



# Compartment Review Presentation

## Roscommon Forest Management Unit

Compartment 153

Entry Year 2016

Acreage: 1,261

County Roscommon

Management Area: Upper Muskegon

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**Revision Date:** 05/12/2014

**Stand Examiner:** Ben Wiese

**Legal Description:**

T21N R04W Sec. 19 and 30

**Identified Planning Goals:**

This compartment is part of the Upper Muskegon Management Area and will be managed in accordance with guidelines identified within that management plan.

**Soil and topography:**

The Muskegon River flows the entire length of the compartment and is its defining feature. Part of a large outwash plain, excessively drained grayling sands lead up to the edge of the river and its floodplains of poorly drained Kinross and Tawas Lupton Muck. Chinwhisker and Croswell sands are interspersed throughout the floodplain.

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

The compartment is a continuous block of state-owned land.

**Unique Natural Features:**

No Unique Natural Features known.

**Archeological, Historical, and Cultural Features:**

There are known concerns within the compartment. All proposed management activities have taken these concerns into consideration.

**Special Management Designations or Considerations:**

None noted

**Watershed and Fisheries Considerations:**

None noted

**Wildlife Habitat Considerations:**

None noted

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

Surface sediments consist of glacial outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 400 and 600 feet. Beneath the glacial drift are the Pennsylvanian Grand River and Saginaw formations. The Saginaw is quarried for clay elsewhere in the state. Gravel pits are not located in the area and potential may be limited. Headquarters Field is located five miles to the east. The field has produced over 11.3 million BO and 4.2 Bcf gas primarily from the Devonian Richfield Formation and is in secondary recovery operations currently. The east half of the compartment is currently leased for oil and gas development.

**Vehicle Access:**

Vehicle access is good on the east side of the river and limited on the west side.

**Survey Needs:**

None noted

**Recreational Facilities and Opportunities:**

This compartment contains portions of the Leota snowmobile and 50"ORV trail which are heavily used in the riding seasons. Dispersed camping, canoeing and hunting (deer, turkeys, small game, and birds) are also common activities in this compartment. Utilize timber management activities to balance resource protection by closing illegal trails, scramble areas and mitigate resource damage.

Assure signs are placed on the trail warning users of logging activity. Focus any retention pockets or clusters along or

near trail. All sign posts shall be protected. Limit stacking of timber along the trail. Ensure logging activity does not obliterate the 50" ATV trail. Protected and maintained non-merchantable understory adjacent to trail to promote narrow use. All stumps within 20 feet of the trails shall be Flush-Cut to ensure stumps do not result in unsafe conditions. For confidence markers attached to trees cut high to retain presence of signs. No stacking of timber along the trail. The snowmobile trail is likely to be used for hauling. Maintain road / trail bed to a condition equal to or better than before the sale prior to December 1. If harvest activities occur during the snowmobile season of December 1 thru March 31 a snow bed must be preserved. Placement of material on the trail due to icy conditions will need to be approved by the department

**Fire Protection:**

There is a fair amount of jack and red pine in this compartment. This compartment is within the zone 4 dispatch boundary.

**Additional Compartment Information:**

None noted

**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 & Treatment Map

Compartment: 153  
 T21N R04W  
 Sections: 19, 30  
 County: Roscommon  
 Unit: Roscommon  
 Management Area: Upper Muskegon  
 YOE: 2016  
 Acres: 1,261 GIS Calculated  
 Examiner: Ben Wiese  
 Map Revised: 08/08/2014  
 Map Phase: Web Post

**Stand #**  
 23  
**Stocking Density**  
 (4120) - A7  
 Level 3 OI  
 Level 4 Code  
**Cover Type Code**

19  
 30

N  
 DEPARTMENT OF NATURAL RESOURCES  
 DNR  
 MICHIGAN

### Legend

- Miris Corners
- Remonumented Section Corners
- PLSS Corner
- Paved Roads
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- County Poor Dirt Roads
- Stream
- Intermittent Stream
- ORV Trails
- Snowmobile Trails
- ORV Trail
- Snowmobile Trail

### Regen Legend

- Natural
- Planted

### Treatments

- Seed Tree (w/Reserves)
- Thinning (Crown, Low, Systematic)
- Clearcut (w/Reserves, Patch/Strip)
- Treatments w/ Site Condition

