



Compartment Review Presentation

Gaylord Forest Management Unit

Compartment 52008

Entry Year 2018

Acreage: 567

County Otsego

Management Area: AuSable Outwash

Revision Date: 2016-05-13

Stand Examiner: Luke Gilner

Legal Description:

T29N - R01W, Sections 25, 26, & 27.

Identified Planning Goals:

To maintain forest health, productivity, sustainability, species diversification, and structural diversity while providing for multiple uses and ecological services.

Soil and topography:

Soils primarily consist of excessively-drained Graycalm and Grayling sands in the uplands and very poorly-drained Tawas-Lupton muck in the lowlands. Generally the topography is fairly level with gentle rolling slopes, however, there are steeper slopes in some areas along the West Branch of Big Creek and Seventh Spectacle Lake tributary. There are also a few lowland bogs scattered within the compartment.

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

Seventh Spectacle Lake is to the northeast corner of the compartment, which has seasonal and year-round residents. The east side of the compartment adjoins to a fenced in cervid facility, and the southeast adjoins to a private hunting property. There is additional private ownership on the south end of the compartment as well.

Unique Natural Features:

West Branch of Big Creek.

Archeological, Historical, and Cultural Features:

None known within the compartment.

Special Management Designations or Considerations:

The West Branch of Big Creek, which is part of the AuSable River System natural river designation, flows through the southwest portion of the compartment. To the west and south of the compartment is HCVA for KW management.

Watershed and Fisheries Considerations:

Stream temperatures in this reach of W Br Big Creek are more suitable for trout downstream of the confluence with Spectacle Lake Outlet. The stream is a designated Natural River, and there are a number of instream-habitat improvement projects ongoing in this reach by partner organizations such as Trout Unlimited. This work is being done under FTP F52-404. Beaver activity should be discouraged in this reach (downstream of Spectacle Lake Outlet). The natural river status recommends a 150 foot vegetative buffer for forest management activities. There is also a small tributary from Seventh Spectacle Lake that dissects the compartment, but does not hold natural river status.

Wildlife Habitat Considerations:

The compartment has a good mixture of upland and lowland, as well as deciduous and coniferous forest types. White oak and northern pin oak tend to regenerate well throughout the compartment. The West Branch of Big Creek and tributary from Seventh Spectacle Lake flow through the compartment, which provides habitat for otter, amphibians, beaver, and waterfowl. The lowland spruce/mixed conifer complexes provide habitat and cover for rabbit, deer, and bear. Treatments in this compartment will maintain age class diversity in aspen and jack pine while creating early successional habitat benefiting deer, grouse, wild turkey and woodcock.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of glacial outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 600 and 800 feet. The Mississippian Coldwater Shale subcrops below the glacial drift. The Coldwater does not have an economic use. Sand and gravel pits are not located in the area, but potential appears to be good on the uplands. The compartment is within the Antrim Shale gas play and is located south of the Niagaran reef trend. All state land within the compartment is currently leased and held by production within the Perch Lake Unitized Area.

Vehicle Access:

Access is greatly limited into the compartment. The West Branch of Big Creek and tributary of Seventh Spectacle Lake dissect the compartment and restrict access. There is currently no legal access on the east side of the compartment due to the private ownership. Hilltop road becomes privately owned in Section 24. The oil and gas roads cut through private on the east, which are leased, not owned, by the oil/gas company and is also gated. It may be possible to obtain access to the northern portion of the compartment through the adjacent compartment 6, but there are some steep topography and lowland restrictions with this option.

Survey Needs:

The northeast boundary along Hilltop road.

Recreational Facilities and Opportunities:

The north spur of the Michigan Shore to Shore Riding and Hiking Trail runs north-south through the center of the compartment.

Fire Protection:

The 1,911 acre Big Creek Fire of May 20, 1981 burned about 90% of this compartment. It has completely recovered and left much of the compartment at the same age. There are red pine and jack pine residuals that survived the fire scattered throughout the compartment. The jack pine planted in 1974 on the southwest portion of the compartment acted like a fuel break during the fire and did not burn.

Additional Compartment Information:

According to the aerial surveys, there has been some jack pine budworm located in the southeast portion of the compartment and surrounding land in 2014, and nearby to the west in 2015.

The following reports from the Inventory are attached:

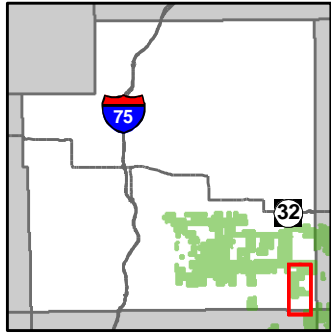
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

