



Compartment Review Presentation

Cadillac Forest Management Unit

Compartment 63076

Entry Year 2024

Acreage: 2,020

County Missaukee

Management Area: Upper Muskegon

Stand Examiner: Matt Edison

Legal Description:

T24N R5W, Sec. 1, 12, and 13.

Identified Planning Goals:

To maintain a variety of cover types and age class diversity that favors game as well as non-game species. Past focus on this area has been on the development of the Norwich Oil Field that encompasses over 80% of this Compartment. Long-term goals are to increase the acreage of red and white pine to provide for greater cover type diversity and to create structural and age diversity within the wetland complex along the southern portion of the compartment.

Soil and topography:

The terrain of this Compartment ranges from flat lowland (to the south), to rolling uplands (to the north). Soil series' include Rubicon-Montcalm-Graycalm & Lupton-Roscommon-Tawas associations.

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

The state owns all lands within the boundaries of this Compartment. The lands adjacent to this Compartment are primarily state owned with some small private in-holdings. The adjoining state lands falls into three separate Forest Management Units (Traverse City-Kalkaska, Roscommon, and Grayling). There are no parcels of land in this Compartment that are recommended for acquisition or disposal. This Compartment has previously been heavily developed for its oil and gas resources.

Unique Natural Features:

The southern one-third of Section 13 contains the northern edge of the Dead Stream Swamp, although is area is not part of the official designated Dead Stream Swamp management area. This portion of the swamp is the headwaters for Cole creek (a tributary to the Dead Stream). MNFI records indicate Hill's thistle to the north and northwest. Kirtland Warbler to the north, Dusted Skipper to the NW, and Bald Eagle to the west. Numerous well sites and roads. Some potential for dry Prairie plants in grassy openings. Hill's thistle, rough fescue. Potential for dusted skipper and red-legged spittlebug as well. Potential for ram's head, limestone oak fern and calypso in cedar types.

Archeological, Historical, and Cultural Features:

Several old railroad grades cross over the Compartment. No known archeological or historical sites within the Compartment.

Special Management Designations or Considerations:

There are numerous oil wells and associated networks of unmarked above ground and shallow pipelines. This limits the possibilities for prescribed burning in the fire dependant ecosystems present in this Compartment. The amount of pipelines also limits the type of silvicultural treatments that can be applied in some areas.

Watershed and Fisheries Considerations:

Sections 1 and 12 contain no surface waters. Section 13 contains the headwaters of Cole Creek that is classified warm water. This stream should be protected with the standard setbacks recommend in the Forest Management Guidelines. (R. O'Neal 10/12)

Wildlife Habitat Considerations:

Management efforts are focused on maintaining the aspen type, establishing mixed age classes of aspen, and to manage and maintain the oak component for acorn production and mature timber. This compartment occurs along the northern edge of the Deadstream Swamp, an important deeryard and prime habitat for bear and bobcat. Ensuring early successional types and mast-producing oaks in close proximity to the swamp is an important resource for overwintering deer. Heavy oil and gas development throughout prevent habitat improvement in the uplands, because there is little chance of burning in the understory or openings. Featured species guidance will be considered for American bittern, American woodcock, beaver, black bear, eastern massasauga rattlesnake, mallard, pileated woodpecker, red-headed woodpecker, ruffed grouse, snowshoe hare, white-tailed deer, and wood duck. (E. Victory 9/2012)

Mineral Resource and Development Concerns and/or Restrictions

No known potential exists for commercial metallic mineral production in this part of the state. The nearest active sand/gravel pit is more than five miles away. There appears to be good potential for sand & gravel on the uplands, but the State may not own the rights to sand & gravel in much of the compartment, and oil & gas infrastructure could inhibit development. The compartment is within the East Norwich oil field, and the compartment has been fully developed for the Richfield Member of the Lucas Formation. New Richfield development wells are unlikely. However, there could be future potential from other formations. All State-owned mineral rights within the compartment are currently under lease and held by production. The State does not own most of the mineral rights within the compartment. Because the mineral estate is the dominant estate, the surface owner must provide the owner of the mineral rights reasonable access to the surface for mineral exploration and 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 needed this entry.

Recreational Facilities and Opportunities:

Snowmobile Trail #6 is located along the northern boundary of this compartment along S. County Line Road. The West Higgins Trail and Michigan Cross Country Cycle (MCCCT) run east/west in the northern portion of the compartment on the same tread. The West Higgins/MCCCT Trail is designed as a 50' maximum width trail for smaller type ORV's such as quads. Care should be taken to keep the 50" width trail intact to reduce illegal opportunistic full size Off -Road Vehicle from using this trail. Proposed timber management activities should include trail protection specifications to reduce impacts, as well as serve as an example of how silviculturally sound timber harvesting practices can co-exist, and often improve recreation and wildlife experiences for future generations. (T.M.N. 8-30-12)

Fire Protection:

Wildfire suppression is the responsibility of the Houghton Lake Field Office. Many oil and gas wells in the compartment makes this a limited plow area until utility representative is contacted. There are numerous well roads, ORV/ snowmobile routes and county roads for access. Seasonal users in dry periods may increase the chance of wildfires. (BET 8-1-12)

Additional Compartment Information:

The following reports from the Inventory are attached:

