



# Compartment Review Presentation

## Roscommon Forest Management Unit

Compartment 71166

Entry Year 2019

Acreage: 1,260

County Roscommon

Management Area: Upper Muskegon

**Revision Date:** 2017-08-02

**Stand Examiner:** Doug Bates

### Legal Description:

T21N R03W Sections 23-24

### Identified Planning Goals:

Maintain current age and species diversity in a range of early and late successional ecosystems. Large amounts of oak at or above maturity. Do some selective and final harvest treatments. Trying to move some of the red pine placement around within the compartment as well.

### Soil and topography:

Terrain is level glacial outwash on the south end of the compartment and moderately rolling ice contact moraines on the north end of the compartment. Soils are Grayling, Roselawn, and Rubicon sands and Ottawa loamy sand.

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

Compartment is a solid block of state land and is surrounded by state land except for Mid Forest Lodge on the east side of the compartment.

### Unique Natural Features:

None

### Archeological, Historical, and Cultural Features:

Numerous narrow gauge railroad grades (circa 1900) were found and should be preserved. No concerns from State Archeological Office.

### Special Management Designations or Considerations:

Stand 37 is close to reaching Type 1 old-growth status and should be left for scenic/recreational values.

### Watershed and Fisheries Considerations:

A broad drainage area in the N1/2NE Section 23 and a cedar stand in a natural seep area in the NWSW Section 24 will need to be protected.

### Wildlife Habitat Considerations:

Maintain ecosystem diversity in the compartment via habitat manipulation to benefit game species such as deer, grouse, rabbits, and turkeys as well as non-game species.

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

No active sand/gravel pits are located in the area, but sand and gravel potential appears to be good on the uplands in the compartment. Headquarters Field is located less than two miles to the west. The field is in secondary recovery operations and is not expected to expand further. All of the parcels in the compartment are currently leased by Marathon. However, Marathon has indicated they are leaving the state and have begun the process of releasing all of their remaining leases that are not held by production. There is no known metallic mineral potential in this part of the state

### Vehicle Access:

Vehicle access to the compartment is generally good via state and county roads and quarter section roads which are old fire breaks. Some of these fire break roads are closing in naturally and others may need to be closed due to erosion concerns on hills.

### Survey Needs:

None

### Recreational Facilities and Opportunities:

This compartment contains portions of the Houghton Lake snowmobile trail 6& 654, and Denton Creek 50" ATV & ORV trails in Section 23. This compartment is also heavily used for dispersed recreation such as hunting and gathering due to

good vehicle access. A private hunt camp exists along the east boundary of the compartment. Continue to utilize forest management efforts to address resource damage areas.

**Fire Protection:**

This compartment has high hazard pine type fuels in it.

**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**

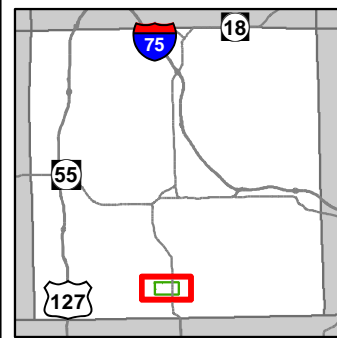
**The following information is displayed, where pertinent, on the attached compartment maps:**

