



Compartment Review Presentation

Gaylord Forest Management Unit

Compartment 52012

Entry Year 2020

Acreage: 1,243

County Otsego

Management Area: AuSable Outwash

Revision Date: 2018-03-28

Stand Examiner: Trevor Kubitskey

Legal Description:

T29N R2W Sec. 4, 5, 6, 7, 8, & 9.

Identified Planning Goals:

The continuation of 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.

Soil and topography:

The dominant soil type throughout is Rubicon-Grayling Sand with a small percentage of Rifle Peat-Carbondale Muck found in the Turtle Creek drainage system. The terrain is level.

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

Within the legal description of this compartment, state ownership is approximately 32%. The compartment and its surrounding areas have been extensively developed in the past by the Antrim Shale gas industry. Other land uses in and around the compartment are mostly general recreation use such as, hunting, fishing, and off-road vehicle use on designated trails.

Unique Natural Features:

There are two natural features in the stand, one being the North Branch of the Ausable River, which is a designated river and Turtle Creek which is part of the natural river designation system. There are stands adjacent to these features that could be nominated for a High Conservation Value Area.

Archeological, Historical, and Cultural Features:

None known at this time.

Special Management Designations or Considerations:

Stand 24 is a managed wildlife opening and has a management plan that encompasses three adjacent compartments as well.

Watershed and Fisheries Considerations:

This compartment is within the Au Sable River watershed, and contains portions of the North Branch Au Sable River and Turtle Creek. The North Branch Au Sable has Type 1 trout regulations in this compartment, but both streams are fairly warm at this point since they start as lake outlets near this compartment. Natural Rivers buffers apply to both the North Branch Au Sable and Turtle Creek. The prescribed management actions are appropriate for protection of these waterbodies.

Wildlife Habitat Considerations:

This compartment offers many values including food, cover, and water sources for featured species like grouse, woodcock, and deer. Much of the non-forested upland cover types are managed through prescribed burning to maintain their open or brushy character. This should continue into the future.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of glacial outwash sand, gravel and post glacial alluvium. The glacial drift thickness is between 600 and 800 feet, with the Mississippian Coldwater Shale subcrop below that. This subcrop has no economic use. There is no current mining activity in the area, but there may be some sand & gravel potential on the uplands within the compartment. The compartment has been mostly developed for Antrim Shale gas production and is also located in the Niagaran reef trend. However, there may be potential for additional wells within the compartment. Most State lands are leased and in production.

Vehicle Access:

Access is very good throughout due to the extensive network of pipelines and gas well access roads. There are no road closures recommended at this time.

Survey Needs:

The proposed treatments will require minimum survey work, as many of adjacent landowners have had properties professionally surveyed.

Recreational Facilities and Opportunities:

The North Branch Snowmobile Trail and ORV Route passes through the eastern edge of section 9. In section 6 there is a public boat launch giving access to Emerald Lake.

Fire Protection:

Prescribed burns will be periodically used in stand 24 to maintain this area for wildlife.

Additional Compartment Information:

The following reports from the Inventory are attached:

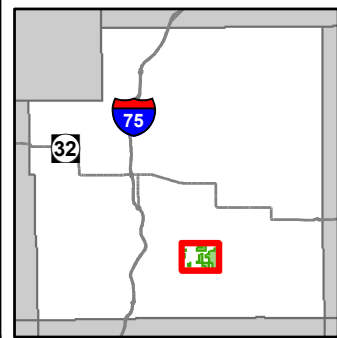
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

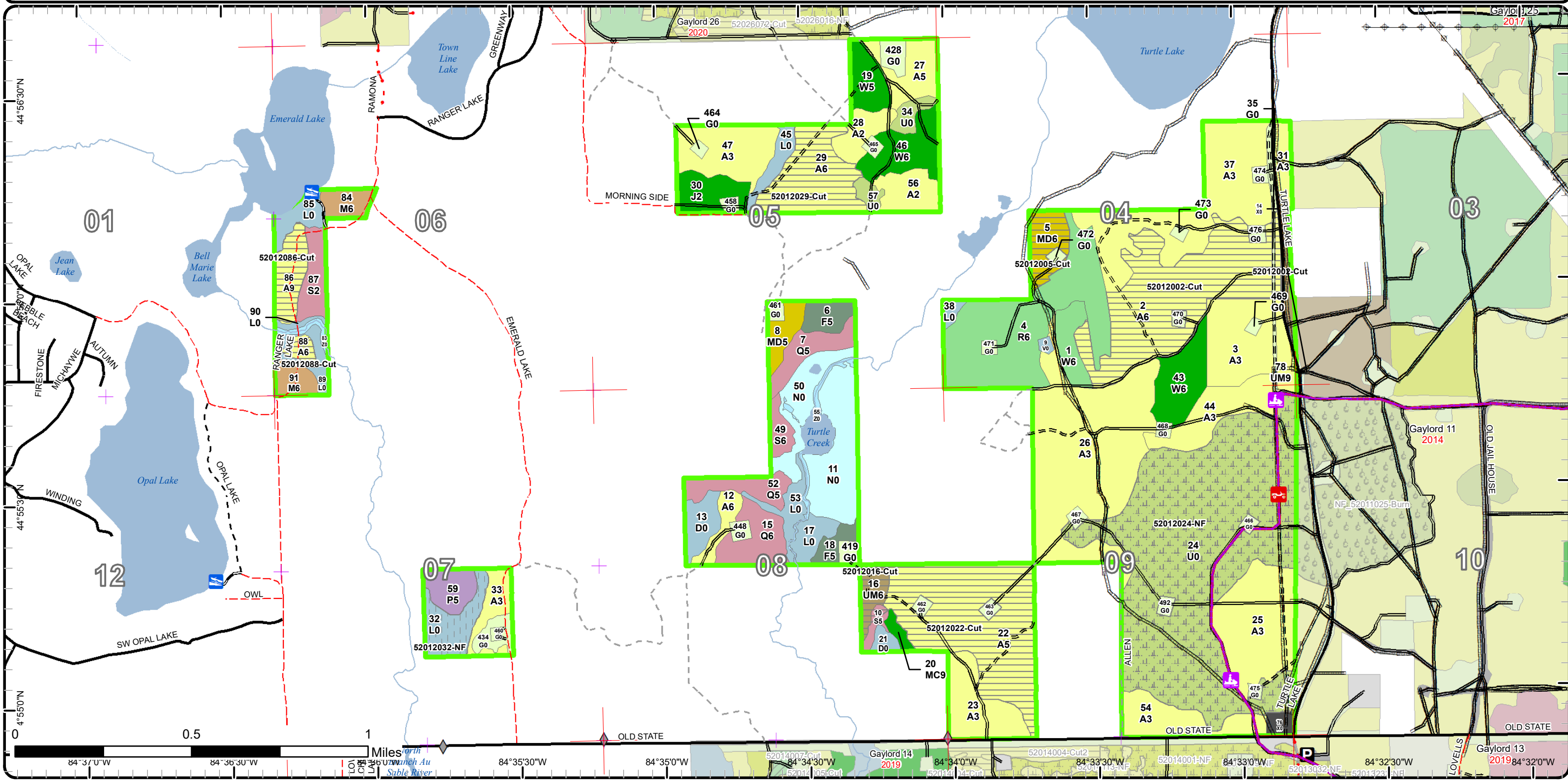
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments Map

Compartment: 12
 T29N, R02W, Sec. 4-9
 County: Otsego
 Unit: Gaylord
 Mgmt Area: AuSable Outwash
 YOE: 2020
 Acres: 1,243 GIS Calculated
 Examiner: Trevor Kubitskey
 Map Revised: 10/1/2018
 Map Phase: Post-Review

