



# Compartment Review Presentation

## Cadillac Forest Management Unit

Compartment 109

Entry Year 2015

Acreage: 1,266

County Missaukee

Management Area: Houghton Lake Wetlands

**Revision Date:** 06/28/2013

**Stand Examiner:** Tom Haxby

### Legal Description:

22 N, R 7W, Sections 1,2, 11 and 12

### Identified Planning Goals:

Continue management of scattered aspen, jack pine and red pine stands for habitat and forest products. Consider treatments of lowland areas where accessible and not limited by hydrology within the context of management for wildlife habitat and forest products.

### Soil and topography:

Low areas are Lupton muck, Kawkawlin loam with upland being Emmet-Montcalm and Graycalm.

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

The area is located 5 miles east of Lake City and surrounded by private tracts of agricultural upland. Various land exchanges have helped to consolidate ownership. The private parcels in the E 1/2 of the SE 1/4 in Section 2 and E1/2 of the NE 1/4 of Section 11 should be given top priority for acquisition.

### Unique Natural Features:

Great blue heron rookery to ne. Bigmouth shiner to s, s/se, and ne. Round pigtoe (mussel) to w/sw. Potential for great blue heron rookery, bald eagle, wood turtle, Blanding's turtle, eastern massasauga, and osprey. Potential for marsh birds: common moorhen, least bittern, king rail, yellow rail, and American bittern.

### Archeological, Historical, and Cultural Features:

None known.

### Special Management Designations or Considerations:

None.

### Watershed and Fisheries Considerations:

A tributary of the West Branch of the Clam River flows through the northeast corner of this compartment. (R. O'Neal, 8/24/2013).

### Wildlife Habitat Considerations:

This compartment is in the Highplains Ecosystem, Cadillac Subsection, LTA 5149 and 5211. In LTA 5149, soils are generally poorly drained organics with inclusions of poorly to moderately well drained sands. Historic vegetation included mixed lowland conifers, cedar, or tamarack swamps with forests of hemlock, mixed with beech or white pine on sandy areas. In LTA 5211, soils are deep, excessively drained sands with low natural fertility. Historic vegetation was a variety of conifer dominated forests. Wildlife management objectives are to maintain the area as a natural area and to manage the aspen on a 50-60 year rotation. Featured species of species interest are deer, woodcock, ruffed grouse, and snowshoe hare. (E. Victory, 8/21/13)

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

Surface sediments consist of coarse-textured glacial till and glacial outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 600 and 800 feet. Beneath the glacial drift are the Pennsylvanian Grand River and Saginaw Formations. The Saginaw is quarried for clay/shale in other parts of the State. A gravel pit is located one mile to the east and gravel potential is considered good. The compartment is located two miles north of Falmouth Field. The field has produced from the Stray Sandstone, Dundee, Richfield and Prairie du Chien. The entire Compartment is leased for oil and gas development. (T. Hoane, 3/6/2013).

### Vehicle Access:

A forest road access plan is detailed on the compartment map. Identified are state and county roads as well as forest roads and trails under the jurisdiction of the DNR. Also indicated are forest roads and trails under the jurisdiction of the DNR that are proposed for closure. These roads were determined to be in excess of the access needs in the area, are a

threat to the resources, or are a concern environmentally.

**Survey Needs:**

May need a survey along stand 16 prior to possible treatment.

**Recreational Facilities and Opportunities:**

There are no designated recreational trails or facilities within this compartment. Dispersed recreation opportunities include hunting and trapping. (T.M.N., 8/26/2013).

**Fire Protection:**

Small and large tracts with homes and other structures that could be threatened by wildfire, are around the perimeter of the compartment. Access to the compartment is adequate and could be improved for emergency needs. There is the possibility of large fire growth on Very High and Extreme days. Resource damage could occur on those days. The most likely cause of a wildfire would be from the private property outside the compartment boundary. (B. Tower, 2013).

