



**TRAVERSE CITY FOREST MANAGEMENT UNIT  
COMPARTMENT REVIEW PRESENTATION**

**COMPARTMENT # 134 ENTRY YEAR: 2013**

**Compartment Acreage: 2019      County: Kalkaska**

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**Stand Examiner:** Donna Hagan

**Legal Description:** T25N,R6W,Sec. 2-5 and T26N,R6W,Sec. 34-35

**Management Goals:** Wildlife intensive. East half of compartment is Kirtland's Warbler Management Area.

**Soil and Topography:** Grayling and Rubicon Sands, Rifle Peat

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

The Manistee River, a blue ribbon trout stream, borders this compartment to the north. Devil and Little Devil Creeks run along the southern border. To the east is Hanson Military Reserve land. The western border contains private holdings. Most private holdings within the compartment contain summer cottages and a few year-round residential homes, especially along the Manistee River.

**Unique, Natural Features (include only non-site specific and non-sensitive information):**

Kirtland's Warbler

**Archeological, Historical, and Cultural Features (include only non-site specific and non-sensitive information):** No feature listed on HAL website.

**Special Management Designations or Considerations:** East side of compartment is in the Kirtland's Warbler Management Area.

**Watershed and Fisheries Considerations:** The Manistee River, Big Devil Creek, and Little Devil Creek flow through Compartment 134. They are all Designated Trout Streams. The Manistee River has naturally reproducing populations of brook, brown, and rainbow trout. Big Devil Creek has a naturally reproducing population of brook and brown trout. The Natural Rivers native vegetation buffer is 75', so no cutting should occur within 75' of any of the streams in the compartment or their tributaries. Also, BMPS should be followed when working in wet areas near the streams.

**Wildlife Habitat Considerations:**

**Mineral Resource and Development Concerns and/or Restrictions:** Surface sediments consist of ice-contact and glacial outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 200 and 400 feet. Beneath the glacial drift is the Mississippian Michigan Formation. The Michigan is quarried for gypsum. Gravel pits are located in Section 4 and 34 (pit #454). Gravel potential in the compartment is considered good. This area is located two miles northwest of Garfield 8 Field. The field produces from the Devonian Richfield and the Ordovician PdC. The PdC has produced over 46 Bcf gas. Most of this compartment is leased for oil and gas development. There may be additional Devonian and Ordovician potential in the compartment.

**Vehicle Access:** Good access via county roads running along Northern edge of compartment along the Manistee River, King Road and running along Southern edge of compartment, Military Road. Snowmobile Trail runs along Eastern side of compartment. Two track roads run throughout compartment and some will be closed when planting and timber sales are complete.

**Survey Needs:** None needed.

**Recreational Facilities and Opportunities:** Hunting and fishing are popular recreational activities within the area. Two access sites are available on the Manistee River along King Road. One mile of the Cranberry Lake Snowmobile Trail runs through the eastern border of the compartment.

**Fire Protection:** Fire management in this area is handled by the MDNR Kalkaska Field Office with assistance from Grayling DNR, local volunteer fire departments and possibly Camp Grayling National Guard. Fire units may also respond from the Roscommon DNR Office. Water access for fire suppression is good. Road access is limited and due to the Kirkland Warbler habitat on the east side of the compartment potential for large wildfire is possible. (Comments by Rod Rader, DNR Fire Supervisor, Traverse City Field Office.)

**Additional Compartment Information:**

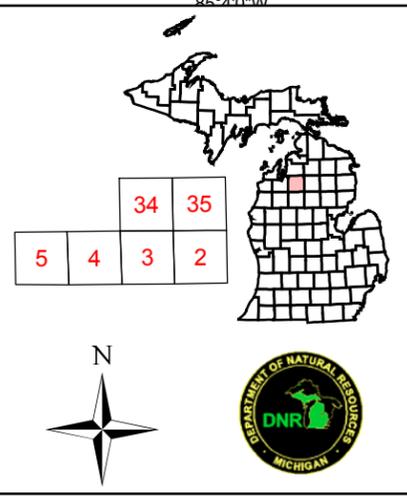
**\*\*\*\* Cover type details, proposed treatments and stands designated as FDF are listed in the attached reports:**