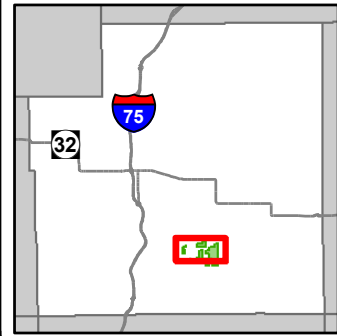


- Miris Corners
- + Remonumented Section Corners
- ◆ Field Grade Corners
- Counties
- DNR - Primary Forest Road
- DNR - Secondary Forest Road
- DNR - Forest Access Route
- Federal / State / County - Paved Road
- Federal / State - Dirt / Gravel Road
- County - Gravel Road
- County - Dirt Road (Seasonal)
- Private - Dirt / Gravel Road
- ORV Routes
- Snowmobile Trails
- Designated ORV Route
- Designated Snowmobile Trails
- Boating Access Site
- P Parking Lot
- Island in Lake or River
- Lake/Pond
- Perennial River
- Lakes and Rivers All
- Pipeline
- Compartment Boundary
- Other Treatment - See Comments
- Clearcut (w/Reserves)
- Opening Maintenance
- 411 - Northern Hardwood
- 413 - Aspen Types
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 423 - Other Upland Conifers
- 430 - Upland Mixed Forest
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 122 - Roads/Parking Lot
- 123 - Other High Intensity Urban
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 500 - Water
- 622 - Lowland Shrub
- 623 - Emergent Wetland
- Lakes