### Forest Stands

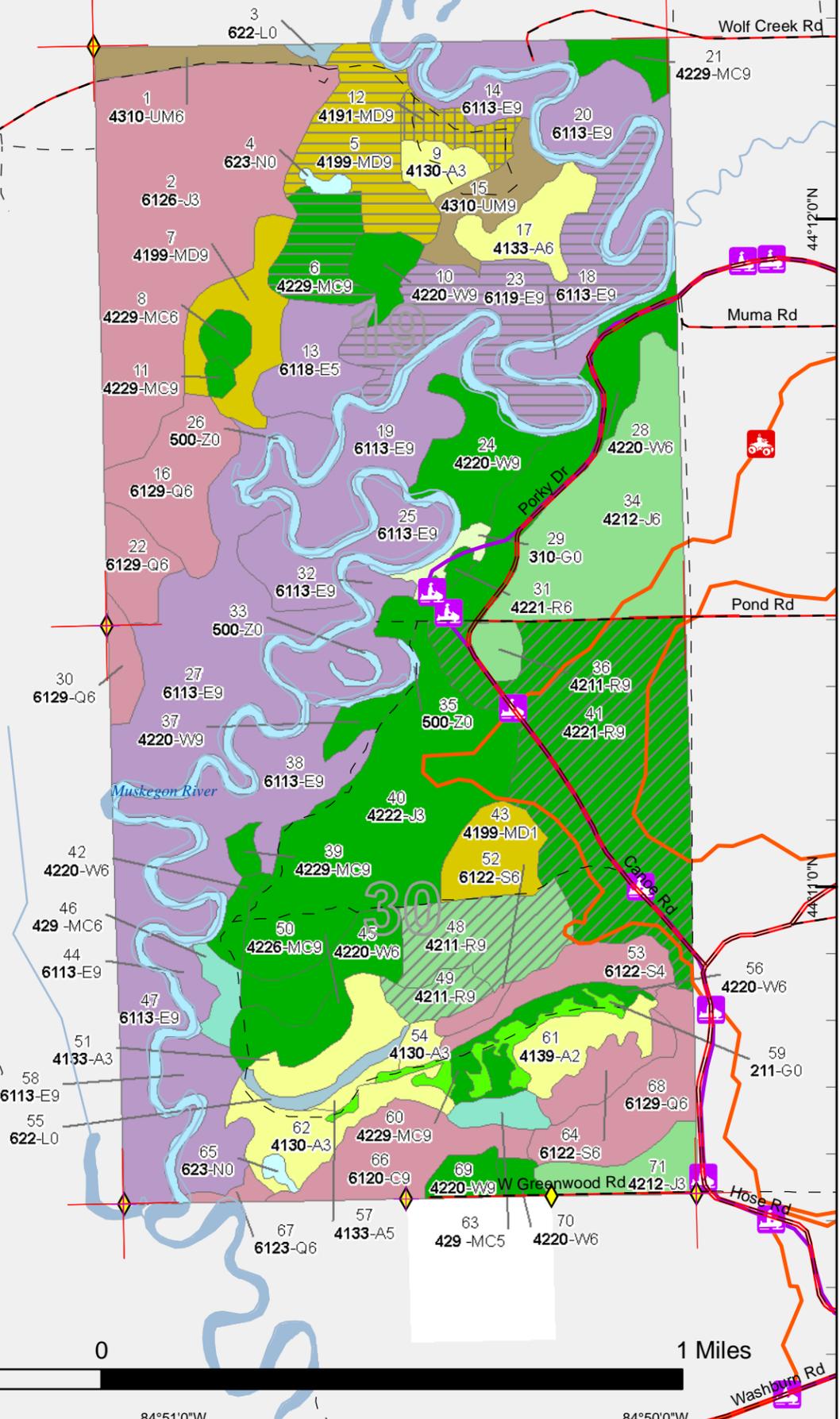
Level 3

- 413 - Aspen Types
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 429 - Mixed Upland Conifers
- 431 - Upland Mixed Forest
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest

### Non-Forest Stands

Level 3

- 211 - Cropland
- 310 - Herbaceous Openland
- 500 - Water
- 622 - Lowland Shrub
- 623 - Emergent Wetland
- Lakes and Rivers
- State Forest Land