- Cover Type by Age Class**
- Cover Type by Management Objective**
- Compartment Volume Summary**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**

**\*\*\*\* The following information is displayed on the attached compartment maps:**

- Base feature information, stand numbers, cover types**
- Proposed treatments**
- Proposed road access system**
- Suggested potential old growth**

# Cover Type & Treatment Map



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

Compartment 134  
 T25N, R06W, Sec. 2-5  
 T26N, R06W, Sec. 34-35  
 County: Kalkaska  
 Unit: Traverse City  
 YOY: 2013  
 Acres: 2,019 GIS Calculated  
 Stand Examiner: Donna Hagan  
 Map Revised: 5/25/2011  
 Map Phase: Pre-Review

**Legend**

- Miris Corners
- Paved Roads
- County Gravel Roads
- Gravel Roads
- Poor Dirt Roads
- Power
- Intermittent Stream/Drain
- Stream
- Lakes and Rivers
- ORV Routes
- Snowmobile Trails
- ORV Route
- Snowmobile Trail

**Forest Stands**

Level 3

- 411 - Northern Hardwood
- 412 - Oak Types
- 413 - Aspen Types
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 431 - Upland Mixed Forest
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest

**Non-Forest Stands**

Level 3

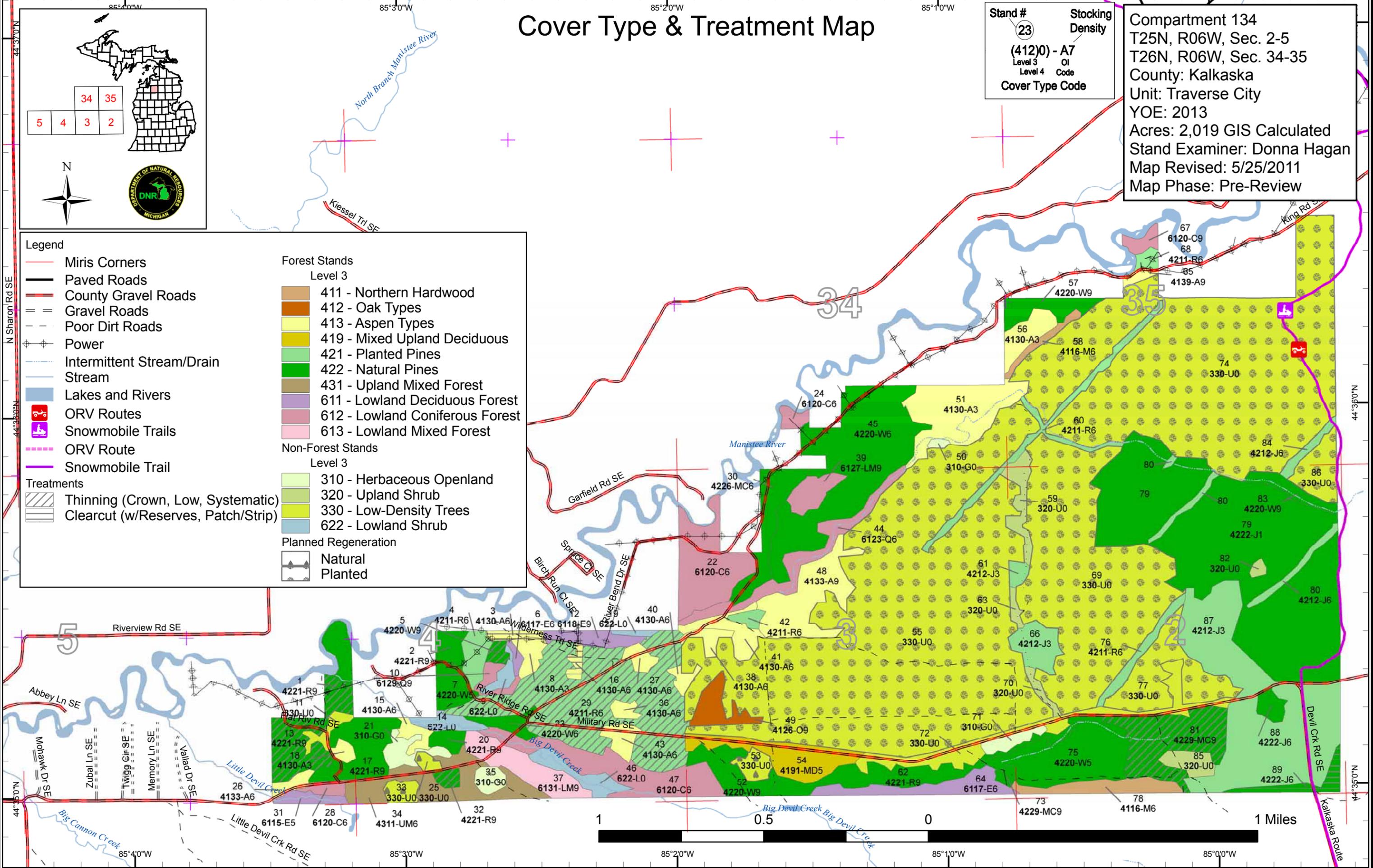
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low-Density Trees
- 622 - Lowland Shrub

