

CADILLAC FOREST MANAGEMENT UNIT



COMPARTMENT REVIEW PRESENTATION

COMPARTMENT #077 ENTRY YEAR: 2013

Compartment Acreage (GIS Acres): 1992 County: Missaukee

Revision Date: 10/07/2011 10:16 AM

Stand Examiner: Jim Malloy, Forester

Legal Description: T24N 05W Sections 2, 11, and 14

Management Goals: To manage the Norwich oil field and northern reaches of the Deadstream Swamp for a diverse timber and age class to provide for recreational opportunities for the public.

Soil and Topography: Montcalm-Graycalm complex, Rubicon sand, Tawas mucks and peats, Roscommon mucky sand and Lupton muck. The topography consists of flat lowlands in the southern portion transitioning to oak ridges to the north.

Ownership Patterns, Development, and Land Use in and Around the Compartment: Solid State surface ownership with minerals owned privately. Oil and gas development and timber management dominates the compartment. Merit Energy runs the Norwich Oilfield Office located in this compartment.

Unique, Natural Features (include only non-site specific and non-sensitive information): Loon and dusted skipper to the west, Great blue heron rookery 1 mile to SW of section 14. Massasauga to W. Blanding's turtle to SE. Bald eagle to E. Secretive locust to E. Kirtland's warbler mapped just N of compartment. Hill's thistle 1/2 mile to NW of section 2 and throughout vicinity to N. Rough fescue to N. Hill's pondweed to SW. Potential for dusted skipper, secretive locust, and Great Plains spittlebug in grassy openings and jack pine/oak savanna. Potential for massasauga, Blanding's turtle, and box turtle. Potential for eagle, osprey, and great blue heron rookery. Potential for red-shouldered hawk and goshawk. Potential for Hill's thistle, Alleghany plum, and rough fescue in grassy openings. Potential for calypso and ram's head lady slipper in cedar swamps.

Archeological, Historical, and Cultural Features (include only non-site specific and non-sensitive information): None listed.

Special Management Designations or Considerations: South of the compartment is the Deadstream Swamp National Natural Landmark. Within the compartment Heavy oil and gas development plus an extensive network of largely unmapped, antiquated above ground pipelines creates a hazardous compartment for most management activities, especially wild or prescribed fire activities as well as timber sale harvesting.

Watershed and Fisheries Considerations: No Fisheries comments at this time.

Wildlife Habitat Considerations: Priority Wildlife Species: Those wildlife species associated with mesic hardwoods and lowland conifer forested community types.

Habitat Objectives: This compartment is located in the Highplains Ecosystem, Grayling Outwash Plain Subsection, LTA 5111, 3111 and 5149. Deep, excessively drained sands and gravelly sands characterize soils in this area. The southern part of the compartment is very poorly drained peats and mucks.

Historically, this area was characterized by a matrix of dry-mesic conifer, mesic northern forest, and lowland conifer swamp. Various areas of the swamp have a heavy understory of spruce and/or balsam fir replacing the cedar. Wildlife habitat objectives are to continue to maintain species and age-class diversity. (MK 9/30/11)

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 600 feet. Beneath the glacial drift is the Mississippian Michigan Formation. The Michigan Formation is quarried for gypsum in other areas of the State. The nearest gravel pit is located one mile to the east and potential is thought to be good. Part of East Norwich Field is located in this compartment. The field has produced over 15.9 million BO and 15.7 Bcf gas from the Devonian Richfield Formation and is in secondary recovery operations currently. The one State fee parcel is leased and HBP.

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. Proposed new roads or roads recommended for substantial improvement are noted below: The above paragraph is to be included in each write-up. As noted above the road plan is on the map and any new roads or improvements should be listed here.

Survey Needs: N/A

Recreational Facilities and Opportunities: The North Missaukee ORV Route and the West Higgins Lake ORV Route traverses the compartment. The MCCCT trail also lays in the compartment. The area is used by hunters, berry pickers and other recreationists. 9-01-2011 BET

Fire Protection: Many oil and gas wells with pipelines curtail plowing operations within the compartment. Fuel types will not support large crown fires. Wildfire suppression is the responsibility of the Houghton Lake Field Office. The local roads allows for a good access for fire suppression units. 9-01-2011 BET

Additional Compartment Information:

- **The following 5 reports from the Operations Inventory System (OIPC) are attached:**
 - ◆ **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, where pertinent, on the attached compartment maps:**
 - ◆ **Base feature information, stand numbers, cover types**
 - ◆ **Proposed treatments**
 - ◆ **Proposed road access system**
 - ◆ **Suggested potential old growth**

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 +		Unreven Age
Aspen	0	0	187	59	80	160	0	19	0	0	0	0	0	0	0	504
Herbaceous Openland	97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97
Low-Density Trees	143	0	0	0	0	0	0	0	0	0	0	0	0	0	0	143
Lowland Conifers	0	0	0	0	0	0	0	0	0	0	223	0	0	0	223	
Lowland Deciduous	0	18	0	0	0	0	0	0	0	0	0	0	0	0	18	
Lowland Mixed Forest	0	0	41	0	0	0	0	0	0	0	0	0	0	0	41	
Mixed Upland Deciduous	0	34	0	0	0	0	0	0	0	0	0	0	0	0	34	
Northern Hardwood	0	0	0	32	0	0	0	0	0	0	0	0	0	0	32	
Oak	0	0	0	29	39	30	0	0	158	534	0	0	0	0	791	
Red Pine	0	0	0	0	20	0	0	0	0	0	0	0	0	0	20	
Urban	90	0	0	0	0	0	0	0	0	0	0	0	0	0	90	
Total	330	52	228	121	139	190	0	19	158	534	223	0	0	0	1992	



Table 2 – Proposed Treatment Summaries

Cadillac Mgt. Unit
Year of Entry 2013

Compartment 077
Total Compartment Acres: 1992

Acres by Treatment Type

Commercial Harvest - 228	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
Aspen	97	0	0	0	0	0	97
Oak	0	131	0	0	0	0	131
Total	97	131	0	0	0	0	228

Table 3 -- Treatments Prescribed
with No Limiting Factor

S t a n d	Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
1	63077001-Cut	28.1	4130 - Aspen	High Density Log	62	Harvest	Clearcut with Reserves	4130 - Aspen	Cmpt. Review Proposal
<u>Prescription</u> Final harvest, leave scattered oak and cherry. <u>Specs:</u> Apply dead and down creation spec for grouse habitat. Focus on retaining mast and berry producing shrubs. <u>Other</u> Expand into the opening to the east to pick up merchantable aspen clones. <u>Comments:</u> <u>Next</u> <u>Steps:</u>									
3	63077003-Cut	55.9	4126 - White, Black, N. Pin Oak	High Density Log	89	Harvest	Group Selection	4129 - Mixed Oak	Cmpt. Review Proposal
<u>Prescription</u> thin oak to a residual BA of 70. Create 1 85ft regen gaps (between crowns) per acre. <u>Specs:</u> <u>Other</u> When marking mast trees to leave, consult with wildlife to help mark. Retain oaks for mast and seed source. Focus on retaining mast and berry producing shrubs. <u>Comments:</u> <u>Next</u> <u>Steps:</u>									
31	63077031-Cut	32.2	4124 - Red with White Oak	High Density Log	87	Harvest	Single Tree Selection	4129 - Mixed Oak	Cmpt. Review Proposal
<u>Prescription</u> Thin oaks to a residual ba of 60-70. Cut all jack pine and any red pine over 14 dbh. Select cut about half the red maple and leave best quality single stem in place in attempt to not overwhelm stand with sprouting red maple that competes with the oak regeneration <u>Specs:</u> <u>Other</u> <u>Comments:</u> <u>Next</u> <u>Steps:</u>									
34	63077034-Cut	42.8	4124 - Red with White Oak	High Density Log	84	Harvest	Single Tree Selection	4129 - Mixed Oak	Cmpt. Review Proposal
<u>Prescription</u> Thin oaks to a residual ba of 60-70. Cut all jack pine and any red pine over 14 dbh. Select cut about half the red maple and leave best quality single stem in place in attempt to not overwhelm stand with sprouting red maple that competes with the oak regeneration <u>Specs:</u> <u>Other</u> <u>Comments:</u> <u>Next</u> <u>Steps:</u>									
58	63077058-Cut	68.9	4130 - Aspen	High Density Pole	42	Harvest	Clearcut with Reserves	4130 - Aspen	Cmpt. Review Proposal
<u>Prescription</u> Final harvest eastern 1/2 of stand for age class diversity. <u>Specs:</u> <u>Other</u> Apply dead and down creation spec for grouse habitat. Focus on retaining mast and berry producing shrubs. <u>Comments:</u> <u>Next</u> <u>Steps:</u>									

