



Compartment Review Presentation

Roscommon Forest Management Unit

Compartment 71133

Entry Year 2018

Acreage: 1,377

County Roscommon

Management Area: AuSable Outwash

Revision Date: 2016-07-26

Stand Examiner: Doug Bates

Legal Description:

T21N R1W sections 1, 2, and 12

Identified Planning Goals:

Balance age classes and enhance in-stand diversity of various cover types providing a range of stand structures and habitats.

Soil and topography:

Soils are composed primarily of pitted outwash and ice-contact deposits. Kotar types are primarily PARVHa with some wetland toward the southeast.

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

Mostly solid block of state land surrounded by some hunting clubs and camps.

Unique Natural Features:

None identified, but the habitat could potentially harbor dusted skipper, grizzled skipper, and red-legged spittlebug in grassy openings and open stands. Potential also exists for Hill's thistle, rough fescue, Alleghany plum, and pale agoseris in stands with barrens type structure.

Archeological, Historical, and Cultural Features:

None identified or detected during field work.

Special Management Designations or Considerations:

Watershed and Fisheries Considerations:

There is a small creek in the southeast corner of the compartment.

Wildlife Habitat Considerations:

Mineral Resource and Development Concerns and/or Restrictions

Sections 1, 2 & 12, T21N R1W, Roscommon County

Surface sediments consist of sand and gravel from ice-contact drift. The glacial drift thickness varies between 200 and 400 feet. Beneath the glacial drift is the Pennsylvanian Saginaw Formation. The Saginaw is quarried for clay elsewhere in the state. Most of the good sand and gravel pits are associated with upland areas. Most of this compartment is upland and, therefore, potential is considered good. There is an isolated, plugged Detroit River oil well in Section 12. The closest active oil or gas production is the West Branch Field five miles to the northeast. There is currently no active leasing within the compartment.

Vehicle Access:

There is good vehicle access to most areas of the compartment. However, two stands currently have limiting factors for access due to the need for a bridge or access from private landowners.

Survey Needs:

Within Section 1 survey corners will need to be established to treat stands 8, 9, and 26.

Recreational Facilities and Opportunities:

Michigan Cross Country Cycle Trail from St. Helen to M-30 and Midland to Mackinaw Scout trail occurs in this compartment west of Dunham Lake Road. All sign posts and confidence markers shall be protected. Ensure logging activity does not obliterate the trail. Prohibit blocking trail crossings or leaving slash and debris on the recreational trail. Dispersed camping

and hunting are other popular recreational pursuits with in the compartment.

Fire Protection:

Additional Compartment Information:

The following reports from the Inventory are attached:

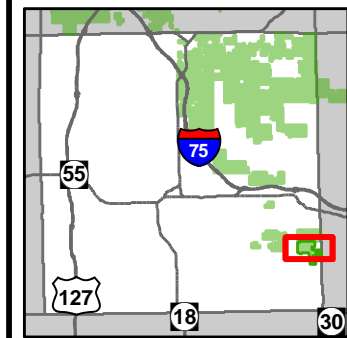
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

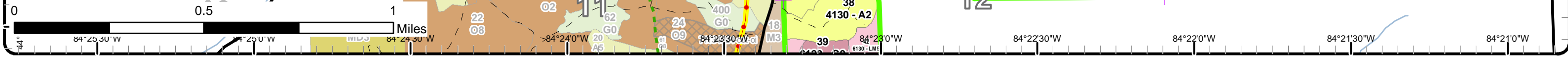
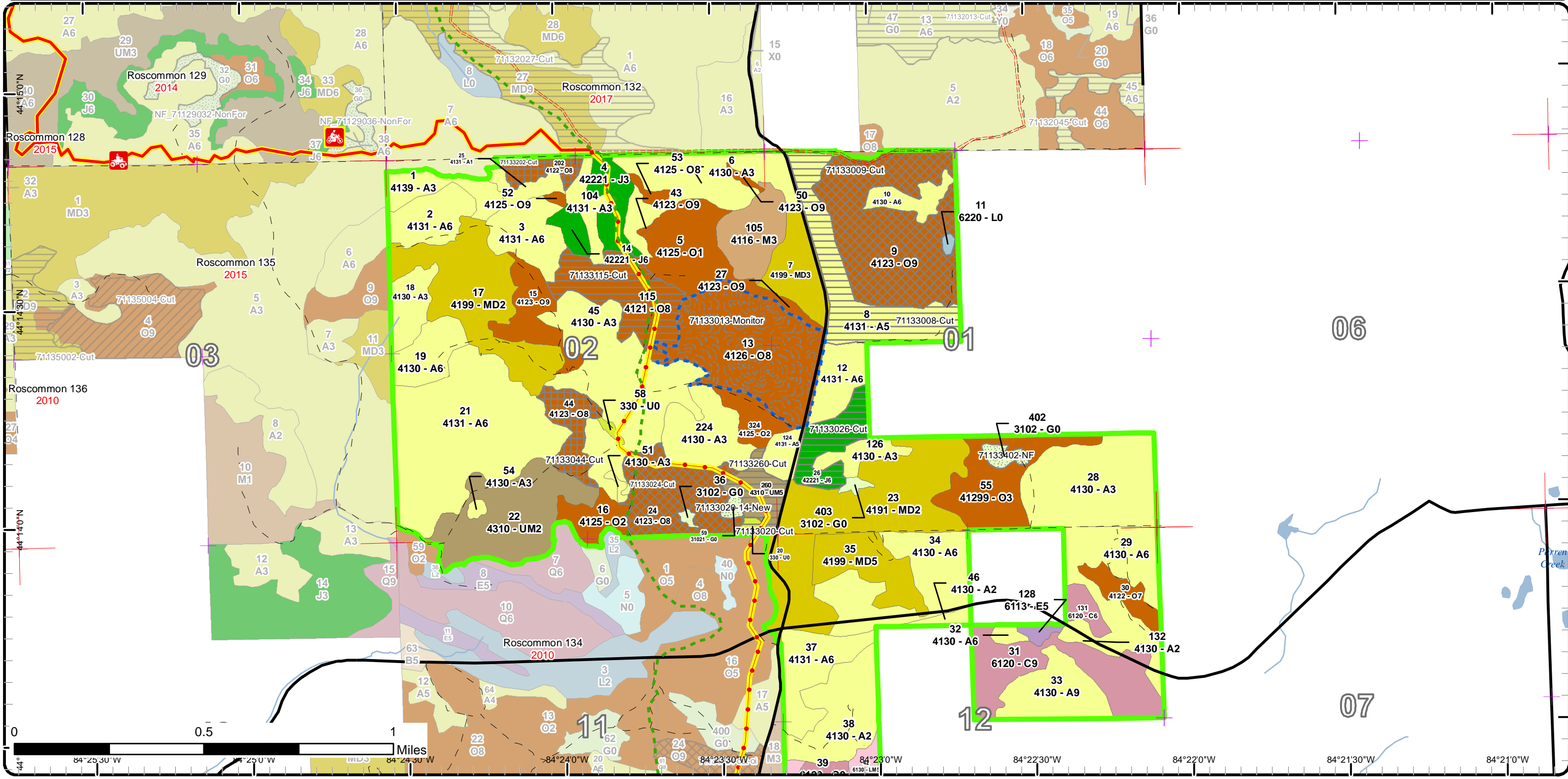
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments Map

Compartment: 133
 T21N, R01W, Sec. 01-02, 12
 County: Roscommon
 Unit: Roscommon
 Mgmt Area: AuSable Outwash
 YOE: 2018
 Acres: 1377 GIS Calculated
 Examiner: Doug Bates
 Map Revised: 2/9/2017
 Map Phase: Post-Review

