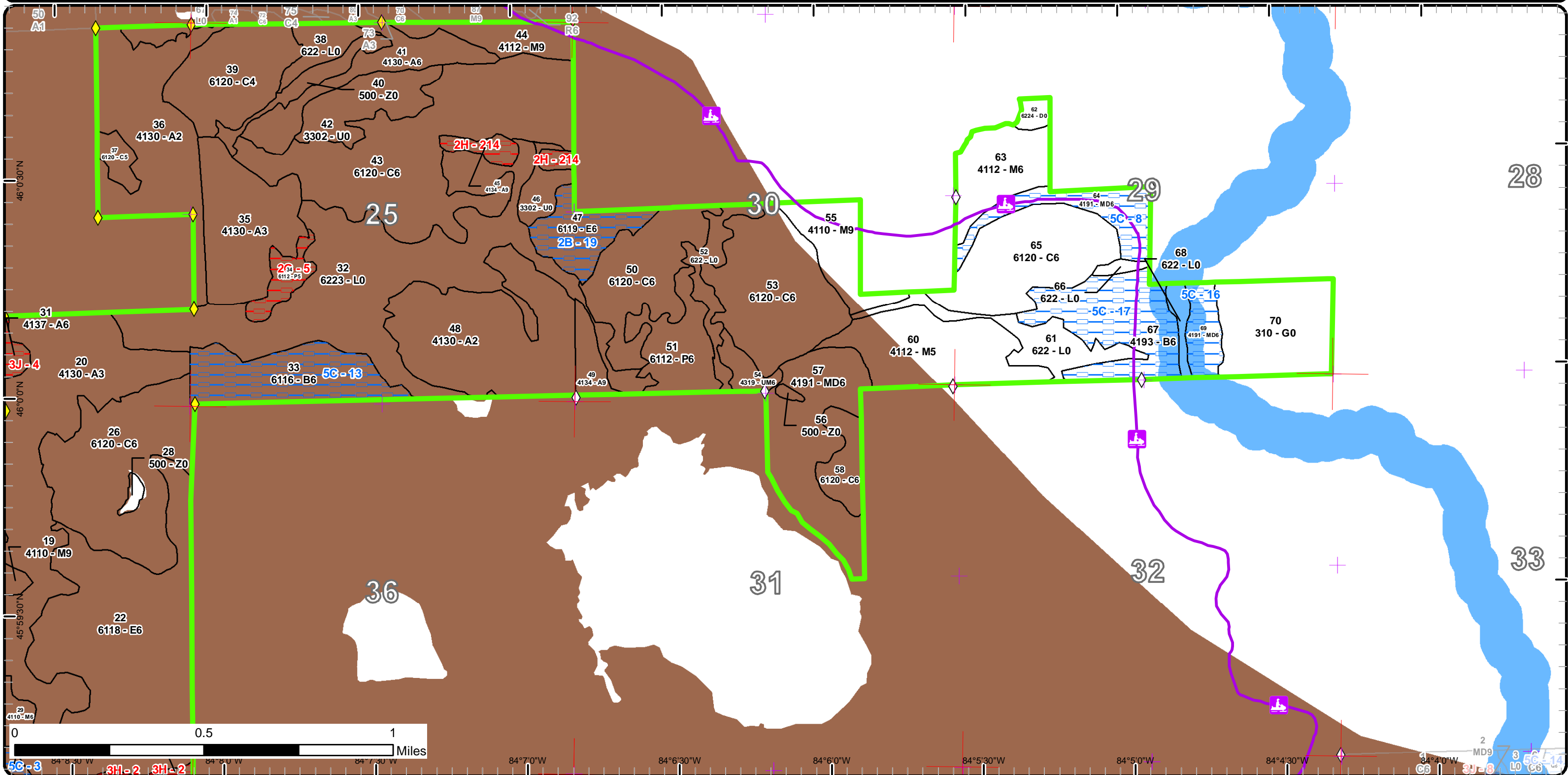


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- Designated Snowmobile Trails
- Compartment Boundary
- Available w/ Constraints
- Unavailable
- 2B: Unknown if access through adjacent landowner(s) is possible
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- Stand Boundaries
- High Priority Trout Stream Buffer
- Deer Winter Range
- 2G: Too wet (sensitive soils, does not include access issues)
- 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
- 3H: Deer Wintering Areas
- 3J: Water quality / BMPs (stream, river, or lake)