**Planned Regeneration**

- Natural
- Planted

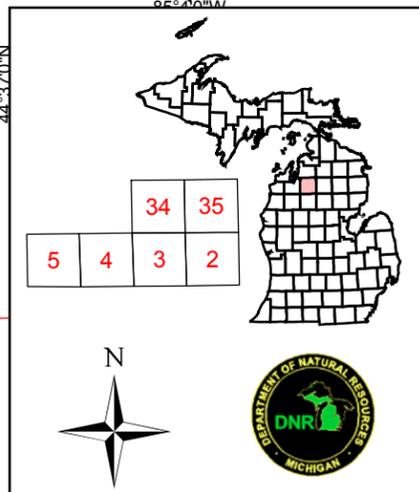
**Treatments**

- Thinning (Crown, Low, Systematic)
- Clearcut (w/Reserves, Patch/Strip)





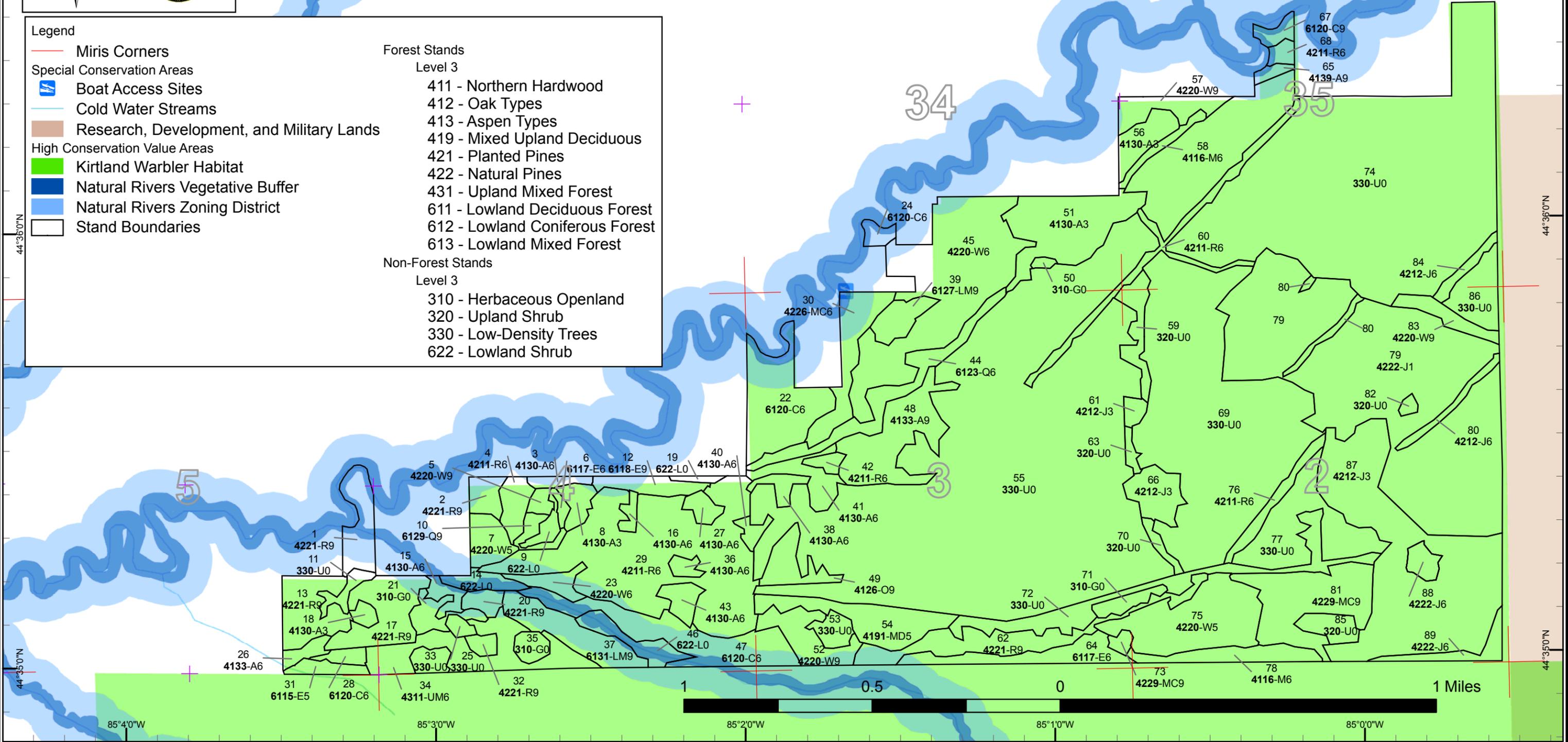
# Dedicated & Proposed Special Conservation Area Map