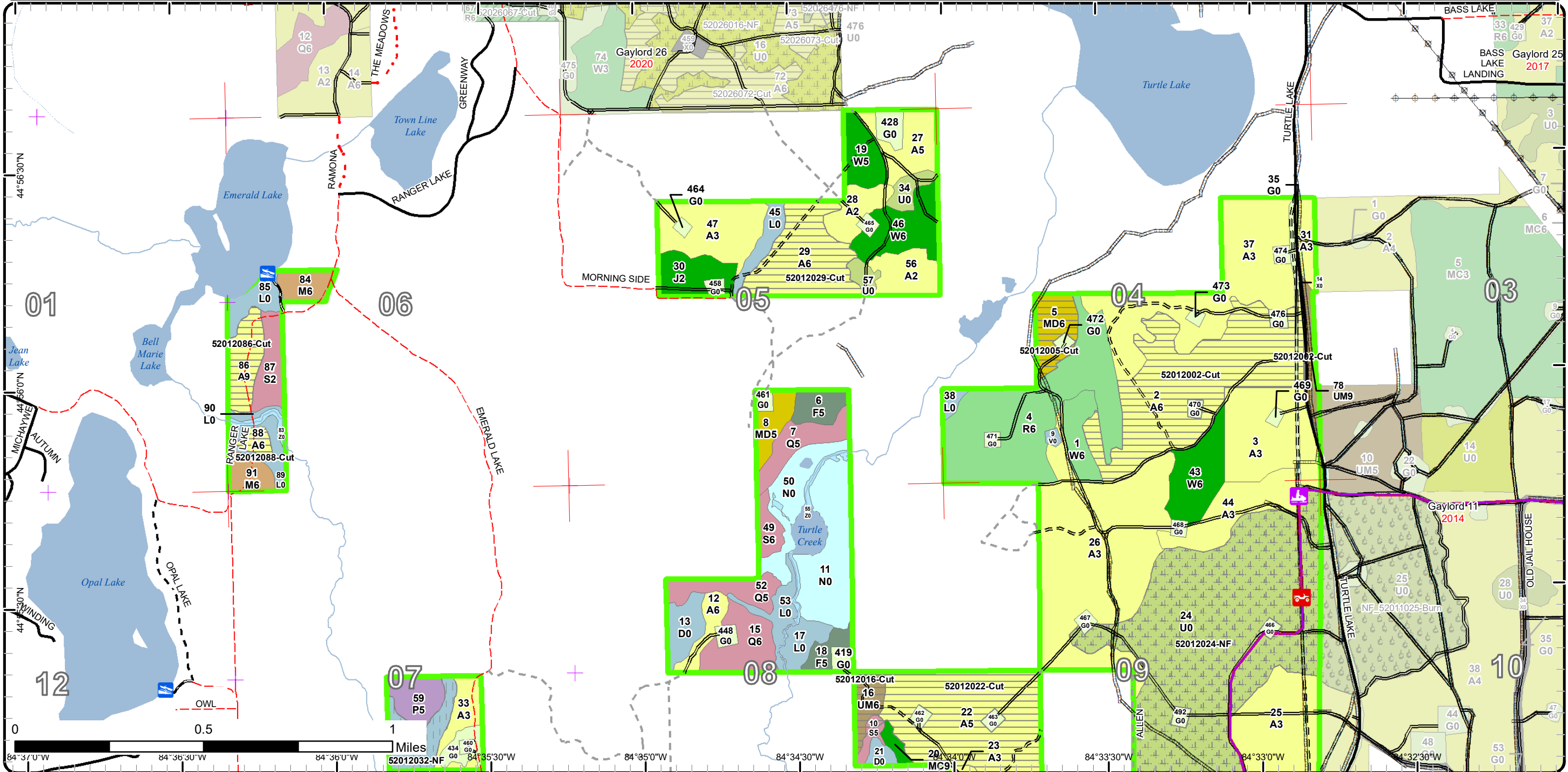


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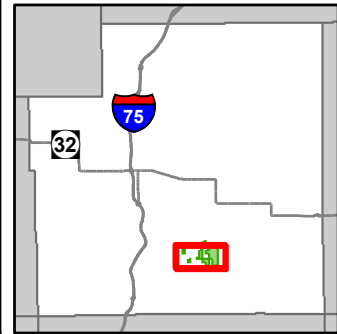
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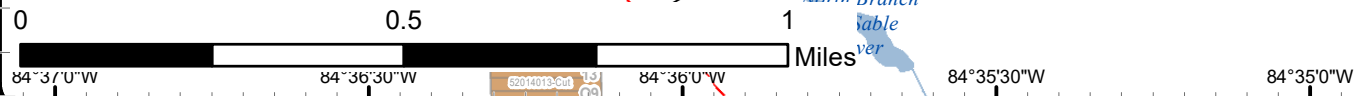
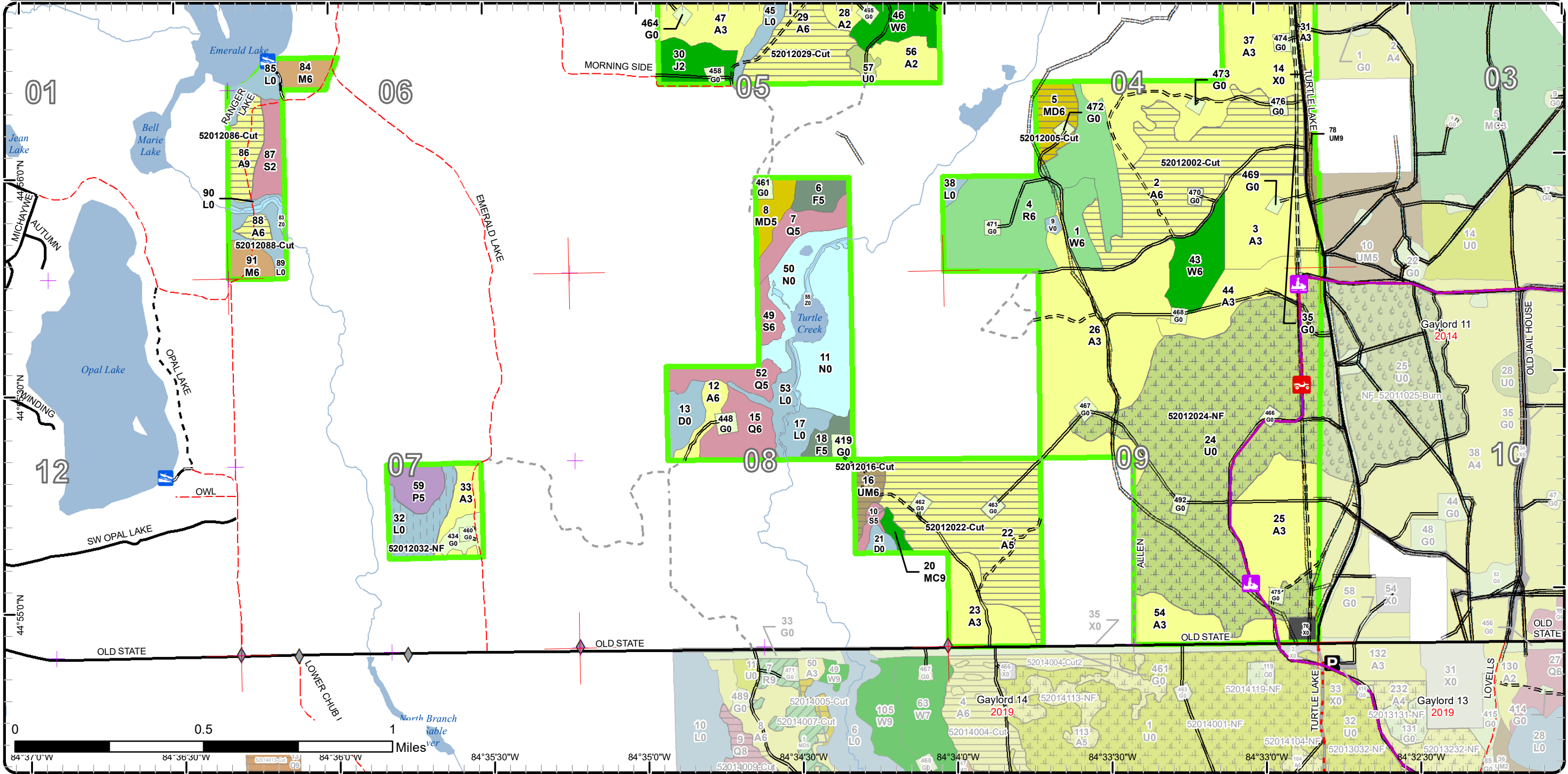


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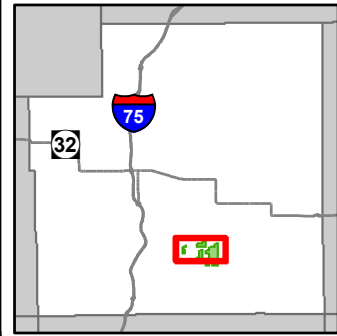
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|--|--|---|---|
| <ul style="list-style-type: none"> — Miris Corners — Remonumented Section Corners ◆ Field Grade Corners --- Counties — DNR - Primary Forest Road — DNR - Secondary Forest Road == DNR - Forest Access Route — Federal / State / County - Paved Road - - Federal / State - Dirt / Gravel Road - . - . County - Gravel Road - - - County - Dirt Road (Seasonal) - - - Private - Dirt / Gravel Road ORV Routes | <ul style="list-style-type: none"> — Snowmobile Trails --- Designated ORV Route --- Designated Snowmobile Trails Boating Access Site P Parking Lot Island in Lake or River Lake/Pond Perennial River Lakes and Rivers All Pipeline Compartment Boundary Other Treatment - See Comments Clearcut (w/Reserves) Opening Maintenance | <ul style="list-style-type: none"> 411 - Northern Hardwood 413 - Aspen Types 419 - Mixed Upland Deciduous 421 - Planted Pines 422 - Natural Pines 423 - Other Upland Conifers 430 - Upland Mixed Forest 611 - Lowland Deciduous Forest 612 - Lowland Coniferous Forest 122 - Roads/Parking Lot 123 - Other High Intensity Urban 310 - Herbaceous Openland 320 - Upland Shrub 500 - Water 622 - Lowland Shrub | <ul style="list-style-type: none"> 623 - Emergent Wetland Lakes |
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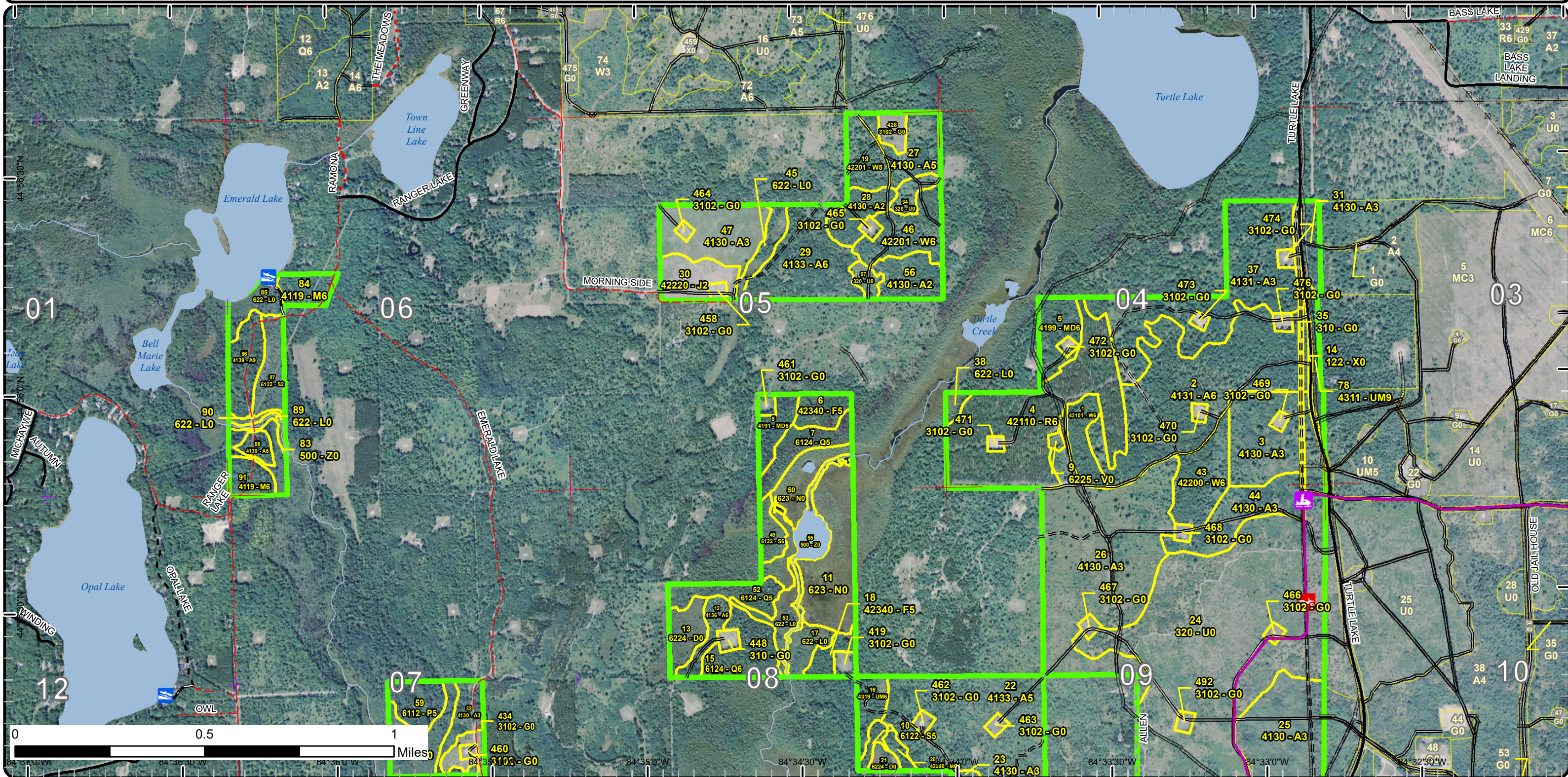


