



# Compartment Review Presentation

## Cadillac Forest Management Unit

Compartment 93

Entry Year 2016

Acreage: 2,463

County Missaukee

Management Area: Houghton Lake Wetlands

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**Revision Date:** 04/16/2014

**Stand Examiner:** Steve Eisele

### Legal Description:

T23N R5W, Sections 24-29 31, 35, & 36

### Identified Planning Goals:

Vegetation management in the Houghton Lake Wetlands management area (MA) will provide forest products; maintain or enhance wildlife habitat; protect areas of unique threatened, endangered and special concern species; and provide for forest-based recreational uses. Timber management for this 10-year planning period will focus on balancing the aspen age-class distribution. Wildlife habitat management objectives include perpetuating early-successional communities for species adapted to young forests for hunting and other wildlife-related recreation opportunity. Expected trends within the next decade are the need to continue to balance aspen age-class distributions, an expected increase in recreation pressure and invasive species encroachment.

### Soil and topography:

Ribicon-Montcalm-Grayling sands. Lupton Tawas associations. Majority of the compartment is level and poorly drained.

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

Mixed blocks of State and private ownership. Private lands are a combination of seasonal hunting with some small agricultural use. Wet soils and limited roads have kept the area relatively undeveloped.

### Unique Natural Features:

Reedsburg dam and flooding area have created a wide array of diverse bird and aquatic species.

### Archeological, Historical, and Cultural Features:

No Archeological, Historical, or Cultural Features known.

### Special Management Designations or Considerations:

Maintain integrity of the area by keeping vehicle access to a minimum. Keep roads bermed and closed on the west side of Reedsburg flooding.

### Watershed and Fisheries Considerations:

Protect and restore if necessary natural vegetation along all waterbodies in the watershed. Adhere to all buffers and Best Management Practices in wet areas.

### Wildlife Habitat Considerations:

This compartment encompasses a large part of the Deadstream Swamp, and a portion of the Deadstream Flooding SWMA (Reedsburg Dam). This swamp complex and associated uplands are key black bear habitat and part of a large deer wintering complex. Greater emphasis should be placed on promoting larger stands of older age and mixed age classes to provide diversity in vertical and horizontal structure in this compartment. Generally, wildlife goals are to maintain lowland conifer and to promote oak and aspen adjacent to lowlands. Creation of brush piles near lowlands, protection of mast bearing shrubs and provision of coarse woody debris are also desired. Management will also seek to promote emergent wetland types to support numerous wetland birds in this swamp complex, and to provide large nesting trees adjacent to the flooding. Featured species of special interest include snowshoe hare, bear, deer, golden-winged warbler and woodcock. (E. Victory 7/18/14)

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

Surface sediments consist of glacial outwash sand and gravel and postglacial alluvium and fine textured glacial till. The glacial drift thickness varies between 400 and 600 feet. Beneath the glacial drift are the Mississippian Michigan Formation and Bayport Limestone. The Michigan Formation for quarried gypsum and the Bayport Limestone for other areas of the State. A gravel pit is located in section 11 and there may be potential. Enterprise Field is located to the north. The field has produced over 4.7 million Bo and 2.3 Bcf gas from the Devonian Richfield Formation. It is in secondary recovery operations



currently. The compartment is currently leased for oil and gas development.

**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 abandonment. 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:**

None at this time.

**Recreational Facilities and Opportunities:**

Reedsburg Dam Forest Campground and day use area are within this compartment. Recommend local Parks & Recreation Division staff, along with local Wildlife Division staff work with local Forest Resource Division staff to assess trees in these recreation based areas for potential removal. Removing undesirable trees during the winter or off-season via a small timber sale may have some merit. 2.5 miles of snowmobile trail (#6/7) tracks along the south and east sides of the compartment. Trail protection specifications should be included in any timber sales potentially impacting the the snowmobile trail. Dispersed hunting and fishing along the Muskegon River are common recreational activities. (T.M.N. 3/14)

**Fire Protection:**

The areas of conifer fuel types can cause suppression concerns. Access with suppression equipment maybe limited on the west side of Reedsburg Dam Pond. With roads and 2 tracks being closed, unattended dispersed campfires can go undetected.

**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**

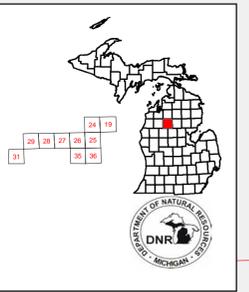
**The following information is displayed, where pertinent, on the attached compartment maps:**