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

Compartment 134  
 T25N, R06W, Sec. 2-5  
 T26N, R06W, Sec. 34-35  
 County: Kalkaska  
 Unit: Traverse City  
 YOE: 2013  
 Acres: 2,019 GIS Calculated  
 Stand Examiner: Donna Hagan  
 Map Revised: 5/25/2011  
 Map Phase: Pre-Review

- Legend**
- Miris Corners
  - Special Conservation Areas**
  - Boat Access Sites
  - Cold Water Streams
  - Research, Development, and Military Lands
  - High Conservation Value Areas**
  - Kirtland Warbler Habitat
  - Natural Rivers Vegetative Buffer
  - Natural Rivers Zoning District
  - Stand Boundaries
- Forest Stands**
- Level 3
- 411 - Northern Hardwood
  - 412 - Oak Types
  - 413 - Aspen Types
  - 419 - Mixed Upland Deciduous
  - 421 - Planted Pines
  - 422 - Natural Pines
  - 431 - Upland Mixed Forest
  - 611 - Lowland Deciduous Forest
  - 612 - Lowland Coniferous Forest
  - 613 - Lowland Mixed Forest
- Non-Forest Stands**
- Level 3
- 310 - Herbaceous Openland
  - 320 - Upland Shrub
  - 330 - Low-Density Trees
  - 622 - Lowland Shrub



**Table 1 – Total Acres by Cover Type and Age Class**



	Age Class														Total	
	Non-Forested	1-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120 +		Unretn Age
Aspen	0	41	7	0	0	33	3	28	0	2	3	0	0	0	0	118
Cedar	0	0	0	0	0	0	0	0	0	65	0	3	4	0	0	71
Herbaceous Openland	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
Jack Pine	0	204	97	0	0	11	7	4	0	0	0	0	0	0	0	323
Low-Density Trees	885	0	0	0	0	0	0	0	0	0	0	0	0	0	0	885
Lowland Conifers	0	0	0	0	0	0	0	18	0	0	0	8	0	4	0	30
Lowland Deciduous	0	0	0	0	0	0	2	19	0	8	0	0	0	0	0	28
Lowland Mixed Forest	0	0	0	0	0	0	0	18	0	0	0	0	0	0	0	18
Lowland Shrub	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
Mixed Upland Deciduous	0	0	0	0	0	21	0	0	0	0	0	0	0	0	0	21
Natural Mixed Pines	0	0	0	0	0	0	0	50	0	2	0	0	0	0	0	52
Northern Hardwood	0	0	0	0	0	11	0	4	0	0	0	0	0	0	0	15
Oak	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9
Red Pine	0	0	0	0	0	128	0	12	0	73	0	0	0	0	0	214
Upland Mixed Forest	0	0	0	0	0	26	0	0	0	0	0	0	0	0	0	26
Upland Shrub	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
White Pine	0	0	0	0	0	0	44	100	0	2	0	7	0	0	0	154
<b>Total</b>	<b>940</b>	<b>245</b>	<b>105</b>	<b>0</b>	<b>0</b>	<b>231</b>	<b>56</b>	<b>254</b>	<b>0</b>	<b>152</b>	<b>3</b>	<b>27</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>2019</b>



