



Compartment Review Presentation

Gaylord Forest Management Unit

Compartment 52157

Entry Year 2023

Acreage: 1,674

County Cheboygan

Management Area: Chandler Hills

Revision Date: 2021-05-04

Stand Examiner: Tricia St. Pierre

Legal Description:

Cheboygan County, Wilmot Township
T33N R03W
Sec 21 all
27: portions of W1/2NW
28 all
33: W1/2, NWNE, SWSE

Identified Planning Goals:

To provide for the protection, integrated management, and responsible use of a healthy, productive, and undiminished forest resource base for the social, recreational, environmental, and economic benefit of the State of Michigan and its inhabitants. To promote native species whenever and wherever appropriate and reasonable to coincide with multiple uses and management objectives across the landscape.

Soil and topography:

Soils in this compartment are dominated by sands (34%) and loamy sands (51%), with lesser amounts of peat (11%), sandy loams (<2%), muck (<2%), and water (<1%). The terrain is highly variable, ranging from 0-60% slopes depending on glacial influence. There are prominent west-facing slopes following along the river corridor. Kotar Habitat Types are dominated by AFO/AFOCa types (1486 acres, approximately 89% of the compartment), supporting nice quality mixed hardwood and pine. Unclassified Lowlands (dominated by Tawas Peat) account for about 10% of the compartment, and PARVHA and PARVVb for approximately 1%.

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

This compartment consists of one contiguous block of state land abutting other state land on the north, east, and west sides, excluding compartment boundaries within section 33, which are largely adjacent to private ownership. Private lands within close proximity are light residential (permanent and seasonal) with larger tracts of land. There is some oil and gas development in the surrounding area as well.

Unique Natural Features:

There recorded MNFI animal occurrences within this compartment. Portions of the West Branch of the Sturgeon River and its tributaries are within the W1/2 Sec 21 and SW1/4 of Sec 28.

Archeological, Historical, and Cultural Features:

There are no known archaeological sites within this compartment.

Special Management Designations or Considerations:

There are no special management designations within this compartment.

Watershed and Fisheries Considerations:

Wildlife Habitat Considerations:

This compartment is dominated by northern hardwoods and is part of a much larger landscape featuring this cover type. It provides habitats suitable for pine marten and small mammals as well as songbirds and raptors.

Mineral Resource and Development Concerns and/or Restrictions

Sections 21, 28, & 33, T33N-R3W, Cheboygan Co.

No active sand/gravel pits are known to occur in this area, but the compartment appears to have sand & gravel potential. The southern two-thirds of the compartment is currently leased and held by gas production from the Antrim Shale. However, all the wells in the compartment are currently shut in. The compartment is near the northern limit of the Antrim Shale, well production here is probably marginal, and additional future Antrim wells are unlikely. A Collingwood Formation test well was drilled in Sec 21 in 2011, but it did not produce. The Collingwood has not been shown to be an economical

play in Michigan at this time. There is no known potential for metallic minerals in this part of the state.

Vehicle Access:

Vehicle access is decent but limited by season and vehicle type. Unstable, sometimes wet or sandy soils can limit reliable access to all corners of this compartment. Many trails can become very steep, narrow, and/or rutted. The county roads are most reliable for ease of access, whereas state forest roads and trails are somewhat unkempt.

Survey Needs:

There are no immediate survey needs within this compartment.

Recreational Facilities and Opportunities:

Snowmobile Trail 765 follows Perry Road and Wilderness Road during the winter months. The Tomahawk Motorcycle Trail C Loop (also the Tomahawk to Kalkaska MCCCT North) meanders through this compartment.

Fire Protection:

There are very few if any volatile covertypes within this compartment. Fire response would be quickest with a Type 6 engine considering the slopes, soils, tight forest roads, and overall ease of maneuvering. Water access for drafting is possible at the bridge crossing the west branch of the Sturgeon, though caution should be had for knowing weight restrictions on the bridge.

Additional Compartment Information:

The following reports from the Inventory are attached:

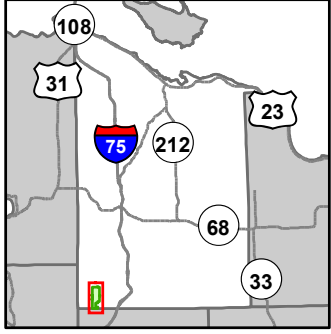
- Total Acres by Cover Type and Age Class
- Cover Type by Harvest Method
- Proposed Treatments – No Limiting Factors
- Proposed Treatments – With Limiting Factors
- Stand Details (Forested and Nonforested)
- Dedicated and Proposed Special Conservation Areas
- Site Condition Details

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

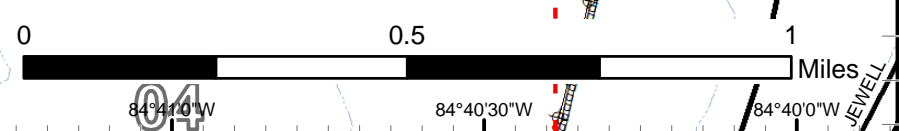
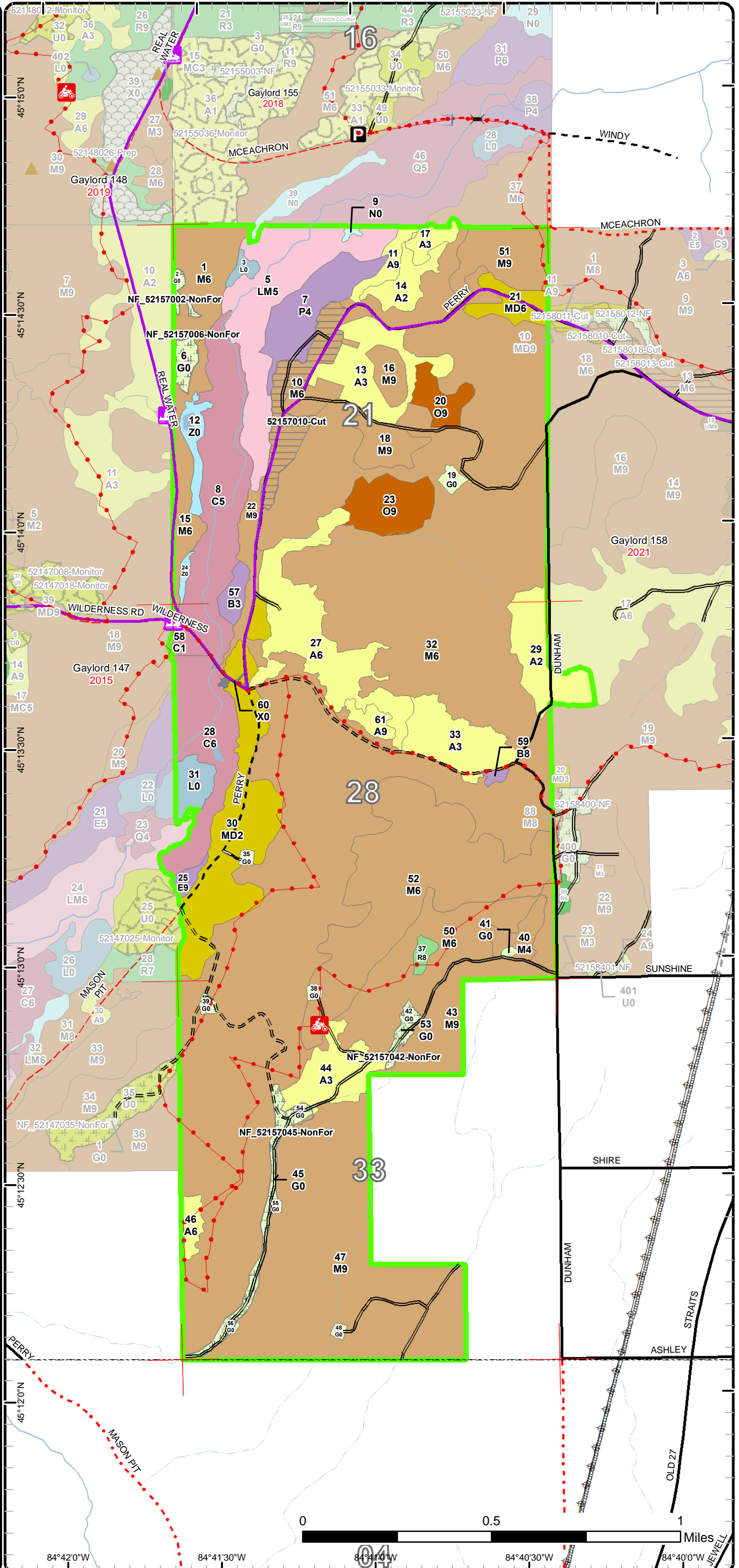
- Base feature information, stand boundaries, cover types, and numbers
- Proposed treatments
- Site condition boundaries
- Details on the road access system

Cover Type & Treatments Map

Compartment: 157
 T33N, R03W, Sec. 21, 27, 28, 33
 County: Cheboygan
 Unit: Gaylord
 Mgmt Area: Chandler Hills
 YOE: 2023
 Acres: 1674.5 GIS Calculated
 Examiner: Tricia St. Pierre
 Map Revised: 10/5/2021
 Map Phase: Post-Review