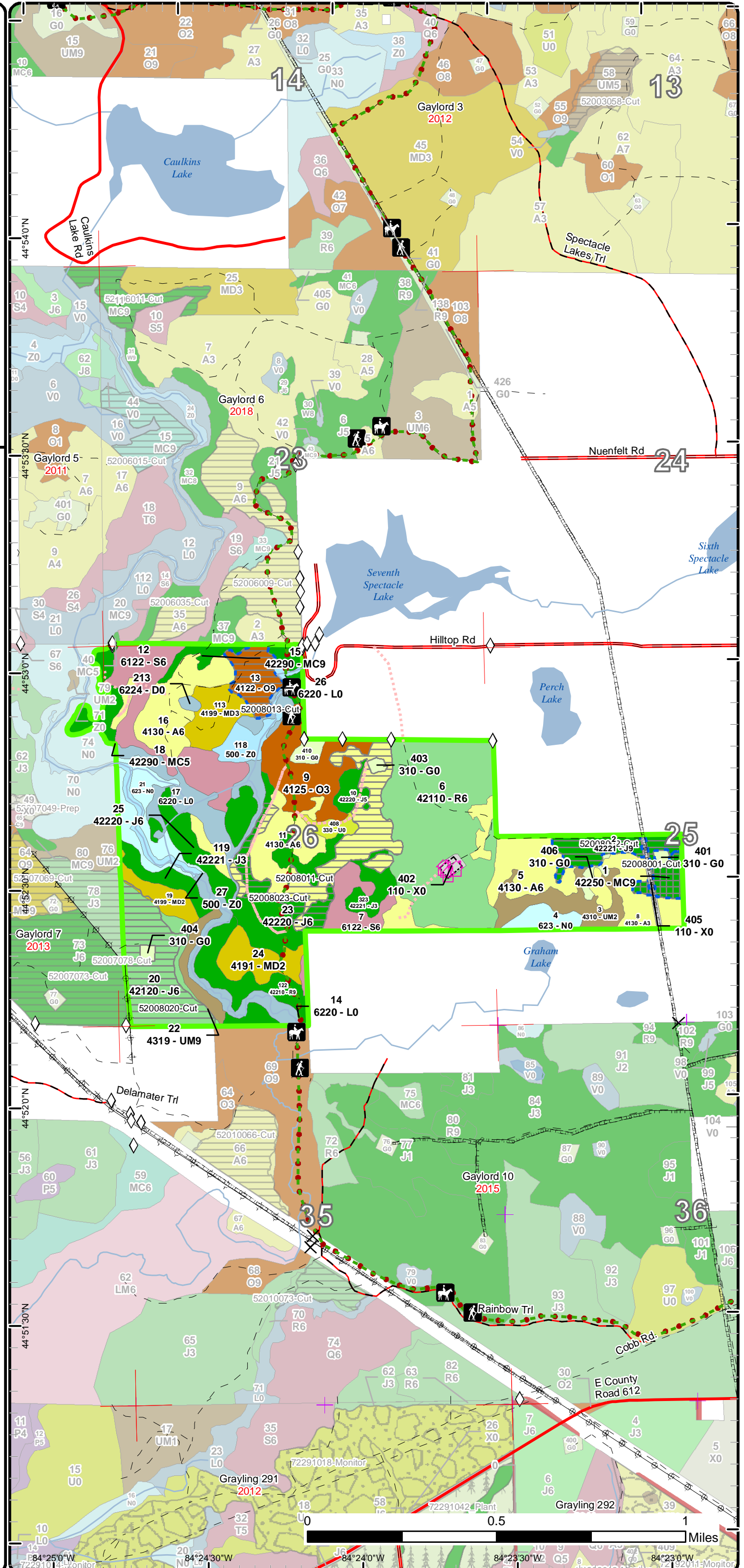
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments Map

Compartment: 8
 T29N,R01W, Sec. 25-27
 County: Otsego
 Unit: Gaylord
 Mgmt Area: AuSable Outwash
 YOE: 2018
 Acres: 568 GIS Calculated
 Examiner: Luke Gilner
 Map Revised: 8/29/2016
 Map Phase: Post-Review



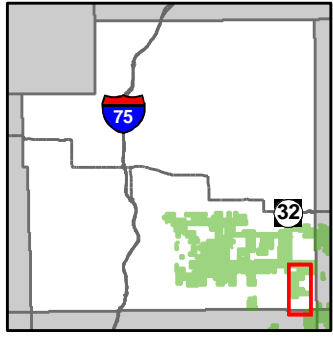
- Miris Corners
- Remonumented Section Corners
- Field Grade GPS Corners
- Gate
- Unspecified Structures
- Hiking Trails
- Horse Trails
- Designated Hiking Trails
- Designated Equestrian Trails
- County Paved Roads
- County Gravel Roads
- Poor Dirt Roads
- County Poor Dirt Roads
- Closed Roads
- Rivers
- Pipeline
- Powerline
- Fence
- Compartment Boundary
- Treatments with Site Conditions
- Clearcut (w/Reserves)
- Seed Tree (w/Reserves)
- 412 - Oak Types
- 413 - Aspen Types
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 430 - Upland Mixed Forest
- 612 - Lowland Coniferous Forest
- 110 - Low Intensity Urban
- 310 - Herbaceous Openland
- 330 - Low Density Trees
- 500 - Water
- 622 - Lowland Shrub
- 623 - Emergent Wetland
- Lakes