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	383	197	243	55	0	0	340	68	0	0	0	0	0	0	0	0	0	1285
Cedar	0	0	0	0	0	0	0	0	0	51	150	260	48	0	0	0	0	0	508
Herbaceous Openland	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48
Low-Density Trees	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38
Lowland Aspen/Balsam Poplar	0	0	0	0	0	0	0	11	0	29	0	0	0	0	0	0	0	0	39
Lowland Conifers	0	0	0	0	0	0	0	0	0	0	0	195	0	0	0	0	0	0	195
Lowland Deciduous	0	0	0	0	0	0	0	153	0	25	0	0	0	0	0	0	0	0	177
Lowland Shrub	229	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	229
Mixed Upland Deciduous	0	0	0	0	0	0	0	0	38	159	6	0	0	0	0	0	0	0	203
Northern Hardwood	0	0	0	0	0	0	0	19	57	53	0	42	0	0	0	0	0	0	171
Paper Birch	0	0	0	0	0	0	0	0	53	46	0	0	0	0	0	0	0	0	99
Treed Bog	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Upland Mixed Forest	0	0	0	0	0	0	0	104	0	0	0	8	0	0	0	0	0	0	112
Water	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34
White Pine	0	0	0	0	0	0	0	62	0	0	0	0	0	0	0	0	0	0	62
Total	353	383	197	243	55	0	0	689	216	363	156	505	48	0	0	0	0	0	3204



Report 2 – Treatment Summary

Sault Ste. Marie Mgt. Unit
Year of Entry: 2018

Acres of Harvest

Compartment 23
Total Compartment Acres: 3,205

Commercial Harvest - 347
Harvests with Site Condition - 0
Next Step Harvest - 0
Habitat Cut - 0

Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Aspen	154	0	0	0	0	0	0	0	0	154
Lowland Aspen/Balsam Poplar	28	0	0	0	0	0	0	0	0	28
Mixed Upland Deciduous	55	0	0	0	0	0	0	0	0	55
Northern Hardwood	0	4	0	0	0	0	0	0	0	4
Upland Mixed Forest	105	0	0	0	0	0	0	0	0	105
Total	342	4	0	0	0	0	0	0	0	347

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	347	0	28	0	0	0	0	0	0	375
Next Step	0	0	0	0	0	28	347	0	0	375
Total	347	0	28	0	0	28	347	0	0	749



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
6	45023006-Cut	76.3	4135 - Aspen, Cedar	Sawtimber Well	64	81-110	Harvest	Clearcut with Retention	4136 - Aspen, Mixed Conifer	Even-Aged	Draft Field Boundary

Habitat Cut: No**Site Condition:**

Prescription Harvest all species except pine, oak, cedar, hemlock, and yellow birch. Winter cut to benefit wintering deer.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Present species acceptable.

Regen:OtherComment:

Proposed Start Date: 10/01/2017

9	45023009-Cut	105.1	4319 - Mixed Upland Forest	Sawtimber Well	66	51-80	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Cut all species except cedar and pine to provide young early successional growth for deer, ruffed grouse, and other wildlife while maintaining diversity

Specs: in the stand. Design irregular boundaries around cedar groves. Winter cut (Dec. 1 - Mar. 31) so tops are available as browse for wintering deer.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Present species acceptable

Regen:OtherComment:

Proposed Start Date: 10/01/2017

17	45023017-Cut	67.1	4136 - Aspen, Mixed Conifer	Sawtimber Well	66	Unspecified	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Cut all species except cedar and pine to provide young early successional growth for deer, ruffed grouse, and other wildlife while maintaining diversity

Specs: in the stand. Design irregular boundaries around cedar groves. Winter cut (Dec. 1 - Mar. 31) so tops are available as browse for wintering deer. except create a south unit to include part of stand 9 near the highway for summer cut to avoid car/deer accidents with deer concentrating in the sale area during winter.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Present species acceptable.