**Total Treatment
Acreage Proposed: 228.0**

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

**Out of YOE -- Treatments
Prescribed with No Limiting Factor**

Year of Entry: 2013



Treatment Name	Acres	Stage1 CoverType	Size Density	Stand Age	Treatment Type	Treatment Method	Cover Type Objective	Approval Status
63102_OutOfY OE_1-Cut	7.2				Harvest	Clearcut	42110 - Planted Red Pine	Cmpt. Review Proposal
<u>Prescription:</u> Final harvest plant to red pine								
<u>Specs:</u>								
<u>Other</u>								
<u>Comments:</u>								
<u>Next</u> Write FTP								
<u>Steps:</u>								

**Total Treatment
Acreage Proposed: 7.2**

Stand	Cadillac Mgt. Unit		5 – Forested Stands			Compartment: 077	General Comments:
	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Year of Entry: 2013	
1	4130 - Aspen	High Density Log	18.8	62	51-80		
3	4126 - White, Black, N. Pin Oak	High Density Log	55.9	89	111-140		
4	4130 - Aspen	High Density Sapling	17.4	10			Stand cut last entry
5	4130 - Aspen	High Density Sapling	29.1	20			
6	4129 - Mixed Oak	High Density Log	107.2	89	81-110		Stand was thinned last entry and has not responded well yet. Some marked trees left.
9	4124 - Red with White Oak	High Density Pole	39.2	30	1-50		
10	42110 - Planted Red Pine	High Density Pole	13.4	33	51-80		Red pine plantation not doing very well.
12	4130 - Aspen	High Density Pole	9.2	31			
15	4126 - White, Black, N. Pin Oak	High Density Pole	157.7	72	51-80		stand was cut last entry. regen is mostly multiple stemmed maple and scattered multiple stemmed oaks. oak pole/log overstory.
17	4130 - Aspen	High Density Sapling	12.7	10			stand cut in 2001
19	4124 - Red with White Oak	High Density Log	55.3	88	51-80		OAK STAND THAT WAS THINNED IN 1991. Has not responded
21	42110 - Planted Red Pine	High Density Pole	6.5	33	111-140		Young red pine plantation. small diameter and short
22	4124 - Red with White Oak	High Density Sapling	29.4	27			almost all multiple stemmed oaks and red maple.
23	4124 - Red with White Oak	High Density Log	23.2	87			stand was shelterwood cut last entry. remove overstory oaks next entry.
27	4124 - Red with White Oak	High Density Log	44.6	84	51-80		Stand was thinned last entry, has not yet responded
28	4126 - White, Black, N. Pin Oak	High Density Pole	30.2	46	51-80		mostly single stemmed oaks
30	4116 - Mixed N. Hardwood - Aspen	High Density Sapling	32.4	20			stand is mostly cherry with scattered pockets of aspen.
31	4124 - Red with White Oak	High Density Log	32.2	87	111-140		



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Cadillac Mgt. Unit

5 – Forested Stands

Compartment: 077
Year of Entry: 2013

	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
33	4129 - Mixed Oak	High Density Log	76.1	87	1-50	Stand is a mix of open upland and oaks with pine with scattered oil wells throughout.
34	4124 - Red with White Oak	High Density Log	42.8	84	111-140	
35	4199 - Other Mixed Upland Deciduous	High Density Sapling	34.1	8		stand was cut last entry. a few scattered large oaks left. mostly multiple stemmed maple regen with scattered multiple stemmed oak.
37	4130 - Aspen	High Density Pole	25.6	40		small diameter aspen.
41	4124 - Red with White Oak	High Density Log	58.4	85	51-80	
43	4124 - Red with White Oak	High Density Pole	8.0	82	81-110	sand was left uncut last entry as buffer to the west.
44	4131 - Aspen, Oak	High Density Sapling	47.5	10		
45	4130 - Aspen	High Density Sapling	36.5	10		
47	4130 - Aspen	High Density Sapling	42.4	10		same as pre inventory 45
49	4130 - Aspen	High Density Sapling	4.2	10		
51	4130 - Aspen	High Density Sapling	26.3	10		
52	4130 - Aspen	High Density Pole	36.3	31		
56	4124 - Red with White Oak	High Density Log	30.5	86	51-80	Stand was thinned last entry
58	4130 - Aspen	High Density Pole	134.3	42	81-110	
61	4130 - Aspen	High Density Sapling	29.7	21		
62	4130 - Aspen	High Density Pole	34.1	31		
64	6132 - Mixed Lowland Forest with Cedar	Medium Density	40.5	10		
65	6117 - Lowland Deciduous, Mixed Coniferous	High Density Sapling	17.7	8		