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



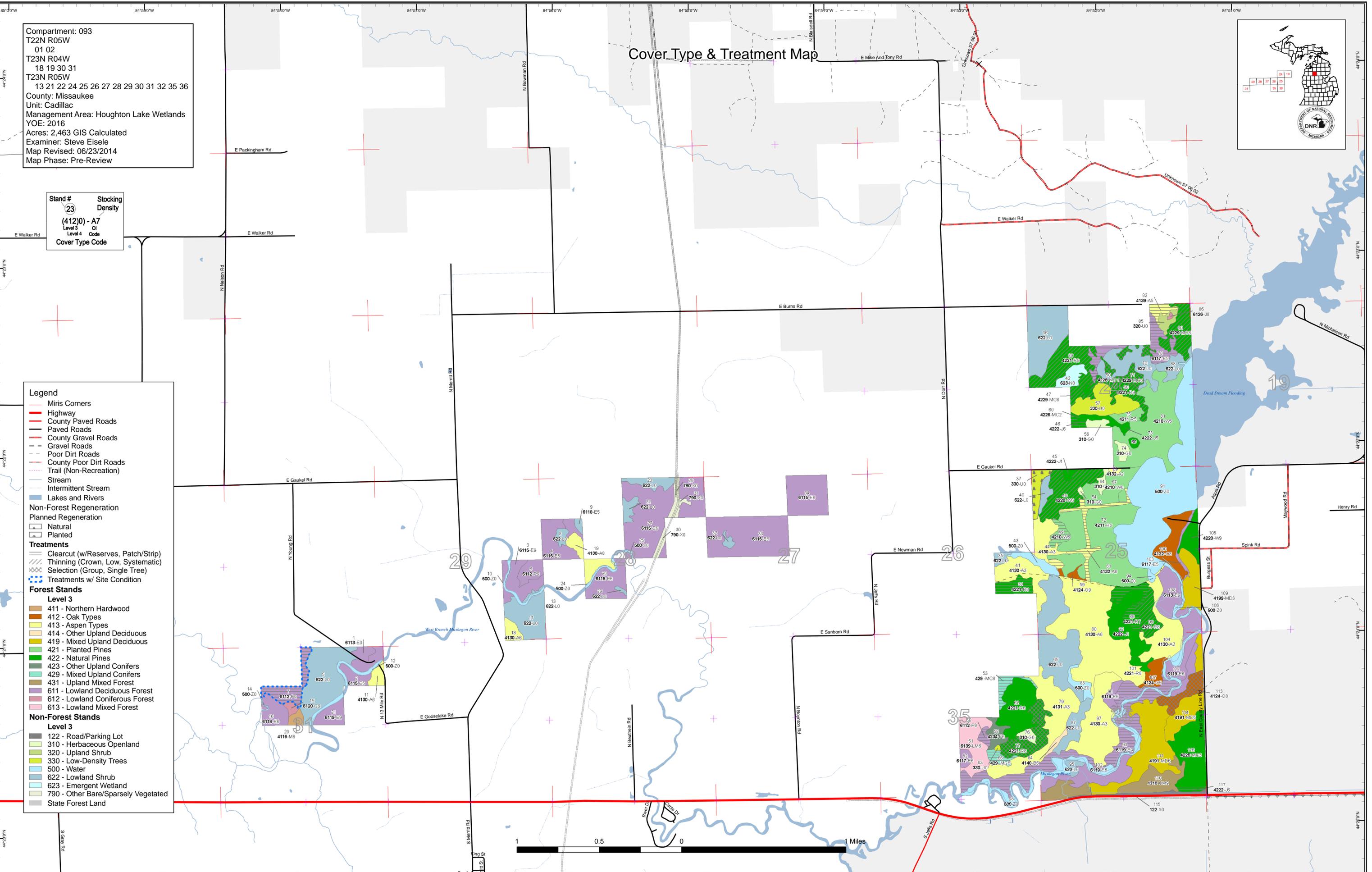
Compartment: 093  
 T22N R05W  
 01 02  
 T23N R04W  
 18 19 30 31  
 T23N R05W  
 13 21 22 24 25 26 27 28 29 30 31 32 35 36  
 County: Missaukee  
 Unit: Cadillac  
 Management Area: Houghton Lake Wetlands  
 YOE: 2016  
 Acres: 2,463 GIS Calculated  
 Examiner: Steve Eisele  
 Map Revised: 06/23/2014  
 Map Phase: Pre-Review

# Cover Type & Treatment Map



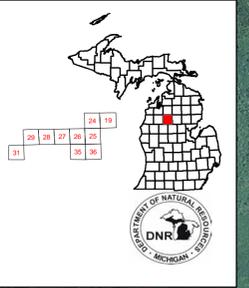
**Stand #**  
 23  
**Stocking Density**  
 (412)0 - A7  
 Level 3  
 Level 4  
**Cover Type Code**

- Legend**
- Miris Corners
  - Highway
  - County Paved Roads
  - Paved Roads
  - County Gravel Roads
  - Gravel Roads
  - Poor Dirt Roads
  - County Poor Dirt Roads
  - Trail (Non-Recreation)
  - Stream
  - Intermittent Stream
  - Lakes and Rivers
- Non-Forest Regeneration**
- Planned Regeneration
  - Natural
  - Planted
- Treatments**
- Clearcut (w/Reserves, Patch/Strip)
  - Thinning (Crown, Low, Systematic)
  - Selection (Group, Single Tree)
  - Treatments w/ Site Condition
- Forest Stands**
- Level 3**
- 411 - Northern Hardwood
  - 412 - Oak Types
  - 413 - Aspen Types
  - 414 - Other Upland Deciduous
  - 419 - Mixed Upland Deciduous
  - 421 - Planted Pines
  - 422 - Natural Pines
  - 423 - Other Upland Conifers
  - 429 - Mixed Upland Conifers
  - 431 - Upland Mixed Forest
  - 611 - Lowland Deciduous Forest
  - 612 - Lowland Coniferous Forest
  - 613 - Lowland Mixed Forest
- Non-Forest Stands**
- Level 3**
- 122 - Road/Parking Lot
  - 310 - Herbaceous Openland
  - 320 - Upland Shrub
  - 330 - Low-Density Trees
  - 500 - Water
  - 622 - Lowland Shrub
  - 623 - Emergent Wetland
  - 790 - Other Bare/Sparsely Vegetated
  - State Forest Land