Regen:OtherComment:

Proposed Start Date: 10/01/2017

49	45023049-Cut	10.1	4134 - Aspen, Spruce/Fir	Sawtimber Well	73	111-140	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Harvest all species except cedar and pine to provide young early successional growth for deer, ruffed grouse, and other wildlife while maintaining

Specs: diversity in the stand., leave mature aspen boundary trees as retention. Winter cut (Dec. 1 - Mar. 31) so tops are available as browse for wintering deer.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Present species acceptable.

Regen:OtherComment:

Proposed Start Date: 10/01/2017



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
51	45023051-Cut	28.4	6112 - Lowland Aspen	Poletimber Well	84	141-170	Harvest	Clearcut with Retention	6112 - Lowland Aspen	Even-Aged	Draft Field Boundary

Habitat Cut: No**Site Condition:**

Prescription Harvest all species except cedar and pine to provide young early successional growth for deer, ruffed grouse, and other wildlife while maintaining diversity in the stand. . Leave mature aspen boundary trees as retention. Winter cut (Dec. 1 - Mar. 31) so tops are available as browse for wintering deer.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Present species acceptable.

Regen:

Other

Comment:

Proposed Start Date: 10/01/2017

55	45023055-Plant	10.4	4110 - Sugar Maple Association	Sawtimber Well	77	51-80	Planting	Underplant	411 - Northern Hardwood	Uneven-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Plant oak, resistant beech or white pine if desired.

Specs:

Next Step ; Pesticide, Other - Specify

Treatments:

Acceptable Acceptable regeneration includes maples, beech, birch, fir, ironwood..

Regen:

Other

Percent to Treat = 100%

Comment:

Proposed Start Date: 07/05/2016

57	45023057-Cut	55.3	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	89	111-140	Harvest	Clearcut with Retention	4191 - Mixed Upland Deciduous with Conifer	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Harvest all species except cedar, pine, hemlock, and yellow birch to provide young early successional growth for deer, ruffed grouse, and other wildlife while maintaining diversity in the stand. Buffer wetlands by fisheries recommendations. Winter cut (Dec. 1 - Mar. 31) so tops are available as browse for wintering deer. Do not reach into cedar pockets to harvest other species and leave brush piles for hare.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Present species acceptable.

Regen:

Other

May need a survey for east corners. southern part of treatment subject to removal if sale is done in a wet year or good access is not found. Winter cutting should not be a problem here. Treatment acres may vary considerably with wet area and cedar pockets.

Proposed Start Date: 10/01/2017

60	45023060-Cut	4.4	4112 - Maple, Beech, Cherry Association	Poletimber Medium	87	51-80	Harvest	Group Selection	4111 - S.Maple, Hard Mast Association	Uneven-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Harvest all beech, no retention of beech, to provide young early successional growth for deer and other wildlife.. No beech being salvaged outside the treatment area.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Present species acceptable

Regen:

Other

Treatment purpose is salvage.

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
63 45023063-Plant	17.5	4112 - Maple, Beech, Cherry Association	Poletimber Well	74	81-110	Planting	Underplant	411 - Northern Hardwood	Uneven-Aged	Draft Field Boundary

Habitat Cut: No

Site Condition:

Prescription Plant oak, resistant beech or white pine where desirable.

Specs:

Next Step ; Pesticide, Other - Specify

Treatments:

Acceptable Regen: Acceptable regeneration includes maple, beech, birch, oak, fir, spruce and other currently present species.

Other Comment:

Percent to Treat = 100%

Comment:

Proposed Start Date: 07/05/2016

Total Treatment Acreage Proposed: 374.6

Report 4 – Site Conditions

Sault Ste. Marie Mgt. Unit

Jeff Wise : Examiner

Compartment: 23

Year of Entry: 2018

Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	Dominant Site Conditions											
		With Condition	Not Available		2B	5C	5F	2G	2H	3B	3H	3J	5E			
1286	1153	85	47	Aspen		85				10					38	
509	481	28	0	Cedar			28									
48	48	0	0	Herbaceous Openland												
38	38	0	0	Low-Density Trees												
39	28	0	11	Lowland Aspen/Balsam Poplar				11								
195	0	0	195	Lowland Conifers								195				
178	153	25	0	Lowland Deciduous	25											
229	229	0	0	Lowland Shrub												
202	59	125	18	Mixed Upland Deciduous		125					12					6
171	171	0	0	Northern Hardwood												
99	0	99	0	Paper Birch		95	4									
4	4	0	0	Treed Bog												
112	112	0	0	Upland Mixed Forest												
33	33	0	0	Water												
62	0	62	0	White Pine		62										
3,205	2,510	424	271	Total Forested Acres	25	367	32	11	10	12	195	38			6	
	78%	13%	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 Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	Unavailable	3H: Deer Wintering Areas	169	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
2	Unavailable	3H: Deer Wintering Areas	26	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

