



Compartment Review Presentation

Gaylord Forest Management Unit

Compartment 52148

Entry Year 2019

Acreage: 1,574

County Cheboygan

Management Area: Chandler Hills

Revision Date: 2017-04-21

Stand Examiner: Tricia St. Pierre

Legal Description:

Cheboygan County
T33N R03W Section 5: S1/2; Section 8: all except SWSE; Section 17.

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 residents. There also exist targets for establishing and maintaining red pine across the landscape within this Management Area and compartment, in particular.

Soil and topography:

Topography is variable, generally hilly, with occasionally steep slopes. Marl Creek and a beaver flooding occupy a low, flat valley through the middle of the compartment, west to east. There are very few depressions and seasonal drainages scattered elsewhere throughout the compartment. Habitat types are dominated by AFO/AFOCa, with higher quality AFOCa in the southwest. Marl Creek drainage supports PARVCo, PARVHa, and unclassified lowland habitat types. Soils are largely Kalkaska Sands, Cheboygan Loamy Sands, Blue Lake Loamy Sands, and Emmet Sandy Loams, typically well drained with somewhat moderate (and in some cases high) erosion potential. Occasional deposits of Ocqueoc, Mancelona, and Croswell sands are also found within the hills. Marl Creek drainage is supported by Tawas Peat, Roscommon Muck, Au Gres Sand, and Rudyard Loam, in general.

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

This compartment is largely surrounded by state land, with the exception of a couple private parcels and the north boundary line. Landlocked private parcels are visited seasonally, generally by hunting camps. Private parcels to the north are permanent residents, with light agriculture and forests. Oil and gas exploration has not affected this compartment. Land use within is recreational, including hunting, ORV/ATV/dirtbike traffic, camping (mostly associated with mushrooming), and potentially trapping. There is evidence of occasional horseback riding and foot traffic, probably scouting.

Unique Natural Features:

There are no known MNFI occurrences within this compartment, though the potential exists. There is historical record for pine martens nearby, though no known occurrences within.

Archeological, Historical, and Cultural Features:

There are no known archaeological, historical, or cultural features unique to this compartment.

Special Management Designations or Considerations:

The Red Pine Project, maintaining red pine across the landscape, affects this compartment and MA, and should be taken into consideration when creating management objectives.

While ash and beech are not major components of the forest types within this compartment, their presence should be noted and management activities should be considerate of the affects of Emerald Ash Borer and Beech Bark Disease.

Heterobasidion Root Disease should also be regarded when examining red pine stands.

Watershed and Fisheries Considerations:

Cheboygan County
T33N, R03W, Sec. 5, 8, 17

This compartment is in the Sturgeon River watershed, and contains part of Marl Creek, a designated trout stream with Type 1 trout stream regulations. A buffer should be left next to Marl Creek to discourage beaver activity.

Wildlife Habitat Considerations:

This compartment is primarily northern hardwoods with aspen and pine throughout. There is a large wetland complex in the center of the compartment that supports various species of waterfowl and amphibians. Areas with aspen should be maintained for diversity and benefits to wildlife. Featured species include wild turkey, deer, woodcock, black bear, pine

marten and ruffed grouse.

Mineral Resource and Development Concerns and/or Restrictions

Sections 5-6, 8, & 17, T33N R3W, Cheboygan County

This area has been leased for oil and gas exploration in the recent past as part of the Collingwood lease play. While the Collingwood has produced some hydrocarbons from a well just to the southeast, the formation has not proven to be an economically viable resource play to date. Interest in the formation has waned and all leases in the area have expired. The nearest active oil and gas production, the Antrim Shale gas play, is located roughly two miles to the south. However, the Antrim is very thin or absent beneath the compartment. Oil and gas potential within the compartment is considered low at this time. Some former sand/gravel pits are located in the area, and sand and gravel potential appears to be good within the compartment.

Vehicle Access:

Vehicular access to the interior of this compartment is somewhat limited, especially by season. All roads are seasonal, so access in the winter will be only by foot or snowmobile. Where roads exist, conditions and topography limit what kinds of vehicles can be confidently driven. Closed and temporary roads exist for forest management purposes, but are not available for civilian use.

The County Road Commission has put significant effort into improving portions of Marl Creek Road affected by water flow.

Survey Needs:

There are no imminent survey needs at this time.

Recreational Facilities and Opportunities:

The Marl Creek corridor and the surrounding hills provide many recreational opportunities, from camping and birding, to hunting and trail riding. There are ORV, dirtbike, and snowmobile trails that meander through this compartment for motorized recreation. There are plenty of secluded acres for non-motorized pursuits, like mushroom hunting, game hunting, and backcountry exploring or geocaching. There are no trailheads within this compartment.

Snowmobile Trail 765 and the Tomahawk Motorcycle Trail C Loop run through portions of this compartment.

Fire Protection:

Fire protection is not a major concern for this compartment with few volatile fuel types. Young and proposed red pine plantations are scattered and generally surrounded by rolling, though sometimes steep, hardwood hills. Marl Creek flooding to the west would be the nearest water source, though not a significant or reliable source during a drought. The West Branch of the Sturgeon River is to the southeast and could be a water source. Steep grades, windy roads, and large tracts without roads would be the biggest hindrances in quickly responding to a fire.

Additional Compartment Information:

The majority of this compartment, all but 80 Tax Reverted acres, is designated as State Game Fund land.