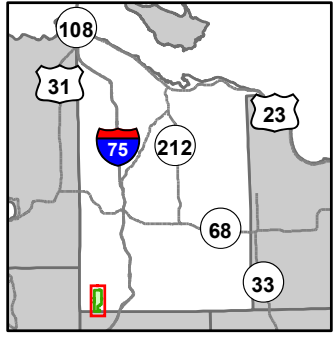


- Miris Corners
- Counties
- DNR - Primary Forest Road
- DNR - Secondary Forest Road
- DNR - Forest Access Route
- Federal / State / County - Paved Road
- Federal / State - Dirt / Gravel Road
- County - Gravel Road
- County - Dirt Road (Seasonal)
- Motorcycle Trails (DNR License)
- Snowmobile Trails
- ORV License & Trail Permit
- Designated Snowmobile Trails
- Intermittent Stream
- Lake/Pond
- Perennial River
- Lakes and Rivers
- Berms
- Bridges
- Culvert
- Parking Lot
- Pipeline
- Powerline
- Compartment Boundary
- Other Treatment - See Comments
- Clearcut (w/Reserves)
- 411 - Northern Hardwood
- 412 - Oak Types
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest
- 122 - Roads/Parking Lot
- 310 - Herbaceous Openland
- 500 - Water
- 622 - Lowland Shrub
- 623 - Emergent Wetland

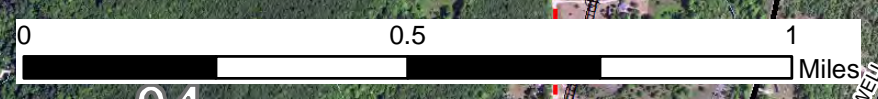
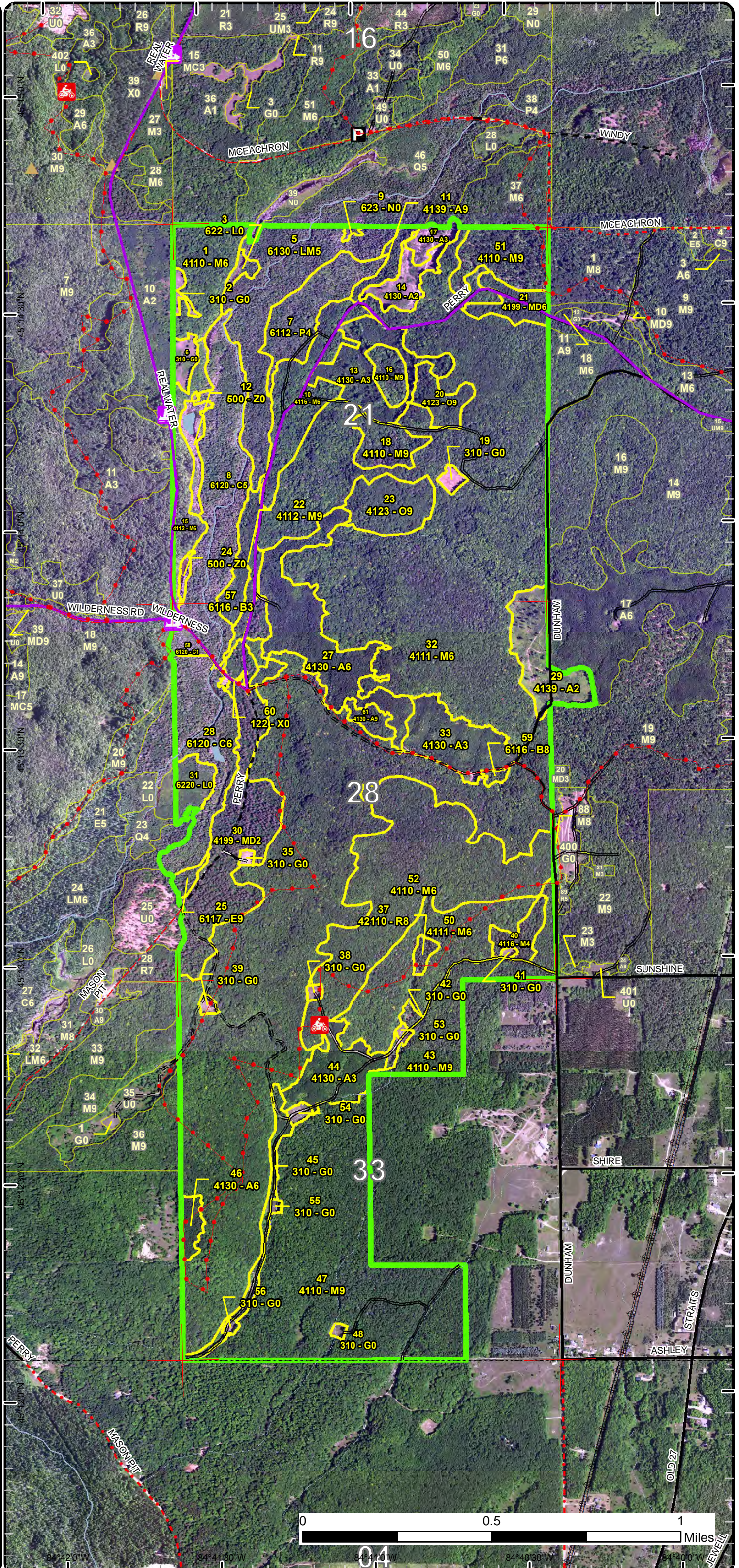


Stand Boundary Map

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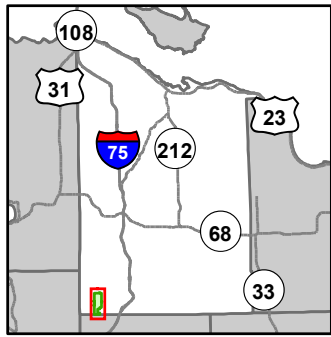
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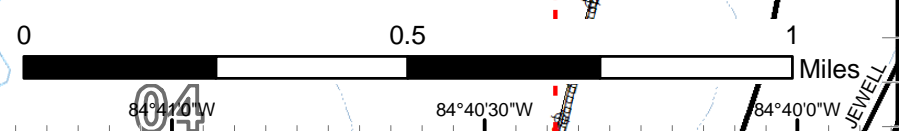
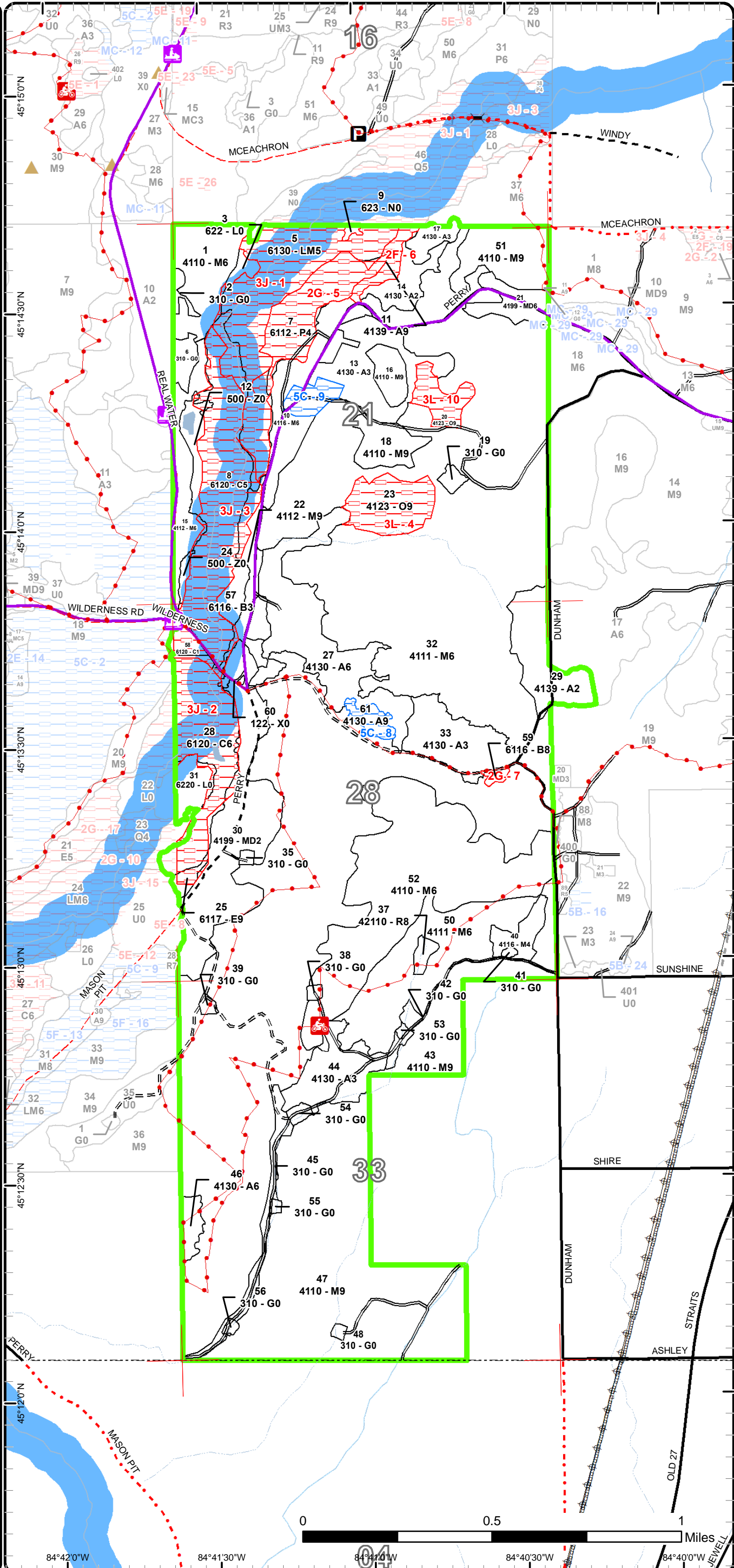
84°42'0" W 84°41'30" W 84°41'0" W 84°40'30" W 84°40'0" W

Special Conservation Areas

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- Lakes and Rivers
- ▲ Berms
- Bridges
- Culvert
- P Parking Lot
- Pipeline
- Powerline
- Compartment Boundary
- Available w/ Constraints
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- Unavailable
- 2F: Too steep
- 2G: Too wet (sensitive soils, does not include access issues)
- 3J: Water quality / BMPs (stream, river, or lake)
- 3L: Other wildlife concerns
- Stand Boundaries
- Cold Water Streams
- High Priority Trout Stream Buffer