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Year of Entry: 2018

3	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	62	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
4	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	38	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
5	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	11	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
6	Unavailable	5E: Long-Term Retention	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
7	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	10	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
8	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	24	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

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Sault Ste. Marie Mgt. Unit

Jeff Wise : Examiner

Compartment: 23

Year of Entry: 2018

9	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	62	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
10	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	25	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
11	Unavailable	3B: Threatened, endangered, and special concern species/communities	12	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
12	Available	5F: Evaluated for Forest Health Considerations	25	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
13	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	46	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
14	Available	5F: Evaluated for Forest Health Considerations	4	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Sault Ste. Marie Mgt. Unit

Jeff Wise : Examiner

Compartment: 23

Year of Entry: 2018

15	Available	5F: Evaluated for Forest Health Considerations	3	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
16	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	13	5F: Evaluated for Forest Health Considerations	Unspecified	Unspecified	Unspecified
Comments:							
17	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	49	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
18	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	75	5F: Evaluated for Forest Health Considerations	Unspecified	Unspecified	Unspecified
Comments:							
19	Available	2B: Unknown if access through adjacent landowner(s) is possible	25	5C: Delay treatment for age/size class diversity or exceptional site quality	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Sault Ste. Marie Mgt. Unit

Jeff Wise : Examiner

Compartment: 23

Year of Entry: 2018

214	Unavailable	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	10	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							



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

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

SCA Name	SCA Category	Detail Type	Recommendation	Acres
	Potential Old Growth		SCA Removal	26
Comments Does not meet SCA criteria.				