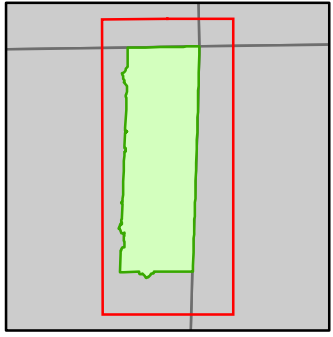
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

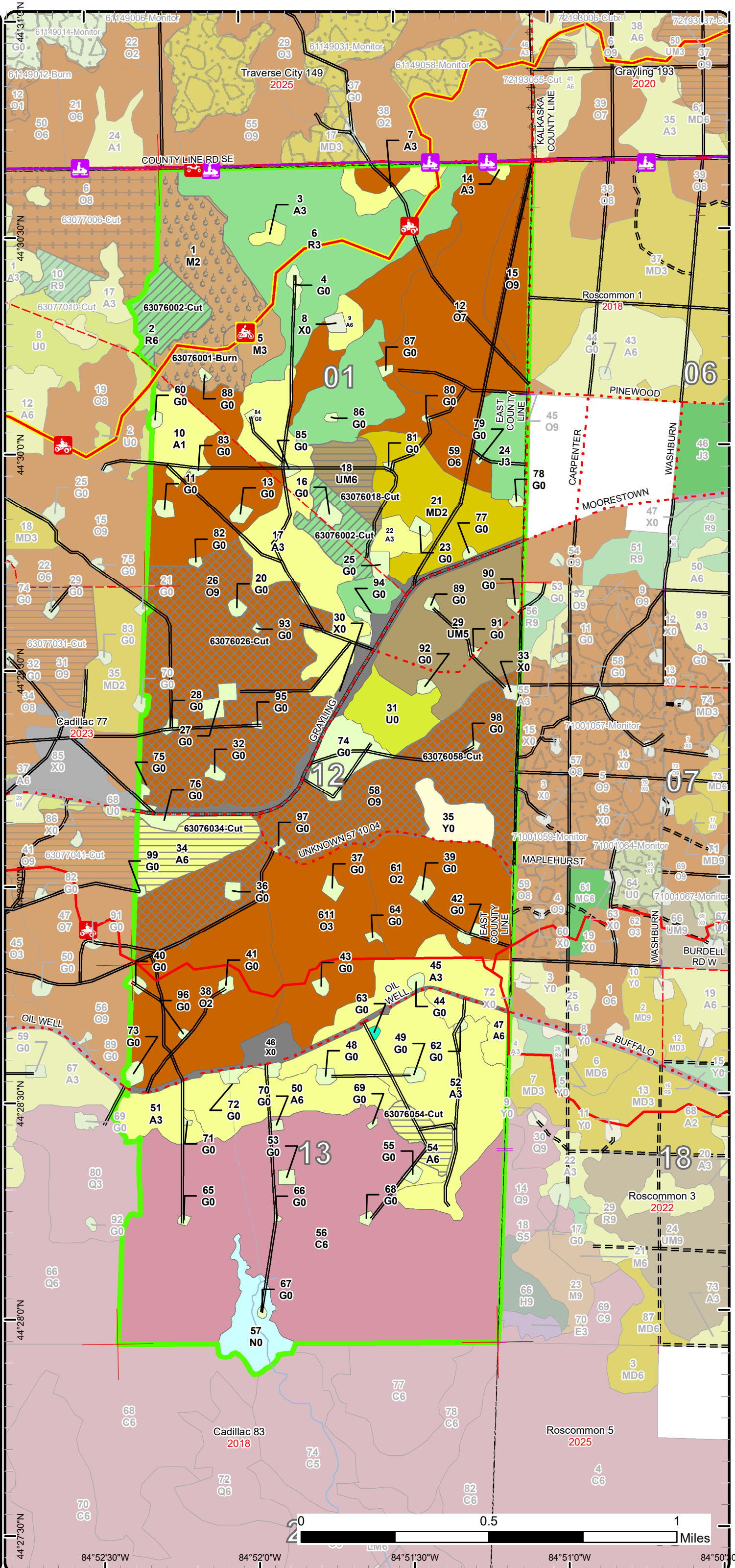
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments Map

Compartment: 76
 T24N R5W Sec. 01,12,13
 County: Missaukee
 Unit: Cadillac
 Mgmt Area: Upper Muskegon
 YOE: 2024
 Acres: 2020.3 GIS Calculated
 Examiner: Matt Edison
 Map Revised: 10/4/2022
 Map Phase: Post-Maps

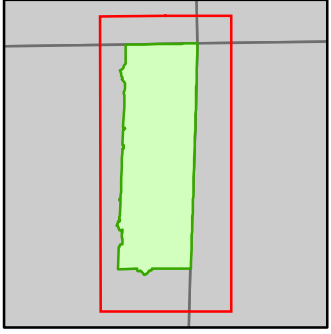


- Miris Corners
- Remonumented Section Corners
- Counties
- DNR - Secondary Forest Road
- DNR - Forest Access Route
- County - Gravel Road
- County - Dirt Road (Seasonal)
- Private - Dirt / Gravel Road
- MCCCT Trails
- ORV Trails
- ORV Routes
- Snowmobile Trails
- Designated ATV
- Designated ORV Route
- Designated Snowmobile Trails
- Michigan Cross Country Cycle Trail (MCCCT)
- Intermittent Stream
- Perennial River
- Pipeline
- Powerline
- Compartment Boundary
- Selection (Group, Single Tree)
- Clearcut (w/Reserves)
- Prescribed Burn
- Thinning (Crown, Low, Systematic)
- 411 - Northern Hardwood
- 412 - Oak Types
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 430 - Upland Mixed Forest
- 612 - Lowland Coniferous Forest
- 122 - Roads/Parking Lot
- 212 - Non-tilled Herbaceous Agriculture
- 310 - Herbaceous Openland
- 330 - Low Density Trees
- 623 - Emergent Wetland
- 710 - Sand/Soil
- 790 - Other Bare/Sparsely Vegetated