Stand Boundary Map

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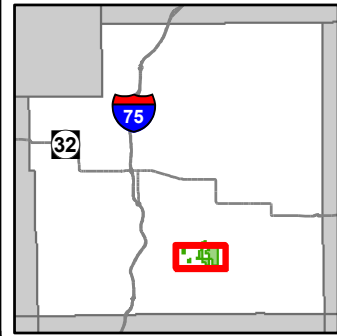


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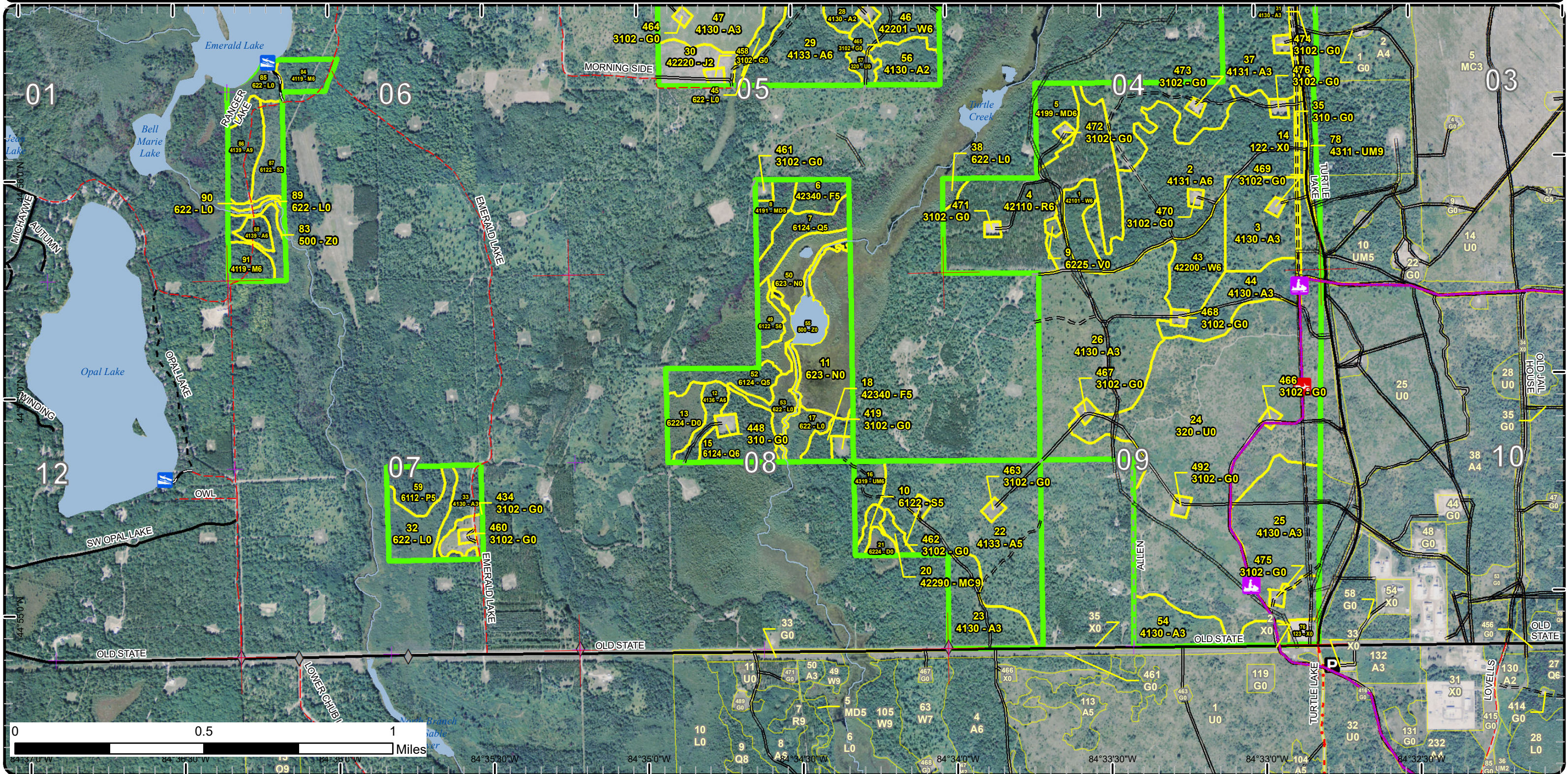


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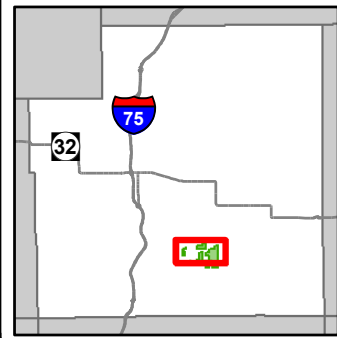


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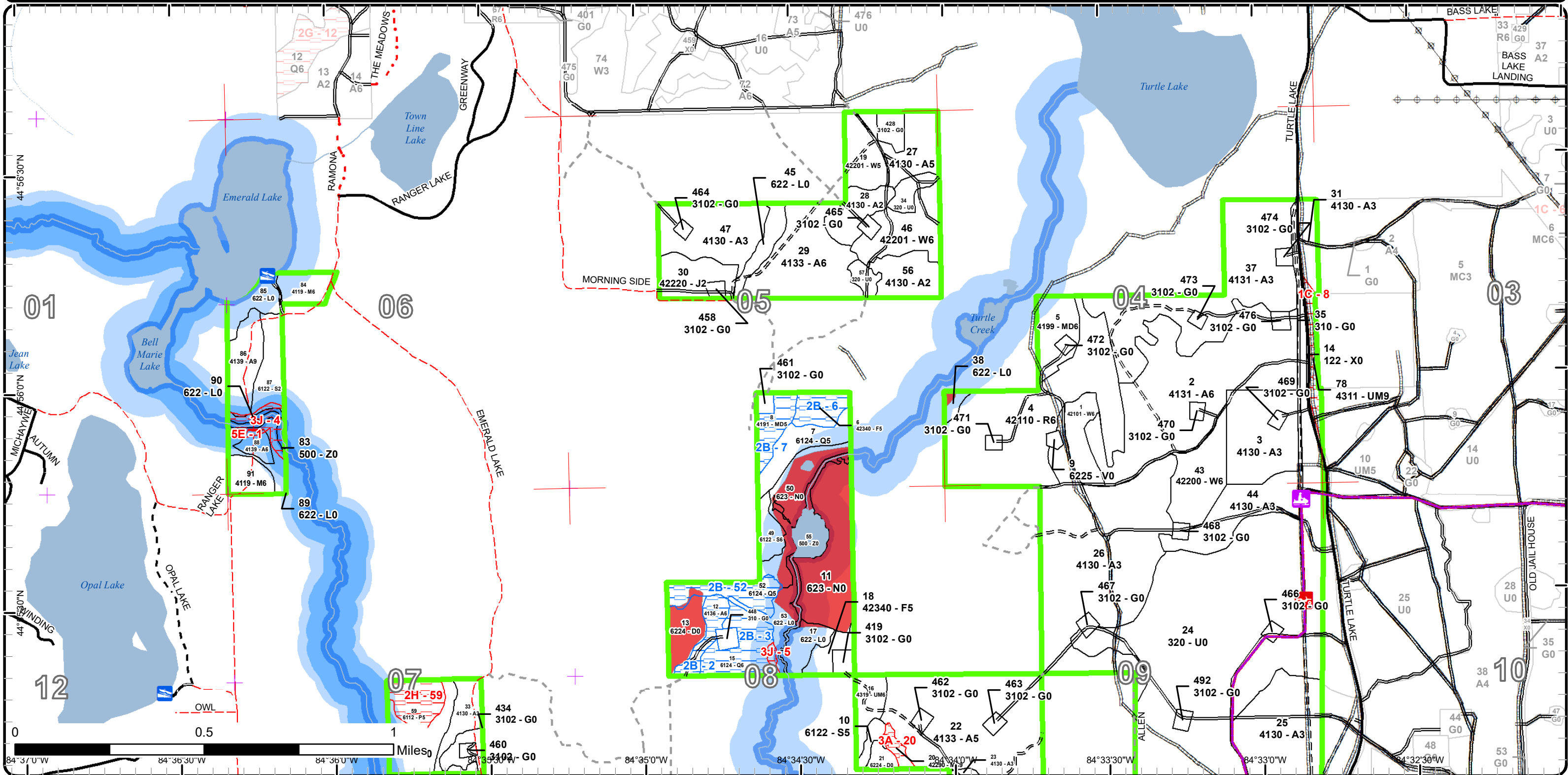