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Cadillac Mgt. Unit

5 – Forested Stands

Compartment: 077
Year of Entry: 2013



S t a n d	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
66	6128 - Lowland Coniferous, Mixed Deciduous	High Density Pole	222.6	97		



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
2	310 - Herbaceous Openland	12.0	N/A	Unspecified	
7	122 - Road/Parking Lot	1.4	N/A	Unspecified	
8	310 - Herbaceous Openland	81.5	N/A	Unspecified	
11	3104 - Degraded	1.6	N/A	Unspecified	
13	3104 - Degraded	1.6	N/A	Unspecified	abandoned oil well site
14	122 - Road/Parking Lot	1.9	N/A	Unspecified	
16	122 - Road/Parking Lot	1.0	N/A	Unspecified	
18	330 - Low-Density Trees	58.3	N/A	Unspecified	
20	122 - Road/Parking Lot	0.8	N/A	Unspecified	
24	122 - Road/Parking Lot	1.1	N/A	Unspecified	
25	122 - Road/Parking Lot	2.0	N/A	Unspecified	
26	122 - Road/Parking Lot	2.3	N/A	Unspecified	
29	122 - Road/Parking Lot	1.0	N/A	Unspecified	
32	122 - Road/Parking Lot	1.0	N/A	Unspecified	
36	3301 - Low Density Deciduous Tree	64.3	No	Unspecified	upland brush and scattered oaks.
38	122 - Road/Parking Lot	62.9	N/A	Unspecified	
39	3301 - Low Density Deciduous Tree	10.8	No	Unspecified	
40	122 - Road/Parking Lot	1.9	N/A	Unspecified	



Stand	Cover Type	Acres	Managed Site	Management Priority (Objective)	General Comments:
42	122 - Road/Parking Lot	1.7	N/A	Unspecified	
46	122 - Road/Parking Lot	1.3	N/A	Unspecified	
48	122 - Road/Parking Lot	1.8	N/A	Unspecified	
50	122 - Road/Parking Lot	1.4	N/A	Unspecified	
53	122 - Road/Parking Lot	1.0	N/A	Unspecified	
54	330 - Low-Density Trees	9.9	N/A	Unspecified	
55	122 - Road/Parking Lot	1.3	N/A	Unspecified	
57	122 - Road/Parking Lot	1.1	N/A	Unspecified	
59	122 - Road/Parking Lot	1.1	N/A	Unspecified	
60	122 - Road/Parking Lot	1.0	N/A	Unspecified	
63	122 - Road/Parking Lot	1.5	N/A	Unspecified	



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

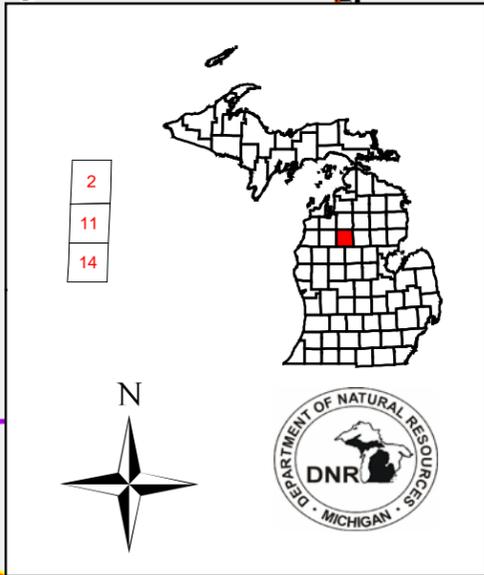
* This is a list of Dedicated Biodiversity Areas for this compartment along with a 1/4 mile buffer surrounding the compartment. Refer to Dedicated Conservation Area Map for areas that the below listed Conservation Areas are located.