The following reports from the Inventory are attached:

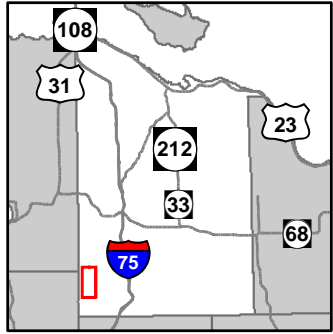
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

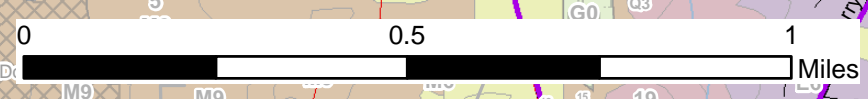
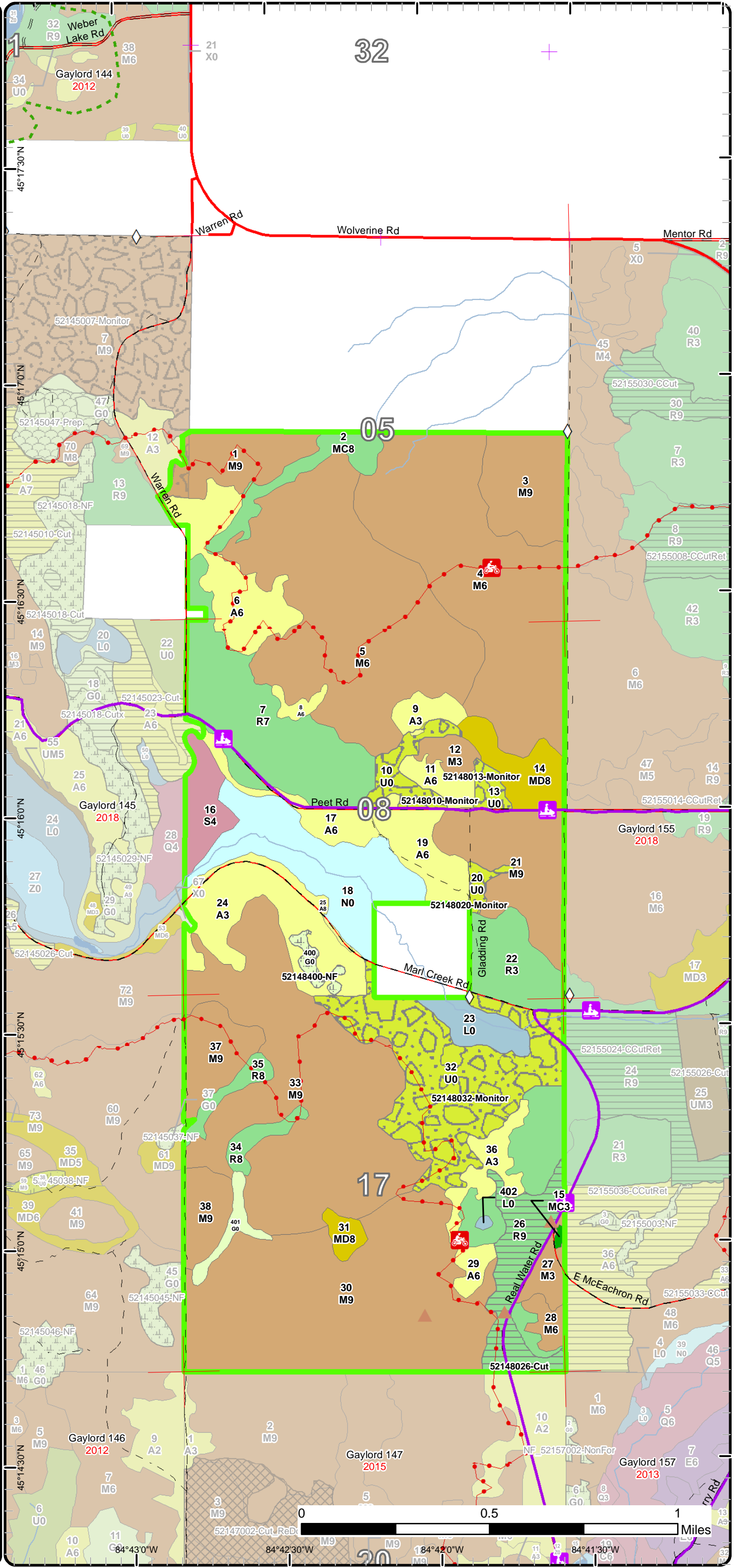
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments Map

Compartment: 148
 T33N, R03W, Sec. 5, 8
 County: Cheboygan
 Unit: Gaylord
 Mgmt Area: Chandler Hills
 YOE: 2019
 Acres: 1574 GIS Calculated
 Examiner: Tricia St. Pierre
 Map Revised: 9/13/2017
 Map Phase: Post-Review



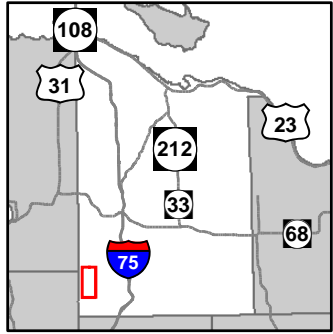
- Miris Corners
- + Remonumented Section Corners
- ◇ Field Grade GPS Corners
- Counties
- ▲ Berms
- 🏍️ Motorcycle Trails (DNR License)
- 🛷 Snowmobile Trails
- Designated Hiking Trails
- Designated Bicycle Trails
- Designated Ski Trails
- ORV License & Trail Permit
- Designated Snowmobile Trails
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Gravel Roads
- County Poor Dirt Roads
- Poor Dirt Roads
- Streams
- Lakes and Rivers All
- Compartment Boundary
- Other Treatment - See Comments
- Clearcut (w/Reserves)
- Regeneration Survey
- 411 - Northern Hardwood
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 612 - Lowland Coniferous Forest
- 310 - Herbaceous Openland
- 330 - Low Density Trees
- 622 - Lowland Shrub
- 623 - Emergent Wetland
- Lakes