**Additional Compartment Information:**

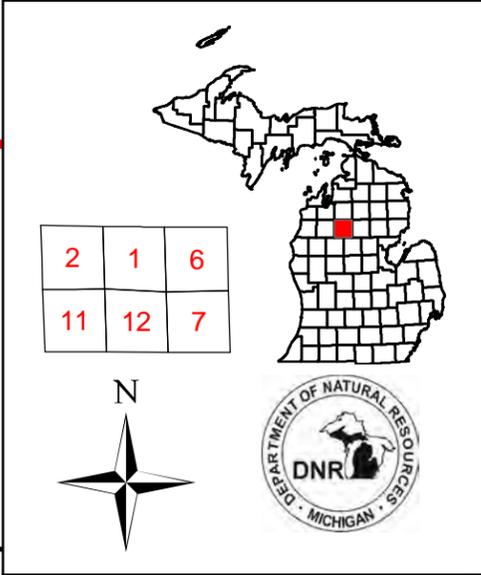
**The following reports from the Inventory are attached:**

- 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**

Compartment: 109  
 T22N R06W  
 06 07  
 T22N R07W  
 01 02 11 12  
 County: Missaukee  
 Unit: Cadillac  
 YOE: 2015  
 Acres: 1,266 GIS Calculated  
 Examiner: Tom Haxby  
 Map Revised: 10/04/2013  
 Map Phase: Pre-Review



# Cover Type & Treatment Map

**Stand #**  
 23  
**Stocking Density**  
 (412)0 - A7  
 Level 3 OI  
 Level 4 Code  
**Cover Type Code**

**Legend**

- Miris Corners
- Remonumented Section Corners
- Highway
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- County Poor Dirt Roads
- Trail (Non-Recreation)
- Closed Roads
- Stream
- Intermittent Stream
- Lakes and Rivers
- State Forest Land

**Treatments**

- Clearcut (w/Reserves, Patch/Strip)

