



Compartment Review Presentation

Cadillac Forest Management Unit

Compartment 135

Entry Year 2015

Acreage: 2,073

County Wexford

Management Area: Manistee River Valley

Revision Date: 04/25/2013

Stand Examiner: Joe Ventimiglia

Legal Description:

T24N, R10W, Sections 28 thru 33

Identified Planning Goals:

Forest Management with focus on multiuse objectives of timber, wildlife and ecological concerns. Management will follow practiced silvicultural guidelines and management plan guidelines.

Soil and topography:

Rubicon-Montcalm-Graycalm in uplands and Tawas-Croswell-Lupton in lowlands.

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

Good block of state forest ownership but would be ideal to attempt to purchase all private land within sections 28, 29 and 30; as well as tributaries in sections 31, 32 and 33.

Unique Natural Features:

Great Blue Heron rookery in NW of section 30, Wood Turtle to North of Compartment. Potential for Ram's Head Lady's Slipper and Calypso Orchid.

Archeological, Historical, and Cultural Features:

None Listed.

Special Management Designations or Considerations:

High quality natural growth white pine is found along the river. Because white pine of this quality is not common, it should be encouraged and retained.

Watershed and Fisheries Considerations:

Four tributaries of the Manistee River flow through Compartment 135. They are Soper Creek, Filer Creek, Blind Creek, and Apple Creek, plus smaller tributaries to those creeks. All are Designated Trout Streams with naturally reproducing populations of brook and/or brown trout, and all are on the "Trout Streams Vulnerable to Beaver Damming" list. Apple and Blind Creeks have historically been severely impacted by beaver damming. Therefore, future management of the riparian zone near these creeks should be to manage for tree species other than aspen. (M. Tonello, 8/27/2013).

Wildlife Habitat Considerations:

This compartment is in the Highplains Ecosystem, Grayling Outwash Plains Subsection, ½ is LTA 5211 and ½ is LTA 5111. In LTA 5111, soils are Grayling sand, a deep, excessively drained, acidic soil with low natural fertility. Historically, vegetation was dominated by fire dependent, conifer forest, e.g. jack pine, red pine/white pine, and pine or oak/pine barrens. In LTA 5211, soils are characterized by deep, excessively drained, acidic sands. Historic vegetation included the entire spectrum of conifer dominated forests. Management goals are to maintain cover type diversity across the compartment, structural diversity within stands, and to promote lowland conifers and mast-producing species. Featured species of special interest are bear, 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 minor glacial outwash sand and gravel and postglacial alluvium and end moraine of coarse-textured till. Glacial drift thickness varies between 200 and 400 feet. Beneath the glacial drift is the Mississippian Michigan Formation. The Michigan is quarried for gypsum elsewhere in the State. A gravel pit is located two miles to the north, but potential is considered to be good. This area lies five miles southeast of the prolific Silurian Niagaran reef trend. There does not appear to be any potential for Niagaran reefs in this area. This area is not currently leased for oil and gas and potential appears to be limited. (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:

None.

Recreational Facilities and Opportunities:

The Michigan Cycle Conservation Club trail is routed along the county road system in this compartment and is the only designated recreation facility within the compartment. There is heavy use of state lands for hunting, fishing, berry and mushroom picking as well as dispersed camping during those peak times. (T.M.N. 7/10/13)

Fire Protection:

The area has a history of large and small fires over the years. There are numerous 40 acre and smaller parcels of private land scattered within the boundaries of the compartment. These holdings have many unmarked roads leading into private land holdings. A number of these parcels have structural values however which ones and where the values are often change. The most likely probability of an ignition will come from one of these parcels or the abundant recreation in this area. The fuel type's all supports large fire growth during any dry season and there is high potential for property and resource damage should a wildfire occur. (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**

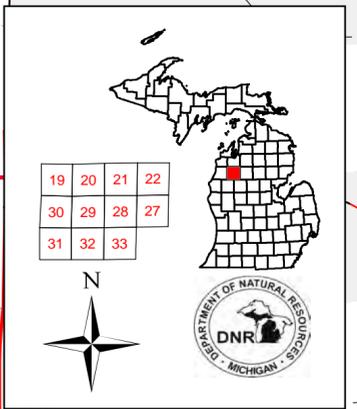
The following information is displayed, where pertinent, on the attached compartment maps:

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

Compartment: 135
 T24N R10W
 19 20 21 22 27 28 29 30 31 32 33
 County: Wexford
 Unit: Cadillac
 YOE: 2015
 Acres: 2,073 GIS Calculated
 Examiner: Joe Ventimiglia
 Map Revised: 10/04/2013
 Map Phase: Pre-Review

Cover Type & Treatment Map

Stand #
 23
 (4120) - 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
- Motorcycle Trails
- Motorcycle (SOS License)
- MCCCT Trail
- Stream
- Intermittent Stream
- Lakes and Rivers
- State Forest Land

Treatments

- Clearcut (w/Reserves, Patch/Strip)
- Seed Tree (w/Reserves)
- Selection (Group, Single Tree)
- Mowing