ERA = Ecological Reference Area
 HCVA = High Conservation Value Area
 SCA = Special Conservation Area

Conservation Area	Type	Description
SCA	Non-Dedicated Natural Areas and National Natural Landmarks	This category is comprised of those Natural, Wilderness and Wild Areas that have been nominated or proposed for legal dedication, but for which legal dedication by legislature has not occurred. The nomination process is defined by Part 351, Wilderness and Natural Areas, of the Natural Resources and Environmental Protection Act, 1994 PA 451. The program is administered by the DNR. Nominations require the submittal of a Natural Areas Nomination Packet to the DNR. This is an active program, with proposed sites in various stages of review. Final dedication of nominated Natural, Wilderness and Wild Areas is accomplished through legislative action.

Cover Type & Treatment Map

Compartment 77
 T24N, R05W, Sec. 2,11,14
 County: Missaukee
 Unit: Cadillac
 YOE: 2013
 Acres: 1,992 GIS Calculated
 Stand Examiner: Jim Malloy
 Map Revised: 10/4/2011
 Map Phase: Pre-Review



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

Legend

- Miris Corners
- Remonumented Section Corners
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Poor Dirt Roads
- County Poor Dirt Roads
- Motorcycle Trails (DNR License)
- MCCCT Trails
- ORV Trails
- Snowmobile Trails
- Motorcycle (DNR Sticker)
- ORV Trail
- Snowmobile Trail
- MCCCT Trail
- Intermittent Stream
- Perennial Stream or River
- Lakes and Rivers
- State Forest Land