**Forest Stands**

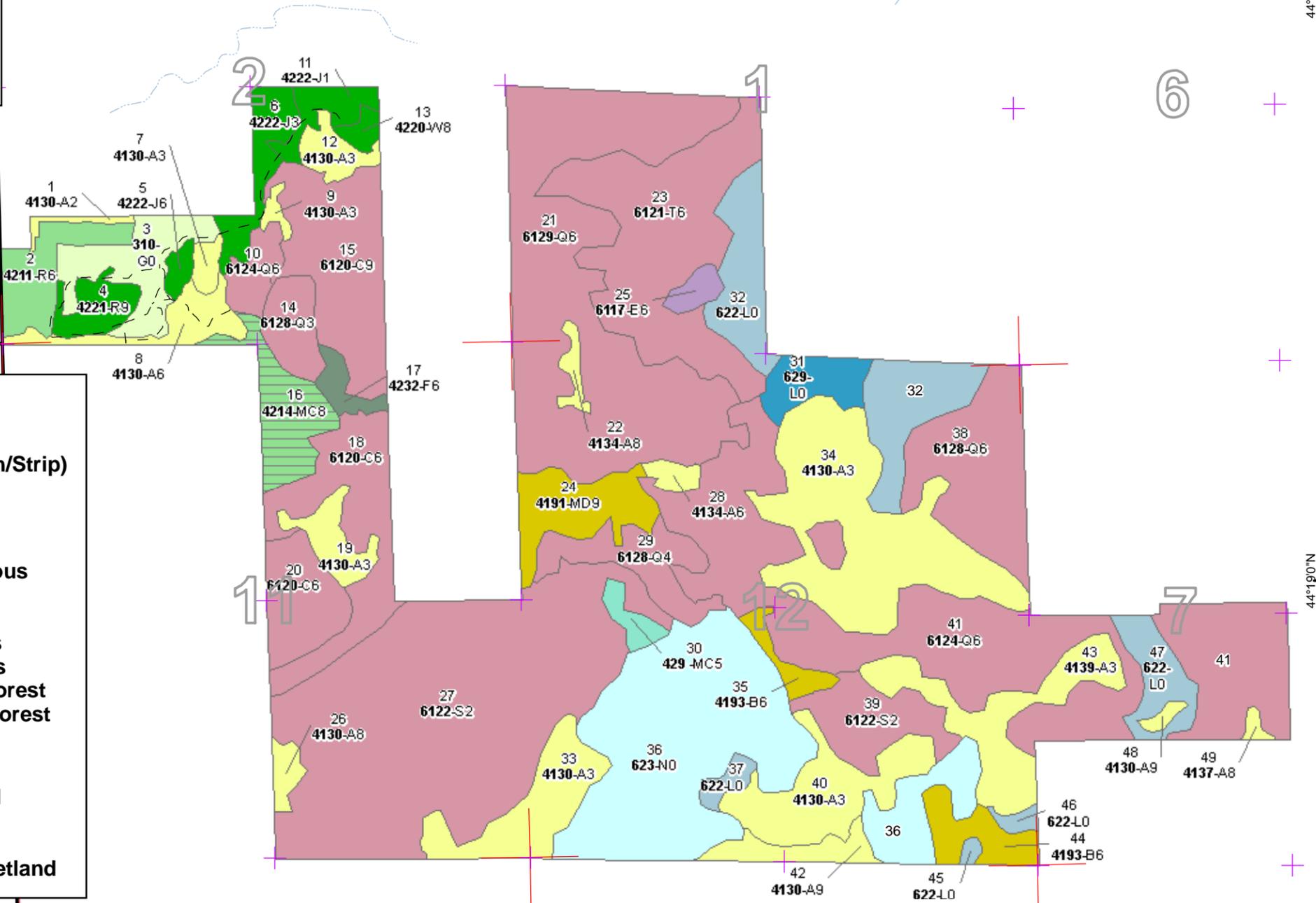
**Level 3**

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

**Non-Forest Stands**

**Level 3**

- 310 - Herbaceous Openland
- 622 - Lowland Shrub
- 623 - Emergent Wetland
- 629 - Mixed non-forested wetland



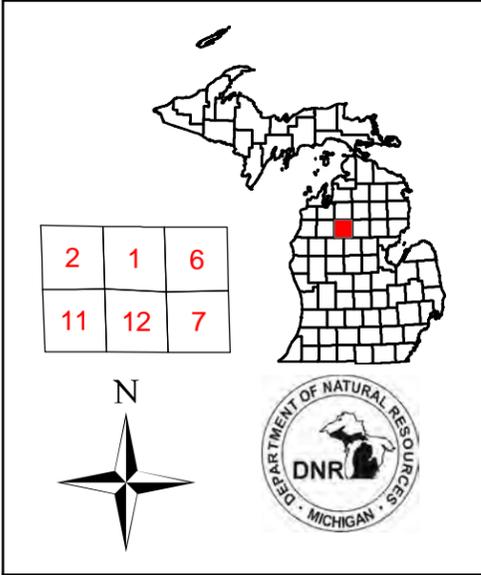
85°9'0"W 85°8'0"W 85°7'0"W 85°6'0"W 85°5'0"W

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 Taxway Ida  
 44°20'0"N  
 44°19'0"N  
 S Burkett Rd