Forest Stands

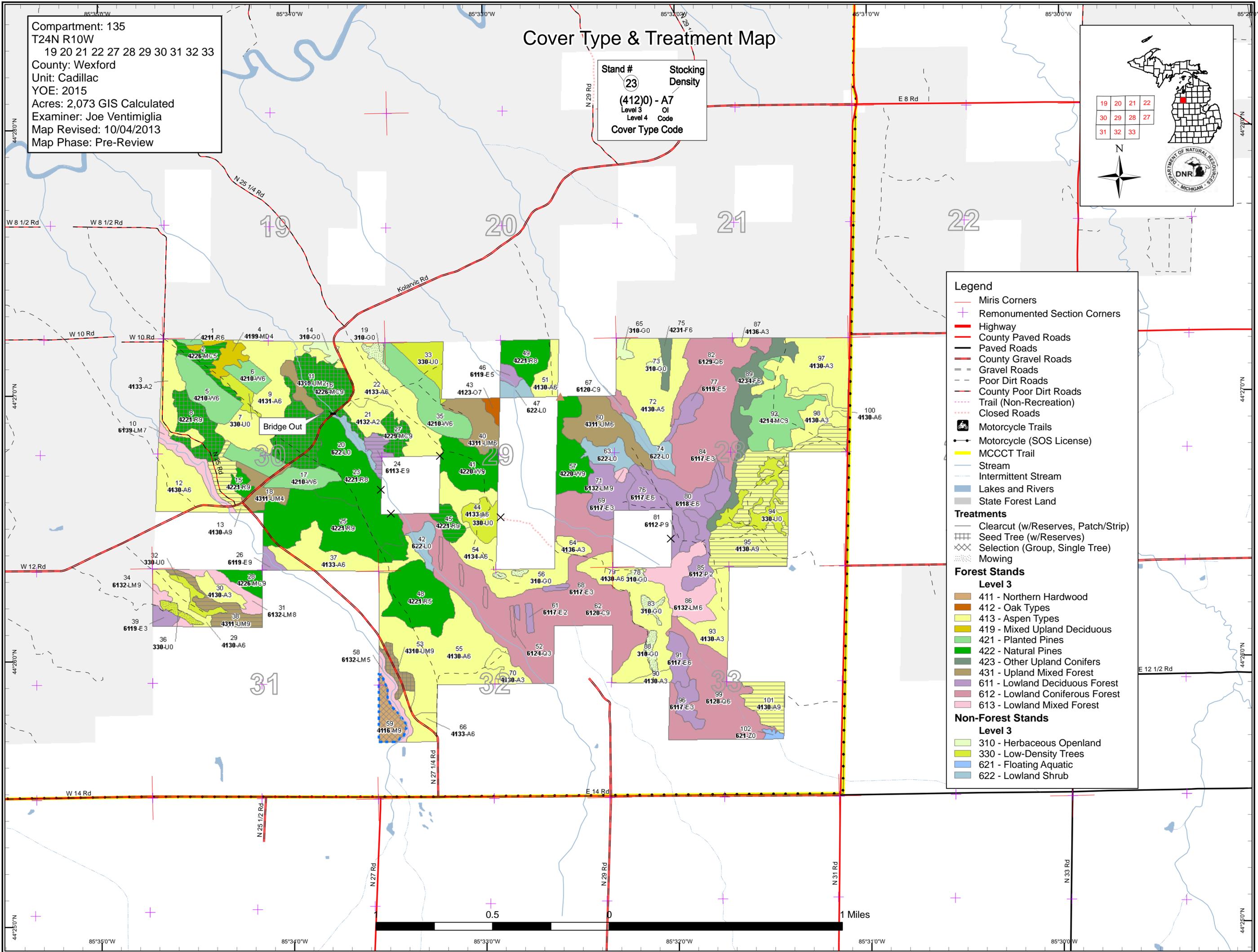
Level 3

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

Non-Forest Stands

Level 3

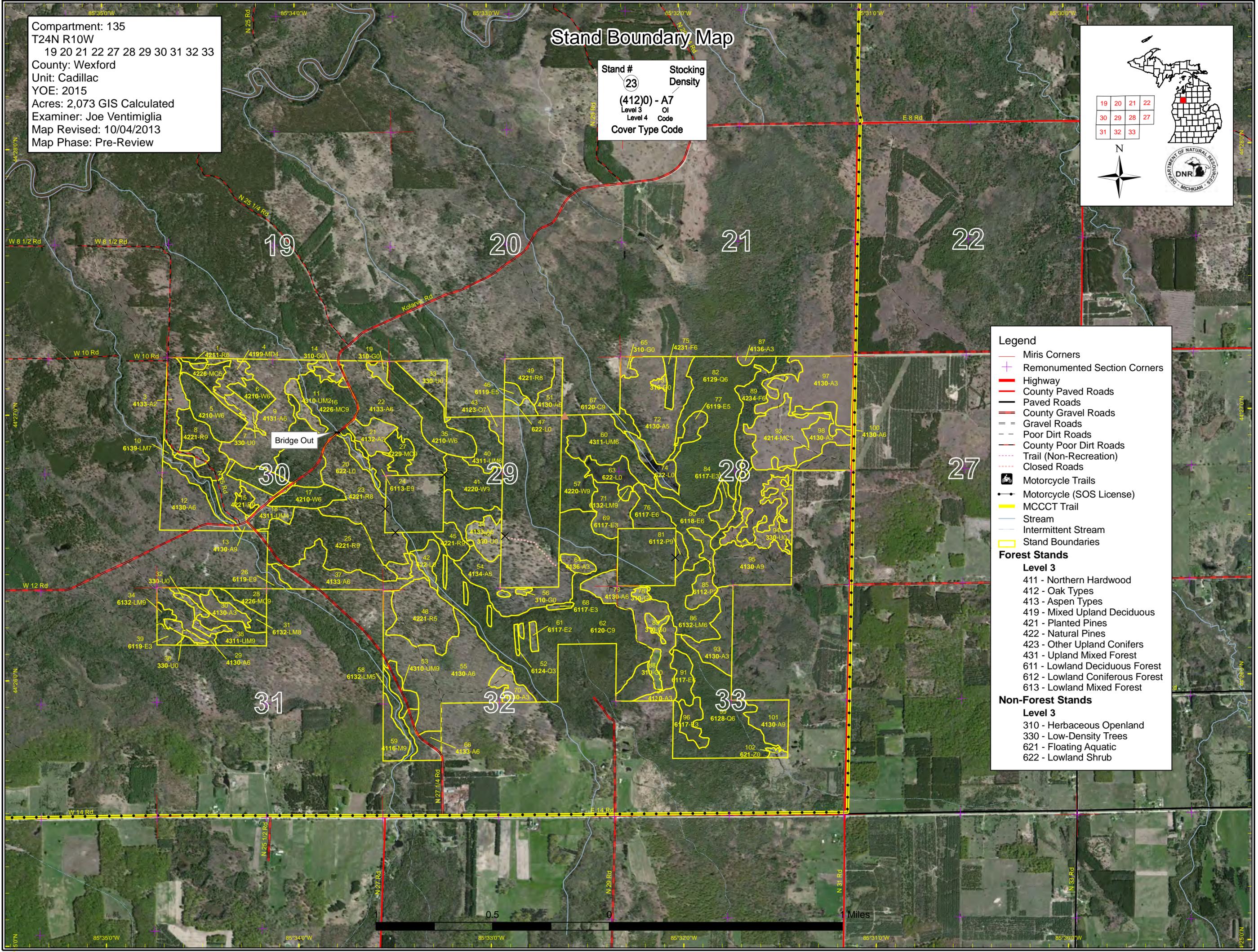
- 310 - Herbaceous Openland
- 330 - Low-Density Trees
- 621 - Floating Aquatic
- 622 - Lowland Shrub