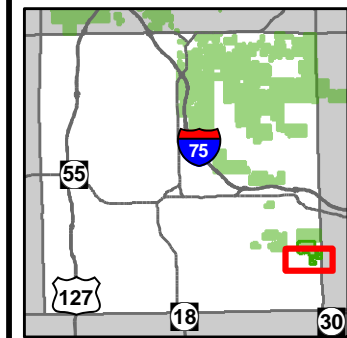


- Miris Corners
- + Remonumented Section Corners
- MCCCT Trails
- ORV Trails
- - - Designated Hiking Trails
- - - ORV License & Trail Permit
- Designated ATV Trails
- - - Designated ORV Route
- Michigan Cross Country Cycle Trail (MCCCT)
- Paved Roads
- - - Poor Dirt Roads
- Rivers
- Compartment Boundary
- Treatments with Site Conditions
- Selection (Group, Single Tree)
- Clearcut (w/Reserves)
- Monitoring
- Mowing
- 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
- 613 - Lowland Mixed Forest
- 310 - Herbaceous Openland
- 330 - Low Density Trees
- 622 - Lowland Shrub
- Lakes

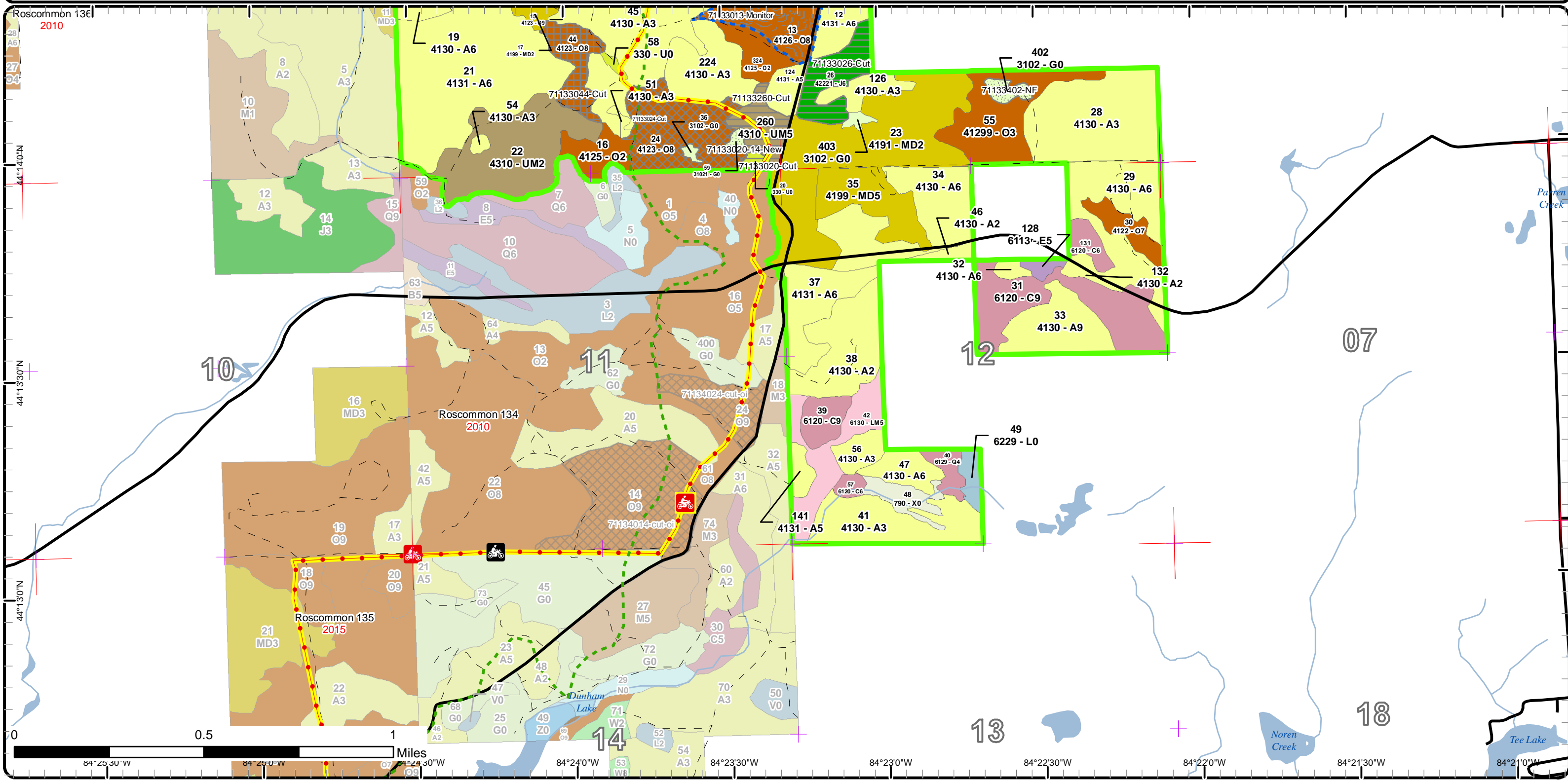


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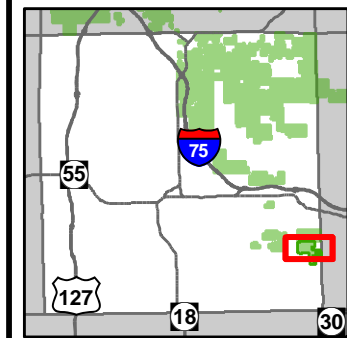


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- 422 - Natural Pines
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- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest
- 310 - Herbaceous Openland
- 330 - Low Density Trees
- 622 - Lowland Shrub
- 790 - Other Bare/Sparsely Vegetated
- Lakes