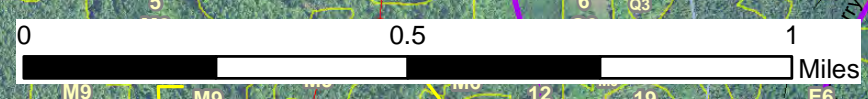
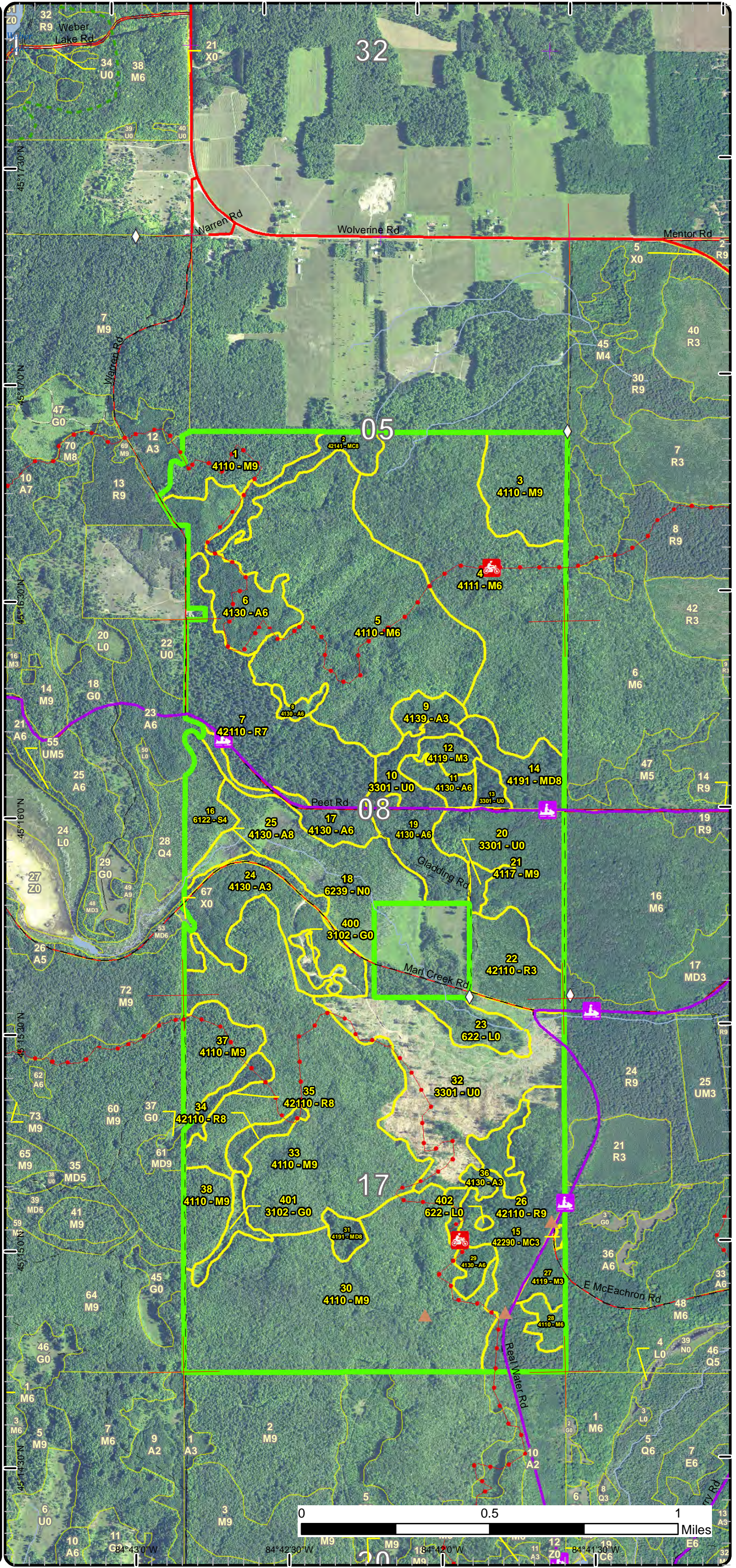
84°43'0"W 84°42'30"W 184°42'0"W 84°41'30"W

Stand Boundary Map

Compartment: 148
 T33N, R03W, Sec. 5, 8
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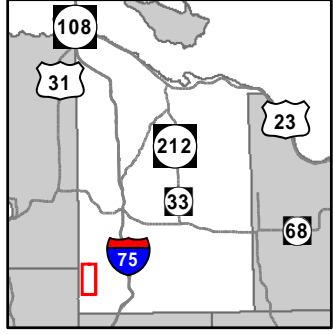
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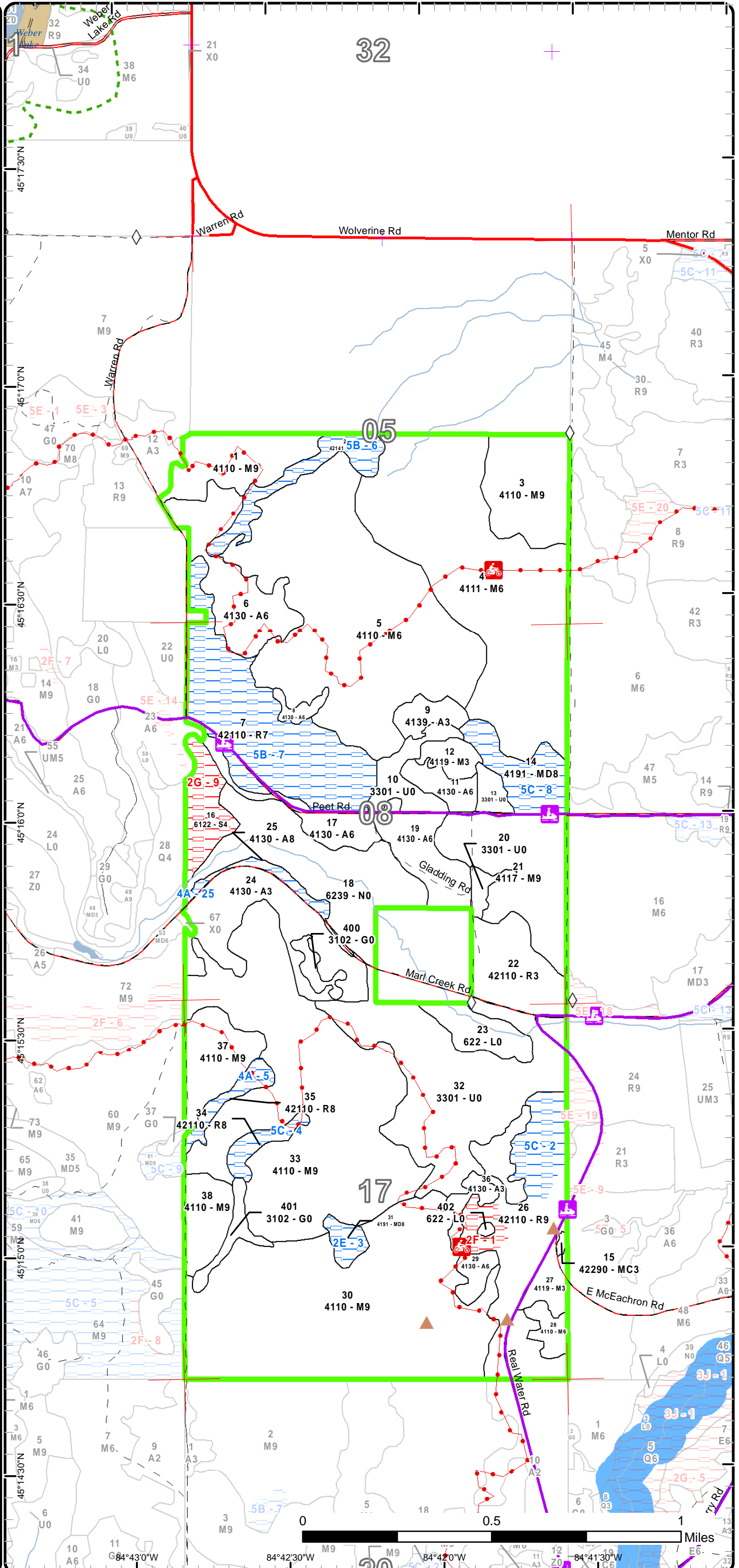
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Special Conservation Areas & Site Conditions Map