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	39	72	0	54	0	0	5	0	6	0	0	0	0	0	0	0	0	176
Cedar	0	0	0	0	0	4	0	0	0	39	0	0	0	0	0	0	0	60	103
Herbaceous Openland	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31
Lowland Aspen/Balsam Poplar	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	25
Lowland Deciduous	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3
Lowland Mixed Forest	0	0	0	0	0	0	0	0	0	0	56	0	0	0	0	0	0	0	56
Lowland Shrub	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
Marsh	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Mixed Upland Deciduous	0	0	0	0	62	0	10	0	0	0	0	0	0	0	0	0	0	0	72
Northern Hardwood	0	0	0	0	0	0	0	8	87	992	65	0	0	0	0	0	0	0	1152
Oak	0	0	0	0	0	0	0	0	19	10	0	0	0	0	0	0	0	0	29
Paper Birch	0	0	0	0	0	5	0	0	0	0	1	0	0	0	0	0	0	0	6
Red Pine	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3
Urban	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Water	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Total	53	39	72	0	116	9	35	13	106	1053	122	0	0	0	0	0	0	60	1678



Report 2 – Treatment Summary

Gaylord Mgt. Unit

Year of Entry: 2023

Acres of Harvest

Compartment 157

Total Compartment Acres: 1,674

Commercial Harvest - 23
 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
Northern Hardwood		23	0	0	0	0	0	0	0	0	23
	Total	23	0	0	0	0	0	0	0	0	23

Proposed and Next Step Treatments by Method

		Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current		23	0	0	0	0	0	0	0	24	47
Next Step		0	0	0	0	0	23	0	0	0	23
	Total	23	0	0	0	0	23	0	24	24	70



S t a n d	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:

10	52157010-Cut	23.0	4116 - Mixed N. Hardwood - Aspen	Poletimber Well	74	81-110	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	No
<p><u>Prescription</u> Final harvest excluding areas of desirable hardwood (to be managed selectively with adjacent hardwood stand). Do not cut any oak. Sign and protect snowmobile trail during harvesting and hauling operations.</p> <p><u>Specs:</u> Retention has been identified as the northernmost tip of the stand but may be adjusted if more suitable locations are found during timber sale preparation.</p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u> Acceptable regeneration will meet minimum stocking requirements for aspen. The inclusion of hardwood at any level will be acceptable.</p> <p><u>Other Comment:</u> Push harvest into stand 32 where aspen is present.</p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2022</p>											
2	NF_52157002-NonFor	2.1	310 - Herbaceous Openland	Nonstocked			Unspec ified	NonForestMgt	Other - Specify	3105 - Mixed Upland Herbaceous	No
<p><u>Prescription</u> Conduct opening maintenance using whatever techniques deemed necessary from the appropriate wildlife personnel</p> <p><u>Specs:</u></p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u></p> <p><u>Other Comment:</u> FTP W52-415 Old next step comments: monitor success of treatment</p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2022</p>											
6	NF_52157006-NonFor	4.7	310 - Herbaceous Openland	Nonstocked			Unspec ified	NonForestMgt	Other - Specify	3105 - Mixed Upland Herbaceous	No
<p><u>Prescription</u> Conduct opening maintenance using methods approved by wildlife personnel</p> <p><u>Specs:</u></p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u></p> <p><u>Other Comment:</u> FTP W52-415. Old next step comments: monitor success of the treatment</p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2022</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
42 NF_52157042-NonFor	3.8	310 - Herbaceous Openland	Nonstocked		Unspecified	NonForestMgt	Other - Specify	3105 - Mixed Upland Herbaceous		No
<p><u>Prescription</u> Conduct opening maintenance using methods approved by wildlife personnel</p> <p><u>Specs:</u></p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable</u></p> <p><u>Regen:</u></p> <p><u>Other</u> FTP W52-415. Old next step comments: monitor the success of the treatment</p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2022</p>										
45 NF_52157045-NonFor	13.3	310 - Herbaceous Openland	Nonstocked		Unspecified	NonForestMgt	Other - Specify	3105 - Mixed Upland Herbaceous		No
<p><u>Prescription</u> Conduct opening maintenance using methods approved by wildlife personnel</p> <p><u>Specs:</u></p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable</u></p> <p><u>Regen:</u></p> <p><u>Other</u> FTP W52-415. Old next step comments: monitor success of the treatment</p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2022</p>										

Total Treatment 46.9
Acreage Proposed:

Report 4 – Site Conditions

Gaylord Mgt. Unit

Compartment: 157

Tricia St. Pierre : Examiner

Year of Entry: 2023

Availability for Management

Total Acres	Acres Available	Acres Avail With Condition	Acres Not Available
176	165	5	6
102	2	0	100
31	31	0	0
25	0	0	25
3	1	0	2
56	0	0	55
11	10	0	1
1	1	0	0
72	70	0	2
1151	1140	6	5
29	0	0	29
6	5	0	1
3	3	0	0
1	1	0	0
9	8	0	1
1,674	1,437	11	226
	86%	1%	14%

Dominant Site Conditions

	Dominant Site Conditions			
	5C	2F	2G	3J 3L
Aspen	5	6		0
Cedar	0		0	100
Herbaceous Openland				
Lowland Aspen/Balsam Poplar			24	0
Lowland Deciduous				2
Lowland Mixed Forest			2	54
Lowland Shrub				1
Marsh				
Mixed Upland Deciduous				2
Northern Hardwood	6			5
Oak				29
Paper Birch			1	
Red Pine				
Urban				0
Water				1
Total Forested Acres	11	6	28	164
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	3J: Water quality / BMPs (stream, river, or lake)	59	5F: Evaluated for Forest Health Considerations	Unspecified	Unspecified	Unspecified
Comments: Evaluated for SBW Salvage. Stand was declined due to BMP/stream concerns.							
2	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	40	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Gaylord Mgt. Unit

Tricia St. Pierre : Examiner

Compartment: 157

Year of Entry: 2023

3	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	65	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
4	Unavailable	3L: Other wildlife concerns	19	5A: Not able to obtain desirable regeneration	Unspecified	Unspecified	Unspecified
Comments: Retaining oak stands to maintain an important mast source with the loss of beech and difficulty in regenerating oak with browsing pressure. Steep hillsides on the west and southwest. Plateaus in north. Very little subcanopy and heavy browsing pressure. Operational challenges. Access possible from east through well pad requiring road improvements.							
5	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	26	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
6	Unavailable	2F: Too steep	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Steep, potential for seeps, wet bottom. Adjacent harvest (stand 14 and 17) cut all operable ground.							
7	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	1	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Seep and drainage supporting a highly diverse subcanopy.							
8	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Minimal acreage. Harvest with adjacent aspen when ready.							

Report 4 – Site Conditions

Gaylord Mgt. Unit

Tricia St. Pierre : Examiner

Compartment: 157

Year of Entry: 2023

9	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	7	Unspecified	Unspecified	Unspecified	Unspecified
Comments: To be managed selectively with adjacent hardwood stand.							
10	Unavailable	3L: Other wildlife concerns	10	5A: Not able to obtain desirable regeneration	Unspecified	Unspecified	Unspecified
Comments: Retaining oak stands to maintain an important mast source with the loss of beech and difficulty in regenerating oak with browsing pressure. Steep slopes in the west and south. Stand plateaus in the central and east portions. Heavy browsing pressure. Somewhat difficult access without major road work.							