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

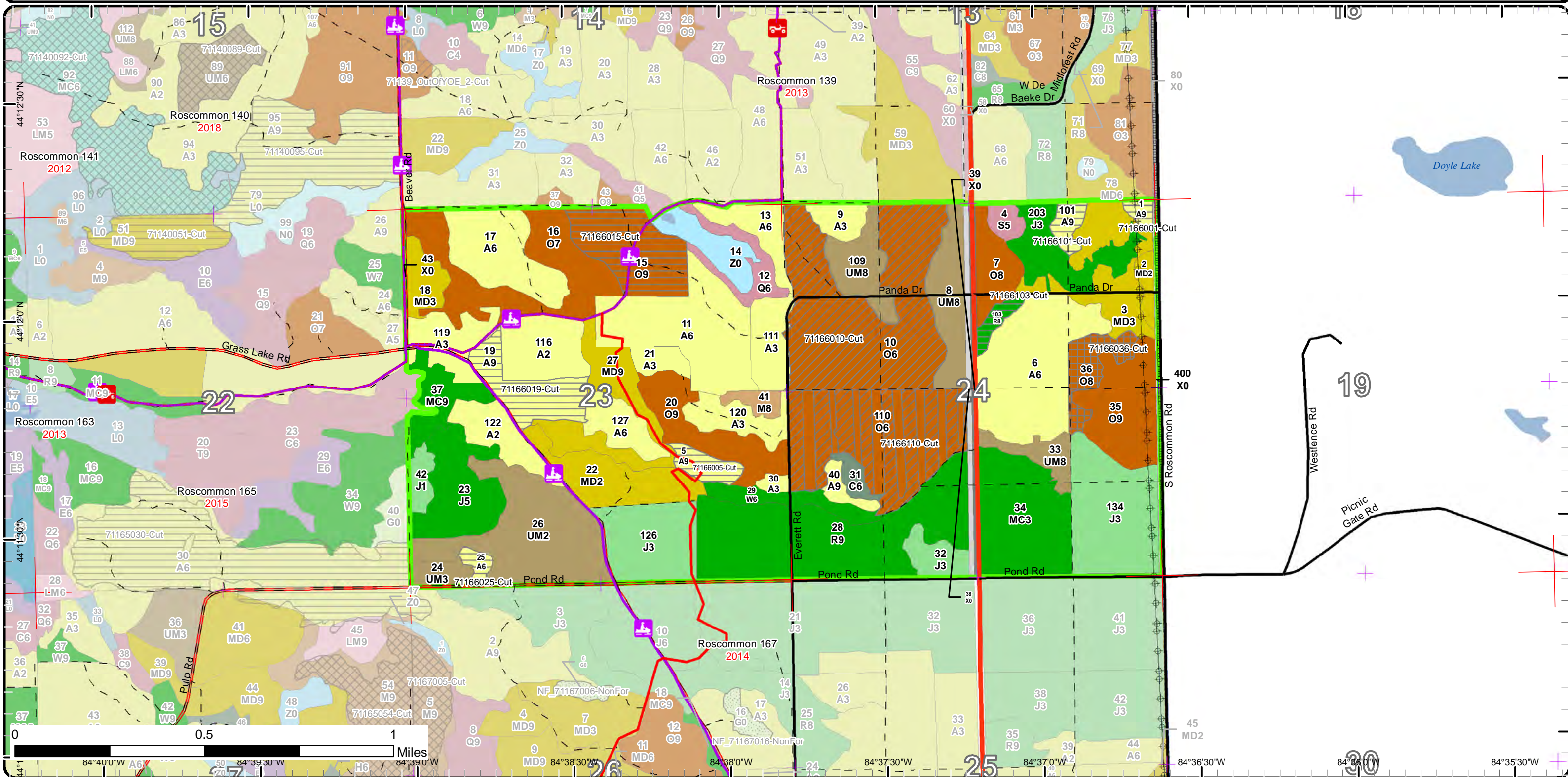


# Cover Type & Treatments Map

Compartment: 166  
 T21N, R03W, Sec. 23-24  
 County: Roscommon  
 Unit: Roscommon  
 Mgmt Area: Upper Muskegon  
 YOE: 2019  
 Acres: 1260.5 GIS Calculated  
 Examiner: Doug Bates  
 Map Revised: 8/2/2017  
 Map Phase: Review



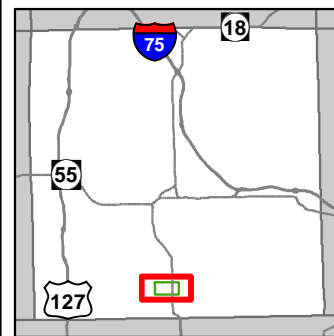
- Miris Corners
- + Remonumented Section Corners
- Counties
- ORV Routes
- Snowmobile Trails
- Designated ATV
- Designated ORV Route
- Designated Snowmobile Trails
- Highway
- Paved Roads
- County Gravel Roads
- - Poor Dirt Roads
- Streams
- Lakes and Rivers All
- Pipeline
- Powerline
- Compartment Boundary
- Clearcut (w/Reserves)
- Thinning (Crown, Low, Systematic)
- Seed Tree (w/Reserves)
- 411 - Northern Hardwood
- 412 - Oak Types
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 423 - Other Upland Conifers
- 430 - Upland Mixed Forest
- 612 - Lowland Coniferous Forest
- 110 - Low Intensity Urban
- 122 - Roads/Parking Lot
- 500 - Water
- Lakes