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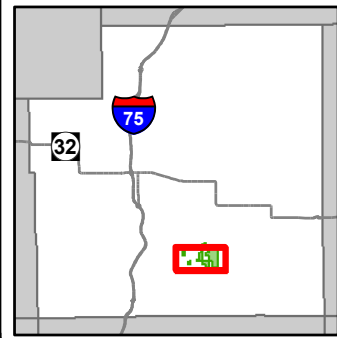


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- 1C: Other dept or div proc/practices
- 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
- 3A: Conservation Values incompatible with harvest at this time
- 3J: Water quality / BMPs (stream, river, or lake)
- 5E: Long-Term Retention
- Stand Boundaries
- Ecological Reference Areas
- Natural Rivers Vegetative Buffer
- Natural Rivers Zoning District
- Cold Water Streams
- High Priority Trout Stream Buffer

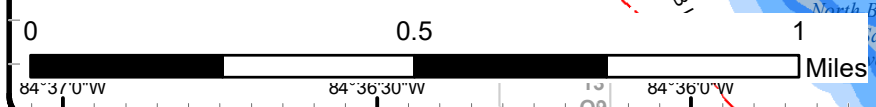
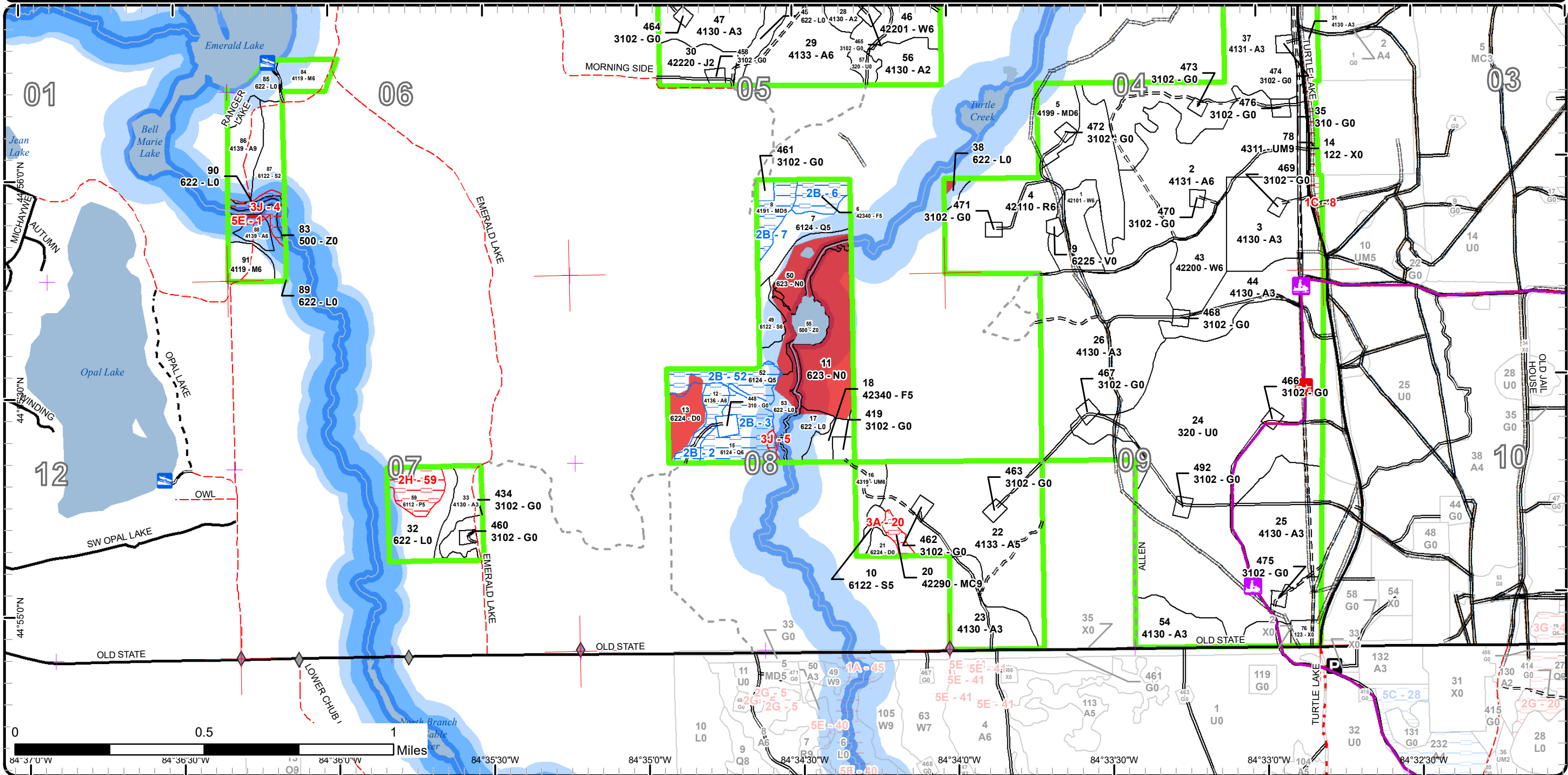


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Age Class

	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	164	55	142	0	92	122	0	13	0	0	0	0	0	0	0	0	0	588
Bog	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Herbaceous Openland	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42
Jack Pine	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
Lowland Aspen/Balsam Poplar	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	10
Lowland Conifers	0	0	0	0	0	0	0	0	39	0	0	0	0	0	0	0	0	0	39
Lowland Shrub	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54
Lowland Spruce/Fir	0	0	0	0	0	0	11	0	8	0	0	0	0	0	0	0	0	0	19
Marsh	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47
Mixed Upland Deciduous	0	0	0	0	8	0	12	0	0	0	0	0	0	0	0	0	0	0	20
Natural Mixed Pines	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3
Northern Hardwood	0	0	0	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0	14
Red Pine	0	0	0	0	0	0	68	0	0	0	0	0	0	0	0	0	0	0	68
Treed Bog	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
Upland Mixed Forest	0	0	0	0	0	0	8	6	0	0	0	0	0	0	0	0	0	0	14
Upland Shrub	212	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	212
Upland Spruce/Fir	0	0	0	0	0	0	5	0	8	0	0	0	0	0	0	0	0	0	13
Urban	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Water	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
White Pine	0	0	0	0	0	11	29	18	0	0	0	0	0	0	0	0	0	0	58
Total	386	176	55	142	8	103	262	31	78	0	3	0	0	0	0	0	0	0	1244