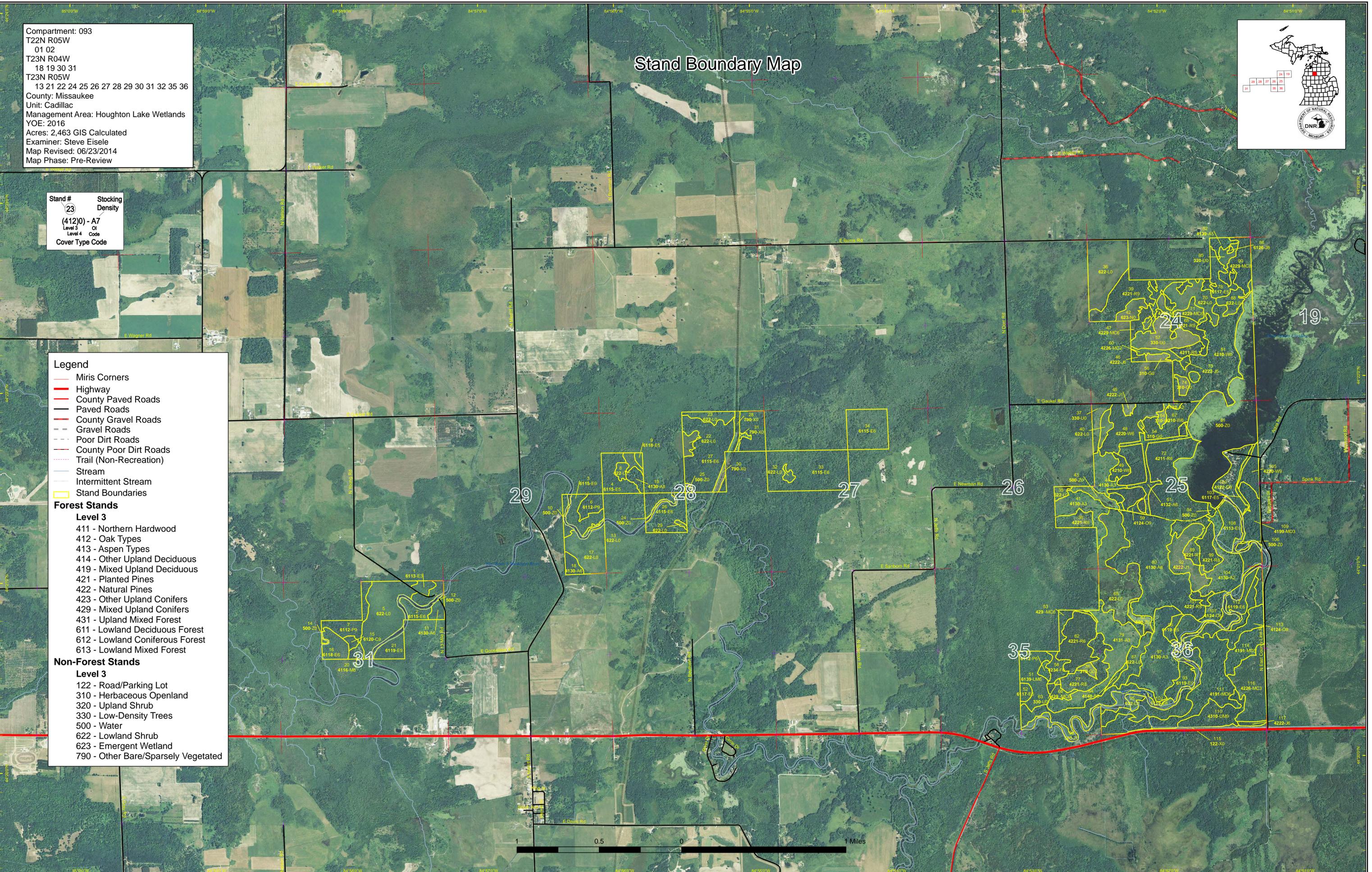
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# Stand Boundary Map

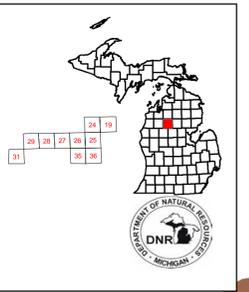


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 23  
**Stocking Density**  
 (412)0 - A7  
 Level 3  
 Level 4  
**Cover Type Code**

- Legend**
- Miris Corners
  - Highway
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  - Paved Roads
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  - County Poor Dirt Roads
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  - Stand Boundaries
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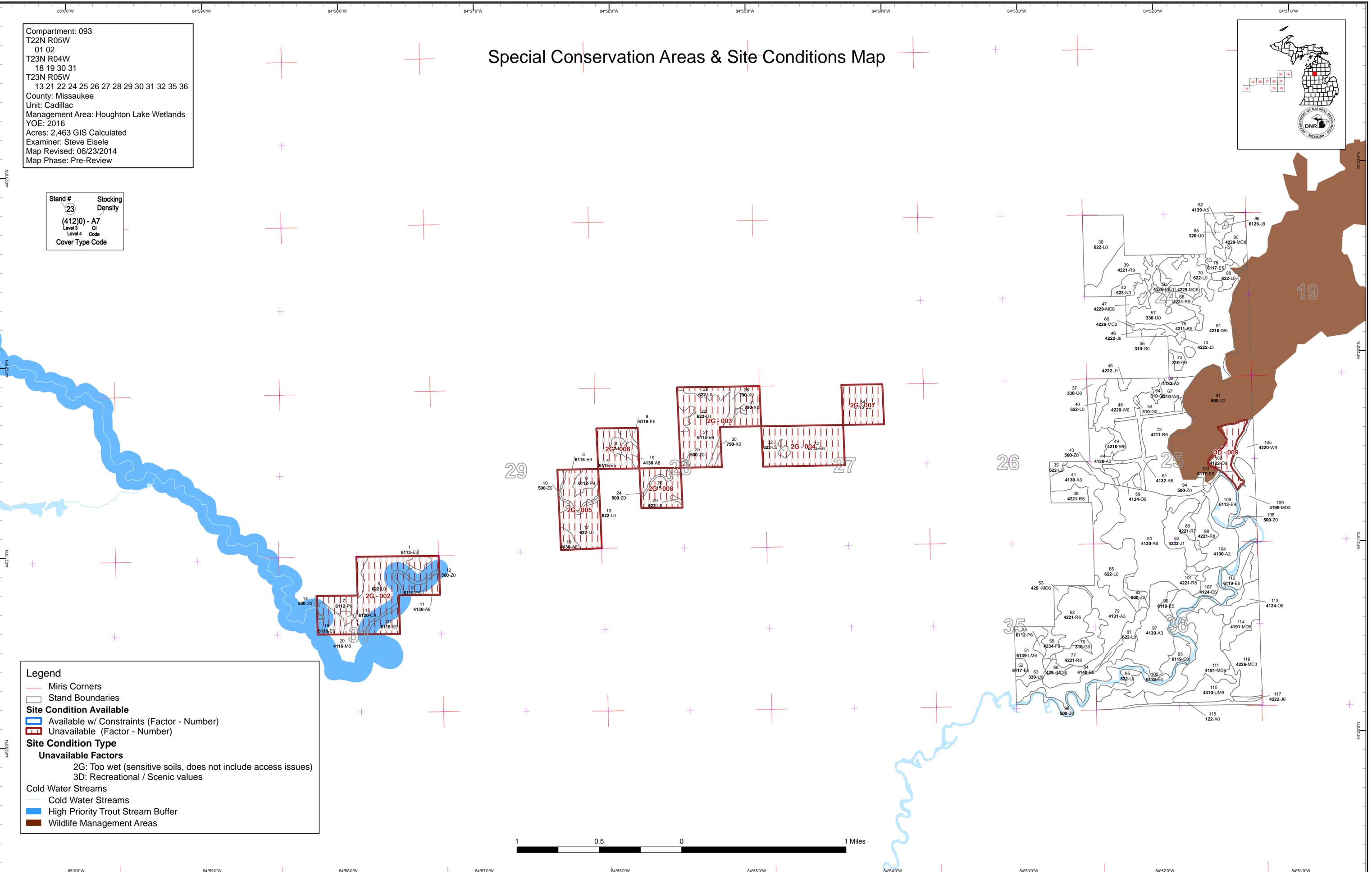