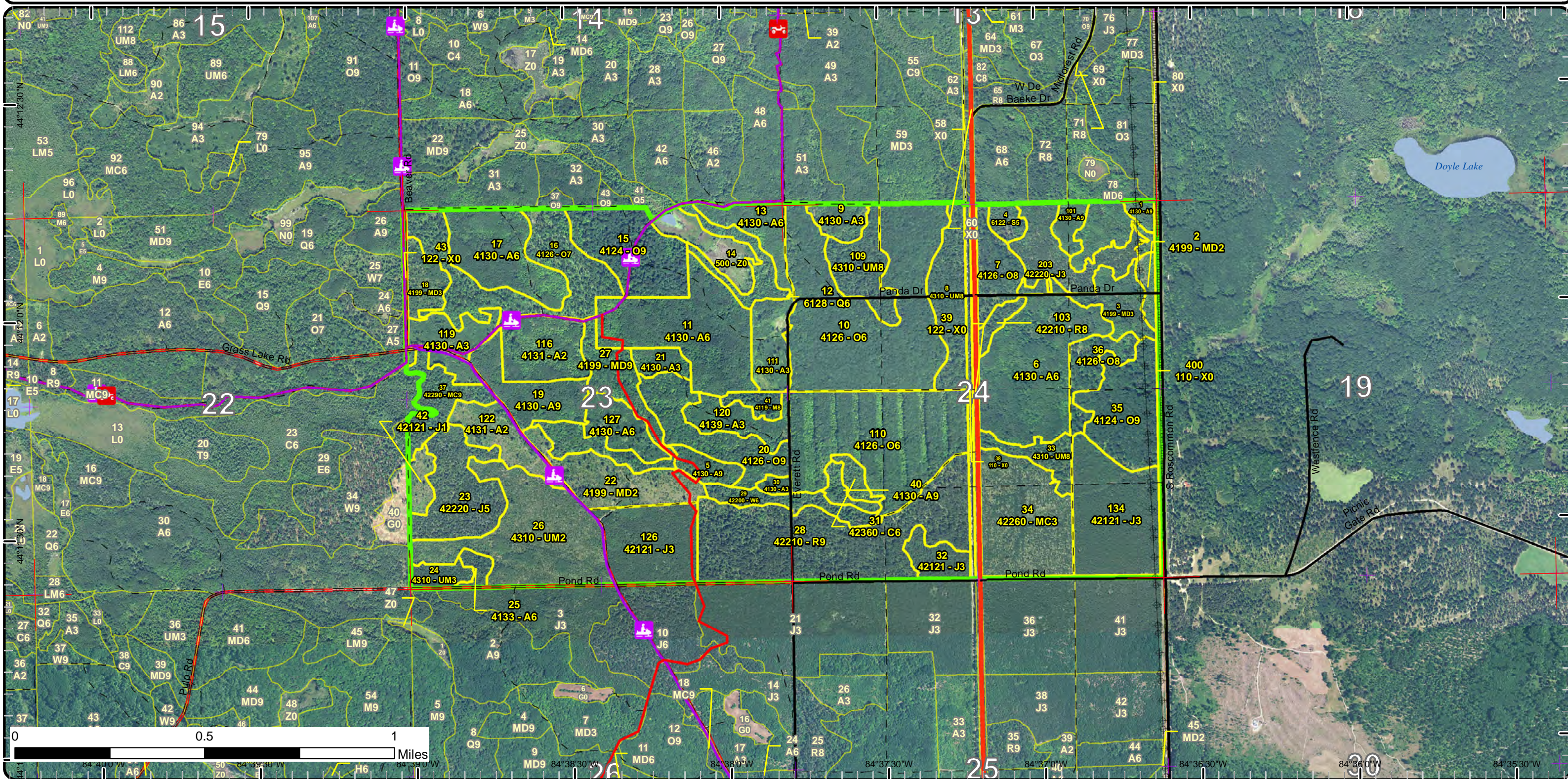


# Stand Boundary Map

Compartment: 166  
 T21N, R03W, Sec. 23-24  
 County: Roscommon  
 Unit: Roscommon  
 Mgmt Area: Upper Muskegon  
 YOE: 2019  
 Acres: 1260.5 GIS Calculated  
 Examiner: Doug Bates  
 Map Revised: 8/2/2017  
 Map Phase: Review



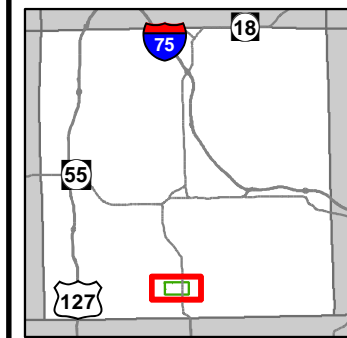
- Miris Corners
- + Remonumented Section Corners
- Counties
- ORV Routes
- Snowmobile Trails
- Designated ATV
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- 122 - Roads/Parking Lot
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- 411 - Northern Hardwood
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- 419 - Mixed Upland Deciduous
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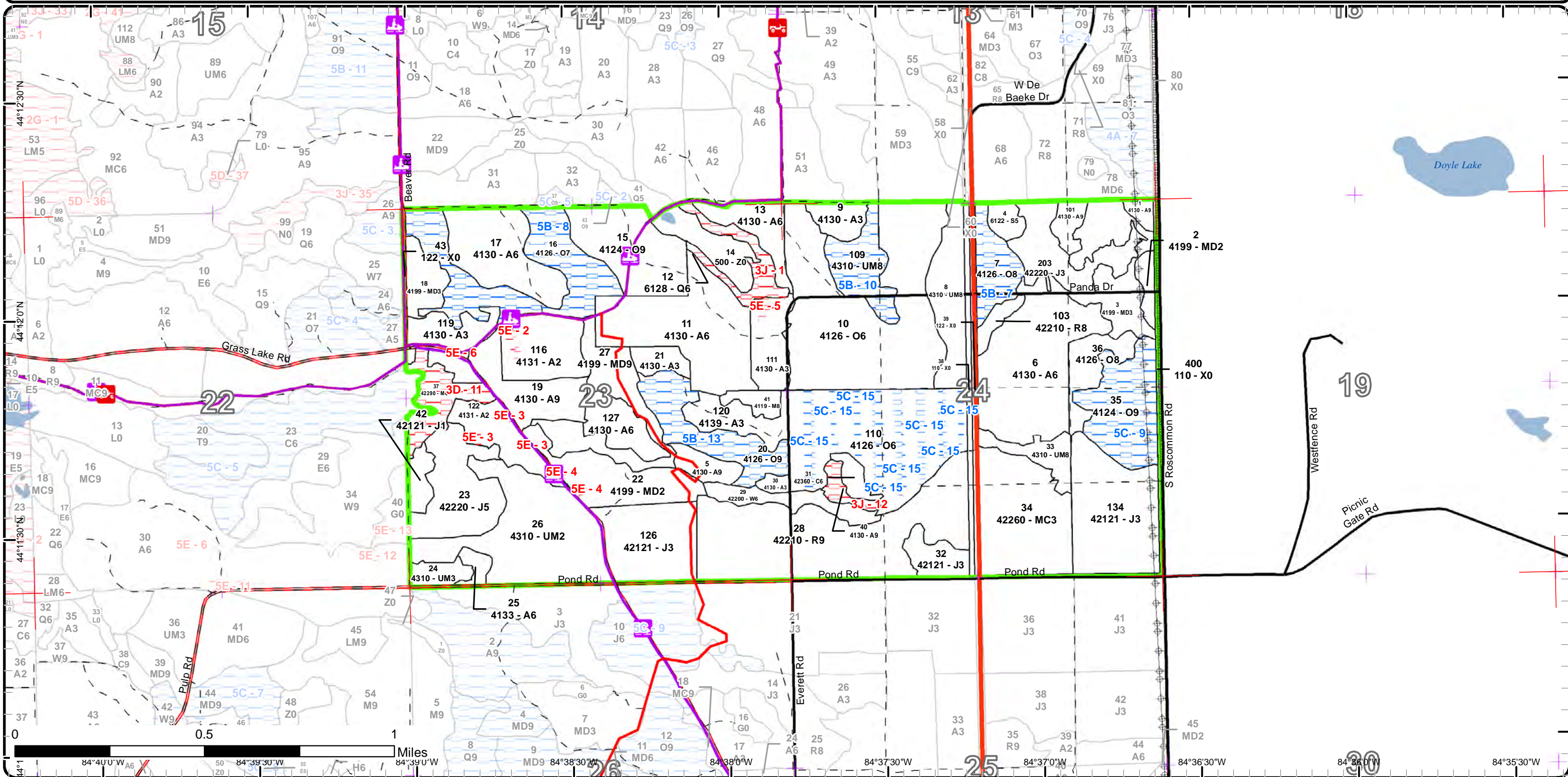