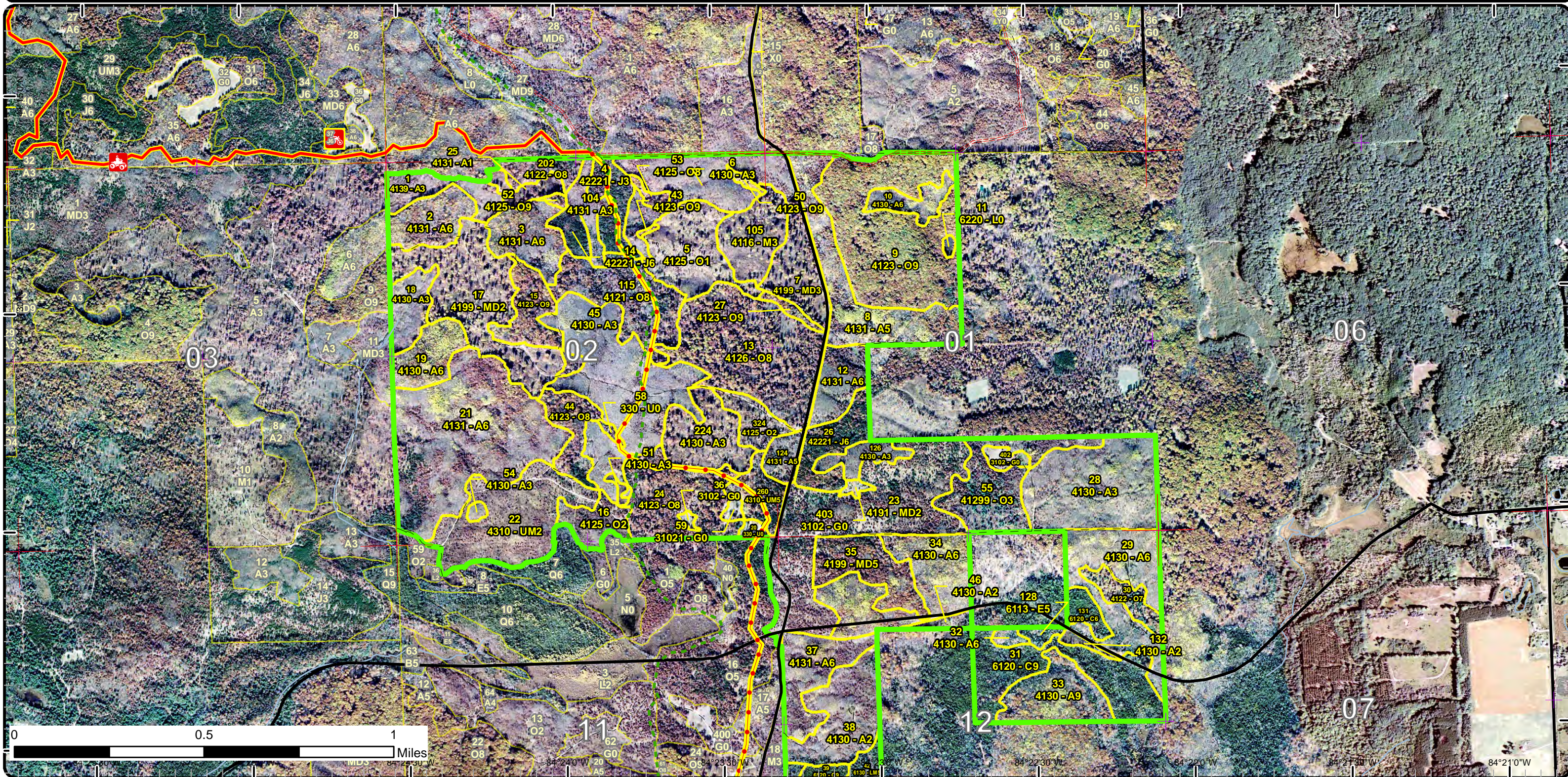


Stand Boundary Map

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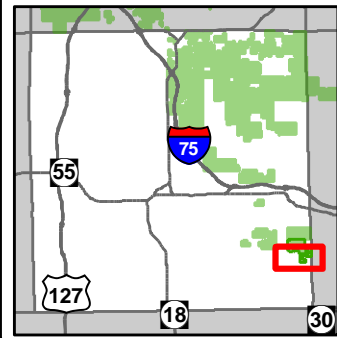


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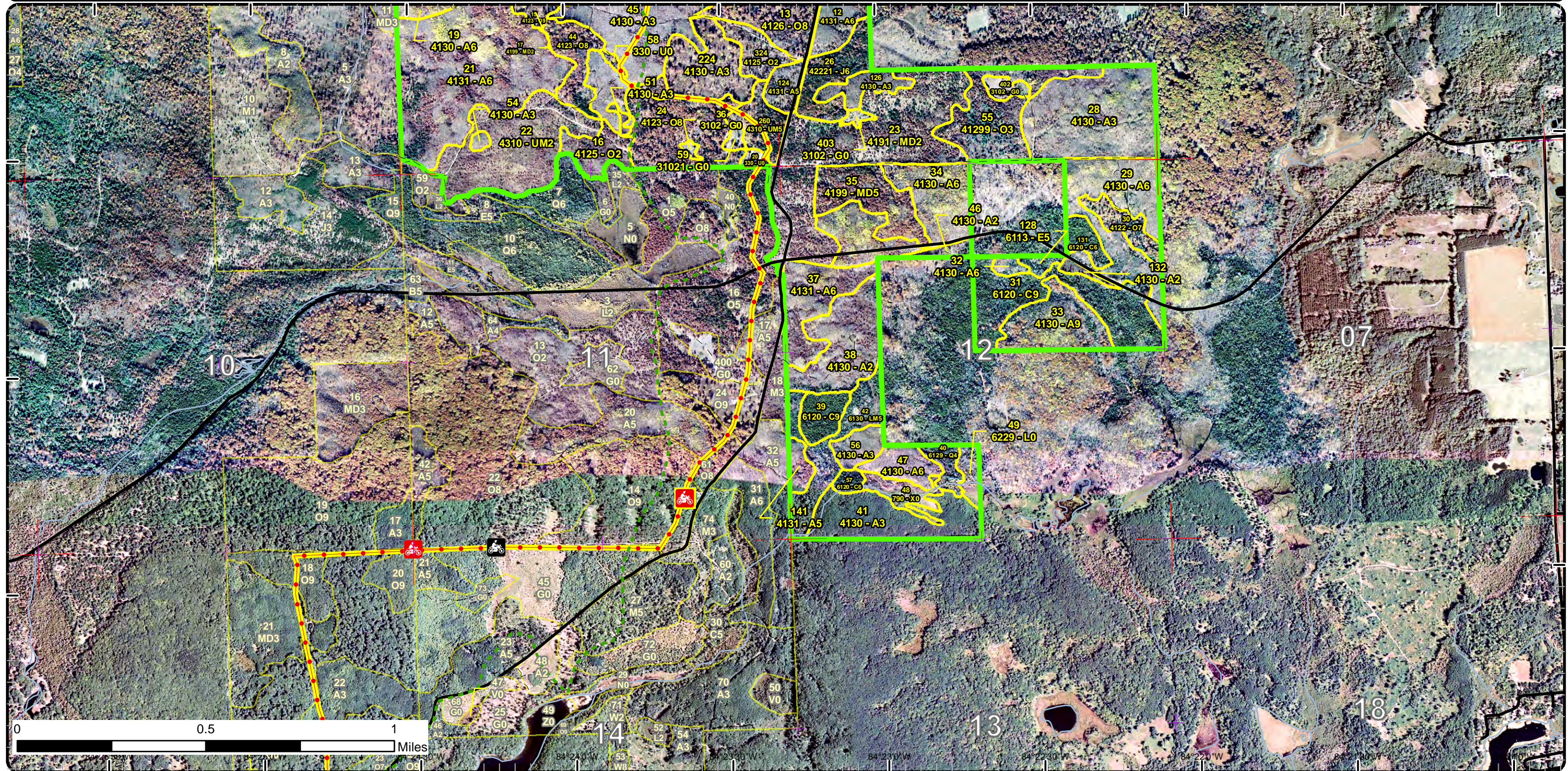


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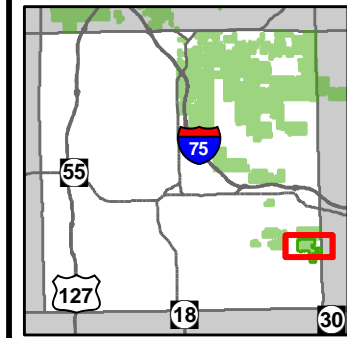