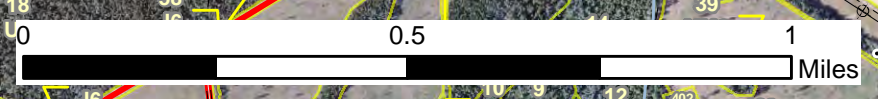
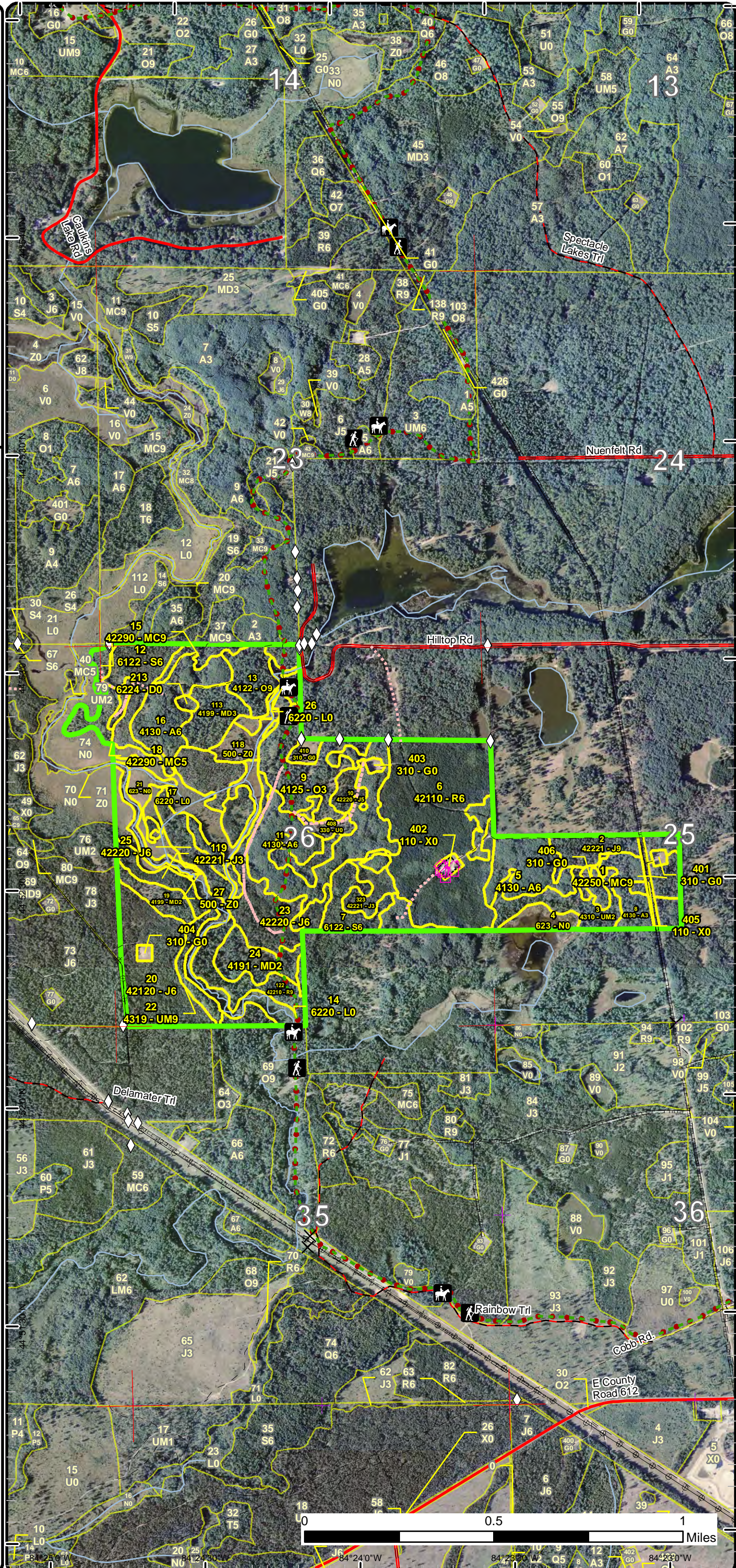
84°25'0"W 84°24'30"W 84°23'30"W 84°23'0"W
 44°52'0"N 44°51'30"N 44°51'0"N 44°50'30"N