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
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	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	Managed Site	General Comments																																																																																												
1	4110 - Sugar Maple Association	Poletimber Well	26.1	77	51-80	N/A	Trace white pine, red pine, jack pine in canopy, specifically around non-forested opening and gaps. Conifer more consistently present in north half of stand. Eastern edge drops down into stream corridor. Without a firm bottom, this should be excluded from any management activity. Beech more prominent on this slope. Lingering dead, standing white ash (EAB mortality); black cherry falling out. Trace yellow birch along the bottom edge of the slope into the stream corridor. Rare occurrences of white spruce, red oak, witch hazel, white ash, and serviceberry in subcanopy. Significant amount of advanced ironwood in the subcanopy, >20', 1-2" dbh, waiting patiently.																																																																																												
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3	622 - Lowland Shrub	Nonstocked	2.4		Unspecified	No	Old beaver dam on north edge; stressed and stunted trees in east.																																																																																												
5	6130 - Fir, Aspen, Maple	Poletimber Medium	55.6	90	51-80	N/A	Braided streams associated with the West Branch of the Sturgeon River. Trace black cherry, beech, red oak, elm, white pine in the canopy. Rare occurrences of cedar (saps), alder leaf buckthorn, blueberry, honeysuckle, red osier dogwood, wild raisin, white pine, gooseberry, michigan holly, and elm in the subcanopy. High density of paper birch saplings in the far north expanding into the adjacent compartment. Extreme northeast tip is dominated by spruce with scattered paper birch, cedar, quaking aspen. BAs vary, 60, 40, 80, 90, 20.																																																																																												
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments									
6	310 - Herbaceous Openland	Nonstocked	4.7		Unspecified	Managed Opening	Wildlife opening maintenance. FTP W52-415. Jack pine, white pine, black cherry, elm, raspberry, red pine, red maple, sugar maple, serviceberry, balsam fir, quaking aspen, basswood, ironwood, beech all encroaching on the perimeter. Low presence of mullein.									
								Sub-Canopy Species	Density	Avg. Height	Size					
								Spotted Knapweed	Full	5 - 10 feet	Non-Wood					
								Bracken Fern	Trace	5 - 10 feet	Non-Wood					
								Black Cherry	Low	>20 feet	Log					
								Sugar Maple	Trace	>20 feet	Pole					
								Honeysuckle (spp.)	Trace	5 - 10 feet	Tall Shrub					
Ironwood	Trace	>20 feet	Sapling													
7	6112 - Lowland Aspen	Poletimber Poor	25.1	58	1-50	N/A	Formerly an E6, dominated by black ash. EAB decimated the ash in the canopy, resulting in an understocked lowland deciduous and balsam fir stand with high black ash sapling regenerating. Trace black spruce, silver maple in the canopy. Rare basswood, elm, cattails in the subcanopy. Canopy data is based on observations from the northeast quarter and the south half. Did not see northwest quarter of stand which looks slightly more open.									
								Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
								Red Maple	2	Pole/Sapling	6		Balsam Fir	Medium	Variable	Sapling
								Basswood	3	Log/Pole	10		Black Ash	High	>20 feet	Sapling
								Quaking Aspen	27	Pole/Log	8		Black Cherry	Trace	10 - 20 feet	Sapling
								Balsam Fir	30	Pole/Sap/Log	6	58	Honeysuckle (spp.)	Trace	< 5 feet	Tall Shrub
								Northern White Cedar	2	Log/XLog	14		Hazelnut (Spp.)	Trace	5 - 10 feet	Tall Shrub
								White Spruce	3	Log/Pole	10		American Elm	Trace	>20 feet	Sapling
								Paper Birch	1	Pole/Sapling	6		American Highbush Cranberry	Trace	5 - 10 feet	Tall Shrub
								Yellow Birch	2	Pole/Log/Sap	6		Alder Leaved Buckthorn	Trace	< 5 feet	Tall Shrub
								Balsam Poplar	25	Pole/Log	8		Red Osier Dogwood	Trace	< 5 feet	Tall Shrub
								American Elm	5	Pole/Log	8					
								8	6120 - Lowland Cedar	Poletimber Medium	59.9	78	111-140	N/A	A large, variable lowland complex of various ages, size classes, composition. Areas dominated by log cedar; areas dominated by pole/sap maple and birch. Areas of logs, pockets of poles, open canopy with alder and saplings. Occasional areas of fir/cedar blow-down. Scattered Xlog stumps. Braided streams and very saturated ground. Rare hazelnut and dwarf scouring rush.	
																Canopy Species
Balsam Fir	10	Pole/Log/Sap	6	47	Balsam Fir	High	Variable									Sapling
Northern White Cedar	63	Pole/Log/XLog	8	78	Tag Alder	Low	5 - 10 feet									Tall Shrub
White Spruce	3	Log	14		White Spruce	Low	Variable									Sapling
Black Spruce	5	Log/Pole	10		Blueberry/Bilberry/Cranberry	Trace	< 5 feet									Tall Shrub
Red Maple	5	Log/Pole/Sap	12		Black Spruce	Low	Variable									Sapling
Paper Birch	4	Log/Pole/Sap	10		Northern White Cedar	Trace	< 5 feet									Sapling
Yellow Birch	3	Pole/Log/Sap	8		Black Ash	Trace	Variable									Sapling
Hemlock	2	Log/Pole	10		Black Cherry	Trace	5 - 10 feet									Sapling
White Pine	2	XLog/Log/Pole	20		Beech	Low	Variable									Sapling
Tamarack	3	Log	14		Sugar Maple	Trace	Variable									Sapling
					Honeysuckle (spp.)	Trace	< 5 feet									Tall Shrub
					Labrador Tea	Trace	< 5 feet									Tall Shrub



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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9	623 - Emergent Wetland	Nonstocked	0.8		Unspecified	No	Old beaver activity.
		Sub-Canopy Species		Density	Avg. Height	Size	
		Cattail spp.		Medium	Unspecified	Non-Wood	
		Black Spruce		Medium	Variable	Sapling	
		Balsam Fir		Medium	Variable	Sapling	
		Bulrush		Low	Unspecified	Non-Wood	
		Paper Birch		Low	>20 feet	Sapling	
		American Highbush Cranberry		Trace	5 - 10 feet	Tall Shrub	
		Black Ash		Low	Variable	Sapling	
		Northern White Cedar		Trace	< 5 feet	Sapling	
		Wild Raisin		Trace	10 - 20 feet	Tall Shrub	
		Red Osier Dogwood		Trace	5 - 10 feet	Tall Shrub	
		Red Maple		Low	Variable	Sapling	

10	4116 - Mixed N. Hardwood - Aspen	Poletimber Well	31.9	74	81-110	N/A	Rare occurrences of elm, cherry, yellow birch, white spruce in the subcanopy. Trace paper birch, yellow birch, beech, white cedar, white spruce, black cherry, elm in canopy. (One hemlock along western perimeter.) Fairly dense leatherwood in the northernmost portion east of the road, Rather mixed stand, though dominated by sugar maple, aspen, and red maple in varying densities. South to north: sugar maple/bta dominated to quaking aspen/red maple; more balsam fir in the north half (also wetter). Slopes down on northwest edge into lowland; south is high and dry. BAs range 50-100, averaging 79.
		Canopy Species		% Cover	Size Class	DBH	Age
		Sugar Maple		31	Pole/Log	8	74
		Red Maple		25	Pole/Log	8	74
		Basswood		6	Log/Pole	10	
		Quaking Aspen		10	Log/Pole	10	
		Bigtooth Aspen		15	Log/XLog	14	
		Balsam Fir		5	Pole/Log	8	
		Red Oak		5	Log/Pole	10	
		Balsam Poplar		1	Log	12	
		Ironwood		2	Pole/Sapling	6	
		Sub-Canopy Species		Density	Avg. Height	Size	
		Leatherwood		Low	Variable	Tall Shrub	
		Black Ash		Trace	Variable	Sapling	
		Hazelnut (Spp.)		Trace	5 - 10 feet	Tall Shrub	
		Ironwood		Trace	Variable	Sapling	
		Balsam Fir		High	Variable	Sapling	
		Sugar Maple		Trace	Variable	Sapling	
		Red Oak		Trace	10 - 20 feet	Sapling	
		Beech		Trace	Variable	Sapling	

11	4139 - Aspen, Mixed Deciduous	Sawtimber Well	5.7	86	51-80	N/A	Trace red oak (in south), basswood (in southwest) in canopy. Rare white spruce, ironwood in subcanopy. Balsam fir blow-down along east edge of stand. Westerly-facing slope, steep in areas; very wet at bottom. More typical low quality upland mix on hillside (sugar maple, bigtooth) transitioning to low quality quaking aspen with high density balsam fir at bottom of the slope. Adjacent clearcut went to the edge of operable ground.
		Canopy Species		% Cover	Size Class	DBH	Age
		Red Maple		25	Log/Pole	10	
		Paper Birch		1	Pole/Log	8	
		Quaking Aspen		40	Log/Pole/XLog	14	86
		Balsam Fir		16	Pole/Log	8	61
		White Spruce		1	Log	12	
		Northern White Cedar		1	Log/Pole/XLog	14	
		Sugar Maple		5	Pole/Sap/Log	6	
		Bigtooth Aspen		10	Log/XLog	16	
		Yellow Birch		1	Pole/Log	8	
		Sub-Canopy Species		Density	Avg. Height	Size	
		Balsam Fir		Medium	Variable	Sapling	



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments									
12	500 - Water	Nonstocked	7.2		Unspecified	No	One red pine sapling, 5-10'. Dead cedar, pole/sap/log. Stream corridor and a beaver flooding. A half-acre pocket along the west edge along the stream corridor is filling in with balsam fir, red maple, cedar, hemlock, and yellow birch.									
								Sub-Canopy Species	Density	Avg. Height	Size					
								Tamarack	Low	Variable	Sapling					
								Paper Birch	Trace	10 - 20 feet	Sapling					
								Balsam Fir	Low	Variable	Sapling					
								Northern White Cedar	Medium	5 - 10 feet	Sapling					
								Black Spruce	Trace	5 - 10 feet	Sapling					
								Willow spp.	Trace	5 - 10 feet	Tall Shrub					
								Cattail spp.	Trace	Unspecified	Non-Wood					
13	4130 - Aspen	Sapling Well	25.9	16	Immature	N/A	More Extreme Aspen, cut in 2005. Trace red oak, balsam fir, elm, basswood, black cherry, and striped maple in the canopy. Trace log/pole residual sugar maple and pole/sap ironwood, too. Rare occurrences of alternate leaved dogwood, honeysuckle, hazelnut, leatherwood, white spruce, and red pine in the subcanopy. Some squirrel damage (stripping of all bark) on sugar maple in northeast. Limited snow damage (arching) of pin cherry.									
								Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
								Quaking Aspen	5	Sapling	3		Prickly Or Wild Gooseberry	Trace	< 5 feet	Tall Shrub
								Bigtooth Aspen	80	Sapling/Pole	3	16	Maple Leaved Viburnum	Low	< 5 feet	Tall Shrub
								Pin Cherry	5	Sapling/Pole	2		Ironwood	Medium	Variable	Sapling
								Sugar Maple	2	Sapling	1		Beech	Trace	Variable	Sapling
								Ironwood	3	Sapling	1		Blackberry/Raspberry	Low	< 5 feet	Tall Shrub
								Beech	1	Sapling	1		Sugar Maple	Low	Variable	Sapling
								White Ash	1	Sapling/Pole	2		White Ash	Medium	Variable	Sapling
								Paper Birch	1	Sapling	2		Balsam Fir	Low	Variable	Sapling
								Red Oak	2	Log/XLog/Pole	16		Striped Maple	Trace	Variable	Sapling
													Red Oak	Trace	Variable	Sapling
													Pin Cherry	Trace	Variable	Sapling
								14	4130 - Aspen	Sapling Medium	10.3	6	Immature	N/A	Harvest completed 9/2015, Monstrous Aspen, 52-140-13-01. Significant browsing pressure. Hardwood is multi-stemmed, stump sprout, browsed. Trace paper birch in the canopy. Scattered residual sap/pole hardwood and balsam fir; one residual log beech. Stand will hopefully advance to an A3 over the next inventory cycle with beech, ash, and ironwood sort of filling in the gaps. Trace gooseberry, white spruce, striped maple, and witch hazel in the subcanopy.	
Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height									Size
Sugar Maple	2	Sapling	1		Blackberry/Raspberry	Full	5 - 10 feet									Tall Shrub
Quaking Aspen	10	Sapling	1		Balsam Fir	Low	Variable									Sapling
Pin Cherry	5	Sapling	1		Beech	Low	Variable									Sapling
Red Maple	2	Sapling	1		Bracken Fern	Trace	Unspecified									Non-Wood
White Ash	5	Sapling	1		Red Oak	Trace	< 5 feet									Sapling
Red Oak	1	Sapling	1		Honeysuckle (spp.)	Trace	< 5 feet									Tall Shrub
Basswood	2	Sapling	1		Sugar Maple	Trace	< 5 feet									Tall Shrub
Ironwood	5	Sapling	1													
Beech	9	Sapling	1													
Balsam Fir	1	Sapling/Pole	1													
Bigtooth Aspen	58	Sapling	1	6												