44°20'0"N  
 44°19'0"N  
 85°5'0"W



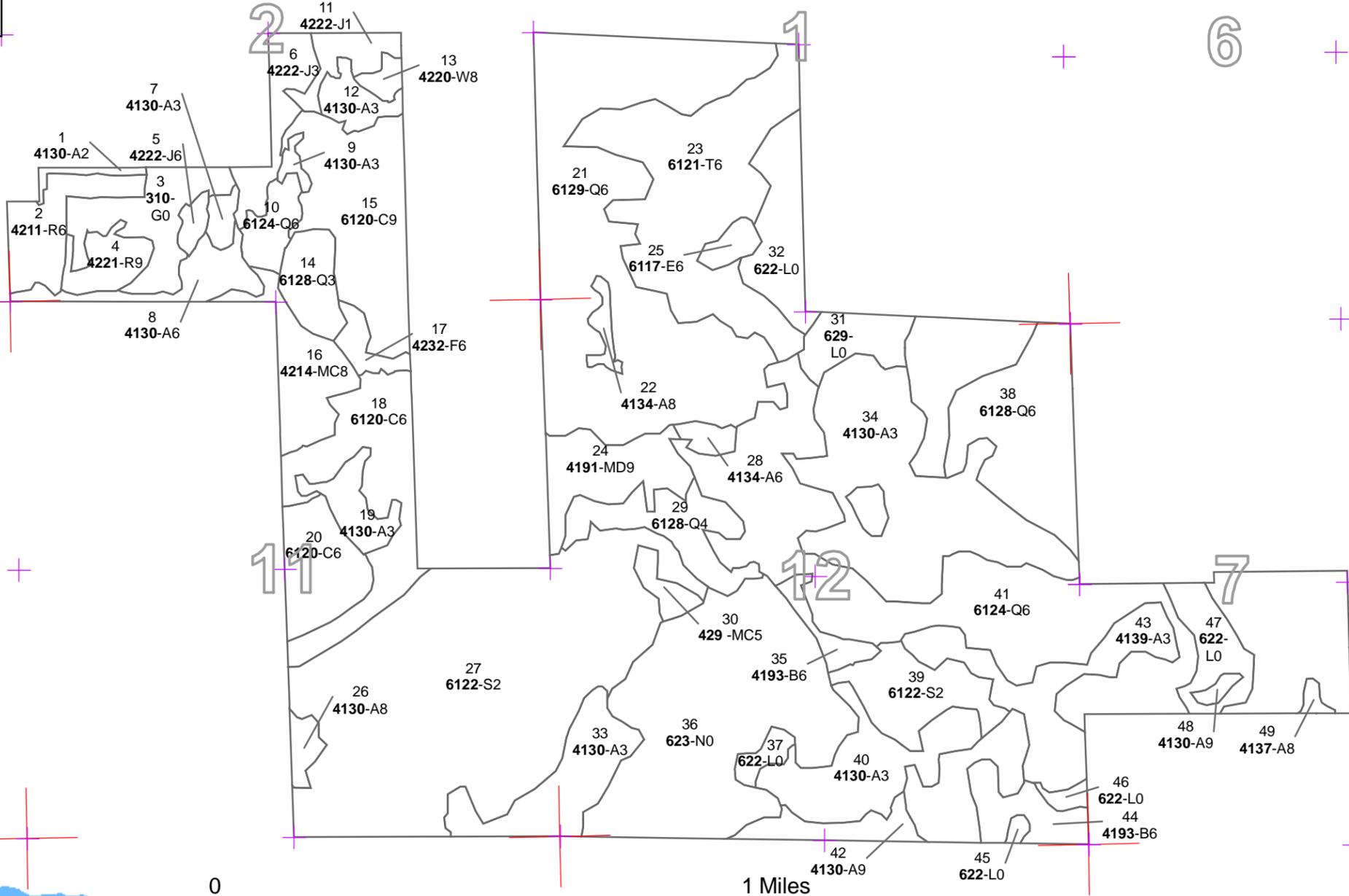
Compartment: 109  
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 County: Missaukee  
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 Examiner: Tom Haxby  
 Map Revised: 10/04/2013  
 Map Phase: Pre-Review