Report 2 – Treatment Summary

Gaylord Mgt. Unit

Year of Entry: 2020

Acres of Harvest

Compartment 12

Total Compartment Acres: 1,243

Commercial Harvest - 226
 Harvests with Site Condition - 0
 Next Step Harvest - 0
 Habitat Cut - 0

Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Aspen	206	0	0	0	0	0	0	0	0	206
Mixed Upland Deciduous	12	0	0	0	0	0	0	0	0	12
Upland Mixed Forest	8	0	0	0	0	0	0	0	0	8
Total	226	0	0	0	0	0	0	0	0	226

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	226	0	0	0	0	0	0	0	219	445
Next Step	0	0	0	0	0	0	226	0	0	226
Total	226	0	0	0	0	0	226	0	219	671



Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
2	52012002-Cut	80.0	4131 - Aspen, Oak	Poletimber Well	54	81-110	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Draft Field Boundary

Habitat Cut: No**Site Condition:**

Prescription Final harvest all trees 2" dbh and up. Leave 10% retention in islands between 1/4 to 1/2 acre in size focusing on large, multi stem oaks. Oak wilt restrictions will apply.

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

Acceptable Dominated by Aspen, with a component of mixed deciduous and conifer.
Regen:

Other
Comment:

Proposed Start Date: 10/1 /2019

5	52012005-Cut	12.0	4199 - Other Mixed Upland Deciduous	Poletimber Well	58	81-110	Harvest	Clearcut with Retention	4199 - Other Mixed Upland Deciduous	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Final harvest all trees 2" dbh and up, leave minimum retention. Single trees or clumps should be left to provide added benefits such as cover, mast, diversity. Mark to leave supercanopy Red Oaks. Make sure leave trees do not exceed 10 BA for entire stand.

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

Acceptable Red maple, oak, birch, aspen and mixed conifers.
Regen:

Other Use leave trees to protect oak saplings as much as possible. Oak wilt restrictions will apply.
Comment:

Proposed Start Date: 10/1 /2019

16	52012016-Cut	8.4	4319 - Mixed Upland Forest	Poletimber Well	53	81-110	Harvest	Clearcut with Retention	4199 - Other Mixed Upland Deciduous	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Final harvest all trees 2" dbh and up. Leave minimum retention and focus retention around the lowland areas. Leave trees can be marked if they add additional benefits (cover, mast, diversity) but recommend leave trees do not exceed 5 BA for entire sale.

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

Acceptable A mix of deciduous species, such as aspen, red maple, birch, and oak. Also a minor conifer component.
Regen:

Other Part of treatment should incorporate stand 10.
Comment:

Proposed Start Date: 10/1 /2019

22	52012022-Cut	77.6	4133 - Aspen, Mixed Pine	Poletimber Medium	48	81-110	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Final harvest all trees 2" dbh and up. Leave standard retention and focus retention around any red oaks that are found.

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

Acceptable Aspen with a minor component of mixed deciduous and mixed pines.
Regen:

Other There are pockets of red pine and white pine that can be left as retention for natural seed source.
Comment:

Proposed Start Date: 10/1 /2019



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
24	52012024-NF	204.3	320 - Upland Shrub	Nonstocked		Unspec ified	NonForestMgt	Other - Specify	320 - Upland Shrub		Draft Field Boundary

Habitat Cut: No**Site Condition:**

Prescription Brush, mow, plant, burn and/or herbicide to maintain opening. Planting of hard and soft mast.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other Protect recreational trails which run through this stand.

Comment:

Proposed Start Date: 10/1 /2019

29	52012029-Cut	32.4	4133 - Aspen, Mixed Pine	Poletimber Well	57	51-80	Harvest	Clearcut with Retention	4133 - Aspen, Mixed Pine	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Final harvest all trees 2" dbh and up. Leave standard retention. Do not cut White pine 20" and up.

Specs:

Next Step

Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable

Aspen with a component of white pine and a minor component of mixed deciduous and conifers.

Regen:

Other There are scattered relic White Pines that are providing good seed source throughout the stand. Leave large diameter/super canopy pines in retention.

Comment:

Proposed Start Date: 10/1 /2019

32	52012032-NF	14.7	622 - Lowland Shrub	Nonstocked		Unspec ified	NonForestMgt	Brush Cutting	6220 - Alder/willow		Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription strip cuts within tag alder for wildlife benefits

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Proposed Start Date: 10/1 /2019

86	52012086-Cut	12.6	4139 - Aspen, Mixed Deciduous	Sawtimber Well	72	81-110	Harvest	Clearcut with Retention	4139 - Aspen, Mixed Deciduous	Even-Aged	Draft Field Boundary
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Habitat Cut: No**Site Condition:**

Prescription Final harvest all trees 2" DBH and up. Leave standard retention. Focus retention around pockets of larger canopy white pines or oak.

Specs:

Next Step

Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable

Aspen with a component of mixed deciduous such as red maple, oak, birch, and mixed conifers.

Regen:

Other Oaks are present in the south part of the stand. Consider leaving retention in the south where the natural river zone (150' from ordinary high water mark) comes into the stand. Road maintenance and protection spec will be added to protect Ranger Lake Rd and boat launch during logging activity.

Comment:

Proposed Start Date: 10/1 /2019



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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
88	52012088-Cut	3.1	4139 - Aspen, Mixed Deciduous	Poletimber Well	58	51-80	Harvest	Clearcut with Retention	4139 - Aspen, Mixed Deciduous	Even-Aged	Draft Field Boundary

Habitat Cut: No

Site Condition:

Prescription Specs: Final harvest all trees 2" dbh and up. Retention has already been identified and will be left in the north portion of the stand that contains the natural river zone.

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

Acceptable Regen: Aspen with a component of mixed deciduous such as red maple, oak, birch. Also a minor component of mixed conifers.

Other Comment: Road maintenance and protection spec will be added to protect Ranger Lake Road and the public boat launch access site during logging activity.

Proposed Start Date: 10/1 /2019

Total Treatment Acreage Proposed: 445.1

Report 4 – Site Conditions

Gaylord Mgt. Unit

Compartment: 12

Trevor Kubitskey : Examiner

Year of Entry: 2020

Availability for Management

Total	Acres	Acres Avail	Acres
Acres	Available	With Condition	Not Available

Dominant Site Conditions

2B 1C 2H 3A 3J 5E

588	581	7	1	Aspen	7				0	0
1	1	0	0	Bog						
42	42	0	0	Herbaceous Openland						
12	12	0	0	Jack Pine						
10	0	0	10	Lowland Aspen/Balsam Poplar			10			
38	12	26	1	Lowland Conifers	26				1	
54	51	0	4	Lowland Shrub					4	0
19	18	0	1	Lowland Spruce/Fir					1	
47	47	0	0	Marsh						
20	12	8	0	Mixed Upland Deciduous	8					
3	0	0	3	Natural Mixed Pines				3		
14	14	0	0	Northern Hardwood						
68	68	0	0	Red Pine						
12	12	0	0	Treed Bog						
14	8	0	6	Upland Mixed Forest		6				
212	212	0	0	Upland Shrub						
13	5	7	0	Upland Spruce/Fir	7					
6	6	0	0	Urban						
12	10	0	2	Water					2	
58	58	0	0	White Pine						
1,243	1,169	48	27	Total Forested Acres	48	6	10	3	8	0
	94%	4%	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	5E: Long-Term Retention	0	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
Comments:							
Natural River Zone and long term retention for sale in stand 88.							