Stand Boundary Map

Compartment: 8
 T29N,R01W, Sec. 25-27
 County: Otsego
 Unit: Gaylord
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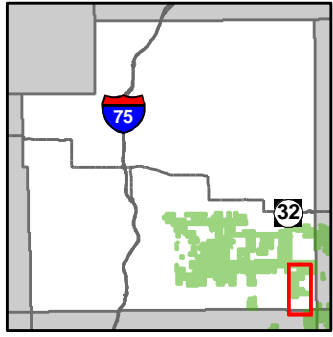
- Miris Corners
- + Remonumented Section Corners
- ◇ Field Grade GPS Corners
- ✕ Gate
- Unspecified Structures
- 🚶 Hiking Trails
- 🐎 Horse Trails
- Designated Hiking Trails
- Designated Equestrian Trails
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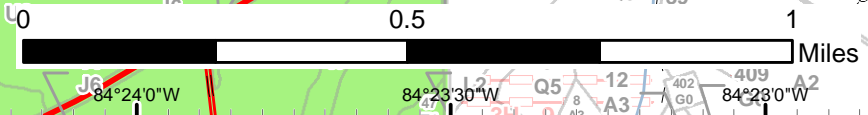
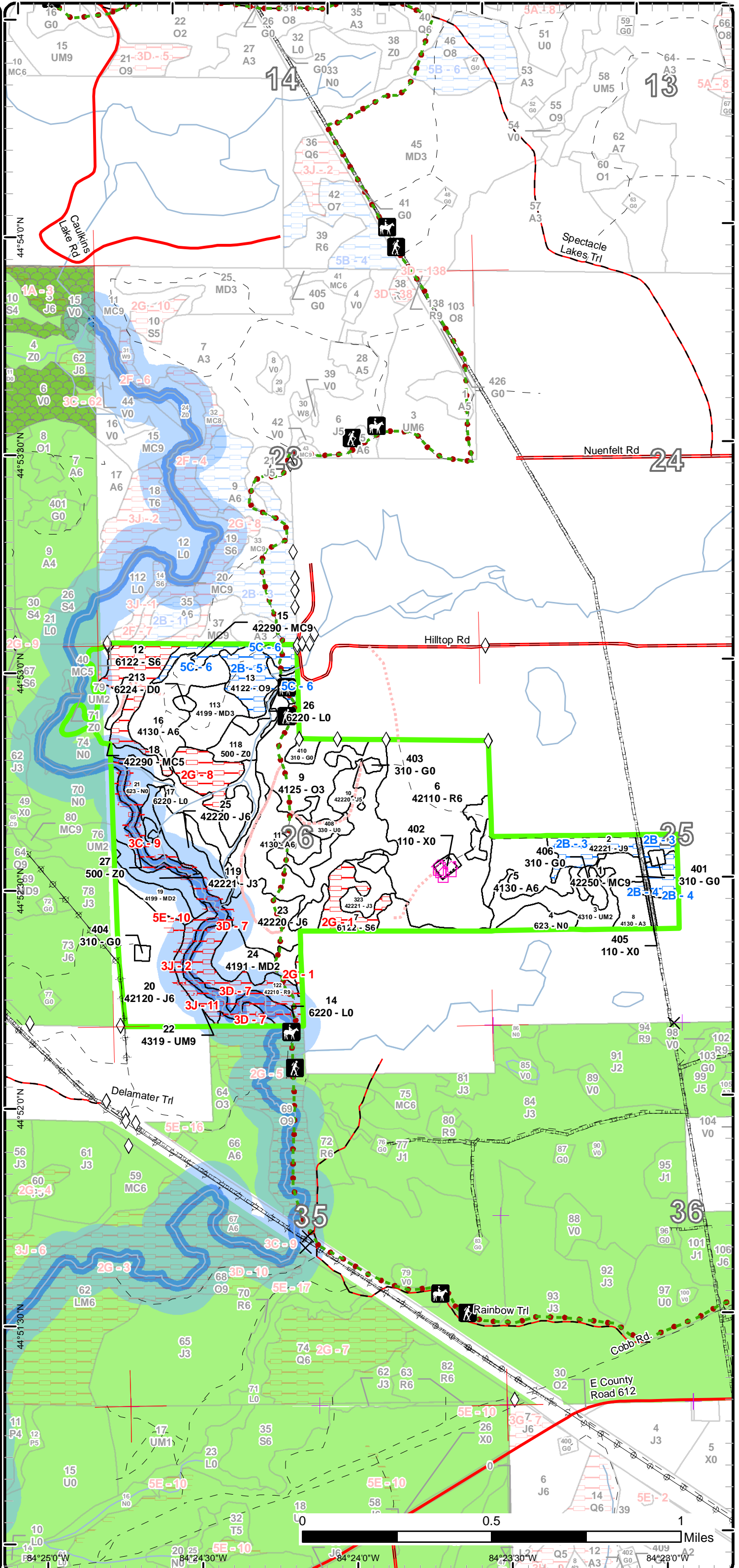
84°24'0"W 84°23'0"W 84°22'0"W
 44°25'0"N 44°24'0"N 44°23'0"N

Special Conservation Areas & Site Conditions Map

Compartment: 8
 T29N,R01W, Sec. 25-27
 County: Otsego
 Unit: Gaylord
 Mgmt Area: AuSable Outwash
 YOE: 2018
 Acres: 568 GIS Calculated
 Examiner: Luke Gilner
 Map Revised: 8/29/2016
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- Miris Corners
- + Remonumented Section Corners
- ◇ Field Grade GPS Corners
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- Poor Dirt Roads
- County Poor Dirt Roads
- - - Closed Roads
- Rivers
- Pipeline
- Powerline
- - - Fence
- Compartment Boundary
- Available w/ Constraints
- Unavailable
- 2B: Unknown if access through adjacent landowner(s) is possible
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 2G: Too wet (sensitive soils, does not include access issues)
- 3C: Legally Designated Quiet Area, Natural Area, or Wilderness
- 3D: Recreational / Scenic values
- 3J: Water quality / BMPs (stream, river, or lake)
- 5E: Long-Term Retention
- Stand Boundaries
- Natural Rivers Vegetative Buffer
- Natural Rivers Zoning District
- Kirtland Warbler Habitat
- Cold Water Streams
- Potential Old Growth





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	0	0	114	0	0	0	0	0	0	0	0	0	0	0	0	0	114
Herbaceous Openland	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43
Jack Pine	0	0	0	0	66	0	0	13	0	0	0	0	0	0	0	0	0	0	79
Low-Density Trees	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Lowland Shrub	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36
Lowland Spruce/Fir	0	0	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	40
Marsh	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
Mixed Upland Deciduous	0	0	0	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	33
Natural Mixed Pines	0	0	0	0	9	0	0	6	0	0	0	10	0	0	0	0	0	0	25
Oak	0	0	0	0	25	0	0	0	0	0	0	0	11	0	0	0	0	0	36
Red Pine	0	0	0	0	78	0	0	0	0	0	0	0	18	0	0	0	0	0	96
Treed Bog	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Upland Mixed Forest	0	0	0	0	15	0	6	0	0	0	0	0	0	0	0	0	0	0	21
Urban	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Water	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
Total	123	0	0	0	381	0	6	19	0	0	0	10	29	0	0	0	0	0	567



Report 2 – Treatment Summary

Gaylord Mgt. Unit

Year of Entry: 2018

Acres of Harvest

Compartment 8

Total Compartment Acres: 567

Commercial Harvest - 10
 Harvests with Site Condition - 58
 Next Step Harvest - 0
 Habitat Cut - 0

Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Aspen	28	0	0	0	0	0	0	0	0	28
Jack Pine	23	0	0	0	0	0	0	0	0	23
Natural Mixed Pines	0	0	0	6	0	0	0	0	0	6
Oak	11	0	0	0	0	0	0	0	0	11
Total	62	0	0	6	0	0	0	0	0	68

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	68	33	0	0	0	0	0	0	0	101
Next Step	0	0	33	0	0	0	133	0	0	166
Total	68	33	33	0	0	0	133	0	0	267



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	Approval Status
1	52008001-Cut	5.9	42250 - Pine, Oak	Sawtimber Well	62	111- 140	Harvest	Seed Tree	4122 - Oak, Pine	Even-Aged	Draft Field Boundary

Habitat Cut: No Site Condition: Unknown Access

Prescription Harvest all trees 2" DBH and greater, except protect as much advanced oak regeneration as possible. Leave all white oak, and mark to leave 10-
Specs: 20 BA of red pine for seed source and diversity. No area retention necessary due to small stand size.

Next Step Monitoring, Natural Regen (Intermediate)
Treatments:

Acceptable Northern pin oak and white oak, with some red maple and white pine. Encourage red pine recruitment with seed trees.
Regen:

Other Possibly land locked. Harvest with 2. Allow oak/pine conversion. MNFI shows stand is within 1/2 mile of eagles nest on private land.
Comment:

Proposed Start Date: 10/01/2017

2	52008002-Cut	13.0	42221 - Natural Jack Pine, Mixed Deciduous	Sawtimber Well	60	81-110	Harvest	Clearcut with Retention	4121 - Oak, Aspen	Even-Aged	Draft Field Boundary
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Habitat Cut: No Site Condition: Unknown Access

Prescription Clearcut all trees 2" DBH and greater, except protect as much advanced oak regeneration as possible. Leave all red pine and white oak in
Specs: overstory for diversity and hard mast. Leave southwest finger to meet retention guidelines.

Next Step Monitoring, Natural Regen (Intermediate)
Treatments:

Acceptable White oak, northern pin oak, aspen, red maple, with some jack pine, red pine, and white pine. Some areas will be more dominated by aspen,
Regen: and others more dominated by oak and red maple.

Other Possibly landlocked - must obtain access through private. Small stick nest on west side - unknown what species or if utilized. MNFI shows
Comment: stand is within 1/2 mile of eagles nest on private land.

Proposed Start Date: 10/01/2017

11	52008011-Cut	28.2	4130 - Aspen	Poetimber Well	36	Unspec ified	Harvest	Clearcut	413 - Aspen	Even-Aged	Draft Field Boundary
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Habitat Cut: No Site Condition: Unknown Access

Prescription Clearcut all trees 2" DBH and greater. Harvest with portion of stand 23. Leave one 1-acre, or two half-acre retention island(s) in wider portions
Specs: of the sale. Sale consists of 4 polygons.

Next Step Monitoring, Natural Regen (Re-Inventory)
Treatments:

Acceptable Dominated by aspen with some northern pin oak, red maple, and possibly some jack pine mixed in.
Regen:

Other Add trail specs to proposal to protect Shore-to-Shore trail. Should be able to limit operations to one crossing location. Private line on north has
Comment: good corners and a fence. Corners will need to be located for private line on south, or sale boundary could be buffered off as last option.

Proposed Start Date: 10/01/2017

13	52008013-Cut	11.3	4122 - Oak, Pine	Sawtimber Well	110	81-110	Harvest	Clearcut with Retention	4122 - Oak, Pine	Even-Aged	Draft Field Boundary
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Habitat Cut: No Site Condition: Unknown Access

Prescription Harvest all trees 2" DBH and greater. Mark to leave 3 to 5 black, red, or white oak per acre (favor white and red), and also mark to leave about 2
Specs: red pine per acre to promote pine and oak regeneration and for hard mast and diversity. Leave trees should be left in clumps or clusters when possible. Leave about a half-acre of retention along the east boundary. In the remaining eastern portion create a separate cutting unit for the east 100 feet along the Seventh Spectacle Lake tributary (maybe utilize existing two-track), mark to cut and only perform a light TSI, remove no more than 25% of BA in this strip.

Next Step Monitoring, Natural Regen (Intermediate)
Treatments:

Acceptable Hybrid oak/pin oak, white oak, red maple, red pine, and white pine. More oak and pine than red maple would be ideal, but red maple may
Regen: dominate some areas.

Other Must harvest during snow off conditions, but outside of oak wilt restriction in order to properly scarify the site.
Comment:

Proposed Start Date: 10/01/2017



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	Approval Status
23	52008023-Cut	9.8	42220 - Natural Jack Pine	Poletimber Well	36	Unspec ified	Harvest	Clearcut	4132 - Aspen, Jack Pine	Even-Aged	Draft Field Boundary

Habitat Cut: No

Site Condition:

Prescription Clearcut all trees 2" DBH and greater. Harvest with portion of stand 11. Northern tip of stand can be utilized as retention.
Specs:

Next Step Monitoring, Natural Regen (Intermediate)
Treatments:

Acceptable Regen: Many areas should be dominated by aspen with jack pine, northern pin oak, and red maple mixed in the stand.

Other Comment: Add trail specs to sale proposal to protect Shore-to-Shore trail. Should be able to limit operations to one crossing location.