# Special Conservation Areas & Site Conditions Map

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

**Legend**  
 Miris Corners  
 Stand Boundaries



85°9'0"W 85°8'0"W 85°7'0"W 85°6'0"W

44°20'0"N 44°19'0"N

44°20'0"N 44°19'0"N



	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	156	25	2	0	12	0	0	17	0	0	0	0	0	3	216
Cedar	0	0	0	0	0	0	0	0	0	0	20	0	81	0	101
Herbaceous Openland	21	0	0	0	0	0	0	0	0	0	0	0	0	0	21
Jack Pine	0	0	21	0	0	0	3	0	0	0	0	0	0	0	24
Lowland Conifers	0	12	0	0	20	155	0	0	41	128	0	0	0	0	356
Lowland Deciduous	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4
Lowland Shrub	75	0	0	0	0	0	0	0	0	0	0	0	0	0	75
Lowland Spruce/Fir	0	0	0	0	166	21	0	0	0	0	0	0	0	0	187
Marsh	114	0	0	0	0	0	0	0	0	0	0	0	0	0	114
Mixed Upland Deciduous	0	0	0	0	0	0	0	21	0	0	0	0	0	0	21
Paper Birch	0	0	0	0	0	18	0	0	0	0	0	0	0	0	18
Planted Mixed Pines	0	0	0	0	0	0	0	0	0	0	0	0	0	20	20
Red Pine	0	0	17	0	0	0	9	0	0	0	0	0	0	0	26
Tamarack	0	0	0	0	0	0	0	0	0	71	0	0	0	0	71
Upland Conifers	0	0	0	0	0	5	0	0	0	0	0	0	0	0	5
Upland Spruce/Fir	0	0	0	0	0	0	0	5	0	0	0	0	0	0	5
White Pine	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
<b>Total</b>	<b>366</b>	<b>37</b>	<b>40</b>	<b>0</b>	<b>198</b>	<b>203</b>	<b>12</b>	<b>43</b>	<b>41</b>	<b>199</b>	<b>20</b>	<b>3</b>	<b>81</b>	<b>23</b>	<b>1266</b>



## Report 2 – Proposed Treatment Summaries

**Cadillac Mgt. Unit**  
**Year of Entry 2015**

**Compartment 109**  
**Total Compartment Acres: 1,266**

### Acres by Treatment Type

Commercial Harvest - 20	Tree Planting - 20	Other - 0
Habitat Cut - 0	Opening Maintenance - 0	

### Cover Type by Harvest Method

		Clearcut	Selection	Seed Tree	Shelterwood	Thinning	Other - Specify	Total Acres
<b>Planted Pines</b>		20	0	0	0	0	0	20
	<b>Total</b>	20	0	0	0	0	0	20



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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
16 63109016-Cut	19.5	42140 - Planted Mixed Pine	Medium Density Log	56	1-50	Harvest	Clearcut with Reserves	4211 - Planted Red Pine	Cmpt. Review Proposal

Prescription Final harvest red pine and white pine. Leave 18+ inch diameter trees for retention and supercanopy structure. Leave scattered pockets of aspen and red maple advanced regeneration.

Other Comments: May need to survey boundary with private.

Next Steps: Evaluate site preparation method for remaining understory with TMS before re-planting to red pine.

Proposed Start Date: 10/01/2014

**Total Treatment Acreage Proposed: 19.5**



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

Prescription  
Specs:

Other  
Comment:

Next  
Steps:

Proposed  
Start Date: #Type!

Limiting Factor

**Total Treatment**  
**Acreage Proposed: 0.0**

## Report 5 – Site Conditions

Cadillac Mgt. Unit  
Tom Haxby : Examiner

Compartment 109  
Year of Entry 2015

### Availability for Management

Total Acres	Acres Available	Acres Not Available		Dominant Site Conditions					
				No	5C	4A	2H	2G	2B
216	199	17	<b>Aspen</b>	199			17		
101		101	<b>Cedar</b>					101	
24	24		<b>Jack Pine</b>	24					
356	40	316	<b>Lowland Conifers</b>	40				316	
4		4	<b>Lowland Deciduous</b>				4		
187		187	<b>Lowland Spruce/Fir</b>					187	
21	21		<b>Mixed Upland Deciduous</b>						21
18		18	<b>Paper Birch</b>				18		
20	20		<b>Planted Mixed Pines</b>	20					
26	9	17	<b>Red Pine</b>	9				17	
71		71	<b>Tamarack</b>					71	
5	5		<b>Upland Conifers</b>			5			
5	5		<b>Upland Spruce/Fir</b>		5				
3	3		<b>White Pine</b>	3					
1,056	326	730	Total Forested Acres	295	5	5	39	692	21
	31%	69%	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
003	Not Available	2G: Too wet (sensitive soils, does not include access issues)	43				
<b>Comments:</b>							
004	Not Available	2G: Too wet (sensitive soils, does not include access issues)	41	2B: Unknown if access through adjacent landowner(s) is possible			
<b>Comments:</b>							