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Stand Boundary Map

Stand #
 23
 Stocking
 Density
 (4120) - 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
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- Intermittent Stream
- Stand Boundaries

Forest Stands

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Non-Forest Stands

Level 3

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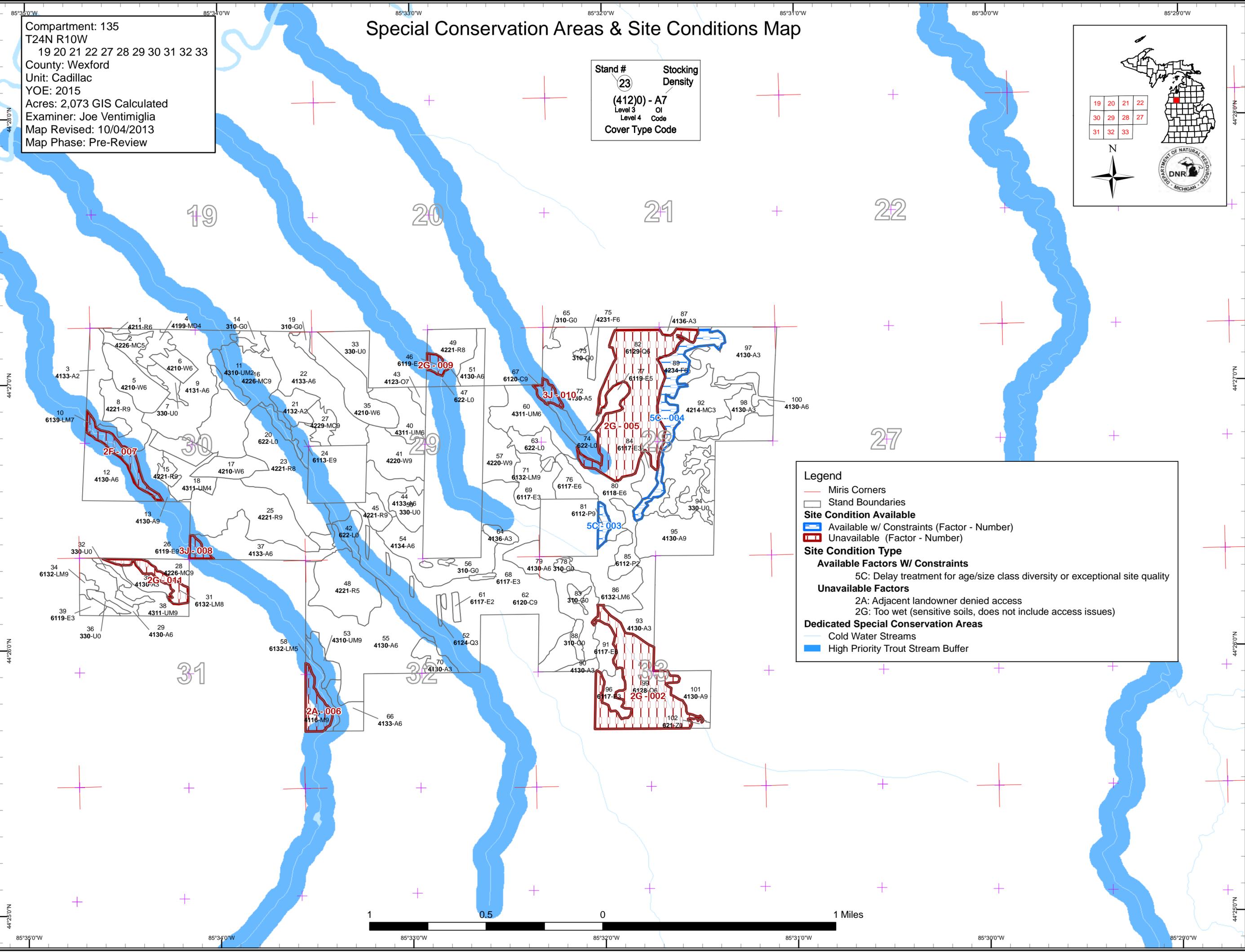
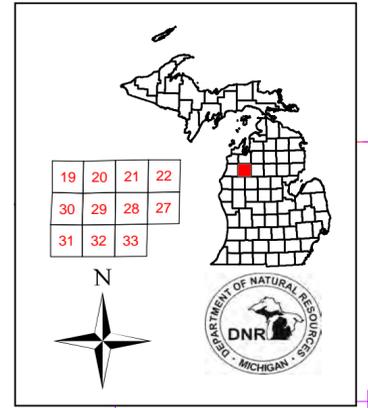
Bridge Out

0.5 1 Miles

Special Conservation Areas & Site Conditions Map

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 Examiner: Joe Ventimiglia
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Stand #
 23
 Stacking
 Density
 (4120) - 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

Available Factors W/ Constraints

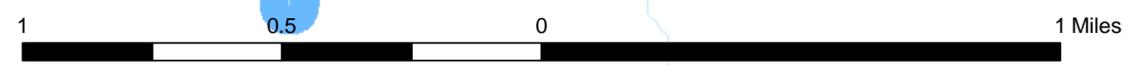
- 5C: Delay treatment for age/size class diversity or exceptional site quality

Unavailable Factors

- 2A: Adjacent landowner denied access
- 2G: Too wet (sensitive soils, does not include access issues)