Treatments

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

Forest Stands

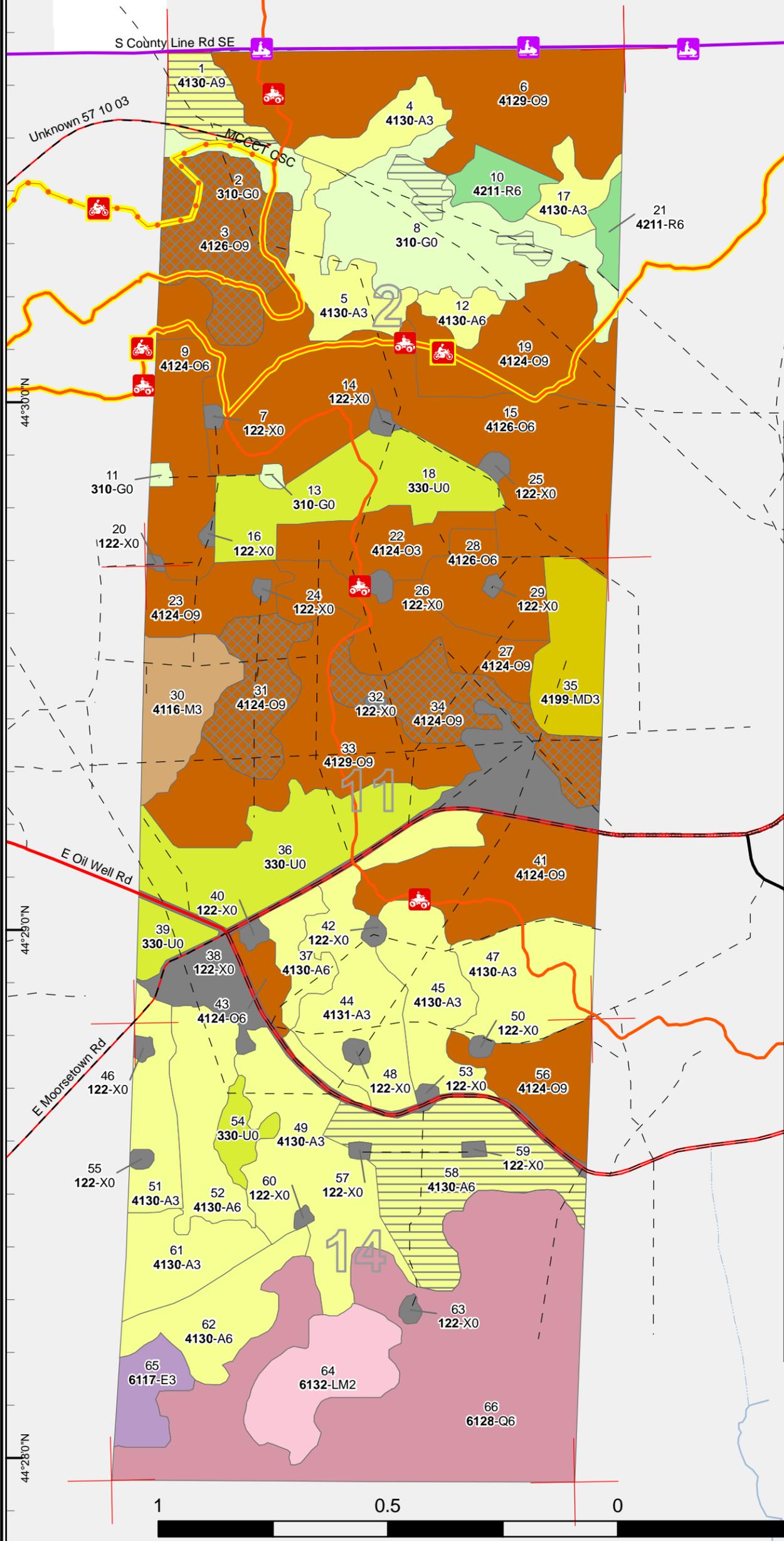
Level 3

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

Non-Forest Stands

Level 3

- 122 - Road/Parking Lot
- 310 - Herbaceous Openland
- 330 - Low-Density Trees



Stand Boundary Map

Compartment 77
 T24N, R05W, Sec. 2,11,14
 County: Missaukee
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 Stand Examiner: Jim Malloy
 Map Revised: 10/4/2011
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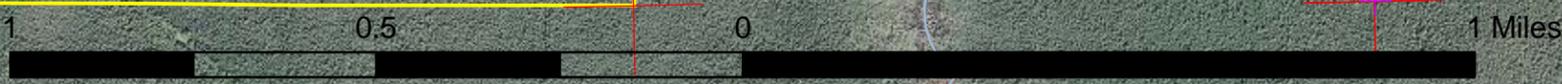
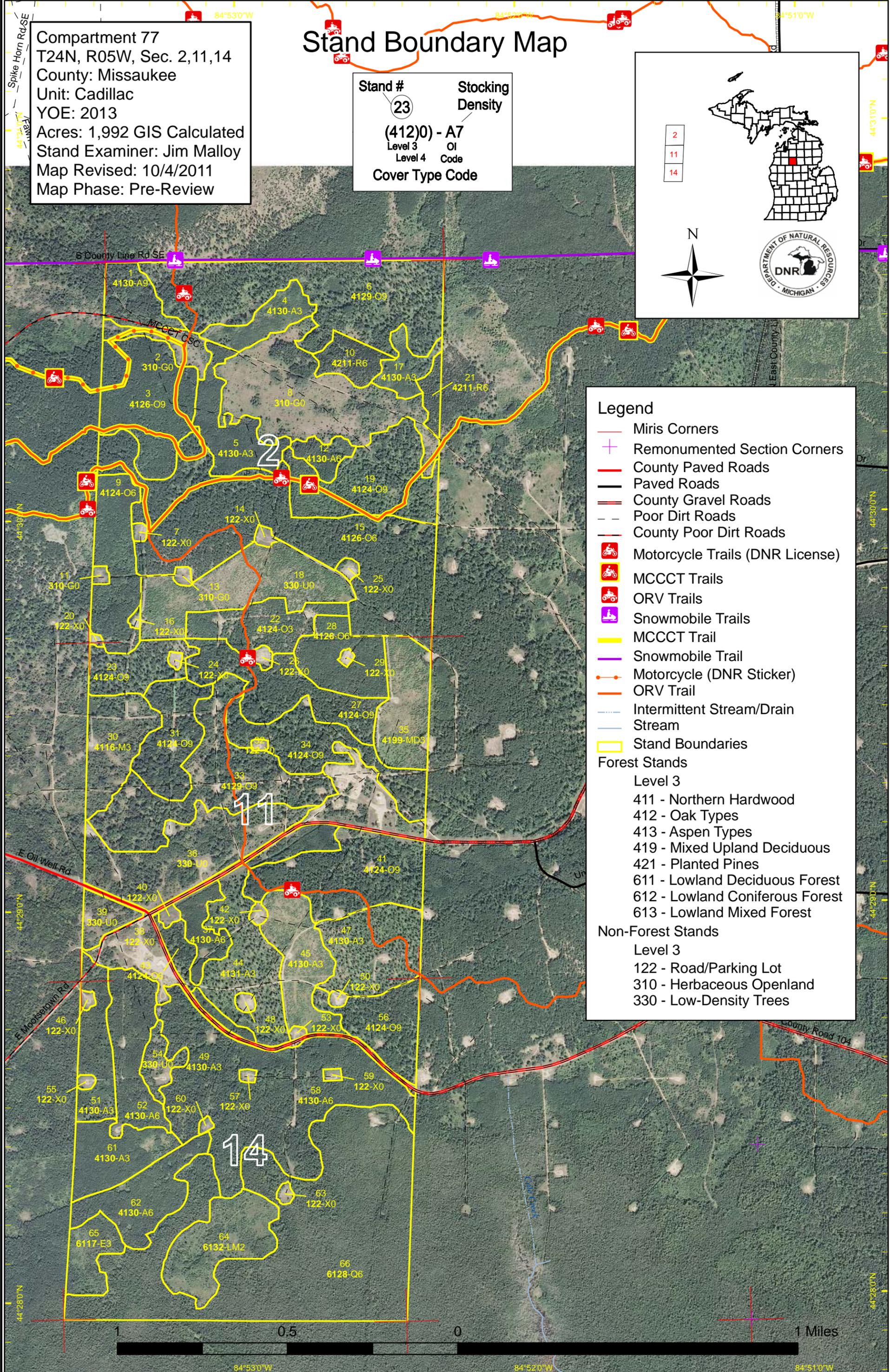
Stand #
 23
Stocking Density
 (412)0 - A7
 Level 3 OI
 Level 4 Code
Cover Type Code