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- Designated Snowmobile Trails
- County Paved Roads
- Paved Roads
- County Gravel Roads
- Gravel Roads
- County Poor Dirt Roads
- Poor Dirt Roads
- Streams
- Lakes and Rivers All
- Compartment Boundary
- Available w/ Constraints
- Unavailable
- 2E: Road needed
- 4A: No Markets Available for these Forest Products
- 5B: Maintain for regeneration purposes
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 2F: Too steep
- 2G: Too wet (sensitive soils, does not include access issues)
- Stand Boundaries
- Cold Water Streams
- Cold Water Lakes
- High Priority Trout Stream Buffer
- State Forest Campground





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	65	80	31	0	0	0	7	0	0	0	0	0	0	0	0	0	182
Herbaceous Openland	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
Low-Density Trees	126	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	126
Lowland Shrub	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
Lowland Spruce/Fir	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	19
Marsh	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64
Mixed Upland Deciduous	0	0	0	0	0	0	0	0	29	0	0	0	0	0	0	0	0	0	28
Natural Mixed Pines	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Northern Hardwood	0	0	10	8	7	0	0	0	183	433	231	0	0	0	0	0	0	32	903
Planted Mixed Pines	0	0	0	0	0	0	0	0	0	18	0	0	0	0	0	0	0	0	18
Red Pine	0	0	32	0	0	0	0	0	16	154	0	0	0	0	0	0	0	0	202
Total	220	0	108	88	38	0	0	0	206	634	231	0	0	0	0	0	0	51	1573



Report 2 – Treatment Summary

Gaylord Mgt. Unit

Compartment 148

Year of Entry: 2019

Acres of Harvest

Total Compartment Acres: 1,574

Commercial Harvest - 38
 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
Red Pine		38	0	0	0	0	0	0	0	0	38
	Total	38	0	0	0	0	0	0	0	0	38

Proposed and Next Step Treatments by Method

		Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current		38	0	0	0	0	126	0	5		170
Next Step		0	279	178	0	0	76	279	0	0	812
	Total	38	279	178	0	0	76	405	0	5	982



Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
10	52148010-Monitor	15.1	3301 - Low Density Deciduous Trees	Nonstocked	0	Unspecified	Monitoring	Natural Regen (Intermediate)	411 - Northern Hardwood	Even-Aged	Draft Field Boundary
Habitat Cut: No			Site Condition:								
<u>Prescription Specs:</u>											
<u>Next Step Treatments:</u>											
<u>Acceptable Regen:</u> Minimum stocking requirements for hardwood.											
<u>Other Comment:</u> Percent to Treat = 100%											
<u>Proposed Start Date:</u> 10/01/2021											
13	52148013-Monitor	5.7	3301 - Low Density Deciduous Trees	Nonstocked	0	Unspecified	Monitoring	Natural Regen (Intermediate)	411 - Northern Hardwood	Even-Aged	Draft Field Boundary
Habitat Cut: No			Site Condition:								
<u>Prescription Specs:</u>											
<u>Next Step Treatments:</u>											
<u>Acceptable Regen:</u> Minimum stocking requirements for hardwood.											
<u>Other Comment:</u> Percent to Treat = 100%											
<u>Proposed Start Date:</u> 10/01/2021											
20	52148020-Monitor	4.3	3301 - Low Density Deciduous Trees	Nonstocked	0	Unspecified	Monitoring	Natural Regen (Intermediate)	411 - Northern Hardwood	Even-Aged	Draft Field Boundary
Habitat Cut: No			Site Condition:								
<u>Prescription Specs:</u>											
<u>Next Step Treatments:</u>											
<u>Acceptable Regen:</u> Minimum stocking requirements for hardwood.											
<u>Other Comment:</u> Percent to Treat = 100%											
<u>Proposed Start Date:</u> 10/01/2021											
26	52148026-Cut	38.2	42110 - Planted Red Pine	Sawtimber Well	87	111-140	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	Draft Field Boundary
Habitat Cut: No			Site Condition:								
<u>Prescription Specs:</u> Clearcut all trees, regardless of merchantability. Require 6" stump height and chipping to facilitate planting operations. Retention will be placed around non-forested opening in the west, as indicated. Sign and protect Snowmobile Trail 765 and the Tomahawk Motorcycle Trail C Loop. Do not cut any trees or posts with trail markers. Dirtbike trail may be used as a boundary in the southwest corner, otherwise work with Recreation Specialist to permanently relocate trail to the western boundary of the sale.. Non-winter harvest only to avoid conflict with snowmobile trail.											
<u>Next Step Treatments:</u> SitePrep, Roller Chopping; Pesticide, Skidder/Mechanical; SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Pesticide, Skidder/Mechanical; Monitoring, Artificial Regen(3yr); Planting, Interplant											
<u>Acceptable Regen:</u> Acceptable regeneration will be a well stocked stand of planted red pine.											
<u>Other Comment:</u> Treatment is proposed for FY 2018 to coincide with harvesting/trenching/planting operations in compartment 153, to the east. Evaluate regeneration in stand 32 (to north) to see if stocking is adequate - otherwise consider site prep/trench/plant up there too.											
<u>Proposed Start Date:</u> 10/01/2017											