# Special Conservation Areas & Site Conditions Map

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

**Legend**

- Miris Corners
- Stand Boundaries
- Site Condition Available**
- Available w/ Constraints (Factor - Number)
- Unavailable (Factor - Number)
- Site Condition Type**
- Unavailable Factors**
- 2G: Too wet (sensitive soils, does not include access issues)
- 3D: Recreational / Scenic values
- Cold Water Streams**
- Cold Water Streams
- High Priority Trout Stream Buffer
- Wildlife Management Areas



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 +	Uneten Age	
Aspen	142	64	121	0	25	0	0	22	0	0	0	0	0	0	374
Bare/Sparsely Vegetated	11	0	0	0	0	0	0	0	0	0	0	0	0	0	11
Cedar	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3
Herbaceous Openland	16	0	0	0	0	0	0	0	0	0	0	0	0	0	16
Jack Pine	34	0	2	0	0	0	6	0	0	0	0	0	0	0	42
Low-Density Trees	41	0	0	0	0	0	0	0	0	0	0	0	0	0	41
Lowland Aspen/Balsam Poplar	0	0	0	0	0	4	20	11	0	0	0	0	0	0	34
Lowland Deciduous	5	0	0	0	4	33	294	15	43	0	0	0	0	127	522
Lowland Mixed Forest	0	0	0	0	0	30	0	0	0	0	0	0	0	0	30
Lowland Shrub	313	0	0	0	0	0	0	0	0	0	0	0	0	0	313
Marsh	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Mixed Upland Deciduous	0	27	64	0	22	0	0	0	0	0	0	0	0	0	113
Natural Mixed Pines	0	53	2	0	0	10	39	0	0	0	0	0	0	0	104
Northern Hardwood	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4
Oak	0	0	0	0	0	0	11	3	0	16	25	0	0	0	55
Paper Birch	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3
Red Pine	0	0	0	0	0	184	97	0	0	0	0	0	0	0	281
Upland Conifers	0	0	0	0	7	7	0	0	0	0	0	0	0	0	14
Upland Mixed Forest	0	0	0	0	0	0	0	0	0	0	0	0	0	42	42
Upland Shrub	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Upland Spruce/Fir	0	0	0	0	9	0	0	0	0	0	0	0	0	0	9
Urban	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Water	253	0	0	0	0	0	0	0	0	0	0	0	0	0	253
White Pine	0	0	0	0	0	150	8	0	0	0	0	0	0	14	171
<b>Total</b>	<b>841</b>	<b>143</b>	<b>189</b>	<b>0</b>	<b>67</b>	<b>421</b>	<b>480</b>	<b>51</b>	<b>46</b>	<b>16</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>183</b>	<b>2463</b>



## Report 2 – Proposed Treatment Summaries

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

**Compartment 093**  
**Total Compartment Acres: 2,463**

### Acres by Treatment Type

Commercial Harvest - 402    Tree Planting - 20    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>Aspen Types</b>	25	0	0	0	0	0	<b>25</b>
<b>Lowland Deciduous Forest</b>	125	0	0	0	0	0	<b>125</b>
<b>Mixed Upland Conifers</b>	14	0	0	0	0	0	<b>14</b>
<b>Natural Pines</b>	34	44	0	0	136	0	<b>214</b>
<b>Oak Types</b>	0	16	0	0	0	0	<b>16</b>
<b>Planted Pines</b>	8	0	0	0	0	0	<b>8</b>
<b>Total</b>	<b>206</b>	<b>60</b>	<b>0</b>	<b>0</b>	<b>136</b>	<b>0</b>	<b>402</b>

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S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
38	63093038-Cut	12.3	42210 - Natural Red Pine	Medium Density Log	60	81-110	Harvest	Clearcut	4211 - Planted Red Pine	Cmpt. Review Proposal

Prescription Final harvest natural red pine

Specs:

Other Have TMS look at for planting red pine. Ground is hummocky in spots

Comments:

Next

Steps:

Proposed

Start Date: 10/01/2015

39	63093039-Cut	33.9	42210 - Natural Red Pine	High Density Log	65	141-170	Harvest	Crown Thinning	4221 - Natural Red Pine	Cmpt. Review Proposal
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Prescription Thin to approx. 100 ba, Take out larger diameters.

Specs:

Other

Comments:

Next

Steps:

Proposed

Start Date: 10/01/2015

46	63093046-Cut	3.0	42220 - Natural Jack Pine	High Density Pole	65	81-110	Harvest	Clearcut with Reserves	4221 - Natural Red Pine	Cmpt. Review Proposal
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Prescription Final harvest jack pine, leave red pine

Specs:

Other Some wet areas

Comments:

Next

Steps:

Proposed

Start Date: 10/01/2015

47	63093047-Cut	10.0	42290 - Natural Mixed Pine	High Density Pole	53	141-170	Harvest	Low Thinning	4221 - Natural Red Pine	Cmpt. Review Proposal
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Prescription Remove all jack pine, thin red to approx. 100 ba

Specs:

Other

Comments:

Next

Steps:

Proposed

Start Date: 10/01/2015

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S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
48	63093048-Cut	37.7	42201 - Natural White Pine, Mixed Deciduous	High Density Pole	50	111-140	Harvest	Systematic Thinning	4210 - Planted White Pine	Cmpt. Review Proposal
<u>Prescription</u> Create rows as in past sales in area. Take out aspen and maple										
<u>Specs:</u>										
<u>Other</u>										
<u>Comments:</u>										
<u>Next</u>										
<u>Steps:</u>										
<u>Proposed</u>										
<u>Start Date:</u> 10/01/2015										
49	63093049-Cut	7.9	42101 - Planted White Pine, Mixed Deciduous	High Density Pole	60	81-110	Harvest	Clearcut with Reserves	42101 - Planted White Pine, Mixed Deciduous	Cmpt. Review Proposal
<u>Prescription</u> Clear cut with reserves. Leave oak and white pine less than 6 inch dbh										
<u>Specs:</u>										
<u>Other</u>										
<u>Comments:</u>										
<u>Next</u>										
<u>Steps:</u>										
<u>Proposed</u>										
<u>Start Date:</u> 10/01/2015										
53	63093053-Cut	7.3	429 - Mixed Upland Conifers	High Density Pole	52	81-110	Harvest	Clearcut with Reserves	4134 - Aspen, Spruce/Fir	Cmpt. Review Proposal
<u>Prescription</u> Clear cut with reserves, mark some spruce to leave.										
<u>Specs:</u>										
<u>Other</u> Hummocky ground										
<u>Comments:</u>										
<u>Next</u>										
<u>Steps:</u>										
<u>Proposed</u>										
<u>Start Date:</u> 10/01/2015										
55	63093055-Cut	3.6	6112 - Lowland Aspen	High Density Pole	55		Harvest	Clearcut with Reserves	4130 - Aspen	Cmpt. Review Proposal
<u>Prescription</u> Clearcut, leave some edge/wet areas										
<u>Specs:</u>										
<u>Other</u>										
<u>Comments:</u>										
<u>Next</u>										
<u>Steps:</u>										
<u>Proposed</u>										
<u>Start Date:</u> 10/01/2015										

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Stand	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
61	63093061-Cut	18.1	4132 - Aspen, Jack Pine	High Density Pole	45		Harvest	Clearcut with Reserves	4130 - Aspen	Cmpt. Review Proposal
<u>Prescription</u> Clear cut with reserves, leave oak and red pine <u>Specs:</u> <u>Other</u> <u>Comments:</u> <u>Next</u> <u>Steps:</u> <u>Proposed</u> <u>Start Date:</u> 10/01/2015										
66	63093066-Cut	6.6	429 - Mixed Upland Conifers	High Density Pole	45	51-80	Harvest	Clearcut with Reserves	4134 - Aspen, Spruce/Fir	Cmpt. Review Proposal
<u>Prescription</u> Clear cut with reserves, leave oak and red pine. <u>Specs:</u> <u>Other</u> Stand has enough aspen and maple to sprout back. <u>Comments:</u> <u>Next</u> <u>Steps:</u> <u>Proposed</u> <u>Start Date:</u> 10/01/2015										
68	63093068-Cut	14.7	42210 - Natural Red Pine	High Density Log	65	141-170	Harvest	Crown Thinning	4221 - Natural Red Pine	Cmpt. Review Proposal
<u>Prescription</u> Thin to approx 100 ba <u>Specs:</u> <u>Other</u> <u>Comments:</u> <u>Next</u> <u>Steps:</u> <u>Proposed</u> <u>Start Date:</u> 10/01/2015										
71	63093071-Cut	15.4	42290 - Natural Mixed Pine	High Density Pole	63	141-170	Harvest	Single Tree Selection	42290 - Natural Mixed Pine	Cmpt. Review Proposal
<u>Prescription</u> Remove jack pine and spruce. Thin remaining pine to approx. 100 ba <u>Specs:</u> <u>Other</u> These are upland pine islands in wet areas, may not get to all of them <u>Comments:</u> <u>Next</u> <u>Steps:</u> <u>Proposed</u> <u>Start Date:</u> 10/01/2015										

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S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
77	63093077-Cut	28.1	42210 - Natural Red Pine	Medium Density Log	58	111-140	Harvest	Single Tree Selection	4221 - Natural Red Pine	Cmpt. Review Proposal

Prescription Remove all aspen and jack pine. Thin red to approx. 80 basal area, take larger diameters

Specs:

Other

Comments:

Next

Steps:

Proposed

Start Date: 10/01/2015

78	63093078-Cut	24.4	6117 - Lowland Deciduous, Mixed Coniferous	Medium Density Pole	53		Harvest	Clearcut with Reserves	6117 - Lowland Deciduous, Mixed Coniferous	Cmpt. Review Proposal
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Prescription Cut what you can get to. Some low wet areas.

Specs:

Other

Will have to obtain permission from private land owner for access

Comments:

Next

Steps:

Proposed

Start Date: 10/01/2015

82	63093082-Cut	6.4	4139 - Aspen, Mixed Deciduous	Medium Density Pole	70		Harvest	Clearcut with Reserves	4139 - Aspen, Mixed Deciduous	Cmpt. Review Proposal
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Prescription Clear cut with reserves, leave oak. Low, wet and low quality

Specs:

Other

Will have to obtain permission from private landowner to access

Comments:

Next

Steps:

Proposed

Start Date: 10/01/2015

89	63093089-Cut	16.0	42210 - Natural Red Pine	Low Density Log	65	51-80	Harvest	Clearcut with Reserves	4221 - Natural Red Pine	Cmpt. Review Proposal
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Prescription Overstory removal. Let natural regen release

Specs:

Other

Comments:

Next

Steps:

Proposed

Start Date: 10/01/2015

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S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
90	63093090-Cut	24.0	42290 - Natural Mixed Pine	Medium Density Log	65	141-170	Harvest	Crown Thinning	42290 - Natural Mixed Pine	Cmpt. Review Proposal
<u>Prescription</u> Remove larger diameter, thin to approx. 100 ba										
<u>Specs:</u>										
<u>Other</u> Will have to obtain access from private landowner										
<u>Comments:</u>										
<u>Next</u>										
<u>Steps:</u>										
<u>Proposed</u>										
<u>Start Date:</u> 10/01/2015										
93	63093093-Cut	77.7	6119 - Mixed Lowland Deciduous Forest	High Density Log	90	81-110	Harvest	Clearcut with Reserves	6119 - Mixed Lowland Deciduous Forest	Cmpt. Review Proposal
<u>Prescription</u> Final harvest with reserves. Mark some mast oak to leave, do not cut cedar/hemlock										
<u>Specs:</u>										
<u>Other</u> Alot of wet and edge areas will not get to. Buffer river Use BMP guidelines										
<u>Comments:</u>										
<u>Next</u>										
<u>Steps:</u>										
<u>Proposed</u>										
<u>Start Date:</u> 10/01/2015										
99	63093099-Cut	15.7	42210 - Natural Red Pine	Medium Density Log	65	111-140	Harvest	Crown Thinning	4221 - Natural Red Pine	Cmpt. Review Proposal
<u>Prescription</u> Cut larger diamteres, thin to approx 100 ba										
<u>Specs:</u>										
<u>Other</u>										
<u>Comments:</u>										
<u>Next</u>										
<u>Steps:</u>										
<u>Proposed</u>										
<u>Start Date:</u> 10/01/2015										
113	63093113-Cut	16.4	4124 - Red with White Oak	Medium Density Log	90	51-80	Harvest	Single Tree Selection	4124 - Red with White Oak	Cmpt. Review Proposal
<u>Prescription</u> Shelterwood. leave approx. 30 basal area of oak										
<u>Specs:</u>										
<u>Other</u> Use trail protection guidelines along snowmobile trail.										
<u>Comments:</u>										
<u>Next</u>										
<u>Steps:</u>										
<u>Proposed</u>										
<u>Start Date:</u> 10/01/2015										

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S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
117	63093117-Cut	2.8	42221 - Natural Jack Pine, Mixed Deciduous	High Density Pole	60	81-110	Harvest	Clearcut	42220 - Natural Jack Pine	Cmpt. Review Proposal

Prescription Final harvest, have logger equipment scarify, natural regen.

Specs:

Other

Comments:

Next

Steps:

Proposed

Start Date: 10/01/2015

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**Total Treatment  
Acreage Proposed: 381.9**



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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
7 63093007-Cut	19.7	6112 - Lowland Aspen	High Density Log	60		Harvest	Clearcut	413 - Aspen	Cmpt. Review Proposal

Prescription Final harvest,  
Specs:

Other Have to obtain permission to access from private land owner  
Comment:

Next  
Steps:

Proposed  
Start Date: 10/01/2015

Limiting Factor 2G: Too wet (sensitive soils, does not include access issues)

**Total Treatment  
Acreage Proposed: 19.7**



## Report 5 – Site Conditions

**Cadillac Mgt. Unit**  
**Steve Eisele : Examiner**

**Compartment 093**  
**Year of Entry 2016**

### Availability for Management

Availability for Management			Dominant Site Conditions			
Total Acres	Acres Available	Acres Not Available		No	3D	2G
374	345	29	Aspen	345		29
3		3	Cedar			3
42	42		Jack Pine	42		
34	4	30	Lowland Aspen/Balsam Poplar	4		30
522	195	327	Lowland Deciduous	195		327
30	30		Lowland Mixed Forest	30		
113	113		Mixed Upland Deciduous	113		
104	104		Natural Mixed Pines	104		
4		4	Northern Hardwood			4
55	30	25	Oak	30	25	
3	3		Paper Birch	3		
281	281		Red Pine	281		
14	14		Upland Conifers	14		
42	42		Upland Mixed Forest	42		
9	9		Upland Spruce/Fir	9		
171	171		White Pine	171		
1,802	1,384	419	Total Forested Acres	1,384	25	394
	77%	23%	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)	150				

**Comments:**

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## Report 5 – Site Conditions

Cadillac Mgt. Unit  
Steve Eisele : Examiner

Compartment 093  
Year of Entry 2016

003	<b>Not Available</b>	2G: Too wet (sensitive soils, does not include access issues)	117	No Limiting Factor	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
<b>Comments:</b>					
004	<b>Not Available</b>	2G: Too wet (sensitive soils, does not include access issues)	78	No Limiting Factor	
<b>Comments:</b>					
005	<b>Not Available</b>	2G: Too wet (sensitive soils, does not include access issues)	77	2G: Too wet (sensitive soils, does not include access issues)	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
<b>Comments:</b>					
006	<b>Not Available</b>	2G: Too wet (sensitive soils, does not include access issues)	39	2G: Too wet (sensitive soils, does not include access issues)	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
<b>Comments:</b>					
007	<b>Not Available</b>	2G: Too wet (sensitive soils, does not include access issues)	39	No Limiting Factor	
<b>Comments:</b>					



## Report 5 – Site Conditions

Cadillac Mgt. Unit  
Steve Eisele : Examiner

Compartment 093  
Year of Entry 2016

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008	<b>Not Available</b>	<b>2G: Too wet (sensitive soils, does not include access issues)</b>	39	No Limiting Factor
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**Comments:**

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009	<b>Not Available</b>	<b>3D: Recreational / Scenic values</b>	25	
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**Comments:**

campground. Hazard tree removal only.

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### 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
Comments				





**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.
SCA	Habitat Area	An area that provide some specific need for the life cycle of wildlife species, including State Wildlife Areas and Waterfowl Production Areas, deer wintering complexes in lowland conifer communities, grassland openings and savannas. Habitat areas are distinct from critical habitat designated for recovery of endangered or threatened species (such as Kirtland's warbler or piping plover areas) in that they are more general in nature, are not primarily associated with threatened or endangered species, and are not covered by species recovery plans that are developed in cooperation with Federal agencies.
SCA	Riparian Area	A transitional area between aquatic and terrestrial ecosystems in which the terrestrial ecosystem influences the aquatic ecosystem and vice-versa. Because of the unique conditions adjacent to lakes, streams and open water wetlands, riparian areas harbor a high diversity of plants and wildlife. Riparian communities are ecologically and socially significant in their effects on water quality and quantity, as well as aesthetics, habitat, bank stability, timber production, and their contribution to overall biodiversity.