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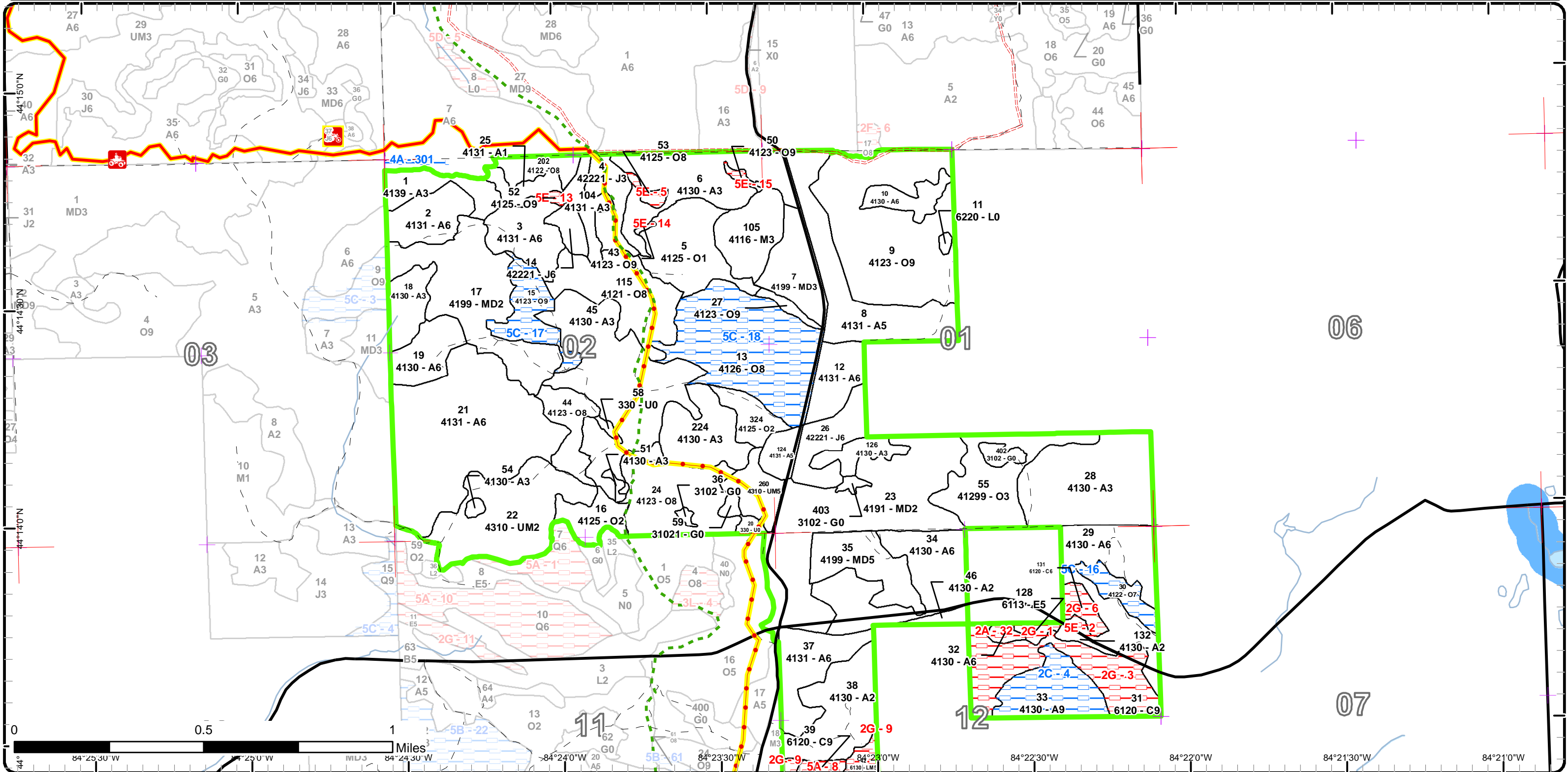


Special Conservation Areas & Site Conditions Map

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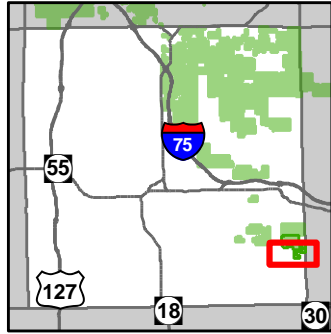


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- Rivers
- Compartment Boundary
- Available w/ Constraints
- Unavailable
- 2C: Engineered Bridge Needed (Dept. portable bridge not available or inadequate)
- 4A: No Markets Available for these Forest Products
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 2A: Adjacent landowner denied access
- 2G: Too wet (sensitive soils, does not include access issues)
- 5E: Long-Term Retention
- Stand Boundaries
- Cold Water Streams
- Cold Water Lakes
- High Priority Trout Stream Buffer

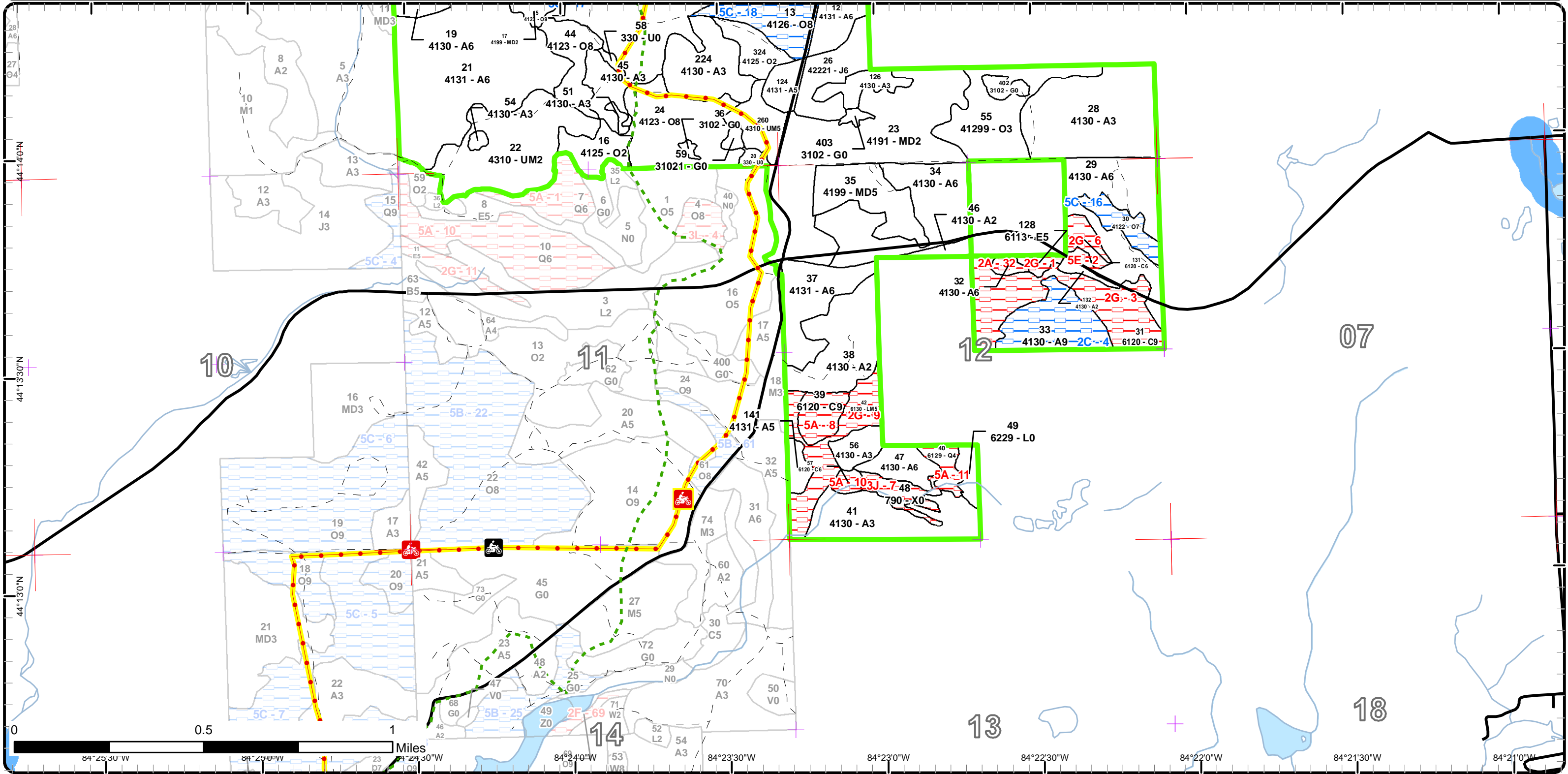


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- Compartment Boundary
- Available w/ Constraints
- Unavailable
- 2C: Engineered Bridge Needed (Dept. portable bridge not available or inadequate)
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 2A: Adjacent landowner denied access
- 2G: Too wet (sensitive soils, does not include access issues)
- 3J: Water quality / BMPs (stream, river, or lake)
- 5A: Not able to obtain desirable regeneration
- 5E: Long-Term Retention
- Stand Boundaries
- Cold Water Streams
- Cold Water Lakes
- High Priority Trout Stream Buffer