Report 4 – Site Conditions

Gaylord Mgt. Unit

Compartment: 12

Trevor Kubitskey : Examiner

Year of Entry: 2020

2	Available	2B: Unknown if access through adjacent landowner(s) is possible	7	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
3	Available	2B: Unknown if access through adjacent landowner(s) is possible	15	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
4	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	7	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Natural River							
5	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	1	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Natural river buffer zone. Turtle creek.							
6	Available	2B: Unknown if access through adjacent landowner(s) is possible	8	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Same as stand 8, had permission to cross private land by foot from the north, but unsure about future access for possible future harvesting.							
7	Available	2B: Unknown if access through adjacent landowner(s) is possible	8	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

Report 4 – Site Conditions

Gaylord Mgt. Unit

Compartment: 12

Trevor Kubitskey : Examiner

Year of Entry: 2020

8	Unavailable	1C: Other dept or div proc/practices	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Parcel will be nominated for disposal, as it is not a manageable parcel of state owned land.							
20	Unavailable	3A: Conservation Values incompatible with harvest at this time	3	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Large healthy relic pines, left for diversity and seed source.							
52	Available	2B: Unknown if access through adjacent landowner(s) is possible	11	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
59	Unavailable	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	10	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Part of natural river buffer does enter the west portion of the stand and access may be challenging due to very wet portions in stand 32 to the east.							

Mgt. Unit

Compartment: #Type!

Year of Entry:



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

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

SCA Name	SCA Category	Detail Type	Recommendation	Acres
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Comments