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																																	
15	4112 - Maple, Beech, Cherry Association	Poletimber Well	18.3	79	51-80	N/A	Very steep, many areas inoperable due to slope and saturated bottom; slopes down to west branch of the Sturgeon River. Trace beech, red oak, white pine, elm, paper birch, white spruce, white cedar, and yellow birch in canopy. Rare occurrences of serviceberry, white spruce, black cherry, honeysuckle, maple leaved viburnum in subcanopy. One alternate-leaved dogwood; trace mountain maple and wild raisin. One hemlock (10"). Consistent balsam fir subcanopy, but sporadic in the canopy. Generally a red maple dominated stand with varying size classes.																																																																	
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17	4130 - Aspen	Sapling Well	5.4	6	Immature	N/A	Stand was harvested in 2016: Monstrous Aspen, 52-140-13-01, after being varniced from a selection to a clearcut. Couple of seeps on the hillsides, one occupied by bulrush. Northeast is lesser stocked and heavier to hardwood.																																																																	
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19	310 - Herbaceous Openland	Nonstocked	2.1	0	Unspecified		Abandoned well St Wilmot 1-21. Marathon has a multi-year restoration and monitoring plan that started in 2019. DNR agreed the gate along the access road could stay in place to protect restoration. Post restoration, the gate will remain in place and DNR will assume responsibility and may choose to keep or remove. RxM API Number 21031603050000; permit # 60305; well # 1-21.																																																																	
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments			
20	4123 - Red Oak	Sawtimber Well	9.5	84	81-110	N/A	Trace beech, red maple, yellow birch in canopy. Northwest hillside has high stocking of striped maple underneath bigtooth and oak on a fairly steep westerly-facing slope; bigtooth is lacking in presence elsewhere. Striped maple is low to trace elsewhere. Ironwood subcanopy is most prominent in the east/northeast. Maple-leaved viburnum increases in the southeast. Southwest/south portion of stand is also hilly, some steep slopes. One white spruce sap (10'), occasional pole white ash and beech in subcanopy. Rare honeysuckle in the far west.			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size
Sugar Maple		5	Log/Pole	10		Beech		Trace	Variable	Sapling
Basswood		1	Log/Pole	10		Ironwood		Medium	Variable	Sapling
Quaking Aspen		2	Log/Pole	12		Striped Maple		Low	Variable	Sapling
Red Oak		85	Log/Pole/XLog	14	84	White Ash		Medium	Variable	Sapling
Bigtooth Aspen		7	Log/Pole/XLog	14		Red Oak		Trace	< 5 feet	Sapling
						Sugar Maple		Low	>20 feet	Sapling
						Sugar Maple		Low	>20 feet	Pole
						Maple Leaved Viburnum		Low	< 5 feet	Tall Shrub
21	4199 - Other Mixed Upland Deciduous	Poletimber Well	10.4	54	51-80	N/A		This is a pole oak stand transitioning to log with scattered aspen clones. Canopy closure varies, 60-100%, averaging around 75% closure. There's a 3/4-ac rectangle along the north side of the road with full stocking of ironwood saps >20' as the primary canopy with scattered pole red oak (trace elm, balsam fir, white ash, sugar maple). Trace white pine, black cherry, balsam fir in canopy. Rare occurrences of striped maple (north edge), red oak (sap, >20'), white spruce (sap/pole), honeysuckle (associated with black cherry). One paper birch in southwest leg. High to full beech in the subcanopy in the northeast, low elsewhere. Scattered white ash snags. There's an old trail through the southern portion of this stand with some openings along the trail filling in with cherry. Mancelona sand. BAs range 30 to 90, averaging 62 (higher density in aspen clones).		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density		Avg. Height	Size
Quaking Aspen		2	Pole/Log	8		Sugar Maple	Low		Variable	Sapling
Bigtooth Aspen		15	Log/Pole	10	65	White Ash	Medium		Variable	Sapling
Sugar Maple		25	Pole/Log	8		Beech	Low		Variable	Sapling
Basswood		2	Pole/Log	8		Ironwood	Medium		Variable	Sapling
Beech		1	Pole/Log	8		Serviceberry (Juneberry)	Trace		5 - 10 feet	Sapling
American Elm		1	Pole	7		Prickly Or Wild Gooseberry	Trace		< 5 feet	Tall Shrub
Ironwood		4	Sapling/Pole	2						
Red Oak		50	Pole/Log/XLog	8	54					
22	4112 - Maple, Beech, Cherry Association	Sawtimber Well	10.9	71	81-110	N/A	Trace bigtooth, balsam fir, beech, cedar, red and white pine in canopy (pine confined to extreme south). Rare witch hazel, hemlock, cedar, hazelnut, honeysuckle, alternate leaved dogwood, maple leaved viburnum in the subcanopy. Dense yellow birch (pole/sap) with paper birch (pole/sap) (and trace amounts of red maple, white spruce, cedar, balsam fir, hemlock) in the far north - cut in 1986. Elsewhere throughout the stand, red maple dominates with varying densities/distribution of hemlock, paper birch, black cherry, etc. More sugar maple in the north half.			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size
Sugar Maple		5	Pole/Log/Sap	6		Balsam Fir		High	Variable	Sapling
Red Maple		77	Log/Pole/XLog	10	71	Yellow Birch		Low	Variable	Sapling
Quaking Aspen		2	Log/Pole	10		Sugar Maple		Low	Variable	Sapling
Yellow Birch		3	Pole/Sap/Log	6	35	White Spruce		Trace	Variable	Sapling
Paper Birch		2	Pole/Log	8		Beech		Low	Variable	Sapling
White Spruce		2	Log/Pole	12						
Hemlock		4	Log/XLog	14						
Black Cherry		2	Log/Pole	12						
Red Oak		3	XLog/Log/Pole	22						
23	4123 - Red Oak	Sawtimber Well	19.3	78	81-110	N/A	Trace yellow birch, basswood, elm, quaking aspen in canopy. QA is present with yellow birch on tow of slope in the southwest, closely associated with a seep in the hillside. Higher densities of beech saplings (medium to high stocking) on slopes with medium stocking of striped maple. Beech is low elsewhere. Trace white spruce and balsam fir in the subcanopy. Stand is dominated by oak (80-150 BA) with consistent sugar maple (10-20BA); bigtooth clones on western and southwestern hillsides but not present in the main body of the stand.			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species		Density	Avg. Height	Size
Sugar Maple		5	Log/Pole	10		Sugar Maple		Low	Variable	Sapling
Beech		1	Pole/Log	8		Beech		Low	Variable	Sapling
Red Oak		90	Log/Pole/XLog	10	78	Striped Maple		Low	Variable	Sapling
Bigtooth Aspen		3	Log	14		Maple Leaved Viburnum		Trace	< 5 feet	Tall Shrub
Red Maple		1	Log/Pole	12		Ironwood		Low	Variable	Sapling



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments									
24	500 - Water	Nonstocked	1.6		Unspecified	No	Old beaver flooding, dammed on the north edge.									
								Sub-Canopy Species	Density	Avg. Height	Size					
								Northern White Cedar	Low	Variable	Sapling					
								Willow spp.	Trace	< 5 feet	Tall Shrub					
								Tag Alder	Trace	5 - 10 feet	Tall Shrub					
								Balsam Fir	Trace	5 - 10 feet	Sapling					
								Cattail spp.	Low	Unspecified	Non-Wood					
25	6117 - Lowland Deciduous, Mixed Coniferous	Sawtimber Well	2.6	85	51-80	N/A	Trace paper birch, basswood, black cherry, elm in canopy. Rare ironwood in subcanopy. Alder and black cherry are most prevalent in the middle/south portion of the stand with an open canopy. Stand exists as a transitional lowland stand on the edge of the Sturgeon River floodplain before starting to slope into upland.									
								Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
								Quaking Aspen	35	Log/Pole	14		Balsam Fir	Medium	Variable	Sapling
								Balsam Fir	15	Pole/Log	8		Beech	Low	Variable	Sapling
								White Spruce	10	Log/Pole	12		Sugar Maple	Trace	Variable	Sapling
								Northern White Cedar	2	Log/Pole	10	93	Black Cherry	Low	5 - 10 feet	Sapling
								Yellow Birch	1	Pole/Sapling	7		Serviceberry (Juneberry)	Low	5 - 10 feet	Tall Shrub
								Red Maple	37	Pole/Log	8	85	White Spruce	Trace	< 5 feet	Sapling
													Black Spruce	Trace	< 5 feet	Sapling
													Prickly Or Wild Gooseberry	Trace	< 5 feet	Tall Shrub
													Honeysuckle (spp.)	Trace	< 5 feet	Tall Shrub
													Tag Alder	Trace	10 - 20 feet	Tall Shrub
													Hazelnut (Spp.)	Trace	5 - 10 feet	Tall Shrub
								27	4130 - Aspen	Poletimber Well	49.0	35	81-110	N/A	Trace black cherry, BAM, elm, yellow birch, beech, white spruce in primary canopy; trace red pine, white pine, red oak residual "super"canopy (log/Xlog). Rare red oak and white spruce in subcanopy. Two distinct oak cohorts: pole/sap (35 year old) and Log/Xlog (90 year old). Ironwood, sugar maple, and white ash are generally outcompeted by aspen and lingering now in the midcanopy. Most pin cherry has senesced. Areas with high sugar maple regen. Balsam fir is somewhat sparse in the subcanopy with occasional dense pockets. Trace BAM in the north along drainage. Drainage shown may be seasonally moist, but there's no evidence of prolonged soil saturation; no defined water courses. Result of 1986 clearcut. Southern acreage planted to red, white, and jack pine in 1931.	
																Canopy Species
Quaking Aspen	5	Pole/Sapling	6		Sugar Maple	Medium	Variable									Sapling
Bigtooth Aspen	85	Pole/Log/Sap	7	35	Balsam Fir	Low	Variable									Sapling
Balsam Fir	1	Pole/Sapling	6		Serviceberry (Juneberry)	Trace	10 - 20 feet									Sapling
Paper Birch	1	Sapling/Pole	4		Beech	Trace	Variable									Sapling
Sugar Maple	3	Sapling/Pole	4		Witch Hazel	Trace	10 - 20 feet									Tall Shrub
Red Oak	1	Pole/Sap/Log	6		White Ash	Low	Variable									Sapling
White Ash	1	Sapling/Pole	3		Ironwood	Low	Variable									Sapling
Pin Cherry	1	Sapling/Pole	4		Red Maple	Low	>20 feet									Sapling
Red Maple	2	Pole/Sapling	6		Striped Maple	Trace	10 - 20 feet									Sapling
					Maple Leaved Viburnum	Trace	< 5 feet									Tall Shrub
					Honeysuckle (spp.)	Trace	< 5 feet									Tall Shrub