Proposed Start Date: 10/01/2017

Total Treatment Acreage Proposed: 68.2

Report 4 – Site Conditions

Gaylord Mgt. Unit
Luke Gilner : Examiner

Compartment: 8
Year of Entry: 2018

Availability for Management

Total Acres	Acres Available	Acres Avail With Condition	Acres Not Available
114	86	28	0

Dominant Site Conditions

	Total Acres	Acres Available	Acres Avail With Condition	Acres Not Available	Dominant Site Conditions												
					2B	5C	1A	2F	2G	3D	3J	5E					
114	86	86	28	0	Aspen	28											
43	40	40	0	3	Herbaceous Openland								1	2			
79	63	63	13	2	Jack Pine	13		2									
4	4	4	0	0	Low-Density Trees												
36	23	23	0	12	Lowland Shrub												
40	0	0	0	40	Lowland Spruce/Fir	0			0	40			0				
21	15	15	0	6	Marsh			6									
33	33	33	0	0	Mixed Upland Deciduous			0									
25	9	9	15	0	Natural Mixed Pines	6	9										
37	25	25	11	0	Oak	11											
96	78	78	0	18	Red Pine			7				11					
1	1	1	0	0	Treed Bog												
21	15	15	0	6	Upland Mixed Forest			3					3				
4	4	4	0	0	Urban												
14	9	9	0	5	Water			5									
567	405	405	68	94	Total Forested Acres	58	9	36	0	40	11	5	2				
	71%	71%	12%	17%	Relative Percent												

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

Site No.	Dominant Site Cond Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	12	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
2	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	3	2F: Too steep	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Gaylord Mgt. Unit
Luke Gilner : Examiner

Compartment: 8
Year of Entry: 2018

3	Available	2B: Unknown if access through adjacent landowner(s) is possible	13	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
4	Available	2B: Unknown if access through adjacent landowner(s) is possible	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
5	Available	2B: Unknown if access through adjacent landowner(s) is possible	11	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
6	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	10	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
7	Unavailable	3D: Recreational / Scenic values	11	3C: Legally Designated Quiet Area, Natural Area, or Wilderness	3A: Conservation Values incompatible with harvest at this time	Unspecified	Unspecified
Comments:							
Unique, scenic area. Small creek and horse trail on east. Borders natural river. Doesn't quite meet type 2 old growth potential criteria because of acreage, but has many large, 100+ year old red and white pine.							

Report 4 – Site Conditions

Gaylord Mgt. Unit
Luke Gilner : Examiner

Compartment: 8
Year of Entry: 2018

8	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	28	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
9	Unavailable	1A: Federal/State/Local Law	36	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
Comments: West Branch of Big Creek - Natural River - approximate 150 foot vegetative buffer							
10	Unavailable	5E: Long-Term Retention	2	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
11	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	2	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
12	Available	2B: Unknown if access through adjacent landowner(s) is possible	28	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Mgt. Unit

Compartment: #Type!

Year of Entry:



Report 5 – PROPOSED SPECIAL CONSERVATION AREA* (SCA) DETAILS

* This is a partial list of SCAs for this compartment. Not included are those areas identified under other Department initiatives (Natural Rivers, Deer Wintering Areas, etc.). Those will be identified in separate, future map and report products.

SCA Name	SCA Category	Detail Type	Recommendation	Acres
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Comments



Report 6 – EXISTING SPECIAL CONSERVATION AREA DETAILS

* This is a list of SCA's for this compartment along with a 1/4 mile buffer surrounding the compartment. Refer to the Special Conservation Area Map for locations of the below listed Conservation Areas.