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	Great Lakes Islands	Great Lakes Islands provide significant habitat for numerous species, including many rare plants and animals, several of which are endemic or largely restricted to the Great Lakes region. Due to their isolation, islands provide good examples of many Great Lakes-associated natural communities and ecosystems, and thus have potential to provide insights for understanding the consequences of human disturbance on the increasingly fragmented ecosystems of the mainland.
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.
SCA	Riparian Area	A transitional area between aquatic and terrestrial ecosystems in which the terrestrial ecosystem influences the aquatic ecosystem and vice-versa. Because of the unique conditions adjacent to lakes, streams and open water wetlands, riparian areas harbor a high diversity of plants and wildlife. Riparian communities are ecologically and socially significant in their effects on water quality and quantity, as well as aesthetics, habitat, bank stability, timber production, and their contribution to overall biodiversity.
ERA	Ecological Reference Areas	Ecological Reference Areas (ERAs) are high quality examples of natural communities that have been identified as Element Occurrences (EOs) by the Michigan Natural Features Inventory (MNFI) within the context of their natural community classification system. Element Occurrences with viability ranks of A (Excellent) or B (Good) and a Global (G) or State (S) element (rarity) ranking of endangered (1), threatened (2), or rare (3) serve as an initial base of ERAs. They may be located upon any ownership in the State. The system is comprised of individual or associations of natural community types that are managed for restoration and maintenance of natural ecological processes and values. The public may submit recommendations for lands as ERAs using the DNR Conservation Area Recommendation Form.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4130 - Aspen	Sawtimber Well	10.4	74	51-80	Small stand which is converting into a hwd. type. Stand was not managed previously because of very rocky conditions. Aspen is dieing out with young sugar maple replacing it. Stand would be too difficult to manage given it's size, location, and rocky ground.
2	4134 - Aspen, Spruce/Fir	Sapling Poor	26.4	16	Immature	Stand was harvested in 2000. Regeneration is looking ok, not great, but ok. Cedar trees were left throughout the stand and are doing good. Balsam saplings are present in clumps and scattered amongst the stand.
3	4130 - Aspen	Poletimber Well	24.1	36	51-80	Nice stand of young aspen with a mix of pole sized hard maple and young balsam understory. Stand is in good condition.
4	4133 - Aspen, Mixed Pine	Sapling Medium	124.6	5	Immature	Sale 45-005-08-01, Stand was harvested in 2011. White pine and white birch reserved. Good regen stocking.
5	6120 - Lowland Cedar	Poletimber Well	7.5	116	81-110	I delineated this stand after my field work was complete. This stand looks to be similar to stand 3. No management of this stand at this time.
6	4135 - Aspen, Cedar	Sawtimber Well	199.1	64	81-110	Stand contains a heavy understory of balsam. Cedar clumps present within the stand. Small vernal pond located within the southernmost part of the stand. Some low wet areas exist within stand. treat parts of this stand next YOE.
7	4199 - Other Mixed Upland Deciduous	Sawtimber Well	24.8	80	51-80	White birch within stand is falling apart. A lot has already died and is nothing but snags. Aspen is doing ok, with some conks present. Some areas within stand are very rocky. Some large super-canopy white pine exist within stand.
8	6120 - Lowland Cedar	Poletimber Well	25.3	116	51-80	Stand consist of dense pole sized cedar. Balsam patches exist within the understory. Stand 3 has a considerable amount of deer sign. It is definitely yarding area for them in the winter.
9	4319 - Mixed Upland Forest	Sawtimber Well	103.9	66	51-80	Stand consists of a mix of species. All in all stand is holding up well. Wood is in good condition. Areas of stand may be difficult to manage due to rocky areas.
10	42201 - Natural White Pine, Mixed Deciduous	Poletimber Poor	62.4	62	1-50	Stand is a natural opening which is slowly filling in. Quaking aspen and white pine are the predominant canopy species. Red pine and white pine saplings are filling in. The stand looks like a pine barren, no burnt stumps present however. Ground veg. consists of braken fern and reindeer moss. Aspen is poor quality. Illegal ORV trail within stand.
11	42360 - Upland Cedar	Poletimber Well	3.2	80	51-80	Very rocky area. Big boulders present throughout stand. Stand is good for diversity, breaks up CC. Stand was not harvested during previous CC due to very rocky conditions.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