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Cadillac Mgt. Unit

## Report 8 – Forested Stands

Compartment: 093  
Year of Entry: 2016

	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	6113 - Lowland Maple	High Density Sapling	5.5	5		look up cut records
2	6115 - Lowland Ash	High Density Pole	17.4	80	81-110	all ash is dead
3	6115 - Lowland Ash	High Density Log	21.4	80	81-110	no access muskegon river
4	6115 - Lowland Ash	Medium Density Pole	21.9	63	81-110	no access
6	6112 - Lowland Aspen	High Density Log	10.7	70		No legal access
7	6112 - Lowland Aspen	High Density Log	19.7	60		needs survey private access
9	6118 - Lowland Deciduous with Cedar	Medium Density Pole	4.5	63	81-110	
11	4130 - Aspen	High Density Pole	6.4	15		New stand added. wet!
15	6120 - Lowland Cedar	High Density Log	3.1	80	171-200	New stand added. pure cedar
16	6118 - Lowland Deciduous with Cedar	High Density Pole	15.3	70		wet!
18	4130 - Aspen	High Density Pole	6.8	42		
19	4130 - Aspen	Medium Density Log	15.4	70		No legal access
20	4116 - Mixed N. Hardwood - Aspen	Medium Density Log	4.3	65	51-80	private access needs survey
21	6119 - Mixed Lowland Deciduous Forest	High Density Log	12.7	65		Stand swapped from Non-Forested to Forested. wet river no access
26	6115 - Lowland Ash	High Density Pole	26.0	60		no legal access
27	6115 - Lowland Ash	High Density Pole	88.9	60		Assume this is like stands to the west that I got to.
33	6115 - Lowland Ash	High Density Pole	75.0	60		assume it is like stands to the west that I looked at
34	6115 - Lowland Ash	High Density Pole	38.7	60		assume it is like stands to the west that I looked at



Report 8 – Forested Stands

Compartment: 093  
Year of Entry: 2016



S t a n d	Cadillac Mgt. Unit		Acres	Stand Age	BA Range	General Comments:
	Level 4 Cover Type	Size Density				
38	42210 - Natural Red Pine	Medium Density Log	12.3	60	81-110	
39	42210 - Natural Red Pine	High Density Log	33.9	65	141-170	tough access
41	4130 - Aspen	High Density Sapling	27.4	7		treated last year of entry came back well look up cut records
44	4130 - Aspen	High Density Sapling	19.2	8		same as 46 look up cut records
45	42220 - Natural Jack Pine	Low Density Sapling	2.9	5		Stand swapped from Non-Forested to Forested. look up cut records
46	42220 - Natural Jack Pine	High Density Pole	3.0	65	81-110	may have access issues wet/leatherleaf
47	42290 - Natural Mixed Pine	High Density Pole	10.0	53	141-170	wet areas treat with 70
48	42201 - Natural White Pine, Mixed Deciduous	High Density Pole	37.7	50	111-140	
49	42101 - Planted White Pine, Mixed Deciduous	High Density Pole	7.9	60	81-110	rows created last time
50	42260 - Natural Pine, Mixed Deciduous	Low Density Sapling	1.7	20	1-50	Stand swapped from Non-Forested to Forested.
51	6139 - Mixed Lowland Forest	High Density Pole	30.1	55		wet hummocy
52	6117 - Lowland Deciduous, Mixed Coniferous	High Density Pole	4.5	80		
53	429 - Mixed Upland Conifers	High Density Pole	7.3	52	81-110	New stand added. wet hummocy
55	6112 - Lowland Aspen	High Density Pole	3.6	55		Stand swapped from Non-Forested to Forested. low wet areas expand into 63 where their is aspen
58	42340 - Upland Spruce/Fir	High Density Pole	9.3	45		hummocy ground
59	4124 - Red with White Oak	High Density Log	3.0	70	51-80	New stand added. treated last year of entry
60	42260 - Natural Pine, Mixed Deciduous	Medium Density	8.5	15		Stand swapped from Non-Forested to Forested. cut in 99



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## Cadillac Mgt. Unit

## Report 8 – Forested Stands

Compartment: 093  
Year of Entry: 2016

	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
61	4132 - Aspen, Jack Pine	High Density Pole	18.1	45		Stand swapped from Non-Forested to Forested. old fire lanes filling in
62	42210 - Natural Red Pine	High Density Pole	39.0	52	111-140	rows created last time came out well needs more diameter growth
66	429 - Mixed Upland Conifers	High Density Pole	6.6	45	51-80	New stand added. final harvest with reserves leave some small islands and occasional oak and red pine
67	42100 - Planted White Pine	High Density Pole	25.5	51	81-110	New stand added. rows created last time look up plant records
68	42210 - Natural Red Pine	High Density Log	14.7	65	141-170	treat with 44 cut to 100-110ba
69	4132 - Aspen, Jack Pine	Medium Density	1.6	5		Stand swapped from Non-Forested to Forested. look up cut records
71	42290 - Natural Mixed Pine	High Density Pole	15.4	63	141-170	pine islands private access
72	42110 - Planted Red Pine	High Density Pole	110.1	51	111-140	rows created last time look up plant records
73	42220 - Natural Jack Pine	Medium Density Pole	2.1	25	81-110	New stand added.
75	42110 - Planted Red Pine	Medium Density Pole	7.0	50	81-110	New stand added. first thinned last year of entry
77	42210 - Natural Red Pine	Medium Density Log	28.1	58	111-140	
78	6117 - Lowland Deciduous, Mixed Coniferous	Medium Density Pole	24.4	53		a lot of low wet areas may be able to cut some edge low quality low basal area
79	4131 - Aspen, Oak	High Density Sapling	57.3	8		cutl last year of entry look up cut records good regen red pine in sub canopy is planted
80	4130 - Aspen	High Density Pole	121.4	25		
81	42100 - Planted White Pine	High Density Pole	86.6	50	81-110	rows created last time came out well look up planting records some low areas within stand not cut
82	4139 - Aspen, Mixed Deciduous	Medium Density Pole	6.4	70		humocy ground low quality low basal area private access
84	4140 - Other Upland Deciduous	High Density Pole	3.1	50		New stand added.