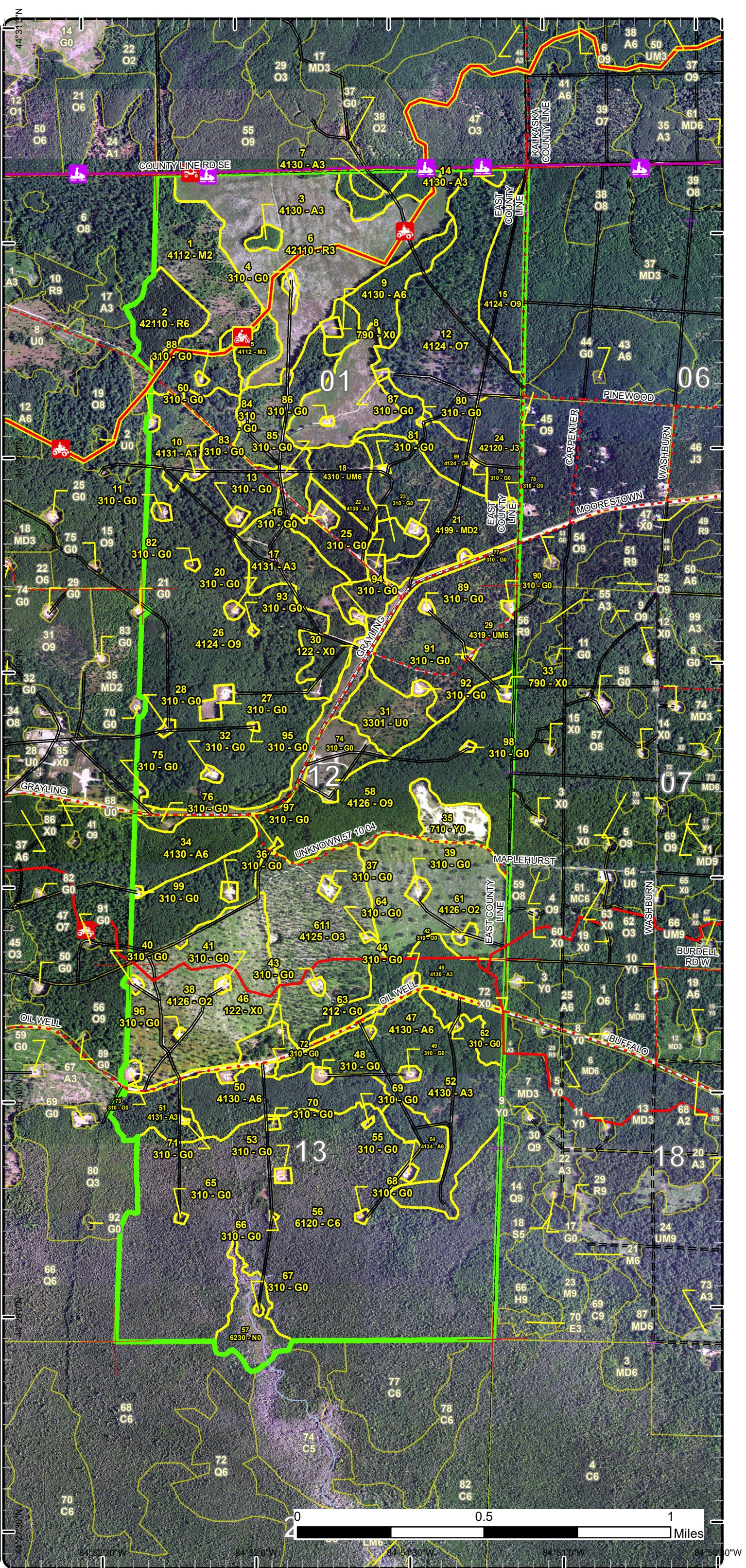


Stand Boundary Map

Compartment: 76
 T24N R5W Sec. 01,12,13
 County: Missaukee
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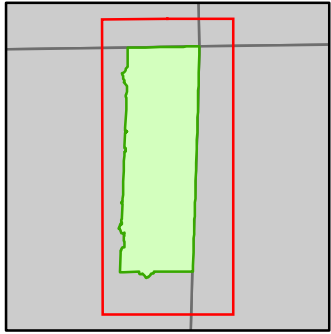