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

Conservation Area	Type	Description
SCA	Cold Water Stream	A coldwater stream has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species (e.g., slimy sculpin) to persist from year to year. Coldwater streams in Michigan typically provide these conditions due to substantial contributions of groundwater to their stream flows. Such streams are established by Director's action and designated as trout resources by Fisheries Order 210.
HCVA	Designated Critical Habitat	Critical habitat areas are established via a consultative and cooperative process between the DNR and the U.S. Fish and Wildlife service for the recovery of threatened and endangered species, as governed by Part 365, Endangered Species Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, and the Federal Endangered Species Act of 1973. This is an active program, with proposed species plans in various stages of review. As of now only two exist, Kirtland Warbler Habitat and Piping Plover Habitat.
HCVA	Natural Rivers	There are two Natural Rivers datasets which are derived from spatial buffers set from an established and approved distance from the river centerlines. The Natural Rivers Zoning District is a 400 foot buffer for most Natural Rivers. The Vegetative Buffer ranges from 25 to 100 feet. To view specific Zoning Districts and Vegetative Buffers for each Natural River see the table located on the I:\Documentation\GDSE data folder.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	42250 - Pine, Oak	Sawtimber Well	5.9	62	111-140	Mix of mostly red pine, jack pine, and oak. Red pine varies in size and age, some older super canopy. Significant amount of oak seedlings/saplings, mostly white oak. Stand split by pipeline - 2 polygons.
2	42221 - Natural Jack Pine, Mixed Deciduous	Sawtimber Well	13.0	60	81-110	Predominantly over-mature jack pine with oak, aspen, and red pine mixed in. East side has higher amount of aspen and oak. Significant amount of oak seedlings and saplings throughout the stand, with some areas heavier to red maple. Stand split by pipeline - 2 polygons.
3	4310 - Pine, Oak Mix	Sapling Medium	15.1	36	1-50	Quite variable stand. Density and BA varies, with some fairly open spots. Overall sapling size, but nearly pole size. Some areas dominated by white pine, others heavier to oak, red maple, and jack pine. Most of stand is on a slight slope down to Graham Lake/Marsh. Includes a couple acres of lowland along Graham Lake/Marsh with white pine, tamarack, black spruce, red pine, paper birch, etc. as indicated in the canopy species.
5	4130 - Aspen	Poletimber Well	24.5	36	Unspecified	Aspen averages about 4-7" DBH. Mostly 1 & 2 stick, with some 3 stick. Some scattered log size red pine, and scattered pockets of jack pine. Parts of stand are intermixed and/or along red pine plantation. Three polygons total.
6	42110 - Planted Red Pine	Poletimber Well	77.9	30	111-140	Red pine planted in 1987. Averages 6' - 6.5' between rows. About 30-35' tall with mostly 1 & 2 stick trees for about 15 - 17 total cords per acre. Some areas mixed with jack pine, especially along edges. Includes scattered pockets where aspen is dominant. BA: 130, 140, 100, 120, 140, 130, average of 127.
7	6122 - Black Spruce	Poletimber Well	11.8	36	81-110	Predominantly black spruce, but quite variable and mixed ages. Many areas are pre-merchantable. Standing water in some spots, and heavy alder in spots. Some areas are fairly open, stand is close to 75% canopy closure. Northeast finger is basically a forested bog. Lots of rabbit activity - great wildlife cover. Polygon on south is heavier to tamarack. Two polygons total.
8	4130 - Aspen	Sapling Well	13.7	36	Unspecified	Nearly an A6. Aspen ranges from 3" - 7" DBH. Similar to stand 5, but slightly smaller and less dense. Also has scattered mixed oak and red pine logs. Stand split by pipeline - 2 polygons.
9	4125 - Black, N. Pin Oak	Sapling Well	25.2	36	1-50	Transitioning to O6, but predominantly sapling size. Mostly sprout origin oak and red maple. Some pockets of aspen and some of jack pine. Some scattered residual red pine log trees. Couple of open areas. Somewhat lower density and smaller on east side. Shore to shore trail runs through stand.
10	42220 - Natural Jack Pine	Poletimber Medium	4.7	36	Unspecified	Transitioning to J6. Variable stand.
11	4130 - Aspen	Poletimber Well	53.1	36	Unspecified	Aspen averages about 4-7" DBH. Mostly 1 & 2 stick trees, but some 3 stick. Some areas are dominated by quaking aspen. Some areas with lots of hypoxylon cankers found. Some small patches of jack pine mixed in. Shore to shore trail crosses through west side of large polygon. Must cross small intermittent creek to get to far west polygon. Five total polygons.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
12	6122 - Black Spruce	Poletimber Well	28.3	36	51-80	Mixed conifer with cedar. Fire burned through stand and left some older cedar, pockets, and other remnants. Wet in areas. Lots of snags along the south. Good wildlife habitat and cover.
13	4122 - Oak, Pine	Sawtimber Well	11.3	110	81-110	Mature oak and red pine, mixed with white oak, red maple, and white pine. Thicker subcanopy on the east side, and more dominated by red pine along the east boundary. Adjacent to West Branch of Big Creek Tributary from Seventh Spectacle Lake, but does not hold natural river status. Maintain higher residuals along the tributary in future harvests. BA averages 100, with red pine at 23, red/black oak at 40, white oak at 15, and other species at 22.
15	42290 - Natural Mixed Pine	Sawtimber Well	9.5	104	81-110	Multiple ages of red pine, and secondary age class of mixed species saplings/poles as shown in sub-canopy. Density varies. Good diversity and variability. Fair amount of red pine recruitment. Small bog on south, and west borders lowland site. Shore to shore trail runs through east side. Three polygons total. Leave south east polygon as retention in future harvests.
16	4130 - Aspen	Poletimber Well	22.9	36	Unspecified	Mostly 1 & 2 stick aspen, but some 3 stick. Some pockets of better quality and taller on north. Scattered red pine, red maple, and oak logs that survived the fire.
18	42290 - Natural Mixed Pine	Poletimber Medium	9.2	36	1-50	Mixed pine with oak and red maple. Fairly open in areas. Heavier to red maple, oak, aspen on south end. Stand has a lot of sapling size as well. Some lowland, wet areas, and some rolling topography. Beaver activity/damage on north. Wooden bench swing with scenic overlook near north end.
19	4199 - Other Mixed Upland Deciduous	Sapling Medium	7.8	36	1-50	Includes some small open areas. Stand may be about 5 years younger than shown. It is unclear if it was originally planted to jack pine with stand to south, and then burned during the Big Creek Fire in 1981, which may have slowed regeneration slightly as compared to the rest of the compartment. Old plow line along south end.
22	4319 - Mixed Upland Forest	Sawtimber Well	6.3	56	81-110	Mixture of red pine, aspen, oak, and jack pine, with some age variation. Some older red pine and white pine close to the river. Most of stand is on fairly steep slope down to West Branch of Big Creek, which has natural river status.
23	42220 - Natural Jack Pine	Poletimber Well	29.3	36	Unspecified	Meets pole size criteria, but still many sapling sized trees. Some aspen pockets, and some open pockets scattered throughout. Scattered log size red pine and jack pine residuals from fire. Shore to shore trail runs through stand. Two polygons.
24	4191 - Mixed Upland Deciduous with Conifer	Sapling Medium	12.8	36	1-50	
25	42220 - Natural Jack Pine	Poletimber Well	17.1	36	Unspecified	Stand is similar to 23, but separated due to additional access difficulties. Meets pole size criteria, but still many sapling sized trees. Some aspen pockets, and some open pockets scattered throughout. Scattered log size red pine and jack pine residuals from fire. Must cross small intermittent creek to access. Northeast polygon includes beaver damaged area, with very few trees remaining. Small island polygon is likely un-accessible for equipment, use as retention. Three polygons total.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
113	4199 - Other Mixed Upland Deciduous	Sapling Well	12.5	36	1-50	Fairly even mixture of aspen, red maple, and oak with scattered red and white pine saplings. Also scattered older red and white pine logs that survived the fire. Stand has great diversity. Most of red maple and oak are stump sprout origin.
119	42221 - Natural Jack Pine, Mixed Deciduous	Sapling Well	7.4	36	Unspecified	On bluff and hillside overlooking Big Creek. Small bog on west side. Some rolling topography. Stand may be about 5 years younger than shown. It is unclear if it was originally planted to jack pine with stand 20 to south, and then burned during the Big Creek Fire in 1981, which may have slowed regeneration slightly as compared to the rest of the compartment.
122	42210 - Natural Red Pine	Sawtimber Well	18.1	110	111-140	Very scenic place along West Branch of Big Creek. Small creek on east as well. Park-like and open in areas. Has been harvested in past, and also burned through. Variable stand. East pocket is dominated by jack pine, and eastern edges heavier with oak, cherry, and red maple seedlings/saplings. Some of stand is on slope and down in lower ground. Red pine is included in younger age class as well. Older red pine mostly nearest to river. Some large, tall, pole quality pine. Shore to shore trail runs through east side, with small bridge. Two polygons split by river. BA averages 118 on 8 plots, but varies. Red pine accounts for 83 sq. ft.
323	42221 - Natural Jack Pine, Mixed Deciduous	Sapling Well	7.3	36	Unspecified	Nearly a pole sized stand, but not quite. Some areas dominated by aspen, and some open areas. Fairly thick in spots. Surrounded by lowland on three sides and low near the center. Some minor slopes.