Stand **Level 4 Cover Type** **Size Density** **Acres** **Stand Age** **BA Range** **Managed Site** **General Comments**

28 6120 - Lowland Cedar Poletimber Well 38.7 85 141-170 N/A

Canopy Species	% Cover	Size Class	DBH	Age
Quaking Aspen	2	Log/Pole	14	
Balsam Fir	5	Pole/Log/Sap	7	
Black Spruce	7	Pole	8	79
Northern White Cedar	55	Log/Pole/XLog	10	85
Tamarack	2	Log/Pole	12	
White Pine	3	XLog	24	
Hemlock	3	Log/Pole	12	
White Spruce	10	Log/XLog	16	
Yellow Birch	5	Pole/Log/Sap	7	
Paper Birch	5	Pole/Log/Sap	8	
Red Maple	3	Pole/Log/XLog	8	

Sub-Canopy Species	Density	Avg. Height	Size
Balsam Fir	Medium	Variable	Sapling
White Ash	Low	Variable	Sapling
Mountain Maple	Trace	5 - 10 feet	Tall Shrub
Michigan Holly	Trace	5 - 10 feet	Tall Shrub
White Spruce	Low	< 5 feet	Sapling
Honeysuckle (spp.)	Trace	< 5 feet	Tall Shrub
Elderberry	Trace	< 5 feet	Tall Shrub
Alder	Low	10 - 20 feet	Tall Shrub
White Pine	Trace	< 5 feet	Sapling
Hemlock	Trace	Variable	Sapling
Black Spruce	Trace	< 5 feet	Sapling
Ninebark	Trace	5 - 10 feet	Tall Shrub
Hazelnut (Spp.)	Trace	Variable	Tall Shrub
Canadian Yew	Trace	< 5 feet	Tall Shrub

Corridor for west branch of the sturgeon river. Trace dwarf scouring rush, ironwood, sugar maple in subcanopy. Small channel along northwest hillside. Trace silver maple present, mixed with red maple. Areas with very dense balsam fir saplings adjacent to stream. A lot of blowdown, dense balsam fir saplings west of the the river in the north half of the stand. More larch in east. Spruce is 10-12" dbh in the south vs 14-18" elsewhere. Much less balsam fir regen in south (low stocking at best). Some very large white pine in the far northwest.

29 4139 - Aspen, Mixed Deciduous Sapling Medium 23.9 8 Immature N/A

Canopy Species	% Cover	Size Class	DBH	Age
Bigtooth Aspen	33	Sapling	1	8
Pin Cherry	30	Sapling	1	
Beech	3	Sapling	1	
Red Maple	2	Sapling	1	
Striped Maple	1	Sapling	1	
Sugar Maple	5	Sapling	1	
Quaking Aspen	19	Sapling	1	
Beech	1	Log	14	
Balsam Fir	1	Pole/Log/Sap	8	
White Pine	3	Log/XLog/Pole	16	
Red Pine	2	Log/XLog/Pole	14	88

Sub-Canopy Species	Density	Avg. Height	Size
Beech	Medium	Variable	Sapling
Blackberry/Raspberry	Full	< 5 feet	Tall Shrub
Sugar Maple	Low	Variable	Sapling
Ironwood	Low	Variable	Sapling
Bracken Fern	Low	Unspecified	Non-Wood
Red Maple	Low	Variable	Sapling
White Ash	Trace	Variable	Sapling
Striped Maple	Trace	Variable	Sapling
White Pine	Trace	< 5 feet	Sapling
Red Pine	Trace	< 5 feet	Sapling

Sale completed as part of Dunham Road Mix in September 2013. Lots of slash from hdwd tops, mix of hdwd and aspen regen. Rare occurrence of red oak in canopy. Rare balsam fir, mullein, maple leaved viburnum in subcanopy. Stand appears densely stocked from the road, but the east and west extremes are poorly stocked. Far west third of stand along hardwood is 50% stocked from browsing and possibly shading. The portion east of the section line is more fully stocked, except again in the far east along the hardwood edge where it has 50% stocking. Red and white pine saps are generally in skid trails and along the road edge. Heavy browsing pressure, especially on maples and ash. There's a lot of pin cherry dominating pockets of this stand. I'm hopeful this can nurse along more desirable and longer lived hardwood before it begins to fall out of the canopy. If sugar maple can persist under pin cherry, it might become a more prominent canopy species in the future.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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30 4199 - Other Mixed Upland Deciduous Sapling Medium 61.5 38 1-50 N/A

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	15	Sapling/Pole	3	
Red Pine	5	XLog/Log	20	81
White Ash	3	Sapling/Pole	3	
Beech	5	Sapling/Pole	2	
Jack Pine	1	Sapling/Pole	4	
Bigtooth Aspen	17	Pole/Sapling	6	
Paper Birch	5	Sapling/Pole	4	
Pin Cherry	2	Sapling/Pole	4	
Black Cherry	5	Sapling/Pole	4	
Balsam Fir	4	Sapling/Pole	4	
Red Oak	3	Sapling/Pole	4	
Ironwood	5	Sapling/Pole	2	
Red Maple	30	Sapling/Pole	4	38

Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	Medium	Variable	Sapling
Black Cherry	Medium	5 - 10 feet	Sapling
Balsam Fir	Low	Variable	Sapling
White Ash	Medium	< 5 feet	Sapling
Pin Cherry	Low	Variable	Sapling
Beech	Medium	Variable	Sapling
Bigtooth Aspen	Low	5 - 10 feet	Sapling
Blackberry/Raspberry	High	< 5 feet	Tall Shrub
Sugar Maple	Low	< 5 feet	Sapling

Trace red pine, white spruce, quaking aspen, balsam poplar, and elm in canopy, <1% each. Rarely found staghorn sumac (adjacent to road), honeysuckle, witch hazel in subcanopy. Stand originally planted to red pine in _____, then subsequently thinned in _____, receiving an overstory removal of red pine (leaving 50% or greater of advanced sap/pole hardwood and aspen) in _____. These treatments have created a multi-aged stand with "super" canopy red pine, canopy (or midcanopy under red pine) advanced hardwood and aspen, with sapling hardwood and aspen regenerating in the harvested openings. Regeneration within the gaps is somewhat sparse and has received browsing damage from deer and elk, species dominated by cherry and red maple with lesser amounts of beech, ironwood, sugar maple, white ash, and aspen. Areas of unharvested red pine have BAs of 30-90 for red pine with 0-30 BA of red maple/paper birch/balsam fir, variable. Mullein, thistle, and knapweed present throughout treatment areas.

31 6220 - Alder/willow Nonstocked 8.4 Unspecified No

Sub-Canopy Species	Density	Avg. Height	Size
Alder	High	10 - 20 feet	Tall Shrub
Northern White Cedar	Trace	Variable	Sapling
Balsam Poplar	Trace	Variable	Sapling
Ninebark	Trace	5 - 10 feet	Tall Shrub
Balsam Fir	Low	Variable	Sapling
Willow spp.	Low	Variable	Tall Shrub
Black Spruce	Low	Variable	Sapling
American Highbush Cranberry	Trace	5 - 10 feet	Tall Shrub
Michigan Holly	Low	5 - 10 feet	Tall Shrub
Quaking Aspen	Trace	>20 feet	Sapling
Round Leaved Dogwood	Low	5 - 10 feet	Tall Shrub
White Spruce	Trace	>20 feet	Pole
Red Pine	Trace	10 - 20 feet	Sapling
Paper Birch	Low	Variable	Sapling
Red Maple	Trace	>20 feet	Pole
Tamarack	Medium	Variable	Sapling

Formerly a forested stand (cedar, white pine - very old stumps), now lowland shrub (alder) dominated, but hospitable to trees; slow conversion to a forested stand may be occurring. Surprising presence of red pine. Virgin's bower and wild raisin scarcely present.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																																																																			
32	4111 - S.Maple, Hard Mast Association	Poletimber Well	659.3	81	81-110	N/A	2011 notes: Scattered areas of beech scale, very hilly, terrain would make operations difficult, AVG BA = 98 2021 notes: Very large mixed hardwood stand with quite a few scattered historic treatments. Portions of this stand, primarily in the south, were planted in the 1930s to red, white, and jack pine (of varying densities and distribution). Selective harvests occurred on more operable ground in the 1980s and early 1990s, as well as a couple small opening creations in 1985. Trace birch, balsam fir, elm in canopy. Oak is confined largely to the northernmost acreage; red and white pine to the southern half. Some standing ash snags; few escapees (poles).																																																																																																			
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33	4130 - Aspen	Sapling Well	24.5	16	Immature	N/A	More Extreme Aspen harvested in 2005. Trace residual white pine, red pine, red oak. Trace red oak saps - extremely heavy browse pressure. Very hilly. Trace residual ironwood (pole/sap). Rare red pine sapling in canopy, rare balsam fir sapling in west. Trace elderberry along road at south/west edge of stand. Very steep hill climb that has become an RDR in the far east.																																																																																																			
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37	42110 - Planted Red Pine	Sawtimber Medium	2.6	85	81-110	N/A	ORV trail through the center of stand; old logging road travelling north-south. One balsam fir sapling <5'. Advanced pole suncanopy of beech, sugar maple, and ash, not quite mixing in with canopy yet.																																																																																																			
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38 310 - Herbaceous Openland Nonstocked 1.0 Unspecified Permit no 58110, Northstar Energy. Api well # 21031581100000.