## Table 2 – Proposed Treatment Summaries

**Traverse City Mgt. Unit**  
**Year of Entry 2013**

**Compartment 134**  
**Total Compartment Acres: 2019**

### Acres by Treatment Type

Commercial Harvest - 168	Site Prep - 0	Tree Planting - 0	Prescribed Burn - 0	Other - 0
Habitat Cut - 0	Opening Maintenance - 0	Tree Seeding - 0	Pesticide - 0	

### Cover Type by Harvest Method

	Clearcut	Selection	Seed Tree	Shelterwood	Thinning	Other - Specify	Total Acres
<b>Aspen</b>	5	0	0	0	0	0	5
<b>Jack Pine</b>	7	0	0	0	0	0	7
<b>Natural Mixed Pines</b>	0	0	0	0	33	0	33
<b>Red Pine</b>	0	0	0	0	120	0	120
<b>White Pine</b>	0	0	0	0	2	0	2
<b>Total</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>156</b>	<b>0</b>	<b>168</b>



S t a n d	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
1	61134001-Cut	5.8	42211 - Natural Red Pine, Mixed Deciduous	High Density Log	80	Harvest	Crown Thinning	42210 - Natural Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Take out aspen and red maple.  <u>Specs:</u>  <u>Other</u> This stand is under the old Consumers lease and is expiring in 2011. Should be good to go by 2012.  <u>Comments:</u>  <u>Next</u> Should be pockets of aspen and red maple regeneration and better growth in the red pine.  <u>Steps:</u></p>									
3	61134003-Cut	2.8	4130 - Aspen	High Density Pole	90	Harvest	Clearcut	4130 - Aspen	Cmpt. Review Proposal
<p><u>Prescription</u> Final Harvest - leaving any conifers and white birch. Too small for retention.  <u>Specs:</u>  <u>Other</u> Stand along private property and have signs on State land posting road as private.  <u>Comments:</u>  <u>Next</u>  <u>Steps:</u></p>									
5	61134005-Cut	2.4	42200 - Natural White Pine	High Density Log	80	Harvest	Crown Thinning	42200 - Natural White Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Reduce basal area to 120 BA.  <u>Specs:</u>  <u>Other</u>  <u>Comments:</u>  <u>Next</u>  <u>Steps:</u></p>									
13	61134013-Cut	17.2	42210 - Natural Red Pine	High Density Log	80	Harvest	Crown Thinning	42210 - Natural Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Reduce red pine BA down between 100-120 BA.  <u>Specs:</u>  <u>Other</u>  <u>Comments:</u>  <u>Next</u>  <u>Steps:</u></p>									
16	61134016-Cut	2.3	4130 - Aspen	High Density Pole	40	Harvest	Clearcut	4130 - Aspen	Cmpt. Review Proposal
<p><u>Prescription</u> Final harvest leaving any oak. Too small for retention.  <u>Specs:</u>  <u>Other</u>  <u>Comments:</u>  <u>Next</u>  <u>Steps:</u></p>									
29	61134029-Cut	94.8	42110 - Planted Red Pine	High Density Pole	47	Harvest	Systematic Thinning	42110 - Planted Red Pine	Cmpt. Review Proposal
<p><u>Prescription</u> Second thinning. Mark trees to take.  <u>Specs:</u>  <u>Other</u>  <u>Comments:</u>  <u>Next</u>  <u>Steps:</u></p>									

**Table 3 -- Treatments Prescribed  
with No Limiting Factor**



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Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
<b>32 61134032-Cut</b>	2.6	42210 - Natural Red Pine	High Density Log	65	Harvest	Crown Thinning	42210 - Natural Red Pine	Cmpt. Review Proposal

Prescription Thin down to 100-110 BA.