Report 1 – Total Acres by Cover Type and Age Class



	Age Class														Total
	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 +	Uneven Age	
Aspen	12	0	43	0	13	0	0	0	0	0	0	0	0	0	68
Cedar	0	0	0	0	0	0	0	0	0	0	0	0	24	0	24
Cropland	9	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Herbaceous Openland	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Jack Pine	0	183	71	0	0	0	0	0	0	0	0	0	0	0	254
Lowland Conifers	0	0	0	0	2	42	0	0	0	0	0	23	0	0	68
Lowland Deciduous	0	0	0	0	0	18	0	0	0	23	50	124	127	0	343
Lowland Shrub	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Lowland Spruce/Fir	0	0	0	0	0	14	10	0	0	3	0	0	0	0	27
Marsh	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Mixed Upland Deciduous	15	0	0	0	0	18	0	0	8	29	0	0	0	0	70
Natural Mixed Pines	0	0	0	0	0	4	11	20	0	0	2	9	0	0	46
Red Pine	0	0	0	0	0	0	0	144	0	0	0	0	0	0	144
Upland Conifers	0	0	0	5	0	0	0	5	0	0	0	0	0	0	10
Upland Mixed Forest	0	0	0	0	9	0	0	13	0	0	0	0	0	0	22
Water	65	0	0	0	0	0	0	0	0	0	0	0	0	0	65
White Pine	0	0	0	0	5	0	18	39	0	0	0	36	0	0	99
<b>Total</b>	<b>112</b>	<b>183</b>	<b>113</b>	<b>5</b>	<b>30</b>	<b>83</b>	<b>43</b>	<b>232</b>	<b>8</b>	<b>23</b>	<b>81</b>	<b>150</b>	<b>196</b>	<b>0</b>	<b>1261</b>



## Report 2 – Proposed Treatment Summaries

**Roscommon Mgt. Unit**  
**Year of Entry 2016**

**Compartment 153**  
**Total Compartment Acres: 1,261**

### Acres by Treatment Type

Commercial Harvest - 247    Tree Planting - 16    Other - 0  
 Habitat Cut - 0    Opening Maintenance - 0

### Cover Type by Harvest Method

	<i>Clearcut</i>	<i>Selection</i>	<i>Seed Tree</i>	<i>Shelterwood</i>	<i>Thinning</i>	<i>Other - Specify</i>	<i>Total Acres</i>
<b>Lowland Deciduous Forest</b>	57	0	0	0	0	0	57
<b>Mixed Upland Deciduous</b>	29	0	8	0	0	0	37
<b>Natural Pines</b>	16	0	0	0	106	0	122
<b>Planted Pines</b>	0	0	0	0	32	0	32
<b>Total</b>	<b>101</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>138</b>	<b>0</b>	<b>247</b>



Stand	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
5	71153005-Cut	28.8	4199 - Other Mixed Upland Deciduous	High Density Log	109	81-110	Harvest	Clearcut with Reserves	4199 - Other Mixed Upland Deciduous	Cmpt. Review Proposal
<p><u>Prescription</u> Regenerate the stand by clearcutting with reserves to a 2 inch diameter. The reserve trees should be healthy oak for mast and white pine of good health and form. Leave some red pine for diversity. Leave one percent of the harvest area for retention.</p> <p><u>Specs:</u></p> <p><u>Other</u> <u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u></p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2015</p>										
6	71153006-Cut	15.8	42290 - Natural Mixed Pine	High Density Log	74	51-80	Harvest	Clearcut	4211 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Clearcut to a two inch diameter with no retention. Chip slash. Leave one percent of the harvest area for retention.</p> <p><u>Specs:</u></p> <p><u>Other</u> Site prep as needed to establish red pine. There is a small component of maple, aspen and oak already established. Site prep may include trenching, roller chopping or herbicide.</p> <p><u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u></p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2015</p>										
12	71153012-Cut	8.3	4191 - Mixed Upland Deciduous with Conifer	High Density Log	80	81-110	Harvest	Seed Tree	4310 - Pine, Oak Mix	Cmpt. Review Proposal
<p><u>Prescription</u> Promote white pine growth and oak regeneration with a shelterwood harvest to remove low quality and suppressed trees and open the canopy to promote oak regeneration. Leave quality, healthy trees.</p> <p><u>Specs:</u></p> <p><u>Other</u> <u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u></p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2015</p>										
18	71153018-Cut	56.6	6113 - Lowland Maple	High Density Log	121	111-140	Harvest	Clearcut with Reserves	6113 - Lowland Maple	Cmpt. Review Proposal
<p><u>Prescription</u> Regenerate the stand by clearcutting to a 2" dbh and a heavy thinning to a residual basal area of 60 in the 100 ft Riparian Management Zone. In the clearcut area leave scattered large canopy, healthy maple and oak for a seed source. In the thinning area remove the poor quality and suppressed trees first. Do not cut or remove trees that shade or overhang the river. Use the riparian management zone as retention.</p> <p><u>Specs:</u></p> <p><u>Other</u> The stand is wet most of the year, but may dry out in late summer. Most of the stand was wet/frozen at the time of inventory. Consider a three year contract.</p> <p><u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u></p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2015</p>										
41	71153041-Cut	105.8	42210 - Natural Red Pine	High Density Log	75	111-140	Harvest	Crown Thinning	4211 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Thin the stand to a residual basal area of 90-110, remove suppressed and poor formed trees first and look to create even spacing by removing dominants.</p> <p><u>Specs:</u></p> <p><u>Other</u> Due to the manner of the previous thinning the residual stand density is highly uneven. There are many suppressed trees. Overall they are healthy. Thinning at this stage will open the canopy and allow more oak understory development. Apply the appropriate snowmobile protection specs and use Hose Rd for access if cut during the snowmobile season.</p> <p><u>Comments:</u></p> <p><u>Next</u> <u>Steps:</u></p> <p><u>Proposed</u> <u>Start Date:</u> 10/01/2015</p>										