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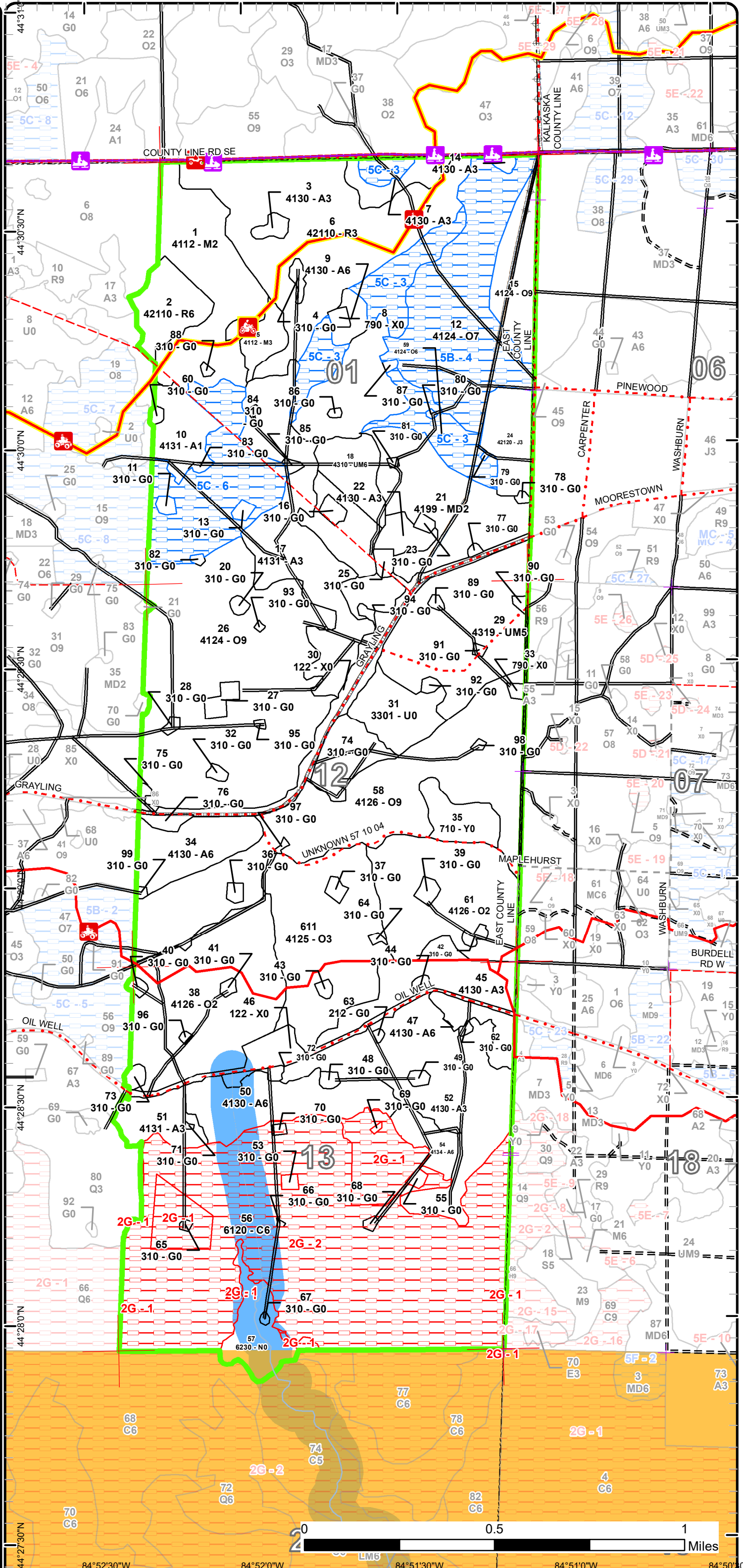


Special Conservation Areas

Compartment: 76
 T24N R5W Sec. 01,12,13
 County: Missaukee
 Unit: Cadillac
 Mgmt Area: Upper Muskegon
 YOE: 2024
 Acres: 2020.3 GIS Calculated
 Examiner: Matt Edison
 Map Revised: 10/4/2022
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- Michigan Cross Country Cycle Trail (MCCCT)
- Intermittent Stream
- Perennial River
- Pipeline
- Powerline
- Compartment Boundary
- Available w/ Constraints
- 5B: Maintain for regeneration purposes
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- Unavailable
- 2G: Too wet (sensitive soils, does not include access issues)
- Stand Boundaries
- Cold Water Streams
- Non-Dedicated Natural Areas and National Natural Landmarks
- High Priority Trout Stream Buffer



Report 1 – Total Acres by Cover Type and Age Class



Age Class

	Non-Forest	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130-139	140-149	150+	Uneven-Aged	Total
Aspen	0	0	104	83	109	0	40	0	0	0	0	0	0	0	0	0	0	0	336
Bare/Sparsely Vegetated	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Cedar	0	0	0	0	0	0	0	0	0	0	0	326	0	0	0	0	0	0	326
Cropland	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Herbaceous Openland	76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	76
Jack Pine	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
Low-Density Trees	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
Marsh	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
Mixed Upland Deciduous	0	0	0	0	53	0	0	0	0	0	0	0	0	0	0	0	0	0	53
Northern Hardwood	0	0	0	61	10	0	0	0	0	0	0	0	0	0	0	0	0	0	71
Oak	0	229	0	0	0	0	0	26	0	507	0	0	0	0	0	0	0	0	761
Red Pine	0	154	0	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	191
Sand, Soil	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
Upland Mixed Forest	0	0	0	0	70	17	0	0	0	0	0	0	0	0	0	0	0	0	87
Urban	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40
Total	175	383	104	164	242	54	40	0	26	0	507	0	326	0	0	0	0	0	2019