Sub-Canopy Species	Density	Avg. Height	Size
Spotted Knapweed	High	Unspecified	Non-Wood
Blackberry/Raspberry	High	< 5 feet	Tall Shrub
Goldenrod spp.	Trace	Unspecified	Non-Wood

39 310 - Herbaceous Openland Nonstocked 1.3 Unspecified Permit no 57123, Northstar Energy. Api well # 21031571230000. Mullein present.

Sub-Canopy Species	Density	Avg. Height	Size
Spotted Knapweed	Full	Unspecified	Non-Wood
Blackberry/Raspberry	Low	< 5 feet	Tall Shrub
Red Pine	Trace	< 5 feet	Sapling

40 4116 - Mixed N. Hardwood - Aspen Poletimber Poor 7.5 63 1-50 N/A Trace black cherry, elm present in canopy. Result of overstory red pine removal, _____. Heavy browsing on regeneration. Elk tracks through stand.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	35	Pole/Sap/Log	6	63	Sugar Maple	Low	< 5 feet	Sapling
Basswood	1	Pole	6		Beech	Medium	Variable	Sapling
Paper Birch	2	Pole/Log	8		Ironwood	Low	Variable	Sapling
Quaking Aspen	18	Log/Pole	10		White Ash	Low	Variable	Sapling
Beech	35	Pole/Sapling	6		Red Pine	Low	< 5 feet	Seeding
Ironwood	2	Sapling	4		Blackberry/Raspberry	Medium	< 5 feet	Tall Shrub
Red Maple	2	Pole/Sapling	7		Striped Maple	Low	< 5 feet	Sapling
Bigtooth Aspen	5	Log	12		Quaking Aspen	Low	5 - 10 feet	Sapling
					Black Cherry	Trace	5 - 10 feet	Sapling

41 310 - Herbaceous Openland Nonstocked 0.6 Unspecified Permit # 55261, API # 21031552610000

Sub-Canopy Species	Density	Avg. Height	Size
Blackberry/Raspberry	Low	< 5 feet	Tall Shrub
Spotted Knapweed	Full	Unspecified	Non-Wood
Goldenrod spp.	Low	Unspecified	Non-Wood



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments					
42	310 - Herbaceous Openland	Nonstocked	3.3		Unspecified		Permit # 57119, API No 21031571190000. REMOVE SCOTCH PINE.					
								Sub-Canopy Species	Density	Avg. Height	Size	
								Red Pine	Low	Variable	Sapling	
								Black Cherry	Medium	>20 feet	Pole	
								Sugar Maple	Low	Variable	Sapling	
								Beech	Low	Variable	Sapling	
								Spotted Knapweed	High	Unspecified	Non-Wood	
								Blackberry/Raspberry	Low	< 5 feet	Tall Shrub	
								Scotch Pine	Trace	10 - 20 feet	Sapling	
								White Pine	Trace	< 5 feet	Sapling	
								Bracken Fern	Low	Unspecified	Non-Wood	
Ironwood	Low	Variable	Sapling									
43	4110 - Sugar Maple Association	Sawtimber Well	29.1	82	81-110	N/A	Thinned around 2005. Current BA steadily around 90. Mortality and decline in beech (BBD). Full stocking of undesirables in subcanopy. Trace paper birch on west edge adjacent to stand 42. One dead yellow birch (seedbank potential). West half is mostly sugar maple and beech; east half is sugar maple and basswood with consistently dead white ash. Northeast has better quality and smaller diameter sugar maple. Full beech subcanopy in west, medium to high in northeast. One autumn olive, one white pine sap in extreme northeast tip near road. Trace aspen on perimeters. Handful of red pine and trace white pine at northwest corner of private. Trace quaking aspen, elm, and ironwood in canopy.					
								Canopy Species	% Cover	Size Class	DBH	Age
								Sugar Maple	63	Log/Pole	10	82
								Basswood	25	Log/Pole/XLog	12	
								Beech	10	Log/Pole	12	
								Bigtooth Aspen	1	XLog/Log	18	
								Red Pine	1	XLog/Log	20	
								Sub-Canopy Species	Density	Avg. Height	Size	
								Beech	Full	5 - 10 feet	Sapling	
								Ironwood	High	Variable	Sapling	
								Striped Maple	Low	Variable	Sapling	
Sugar Maple	Low	5 - 10 feet	Sapling									
White Ash	Low	Variable	Sapling									
Sugar Maple	Low	< 5 feet	Seeding									
44	4130 - Aspen	Sapling Well	21.2	16	Immature	N/A	More Extreme Aspen. Trace balsam fir and basswood; residual. Trace striped maple, honeysuckle, serviceberry, scotch pine, and basswood in the subcanopy. Deer, elk tracks and browse. Fairly dense raspberry in skid trails and openings yet. Nice paper birch response in west central portion of stand. Although aspen dominated, there's still pleasant diversity and good sugar maple representation, though it's likely to be outcompeted in many areas. Striped maple and honeysuckle closely associated. Two residual elm - both dead. Handful of red pine saplings, 5-20'.					
								Canopy Species	% Cover	Size Class	DBH	Age
								Quaking Aspen	50	Sapling	2	16
								Bigtooth Aspen	20	Sapling	3	16
								Sugar Maple	10	Sapling	1	
								Ironwood	5	Sapling	1	
								Black Cherry	5	Sapling	1	
								White Ash	2	Sapling	1	
								Paper Birch	5	Sapling	2	
								Pin Cherry	3	Sapling	2	
								Sub-Canopy Species	Density	Avg. Height	Size	
Black Cherry	Low	Variable	Sapling									
White Ash	Low	Variable	Sapling									
Beech	Medium	Variable	Sapling									
Sugar Maple	Low	Variable	Sapling									
Blackberry/Raspberry	Medium	< 5 feet	Tall Shrub									
Prickly Or Wild Gooseberry	Trace	< 5 feet	Tall Shrub									
Bracken Fern	Trace	Unspecified	Non-Wood									



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments					
45	310 - Herbaceous Openland	Nonstocked	10.4		Unspecified	No	Forest road and buried pipeline connecting well pads. Northernmost portion is an M3 with mixed hardwood and aspen. Stand is documented as a maintained wildlife opening.					
								Sub-Canopy Species	Density	Avg. Height	Size	
								Spotted Knapweed	High	Unspecified	Non-Wood	
								Balsam Poplar	Trace	5 - 10 feet	Sapling	
								Bracken Fern	Trace	Unspecified	Non-Wood	
								Goldenrod spp.	Low	Unspecified	Non-Wood	
								Ironwood	Medium	Variable	Sapling	
								Honeysuckle (spp.)	Trace	5 - 10 feet	Tall Shrub	
								Black Cherry	Low	Variable	Sapling	
								Quaking Aspen	Low	Variable	Sapling	
								Juniper	Trace	< 5 feet	Tall Shrub	
								Balsam Fir	Low	Variable	Sapling	
								Beech	Trace	5 - 10 feet	Sapling	
								Sugar Maple	Trace	Variable	Sapling	
Blackberry/Raspberry	Medium	< 5 feet	Tall Shrub									
46	4130 - Aspen	Poletimber Well	5.2	38	81-110	N/A	Trace quaking aspen, yellow birch, and pin cherry in canopy. Rare occurrences of balsam fir, honeysuckle, and raspberry in subcanopy. Most sugar maple, ironwood, white ash, beech sapling/poles are suppressed into midcanopy; few mingle in canopy with bigtooth. Honeysuckle, raspberry present on edge of private. Stand occupies a slight west slope, increasing in steepness further east (up the hill). Smaller diameters (6" ave) present in steeper slopes in east half. Lower, flatter slope consists of larger (8") average diameters in aspen.					
								Canopy Species	% Cover	Size Class	DBH	Age
								Red Maple	9	Pole/Sapling	6	
								Bigtooth Aspen	85	Pole/Sap/Log	7	38
								Black Cherry	1	Pole/Sapling	6	
								Ironwood	1	Sapling	4	
								Sugar Maple	4	Pole/Sapling	5	
								Sub-Canopy Species	Density	Avg. Height	Size	
								Ironwood	Low	Variable	Sapling	
								Sugar Maple	Medium	Variable	Sapling	
								White Ash	Medium	Variable	Sapling	
Beech	Low	Variable	Sapling									
Black Cherry	Trace	>20 feet	Sapling									
Serviceberry (Juneberry)	Trace	10 - 20 feet	Sapling									
Striped Maple	Trace	Variable	Sapling									
47	4110 - Sugar Maple Association	Sawtimber Well	161.2	81	51-80	N/A	Thinned around 2005 to 76 BA. Current BA ranges 30-110, averaging around 80 in the wake of EAB and BBD. Dead ash and some beech snap. Trace ironwood, red maple, quaking aspen, elm in canopy. Trace maple leaved viburnum, honeysuckle, white spruce, balsam fir in subcanopy. Seldom a successful basswood stump sprout. Trace log white spruce to east of stand 48 with trace paper birch and black cherry. Full ironwood regen throughout most of the stand, occasionally medium to high stocking - beech takes over for full stocking in areas with less ironwood. More paper birch scattered along west perimeter. Trae scattered white spruce, balsam fir in southwest. Little valley in southwest. 1-acre nonforested opening in south hosting bracken, white pine, black cherry, ironwood, sugar maple, elm, white spruce, quaking aspen, balsam fir.					
								Canopy Species	% Cover	Size Class	DBH	Age
								Sugar Maple	60	Log/Pole	10	81
								Basswood	30	Log/Pole/XLog	12	
								Bigtooth Aspen	2	Log/XLog	16	
								Beech	7	Log/Pole/XLog	12	
								Yellow Birch	1	Log/Pole	10	
								Sub-Canopy Species	Density	Avg. Height	Size	
								Beech	Medium	Variable	Sapling	
								Ironwood	High	Variable	Sapling	
								White Ash	Low	Variable	Sapling	
								Sugar Maple	Low	Variable	Sapling	
								Blackberry/Raspberry	Low	< 5 feet	Tall Shrub	
								Sugar Maple	Medium	< 5 feet	Seeding	
Striped Maple	Trace	Variable	Sapling									
Prickly Or Wild Gooseberry	Trace	< 5 feet	Tall Shrub									
Basswood	Trace	Variable	Sapling									