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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
48 71153048-Cut	25.0	42110 - Planted Red Pine	High Density Log	74	111-140	Harvest	Crown Thinning	4211 - Planted Red Pine	Cmpt. Review Proposal

Prescription Specs: Thin to a residual basal area of 80-110. Make the residual stand density even by removing suppressed and poor formed trees first. Look to maintain even spacing.

Other Comments: The stand density is highly variable, it is overstocked in some places and understocked in others. Thinning will maintain the growth and vigor of the stand. Apply the appropriate snowmobile protection specs and use Hose Rd for access if cut during the snowmobile season.

Next Steps:

Proposed Start Date: 10/01/2015

49 71153049-Cut	7.1	42110 - Planted Red Pine	High Density Log	73	141-170	Harvest	Crown Thinning	4211 - Planted Red Pine	Cmpt. Review Proposal
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Prescription Specs: Open the canopy to a residual basal area of 90-110 to allow for continued growth. Select suppressed, poor formed, and crowded trees first. Leave the aspen for diversity, future snags and coarse woody debris.

Other Comments: The dominant crowns are 1/4-1/3 of tree height, they are touching in many places, Growth rates have increased since thinning. This stand is ready to be thinned again. Apply the appropriate snowmobile protection specs and use Hose Rd for access if cut during the snowmobile season.

Next Steps:

Proposed Start Date: 10/01/2015

**Total Treatment Acreage Proposed: 247.3**

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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
	#Type!	#Type!							

Prescription  
Specs:

Other  
Comment:

Next  
Steps:

Proposed  
Start Date: #Type!

Limiting Factor

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**Total Treatment  
Acreage Proposed: 0.0**

## Report 5 – Site Conditions

Roscommon Mgt. Unit

Compartment 153

Ben Wiese : Examiner

Year of Entry 2016

### Availability for Management

Availability for Management			Dominant Site Conditions				
Total Acres	Acres Available	Acres Not Available					
			No	5C	3A	2G	
68	68		<b>Aspen</b>	68			
24		24	<b>Cedar</b>				24
254	149	104	<b>Jack Pine</b>	149			104
68		68	<b>Lowland Conifers</b>				68
341	57	284	<b>Lowland Deciduous</b>	57			284
27	10	17	<b>Lowland Spruce/Fir</b>	10			17
70	70		<b>Mixed Upland Deciduous</b>	70			
46	46		<b>Natural Mixed Pines</b>	39	7		
144	144		<b>Red Pine</b>	144			
10	10		<b>Upland Conifers</b>	10			
22	13	9	<b>Upland Mixed Forest</b>	13			9
99	67	32	<b>White Pine</b>	67		32	0
1,173	635	538	Total Forested Acres	628	7	32	506
	54%	46%	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
002	Not Available	2G: Too wet (sensitive soils, does not include access issues)	8	3J: Water quality / BMPs (stream, river, or lake)			
<b>Comments:</b>							
003	Not Available	2G: Too wet (sensitive soils, does not include access issues)	1	3J: Water quality / BMPs (stream, river, or lake)			
<b>Comments:</b>							