Report 2 – Treatment Summary

Cadillac Mgt. Unit

Year of Entry: 2024

Acres of Harvest

Compartment 76

Total Compartment Acres: 2,020

Commercial Harvest - 395
 Harvests with Site Condition - 0
 Next Step Harvest - 0
 Habitat Cut - 0

Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Aspen	38	0	0	0	0	0	0	0	0	38
Oak	0	303	0	0	0	0	0	0	0	303
Red Pine	0	0	0	0	0	37	0	0	0	37
Upland Mixed Forest	17	0	0	0	0	0	0	0	0	17
Total	55	303	0	0	0	37	0	0	0	395

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	395	0	0	0	61	0	0	0	0	456
Next Step	0	0	0	0	61	0	358	0	0	418
Total	395	0	0	0	121	0	358	0	0	874



Stand Name	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
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Approved Treatments:

1	63076001-Burn	60.5	4112 - Maple, Beech, Cherry Association	Sapling Medium	20	Immature	Burn	Opening	310 - Herbaceous Openland		No
<p><u>Prescription</u> Burn to keep open <u>Specs:</u> <u>Next Step</u> Burn, Opening <u>Treatments:</u> <u>Acceptable</u> <u>Regen:</u> <u>Other</u> <u>Comment:</u> <u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2013</p>											
2	63076002-Cut	37.1	42110 - Planted Red Pine	Poletimber Well	44	111-140	Harvest	Systematic Thinning	4211 - Planted Red Pine	Even-Aged	No
<p><u>Prescription</u> Third row thin. <u>Specs:</u> Treatments will be prepared according to actual on the ground conditions and acres may vary from prescribed. <u>Next Step</u> <u>Treatments:</u> <u>Acceptable</u> Red Pine <u>Regen:</u> <u>Other</u> <u>Comment:</u> <u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2023</p>											
18	63076018-Cut	17.0	4310 - Pine, Oak Mix	Poletimber Well	48	81-110	Harvest	Clearcut with Retention	4222 - Natural Jack Pine	Even-Aged	No
<p><u>Prescription</u> Clear cut stand and leave a few scattered white oak as retention. <u>Specs:</u> Treatments will be prepared according to actual on the ground conditions and acres may vary from prescribed. <u>Next Step</u> Monitoring, Natural Regen (Re-Inventory) <u>Treatments:</u> <u>Acceptable</u> Any mix of jack pine, aspen, maple, oak, white pine, red pine, balsam fir, hemlock, or cedar. <u>Regen:</u> <u>Other</u> <u>Comment:</u> <u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2023</p>											



Stand Name	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
26	63076026-Cut	171.3	4124 - Red with White Oak	Sawtimber Well	93	111-140	Harvest	Group Selection	412 - Oak Types	Uneven-Aged	No
<p><u>Prescription</u> Cut all red/hybrid oak trees. Leave all white oak and white pine. Treat southern half of stand this entry. Treatments will be prepared according to actual on the ground conditions and acres may vary from prescribed.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u> Any mix of aspen, maple, oak, white pine, red pine, balsam fir, hemlock, or cedar.</p> <p><u>Other Comment:</u> Gas well and above ground exposed pipelines within stand.</p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2023</p>											
34	63076034-Cut	26.9	4130 - Aspen	Poletimber Well	50	141-170	Harvest	Clearcut with Retention	4139 - Aspen, Mixed Deciduous	Even-Aged	No
<p><u>Prescription</u> Clear cut all trees 2" or larger at dbh. Leave 3-5% retention patches. Leave any large white pine.</p> <p><u>Specs:</u> Treatments will be prepared according to actual on the ground conditions and acres may vary from prescribed.</p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u> Any mix of aspen, maple, oak, white pine, red pine, jack pine, balsam fir, hemlock, or cedar.</p> <p><u>Other Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2023</p>											
54	63076054-Cut	10.9	4134 - Aspen, Spruce/Fir	Poletimber Well	55	141-170	Harvest	Clearcut	4136 - Aspen, Mixed Conifer	Even-Aged	No
<p><u>Prescription</u> Clearcut all trees with exception of any large white pine. No retention pockets due to small stand size. Retain some of the balsam component.</p> <p><u>Specs:</u> Treatments will be prepared according to actual on the ground conditions and acres may vary from prescribed.</p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u> Any mix of aspen, maple, oak, white pine, red pine, jack pine, balsam fir, hemlock, or cedar.</p> <p><u>Other Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2023</p>											
58	63076058-Cut	131.8	4126 - White, Black, N. Pin Oak	Sawtimber Well	93	81-110	Harvest	Group Selection	412 - Oak Types	Uneven-Aged	No
<p><u>Prescription</u> Cut all red/hybrid oak trees. Leave all white oak and white pine.</p> <p><u>Specs:</u> Treatments will be prepared according to actual on the ground conditions and acres may vary from prescribed.</p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u> Any mix of aspen, maple, oak, white pine, red pine, jack pine, balsam fir, hemlock, or cedar.</p> <p><u>Other Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2023</p>											



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
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Total Treatment Acreage Proposed: 455.5