12	4130 - Aspen	Sapling Medium	29.8	16	Immature	Stand 27 was cut in 2000. Regen is coming back fairly decent. Pole sized white pine scattered throughout the stand. A small island of white pine exists within the middle of the clearcut (a possible delineation if we get new photo's?) The road into this stand was blocked after cut was completed. It should be blocked better. Trucks and ORV's have found a way around the blocking.
14	4140 - Other Upland Deciduous	Poletimber Well	4.0	70	Unspecified	Small island on Fulmer Lake, looked like it was fully stocked with birch and aspen.
15	4134 - Aspen, Spruce/Fir	Sapling Well	156.3	27	Immature	Aspen regeneration is very nice within stand. Pockets of balsam exist in overstory and understory. Moose pellets found in this stand. Big boulders present within stand.
17	4136 - Aspen, Mixed Conifer	Sawtimber Well	141.3	66	Unspecified	Stand consists of a mix of species. All in all stand is holding up well. Wood is in good condition. Areas of stand may be difficult to manage due to rocky areas.
18	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	74.7	84	51-80	Long linear strip of timber between 2 clearcuts. Wood is old and is falling apart, especially the birch. Diverse strip of mature timber of many types, very rocky with boulders. Leave this uncut.
19	4110 - Sugar Maple Association	Sawtimber Well	24.9	101	81-110	Stand was selectively thinned in February of 2010. Some of the larger maple were cut in an attempt to create some canopy gaps for regeneration. Trees are poorer quality but unique for the area. Just North of this stand is a karst feature in which the stream flows out of Fulmer Lake and then goes underground. A very unique spot! A few beech exist within the stand but not enough to meet the 2% criteria.
20	4130 - Aspen	Sapling Well	184.5	6	Immature	Regen excellent, white birch poles from previous sale reserved.
21	6120 - Lowland Cedar	Poletimber Well	17.3	105	51-80	Stand consists mostly of pole sized cedar with large aspen scattered here and there. Small strips were cut through stand and are regenerating nicely back to aspen and balsam. There is alot of deer sign present within stand. It is good thermal cover in winter. No sub-canopy layer is present within stand.
22	6118 - Lowland Deciduous with Cedar	Poletimber Well	153.3	65	81-110	
23	4130 - Aspen	Sapling Well	86.6	27	1-50	Stand was cut in '89-'90. Regeneration is very nice! Big boulders present within stand. Balsam is scattered amongst stand. A balsam and hazel understory exists. The road going through the stand is in good condition and doesn't look to be used too frequently. Cedar clumps reserved.
24	6128 - Lowland Coniferous, Mixed Deciduous	Sawtimber Well	169.1	100	Unspecified	Stand consist of a lot of age variation. Timber types can vary every few chains in parts of stand. Pockets of cedar, spruce, balsam, and aspen exist. Ground is rocky in some parts (lake huron escarpment). This stand is definitely a deer yard area.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
25	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	6.1	90	51-80	Stand was not harvested during the clearcut of stand 16 due to rocky conditions. Stand makes for good diversity beings it is an island of older timber surrounded by young regen. Stand contains a good mix of deciduous and conifer.
26	6120 - Lowland Cedar	Poletimber Well	84.8	96	51-80	Very thick, stagnant, cedar swamp. Balsam understory is very thick throughout stand. Some pockets of young cedar exist within stand. Stand is a great deer yard area, good thermal cover.
27	6129 - Mixed Coniferous Lowland Forest	Sawtimber Well	25.7	100	51-80	Very nice hemlock stand, wide open, very little sub-canopy.
29	4110 - Sugar Maple Association	Poletimber Well	17.2	101	51-80	Stand is a result of a shelterwood cut from some previous mgmt. A low percentage of canopy trees exist. The hard maple regeneration is excellent! Very good quality, and very good density. Stand has pole size white birch and aspen pockets as well
30	6120 - Lowland Cedar	Sawtimber Well	2.8	101	81-110	
31	4137 - Aspen, Birch	Poletimber Well	37.7	79	1-50	Stand varies in type. Some areas are mostly birch while other areas are a mix of aspen and birch. Birch is holding up fairly well. The stand is over-mature but is holding up well. Leave as buffer stand to wetland.
33	6116 - Lowland Birch	Poletimber Well	45.8	85	51-80	Stand consists of mostly birch and aspen. Both species are holding up fairly well.
34	6112 - Lowland Aspen	Poletimber Medium	10.7	64	Unspecified	A small stand alongside of a wetland. Stand was left after previous clearcut. Beaver activity present. Ground is definitely wet. Stand makes for a nice buffer against the wetland. A lot of aspen blown over from previous windstorm.
35	4130 - Aspen	Sapling Well	53.4	13	Immature	Sale 007-01, good regen
36	4130 - Aspen	Sapling Medium	73.2	5	Immature	Sale 004-10, good regen
37	6120 - Lowland Cedar	Poletimber Medium	7.2	93	Unspecified	A mix of lowland species. Stand goes from clumps of cedar to tag alder and young balsam.
39	6120 - Lowland Cedar	Poletimber Poor	44.5	101	Unspecified	Stand contains wetter ground. Cedar is sparse in areas. Tag alder and balsam fir understory is thick in areas.