**Report 5 – Site Conditions**

Roscommon Mgt. Unit

Compartment 153

Ben Wiese : Examiner

Year of Entry 2016

004	Not Available	2G: Too wet (sensitive soils, does not include access issues)	20	3J: Water quality / BMPs (stream, river, or lake)	
<b>Comments:</b>					
005	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	7		
<b>Comments:</b>					
006	Not Available	2G: Too wet (sensitive soils, does not include access issues)	9	3J: Water quality / BMPs (stream, river, or lake)	
<b>Comments:</b>					
007	Not Available	2G: Too wet (sensitive soils, does not include access issues)	1	3J: Water quality / BMPs (stream, river, or lake)	
<b>Comments:</b>					
009	Not Available	2G: Too wet (sensitive soils, does not include access issues)	5	3J: Water quality / BMPs (stream, river, or lake)	
<b>Comments:</b>					
010	Not Available	2G: Too wet (sensitive soils, does not include access issues)	111	3J: Water quality / BMPs (stream, river, or lake)	
<b>Comments:</b>					

**Report 5 – Site Conditions**

Roscommon Mgt. Unit

Ben Wiese : Examiner

Compartment 153

Year of Entry 2016

011	Not Available	2G: Too wet (sensitive soils, does not include access issues)	37	
<b>Comments:</b>				
012	Not Available	2G: Too wet (sensitive soils, does not include access issues)	46	3J: Water quality / BMPs (stream, river, or lake)
<b>Comments:</b>				
013	Not Available	2G: Too wet (sensitive soils, does not include access issues)	50	3J: Water quality / BMPs (stream, river, or lake)
<b>Comments:</b>				
014	Not Available	2G: Too wet (sensitive soils, does not include access issues)	162	
<b>Comments:</b>				
015	Not Available	2G: Too wet (sensitive soils, does not include access issues)	5	3J: Water quality / BMPs (stream, river, or lake)
<b>Comments:</b>				
016	Not Available	2G: Too wet (sensitive soils, does not include access issues)	21	3J: Water quality / BMPs (stream, river, or lake)
<b>Comments:</b>				

**Report 5 – Site Conditions**

Roscommon Mgt. Unit

Compartment 153

Ben Wiese : Examiner

Year of Entry 2016

017	Not Available	2G: Too wet (sensitive soils, does not include access issues)	47
Comments:			
018	Not Available	3A: Potential old growth / biodiversity	6
Comments:			
020	Not Available	2G: Too wet (sensitive soils, does not include access issues)	17
Comments:			
021	Not Available	3A: Potential old growth / biodiversity	0
Comments:			
022	Not Available	3A: Potential old growth / biodiversity	19
Comments:			
030	Not Available	3A: Potential old growth / biodiversity	8
Comments:			



## Report 6 – 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
<b>Muskegon River Floodplain</b> <b>Comments</b>	Spring-Seeps, Riparian Areas	Riparian Area	<b>SCA</b>	
<b>50%WP50%RP</b> <b>Comments</b> Less than three acres	Potential Old Growth		<b>SCA Removal</b>	