# Special Conservation Areas & Site Conditions Map

Compartment: 166  
 T21N, R03W, Sec. 23-24  
 County: Roscommon  
 Unit: Roscommon  
 Mgmt Area: Upper Muskegon  
 YOE: 2019  
 Acres: 1260.5 GIS Calculated  
 Examiner: Doug Bates  
 Map Revised: 8/2/2017  
 Map Phase: Review



- Miris Corners
- + Remonumented Section Corners
- Counties
- ORV Routes
- Snowmobile Trails
- Designated ATV
- Designated ORV Route
- Designated Snowmobile Trails
- Highway
- Paved Roads
- County Gravel Roads
- Poor Dirt Roads
- Streams
- Lakes and Rivers All
- Pipeline
- + Powerline
- Compartment Boundary
- Available w/ Constraints
- Unavailable
- 5B: Maintain for regeneration purposes
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 3D: Recreational / Scenic values
- 3J: Water quality / BMPs (stream, river, or lake)
- 5E: Long-Term Retention
- Stand Boundaries



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	50	68	47	0	119	4	22	0	0	12	0	0	0	0	0	0	0	320
Cedar	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	5
Jack Pine	0	6	0	112	0	31	0	0	0	0	0	0	0	0	0	0	0	0	149
Lowland Conifers	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	12
Lowland Spruce/Fir	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	5
Mixed Upland Deciduous	0	28	15	30	0	0	27	0	0	0	0	0	0	0	0	0	0	0	100
Natural Mixed Pines	0	0	46	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	62
Northern Hardwood	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	5
Oak	0	0	0	0	0	0	0	0	0	0	159	46	133	0	0	0	0	0	338
Red Pine	0	0	0	0	0	0	0	0	85	0	4	0	0	0	0	0	0	0	89
Upland Mixed Forest	0	0	59	6	0	0	0	33	0	0	0	19	0	0	0	0	0	0	117
Urban	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29
Water	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
White Pine	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	12
<b>Total</b>	<b>44</b>	<b>84</b>	<b>188</b>	<b>195</b>	<b>0</b>	<b>150</b>	<b>31</b>	<b>55</b>	<b>102</b>	<b>0</b>	<b>175</b>	<b>87</b>	<b>133</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1258</b>



## Report 2 – Treatment Summary

Roscommon Mgt. Unit  
Year of Entry: 2019

Acres of Harvest

Compartment 166  
Total Compartment Acres: 1,260

Commercial Harvest - 238  
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	42	0	0	0	0	0	0	0	0	42
Oak	34	0	0	13	0	145	0	0	0	192
Red Pine	4	0	0	0	0	0	0	0	0	4
<b>Total</b>	<b>80</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>145</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>238</b>

### Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	238	0	0	0	0	0	0	0	0	238
Next Step	0	77	38	0	0	38	237	0	0	391
<b>Total</b>	<b>238</b>	<b>77</b>	<b>38</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>237</b>	<b>0</b>	<b>0</b>	<b>628</b>



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
1	71166001-Cut	3.0	4130 - Aspen	Sawtimber Well	45	111- 140	Harvest	Clearcut	4130 - Aspen	Even-Aged	Proposal

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

Prescription Final harvest all species to two inches. No retention due to small size. Place in the drumming log spec.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable aspen to full stocking

Regen:OtherComment:

Proposed Start Date: 10/01/2018

5	71166005-Cut	7.4	4130 - Aspen	Sawtimber Well	90	111- 140	Harvest	Clearcut	4130 - Aspen	Even-Aged	Proposal
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**Habitat Cut: No****Site Condition:**

Prescription Final harvest all species to two inches. There is an ORV trail along the southern edge that will need to be protected but do not want to put a

Specs: buffer strip along it as the chances of it blowing over will be high. The stand is small so no retention at all.

Next Step Monitoring, Natural Regen (Re-Inventory); Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable aspen to full stocking.

Regen:Other

Place a drumming log spec.

Comment:

Proposed Start Date: 10/01/2018

10	71166010-Cut	97.9	4126 - White, Black, N. Pin Oak	Poletimber Well	90	111- 140	Harvest	Crown Thinning	4122 - Oak, Pine	Even-Aged	Proposal
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**Habitat Cut: No****Site Condition:**

Prescription Thin stand to a 70-90 basal area by releasing crop trees of both saw and pole classes of the oak species. Target removal of poor formed oaks

Specs: and larger, older oaks. Mark to remove some maple that is very poor formed, competing against a crop tree, or for operability. Don't remove all the maple because it will take over the understory.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable

Regen:OtherComment:

Proposed Start Date: 10/01/2018

15	71166015-Cut	34.0	4124 - Red with White Oak	Sawtimber Well	110	81-110	Harvest	Clearcut with Retention	42110 - Planted Red Pine	Even-Aged	Proposal
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**Habitat Cut: No****Site Condition:**

Prescription Final harvest all species to a two inch d.b.h.. Leave one large crowned white oak per acre where applicable. For retention leave two islands, one

Specs: on either side of the snowmobile trail, totaling 10% of the area. Try to find oaks with the largest most contiguous crowns to create the islands. This will help alleviated oak wilt issues and aid in planting. The site must be chipped and cutting done by a rotary head feller-buncher. High potential for red maple competition, so site will need competition control done.