Report 4 – Site Conditions

Cadillac Mgt. Unit
Matt Edison : Examiner

Compartment: 76
Year of Entry: 2024

Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	5B	5C	2G
		With Condition	Not Available				
336	333	0	2	Aspen			2
3	3	0	0	Bare/Sparsely Vegetated			
326	0	0	326	Cedar			326
0	0	0	0	Cropland			
76	74	0	2	Herbaceous Openland			2
20	20	0	0	Jack Pine			
21	21	0	0	Low-Density Trees			
20	20	0	0	Marsh			0
53	53	0	0	Mixed Upland Deciduous			
71	71	0	0	Northern Hardwood			
761	558	203	0	Oak	90	113	
191	191	0	0	Red Pine			
14	14	0	0	Sand, Soil			
87	87	0	0	Upland Mixed Forest			
40	40	0	0	Urban			
2,020	1,487	203	330	Total Forested Acres	90	113	330
	74%	10%	16%	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
1	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	40	(Inactive)3C: Legally Designated Quiet Area, Natural Area, or Wilderness	Unspecified	Unspecified	Unspecified
<p>Comments:</p>							

Report 4 – Site Conditions

Cadillac Mgt. Unit
Matt Edison : Examiner

Compartment: 76
Year of Entry: 2024

2	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	290	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	3H: Deer Wintering Area - habitat is incompatible with harvest at this time	Unspecified	Unspecified
Comments:							
3	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	56	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
4	Available	5B: Maintain for regeneration purposes	90	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
6	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	57	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Mgt. Unit

Compartment: #Type!

Year of Entry:



Report 5 – 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 6 – 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	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	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.
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.
HCVA	Legally dedicated Natural Areas, Wilderness or Wild Areas	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.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																	
1	4112 - Maple, Beech, Cherry Association	Sapling Medium	60.7	20	Immature	N/A	Stand swapped from Non-Forested to Forested. brushy cherry and red maple almost all multiple stemmed. a frw scattered oaks . Discuss burn at pre review.																																	
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2	42110 - Planted Red Pine	Poletimber Well	37.1	44	111-140	N/A	Red Pine that has yet to be thinned. Third row thin.2014-poor quality red pine plantation. crosses into compartment 77 to the east.																																	
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4	310 - Herbaceous Openland	Nonstocked	1.9				permit #33175																																	
5	4112 - Maple, Beech, Cherry Association	Sapling Well	10.4	33	1-50	N/A	stand is mostly multiple stemmed red maple with scattered aspen and a few oaks.																																	
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6	42110 - Planted Red Pine	Sapling Well	154.0	6	Immature	N/A	oak mostly poor quality little to no regen throughout stand. traces of aspen and red maple Stand was final harvested and trenched in 2015 and planted to red pine in 2016 with mix of PRT trees and MDNR planting bare root. 10/22/18- Regeneration survey showed 85% survival of planted stocking. Site was release sprayed in fall 2018. Herbicide was effective on witch hazel. Effectiveness on oak competition is yet to be determined. Stocking in South east corner is a bit low, but too small of an area to replant. Poor trenches accounted for poor survival in areas, but overall quality was good.																																	
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8	790 - Other Bare/Sparsely Vegetated	Nonstocked	1.5				vacant oil well site, nothing on site. Check for rehab																																	



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																				
9	4130 - Aspen	Poletimber Well	5.2	34	1-50	N/A	aspen and maple stand is maturing well.																																				
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10	4131 - Aspen, Oak	Sapling Poor	18.1	16	Immature	N/A	active well site permit #12015 in southeast of stand .																																				
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11	310 - Herbaceous Openland	Nonstocked	1.4				active well site permit #35312																																				
12	4124 - Red with White Oak	Sawtimber Poor	90.2	98	1-50	N/A	Leave overstory for now.																																				
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13	310 - Herbaceous Openland	Nonstocked	1.4				active well site permit #35269																																				
14	4130 - Aspen	Sapling Well	1.4	34	51-80	N/A																																					
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16	310 - Herbaceous Openland	Nonstocked	2.2		Unspecified																																						