Dedicated Special Conservation Areas

- Cold Water Streams
- High Priority Trout Stream Buffer



Report 1 – Total Acres by Cover Type and Age Class

Cadillac Mgt. Unit

Compartment 135 Year of Entry 2015

Joe VENTIMIGLIA : Examiner



	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	97	29	22	256	207	111	0	0	0	0	0	0	0	0	723
Cedar	0	0	0	0	0	0	0	0	0	0	0	0	174	0	174
Herbaceous Openland	25	0	0	0	0	0	0	0	0	0	0	0	0	0	25
Low-Density Trees	64	0	0	0	0	0	0	0	0	0	0	0	0	0	64
Lowland Aspen/Balsam Poplar	0	14	0	0	0	5	0	0	0	0	0	0	0	0	18
Lowland Conifers	0	0	0	5	0	0	0	0	0	0	0	168	0	0	173
Lowland Deciduous	0	39	0	34	0	0	29	15	4	0	0	0	0	0	120
Lowland Mixed Forest	0	0	0	0	0	0	2	13	32	0	4	19	0	0	70
Lowland Shrub	43	0	0	0	0	0	0	0	0	0	0	0	0	0	43
Mixed Upland Deciduous	0	0	0	11	0	0	0	0	0	0	0	0	0	0	11
Natural Mixed Pines	0	0	0	0	11	0	69	10	0	0	0	0	0	0	90
Northern Hardwood	0	0	0	0	0	0	0	0	13	0	0	0	0	0	13
Oak	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
Planted Mixed Pines	38	0	0	0	0	0	0	0	0	0	0	0	0	0	38
Red Pine	0	0	0	0	0	1	209	0	9	0	0	0	0	0	219
Upland Mixed Forest	0	8	0	68	0	0	16	9	0	0	0	0	0	0	101
Upland Spruce/Fir	0	0	0	0	0	38	0	0	0	0	0	0	0	0	38
Water	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
White Pine	0	0	0	0	0	95	55	0	0	0	0	0	0	0	150
Total	269	89	22	374	218	250	379	46	57	3	4	187	174	0	2073



Report 2 – Proposed Treatment Summaries

Cadillac Mgt. Unit
Year of Entry 2015

Compartment 135
Total Compartment Acres: 2,073

Acres by Treatment Type

Commercial Harvest - 268 Tree Planting - 0 Other - 0
 Habitat Cut - 0 Opening Maintenance - 19

Cover Type by Harvest Method

	Clearcut	Selection	Seed Tree	Shelterwood	Thinning	Other - Specify	Total Acres
Aspen Types	111	0	0	0	0	0	111
Lowland Deciduous Forest	7	0	0	0	0	0	7
Natural Pines	20	0	93	0	0	0	113
Northern Hardwood	0	13	0	0	0	0	13
Upland Mixed Forest	16	0	9	0	0	0	25
Total	154	13	102	0	0	0	268



S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
2	63135002-Cut	10.8	42260 - Natural Pine, Mixed Deciduous	Medium Density Pole	49	51-80	Harvest	Clearcut with Reserves	42260 - Natural Pine, Mixed Deciduous	Cmpt. Review Proposal

Prescription Final harvest and mark to cut scattered red pine in stand. Red pine left will meet retention. Manage for mixed stand.

Specs:

Other Apply Grouse Spec.

Comments:

Next
Steps:

Proposed
Start Date: 10/01/2014

8	63135008-Cut	22.8	42210 - Natural Red Pine	High Density Log	69	51-80	Harvest	Seed Tree	4133 - Aspen, Mixed Pine	Cmpt. Review Proposal
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Prescription Seed tree red pine stand. Green ring 10 BA of better quality trees. Cut all oak as well.

Specs:

Other Not expecting red pine regen, stand will regenerate to aspen- red maple. Pine left more for diversity and retention purposes. Determined to be too small to re plant to red pine.

Comments:

Next
Steps:

Proposed
Start Date: 10/01/2014

13	63135013-Cut	13.5	4130 - Aspen	High Density Log	51		Harvest	Clearcut with Reserves	4130 - Aspen	Cmpt. Review Proposal
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Prescription Final Harvest. Leave scattered pine as retention. Buffer creek appropriately, stay on top of bluff.

Specs:

Other Apply Grouse Spec.

Comments:

Next
Steps:

Proposed
Start Date: 10/01/2014

16	63135016-Cut	60.8	42260 - Natural Pine, Mixed Deciduous	High Density Log	65	51-80	Harvest	Seed Tree	4133 - Aspen, Mixed Pine	Cmpt. Review Proposal
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Prescription Final harvest leaving 10BA of quality red and white pine. Pick trees to leave which looks solid and wind firm. Manage for mixed stand, with a larger aspen component following harvest.

Specs:

Other Creek buffer appropriately. Bridge is out so stand would need to be accessed from both sides. (Two units)

Comments:

Next
Steps:

Proposed
Start Date: 10/01/2014



S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
24	63135024-Cut	7.1	6113 - Lowland Maple	High Density Log	75	1-50	Harvest	Clearcut with Reserves	6117 - Lowland Deciduous, Mixed Coniferous	Cmpt. Review Proposal

Prescription Final harvest leave all pine as retention.

Specs:

Other Border creek appropriately and make dry condition harvest or winter. Apply herp spec.

Comments:

Next
Steps:

Proposed
Start Date: 10/01/2014

27	63135027-Cut	9.7	42290 - Natural Mixed Pine	High Density Log	75	51-80	Harvest	Seed Tree	42260 - Natural Pine, Mixed Deciduous	Cmpt. Review Proposal
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Prescription Seed tree, leave 10 to 20 BA of best quality pine. Leave the one legacy white pine as well.

Specs:

Other Manage for mixed pine, with aspen component.

Comments:

Next
Steps:

Proposed
Start Date: 10/01/2014

38	63135038-Cut	16.1	4311 - Pine, Aspen Mix	High Density Log	69	1-50	Harvest	Clearcut with Reserves	4136 - Aspen, Mixed Conifer	Cmpt. Review Proposal
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Prescription Final harvest. Green ring quality white pine as retention. Leave all cedar and hemlock as well. Less than 10BA of residual pine should be left.

Specs:

Other Manage for mixed stand. Should get a good amount of aspen, maple with white pine back. Apply Grouse Spec.

Comments:

Next
Steps:

Proposed
Start Date: 10/01/2014

45	63135045-Cut	8.8	42210 - Natural Red Pine	High Density Log	80	51-80	Harvest	Clearcut with Reserves	4136 - Aspen, Mixed Conifer	Cmpt. Review Proposal
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Prescription Final Harvest, green ring scattered red pine as retention.

Specs:

Other Telephone quality trees. Too small of stand to replant to red pine. Manage as aspen dominated mix in future.

Comments:

Next
Steps: Too small to re plant

Proposed
Start Date: 10/01/2014



S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
53	63135053-Cut	8.7	4310 - Pine, Oak Mix	High Density Log	75	1-50	Harvest	Seed Tree	42260 - Natural Pine, Mixed Deciduous	Cmpt. Review Proposal

Prescription Final harvest. Leave 10 to 20 BA of pine as visual and seed source. Management for mix.

Specs:

Other White pine regen expected along with the aspen, limited to no red pine regen expected. Sale on both sides of county road, protect county road.

Comments: Will need to be unit of larger sale.