Specs:

Other

Comments:

Next

Steps:

<b>81 61134081-Cut</b>	33.2	42290 - Natural Mixed Pine	High Density Log	60	Harvest	Crown Thinning	42290 - Natural Mixed Pine	Cmpt. Review Proposal
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Prescription Take out jack pine and red maple.

Specs:

Other

A lot of old jack pine present. Eastern part of stand is in Kirtland's Warbler Mgt. Area.

Comments:

Next

Steps:

<b>89 61134089-Cut</b>	6.6	42220 - Natural Jack Pine	High Density Pole	55	Harvest	Clearcut	42120 - Planted Jack Pine	Cmpt. Review Proposal
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Prescription Warbler Mgt. area. Cut with compartment 133.

Specs:

Other

Comments:

Next

Steps:

**Total Treatment  
Acreage Proposed: 167.7**

**Table 4 -- Treatments Prescribed with a Limiting Factor**



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Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
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Prescription Specs:

Other Comment:

Next Steps:

Limiting Factor and No Treatment Reason

**Total Treatment Acreage Proposed: 0**



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	42211 - Natural Red Pine, Mixed Deciduous	High Density Log	12.8	80	111-140	M-86 Consumers Lease. Expires in 2011.
2	42210 - Natural Red Pine	High Density Log	5.6	65	200+	Nice natural stand of red pine.
3	4130 - Aspen	High Density Pole	2.8	90		
4	42110 - Planted Red Pine	High Density Pole	6.9	47	141-170	
5	42200 - Natural White Pine	High Density Log	2.4	80	200+	
6	6117 - Lowland Deciduous, Mixed Coniferous	High Density Pole	1.5	55		
7	42200 - Natural White Pine	Medium Density Pole	8.4	59	51-80	Flat River Mix Sale # 036-05. Red and white pine and oak were left. Lots of browse.
8	4130 - Aspen	High Density Sapling	5.1	16		Section 4 Aspen Sale # 44-93.
10	6129 - Mixed Coniferous Lowland Forest	High Density Log	3.7	128		
12	6118 - Lowland Deciduous with Cedar	High Density Log	7.5	85		
13	42210 - Natural Red Pine	High Density Log	17.2	80	111-140	Nice stand!
15	4130 - Aspen	High Density Pole	3.8	40		
16	4130 - Aspen	High Density Pole	2.3	40		
17	42210 - Natural Red Pine	High Density Log	19.8	80	111-140	Flat River Mix Sale # 036-05. Red and white pine and oak were left.
18	4130 - Aspen	High Density Sapling	2.3	16		Sale # 35-93.
20	42210 - Natural Red Pine	High Density Log	3.9	65	111-140	
22	6120 - Lowland Cedar	High Density Pole	30.4	85		
23	42200 - Natural White Pine	High Density Pole	5.5	64	111-140	

S t a n d	Traverse City Mgt. Unit		5 – Forested Stands			Compartment: 134	General Comments:
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Year of Entry: 2013	
24	6120 - Lowland Cedar	High Density Pole	3.0	85			
26	4133 - Aspen, Mixed Pine	High Density Pole	3.4	55			Most of stand on side slope north side of Military Road.
27	4130 - Aspen	High Density Pole	3.8	40			
28	6120 - Lowland Cedar	High Density Pole	3.0	100			
29	42110 - Planted Red Pine	High Density Pole	94.8	47	171-200		Planted in 1963. Thinned for first time in 1995, Sale #19-93
30	42260 - Natural Pine, Mixed Deciduous	High Density Pole	17.1	60	141-170		
31	6115 - Lowland Ash	Medium Density Pole	4.3	60			Little Devil Creek flows through.
32	42210 - Natural Red Pine	High Density Log	2.6	65	171-200		
34	4311 - Pine, Aspen Mix	High Density Pole	26.5	45			
36	4130 - Aspen	High Density Pole	2.5	40			Aspen clone within pine plantation.
37	6131 - Hemlock, White Pine, Maple, Birch	High Density Log	17.8	64			
38	4130 - Aspen	High Density Pole	3.9	40			
39	6127 - Lowland Pine	High Density Log	7.6	103	200+		
40	4130 - Aspen	High Density Pole	2.7	48			
41	4130 - Aspen	High Density Pole	9.1	40			
42	42110 - Planted Red Pine	High Density Pole	2.5	47	111-140		Small stand along King Road.
43	4130 - Aspen	High Density Pole	5.1	40			Aspen stand within pine plantation.
44	6123 - Lowland Fir	High Density Pole	18.4	60			Drainage area.