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17	4131 - Aspen, Oak	Sapling Well	69.3	16	1-50	N/A	Stand was cut last entry. Final harvest of aspen with some oak sawlogs left for mast.																																
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18	4310 - Pine, Oak Mix	Poletimber Well	17.0	48	81-110	N/A	Stand is a mix of white oak logs and pole sized jack pine scattered about.																																
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20	310 - Herbaceous Openland	Nonstocked	1.2				permit #35512																																
21	4199 - Other Mixed Upland Deciduous	Sapling Medium	53.4	31	81-110	N/A	Stand was cut in 1990. Resulting mix of cherry oak and open areas. A few overstory oaks were left.																																
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22	4130 - Aspen	Sapling Well	7.1	31	Unspecified	N/A	Lower quality aspen saps/poles																																
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24	42120 - Planted Jack Pine	Sapling Well	20.4	20	Immature	N/A																																	
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																										
26	4124 - Red with White Oak	Sawtimber Well	228.7	93	111-140	N/A	Mature oak that is ready to restart. Mix of white oak and red oak/hybrid.																																										
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Red Oak	Low	5 - 10 feet	Sapling																																														
27	310 - Herbaceous Openland	Nonstocked	3.4				active well																																										
28	310 - Herbaceous Openland	Nonstocked	1.0			No	permit #9889																																										
29	4319 - Mixed Upland Forest	Poletimber Medium	70.0	38	51-80	N/A	Stand contains 3 oil well sites and is a mix of scrubby jack pine, cherry and a few scattered oaks.																																										
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30	122 - Road/Parking Lot	Nonstocked	24.8			No																																											
31	3301 - Low Density Deciduous Trees	Nonstocked	21.3			No																																											
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32	310 - Herbaceous Openland	Nonstocked	1.1				permit #31904 Active well site																																										
33	790 - Other Bare/Sparsely Vegetated	Nonstocked	1.1			No																																											
34	4130 - Aspen	Poletimber Well	26.9	50	141-170	N/A	Nice stand of tall pole aspen. Some scattered red maple in places. Harvest with adjacent stand and leave some large white pine.																																										
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments					
35	710 - Sand, Soil	Nonstocked	14.1		Unspecified	4212 - Planted Jack Pine	10/14/19 - Planted trees completely gone in sandy areas. Stocking is variable in grassy areas, with some spots being well stocked and others not having any trees due to vehicle traffic. Planted trees still in place look good with low mortality. 10/22/18 - Site was replanted in spring 2018. Seedlings completely failed in sandy areas. seedlings seem to be to acceptable stocking levels where grass and sedge was located. Permit #11512 along southern side Also contains gravel pit and active well site permit #. TMS states that site was planted to jack pine in 2016. No trenches planted in jack pine in 2016.					
								Sub-Canopy Species	Density	Avg. Height	Size	
								Black Locust	Low	10 - 20 feet	Sapling	
								Red Pine	Low	10 - 20 feet	Sapling	
								Jack Pine	Low	< 5 feet	Seeding	
36	310 - Herbaceous Openland	Nonstocked	1.4									
37	310 - Herbaceous Openland	Nonstocked	1.6				active well site permit #36098					
38	4126 - White, Black, N. Pin Oak	Sapling Medium	87.4	6	Immature	N/A	Regeneration is mostly mixed oak and relatively short and bushy. Some areas with aspen and red maple. Very scattered oak retention remains.-2014Stand was final harvested in 2016. FTP sent in to plant red pine in Spring 2017. Joint wildlife and FRD objective of oak and planted pine weave. Oil and gas activity throughout. FTP 63-868					
								Canopy Species	% Cover	Size Class	DBH	Age
								Red Maple	15	Sapling	1	6
								Black/Red (Hybrid) Oak	25	Sapling	1	
								White Pine	5	Sapling	1	
								White Oak	50	Sapling	1	6
Bigtooth Aspen	5	Sapling	1									
39	310 - Herbaceous Openland	Nonstocked	2.0									
40	310 - Herbaceous Openland	Nonstocked	1.2			No	active well site permit #35506					
41	310 - Herbaceous Openland	Nonstocked	1.0				active well site permit #35507 poison gas sign					
42	310 - Herbaceous Openland	Nonstocked	1.5				permit #12081					
43	310 - Herbaceous Openland	Nonstocked	1.0				active well site permit #35508					
44	310 - Herbaceous Openland	Nonstocked	1.0				active well site permit #35509 poison gas sign					



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																													
45	4130 - Aspen	Sapling Well	31.4	32	111-140	N/A																																														
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46	122 - Road/Parking Lot	Nonstocked	15.1			No	active well site permit #36102 far west edge																																													
47	4130 - Aspen	Poletimber Well	11.3	33	51-80	N/A	Stand was cut in 1989.																																													
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48	310 - Herbaceous Openland	Nonstocked	1.4				active well site permit # 36080																																													
49	310 - Herbaceous Openland	Nonstocked	1.3				active well site permit #36065 poison gas sign																																													
50	4130 - Aspen	Poletimber Well	39.2	32	1-50	N/A	Now a pole stand, overall average 5" dbh, but some larger. Check next entry for harvest potential.																																													
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51	4131 - Aspen, Oak	Sapling Well	16.3	16	Immature	N/A	stand was cut last entry. some overstory oaks left.																																													
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52	4130 - Aspen	Sapling Well	83.3	23	Immature	N/A	Stand was treated in 1999																																													
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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53 310 - Herbaceous Openland Nonstocked 1.1 active well site permit #38614

54 4134 - Aspen, Spruce/Fir Poletimber Well 13.2 55 141-170 N/A

Canopy Species	% Cover	Size Class	DBH	Age
Balsam Fir	20	Pole/Sapling	5	
White Pine	5	Log	10	
White Oak	3	Pole	4	
Bigtooth Aspen	70	Pole/Log/Sap	6	55
Red Maple	2	Pole/Sap/Log	6	

55 310 - Herbaceous Openland Nonstocked 1.1 active well site permit #38216

56 6120 - Lowland Cedar Poletimber Well 325.8 113 111-140 N/A

Canopy Species	% Cover	Size Class	DBH	Age
Northern White Cedar	50	Pole	6	113
Black Spruce	7	Pole	6	
Balsam Poplar	10	Pole	9	
Paper Birch	5	Pole	5	
Hemlock	3	Pole	6	
Balsam Fir	25	Pole	5	

57 6230 - Cattail Nonstocked 19.7 No Stand is flooded due to old beaver activity on Cole Creek. Salvage cut occurred last entry to remove all standing dead and live trees.