Next
Steps:

Proposed
Start Date: 10/01/2014

95	63135095-Cut	79.2	4130 - Aspen	High Density Log	51		Harvest	Clearcut with Reserves	4130 - Aspen	Cmpt. Review Proposal
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Prescription Final Harvest. Leave retention pockets 3 to 10 percent of acres with location at foresters discretion. As well leave all red pine.

Specs:

Other Good access, class A wood. Apply Grouse Spec.

Comments:

Next
Steps:

Proposed
Start Date: 10/01/2014

101	63135101-Cut	18.4	4130 - Aspen	High Density Log	50		Harvest	Clearcut with Reserves	4130 - Aspen	Cmpt. Review Proposal
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Prescription Final harvest. Leave retention in form of green ringed island 3 to 10 percent of acreage.

Specs:

Other Limit factor based on access. Will need permission from private for access. Apply Grouse Spec.

Comments:

Next
Steps:

Proposed
Start Date: 10/01/2014

19	NF_63135019- NonFor	3.9	310 - Herbaceous Openland				Non-Forest Management	Mowing	31021 - Cool Season Grass	Cmpt. Review Proposal
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Prescription Opening maintenance including disking, seeding, mowing and fertilizing

Specs:

Other
Comments:

Next
Steps:

Proposed
Start Date: Unspecified

36	NF_63135036- NonFor	3.8	330 - Low-Density Trees				Non-Forest Management	Mowing	31021 - Cool Season Grass	Cmpt. Review Proposal
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Prescription Opening maintenance including disking, seeding, mowing and fertilizing

Specs:

Other
Comments:

Next
Steps:

Proposed
Start Date: Unspecified



S t a n d	Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
56	NF_63135056- NonFor	1.7	310 - Herbaceous Openland				Non-Forest Management	Mowing	31021 - Cool Season Grass	Cmpt. Review Proposal
<u>Prescription</u> Opening maintenance including disking, seeding, mowing and fertilizing										
<u>Specs:</u>										
<u>Other</u> <u>Comments:</u>										
<u>Next</u> <u>Steps:</u>										
<u>Proposed</u> <u>Start Date:</u> Unspecified										
78	NF_63135078- NonFor	2.2	310 - Herbaceous Openland				Non-Forest Management	Mowing	31021 - Cool Season Grass	Cmpt. Review Proposal
<u>Prescription</u> Opening maintenance including disking, seeding, mowing and fertilizing										
<u>Specs:</u>										
<u>Other</u> <u>Comments:</u>										
<u>Next</u> <u>Steps:</u>										
<u>Proposed</u> <u>Start Date:</u> Unspecified										
83	NF_63135083- NonFor	3.2	310 - Herbaceous Openland				Non-Forest Management	Mowing	31021 - Cool Season Grass	Cmpt. Review Proposal
<u>Prescription</u> Opening maintenance including disking, seeding, mowing and fertilizing										
<u>Specs:</u>										
<u>Other</u> <u>Comments:</u>										
<u>Next</u> <u>Steps:</u>										
<u>Proposed</u> <u>Start Date:</u> Unspecified										
88	NF_63135088- NonFor	4.1	310 - Herbaceous Openland				Non-Forest Management	Mowing	31021 - Cool Season Grass	Cmpt. Review Proposal
<u>Prescription</u> Opening maintenance including disking, seeding, mowing and fertilizing										
<u>Specs:</u>										
<u>Other</u> <u>Comments:</u>										
<u>Next</u> <u>Steps:</u>										
<u>Proposed</u> <u>Start Date:</u> Unspecified										

**Total Treatment
Acreage Proposed: 274.6**

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Treatment Name	Acres	CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
59 63135059-Cut	12.5	4116 - Mixed N. Hardwood - Aspen	High Density Log	87	81-110	Harvest	Single Tree Selection	4116 - Mixed N. Hardwood - Aspen	Cmpt. Review Proposal

Prescription Mark hardwoods according to guidelines and final harvest the aspen in east edge of stand. Mark for quality.

Specs:

Other Only access is through private. Limit Factor. Talk to landowner before setting up sale. . Buffer creek appropriately.

Comment:

Next

Steps:

Proposed

Start Date: 10/01/2014

Limiting Factor

2A: Adjacent landowner denied access

**Total Treatment
Acreage Proposed: 12.5**

**Due to limitations in the current Site Conditions Analysis tool, all nonforested acres are considered available. Future development will enable analysis of nonforested types.*

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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
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Comments