**Report 5 – Site Conditions**

**Cadillac Mgt. Unit**  
**Tom Haxby : Examiner**

**Compartment 109**  
**Year of Entry 2015**

005	<b>Not Available</b>	<b>2G: Too wet (sensitive soils, does not include access issues)</b>	147	2B: Unknown if access through adjacent landowner(s) is possible	
<b>Comments:</b>					
006	<b>Not Available</b>	<b>2G: Too wet (sensitive soils, does not include access issues)</b>	71	2B: Unknown if access through adjacent landowner(s) is possible	
<b>Comments:</b>					
007	<b>Not Available</b>	<b>2G: Too wet (sensitive soils, does not include access issues)</b>	128		
<b>Comments:</b>					
008	<b>Not Available</b>	<b>2G: Too wet (sensitive soils, does not include access issues)</b>	20		
<b>Comments:</b>					
009	<b>Not Available</b>	<b>2G: Too wet (sensitive soils, does not include access issues)</b>	38		
<b>Comments:</b>					
010	<b>Not Available</b>	<b>2G: Too wet (sensitive soils, does not include access issues)</b>	166		
<b>Comments:</b>					

## Report 5 – Site Conditions

Cadillac Mgt. Unit  
Tom Haxby : Examiner

Compartment 109  
Year of Entry 2015

011	<b>Not Available</b>	<b>2G: Too wet (sensitive soils, does not include access issues)</b>	21	
<b>Comments:</b>				
012	<b>Not Available</b>	<b>2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)</b>	3	
<b>Comments:</b>				
013	<b>Not Available</b>	<b>2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)</b>	4	2B: Unknown if access through adjacent landowner(s) is possible
<b>Comments:</b>				
014	<b>Available</b>	<b>4A: No merchantable products (see product standards)</b>	5	
<b>Comments:</b>				
015	<b>Not Available</b>	<b>2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)</b>	4	
<b>Comments:</b>				
016	<b>Available</b>	<b>2B: Unknown if access through adjacent landowner(s) is possible</b>	21	
<b>Comments:</b>				

Report 5 – Site Conditions

Cadillac Mgt. Unit  
Tom Haxby : Examiner

Compartment 109  
Year of Entry 2015

017	Not Available	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	10
<b>Comments:</b>			
019	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	5
<b>Comments:</b> Treat this 5 acre stand along with the red pine to the west (stand 16).			
020	Not Available	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	6
<b>Comments:</b>			
021	Not Available	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	12
<b>Comments:</b>			
022	Available	2I: Survey needed	19
<b>Comments:</b>			



### 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>Comments</b>				



### Report 7 – DEDICATED CONSERVATION AREA DETAILS

\* This is a list of Dedicated Biodiversity Areas for this compartment along with a 1/4 mile buffer surrounding the compartment. Refer to Dedicated Conservation Area Map for areas that the below listed Conservation Areas are located.

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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## Cadillac Mgt. Unit

## Report 8 – Forested Stands

Compartment: 109  
Year of Entry: 2015

Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
4130 - Aspen	Medium Density	2.1	20		Stand swapped from Non-Forested to Forested.
42110 - Planted Red Pine	High Density Pole	16.5	25	171-200	
42210 - Natural Red Pine	High Density Log	9.2	61	81-110	
42220 - Natural Jack Pine	High Density Pole	2.9	65		
42220 - Natural Jack Pine	High Density Sapling	12.8	28		trace natural red pine
4130 - Aspen	High Density Sapling	3.3	15		
4130 - Aspen	High Density Pole	12.3	45		
4130 - Aspen	High Density Sapling	1.9	14		
6124 - Lowland Spruce- Fir	High Density Pole	8.3	55		
42220 - Natural Jack Pine	Low Density Sapling	8.2	25		Low density scattered trees in grass areas. Possibly an old opening that has woody encroachment. trace natural red pine, red maple, cherry.
4130 - Aspen	High Density Sapling	7.2	14		trace black cherry, red maple.
42200 - Natural White Pine	Medium Density Log	3.0	112	81-110	trace aspen, red pine, white spruce, balsam.
6128 - Lowland Coniferous, Mixed Deciduous	High Density Sapling	11.8	10		Stand swapped from Non-Forested to Forested.
6120 - Lowland Cedar	High Density Log	43.1	125		trace hemlock, paper birch, white spruce.
42140 - Planted Mixed Pine	Medium Density Log	19.5	Uneven Age	1-50	
42320 - Upland Spruce	High Density Pole	5.2	75		
6120 - Lowland Cedar	High Density Pole	37.8	125		
4130 - Aspen	High Density Sapling	9.5	15		Mixed aspen and red maple.