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

Treatments: Monitoring, Artificial Regen(3yr)

Acceptable red pine to full stocking

Regen:Other

Place snowmobile trail protection spec.

Comment:

Proposed Start Date: 10/01/2018





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
19	71166019-Cut	21.6	4130 - Aspen	Sawtimber Well	60	111- 140	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Proposal

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

Prescription Final harvest all species to two inches. Place couple retention islands along the west side for visual buffer for snowmobile trail. Place drumming  
Specs: log spec and snowmobile trail protection specs. in sale contract.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable aspen to full stocking.

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018

25	71166025-Cut	3.8	4133 - Aspen, Mixed Pine	Poletimber Well	51	111- 140	Harvest	Clearcut	413 - Aspen	Even-Aged	Proposal
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**Habitat Cut: No****Site Condition:**

Prescription Final harvest all species to two inches. Mark 10 basal area of red pine for diversity. No retention due to stands small size.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable aspen to full stocking.

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018

36	71166036-Cut	13.2	4126 - White, Black, N. Pin Oak	Sawtimber Medium	100	51-80	Harvest	Seed Tree	4139 - Aspen, Mixed Deciduous	Even-Aged	Proposal
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**Habitat Cut: No****Site Condition:**

Prescription Mark to leave a basal area of 20-40 of oaks for seed/mast. Favor leaving large white oaks or black oaks that are hollow or large crowned. Leave  
Specs: more trees around the old landing location in the northwest corner of the stand that is being used for disbursed camping. Roundwood operation only to protect regeneration.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable A mixed stand of aspen, red maple, and white pine to full stocking. Interplant with red pine if stocking level fails.

Regen:

Other No retention due to smaller irregular boundary stand.

Comment:

Proposed Start Date: 10/01/2018

101	71166101-Cut	5.8	4130 - Aspen	Sawtimber Well	45	Unspec ified	Harvest	Clearcut	4130 - Aspen	Even-Aged	Proposal
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**Habitat Cut: No****Site Condition:**

Prescription Final harvest all species to two inches d.b.h.. No retention due to small stand size. Place in the drumming log spec.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable aspen to full stocking.

Regen:

Other

Comment:

Proposed Start Date: 10/01/2018





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
103	71166103-Cut	4.4	42210 - Natural Red Pine	Sawtimber Medium	99	111- 140	Harvest	Clearcut	4211 - Planted Red Pine	Even-Aged	Proposal

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

Prescription Final harvest all species to a two inch d.b.h.. Leave no retention due to small size. Chipping required along with felling to be done by a hot saw.  
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 If competition control is not all allowed then pull treatment and leave stand for scenic values along M-18.

Comment:

Proposed Start Date: 10/01/2018

110	71166110-Cut	46.7	4126 - White, Black, N. Pin Oak	Poletimber Well	110	111- 140	Harvest	Crown Thinning	4126 - White, Black, N. Pin Oak	Two-Aged	Proposal
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**Habitat Cut: No****Site Condition:**

Prescription Thin to a 70-90 basal area the strips that have not been treated. Manage by removing poor formed trees to open up around good formed larger oak poles and smaller saw classes for crop trees. Side towards leaving more white oaks for residual. Leave out the south end for retention and BMP concerns.

Next Step  
Treatments:

Acceptable  
Regen:

Other  
Comment:

Proposed Start Date: 10/01/2018

**Total Treatment  
 Acreage Proposed: 237.8**



## Report 4 – Site Conditions

Roscommon Mgt. Unit

Doug Bates : Examiner

Compartment: 166

Year of Entry: 2019

### Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	5B	5C	3D	3J	5E
		With Condition	Not Available						
322	298	0	24	Aspen				5	19
5	5	0	0	Cedar					
149	149	0	0	Jack Pine					
12	0	0	12	Lowland Conifers				12	
5	5	0	0	Lowland Spruce/Fir					
100	99	0	1	Mixed Upland Deciduous					1
62	46	0	16	Natural Mixed Pines			16		
5	5	0	0	Northern Hardwood					
339	192	147	0	Oak	89	58			0
90	90	0	0	Red Pine					
117	99	19	0	Upland Mixed Forest	19				
29	29	0	0	Urban					
15	15	0	0	Water					
12	12	0	0	White Pine					
1,260	1,042	166	53	Total Forested Acres	107	58	16	17	20
	83%	13%	4%	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	3J: Water quality / BMPs (stream, river, or lake)	12	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
2	Unavailable	5E: Long-Term Retention	1	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							



## Report 4 – Site Conditions

Roscommon Mgt. Unit  
Doug Bates : Examiner

Compartment: 166  
Year of Entry: 2019

3	Unavailable	5E: Long-Term Retention	2	3D: Recreational / Scenic values	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
4	Unavailable	5E: Long-Term Retention	1	3D: Recreational / Scenic values	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
5	Unavailable	5E: Long-Term Retention	2	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
6	Unavailable	5E: Long-Term Retention	1	3D: Recreational / Scenic values	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
7	Available	5B: Maintain for regeneration purposes	15	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
8	Available	5B: Maintain for regeneration purposes	46	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							

## Report 4 – Site Conditions

Roscommon Mgt. Unit

Doug Bates : Examiner

Compartment: 166

Year of Entry: 2019

9	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	33	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
10	Available	5B: Maintain for regeneration purposes	19	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
11	Unavailable	3D: Recreational / Scenic values	16	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
12	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	5	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
13	Available	5B: Maintain for regeneration purposes	27	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
15	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	25	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							