**Report 7 – 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	Archaeological Site	An aquatic or terrestrial area of the State that contains physical remains of human occupation. These are sites of cultural and historical significance that may occur upon terrestrial areas and Great Lakes bottomlands. They include thousands of Native American settlements and burial sites, as well as French and British outposts, nineteenth century logging camps, mines and homesteads. Beneath the waters of the Great Lakes, there are shipwrecks and other remains documenting the maritime trade. Such sites may be identified by Natural heritage data from the State Historic Preservation Office. Proposed treatments in this compartment will be implemented in such a manner as to maintain the integrity of these sites. Due to the sensitive nature of this information, no further detail about location is available.
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.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4310 - Pine, Oak Mix	High Density Pole	9.0	48	1-50	Long, narrow, mixed upland stand in the northwest corner of the compartment. The age likely ranges +/- ten years. There are some wet areas with alder.
2	6126 - Lowland Jack Pine	High Density Sapling	104.4	12		Sapling size jack pine plantation, that stand was final harvested in 1997-98, seeded to jack pine in December 1999, trenched and planted to jack pine in May 2002. South 2/3 of the stand are lowland.
5	4199 - Other Mixed Upland Deciduous	High Density Log	28.8	109	81-110	Mixed upland stand with oak that ranges from healthy, high quality red/black oak to poor quality senescing pin oak. Roughly ten percent of the canopy is white pine poles and logs. There is a class of red maple poles and a white pine sub-canopy that is dense in places. There are large white pine in the southeast part of the stand.
6	42290 - Natural Mixed Pine	High Density Log	15.8	74	51-80	Mixed pine stand with some aspen, red maple and oak.
7	4199 - Other Mixed Upland Deciduous	High Density Log	18.5	52	81-110	Mixed stand of red maple, oak and aspen. The subcanopy is full of white pine, which is what the stand will eventually succeed to. There is variability of species composition and density.
8	42290 - Natural Mixed Pine	High Density Pole	4.3	58	51-80	Small pole and log sized white pine stand.
9	4130 - Aspen	High Density Sapling	6.9	26		Aspen stand that was regenerate between 87-89 by cutting all aspen, red oak, white oak, jack pine, red maple, balsam fir, white birch, ash, basswood, and sugar maple that are 2" plus dbh.
10	42200 - Natural White Pine	High Density Log	7.8	137	171-200	Mature white pine stand with hemlock and red pine.
11	42290 - Natural Mixed Pine	High Density Log	1.8	124	171-200	Small, isolated, mature, red pine and white pine stand on the edge of the Muskegon River floodplain. There is some cedar and redmaple mixed in the canopy. This is a unique stand.
12	4191 - Mixed Upland Deciduous with Conifer	High Density Log	8.3	80	81-110	A pin oak and white pine stand with a mix of red maple, red pine and white oak. The pin oak is nearing the end of its life span, the white pine is healthy.
13	6118 - Lowland Deciduous with Cedar	Medium Density Pole	18.1	50		Lowland stand with dead/dying ash, cedar and tag alder.
14	6113 - Lowland Maple	High Density Log	17.8	142	111-140	This stand is part of the Muskegon river floodplain. Made up of lowland maple consisting of both red and silver with swamp white oak and ash dying from EAB. There is an old RR grade and bridge sight.
15	4310 - Pine, Oak Mix	High Density Log	13.2	74	51-80	Mixed upland white pine with oak and aspen.
16	6129 - Mixed Coniferous Lowland Forest	High Density Pole	25.0	50		



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
17	4133 - Aspen, Mixed Pine	High Density Pole	13.5	46	111-140	A young white pine stand with mixed deciduous that was harvested between 87-89 by cutting all aspen, red oak, white oak, jack pine, red maple, balsam fir, white birch, ash, basswood, and sugar maple that are 2" plus dbh.
18	6113 - Lowland Maple	High Density Log	56.6	121	111-140	Lowland stand consisting of red and silver maple and white oak, the trees are large and healthy. This stand is part of the Muskegon River flood plain. Emerald Ash Borer is present in the ash. There is a trace amount of cedar.
19	6113 - Lowland Maple	High Density Log	27.8	121		Lowland maple stand that is part of the Muskegon River floodplain.
20	6113 - Lowland Maple	High Density Log	20.0	121	81-110	Large, healthy, mature lowland maple, swamp white oak and ash with borer.
21	42290 - Natural Mixed Pine	High Density Log	6.9	140	200+	Mature natural white and red pine stand on the edge of the Muskegon River floodplain. There is a small amount of oak and aspen mixed in. In the north part of the stand there is a small inclusion of a white pine pole stand with a white pine understory, which is where the lower basal area is. The majority of the red pine is in the east part of the stand.
22	6129 - Mixed Coniferous Lowland Forest	High Density Pole	10.9	50		
23	6119 - Mixed Lowland Deciduous Forest	High Density Log	4.8	126	111-140	Lowland maple stand with swamp white oak and ash. The stand is a small peninsula adjacent to the Muskegon River, it is a floodplain and is likely seasonally flooded. The ash is dead and dying from the EAB, the maple and oak are healthy. There is a trace amount of cedar.
24	42200 - Natural White Pine	High Density Log	18.7	129	171-200	Natural white and red pine stand that is part of an ancient floodplain along the Muskegon River. The stand borders lowland and is adjacent to uplands. It may be seasonally wet or experience occasional flooding. This is a nice stand that is approaching old growth status.
25	6113 - Lowland Maple	High Density Log	22.3	114		
27	6113 - Lowland Maple	High Density Log	68.0	114		
28	42200 - Natural White Pine	High Density Pole	34.9	76	1-50	In 2009 the stand was harvested by removing all jack pine, pin oak, aspen and red maple as part of Sale Number 71-029-06-01 Canoe Camp Removal. White oak, white pine and red pine were left.  Two aged stand with a red and white pine overstory and an oak understory. The basal area is variable.
30	6129 - Mixed Coniferous Lowland Forest	High Density Pole	6.3	50		