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	33	221	241	0	129	0	0	0	0	26	0	0	0	0	0	0	0	649
Bare/Sparsely Vegetated	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Cedar	0	0	0	0	0	0	0	0	0	0	55	0	0	0	0	0	0	0	55
Herbaceous Openland	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Jack Pine	0	0	0	18	0	0	0	17	0	0	0	0	0	0	0	0	0	0	35
Low-Density Trees	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Lowland Conifers	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	6
Lowland Deciduous	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3
Lowland Mixed Forest	0	0	0	0	0	0	0	0	0	23	0	0	0	0	0	0	0	0	23
Lowland Shrub	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Mixed Upland Deciduous	0	69	0	76	0	22	0	0	0	0	0	0	0	0	0	0	0	0	167
Northern Hardwood	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
Oak	0	39	11	30	0	0	0	0	0	117	143	0	0	0	0	0	0	0	338
Upland Mixed Forest	0	0	45	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	56
Total	25	161	277	365	0	151	0	28	0	143	230	0	0	0	0	0	0	0	1377



Report 2 – Treatment Summary

Roscommon Mgt. Unit
Year of Entry: 2018

Acres of Harvest

Compartment 133
Total Compartment Acres: 1,377

Commercial Harvest - 232
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	40	0	0	0	0	0	0	0	0	40
Jack Pine	17	0	0	0	0	0	0	0	0	17
Low-Density Trees	2	0	0	0	0	0	0	0	0	2
Oak	33	108	0	22	0	0	0	0	0	163
Upland Mixed Forest	11	0	0	0	0	0	0	0	0	11
Total	102	108	0	22	0	0	0	0	0	233

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	233	0	0	0	0	0	63	0	5	300
Next Step	0	60	30	0	0	30	263	0	4	387
Total	233	60	30	0	0	30	325	0	9	687



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
8	71133008-Cut	39.7	4131 - Aspen, Oak	Poeltimber Medium	41	Unspec ified	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Draft Field Boundary

Habitat Cut: No**Site Condition:**

Prescription Final harvest all species to 2 inches but the oak. Remove oak down to 5 inches. Mark an additional 10 basal area of large oaks, preferably white, for mast/visual. Delineate out and buffer the large bowls at the north from the treatment and use for retention.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable aspen to full stocking

Regen:

Other Has interface with private property. Was not able to find certified corners. May need to be surveyed to establish line.

Comment:

Proposed Start Date: 10/01/2017

9	71133009-Cut	74.1	4123 - Red Oak	Sawtimber Well	95	111- 140	Harvest	Single Tree Selection	412 - Oak Types	Uneven- Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Thin the stand down to a 70-90 basal area average managing for good formed crop trees and opening up some regeneration gaps (60 feet) to try and encourage oak regeneration. The red maple understory is thick. The treatment will be roundwood only, but still will have a high percentage of maple regeneration damage. This is not a concern, not the target species want regenerated and will create areas for oak to have a fair start. Side towards leaving/managing for white oak when possible. Place an oak wilt spec. and recreational trail protection spec. in the sale contract.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Oak with a mixed deciduous component.

Regen:

Other Has interface with private property. Was not able to find certified corners. May need to be surveyed to establish line.

Comment:

Proposed Start Date: 10/01/2017

13	71133013-Monitor	62.5	4126 - White, Black, N. Pin Oak	Sawtimber Medium	87	81-110	Monitoring	Other - Specify	4121 - Oak, Aspen	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition: Age-Class or Site Quality**

Prescription Monitor for the spread of oak wilt from stand to the north. It enters into stand look at treating stand sooner than next rotation.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2017

20	71133020-14-New	1.7	330 - Low-Density Trees	Nonstocked	0	Unspec ified	NonForestMgt	Mowing	310 - Herbaceous Openland		Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Mow, cultivate, fertilize, seed as required to maintain established Wildlife Opening, Nine mile 11

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2017



Stand Name	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
20	71133020-Cut	2.0	330 - Low-Density Trees	Nonstocked	0	Unspecified	Harvest	Clearcut	4211 - Planted Red Pine	Even-Aged	Draft Field Boundary

Habitat Cut: No**Site Condition:**

Prescription Harvest all trees to 2 inches and chip. Plant site back to red pine.

Specs:

Next Step Pesticide, Skidder/Mechanical; SitePrep, Roller Chopping; SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr);
Treatments: Monitoring, Artificial Regen(3yr)

Acceptable fully stocked red pine plantation.

Regen:

Other Place a recreational trail protection spec. and possibly spread some slash in the illegal scramble areas that are bare sand.

Comment:

Proposed Start Date: 10/01/2017

24	71133024-Cut	34.2	4123 - Red Oak	Sawtimber Medium	89	81-110	Harvest	Group Selection	4121 - Oak, Aspen	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Harvest by removing aspen, red maple, and jack pine to 2 inches. With oak remove to 5 inches. Mark groups of oak in 20-30 basal area clumps evenly spaced throughout stand. Leave no oaks around the aspen regeneration and remove oak overstory over areas of heavy oak regeneration. Do not remove oaks if will cause to much damage to regeneration. Do not allow whole tree skidding, but make a roundwood operation. Favor white oaks for residual. Place a 3 percent retention island around stand 36.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable oak with an aspen component to full stocking

Regen:

Other Make sure have oak wilt spec. and recreational trail protection spec.

Comment:

Proposed Start Date: 10/01/2017

26	71133026-Cut	16.9	42221 - Natural Jack Pine, Mixed Deciduous	Poletimber Well	64	81-110	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Final harvest all species to 2 inches and chip to allow for establishing a red pine plantation. Leave a 3 percent retention island in an area with the highest oak content.

Next Step Pesticide, Skidder/Mechanical; SitePrep, Roller Chopping; SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr);
Treatments: Monitoring, Artificial Regen(3yr)

Acceptable fully stocked red pine plantation.

Regen:OtherComment:

Proposed Start Date: 10/01/2017

44	71133044-Cut	13.6	4123 - Red Oak	Sawtimber Medium	92	81-110	Harvest	Seed Tree with Retention	4121 - Oak, Aspen	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Remove all species to 2 inches except oak. Remove oak to 5 inches. Mark to have an average basal area of 20-30 in oak for seed/mast and side towards white oak when feasible. Areas with more oak in understory remove more of the oak overstory. Will look like patches in the end. Place a retention island along the border with stand 17.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable oak and mixed deciduous to full stocking. If not interplant open areas to red pine.

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
115	71133115-Cut	32.5	4121 - Oak, Aspen	Sawtimber Medium	92	51-80	Harvest	Clearcut with Retention	4121 - Oak, Aspen	Even-Aged	Draft Field Boundary

Habitat Cut: No**Site Condition:**

Prescription Harvest by removing aspen, red maple, and jack pine to 2 inches. With red oak remove to 5 inches. Do not cut any white oak. Place a 3 percent retention island in middle of stand west of the trail road.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Push the stand to an aspen dominated stand with and oak component.

Regen:

Other Place an oak wilt spec. and recreational trail protection spec. in the sale contract.