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
32 52148032-Monitor	101.3	3301 - Low Density Deciduous Trees	Nonstocked	0	Unspecified	Monitoring	Natural Regen (Intermediate)	411 - Northern Hardwood	Even-Aged	Draft Field Boundary

Habitat Cut: No

Site Condition:

Prescription Monitor for successful hardwood regeneration. If stand or portions of stand are understocked, prep/trench/plant to red pine in conjunction with stand 26 (to the south) and/or comp 155, stand 24 to east.
Specs:

Next Step SitePrep, Roller Chopping; SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr)
Treatments:

Acceptable Regen: Minimum stocking requirements for hardwood

Other Comment: Percent to Treat = 100%

Proposed Start Date: 10/01/2021

400 52148400-NF	5.0	3102 - Grass	Nonstocked		Unspecified	NonForestMgt	Other - Specify	310 - Herbaceous Openland		Draft Field Boundary
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Habitat Cut: No

Site Condition:

Prescription Mow, plant, burn,brush, or herbicide to maintain openings. Plant hard and soft mast.
Specs:

Next Step
Treatments:

Acceptable Regen:

Other Comment:

Proposed Start Date: 10/01/2018

Total Treatment Acreage Proposed: 169.6

Report 4 – Site Conditions

Gaylord Mgt. Unit

Tricia St. Pierre : Examiner

Compartment: 148

Year of Entry: 2019

Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	Dominant Site Conditions						
		With Condition	Not Available		2E	4A	5B	5C	2F	2G	
182	176	6	0	Aspen		6					
13	13	0	0	Herbaceous Openland							
126	126	0	0	Low-Density Trees							
17	17	0	0	Lowland Shrub							
19	0	0	19	Lowland Spruce/Fir							19
64	64	0	0	Marsh							
29	0	29	0	Mixed Upland Deciduous	6			22			
1	1	0	0	Natural Mixed Pines							
904	904	0	0	Northern Hardwood							
18	0	18	0	Planted Mixed Pines			18				
201	74	119	8	Red Pine		8	83	28	8		
1,574	1,374	172	28	Total Forested Acres	6	14	101	50	8		19
	87%	11%	2%	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	2F: Too steep	9	5E: Long-Term Retention	Unspecified	Unspecified	Unspecified
Comments:							
2	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	20	Unspecified	Unspecified	Unspecified	Unspecified
Comments: This portion of stand can be geared towards selective hardwood management in the future.							
3	Available	2E: Road needed	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Gaylord Mgt. Unit

Compartment: 148

Tricia St. Pierre : Examiner

Year of Entry: 2019

4	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	8	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Delay treatment. To be thinned selectively with surrounding hardwood. Access would be challenging just to get to this stand alone.							
5	Available	4A: No Markets Available for these Forest Products	8	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Lesser quality, malformed XL red pine. Stand will convert to hardwood naturally. Difficult access and unlikely to move product.							
6	Available	5B: Maintain for regeneration purposes	18	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Allow subcanopy to develop further before removing any pine.							
7	Available	5B: Maintain for regeneration purposes	83	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Delay treatment. Portions of this stand have enough volume in red pine with immature (sapling) understory where the red pine could be final harvested and regeneration wouldn't be set back too much. Otherwise, it would be beneficial to let understory mature with the objective for even-aged management.							
8	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	23	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Delay treatment. Allow pole/sap timber to grow before entering stand again.							
9	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	19	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Gaylord Mgt. Unit