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## Traverse City Mgt. Unit

## 5 – Forested Stands

Compartment: 134  
Year of Entry: 2013

	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
45	42200 - Natural White Pine	High Density Pole	71.7	60	171-200	
47	6120 - Lowland Cedar	High Density Pole	31.4	85		
48	4133 - Aspen, Mixed Pine	High Density Log	28.2	60		Aspen comes and goes.
49	4126 - White, Black, N. Pin Oak	High Density Log	9.4	100	81-110	
51	4130 - Aspen	High Density Sapling	32.1	4		HSB Sale #61-002-05.
52	42200 - Natural White Pine	High Density Log	13.3	65	141-170	Jack pine cut out in northeast part of stand in winter of 2009. Made that into separate stand.
54	4191 - Mixed Upland Deciduous with Conifer	Medium Density Pole	20.8	40		Mix of canopy species.
56	4130 - Aspen	High Density Sapling	8.9	4		HSB Sale #61-002-05
57	42200 - Natural White Pine	High Density Log	9.9	67	171-200	
58	4116 - Mixed N. Hardwood - Aspen	High Density Pole	3.8	65		On side slope.
60	42110 - Planted Red Pine	High Density Pole	15.1	47		Retention/leave strips.
61	42120 - Planted Jack Pine	High Density Sapling	2.5	3		
62	42210 - Natural Red Pine	High Density Log	23.5	80	111-140	
64	6117 - Lowland Deciduous, Mixed Coniferous	High Density Pole	14.5	60		
65	4139 - Aspen, Mixed Deciduous	High Density Log	2.0	85		Along King Road, Manistee River and on a slope.
66	42120 - Planted Jack Pine	High Density Sapling	10.8	3		
67	6120 - Lowland Cedar	High Density Log	3.5	110		Along Manistee River.
68	42110 - Planted Red Pine	High Density Pole	2.5	47	200+	Stand includes access site to Manistee River. Gate and driveway through this stand on state land leading to pvt. residence.

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## Traverse City Mgt. Unit

## 5 – Forested Stands

Compartment: 134  
Year of Entry: 2013

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
73	42290 - Natural Mixed Pine	High Density Log	1.9	80	200+	
75	42200 - Natural White Pine	Medium Density Pole	35.7	50	51-80	Sale #62-03. Cut in winter 2006. All red & white pine, oak & cedar left.
76	42110 - Planted Red Pine	High Density Pole	6.6	47		Leave strip for Kalkaska KW RPP #61-036-09
78	4116 - Mixed N. Hardwood - Aspen	High Density Pole	11.3	40		Young stand yet.
79	42220 - Natural Jack Pine	Low Density Sapling	190.2	4		Sale #62-03. Was scheduled to be planted by Wildlife, however enough natural regeneration has occurred to meet wildlife specs for KW area.
80	42120 - Planted Jack Pine	High Density Pole	7.5	48		Leave strips
81	42290 - Natural Mixed Pine	High Density Log	33.2	60	111-140	A lot of old jack pine present. Eastern part of stand is in Kirtland's Warbler Mgt. Area.
83	42200 - Natural White Pine	High Density Log	6.8	103		Drainage area.
84	42120 - Planted Jack Pine	High Density Pole	3.7	48		Leave strips
87	42120 - Planted Jack Pine	High Density Sapling	97.4	15		Sale #17-93. Seeded with jack pine in 1995.
88	42220 - Natural Jack Pine	High Density Pole	4.1	65		
89	42220 - Natural Jack Pine	High Density Pole	6.6	55		