Comment:

Proposed Start Date: 10/01/2017

202	71133202-Cut	8.2	4122 - Oak, Pine	Sawtimber Medium	89	81-110	Harvest	Seed Tree with Retention	4122 - Oak, Pine	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Final harvest all species to 2 inches but the oak. Remove oak to 5 inches. Mark out 10 basal area of large monarch red pine where applicable and approximately 20 basal area of large crowned oaks for mast, preferably white oak where applicable. Place a small retention pockets around the dispersed campsite on the far east side. Make sure it includes the witness trees.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable oak and mixed pine of varying percentages to full stocking.

Regen:

Other

Comment:

Proposed Start Date: 10/01/2017

260	71133260-Cut	11.3	4310 - Pine, Oak Mix	Poletimber Medium	65	81-110	Harvest	Clearcut	4211 - Planted Red Pine	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Final harvest all species to two inches and chip to allow for planting of red pine. No retention due to stands smaller size, quality, and recreational trail bisecting it.

Specs:

Next Step Pesticide, Skidder/Mechanical; SitePrep, Roller Chopping; SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr);

Treatments: Monitoring, Artificial Regen(3yr)

Acceptable fully stocked red pine plantation.

Regen:

Other Protect recreational trail and possibly use some of the tops to slash in the illegal scramble area within the sale.

Comment:

Proposed Start Date: 10/01/2017

402	71133402-NF	3.5	3102 - Grass	Nonstocked		Unspec ified	NonForestMgt	Mowing	310 - Herbaceous Openland		Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Mow, cultivate, fertilize, seed as required to maintain established Wildlife Opening, Nine Mile 13.

Specs:

Next Step NonForestMgt, Mowing

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/01/2017

**Total Treatment
Acreage Proposed: 300.2**

Report 4 – Site Conditions

Roscommon Mgt. Unit

Doug Bates : Examiner

Compartment: 133

Year of Entry: 2018

Availability for Management

Total Acres	Acres Available	Acres Avail		Acres Not Available		Dominant Site Conditions								
		With Condition				2C	5C	2A	2G	3J	5A	5E		
648	621	24		4	Aspen	24		2						2
8	0	0		8	Bare/Sparsely Vegetated					8				
55	0	0		55	Cedar				44		12			
8	8	0		0	Herbaceous Openland									
35	35	0		0	Jack Pine									
3	3	0		0	Low-Density Trees									
6	0	0		6	Lowland Conifers						6			
3	0	0		3	Lowland Deciduous				3					
23	0	0		23	Lowland Mixed Forest				23					
6	6	0		0	Lowland Shrub									
167	167	0		0	Mixed Upland Deciduous									
20	20	0		0	Northern Hardwood									
338	245	88		5	Oak		88							5
56	56	0		0	Upland Mixed Forest									
1,377	1,161	112		104	Total Forested Acres	24	88	2	69	8	17			7
	84%	8%		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	2G: Too wet (sensitive soils, does not include access issues)	3	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
Comments: Stream flows through from private.							
2	Unavailable	5E: Long-Term Retention	2	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Roscommon Mgt. Unit

Doug Bates : Examiner

Compartment: 133

Year of Entry: 2018

3	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	38	3J: Water quality / BMPs (stream, river, or lake)	5A: Not able to obtain desirable regeneration	Unspecified	Unspecified
Comments:							
4	Available	2C: Engineered Bridge Needed (Dept. portable bridge not available or inadequate)	24	2B: Unknown if access through adjacent landowner(s) is possible	Unspecified	Unspecified	Unspecified
Comments:							
5	Unavailable	5E: Long-Term Retention	2	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified	Unspecified
Comments:							
6	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	6	5A: Not able to obtain desirable regeneration	Unspecified	Unspecified	Unspecified
Comments:							
7	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	8	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Roscommon Mgt. Unit

Doug Bates : Examiner

Compartment: 133

Year of Entry: 2018

8	Unavailable	5A: Not able to obtain desirable regeneration	9	3H: Deer Wintering Areas	3J: Water quality / BMPs (stream, river, or lake)	2G: Too wet (sensitive soils, does not include access issues)	Unspecified
Comments:							
9	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	23	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
Comments:							
10	Unavailable	5A: Not able to obtain desirable regeneration	3	3H: Deer Wintering Areas	3J: Water quality / BMPs (stream, river, or lake)	2G: Too wet (sensitive soils, does not include access issues)	Unspecified
Comments:							
11	Unavailable	5A: Not able to obtain desirable regeneration	6	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified	Unspecified
Comments:							
13	Unavailable	5E: Long-Term Retention	1	2F: Too steep	Unspecified	Unspecified	Unspecified
Comments:							
14	Unavailable	5E: Long-Term Retention	1	2F: Too steep	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Roscommon Mgt. Unit
Doug Bates : Examiner