Compartment: 148

Tricia St. Pierre : Examiner

Year of Entry: 2019

25	Available	4A: No Markets Available for these Forest Products	6	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
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 Lake	A coldwater lake has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species to persist from year to year. Suitable conditions for coldwater fishes may occur in Michigan lakes if they are relatively deep, have substantial groundwater inflows, or are located in colder (northern) areas of the state. Such lakes are established by Director's action and designated as trout resources by Fisheries Order 200.
SCA	Cold Water Stream	A coldwater stream has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species (e.g., slimy sculpin) to persist from year to year. Coldwater streams in Michigan typically provide these conditions due to substantial contributions of groundwater to their stream flows. Such streams are established by Director's action and designated as trout resources by Fisheries Order 210.
SCA	Riparian Area	A transitional area between aquatic and terrestrial ecosystems in which the terrestrial ecosystem influences the aquatic ecosystem and vice-versa. Because of the unique conditions adjacent to lakes, streams and open water wetlands, riparian areas harbor a high diversity of plants and wildlife. Riparian communities are ecologically and socially significant in their effects on water quality and quantity, as well as aesthetics, habitat, bank stability, timber production, and their contribution to overall biodiversity.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4110 - Sugar Maple Association	Sawtimber Well	31.8	95	81-110	Stand was Payment Unit 2 in Comp 148 Hardwood, 52-123-08-01. Cutting completed in December 2010. Beech bark disease. High amount of raspberry in north end, some elderberry present too. Not much desirable regeneration in south; sense beech/raspberry. East 2/3 is much nicer quality than west 1/3. More striped maple in east 1/4. Trace amounts of white pine. OPIC - FMD: Hilly. Decent quality hardwood. Access road will impact about 300 yds. of ORV trail. Harvest stand 1 in Comp 145 with this stand.
2	42141 - Planted Mixed Pine, Mixed Deciduous	Sawtimber Medium	18.2	87	81-110	Stand has a year of origin, but it is becoming uneven-aged as the subcanopy has been maturing and canopy gaps are being created. Trace yellow birch, paper birch in north tip. Smaller diameter hardwood along harrow strip. Log/XL dominate in north bubble; smaller white pine too. White pine is present in XL/L/P. Densely socked red pine and white pine in southern stretch. Pocket of white pine in south, then back to red pine. Trace elm in north. BBD, EAB present. Potentially low pocket in north. OPIC - FMD: OI Stand Year Origin was 1930
3	4110 - Sugar Maple Association	Sawtimber Well	39.4	81	51-80	Thinned in 1990, TSI. BA is variable, 40-110, mostly around 70. Beech bark disease. Much more beech in the north half of stand. Lot of multi-stemmed sugar maple; heavy to pole timber. Barely log-sized. Low end of 75% closure. Couple of basswood seedlings. South edge of hill has a few XL/wolffy trees. OPIC - FMD: OI Stand Year Origin was 555
4	4111 - S.Maple, Hard Mast Association	Poletimber Well	159.0	85	81-110	Highly variable basal areas, 60-130 BA. Beech bark disease and EAB are present and affecting the beech and ash, respectively. Mostly beyond salvage. Lots of pole timber, lots of dead standing ash. More log sugar maple in the northwest. More white ash regen in skid trail. Better quality sugar maple and basswood to east; less beech. Ironwood and beech are the only significant regeneration. White ash and sugar maple are heavily browsed and likely won't recruit. Trace amounts of white pine, white spruce, currant, elm, black cherry, quaking aspen. Occasional XL sugar maple, white ash, basswood, especially in northwest. Interesting pocket. .6 acre pocket of paper birch in the northwest - small drainage. OPIC - FMD: Hilly. Decent access. Fair quality.
5	4110 - Sugar Maple Association	Poletimber Well	180.1	82	81-110	EAB and BBD. Multi-stemmed white ash. A lot of pole timber converging on saw. Pockets of very dense (full) beech, but overall high. Trace red pine and quaking aspen in canopy. Few white pine seedlings; some red oak seedlings around red oak "ridge". Evenly distributed red oak (though few) in southwest. Variable terrain but mostly operable. OPIC - FMD: Very hilly.
6	4130 - Aspen	Poletimber Well	40.1	25	Immature	South Slope Aspen, 52-018-91-01. Harvested in 1991, except red pine and trail markers. Some white pine were left too. Some areas pole dominated, others sapling dominated. EAB present. Occasional L/P hardwood, softwood. Stand is converting to pole timber. Pockets without aspen are dominated by ironwood and sugar maple. Trace white pine, spruce, hazelnut in subcanopy. Trace white oak and basswood in canopy. Red pine and scotch pine sap/pole along trail. Not as much ironwood in the north (more sugar maple). OPIC - FMD: Regen looks good.