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## Cadillac Mgt. Unit

## Report 8 – Forested Stands

Compartment: 109  
Year of Entry: 2015

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
20	6120 - Lowland Cedar	High Density Pole	19.8	100		
21	6129 - Mixed Coniferous Lowland Forest	High Density Pole	127.8	90		could do some small hab cuts in cedar areas to feed deer if needed
22	4134 - Aspen, Spruce/Fir	Medium Density Log	3.2	Uneven Age		The aspen is starting to break apart.
23	6121 - Tamarack	High Density Pole	71.3	90		
24	4191 - Mixed Upland Deciduous with Conifer	High Density Log	21.2	75		final harvest if you can get access
25	6117 - Lowland Deciduous, Mixed Coniferous	High Density Pole	4.1	50		
26	4130 - Aspen	Medium Density Log	4.0	70		
27	6122 - Black Spruce	Medium Density	166.2	40		Stand swapped from Non-Forested to Forested. most of the tamarack is dead snags
28	4134 - Aspen, Spruce/Fir	High Density Pole	3.5	15		New stand added. old habit cut? just getting to pole size
29	6128 - Lowland Coniferous, Mixed Deciduous	Low Density Pole	19.9	40		Stand swapped from Non-Forested to Forested. most of the cedar is standing snags
30	429 - Mixed Upland Conifers	Medium Density Pole	4.7	50		maybe hab cut isolated island
33	4130 - Aspen	High Density Sapling	24.5	8		New stand added.
34	4130 - Aspen	High Density Sapling	71.9	7		Area to north cut in 2003, east side cut in 2006 south area treated in 2009 - all various ages from recent cuts.
35	4193 - Birch, Aspen	High Density Pole	5.5	55		Stand is similar to stand 35b.
38	6128 - Lowland Coniferous, Mixed Deciduous	High Density Pole	41.3	85		very wet low basal area and low quality ash is dead no access through all the alder
39	6122 - Black Spruce	Medium Density	21.1	55		New stand added. a lot of snags
40	4130 - Aspen	High Density Sapling	29.1	8		New stand added.

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Cadillac Mgt. Unit

## Report 8 – Forested Stands

Compartment: 109  
Year of Entry: 2015

	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
41	6124 - Lowland Spruce- Fir	High Density Pole	146.9	55	81-110	wet hummocy small diameters
42	4130 - Aspen	High Density Log	9.5	70		Stand to NW isbuffer left for eagles nest after treatment last entry.
43	4139 - Aspen, Mixed Deciduous	High Density Sapling	30.5	3		
44	4193 - Birch, Aspen	High Density Pole	12.3	55		New stand added. small acreage wet access
48	4130 - Aspen	High Density Log	1.6	70		New stand added.
49	4137 - Aspen, Birch	Medium Density Log	1.5	70		New stand added. no access unless you habit cut, low basal area



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
3	3101 - Poverty Grass, Cladonia	21.4	Unspecified	Unspecified	
31	629 - Mixed non-forested wetland	11.9	No	Unspecified	
32	6229 - Mixed lowland shrub	42.8	No	Unspecified	
36	6239 - Mixed Emergent Wetland	113.5	No	Unspecified	
37	6220 - Alder/willow	3.7	No	Unspecified	
45	6220 - Alder/willow	1.1	No	Unspecified	
46	6220 - Alder/willow	2.1	No	Unspecified	
47	6229 - Mixed lowland shrub	13.3	No	Unspecified	