Compartment: 133
Year of Entry: 2018

15	Unavailable	5E: Long-Term Retention	2	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
16	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	9	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
17	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	17	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
18	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	63	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
32	Unavailable	2A: Adjacent landowner denied access	2	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
301	Available	4A: No Markets Available for these Forest Products	2	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
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 Stream	A coldwater stream has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species (e.g., slimy sculpin) to persist from year to year. Coldwater streams in Michigan typically provide these conditions due to substantial contributions of groundwater to their stream flows. Such streams are established by Director's action and designated as trout resources by Fisheries Order 210.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4139 - Aspen, Mixed Deciduous	Sapling Well	13.0	15	Immature	Aspen/maple mixed stand.
2	4131 - Aspen, Oak	Poletimber Well	16.8	44	Unspecified	Poor quality aspen stand. Recommend holding one more rotation, but if need to adjust age classes, this is one that could be treated.
3	4131 - Aspen, Oak	Poletimber Well	18.7	44	Unspecified	Good aspen stand that is not ready to treat. Give one more rotation at least. Nice oak stump sprouts on throughout with dense oak regeneration in understory in places. All portions of stand contain some percentage in all portions of the stand. Aspen is mixed throughout also.
4	42221 - Natural Jack Pine, Mixed Deciduous	Sapling Well	12.6	28	Immature	Not the best quality jack pine with a good amount of oak regeneration though in the understory. The sliver between this stand and stand 5 is an uphill slope with most of it being aspen. They did not cut it with stand 5. Manage it with stand 3.
5	4125 - Black, N. Pin Oak	Sapling Poor	28.5	9	Immature	Stand cut fall 2008. Just barely enough canopy to call forested. Really good oak regeneration mixed with some jack pine and aspen.. Couple good sized aspen clones on being on the north end and the other the south. Average of 10 basal area of oak logs trees left for seed.
6	4130 - Aspen	Sapling Well	38.1	16	Immature	Decent aspen regeneration with oak and maple component.
7	4199 - Other Mixed Upland Deciduous	Sapling Well	19.4	8	Immature	The original prescription for this stand was to burn the stand to remove competition from maple/cherry and then interplant with red pine. The site was looked at by Fire Staff and was determined a prescribed burn would not deal with the maple at its current size/density. Inspection of stand during inventory and from observation during prior months, it is all most certain a pocket of oak wilt is in the stand in the southern tip. Site was approved to plant red pine last Y.O.E.. It was decided to let this stand stay as is at the Compartment Review and not try to establish pine. The maple regeneration is to far advanced at this time to treat.
8	4131 - Aspen, Oak	Poletimber Medium	39.7	41	Unspecified	Stand appears older than age and feel should be treated. There are pockets of dense oak regeneration especially in the southwest corner. There are a couple of large steep walled bowls within stand at the northern end. Delineate these out for retention.
9	4123 - Red Oak	Sawtimber Well	74.1	95	111-140	Aspen was removed about 20 yrs ago. Healthy northern red, but has some cull. Thick red maple understory 1-2" dbh. Large NRO clear-cut to the north that is rm, aspen, and cherry PVT land to east. Recommend a thinning. Manage for crop trees in areas where applicable and open up some regeneration gaps to try and get some oak regeneration. The maple is so thick, there will be heavy damage to it by operating. This may help the oak get an equal start. Shortwood only though.
10	4130 - Aspen	Poletimber Well	9.0	27	Unspecified	Stand was treated when the surrounding stand was thinned. There are no access roads into this stand. Good aspen but still has a heavy red maple component.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
12	4131 - Aspen, Oak	Poletimber Well	14.7	25	Unspecified	The northern third of the stand is a ridge top full of stump sprouted oaks. The ridges slopes then downward to the north into a sparsely forested bowl of mostly cherry and jack pine. The aspen clones just coming into pole sizes.
13	4126 - White, Black, N. Pin Oak	Sawtimber Medium	62.5	87	81-110	Supposedly a seed tree harvest was done in 2002. With the residual basal area of oak currently believe otherwise. The oak is poor quality but does have very good oak and aspen regeneration in the understory. Regeneration amounts are at the point that the overstory could be removed but there are other oak stands with higher aspen components that should be treated first. Hold another rotation will stagger the oak age classes in compartment. Monitor though to see if possible oak wilt pocket in Stand 7 spreads south. If so treat per protocol.
14	42221 - Natural Jack Pine, Mixed Deciduous	Poletimber Well	5.6	28	Immature	Jack pine stand mixed with oak, maple, and aspen. Good amount of oak regeneration. Currently it should hold to rotation age. There is a 1/4 acre island of saw class sized oaks on the northwest line. Good for mast production.
15	4123 - Red Oak	Sawtimber Well	17.0	92	81-110	Decent quality oak stand with good aspen clones mixed in. The understory regeneration in the oak overstory is oak and maple. Recommend holding one more rotation to stagger the age classes of oak and allow the aspen to get a little larger. Will not impact the regeneration if wait one more rotation.
16	4125 - Black, N. Pin Oak	Sapling Medium	11.0	15	Immature	An oak clear-cut along swamp edge. Was concern about regen due to deer browse. The aspen and oak have come in good in pockets that cover a good portion of the stand. An 1.5 acre chunk of the stand on the south line was trenched and planted to red pine in 2002. Kind of marginal ground so the pine have not done real well, but they still are alive.
17	4199 - Other Mixed Upland Deciduous	Sapling Medium	50.1	8	Immature	This stand was to be treated by herbicide and planted to red pine last year of entry. It was decided at compartment review to let this stand go as is, that the regeneration is to far along to feasibly treat and establish to red pine.
18	4130 - Aspen	Sapling Well	12.2	15	Immature	
19	4130 - Aspen	Poletimber Well	15.0	41	Unspecified	Very nice aspen regeneration with oak and maple in the overstory. The oak and maple are mostly stump sprouted. The understory is red maple.
21	4131 - Aspen, Oak	Poletimber Well	87.2	27	Unspecified	Good aspen with a fair amount of oak stump sprouts in the overstory. Both maple and oak in the understory. Good one to hold at least another rotation to get more diameter growth.
22	4310 - Pine, Oak Mix	Sapling Medium	45.0	15	Immature	Planted to red pine in 2002. There is a fair amount of oak and aspen competition.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
23	4191 - Mixed Upland Deciduous with Conifer	Sapling Medium	75.7	25	Immature	Sale consisted of strips being laid out approximately 100 feet wide. Every other strip was cut starting in 1992 and the remaining strips done in 1998. Can't tell where the corresponding strips are now. There are several fairly large open grass areas currently throughout the entire stand. The oak is mainly stump sprouts with naturally seeded bushy, poor quality jack pine. A couple good aspen clones are found in stand.
24	4123 - Red Oak	Sawtimber Medium	34.2	89	81-110	Mature oak stand with a some declining oaks. Very good regeneration of oak throughout the stand. the aspen is in clones from pole sizes up to saw. Recommend treating the stand to help with oak age class and aspen also. Treat by removing all aspen and leaving pockets of oak overstory.
25	4131 - Aspen, Oak	Sapling Poor	6.7	9	Immature	Stand was harvested in 2008. Coming back in to aspen with a component of oak and maple. There is decent oak regeneration in the understorey. Some residual saw class oaks left post-harvest.
26	42221 - Natural Jack Pine, Mixed Deciduous	Poletimber Well	16.9	64	81-110	Mature jack pine ready for treatment. Not much regeneration in understorey except a small amount of oak. Do a final harvest and plant to red pine.
27	4123 - Red Oak	Sawtimber Well	2.7	87	111-140	Steep north facing slope not treated. Inoperable so leave for retention and site condition.
28	4130 - Aspen	Sapling Well	49.4	17	Immature	Stand harvested in the spring 2000. The red maple regeneration in the understorey is a jungle.
29	4130 - Aspen	Poletimber Well	38.0	26	Immature	Between Stand 31 and Railroad Grade Road there is a couple acre island of large saw class aspen and red pine. It was left out of the harvest because on three sides are streams and the last is private. Leave as retention. Otherwise decent regenerating aspen stand.
30	4122 - Oak, Pine	Sawtimber Poor	8.8	89	111-140	Sale completed in the winter 2008. Almost two different stands with the west half being saw class oak and some red pine around 70 basal area, and the east half is dense white pine with 130 average basal area. The corresponding overstorey type is where find the same species for regeneration in the higher amounts. Do find the other species in more minimal amounts. Recommend hold stand another rotation to stagger oak age classes In compartment.
31	6120 - Lowland Cedar	Sawtimber Well	37.8	92	141-170	Good sized free flowing streams in this stand. A mixed forest with cedar still being the main component. No cedar regeneration but everything thing else it seems. Recommend leaving stand for visual and diversity. Wet ground and streams make it nearly impossible to treat without causing some sort of damage.
32	4130 - Aspen	Poletimber Well	2.4	97	81-110	Small aspen stand with limited means for access to treat. Low ground on all sides with the south line being private. There is all least two flowing streams in the lowland types that would require at least one being crossed. May best be a wildlife habitat cut to keep aspen type.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
33	4130 - Aspen	Sawtimber Well	23.6	92	81-110	Very nice aspen that needs to be harvested but the land is an upland peninsula surrounded on the three sides by a cedar swamp. The cedar swamp at the narrowest has a free flowing stream and very steep walls. The distance to span is longer than any temporary bridge we have. The south line is private and would be the only feasible means for access. Would be a treatment for the Limited Factor Forester or Wildlife Division may want to habitat cut.
34	4130 - Aspen	Poletimber Well	38.9	40	Unspecified	Nice aspen stand.
35	4199 - Other Mixed Upland Deciduous	Poletimber Medium	22.3	40	81-110	Younger oak stand that is not the best quality. Lot of stump sprouting with numerous sparse, open area (50-70b.a.) Areas containing the aspen clones have a higher basal area. There is not much in the way of regeneration in the understory. The southern end contains the highest and it's red maple.
37	4131 - Aspen, Oak	Poletimber Well	22.4	25	Unspecified	Either aspen clones or pockets of oak. Not an even mix of both together.
38	4130 - Aspen	Sapling Medium	30.3	15	Immature	Aspen stand with several open area not regenerating as fast. It does have a natural spring coming out of a hillside at the southeast corner next to the private property creating a free flowing stream at least 2 feet wide.
39	6120 - Lowland Cedar	Sawtimber Well	8.8	91	171-200	Has a free flowing stream bisecting stand, flowing through center stand 42 in 57. No regeneration in understory but lots of deer sign.
40	6129 - Mixed Coniferous Lowland Forest	Poletimber Poor	5.6	91	51-80	Poor quality stand with areas devoid of cedar has dense tag alder undergrowth with some tamarack regen.
41	4130 - Aspen	Sapling Well	30.7	27	Immature	
42	6130 - Fir, Aspen, Maple	Poletimber Medium	22.7	82	51-80	Two-aged stand. All the ash in the overstory is dead but it is regenerating in understory. Dense balsam fir with maple and tag alder mixed in. Has a stream flowing through it between stands 39 and 57. This portion of the stand contains the largest maple also. Created a haul road along the east line to access Stand 56. The road has not regenerated, suspecting water table went up in this area. Either cattails or tag alder.
43	4123 - Red Oak	Sawtimber Well	0.5	95	111-140	Deep forested ravine to steep to treat. Leave as retention and site condition.
44	4123 - Red Oak	Sawtimber Medium	13.6	92	81-110	Low quality oak. Oak regeneration doing well. Recommend seed tree the stand leaving some oak for seed and mast.
45	4130 - Aspen	Sapling Well	64.8	17	1-50	Stand clearcut in 1990