Sub-Canopy Species	Density	Avg. Height	Size
Tag Alder	Low		Tall Shrub

58 4126 - White, Black, N. Pin Oak Sawtimber Well 131.9 93 81-110 N/A Open oak stand with a little red maple and aspen. Some white pine in eastern end.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Bigtooth Aspen	5	Pole/Log/Sap	7		Black/Red (Hybrid) Oak	Low	5 - 10 feet	Sapling
Black/Red (Hybrid) Oak	40	Log/Pole	10		White Oak	Low	5 - 10 feet	Sapling
White Pine	5	Pole/Log/Sap	8		White Pine	Low	5 - 10 feet	Sapling
Red Maple	5	Pole	5					
White Oak	45	Log/Pole	10	93				

2014-
Uncut portion of oak ridge.

59 4124 - Red with White Oak Poletimber Well 55.9 92 51-80 N/A oak mostly poor quality little to no regen throughout stand. traces of aspen and red maple

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
White Oak	40	Pole/Log	8		Red Maple	Low	>20 feet	Pole
Red Oak	60	Pole/Log	8	92				

60 310 - Herbaceous Openland Nonstocked 0.9 0 Well site



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																														
61	4126 - White, Black, N. Pin Oak	Sapling Medium	65.4	6	Immature	N/A	Mixed oak regen is present, but somewhat sparse. Not as much aspen or other regen as in adjacent stands to west cut at same time. 2014- Stand was final harvested with scattered oak left in 2016. Monitor success of oak regeneration in 5 years following harvest. Oil and gas activity throughout.																														
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White Oak	40	Sapling	1	6																																	
62	310 - Herbaceous Openland	Nonstocked	0.6	0																																	
63	212 - Non-tilled Herbaceous Agriculture	Nonstocked	0.5	0																																	
64	310 - Herbaceous Openland	Nonstocked	0.6	0																																	
65	310 - Herbaceous Openland	Nonstocked	0.5	0																																	
66	310 - Herbaceous Openland	Nonstocked	0.2	0																																	
67	310 - Herbaceous Openland	Nonstocked	0.4																																		
68	310 - Herbaceous Openland	Nonstocked	0.7	0																																	
69	310 - Herbaceous Openland	Nonstocked	0.3	0																																	
70	310 - Herbaceous Openland	Nonstocked	0.6	0																																	
71	310 - Herbaceous Openland	Nonstocked	0.2	0																																	
72	310 - Herbaceous Openland	Nonstocked	2.5				active well site permit #36102 far west edge																														
73	310 - Herbaceous Openland	Nonstocked	1.9		Immature		active well site permit #36102 far west edge																														



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
74	310 - Herbaceous Openland	Nonstocked	16.2				
75	310 - Herbaceous Openland	Nonstocked	1.3		Unspecified	No	
76	310 - Herbaceous Openland	Nonstocked	2.7				
77	310 - Herbaceous Openland	Nonstocked	0.6				
78	310 - Herbaceous Openland	Nonstocked	0.7	0			
79	310 - Herbaceous Openland	Nonstocked	0.2	0			
80	310 - Herbaceous Openland	Nonstocked	0.3	0			
81	310 - Herbaceous Openland	Nonstocked	0.4	0			
82	310 - Herbaceous Openland	Nonstocked	0.6	0			
83	310 - Herbaceous Openland	Nonstocked	0.7	0			active well site permit #12015 in southeast of stand .
84	310 - Herbaceous Openland	Nonstocked	0.4	0			
85	310 - Herbaceous Openland	Nonstocked	0.8	0			
86	310 - Herbaceous Openland	Nonstocked	0.5	0			
87	310 - Herbaceous Openland	Nonstocked	0.6	0	Unspecified		stand was cut last entry to an oak shelterwood. regen of oaks is minimal. lots of red maple sprouts. was supposed to be burnt but ftp is still not completed
88	310 - Herbaceous Openland	Nonstocked	0.6	0	Unspecified		



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
89	310 - Herbaceous Openland	Nonstocked	0.8	0			
90	310 - Herbaceous Openland	Nonstocked	0.9	0			
91	310 - Herbaceous Openland	Nonstocked	0.6	0			
92	310 - Herbaceous Openland	Nonstocked	1.1				
93	310 - Herbaceous Openland	Nonstocked	0.3	0			
94	310 - Herbaceous Openland	Nonstocked	1.3				
95	310 - Herbaceous Openland	Nonstocked	0.4	0			
96	310 - Herbaceous Openland	Nonstocked	0.4	0			
97	310 - Herbaceous Openland	Nonstocked	0.5	0			
98	310 - Herbaceous Openland	Nonstocked	0.5	0			
99	310 - Herbaceous Openland	Nonstocked	0.5	0			
611	4125 - Black, N. Pin Oak	Sapling Well	75.5	6	Immature	N/A	Stand was cut in 2016, 20 to 30 BA of oak was marked to leave. Monitor success of cut. Oil and gas activity throughout. Mostly mixed oak regeneration. Appears regen is higher density and taller than stand to west cut at same time. Mix of red maple and aspen scattered.

Canopy Species	% Cover	Size Class	DBH	Age
Black/Red (Hybrid) Oak	10	Log	13	
Bigtooth Aspen	10	Sapling	1	
Black/Red (Hybrid) Oak	55	Sapling	1	6
Red Maple	10	Sapling	1	
White Pine	5	Sapling	1	
White Oak	10	Log	12	93