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments				
53	310 - Herbaceous Openland	Nonstocked	0.5		Unspecified		Hardwood and aspen encroachment on edges. Trace conifer (red and white pine, balsam fir, white spruce). Well pad.				
								Sub-Canopy Species	Density	Avg. Height	Size
								Spotted Knapweed	Full	Unspecified	Non-Wood
								Black Cherry	Low	>20 feet	Pole
								Red Pine	Trace	Variable	Sapling
								Blackberry/Raspberry	Trace	< 5 feet	Tall Shrub
								Quaking Aspen	Low	>20 feet	Sapling
								Beech	Low	Variable	Sapling
54	310 - Herbaceous Openland	Nonstocked	1.6		Unspecified		Permit # 56590, api well # 21031565900000, Northstar Energy. RDR on perimeter - ORV damage on exposed slopes.				
								Sub-Canopy Species	Density	Avg. Height	Size
								Spotted Knapweed	Full	Unspecified	Non-Wood
								Goldenrod spp.	Trace	Unspecified	Non-Wood
								Red Pine	Trace	Variable	Sapling
								White Pine	Trace	< 5 feet	Sapling
								Balsam Fir	Trace	< 5 feet	Sapling
55	310 - Herbaceous Openland	Nonstocked	0.6	0	Unspecified		Permit # 58060, api well # 21031580600000, Northstar Energy. Trace mullein present.				
								Sub-Canopy Species	Density	Avg. Height	Size
								Spotted Knapweed	Full	Unspecified	Non-Wood
								Goldenrod spp.	Low	Unspecified	Non-Wood
								Blackberry/Raspberry	Trace	< 5 feet	Tall Shrub
56	310 - Herbaceous Openland	Nonstocked	0.8	0	Unspecified		Permit # 57122, api # 21031571220000				
								Sub-Canopy Species	Density	Avg. Height	Size
								Spotted Knapweed	Full	Unspecified	Non-Wood
								Bracken Fern	Trace	Unspecified	Non-Wood



Stand **Level 4 Cover Type** **Size Density** **Acres** **Stand Age** **BA Range** **Managed Site** **General Comments**

57 6116 - Lowland Birch Sapling Well 5.2 45 1-50 N/A

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Paper Birch	35	Sapling/Pole	4	25	Balsam Fir	Low	Variable	Sapling
Red Maple	8	Sapling/Pole	4	34	Ironwood	Trace	Variable	Sapling
Basswood	1	Sapling/Pole	4		Serviceberry (Juneberry)	Low	Variable	Sapling
Quaking Aspen	1	Sapling/Pole	4		White Ash	Trace	Variable	Sapling
Yellow Birch	40	Sapling/Pole	4	45	Round Leaved Dogwood	Trace	5 - 10 feet	Tall Shrub
Hemlock	2	Log/Pole	10		Honeysuckle (spp.)	Low	< 5 feet	Tall Shrub
Northern White Cedar	1	Log/Pole	10		Alder	Trace	10 - 20 feet	Tall Shrub
Balsam Poplar	2	Pole/Sapling	6		Black Cherry	Trace	10 - 20 feet	Sapling
White Ash	2	Sapling/Pole	4		Sugar Maple	Trace	Variable	Sapling
Black Cherry	1	Sapling/Pole	4		White Spruce	Trace	< 5 feet	Sapling
Balsam Fir	5	Pole/Sapling	6		Prickly Or Wild Gooseberry	Trace	< 5 feet	Tall Shrub
Red Oak	1	Pole/Sapling	6		Willow spp.	Low	10 - 20 feet	Sapling
American Elm	1	Sapling/Pole	3		Hemlock	Trace	>20 feet	Pole

Scattered red maple, yellow birch, white cedar logs. Looks like this stand was clearcut and left all hemlock. Balsam fir saplings took off, hemlock tops died back but recovered. EAB affected ash, but some still linger. Trace silver maple. West central portion of stand is dominated by balsam fir with quaking aspen and paper birch. MiFI would not accept the presence of logs in yellow birch, paper birch, and red maple - though they're all present.

58 6120 - Lowland Cedar Sapling Poor 3.6 43 1-50 N/A

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Balsam Fir	2	Sapling	3		Alder	High	10 - 20 feet	Tall Shrub
Northern White Cedar	80	Sapling/Pole	2	43	Balsam Fir	Low	Variable	Sapling
White Spruce	1	Sapling/Pole	3		Michigan Holly	Trace	5 - 10 feet	Tall Shrub
Black Spruce	5	Sapling	2		Black Ash	Trace	Variable	Sapling
Paper Birch	10	Sapling	1		Cattail spp.	Medium	Unspecified	Non-Wood
Tamarack	2	Sapling	2		Willow spp.	Low	10 - 20 feet	Tall Shrub
					Northern White Cedar	Medium	Variable	Sapling
					Black Spruce	Low	Variable	Sapling
					Tamarack	Trace	Variable	Sapling
					Paper Birch	Trace	Variable	Sapling
					White Pine	Trace	10 - 20 feet	Sapling

Broke the canopy and subcanopy at 10'. Trace white pine in canopy. Scattered log cedar too. Inundated stand. Dead and declining white cedar; EAB killed black ash canopy. North third of stand has a lot of cattails with VERY stressed cedar saps, trace larch and birch. Exposed culvert crossing Real Water Road. Defined channel in this area. Old beaver dam. Approximately 40 BA of dead cedar (log/pole). If inundation continues, there's a good chance this will convert to a lowland nonforested stand occupied by alder and willow with scattered lingering saplings.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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59 6116 - Lowland Birch Sawtimber Medium 1.3 94 81-110 N/A

Canopy Species	% Cover	Size Class	DBH	Age
Yellow Birch	75	Log/Pole	10	94
Red Maple	2	Log/Pole	12	
Hemlock	18	Log/Pole	10	
Sugar Maple	3	Pole/Log	8	
Northern White Cedar	2	Log/Pole	12	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Low	Variable	Sapling
Beech	Low	Variable	Sapling
Ironwood	Low	Variable	Sapling
Alder Leaved Buckthorn	Trace	< 5 feet	Tall Shrub
Mountain Maple	Trace	5 - 10 feet	Tall Shrub
Elderberry	Low	5 - 10 feet	Tall Shrub
Northern White Cedar	Low	>20 feet	Pole
Prickly Or Wild Gooseberry	Trace	< 5 feet	Tall Shrub
Honeysuckle (spp.)	Trace	< 5 feet	Tall Shrub
American Elm	Trace	10 - 20 feet	Sapling
Blackberry/Raspberry	Trace	< 5 feet	Tall Shrub
Striped Maple	Low	Variable	Sapling
White Ash	Low	Variable	Sapling
Alternate-leaved Dogwood	Trace	5 - 10 feet	Tall Shrub
Cattail spp.	Trace	Unspecified	Non-Wood
Basswood	Trace	Variable	Sapling

Single pocket of alder leaved buckthorn in the west. Seed. Red maple mostly on perimeter. South edge is yellow birch dominated, slightly less wet than rest of the stand. Trace basswood, quaking aspen, beech in canopy.

60 122 - Road/Parking Lot Nonstocked 0.8 0 Unspecified No

Convergence of Perry and Real Water roads with RDR - small scramble area also used as a campsite.

61 4130 - Aspen Sawtimber Well 4.7 68 81-110 N/A

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	5	Pole/Sapling	6	
Bigtooth Aspen	70	Log/Pole	12	68
Red Oak	10	Log/Pole	14	84
Red Maple	15	Pole/Sapling	6	

Sub-Canopy Species	Density	Avg. Height	Size
Beech	Medium	Variable	Sapling
Balsam Fir	Trace	Variable	Sapling
Ironwood	Low	Variable	Sapling
White Pine	Trace	>20 feet	Pole
Maple Leaved Viburnum	Trace	< 5 feet	Tall Shrub
Serviceberry (Juneberry)	Low	5 - 10 feet	Sapling
Red Oak	Low	Variable	Sapling

Trace white pine, beech, ironwood, red pine in canopy. Trace white spruce, red pine, striped maple in subcanopy. Pretty steep; this acreage was avoided when the adjacent stand was harvested. A surprising amount of regenerating oak. Browsing pressure, but oaks present and some are some advanced.