Stand	Cover Type	Acres	Managed Site	General Comments:
4	623 - Emergent Wetland	6.5	No	Spring fed Graham Lake. Includes some scattered white pine, and lots of snags.
14	6220 - Alder/willow	12.1	No	Part of the West Branch of Big Creek is included in this stand. Contains a high amount of alder. Travel barrier that dissects compartment. Scattered trees and snags.
17	6220 - Alder/willow	19.8	No	Part of the West Branch of Big Creek is included in this stand. Contains a high amount of alder. Travel barrier that dissects compartment. Old wooden foot bridge on the northwest. Scattered trees and snags.
20	310 - Herbaceous Openland	35.4		Jack pine was direct seed in 1974. It acted as a fuel break during the 1981 Big Creek fire and did not burn. Stand was clearcut in 2016. Quick Jack sale 52-025-16-01 completed 11/23/2016. Some residual red pine and white oak left. To be trenched and planted to JP/RP mix.
21	623 - Emergent Wetland	14.7	No	More dominated by other wetland vegetation without as much alder.
26	6220 - Alder/willow	3.7	No	Alder and marshy. Scattered trees and snags. Two polygons, dissected by tributary from Seventh Spectacle Lake.
27	500 - Water	5.2	No	West Branch of Big Creek. Wider and more flooding along this stretch.
118	500 - Water	8.7	No	Tributary to West Branch Big Creek from Seventh Spectacle Lake. Does not hold natural river status. Includes some beaver dams with areas that are/were flooded, lots of snags. Shore to shore trail crosses on northeast - narrow bridge appears to be in good condition.
213	6224 - Treed Bog	1.1	No	Blueberry bog with scattered tamarack, black spruce, white pine, jack pine, and red pine. Mostly sapling sized overall, but varies greatly. Could nearly be called a forested stand, may be slightly over 25% canopy coverage.
401	310 - Herbaceous Openland	1.0	No	Gas well site. Some grass, knapweed, and sweet fern visible through snow. Some red pine, jack pine, and cherry saplings along edges. Muskegon Development Company St. Charlton C 2-25 Permit No. 44733 MPSC: 4969 Emergency Contact: (989) 772-4900
402	110 - Low Intensity Urban	1.8	No	Gas facility / Well site. Several buildings fenced in. Muskegon Development Company St. Charlton C 4-26, MPSC: 4971 Permit No. 44736 Emergency Contact: 989-772-4900
403	310 - Herbaceous Openland	1.0	No	Well site with some grass and knapweed. Muskegon Development Company St Charlton B 3-26, MPSC: 4940 Permit No. 44734 Emergency Contact: 989-772-4900



Stand	Cover Type	Acres	Managed Site	General Comments:
404	310 - Herbaceous Openland	1.0	No	Wellsite with grass and knapweed. Muskegon Development Company St. Charlton D 1-26, MPSC 5138 Permit No. 44998 Emergency Contact: 989-772-4900
405	110 - Low Intensity Urban	2.3	No	Enbridge Pipeline (old Lakehead Pipeline) and gravel road. Occasionally mowed and maintained by gas/oil company. Part of Perch Lake (Antrim Formation) lease.
406	310 - Herbaceous Openland	1.8	No	Scattered jack pine and oak within grassy opening.
408	330 - Low-Density Trees	3.5	No	Scattered jack pine with clumpy cherry and oak sprouts, thicker on the north. Some red pine saplings as well. Heavy browse on oak. Includes blueberry bog surrounded by jack pine.
410	310 - Herbaceous Openland	2.9	No	Scattered cherry, jack pine, and red pine mostly along edges. Fence along north edge.