41	4130 - Aspen	Poletimber Well	30.9	36	1-50	Nice aspen stand with some larger residual aspen and balsam. Regen is thick and healthy.
43	6120 - Lowland Cedar	Poletimber Well	127.9	102	Unspecified	Cedar stand mixed with some white birch, balsam, and black spruce. Stand also has a fair amount of tag alder, balsam, and holly within the understory.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
44	4112 - Maple, Beech, Cherry Association	Sawtimber Well	19.4	68	81-110	Stand contains alot of poor quality pulp trees. Some areas of stand contain some blowdown, within these areas the regen seems to be doing well within the openings. Small salvage sale and wood permits for the dead beech in 2013-15 and 16.
45	4134 - Aspen, Spruce/Fir	Sawtimber Well	9.6	73	1-50	Poor quality stand. Aspen and balsam are in tough shape. I estimate 40-50 percent of the balsam has died and fallen over. Aspen contains some windthrow. Beaver activity around the edges of the stand.
47	6119 - Mixed Lowland Deciduous Forest	Poletimber Well	24.5	86	Unspecified	
48	4130 - Aspen	Sapling Medium	87.7	11	Immature	Sale 007-01, good regen.
49	4134 - Aspen, Spruce/Fir	Sawtimber Well	10.2	73	111-140	This stand borders an adjacent clearcut that has regenerated very nicely. More birch is present on the southern end of the stand.
50	6120 - Lowland Cedar	Poletimber Well	48.0	82	111-140	
51	6112 - Lowland Aspen	Poletimber Well	28.5	84	141-170	Large aspen and pole size paper birch over cedar. Some of the higher ground has red maple and paper birch.
53	6120 - Lowland Cedar	Poletimber Well	67.0	100	51-80	
54	4319 - Mixed Upland Forest	Poletimber Well	7.8	100	111-140	There is a ridge with white pine and hemlock. The west side of the stand is dominated by red maple and yellow birch. The east side is dominated by paper birch and red maple. There are a couple of creeks that run through this stand.
55	4110 - Sugar Maple Association	Sawtimber Well	25.3	77	51-80	Beech was salvaged from the stand in 2014. This stand has been thinned and there is lots of good regeneration. There are some areas that were thinned to a lower BA and are filling in with a good flush of regeneration.
57	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	59.2	89	111-140	There is a ridge with white pine and hemlock. The west side of the stand is dominated by red maple and yellow birch. The east side is dominated by paper birch and red maple. There are a couple of creeks that run through this stand. There are a few patches of cedar with in the stand.
58	6120 - Lowland Cedar	Poletimber Well	15.1	112	Unspecified	Stand of pole sized cedar. Quality is decent. A few scattered white pine within the stand.
59	4135 - Aspen, Cedar	Sawtimber Well	0.0	64	81-110	Stand contains a heavy understory of balsam. Cedar clumps present within the stand. Small vernal pond located within the southernmost part of the stand. Some low wet areas exist within stand. treat parts of this stand next YOE.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
60	4112 - Maple, Beech, Cherry Association	Poletimber Medium	52.8	87	51-80	This stand has been cut maybe 15 years ago. It looks like they cut the aspen and paper birch out of this stand and left the rest. Stand is very open in some places but there is a lot of good regeneration of aspen and maple.
63	4112 - Maple, Beech, Cherry Association	Poletimber Well	31.6	74	81-110	More paper birch and aspen on the northern edge of the stand near the lake. There is more sugar maple present in the stand as you go up the hill. Stand has been thinned in the past.
64	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	24.4	77	111-140	Some areas of cedar within the stand. Paper birch is dying out of this stand. Scattered white pine.
65	6120 - Lowland Cedar	Poletimber Well	58.2	90	141-170	DBH gets smaller as you go into the stand. Scattered white pine.
67	4193 - Birch, Aspen	Poletimber Well	49.2	79	81-110	Paper birch is starting to die. Area of lower basal area as you head west along the road.
69	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	13.3	71	111-140	Stand borders the trout stream and contains a mix of lowland and poor quality upland species.



Stand	Cover Type	Acres	Managed Site	General Comments:
13	6223 - Inundated Shrub Swamp	7.9	No	
16	500 - Water	18.2	No	South part of Fulmer Lake
28	500 - Water	2.4	No	
32	6223 - Inundated Shrub Swamp	156.2	No	
38	622 - Lowland Shrub	16.8	No	
40	500 - Water	11.6	No	
42	3302 - Low Density Conifer Trees	27.7	No	Wet ground. Tag alder and balsam fir understory are thick. Cedar is in tough shape due to the low ground.
46	3302 - Low Density Conifer Trees	9.9	No	
52	622 - Lowland Shrub	15.7	No	
56	500 - Water	1.3	No	Latest imagery shows this pond dry.
61	622 - Lowland Shrub	24.2	No	
62	6224 - Treed Bog	4.1	No	
66	622 - Lowland Shrub	2.6	No	
68	622 - Lowland Shrub	5.5	No	Needs a bridge across to manage new acquisition and provide public access.
70	310 - Herbaceous Openland	48.1	No	Has been cultivated in the past.