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

<b>Conservation Area</b>	<b>Type</b>	<b>Description</b>
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	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4130 - Aspen	Sawtimber Well	3.0	45	111-140	Showing some evidence of conks on the larger trees. Best to restart the stand by final harvesting. No retention due to small size.
2	4199 - Other Mixed Upland Deciduous	Sapling Medium	4.7	15	Immature	Some open sparse pockets, particularly on the west side. Most of the oak is stump sprouted. Maple is the main component overall.
3	4199 - Other Mixed Upland Deciduous	Sapling Well	29.8	27	Immature	Very mixed stand with scattered aspen clones and small jack pine inclusions. The remainder of the species are a mix of oak and maple.
4	6122 - Black Spruce	Poletimber Medium	5.0	70	81-110	Large blowdown pocket in the middle, approximately 1 acre. Moss ground cover. The stocking is in the outer perimeter. Trace of red maple, aspen, and red pine also.
5	4130 - Aspen	Sawtimber Well	7.4	90	111-140	Overmature aspen stand needs to be treated. A portion of the ORV trail runs along the south edge will need to be protected. No retention due to small size.
6	4130 - Aspen	Poletimber Well	57.3	45	Unspecified	Real nice aspen stand just shy of being saw class. Overstory of oak and red maple are stump sprouted. Pockets of oak hear and there. Stand is to nice too cut early.
7	4126 - White, Black, N. Pin Oak	Sawtimber Medium	15.2	95	51-80	Treated back in the spring 2011 by removing all the maple, aspen, and marked oak. The pine component was left. Very minimal oak sprouting occurred with what sprouted being browsed heavily. There is maple and pine regeneration but of no great amounts. Recommend letting sit for this rotation to let the pine get bigger and possibly do a shelterwood removal of the older oaks next time to convert the stand to a pine dominant. Couple small aspen clone inclusions also.
8	4310 - Pine, Oak Mix	Sawtimber Medium	23.2	61	81-110	Was thinned in the spring 2011 managing for a mix pine/oak stand. There is a fair amount of white pine understorey with pockets of heavy red maple stump sprouts. Just a few oak stump sprouts with no evidence of seeding. Oak that is there is being browsed. Numerous black oaks are showing evidence of decline. Wait one more rotation and then remove the black oak, thin the white oak, and look to convert the stand to white pine with a small oak component.
9	4130 - Aspen	Sapling Well	8.0	15	Immature	The bigtooth aspen clone is located in the interior 2/3rds. The outer perimeter is more sparsely stocked with quacking aspen, maple, and oak.
10	4126 - White, Black, N. Pin Oak	Poletimber Well	97.9	90	111-140	The stand is close to being two-aged. Large sawlog class with a dense pole mid-canopy. The west half of the stand, the oaks are smaller diameter saw class with large amounts of oak poles mixed in. There is also less red maple. The eastern half, the saw oaks are larger in diameter with heavy amount of pole class mid-canopy. The red maple concentration is higher here in the mid-canopy than the oaks. The northwest portion has a heavy white pine understorey. Recommend thinning releasing crop trees.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
11	4130 - Aspen	Poletimber Well	52.9	44	141-170	Very nice aspen stand of better quality bigtooth that can hold another ten years if other aspen of lower quality is found in the compartment to treat.
12	6128 - Lowland Coniferous, Mixed Deciduous	Poletimber Well	12.2	100	81-110	Mixed stand with water levels fluctuating with beaver activity. Numerous channels on south end that looks like old fireplow furrows full of water. Made by beavers when they hit the aspen edge hard 10-20 years ago. No sign of activity now. Older white pine and cedar overstory with a mid and sub-canopy dominated fir and maple. Leave for BMP issues.
13	4130 - Aspen	Poletimber Well	13.9	28	Unspecified	Treated in 1989 with the west most finger having a fair amount of birch in it. Good aspen stand overall with heavy maple understorey.
15	4124 - Red with White Oak	Sawtimber Well	34.0	110	81-110	Thinned in 1990 removing maple, aspen, and birch. Thinned again in spring 2012 to a 90 basal area average. Nice red and white oak. The understorey is dense maple. Only mid-canopy species is maple and aspen. The aspen inclusions are small and just a couple. Few wet depressions scattered throughout also. Possible site to final harvest and plant to red pine. This site is on the better soils with the chances of getting stump sprouting being very minimal and natural seeding even less. No oak sprouting occurred from the previous treatment. It is on the low end of the canopy closure.
16	4126 - White, Black, N. Pin Oak	Sawtimber Poor	46.4	93	1-50	Fair amount of regeneration coming with maple stump sprouts, oak seeding, and aspen shoots. Basal area is high for in many areas for a seed tree harvest that was done in 2012. The eastern half contains the maple and oak regen. and the other half the aspen and pine mostly. Don't want to interplant red pine in the bare areas as it'll be just a waste of good trees that'll get overtopped by completion. Do nothing this rotation, but seriously consider removing more of the overstorey next time to open up the canopy for the aspen/oak understorey.
17	4130 - Aspen	Poletimber Well	32.6	28	Immature	Treated in 1989 with decent aspen regeneration with some pockets of just sapling size oak and maple on the outer perimeter.
18	4199 - Other Mixed Upland Deciduous	Sapling Well	10.4	16	Immature	Stand treated in the summer 2001. Regenerated to a mixed stand with oak in all canopies. Some more sparse areas with cherry and small jack pine. Aspen clones on the south and east edges.
19	4130 - Aspen	Sawtimber Well	21.6	60	111-140	Evidence of conks on several aspen, it is ready to treat.
20	4126 - White, Black, N. Pin Oak	Sawtimber Well	27.0	110	111-140	Predominately a white oak stand with scattered red and white pine throughout. There is a small amount of black oak in here also. Some pole sized maples but the understorey is a heavy white pine of all heights. Little bit of maple and only a trace amount of oak regeneration. The white pine understorey is fragile right now, with many bent over because of snow loads. The main cover types are longer lived species. Allow this stand to go another rotation, let the white pine mature some more before doing a thinning. As it sets right now, most of the white pine understorey would be damaged trying to remove the large topped oaks. The basal area is right at the bottom of the range.





Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
21	4130 - Aspen	Sapling Well	6.3	15	Immature	Good concentration of aspen in the interior. The outer 1/3rd is more open with oak and white pine.
22	4199 - Other Mixed Upland Deciduous	Sapling Medium	27.8	6	Immature	This stand was treated in the spring 2011. It was planted with red pine in 2012. The pine are still under five feet so the stocking is based on the natural regeneration. The pine were not planted in the aspen clones.
23	42220 - Natural Jack Pine	Poletimber Medium	31.3	48	51-80	Poor quality jack pine with numerous small openings with just cherry brush. Sedge and blueberry ground cover. If do treat do not chip and spread slash evenly for natural regeneration. Couple aspen clones up in the northern end about an acre each.
24	4310 - Pine, Oak Mix	Sapling Well	6.4	24	1-50	Very poor quality red pine plantation with pockets of good red pine but the vast majority is mixed in with so much competition that many of the red pine planted are dead. This is especially true on the eastern third that is mostly oak.
25	4133 - Aspen, Mixed Pine	Poletimber Well	3.8	51	111-140	An old railroad grade across the northern third of the stand. Red pine overstorying an aspen stand. No red pine regeneration in understory. Final harvest to manage the aspen. Mark to leave 10 basal area of the largest red pines for diversity.
26	4310 - Pine, Oak Mix	Sapling Medium	58.7	13	Immature	Planted in 2002 and then in 2004. Still not a very good red pine plantation. There is so much completion from all sorts of species. Along the southern half are numerous aspen clones. The oak and cherry are mixed throughout.
27	4199 - Other Mixed Upland Deciduous	Sawtimber Well	27.1	57	81-110	Older oak stand with mid-canopy being mostly maple poles. No understory in great amounts. Almost no oak at all. Could thin the stand, but there is really no oak crop trees to manage for. This site would be one where remove all species and leave pockets of white oak and let convert to maple or harvest, wait a couple years to see if any oak regenerates if not spray and establish to a red pine stand. Two old railroad beds merge in this stand.
28	42210 - Natural Red Pine	Sawtimber Well	85.4	73	111-140	Thinned in 2004 where most of the oak and all the jack pine was removed. Fair number of poles and smaller sawlogs coming in under larger pine. Could bring these along managing for crop trees by a light thinning down to 90-110 only. Some open pockets is full of young oak. Some oak in the understory of pine, but not much. Nice stand with the west '40' being sparser in the overstory and has more open areas with thick oak/jack pine. Low end on the canopy closure for the stand as a whole.
29	42200 - Natural White Pine	Poletimber Well	12.0	73	81-110	The white pine is either 14-16 inches or less than 8. Many areas are sparse. Few pockets have 110-140 basal area but not many. Maple understory ia heavy in some areas but it is getting browsed down to about 1 foot. The white pine is not the best formed.
30	4130 - Aspen	Sapling Well	2.4	15	Immature	Good dense stand on a side slope.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
31	42360 - Upland Cedar	Poletimber Well	4.7	100	171-200	Very unique stand situated mid-slope. Numerous seeps emanating from the hillside to the east with soils holding the water within the stand. Fair amount of course woody debris.
32	42121 - Planted Jack Pine, Mixed Deciduous	Sapling Well	9.9	24	Unspecified	Most of the stand is a jack pine plantation. Not very good quality. The eastern 1/3rd of the stand was not cut and is still natural jack pine in the 7-8 inch class. It is not big enough to treat on its own so will have to wait till the plantation is at rotation age.
33	4310 - Pine, Oak Mix	Sawtimber Medium	10.2	60	51-80	Southern third of the stand is good white pine with decent oak regeneration. The remainder is more open with stump sprouted oaks and some maples. More open areas is cherry.
34	42260 - Natural Pine, Mixed Deciduous	Sapling Well	45.6	17	Immature	A red pine plantation that pretty much has failed. It was planted in 2003 and again in 2004 but no competition control was done and the natural regenerating jack pine and oak overtopped the red pine.
35	4124 - Red with White Oak	Sawtimber Well	32.7	100	81-110	Aspen and red maple were removed in 2002. The stand was thinned in the spring 2011 with 26 acres being treated. The maple is sporadic, being heavy in one area and absent in another. The basal area is running around 110. Do not treat stand this rotation to stagger the age class distribution of oak species in this compartment.
36	4126 - White, Black, N. Pin Oak	Sawtimber Medium	13.2	100	51-80	Aspen and red maple were removed in 2002. A few aspen clones are scattered about. The maple is most prevalent. A few white pine scattered also. The oak overstory is in poor health with no oak regeneration to speak off. Once the oak dies the stand will never be an oak dominated stand. Manage for the maple, aspen, and white pine that is regenerating. Do a seed tree harvest to allow some seeding and mast of oaks. Bring basal area down to 20-40 favoring leaving wildlife beneficial oaks, i.e. hollow, large crowned and/or white oaks. Leave more trees around the old landing spot in the northwest corner that is being used by campers.
37	42290 - Natural Mixed Pine	Sawtimber Well	16.2	130	111-140	A very diverse old stand. Numerous trees of 26 inches dbh and over 150 years old with the average running around 22 inches and 130 years old. Heavy balsam fir understory in most areas. Mid-canopy of mostly maple with some white pine poles. Tries a thinning treatment of the same stand in the adjacent compartment to the west with mixed results. The producer had a hard time removing the large trees without damaging residual trees. This stand will become a maple/white pine mixed stand in the future whether we treat it or not so I recommend just letting this stand manage itself. No evidence of any treatments being done so in a few years will qualify for old growth status.
40	4130 - Aspen	Sawtimber Well	4.7	90	Unspecified	Seasonally wet stand with sheet flow from the cedar stand to the east. The aspen is old and declining. The aspen regeneration in the understory is getting mowed by the deer. No other understory besides witch hazel. The stand could be treated and was slated to last YOY but was rescinded.





Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
41	4119 - Mixed Northern Hardwoods	Sawtimber Medium	5.0	101	51-80	Thinned in spring 2012. Nice stand that has a fair amount of beech regeneration in the understory. The maple regeneration is being browsed hard. The west third of the stand has more of the maple regeneration that is older than that from the recent treatment. Leave stand for wildlife, BMP concerns. There are scattered small wet swales within stand.
42	42121 - Planted Jack Pine, Mixed Deciduous	Sapling Poor	6.3	5	Immature	Stand harvested in the spring 2011 and planted with jack pine in 2012. Sparsely stocked jack pine with pockets of aspen or areas of just a handful of jack pine with cherry overtop.
101	4130 - Aspen	Sawtimber Well	5.8	45	Unspecified	Nice aspen stand that is full of maple regeneration. Cut now to stagger the age class distribution in the compartment.
103	42210 - Natural Red Pine	Sawtimber Medium	4.4	99	111-140	Hardwoods were removed from the north end of stand in 1990. This tip is where find the small amount of oak regeneration, but 85% of the stand is dense red maple up to 3 inches in diameter. Recommend final harvest and restart the red pine. Will need to be chipped and have competition control done. If not allowed to do competition control then leave the stand as is. Will be just a waste of trees against the maple that is present.
109	4310 - Pine, Oak Mix	Sawtimber Medium	18.8	101	81-110	Thinned in the spring 2011. There is pockets of oak decline, but there is good white pine regeneration throughout. Numerous stump sprouted oaks and a couple small regenerating aspen clones. Where more white pine was removed and oak remains the understory is heavier to white pine. Where the overstory is just opposite, the understory in more to red maple. Let the regeneration go another rotation before attempting a shelterwood harvest.
110	4126 - White, Black, N. Pin Oak	Poletimber Well	72.0	110	111-140	This stand was strip cut in 1991. The cut strips are mainly maple and aspen with a little bit of oak. The strips are just coming into pole size. The uncut strips are mainly open of understory. The diameters are small for the age of the saw class. Recommend a thinning to 70-90 basal area opening up crop trees. Manage for 20-30 more years then treat all the strips. South end of stand is a steep slope with natural seeps feeding water into Stand 31. Leave for retention/BMP issues.
111	4130 - Aspen	Sapling Well	15.5	6	Immature	Final harvest in the spring 2011. A large retention pocket was left at the north end that was deemed to wet to operate in. The location of the landing has not regenerated at all and has a thick layer of chips and other debris that is not helping. Most of the stand is dense aspen with scattered open pockets. The canopy closure is on the bottom end of the scale. A few mature oaks were left for mast.
116	4131 - Aspen, Oak	Sapling Medium	23.2	15	Immature	Decent dense aspen clones around the outer perimeters. Interior more sparse with oak/maple being main canopy. There is a 2 acre wet swale left out for retention.
119	4130 - Aspen	Sapling Well	17.9	6	Immature	Stand harvest in the spring 2011. Decent regeneration so far. Retention pocket left long the snowmobile trail.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
120	4139 - Aspen, Mixed Deciduous	Sapling Well	14.1	15	Immature	Decent aspen regeneration in multiple small clones. The outer 1/3 of the stand is heaviers to maple and sparse openings stocked with cherry/oak. The canopy closure is at the bottom of the percentage scale.
122	4131 - Aspen, Oak	Sapling Medium	17.4	6	Immature	Stand final harvest in spring 2011. It was planted in 2012 to jack pine. The jack pine is still not tall enough to be counted so cover type is based on heavy amount of natural regeneration present. retention pockets left along snowmobile trail.
126	42121 - Planted Jack Pine, Mixed Deciduous	Sapling Well	32.8	24	Immature	Jack pine plantation with limby, poor formed boles. There is a fair number of small aspen clone inclusions throughout, particularly on the west side.
127	4130 - Aspen	Poletimber Well	13.7	15	Immature	Nice dense regeneration with some oak mast trees left.
134	42121 - Planted Jack Pine, Mixed Deciduous	Sapling Well	46.0	25	Immature	Jack pine plantation with a fair amount if intermixed oak from stump sprouting in the northern third of the stand.
203	42220 - Natural Jack Pine	Sapling Well	23.2	27	51-80	No F.T.P. was found nor any trenches evident, so wither the stand was planted by broadcast seeding or is natural. The jack pine is limby, poor formed with trace amounts of oak and red pine mixed in. A large railroad grade runs alongs the west perimeter. This is where most of the aspen is found.



Stand	Cover Type	Acres	Managed Site	General Comments:
14	500 - Water	14.7	No	NORTH END IS OPEN WATER INTERSPERSED WITH MARSH, SOUTH END IS MARSH WITH DEAD CONIFER TREES STICKING UP OUT OF MARSH/WATER
38	110 - Low Intensity Urban	8.7	No	Overhead Powerline and R.O.W. Also thin strip of trees between powerline and M-18.
39	122 - Road/Parking Lot	10.1	No	M-18 AND SHOULDERS, ETC.
43	122 - Road/Parking Lot	1.8	No	
400	110 - Low Intensity Urban	8.0	No	CONSUMERS ENERGY POWERLINE R.O.W. with an overhead powerline of the west side and buried petroleum line on the east.