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
46	4130 - Aspen	Sapling Medium	3.2	16	Immature	Stand was harvested in 2001. The east side slopes down into a low area and was left out of the harvest. There is an illegal road built back to a cabin across state land. This road was closed after the sale but has now since been reopened without authorization. Portions of the state land are being mowed and illegally signed. The owner of the cabin/property have frontage on the public road but is further with no current drive established.
47	4130 - Aspen	Poletimber Well	9.7	27	Unspecified	
50	4123 - Red Oak	Sawtimber Well	1.5	91	111-140	Retention island from stand 105
51	4130 - Aspen	Sapling Well	1.2	17	1-50	Stand clearcut in 1990
52	4125 - Black, N. Pin Oak	Sawtimber Well	1.0	94	81-110	Very steep north facing slope that is inoperable. Leave for retention and site condition it.
53	4125 - Black, N. Pin Oak	Sawtimber Medium	2.4	92	51-80	Two small sawlog oak class islands connected by a seasonally wet depression that was left out of the treatment of Stand 6. Will classify as retention and site condition due to small size a wet swale.
54	4130 - Aspen	Sapling Well	1.3	17	Immature	Aspen clone trenched around when planted red pine.
55	41299 - Oak (OI)	Sapling Well	30.0	25	Immature	Sale consisted of strips being laid out approximately 100 feet wide. Every other strip was cut starting in 1992 and the remaining strips done in 1998. Not able to differentiate between the strips now. Contains ridge tops with stump sprouted oaks with pine mixed in. There are a couple of large bowls almost entirely of red maple regrowth.
56	4130 - Aspen	Sapling Well	7.3	15	Immature	Cut the same time as Stand 38 to the north. Created/froze a haul road from Stand 38 across stand 42's east side to this stand.
57	6120 - Lowland Cedar	Poletimber Well	2.7	91	171-200	Free flowing stream bisects stand and flows into stand 48.
104	4131 - Aspen, Oak	Sapling Well	8.9	28	Immature	Will be nothing but a poor quality aspen stand. Fair amount of aspen in the understory mixed with oak. Not enough merchantable wood yet to treat. Hold another ten and if declines further, if not hold one more then treat.
105	4116 - Mixed N. Hardwood - Aspen	Sapling Well	20.0	8	Immature	This stand was to be burnt and have red pine inter-planted around the oak 20-30 basal area oak seed tree overstory left last Y.O.E.. However, it was not burnt soon enough post-harvest and a subsequent visit by a prescribed burn specialist and unit manager have determined the red maple is to large/dense to treat by burning. Only other method to treat maple is by herbicide. The maple is to tall for ground spraying so it will have to be aerial. It was decided on a site inspection and subsequent Compartment Review to let this stand go as is to maple and aspen. The regeneration is to far along now to feasible treat.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
115	4121 - Oak, Aspen	Sawtimber Medium	32.5	92	51-80	Two-aged stand with oak saw class mixed with pole class aspen. The regeneration is very good to oak. Treat now to restart the aspen and open up the canopy for the oak regeneration. Believe if wait will cause more damage to further regeneration plus this will help a=stagger the 40-49 year old aspen spike. Will come back to an oak/aspen mix.
124	4131 - Aspen, Oak	Poletimber Medium	7.1	25	Immature	Aspen stand with areas of pure oak mixed in. The aspen is just merchantable size but the oak isn't.
126	4130 - Aspen	Sapling Well	7.9	25	Immature	A poor quality aspen stand.
128	6113 - Lowland Maple	Poletimber Medium	2.7	82	51-80	A small wet ground stand with thick balsam fir understory. Best to leave stand alone and not disturb the soils for minimal product available. Good habitat now.
131	6120 - Lowland Cedar	Poletimber Well	5.9	92	141-170	Cedar component starting to slip in this stand to be replaced by red maple a balsam fire. Has a stream flowing off the private land through this stand and tying into the stream that parallels the north edge of Railroad Grade Road.
132	4130 - Aspen	Sapling Medium	2.1	8	Immature	Sale cut winter 2008. Decent aspen regeneration on a ridge top between a road and steep drop-off into a cedar type.
141	4131 - Aspen, Oak	Poletimber Medium	4.6	27	Immature	Both ends of stand contains the aspen with the center portion being sparser oak.
202	4122 - Oak, Pine	Sawtimber Medium	8.2	89	81-110	Poor quality jack pine and oak stand. Some overmature jack pine in the saw class that is dying out. Mortality even in the younger jack pine. Good regeneration amount of oak and pine in understory. Recommend a harvest treatment removing all jack pine and seed tree the oak for mast. Place retention pocket at eastern tip. Contains a dispersed camping site and two witness trees.
224	4130 - Aspen	Sapling Well	23.6	9	Immature	
260	4310 - Pine, Oak Mix	Poletimber Medium	11.3	65	81-110	Overmature jack pine and oak ready for treatment. Treat by final harvest and establish a red pine plantation.
324	4125 - Black, N. Pin Oak	Sapling Medium	9.8	9	Immature	Was final harvest leaving all red pine and some additional oaks for mast. This totaled about 20 basal area average. The new stand is coming in with a good mix of oaks, aspen, pine.



Stand	Cover Type	Acres	Managed Site	General Comments:
11	6220 - Alder/willow	1.0	No	
20	330 - Low-Density Trees	2.0	No	A grassy multi-use area with large overstory oak and some jack pine mixed about. Oak is overmature and dying resulting in grass area expanding. Trees are being cut up for firewood. Portions are used for dispersed camping while one spot is suffering from illegal ORV activity leaving a bare sand spot. This is due to a portion of the ORV trail going through this stand. Plant with red pine with stand 260.
36	3102 - Grass	1.0	No	Grass bowl depression with a handful of scattered cherry.
48	790 - Other Bare/Sparsely Vegetate	8.1	No	A flowing stream coming out of Stand 57 into stand 40. It had a beaver dam on it at one time that flooded the area out killing overstory trees. The dam is broken and water receded but is still mainly grass. On the upper most high ground young oak saplings on coming in.
49	6229 - Mixed lowland shrub	5.0	No	part of a larger swamp that goes east onto private. Some regeneration of tamarack and balsam fir species sparsely in the northern 2/3rds. Not enough to make it forested though.
58	330 - Low-Density Trees	1.1	No	
59	31021 - Cool Season Grass	1.7	Yes	A wildlife opening maintained by wildlife division.
402	3102 - Grass	3.5	Yes	Grass opening maintained by Wildlife Division.
403	3102 - Grass	1.5	No	