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

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 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	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.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	42110 - Planted Red Pine	High Density Pole	1.4	54	111-140	Planted red pine, mostly in other compartment. Was third row thinned.
2	42260 - Natural Pine, Mixed Deciduous	Medium Density Pole	10.8	49	51-80	Hodgpodge of jack pine, aspen with a small piece of planted red pine in stand. Highly variable with mature jack pine scattered throughout.
3	4133 - Aspen, Mixed Pine	Medium Density	21.1	7	1-50	Stand was marked thinned in 2006 with all aspen, maple, and jack also cut. Pine residual over story widely scattered and concentrated in pockets not spread throughout. Aspen, maple and jack pine are regenerating. Not enough pine to consider as primary overstory.
4	4199 - Other Mixed Upland Deciduous	Low Density Pole	11.0	35		Very open mix of oaks ,red maple, aspen. With jack pine and white pine filling in. Small northern piece of stand was recently final harvested in sale in compartment to north. Came back to jack pine.
5	42100 - Planted White Pine	High Density Pole	24.4	50	51-80	Stand was row thinned in 2008, with all aspen, jack pine, and red maple cut that was within reach while cutting rows. Mostly white pine although reds scattered in pockets. Oaks scattered in too.Red pine appears more suitable for site.Plantation failed severely in pockets.
6	42100 - Planted White Pine	High Density Pole	9.6	50	51-80	Stand was row thinned in 2008, with all aspen, jack pine, and red maple cut that was within reach while cutting rows. A little better quality then adjacent pine. All white pine, with fire break through middle.
8	42210 - Natural Red Pine	High Density Log	22.8	69	51-80	Stand was marked thinned in 2006 with all aspen, maple, and jack also cut. Log red pine left along with a few scattered oaks. Looks natural, no planting records found. Some variable diameters. Aspen and red maple in understory.
9	4131 - Aspen, Oak	High Density Pole	56.1	41		Complex of log oaks, with pole aspen and red maple filling in between. Scattered pockets of older aspen clones scattered in stand as well. Semi open stand throughout.
10	6139 - Mixed Lowland Forest	Low Density Log	13.1	75		Mixed lowland valley complex with large flowing creek through middle. Mostly alder on flood plane with mix pine and aspen,oak, and maple on slopes. Some cedar down by creek.
11	4310 - Pine, Oak Mix	Medium Density	8.0	14		Stand was final harvested in 1999. All oak was left. Jack pine, red maple, white pine and aspen regenerated. Oaks of variable diameters left. Semi open stand.
12	4130 - Aspen	High Density Pole	33.6	41		Variable pole aspen stand with a minor mix of scattered pine and oak. Mostly upland although a little lowland ground in portions. Variable diameters although mostly pole.MCCT trail in stand. Stand semi open in pockets as well.
13	4130 - Aspen	High Density Log	13.5	51		Log /Pole aspen with scattered pine in overstory and in understory.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
15	42210 - Natural Red Pine	High Density Log	4.5	65	51-80	Stand was marked thinned in 2006 with all aspen, maple, and jack also cut. Mostly log red pine with good spacing. Little to no understory. May have been planted? Hard to tell at this point.
16	42260 - Natural Pine, Mixed Deciduous	High Density Log	60.8	65	51-80	Mixed white, red and jack pine stand with red maple, oak and aspen filling in the gaps in the pine. Variable stand with thick white pine understory in spots. Creek flows through middle of stand. Aspen fairly small, not much room to grow.
17	42100 - Planted White Pine	High Density Pole	26.6	50	81-110	Stand was third row thinned in 2008, with all aspen, jack pine, and red maple cut. Mostly white pine although a little red pine mixed in.
18	4311 - Pine, Aspen Mix	Low Density Pole	14.9	31		Semi open stand of stunted aspen, jack pine and white pine. Some of the aspen has hypoxlyn canker.
21	4132 - Aspen, Jack Pine	Medium Density	13.1	14		Stand was final harvested in 1999. All oak was left. Mostly aspen regenerated with white and jack mixed in. Few scattered oaks are mostly poles. Some small opening in stand.
22	4133 - Aspen, Mixed Pine	High Density Pole	50.4	32		Aspen complex with scattered pine and log oaks throughout. Two tracks throughout as well as underground electric lines.
23	42210 - Natural Red Pine	Medium Density Log	55.3	69	1-50	Stand was harvest back in 2006. Marked to cut job, with all aspen, jack pine and red maple being spec cut. Red pine and oak overstory, some white pine as well. Variable understory of white pine and some aspen and maple sprout from last cut. Appears as natural stand. Variable diameters in pines.
24	6113 - Lowland Maple	High Density Log	7.1	75	1-50	Lowland hardwood mostly red maple with scattered legacy red and white pine. Hummucky ground, with creek on west border.
25	42210 - Natural Red Pine	High Density Log	61.7	69	51-80	Stand was harvest back in 2006. Marked to cut job, with all aspen, jack pine and red maple being spec cut. Mostly log red pine, which appears natural. Some variable diameters. Limited regen except scattered aspen and red maple sprouts. Small percentage of white pine and scattered oaks in overstory as well.
26	6119 - Mixed Lowland Deciduous Forest	High Density Log	4.0	89	51-80	Nice lowland hardwood with some conifer. Creek running through middle of stand. Stand down the small bluff.
27	42290 - Natural Mixed Pine	High Density Log	9.7	75	51-80	Natural mixed log pine. Limited oak and aspen mixed in.
28	42260 - Natural Pine, Mixed Deciduous	High Density Log	8.4	65	1-50	Mixed variable diameters pine stand with aspen and red maple filling in. Two aged stand.
29	4130 - Aspen	High Density Pole	12.2	44		Small stand of aspen mixed with some white pine.
30	4130 - Aspen	High Density Sapling	9.1	11		Stand was final harvested in 2002 as "Kolarvic Cedar" sale. Came back well to aspen.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
31	6132 - Mixed Lowland Forest with Cedar	Medium Density Log	10.3	110		Mixed lowland cedar stand with has very significant blowdown present in stand. Appears to be a more recent event that caused all the blowdown. Possibly as a result of cut to west. Mature white pine and hemlock present in stand as well. Super canopy white pine scattered.
34	6132 - Mixed Lowland Forest with Cedar	High Density Log	4.2	105		Lowland stand of cedar, hemlock; along with lowland hardwood. Scattered super canopy white pine. Heavy natural blowdown in pockets.
35	42101 - Planted White Pine, Mixed Deciduous	High Density Pole	34.1	50	51-80	Stand was third row thinned in 2008, with all aspen, jack pine, and red maple cut that was within reach while cutting rows. Solid white pine in majority of stand although southwest portion of stand is heavily broken up with variable oaks.
37	4133 - Aspen, Mixed Pine	High Density Pole	35.5	34		Hodgpodge small pole aspen with heavy mix of red and white pine as well as scattered log oaks. One legacy pine in stand.
38	4311 - Pine, Aspen Mix	High Density Log	16.1	69	1-50	Scattered log white pine stand with variable aspen and red maple filling in the gaps. Variable diameters, but mostly log size overall. Hummucky lower ground in small pocket. Small cedar pocket in north portion of stand.
39	6119 - Mixed Lowland Deciduous Forest	High Density Sapling	4.7	13		Stand was final harvested in 2000 by inmate crew. Scattered hemlock were left. Aspen and mixed lowland hardwood. A lot of downed timber from last harvest.
40	4311 - Pine, Aspen Mix	High Density Pole	19.8	35		Aspen stand mixed with variable diameter mixed pine. Heaviest to white pine.
41	42200 - Natural White Pine	High Density Log	28.5	69	51-80	Stand was marked thinned in 2008 with all aspen, maple, and jack also cut. Appears to be natural mix of white and red pine. Variable diameter although log size overall. Oaks scattered.
43	4123 - Red Oak	Low Density Log	3.4	95	1-50	Log Oak scattered with small pole-sap aspen filling in. Some white pine in understory as well.
44	4133 - Aspen, Mixed Pine	High Density Pole	13.4	38		Aspen stand with mixed pine throughout, mostly white pine. Log oaks in stand as well. Very similar stands throughout this compartment.
45	42210 - Natural Red Pine	High Density Log	8.8	80	51-80	Stand was marked thinned in 2008 with all aspen, maple, and jack also cut. Very nice red pine which appears natural.
46	6119 - Mixed Lowland Deciduous Forest	Medium Density Pole	3.9	68	1-50	Small flood plain hardwood stand with some aspen, thick serviceberry-other lowland shrugs understory. Very low stocking and quality. Appears seasonally flooded. Basswood dieing by time its a log. Creek borders southern end of stand. Poor ground for growing trees.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
48	42210 - Natural Red Pine	Medium Density Pole	45.3	65	1-50	Stand was harvest back in 2006. Marked to cut job, with all aspen, jack pine and red maple being spec cut. Likely planted pine although natural stand for management purpose. Red pine and oak overstory with aspen and maple regenerated from last cut.
49	42210 - Natural Red Pine	Medium Density Log	18.9	60	1-50	Stand was marked thinned in 2008 with all aspen, maple, and jack also cut. Mostly red pine with white pine with oak mixed in, appears natural. Variable diameters and stocking. White pine, aspen and maple in understory.
51	4130 - Aspen	High Density Pole	11.1	32		Cut in 1980, with all oak left. Aspen came back well with scattered oaks and some white pine. White pine in subcanopy as well.