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
31	42210 - Natural Red Pine	High Density Pole	1.9	71	141-170	Small pine and oak stand.
32	6113 - Lowland Maple	High Density Log	15.7	109	51-80	Lowland maple (red and silver) stand that is part of the Muskegon River floodplain. EAB present.
34	42120 - Planted Jack Pine	High Density Pole	58.3	26	81-110	Pole sized, healthy jack pine plantation. This stand was harvested in the fall of 1987 by cutting all species which contain at least one 100 inch pulpwood stick to a four inch top diameter.
36	42110 - Planted Red Pine	High Density Log	4.8	74	81-110	This stand was previously thinned in 96 or 97 by removing only the jack pine and oak. A wildfire underburned between 2005 and 2009. Some trees did not survive the fire, there is a mortality pocket centrally located with dense oak regeneration. The tree boles are charred 15-20 feet in places.
37	42200 - Natural White Pine	High Density Log	4.3	129	171-200	Mature natural white pine stand that is adjacent to the floodplain and may be seasonally flooded. The trees have good spacing and healthy crowns. There is a trace amount of birch.
38	6113 - Lowland Maple	High Density Log	34.1	109	111-140	Lowland maple (red and silver) stand that is part of the floodplain. This stand is likely seasonally flooded. The oak is more concentrated to the east and north.
39	42290 - Natural Mixed Pine	High Density Log	2.4	117	171-200	Natural red and white pine with an oak component, this stand is approaching old growth status. The pine is mature and healthy. This stand is of slightly higher elevation than the adjacent floodplain and may be occasionally flooded. There is a heavy white pine understory.
40	42221 - Natural Jack Pine, Mixed Deciduous	High Density Sapling	78.5	13		This stand was clearcut in 96-97 and seeded to jack pine in Dec. 1998. The seeding was not successful and the stand was hand planted to jack pine in May of 2001.
41	42210 - Natural Red Pine	High Density Log	105.8	75	111-140	Harvested in 96 or 97 by removing only the jack pine and oak. Healthy red pine with an uneven distribution. There is a well developed understory of oak. A recreation trail runs through the stand.
42	42200 - Natural White Pine	High Density Pole	4.3	73	81-110	Upland pole sized white pine with a component of oak and aspen. The pin oak is even-aged and senescing.
43	4199 - Other Mixed Upland Deciduous	Low Density Sapling	14.6	5		This stand was clearcut in 2009, 71-011-06-01 Portky Pine Harvest. Trenched in 2009 and planted to red pine in 2010
44	6113 - Lowland Maple	High Density Log	5.2	94	111-140	Lowland maple (red and silver) growing on the Muskegon River floodplain.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
45	42200 - Natural White Pine	High Density Pole	15.2	64	51-80	This stand was harvested in 2009 by removing all jack pine and hardwood. 71-011-06-01 Porky Pine Harvest Unevenly distributed white pine, the density varies in areas of low canopy density aspen and oak splings are regenerating well. The red pine is mostly in the south part of the stand.
46	429 - Mixed Upland Conifers	High Density Pole	5.2	73	51-80	White pine and balsam fir stand that may be seasonally flooded. This stand borders a floodplain. The cover is highly variable in distribution and size. The balsam fir is more concentrated in the north of the stand.
47	6113 - Lowland Maple	High Density Log	34.0	114		
48	42110 - Planted Red Pine	High Density Log	25.0	74	111-140	Red pine stand that was harvested in 2009 by thinning the red and white pine and by cutting all oak and jack pine. 71-011-06-01 Porky Pine Harvest.
49	42110 - Planted Red Pine	High Density Log	7.1	73	141-170	Red and white pine stand that has been thinned in the past. There are large red and white pine in the east part of the stand. This part of the stand appears to be of natural origin. The west side of the stand is more plantation but after the thinning is taking on natural characteristics. Aspen is present in a trace amount, it is senescing. There are red pine monarchs scattered throughout. Lowland on the east side with cedar.