Report 8 – Forested Stands

Compartment: 093  
Year of Entry: 2016



S t a n d	Cadillac Mgt. Unit		Report 8 – Forested Stands			Compartment: 093 Year of Entry: 2016	
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:	
86	6126 - Lowland Jack Pine	Medium Density Log	0.7	60		New stand added.	
89	42210 - Natural Red Pine	Low Density Log	16.0	65	51-80	New stand added. treated last year of entry look up cut records	
90	42290 - Natural Mixed Pine	Medium Density Log	24.0	65	141-170	private access	
92	42220 - Natural Jack Pine	Low Density Sapling	30.6	5		Stand swapped from Forested to Non-Forested. Stand swapped from Non-Forested to Forested. look up cut records	
93	6119 - Mixed Lowland Deciduous Forest	High Density Log	77.7	Uneven Age	81-110	wet areas	
96	6119 - Mixed Lowland Deciduous Forest	Medium Density Pole	5.8	Uneven Age		Stand swapped from Non-Forested to Forested. too wet	
97	4130 - Aspen	High Density Sapling	57.2	15			
99	42210 - Natural Red Pine	Medium Density Log	15.7	65	111-140	thinned last year of entry	
100	4122 - Oak, Pine	Medium Density Log	24.8	100	1-50	reedsburg campground no treatment has had hazard trees removed	
101	42210 - Natural Red Pine	Medium Density Log	4.2	60	81-110	small acreage being used as corridor/cover leave	
102	6119 - Mixed Lowland Deciduous Forest	High Density Pole	26.5	60	51-80	same as 111 flood plain	
103	6117 - Lowland Deciduous, Mixed Coniferous	Medium Density Pole	4.1	40	1-50	Stand swapped from Non-Forested to Forested. low wet swale to river	
104	4130 - Aspen	Medium Density	36.7	5		New stand added. treated last year of entry look up cut records	
105	42201 - Natural White Pine, Mixed Deciduous	High Density Log	13.5	Uneven Age	111-140	small acreage between campground and subdivision leave	
107	4124 - Red with White Oak	Medium Density Pole	10.8	65	81-110	New stand added. cut last year of entry left oak	
108	6113 - Lowland Maple	High Density Log	43.9	Uneven Age	111-140	river flood plain	
109	4199 - Other Mixed Upland Deciduous	High Density Sapling	26.6	15		treated look up cut records 20years ago?	
110	4310 - Pine, Oak Mix	High Density Log	42.4	Uneven Age	111-140	has been treated	



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Cadillac Mgt. Unit

## Report 8 – Forested Stands

Compartment: 093  
Year of Entry: 2016

	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
111	4191 - Mixed Upland Deciduous with Conifer	High Density Pole	64.3	20		has been treated look up cut records
112	6119 - Mixed Lowland Deciduous Forest	High Density Pole	8.2	50	81-110	low wet small diameters
113	4124 - Red with White Oak	Medium Density Log	16.4	90	51-80	shelterwood leave some mast oak 20-30ba
114	4191 - Mixed Upland Deciduous with Conifer	Medium Density Pole	21.7	40		low quality patchy in spots leave oak
116	42260 - Natural Pine, Mixed Deciduous	High Density Sapling	44.7	18	51-80	
117	42221 - Natural Jack Pine, Mixed Deciduous	High Density Pole	2.8	60	81-110	small acreage along highway





Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
5	6229 - Mixed lowland shrub	56.6	No	Low	
8	6229 - Mixed lowland shrub	6.3	No	Low	
10	50 - Water	4.3	No	Unspecified	muskegon river
12	50 - Water	8.9	Yes	High	muskegon river
13	622 - Lowland Shrub	1.3	Unspecified	Unspecified	
14	50 - Water	0.5	No	Low	
17	6220 - Alder/willow	32.5	No	Low	
22	6229 - Mixed lowland shrub	6.2	No	Unspecified	
23	6229 - Mixed lowland shrub	10.4	No	Unspecified	
24	50 - Water	2.6	No	Unspecified	W branch Muskegon river
25	50 - Water	0.7	No	Unspecified	W branch Muskegon river
28	790 - Other Bare/Sparsely Vegetate	5.4	No	Unspecified	pipeline
29	6229 - Mixed lowland shrub	1.1	No	Unspecified	
30	790 - Other Bare/Sparsely Vegetate	3.6	No	Unspecified	
31	790 - Other Bare/Sparsely Vegetate	1.9	Unspecified	Unspecified	
32	6229 - Mixed lowland shrub	2.7	No	Unspecified	
35	6220 - Alder/willow	3.9	No	Low	
36	6220 - Alder/willow	52.3	No	Low	alder





Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
37	3302 - Low Density Conifer Trees	11.0	Natural Regen	Jack Pine	
40	6229 - Mixed lowland shrub	6.5	No	Low	Stand swapped from Forested to Non-Forested.
42	6239 - Mixed Emergent Wetland	9.8	No	Unspecified	
43	50 - Water	8.9	No	Low	
54	3102 - Grass	0.9	No	Low	merge into 67 not water
56	3102 - Grass	3.9	No	Low	merge into 74
57	3302 - Low Density Conifer Trees	29.7	No	Low	filling in with jack pine seedlings
63	3301 - Low Density Deciduous Tree	0.6	No	Low	some pole size aspen
64	3102 - Grass	3.6	No	Low	
65	6220 - Alder/willow	70.1	No	Low	break out the water area
70	6229 - Mixed lowland shrub	30.9	No	Unspecified	New stand added. some open areas with water
74	3102 - Grass	4.4	No	Low	leather leaf no shrubs a few jack pine filling in
76	3102 - Grass	3.6	No	Low	New stand added.
83	50 - Water	7.0	Unspecified	Unspecified	New stand added.
85	3205 - Mixed Upland Shrub	5.9	No	Low	scattered aspen
87	6220 - Alder/willow	16.3	No	Low	merge into 69
88	6229 - Mixed lowland shrub	11.4	No	Low	Stand swapped from Non-Forested to Forested. very mixed stand with low wet areas Stand swapped from Forested to Non-Forested.





Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
91	50 - Water	167.4	Unspecified	Unspecified	
94	50 - Water	1.7	No	Low	
95	6229 - Mixed lowland shrub	4.3	No	Unspecified	flood plain alder and cattails
98	50 - Water	45.3	Unspecified	Unspecified	
106	50 - Water	6.2	Yes	Medium	reedsburg spillay
115	122 - Road/Parking Lot	9.9	Unspecified	Unspecified	