52	6124 - Lowland Spruce-Fir	High Density Sapling	4.6	37		Cedar Strip cuts performed over the course of two winters of 1976 and 1977, inmate crew from Camp Pugsley. Came back thick to balsam-spruce mixed with lowland hardwood. Still sapling size, no cedar regen observed.
53	4310 - Pine, Oak Mix	High Density Log	8.7	75	1-50	Scattered log white and red pine with aspen and oak filling in between. Aspen variable but mostly poles.
54	4134 - Aspen, Spruce/Fir	High Density Pole	37.7	44		Aspen stand with mix of fir and white pine on southern portion. Private to north.
55	4130 - Aspen	High Density Pole	90.9	39		Good quality aspen complex with mix of oak and mixed pine. Variable diameters with some older aspen clones mixed in stand. Small white planted in north end. Older clones to scattered to be separate stand.
57	42200 - Natural White Pine	High Density Log	26.4	68	51-80	Variable natural white pine stand with mix of aspen, red pine, red maple. Some pockets of mostly pole white pine, but overall logs. Some pockets are almost solid pine, with more open aspen pockets too. Large legacy white pine in stand. Low wet pockets in stand, but mostly upland.
58	6132 - Mixed Lowland Forest with Cedar	Medium Density Pole	8.6	110		Mix of lowland valley cedar and hemlock which buffers the creek. Some of the river flats are more open with tag alder.
59	4116 - Mixed N. Hardwood - Aspen	High Density Log	12.5	87	81-110	Good quality northern hardwood with a strip of log aspen on far east edge. No regen on forest floor, stand appears to have been thinned over twenty years ago. Big good quality log oak scattered in stand.
60	4311 - Pine, Aspen Mix	High Density Pole	33.7	32		Cut in 1980 with all pine left. Aspen dominated stand with significant mix of log red and white pine scattered in stand. Balsam mixed in around edges. Pockets of almost solid pine in stand. Wet pocket in northwest portion of stand and in southern tip.
61	6117 - Lowland Deciduous, Mixed Coniferous	Medium Density	3.3	11		Cedar habitat cut performed commercially in 2002. Same back semi open to aspen, lowland hardwood and balsam fir.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
62	6120 - Lowland Cedar	High Density Log	169.3	120		Mixed lowland cedar complex. Variable diameters with tamarack, fir, spruce and lowland hardwood mixed in. Creek in stand along with various habitat strip cuts performed over the decades. Legacy white pine in stand as well. Highly variable with blowdown pockets to areas of pure standing log cedar.
64	4136 - Aspen, Mixed Conifer	High Density Sapling	5.2	14		Final Harvest in 1999. Came back well to aspen, birch, red maple and fir. Residual cedar was left scattered.
66	4133 - Aspen, Mixed Pine	High Density Pole	12.1	45		Pole aspen with mix of oak and white pine. County road goes through stand. Small grassy opening in stand as well, good future spot for landing. Creek to west edge of stand.
67	6120 - Lowland Cedar	High Density Log	4.7	130		Lowland cedar and hemlock mix with creek running through stand. Some red maple as well. Good quality cedar and hemlock.
68	6117 - Lowland Deciduous, Mixed Coniferous	High Density Sapling	1.7	16		Habitat cut final harvested commercially in 1997. Came back thick to mostly aspen with balsam fir, tamarack, tag alder and red maple.
69	6117 - Lowland Deciduous, Mixed Coniferous	High Density Sapling	21.8	13		Attempted to do commercially in 2000, but never happened. Habitat cut in 2002. Came back to lowland mix of aspen, balsam, red maple, paper birch, and tag alder.
70	4130 - Aspen	High Density Sapling	9.9	7		Stand was final harvested in 2006, all oak was left. Regenerated well back to aspen. Widely scattered oak left.
71	6132 - Mixed Lowland Forest with Cedar	High Density Log	1.7	65		Small two acre pocket of mature red maple and cedar.
72	4130 - Aspen	Medium Density Pole	55.1	38		Final Harvested in 1975. Came back to semi open aspen and fir mix. Little to no understory. Poor quality stunted aspen. Old burned pine stumps in stand. Ground may have burned hard and soils suffered?
75	42311 - Planted Spruce, Mixed Deciduous	High Density Pole	5.5	51	51-80	White Spruce planted in 1962. Densely planted. Some aspen and oak mixed in.
76	6117 - Lowland Deciduous, Mixed Coniferous	High Density Pole	13.4	33		Stand was final harvested in 1980. All oak and white pine were left. Eagle nest in large white pine in stand. Aspen mostly with some fir and lowland hardwood mixed in. Small portion of northwest has mature red maple excluded from harvest. Lowland portions but mostly upland ground.
77	6119 - Mixed Lowland Deciduous Forest	Medium Density Pole	7.5	72	1-50	Sparse lowland hardwood and aspen with balsam filling in. Very low ground. Some log red maple but mostly pole size.
79	4130 - Aspen	High Density Pole	49.2	40		Final Harvested in 1973. Mostly aspen with white pine and red maple mixed in. Mostly upland although edges have more lowland character. North end of stand is semi open.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
80	6118 - Lowland Deciduous with Cedar	High Density Pole	24.8	68	1-50	Was attempted to be habitat cut in 1980 but was unsuccessful. Mixed aspen and lowland hardwood with cedar-fir mixed in. Creek in stand. Fir understory. Variable stand with pure cedar pockets to low quality lowland hardwood. Very wet ground. Little open to south end of stand.
81	6112 - Lowland Aspen	High Density Log	4.6	50		Small strip of mature aspen with private to west. Balsam fir mixed in. Lowland ground but not too wet to harvest in.
82	6129 - Mixed Coniferous Lowland Forest	High Density Pole	99.5	110		Large lowland complex dominated by cedar and spruce . Variable stand with pockets of blowdown to pockets of almost pure cedar. Other pockets are pure black spruce bog type. Aspen, red maple, white spruce, and paper birch are scattered throughout. Balsam understory in pockets otherwise limited understory.
84	6117 - Lowland Deciduous, Mixed Coniferous	High Density Sapling	7.2	12		Stand was final harvested in 2001. Not all of sale was able to be cut as a result of wet conditions, this stand represents all that was able to be cut commercially. Came back to mostly aspen with balsam and lowland hardwood mixed in. Some ceas and spruce was left in north portion. Appears northern portion was cut years earlier as well?
85	6112 - Lowland Aspen	Medium Density	13.5	13		Stand was final harvested in 2000. Lowland hummucky ground, regenerated to lowland aspen with lowland hardwood and balsam. Open in spots.
86	6132 - Mixed Lowland Forest with Cedar	High Density Pole	32.1	85		Lowland hardwood mixed with cedar-hemlock . Scattered lecacay white pine. Creek in stand. Steep bluff to northwest border. Wet hodgepodge stand. Some log size hardwood in stand.
87	4136 - Aspen, Mixed Conifer	High Density Sapling	1.4	15		Habitat cut done in 1998 by Traverse City Soil Conservation District. Came back thick to aspen. Couple legacy white pine left. Goes into compartment to north.
89	42340 - Upland Spruce/Fir	High Density Pole	32.5	52		Stand was final harvested in early 1960's. Transition zone between the aspen and the swamp. Hodgepodge of aspen, white pine, spruce, fir and red maple. Upland ground for the most part. Western edge directly borders swamp. Patch of log red pine in southern tip of stand.
90	4130 - Aspen	High Density Sapling	4.0	3		Trespass on State Land, from private timber sale to south. Judging from inventory stand was cut in 2010. Aspen regenerated from cut. Maple was left during cut.
91	6117 - Lowland Deciduous, Mixed Coniferous	High Density Pole	10.6	32		Habitat cut performed in 1980. Regenerated to a mix of aspen and balsam fir. Mix of sapling and small pole size. Very thick.
92	42141 - Planted Mixed Pine, Mixed Deciduous	High Density Sapling	37.6	4		Stand was final harvested in 2008, with all cherry and oak left. Shortwood operation. Came back to aspen and jack pine and was trench and planted to red pine as well. Time will tell how much red pine survives vs the aspen and jack pine.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
93	4130 - Aspen	High Density Sapling	22.2	24		Recent cut aspen sapling stand close to pole size. Some fir mixed in.
95	4130 - Aspen	High Density Log	79.2	51		Large somewhat variable aspen stand. All upland except very small portion of the southwest border of stand. Odd shaped stand with many small fingers, with openings bordering stand. Private to south and east.
96	6117 - Lowland Deciduous, Mixed Coniferous	High Density Sapling	9.6	34		Lowland cut performed in 1979. Came back to aspen, lowland hardwood and some lowland conifer. Previous inventory notes some cedar regen in eastern border of cut. Growing very slowly. Still sapling size mostly.
97	4130 - Aspen	High Density Sapling	46.7	6		Stand was final harvested in 2007, with all cherry and oak left. Tree length operation. This unit was cut first and aspen spouted back well so it was decided not to be planted. Jack pine seedlings under aspen sprouts.
98	4130 - Aspen	High Density Sapling	15.7	5		Stand was final harvested in 2008, with all cherry and oak left. Aspen has sprouted back well, with some jack pine seedlings starting to take hold.
99	6128 - Lowland Coniferous, Mixed Deciduous	High Density Pole	68.4	110		Lowland complex with creek running through stand. Mix of lowland conifer with balsam, hemlock, tamarack cedar and fir. Some lowland hardwood scattered.
100	4130 - Aspen	High Density Pole	6.4	44		Small strip of aspen left as retention from final harvests performed last YOE.
101	4130 - Aspen	High Density Log	18.4	50		Stand was manually cut by prison crew in 1971. Log size aspen with some balsam in understory. Lowland a little on west border.