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
9	6229 - Mixed lowland shrub	3.2	No	Unspecified	
11	3303 - Mixed Low Density Trees	3.8	No	Unspecified	
14	6229 - Mixed lowland shrub	5.4	No	Unspecified	
19	6229 - Mixed lowland shrub	1.4	No	Unspecified	
21	3102 - Grass	6.4	No	Unspecified	
25	3301 - Low Density Deciduous Tree	2.1	Natural Regen	Jack Pine	Sale #36-05. Cut in 2009. Originally jack pine stand. Oak was left.
33	3301 - Low Density Deciduous Tree	4.1	Natural Regen	Jack Pine	Sale #36-05. Cut in 2009. Originally jack pine stand. Oak was left.
35	3102 - Grass	4.1	Yes	High (NonForested)	Rye field
46	6229 - Mixed lowland shrub	8.3	No	Unspecified	
50	3102 - Grass	1.0	No	Unspecified	
53	3302 - Low Density Conifer Trees	5.0	Natural Regen	Aspen	Sale #36-05. Cut in 2009. Originally jack pine stand.
55	3302 - Low Density Conifer Trees	376.9	Planted	Red Pine	
59	3205 - Mixed Upland Shrub	8.7	No	Unspecified	
63	3205 - Mixed Upland Shrub	1.9	No	Unspecified	
69	3302 - Low Density Conifer Trees	147.1	Planted	Jack Pine	
70	3205 - Mixed Upland Shrub	2.5	No	Unspecified	
71	3102 - Grass	4.4	Yes	High (NonForested)	Rye field.
72	3303 - Mixed Low Density Trees	24.8	No	Unspecified	



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
74	3302 - Low Density Conifer Trees	278.0	Planted	Jack Pine	
77	3302 - Low Density Conifer Trees	30.7	Planted	Jack Pine	
82	3205 - Mixed Upland Shrub	1.3	No	Unspecified	
85	3205 - Mixed Upland Shrub	6.3	No	Unspecified	
86	3302 - Low Density Conifer Trees	12.6	Planted	Jack Pine	



**7 – 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.

Stand	SCA Type	SCA Name	Acres	Comments



**8 – 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

Conservation Area	Type	Description
SCA	Cold Water Stream	A coldwater stream has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species (e.g., slimy sculpin) to persist from year to year. Coldwater streams in Michigan typically provide these conditions due to substantial contributions of groundwater to their stream flows. Such streams are established by Director's action and designated as trout resources by Fisheries Order 210.
HCVA	Designated Critical Habitat	Critical habitat areas are established via a consultative and cooperative process between the DNR and the U.S. Fish and Wildlife service for the recovery of threatened and endangered species, as governed by Part 365, Endangered Species Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, and the Federal Endangered Species Act of 1973. This is an active program, with proposed species plans in various stages of review. As of now only two exist, Kirtland Warbler Habitat and Piping Plover Habitat.
HCVA	Natural Rivers	There are two Natural Rivers datasets which are derived from spatial buffers set from an established and approved distance from the river centerlines. The Natural Rivers Zoning District is a 400 foot buffer for most Natural Rivers. The Vegetative Buffer ranges from 25 to 100 feet. To view specific Zoning Districts and Vegetative Buffers for each Natural River see the table located on the I:\Documentation\GDSE data folder.
SCA	Research and Military Areas	These areas provide facilities and lands specifically dedicated for research, or other purposes. They include the 5,847 acre Forest Fire Experiment Station, the 12,000 acre Houghton Lake Wildlife Research Area, the Beaver Islands Archipelago Wildlife Research Area (that includes most of Garden Island, all of High and Hog Islands, all state owned land on Beaver, South Fox and North Fox Islands), the Cusino Wildlife Research Area, the 3,000 acre Hunt Creek Fisheries Research Station, the 125 acre Wyman Nursery, and over 144,000 acres of Military Lands.