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	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
7	42110 - Planted Red Pine	Sawtimber Poor	82.9	86	51-80	Red pine and jack pine were planted in 1931. Jack pine, aspen, and mixed hardwood were thinned from stand in 1990, resulting in a supercanopy of mature red pine with a well stocked canopy of sapling/pole deciduous (some coniferous) trees. There's also a subcanopy, not well stocked, of mixed trees and shrubs. Lots of hare tracks. Trace red pine and jack pine in subcanopy. Trace red oak, white oak, and white ash in deciduous (sap/pole) canopy. Red pine dominates supercanopy with sparse aspen (pole) intermixing. OPIC - FMD: OI Stand Year Origin was 1930.
8	4130 - Aspen	Poletimber Well	4.0	27	Immature	Trace red maple, red pine, paper birch, red oak, white ash. One XL white pine in east. Some snow damage on east facing slope. More hardwood in east and far north; further stratification between hardwood and aspen - decent sugar maple regen is being suppressed by aspen. OPIC - FMD: A lot of sugar maple regen.
9	4139 - Aspen, Mixed Deciduous	Sapling Well	9.1	27	Immature	Trace white pine in canopy. Trace balsam fir in subcanopy. Small non-forested opening in southwest. OPIC - FMD: Good looking regen. Some maple, beech and ironwood.
11	4130 - Aspen	Poletimber Well	9.8	27	Immature	Trace balsam fir and white spruce along road and in subcanopy. Converting to pole. Trace paper birch, black cherry, and beech in canopy. OPIC - FMD: Good looking regen.
12	4119 - Mixed Northern Hardwoods	Sapling Well	8.1	27	Immature	Trace amounts of red pine, log, in the canopy. Trace amounts of elm and beech. EAB in ash. No regeneration under sapling canopy. Adjacent clearcut encroaches on west edge of stand - small leg cut on top of hill. OPIC - FMD: Sugar Maple and Ironwood. Primarily multi stem, stump sprout origin.
14	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Medium	22.5	86	1-50	Red pine and jack pine were planted in 1931. Jack pine, aspen, and mixed hardwood were thinned from stand in 1990, resulting in a supercanopy of mature red pine with a well stocked canopy of sapling/pole deciduous (some coniferous) trees. There's also a subcanopy, not well stocked, of mixed trees and shrubs. Trace black cherry, elm, red oak, paper birch, and white ash in sap/pole canopy. One XL white pine in north tip. OPIC - FMD: Sugar maple and aspen regen approx. 1"DBH. Heavy ironwood in areas. A lot of the maple is stump sprout origin.
15	42290 - Natural Mixed Pine	Sapling Well	0.8	15	Immature	Stand was used as a landing for the surrounding M3 when it was clearcut in 2000 (Rejuvenation Pine, 52-123-99-01). Plans to burn, trench, and plant were never accomplished, but it's evident that pine will grow well here. Took a couple years to get started, but good growth since then.
16	6122 - Black Spruce	Poletimber Poor	19.1	78	1-50	More densely stocked stand to the north and on edges of upland transition. Lots of down woody debris. Very wet. Trace amounts of yellow birch and paper birch on extreme north edge. OPIC - FMD: Spruce is dying. Some spruce and balsam regen to 15' tall. A lot of blowdown.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
17	4130 - Aspen	Poletimber Well	16.5	27	Immature	Sale 52-038-89-01. Clearcut in 1990. Trace balsam fir, white spruce, elm, paper birch in canopy. Couple of red pine saplings scattered along main road. Few scattered red pine, L/XL. West long leg is marginally low and west, especially on south edge. OPIC - FMD: OI Stand Year Origin was 1990
19	4130 - Aspen	Poletimber Well	24.5	36	51-80	Stand was clearcut in 1981, all trees >2" except juneberry and apple trees. Trace red pine in landing on hill. Steep hill in west; 1 tamarack in west. Trace oak present. Long term retention (log) aspen, balsam fir, whit spruce - south of road. More paper birch in west; more hardwood in east/south half. OPIC - FMD: Some pockets of M3 and Balsam Fir.
21	4117 - Mixed N. Hardwood - Pine	Sawtimber Well	54.8	85	81-110	Basal areas range, 80-150, average 110. Red pine could easily be called XL/L, averaging 18" dbh. BBD, EAB present. Steep ridges in south; smaller diameters here too. Trace beech, black cherry, elm, quaking aspen, red maple, paper birch, hemlock, red oak. More red pine in northeast, no red pine (stand transitions more to pole) in west. Red pine was thinned from stand in 1986...maybe. OPIC - FMD: Very hilly to the south part of stand. Fair quality hardwood.
22	42110 - Planted Red Pine	Sapling Well	31.7	14	Immature	Harvested originally as Marl Creek Pine, 52-122-99-01. Completed in 2000. Hand planted in May 2003 to red pine, ~1200 tpa. Some moderately well stocked pockets, otherwise survivorship wasn't fantastic; yet still meets minimum stocking requirements. Deciduous competition should hopefully help to maintain strong apical dominance in the pine. Heavy browsing on deciduous species. Few scattered jack pine (mostly on edges). OPIC - FMD: 1997-FDF POTENTIAL FOR PLANTING. Doesn't look well stocked. Not a lot of pine visible through the snow.
24	4130 - Aspen	Sapling Well	47.8	15	Immature	Vernal Aspen, 52-129-99-01, PU 1. Completed in November 2002. Trace amounts of jack pine and paper birch in the canopy. I expect the aspen will out-compete mixed hardwood by the next inventory cycle. Heavier concentration of balsam fir along road, but also scattered throughout stand. No sap white spruce in canopy - MiFI's only option for mentioning L/P WS. Spruce and fir were unharvested during timber sale. Some more hardwood in the east (southeast) portion. OPIC - FMD: 1997-CUT PORTION SOUTH OF ROAD
25	4130 - Aspen	Sawtimber Medium	7.2	71	51-80	No sapling basswood in canopy; MiFI wouldn't allow Log/Pole alone. Trace black cherry, paper birch, white spruce, sugar maple in canopy. More red maple in west; more quaking aspen in east. Sap/pole balsam fir, white pine, ironwood in subcanopy.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
26	42110 - Planted Red Pine	Sawtimber Well	70.9	87	111-140	<p>Consider creating new stand for north 1/4. Much higher hardwood component with a couple pockets of more densely stocked red pine.</p> <p>Dirtbike trail runs through stand.</p> <p>Dead standing jack pine in south-central acreage. Variable diameters and densities, affected by slope and probably interplanting of jack pine (now dead). West loop around non-forested opening is a white pine/bigtooth mix; south of loop is a white pine, red pine, jack pine (mostly dead), hardwood mix. BMP concerns around non-forested opening. Couple troublesome hills for operations.</p> <p>Southern portion is dominated by larger diameters of white, red, and jack pine with dense sugar maple. This transitions into a decent density and consistency of red pine with some mixed deciduous. The north portion then become heavy to hardwood with that interspersal of dense red pine.</p> <p>OPIC - FMD: FDF POTENTIAL</p>
27	4119 - Mixed Northern Hardwoods	Sapling Well	10.2	17	Immature	<p>Final harvest in 2000 as Rejuvenation Pine, 52-123-99-01. FTP from 2000 to burn slash, then trench and plant. None of these activities occurred. Landing came back to mixed red and jack pine and has been separated into its own stand.</p> <p>Trace amounts of beech, elm, paper birch, red oak, quaking aspen in canopy. Variable sapling pole diameters - poles are most likely residual from harvest (uncut whips). One willow.</p> <p>OPIC - FMD: 1997 - FDF POTENTIAL FOR PLANTING</p>
28	4110 - Sugar Maple Association	Poletimber Well	7.1	36	81-110	<p>South 4 acres of stand were harvested in 1981 for the purpose of providing food for deer in nearby winter deer yard. Area is smaller diameter pole timber</p> <p>OPIC - FMD: Steep hill, decent quality.</p>
29	4130 - Aspen	Poletimber Well	6.6	37	Unspecified	<p>Pockets of BTA, larger, contiguous pocket of quaking aspen. Band of hardwood (SM/IW/BC) in narrow band between north and south. Residual white pine in north.</p> <p>Small pole stand.</p> <p>DED and EAB.</p>
30	4110 - Sugar Maple Association	Sawtimber Well	187.0	93	81-110	<p>White pine planted in low density (100 tpa) in 1929; has some weevil damage. Trace amounts of elm, ironwood, black cherry, paper birch, red pine, and bigtooth aspen in canopy.</p> <p>Inconsistent, dense patches of beech regeneration under sporadic canopy beech; beech is still very manageable with the exception of ridgeline in northeast, heavy to beech, BTA - an inclusion in an otherwise fairly consistent sugar maple/basswood stand. Heavily browsed regeneration. Fair amount of dead standing ash. Increased quaking aspen presence in southwest 40 ac; BTA appears in NE (couple in SW). Tiered topography in west; trace red maple.</p> <p>OPIC - FMD: Decent quality hardwood. Hilly terrain, access is OK. Hardwood stand to the south has been marked.</p>
31	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Medium	6.2	88	51-80	<p>Highly variable diameters, heights. East half is dominated by white pine of various diameters (wolfy, XL to smaller pole). West half is mostly dominated by hardwood (basswood, sugar maple) with trace amounts of QA, BTA mixed in. Potential for OFS point - old road bed (RR?) comes into stand. OPIC - FMD: Scattered wolfy White Pine and Sugar Maple saps.</p>