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
7	330 - Low-Density Trees	6.5	Unspecified	Unspecified	Scattered cherry and maple. A few pines as well.
14	310 - Herbaceous Openland	4.9	Unspecified	Unspecified	
19	310 - Herbaceous Openland	3.9	Unspecified	Unspecified	
20	622 - Lowland Shrub	5.4	Unspecified	Unspecified	Creek surrounded by alder.
32	330 - Low-Density Trees	5.7	Unspecified	Unspecified	
33	330 - Low-Density Trees	15.5	Unspecified	Unspecified	Widely scattered red maple and oaks. Some scattered pines as well. May fill in a little with time to become forested.
36	330 - Low-Density Trees	3.8	Unspecified	Unspecified	
42	622 - Lowland Shrub	8.1	Unspecified	Unspecified	
47	622 - Lowland Shrub	5.4	Unspecified	Unspecified	Lowland shrub complex with some standing water and a few higher spots dry enough to stand on.
50	330 - Low-Density Trees	13.3	Unspecified	Unspecified	Scattered oaks, white pine and a few maple. Very slowly filling in.
56	310 - Herbaceous Openland	1.7	Unspecified	Unspecified	
63	622 - Lowland Shrub	11.9	Unspecified	Unspecified	
65	310 - Herbaceous Openland	3.1	Unspecified	Unspecified	
73	310 - Herbaceous Openland	1.7	Unspecified	Unspecified	
74	622 - Lowland Shrub	11.7	Unspecified	Unspecified	
78	310 - Herbaceous Openland	2.2	Unspecified	Unspecified	
83	310 - Herbaceous Openland	3.2	Unspecified	Unspecified	
88	310 - Herbaceous Openland	4.1	Unspecified	Unspecified	



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
94	330 - Low-Density Trees	19.6	Unspecified	Unspecified	
102	621 - Floating Aquatic	1.9	Unspecified	Unspecified	