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11
14



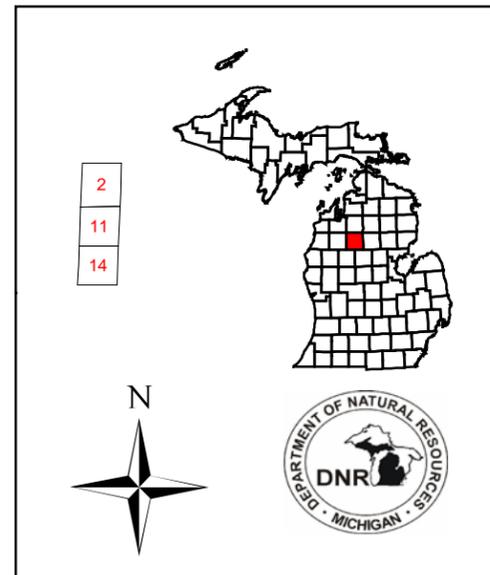
Legend

- Miris Corners
 - Remonumented Section Corners
 - County Paved Roads
 - Paved Roads
 - County Gravel Roads
 - Poor Dirt Roads
 - County Poor Dirt Roads
 - Motorcycle Trails (DNR License)
 - MCCCT Trails
 - ORV Trails
 - Snowmobile Trails
 - MCCCT Trail
 - Snowmobile Trail
 - Motorcycle (DNR Sticker)
 - ORV Trail
 - Intermittent Stream/Drain
 - Stream
 - Stand Boundaries
- Forest Stands**
- Level 3
- 411 - Northern Hardwood
 - 412 - Oak Types
 - 413 - Aspen Types
 - 419 - Mixed Upland Deciduous
 - 421 - Planted Pines
 - 611 - Lowland Deciduous Forest
 - 612 - Lowland Coniferous Forest
 - 613 - Lowland Mixed Forest
- Non-Forest Stands**
- Level 3
- 122 - Road/Parking Lot
 - 310 - Herbaceous Openland
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 T24N, R05W, Sec. 2,11,14
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 Map Revised: 10/4/2011
 Map Phase: Pre-Review

Dedicated & Proposed Special Conservation Area Map



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

Legend

- Miris Corners
- + Remonumented Section Corners
- Stand Boundaries
- Proposed Special Conservation Areas
 - ▨ SCA - Special Conservation Area
 - ▩ SCA Removal
- Dedicated Special Conservation Area
- Non_Dedicated Natural Areas and National Natural Landmarks
- Forest Stands
 - Level 3
 - 411 - Northern Hardwood
 - 412 - Oak Types
 - 413 - Aspen Types
 - 419 - Mixed Upland Deciduous
 - 421 - Planted Pines
 - 611 - Lowland Deciduous Forest
 - 612 - Lowland Coniferous Forest
 - 613 - Lowland Mixed Forest
- Non-Forest Stands
 - Level 3
 - 122 - Road/Parking Lot
 - 310 - Herbaceous Openland
 - 330 - Low-Density Trees