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
33	4110 - Sugar Maple Association	Sawtimber Well	183.1	76	81-110	<p>Fairly diverse stand as far as diameters and densities are concerned. Trace amounts of XL sugar maple. Hilly but operable in most areas. Some hillsides are too steep for running equipment.</p> <p>Pockets with larger log timber and lower BA; areas dominated by pole timber. Areas of higher quality, larger diameters are often lower stocked. Variable regeneration - pockets of beech, pockets of ironwood.</p> <p>BBD, EAB, DED present.</p> <p>Trace bigtooth aspen, black cherry, spruce. Could have possible gone with a pole-stand classification.</p> <p>Interesting planting history: 1930, '34, '38 planting records for mixed white pine, red pine, and jack pine.</p> <p>OPIC - FMD: Decent quality hardwood. Hilly terrain. Hardwood stand to the west (in adjacent compartment) is prescribed for selection harvest. Harvest west parts of this stand with stand in adjacent compartment.</p>
34	42110 - Planted Red Pine	Sawtimber Medium	7.7	79	81-110	<p>Red pine, likely planted in the 30s as the records indicate. Couple of jack pine snags. Some mortality in white pine. Has a natural appearance, but this is unlikely.</p> <p>OPIC - FMD: OI Stand Year Origin was 1950</p>
35	42110 - Planted Red Pine	Sawtimber Medium	8.2	79	81-110	<p>Some lesser quality, suppressed white pine (L/P). Has a natural appearance to the stand, but planting records would indicate otherwise. Lots more hardwood and fewer pine in center of stand. Lower quality red pine; lots of forked/porcupine damage/malformed tops. White pine is also of lower quality.</p> <p>More white pine in the south.</p> <p>The majority of the hardwood is actually subcanopy, as represented in the subcanopy layer.</p> <p>Basal areas range from 70-130, averaging around 90.</p> <p>OPIC - FMD: OI Stand Year Origin was 1950</p>
36	4130 - Aspen	Sapling Well	16.7	15	Immature	<p>Vernal Aspen, 52-129-99-01, PU 1. Completed in November 2002. Trace maple leaved viburnum, hawthorn, and jack pine in subcanopy. Residual White Pine (XL/L) supercanopy on south tip. Some snow damage in south. Black knot in cherry.</p> <p>Alternating pockets of bta and qa throughout stand. Much more hardwood inclusion in canopy in the south tip.</p>
37	4110 - Sugar Maple Association	Sawtimber Well	25.7	99	81-110	<p>Part of Pilot Project Hardwood. Complete in 2015. Trace ironwood, elm, bigtooth aspen, and white pine in the canopy. Heavy browsing on regeneration. (One red oak sapling, <1'). More basswood in north; hardly any in south. Bedstraw, mullein, thistle present. East hillside is marked but wasn't harvested. Mostly pulp. OPIC - FMD: Decent quality hardwood. Harvest with proposed pilot area stands to the west.</p>
38	4110 - Sugar Maple Association	Sawtimber Well	17.8	99	81-110	<p>Stand was harvested with the Pilot Project. Trace amounts of red pine, quaking aspen, bigtooth aspen, white ash, and beech in canopy. DED and EAB. Occasional marked pulp stick uncut. Lesser quality mix (bc, bw, wp, sm) on unharvested south-facing slope.</p> <p>OPIC - FMD: Decent quality hardwood. Harvest with proposed pilot area stands to the west.</p>



Stand	Cover Type	Acres	Managed Site	General Comments:
10	3301 - Low Density Deciduous Tree	14.9		Harvest completed in 2016. Needs time to regenerate.
13	3301 - Low Density Deciduous Tree	5.7		Harvest completed in 2016. Needs time to regenerate.
18	6239 - Mixed Emergent Wetland	64.1	No	Dead cedar, black ash, fir. Tawas soils typically support woodlands with fairly thick organic matter. Beaver activity has flooded portions of the stream resulting in mortality in much of the vegetation. OPIC - FMD: 1997-BEAVER FLOODING A lot of dead balsam fir and cedar. Scattered live cedar, spruce and balsam fir.
20	3301 - Low Density Deciduous Tree	4.3		OPIC - FMD: Clearcut with reserves. Retain a couple red pine per acre. Convert to hardwood.
23	622 - Lowland Shrub	15.8	No	Lowland shrub stand. EAB in ash; apple trees present. Few mixed pine on west edge. Potential for an old road grade through this stand. Apple trees would indicate that something went through here.
32	3301 - Low Density Deciduous Tree	101.3		Harvest completed in 2016. Needs time to regenerate.
400	3102 - Grass	5.0	No	Previously planted to rye. No cultivation or management since the late '90s. Forest roads have been used for logging access. OPIC - FMD: 1997-RYE FIELD
401	3102 - Grass	7.6	No	Variable diameters on the white pine (P/L/S), black cherry (P/S/L), quaking aspen (L/P/S), and red pine (P/S). More mixed deciduous/pine in east leg. Red pine in north only. One jack pine (pole) in north on edge of stand.
402	622 - Lowland Shrub	0.8	No	