50	42260 - Natural Pine, Mixed Deciduous	High Density Log	10.5	64	111-140	Mixed upland pine stand, two-aged with super canopy red and white pine and a pole and log sized cohort of white pine, red maple and oak. The west part of the stand has a pocket of large white and red pine. There is a swale running through the middle of the stand.
51	4133 - Aspen, Mixed Pine	High Density Sapling	12.8	27		This stand was regenerated in 1987. Aspen mixed with other deciduous. There is open grown white pine and scattered super canopy red pine. Hypoxylon present in some of the aspen.
52	6122 - Black Spruce	High Density Pole	2.7	109	81-110	Black spruce stand with white pine, cedar and red maple. Black spruce understory.
53	6122 - Black Spruce	Low Density Pole	14.2	64		Lowland spruce and white pine with alder.
54	4130 - Aspen	High Density Sapling	3.0	26	51-80	Aspen stand that was regenerated in 1988.
56	42200 - Natural White Pine	High Density Pole	5.3	49	51-80	Long narrow stand that borders lowland and a WLD opening. There is a small pocket of aspen along the west end.
57	4133 - Aspen, Mixed Pine	Medium Density Pole	2.4	27	1-50	This stand was regenerated in 1987. Aspen mixed with red maple and white pine.
58	6113 - Lowland Maple	High Density Log	18.1	94	111-140	Lowland maple stand that is part of the Muskegon River floodplain. The maple and oak are healthy the Ash is dead and dying from EAB. the stand is seasonally flooded.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
60	42290 - Natural Mixed Pine	High Density Log	4.4	73	81-110	Mixed pine with oak, a WLD opening is in the middle of the stand.
61	4139 - Aspen, Mixed Deciduous	Medium Density	12.4	5		This stand was clearcut in 2009, 71-011-06-01 Porky Pine Harvest. Trenched in 2009 and planted to jack pine in 2010.
62	4130 - Aspen	High Density Sapling	17.4	27		Aspen stand that was regenerated in 1987.
63	429 - Mixed Upland Conifers	Medium Density Pole	5.2	35	1-50	Open grown white and mixed deciduous. Low density.
64	6122 - Black Spruce	High Density Pole	10.2	73	81-110	Pole sized black spruce with spruce and alder in the understory. There is a trace amount of red maple and paper birch. This stand is unique to the compartment.
66	6120 - Lowland Cedar	High Density Log	24.2	146	141-170	Lowland cedar with EAB infested ash. The balsam fir understory has a variable density and uneven distribution. There is a small pocket in the southwest corner of balsam fir, red maple, white pine and black spruce.
67	6123 - Lowland Fir	High Density Pole	2.4	48	81-110	Pole sized balsam fir.
68	6129 - Mixed Coniferous Lowland Forest	High Density Pole	23.3	112	141-170	Lowland conifer with more cedar in the east and black spruce in the west. There is a trace amount of paper birch, white pine and black ash.
69	42200 - Natural White Pine	High Density Log	5.6	127	200+	Mature white pine with red pine, there is a small amount of black oak and bigtooth aspen. Large healthy trees approaching old growth status. There is a small open area with hardwood in the central part of the stand.
70	42200 - Natural White Pine	High Density Pole	2.8	67	111-140	Pole sized white pine with super canopy pin oak.
71	42121 - Planted Jack Pine, Mixed Deciduous	High Density Sapling	12.6	20	1-50	Jack pine plantation, sapling size.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
3	6220 - Alder/willow	1.3	No	Unspecified	
4	6233 - Wet Meadow	1.5	No	Unspecified	
26	50 - Water	61.6	No	Unspecified	
29	3104 - Degraded	3.5	No	Unspecified	
33	50 - Water	1.2	No	Unspecified	
35	50 - Water	1.9	No	Unspecified	
55	6229 - Mixed lowland shrub	4.2	No	Unspecified	
59	2113 - Forage Crops	8.5	Yes	Unspecified	Clearcut in 87 or 88.
65	6233 - Wet Meadow	1.2	No	Unspecified	It was difficult to make a cover type call due to the snow.