Report 6 – EXISTING SPECIAL CONSERVATION AREA DETAILS

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

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

Conservation Area	Type	Description
SCA	Cold Water Stream	A coldwater stream has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species (e.g., slimy sculpin) to persist from year to year. Coldwater streams in Michigan typically provide these conditions due to substantial contributions of groundwater to their stream flows. Such streams are established by Director's action and designated as trout resources by Fisheries Order 210.
SCA	Riparian Area	A transitional area between aquatic and terrestrial ecosystems in which the terrestrial ecosystem influences the aquatic ecosystem and vice-versa. Because of the unique conditions adjacent to lakes, streams and open water wetlands, riparian areas harbor a high diversity of plants and wildlife. Riparian communities are ecologically and socially significant in their effects on water quality and quantity, as well as aesthetics, habitat, bank stability, timber production, and their contribution to overall biodiversity.
HCVA	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.
ERA	Ecological Reference Areas	Ecological Reference Areas (ERAs) are high quality examples of natural communities that have been identified as Element Occurrences (EOs) by the Michigan Natural Features Inventory (MNFI) within the context of their natural community classification system. Element Occurrences with viability ranks of A (Excellent) or B (Good) and a Global (G) or State (S) element (rarity) ranking of endangered (1), threatened (2), or rare (3) serve as an initial base of ERAs. They may be located upon any ownership in the State. The system is comprised of individual or associations of natural community types that are managed for restoration and maintenance of natural ecological processes and values. The public may submit recommendations for lands as ERAs using the DNR Conservation Area Recommendation Form.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	42101 - Planted White Pine, Mixed Deciduous	Poletimber Well	10.0	58	81-110	Fair quality pole sized white pine plantation planted in 1960. Southern portion opens up to more fair quality red maple and oak. Similar to stand 5 to the north, except healthier white pine and better quality throughout. Scattered O7.
2	4131 - Aspen, Oak	Poletimber Well	80.0	54	81-110	Old notes from 2008 say to hold for one more decade to increase growth in aspen. Very diverse stand. Large sized oak and red pine mixed throughout. East and west portions of stand contain merchantable aspen and red maple and the central portion is poor quality aspen intermixed with white pine and various openings with dying or non-merchantable timber. Due to various openings, the canopy is closer to 75, with the overall size of stand very close between pole and log.
3	4130 - Aspen	Sapling Well	33.8	16	Immature	Old Inventory Notes: SCATTERED OAK LOG THROUGHOUT STAND LEAVE FOR MAST TO BENEFIT WILDLIFE. 9/24/87 THIS STAND WAS ROLLER CHOPPED IN 1974. STAND HAS ANYWHERE FROM A3 TO U SCATTERED THROUGHOUT. 1/16/98.2017: Final harvested in 2001, left scattered xl oaks and red pine.
4	42110 - Planted Red Pine	Poletimber Well	67.5	58	141-170	Planted in 1960, first time third row thinned in Dec. 2011. Cut intermixed red maple and aspen in cut rows only. (2008 notes). There are a few pockets that have low BA. Stand contains scattered large oaks and clumps of paper birch. West portion of stand contains a higher BA than the east. 151.6 overall average BA. Cores indicate a response to the thinning.
5	4199 - Other Mixed Upland Deciduous	Poletimber Well	12.0	58	81-110	Originally a white pine plantation planted in 1960. Few larger white pines, but dominated in canopy by red maple, aspen, birch and oak. There is heavy browse present. Aspen is reaching maturity. Mortality is present in understory white pine. Oak presence is heavier in southern portion of stand and around 20BA for total stand. Due to close proximity to Turtle Creek (tributary of the Ausable) part of the natural river buffer zone does extend into the northwest portion of the stand.
6	42340 - Upland Spruce/Fir	Poletimber Medium	7.5	70	1-50	Upland spruce stand. East side of stand contains more opening due to mortality in larger aspen and black spruce. West side of stand contains more spruce, fir, birch with a small component of cedar in the NE corner. Unlike stand 8 to the east, this has no record of a harvest.
7	6124 - Lowland Spruce-Fir	Poletimber Medium	11.5	70	51-80	This stand is in close proximity of Turtle Creek, adjacent to marsh, and a small portion is within the natural river buffer zone. Dominated by black spruce, and fir. Good wildlife habitat. Age was estimated by multiple cores. Transition zone from upland MD type to N type. Canopy close to 75 due to dead fall creating gaps.
8	4191 - Mixed Upland Deciduous with Conifer	Poletimber Medium	7.6	31	1-50	Old notes mention that there was a harvest in 1987 to benefit deer and grouse. Mortality in older aspen, spruce, and fir. Decent quality aspen and red maple. Have to access through private from the north.
10	6122 - Black Spruce	Poletimber Medium	2.8	73	81-110	A unique black spruce stand with a small component of white pine. Western edge transitions back into an upland mix of conifers, birch, aspen and red maple. Very wet. It does have a thick layer of sphagnum moss and seems to have heavy deer activity.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
12	4136 - Aspen, Mixed Conifer	Poletimber Well	6.5	53	51-80	Very diverse stand. Old notes from 98 mention that site index decreases as you move south. There is a heavy pine component in the south portion and as you move north it transitions into fair quality aspen and red maple. Overmature aspen is present but not many. Balsam Fir and Black Spruce on edges of stand. South portion contains a pocket of relic red pines. Does border an ERA that is within stand 13.
15	6124 - Lowland Spruce- Fir	Poletimber Well	15.7	77	51-80	Heavy mortality in older aspen, fir and spruce. Looks like an Aspen stand that was left untouched and transitioned into a fir spruce dominated stand. Few scattered supercanopy white pines. Red maple throughout stand is fair quality.
16	4319 - Mixed Upland Forest	Poletimber Well	7.5	53	81-110	Stand originally clumped with stand 22, made into separate stand because of its composition and also because of its lowland portions. There are scattered relic white and red pines that are providing good seed source throughout. Two lowland spots present which include tag alder and also leatherleaf. Portions are starting to show mortality.
18	42340 - Upland Spruce/Fir	Poletimber Medium	5.2	50	81-110	Balsam fir & black spruce dominated with intermixed aspen and red maple throughout. Previous inventory aged stand at 91, coring dominant species indicates majority age is around 50. Relic pines are scattered in northeast portion with some beginning to die. Unique stand with signs of high wildlife traffic. Is partially within the natural river zone because of its close proximity to Turtle Creek. Access is limited.
19	42201 - Natural White Pine, Mixed Deciduous	Poletimber Medium	11.2	45	81-110	Previously coded as a U-Type, dominated by white pine with a few scattered relic pines and paper birch. There is mortality within the larger overmature aspen. BA is much higher in lower half of stand.
20	42290 - Natural Mixed Pine	Sawtimber Well	2.6	96	51-80	Small natural stand of relic white and red pines. Unique stand, old notes have mention of leaving for diversity and seed source for surrounding areas. Northern portion has thicker understory.
22	4133 - Aspen, Mixed Pine	Poletimber Medium	77.6	48	81-110	Density variable throughout. Pockets of decent quality aspen, white pine and red pine with the rest of the stand having patchy mortality in the aspen. Good white pine establishment in the understory. The NW portion of the stand was turned into its own stand (Stand 16). Old notes from 2008 mention to hold, and in a decade harvest north portion of stand.
23	4130 - Aspen	Sapling Well	22.1	26	Immature	Featured stand is an immature aspen stand with a scattered overstory component of white and red pine. Stand was cut in 1990 and sale specs said to leave all pine. Pockets of white and red pine are merchantable, but could be cut with next harvest. Heavy white pine component along old state road.
25	4130 - Aspen	Sapling Well	42.0	26	Immature	Young aspen stand final harvested in 1990. Quality and density are variable throughout stand having pockets of merchantable and un-merchantable trees. Canopy is close to 75 due to some scattered opening, and majority of larger diameter trees are on the edge.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
26	4130 - Aspen	Sapling Well	96.0	6	Immature	Final harvest completed Dec. 2011. 3 retention islands are present. Immature aspen with intermixed log sized red oak and pine. Some areas are denser than others. Good regen.
27	4130 - Aspen	Poletimber Medium	14.2	45	81-110	Dominated by pockets of fair quality aspen. A few scattered oaks throughout. Northeast portion starts to slope down towards a lowland area. Openings throughout contain open grown red maples, scrub cherry.
28	4130 - Aspen	Sapling Medium	9.7	4	Immature	Stand was cut as part of the Morningside Aspen-Jack Sale in 2014. Patchy in spots but meets minimum stems per acre. Some WP seedling establishment.
29	4133 - Aspen, Mixed Pine	Poletimber Well	32.4	57	51-80	Featured stand is an aspen stand with a large conifer component. Notes from 1998 indicate that the long term management obj for this stand was white pine. Understory is dominated by white pine and balsam fir. Northern portion of stand contains the majority of the white pine. Red maple and aspen are fair quality. NW corner contains large supercanopy white pines (~30" dbh) that seem to be providing a good seed source. A small island of Red Pine is present on the edge near stand 57.
30	42220 - Natural Jack Pine	Sapling Medium	12.4	3	Immature	Stand harvested as part of Morning Side Aspen-Jack sale January of 2015. Sales specs required producer to return and spread dead jack pine debris. Original objective was planted red pine. Flagged stand because there is natural jack pine regen that has came up. Approximately 3 feet in height. Was FTP# 652-401, discussed at compartment pre-review to accept jack pine regeneration that is there and drop the trenching treatment. Leave as is.
31	4130 - Aspen	Sapling Well	6.9	22	81-110	Originally this stand was grouped with stand 78 to the south. Records and imagery show that this stand was harvested in 96 with stand 2 (comp 11) to the east. Sale#520059601 which cut everything east of the powerline. Large supercanopy oaks and white pine present.
33	4130 - Aspen	Sapling Well	9.3	27	Immature	Mixed aspen regeneration created by a final harvest done in 1991. Small lowland influence in northern portion of stand. Southern portion of stand along private is similar composition, however very mature.
37	4131 - Aspen, Oak	Sapling Well	61.9	27	Immature	Immature aspen stand with ~10 B.A Red oak logs. Fair quality stems about 15-20 feet in height. Stand was last cut in 1991.
43	42200 - Natural White Pine	Poletimber Well	18.8	58	81-110	Natural stand of white pine with a minor component of Q. Aspen on edges and R. Maple scattered throughout. Some relic red and white pines in the stand, with a few scattered red oaks. SW portion contains smaller pole sized white pine transitioning to larger diameter pines in the middle. NE portion has the greatest component of aspen.
44	4130 - Aspen	Sapling Well	21.4	17	Immature	Young quaking aspen regeneration 10'-12' in height. Some large white pine and oak left scattered throughout. Final Harvested in 2000, some pocket seem healthier than others.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
46	42201 - Natural White Pine, Mixed Deciduous	Poletimber Well	18.0	60	81-110	Few scattered relic pines providing good seed source throughout stand and adjacent areas. Portions of stand contain lower quality stems. Good white and red pine regen in openings. There is a very small leatherleaf bog in the east half of the stand. Previous inventory says age is 80, cores estimate that dominant age of stand is around 60 years old.
47	4130 - Aspen	Sapling Well	24.9	4	Immature	This stand was cut in January of 2015 as part of the Morning Side Aspen-Jack sale. Unlike stand 30 to the south the objective for this stand is Aspen. Very good regeneration, meets the minimum stems/acre.
49	6122 - Black Spruce	Poletimber Well	5.4	70	51-80	Small, hard to access stand of black spruce & swamp conifer surrounded by marsh & tag alder.
52	6124 - Lowland Spruce-Fir	Poletimber Medium	11.1	75	51-80	Structure and composition very similar to stand 15 to the south. Pocket of aspen and red maple in the northwest corner is starting to become overmature. Access to this area to manage commercially may be difficult.
54	4130 - Aspen	Sapling Well	20.8	6	Immature	OPIC - FMD: This stand was final harvested in Dec.2011. The only retention was a few scattered old relic pine. Immature aspen stand final harvested in Dec. 2011, with only a few relic pines left as retention. Heavy sedge mat present.
56	4130 - Aspen	Sapling Medium	12.2	4	Immature	Stand was cut in 2014 as part of the Morning Side Aspen-Jack sale. Patchy but does meet minimum stems per acre.
59	6112 - Lowland Aspen	Poletimber Medium	10.0	70	51-80	Low volume/value of mature red maple, quaking aspen and balm-of-gilead with mortality throughout. Strips of tag alder in stand indicating wetland soil type. There is a small upland portion in the middle of the stand with oak seedlings and a large conifer component in the understory. Pretty variable throughout. Leave for diversity & retention. It is in close proximity to the North Branch Ausable River which is a designated Natural River.
78	4311 - Pine, Aspen Mix	Sawtimber Well	6.0	64	81-110	This narrow stand is a mixed stand with aspen, oak and pine adjacent to private property. Some mortality in the aspen and oaks. Contains private drives to a few cabins. Survey corners are present on property line. BA is averaging 110. No history on previous management. Looks to be converting to a Pine, Oak stand as aspen is starting to fall out.
84	4119 - Mixed Northern Hardwoods	Poletimber Well	7.3	55	81-110	Small stand adjacent to Emerald Lake, which has the public boat launch and also adjacent to private land. Old notes mention an aesthetically pleasing stand. Composition is a mix of northern hardwoods, bt aspen, and paper birch. Looks like it is on cusp of reaching a log sized stand. Mature aspen seems to be starting to die out, few scattered oaks and natural river buffer does extend into west portion of stand, and a powerline does run through the east side.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
86	4139 - Aspen, Mixed Deciduous	Sawtimber Well	12.7	72	81-110	Aspen stand is adjacent to Emerald Lake access site and the North Branch of the Ausable. Southern portion of stand is in the natural river zone. Other areas of the stand area composed with overmature aspen with intermixed red maple and paper birch with a thick understory of b fir. Southwest portion does contain a few nice oaks. Looks as if it hasn't been touched in a while.
87	6122 - Black Spruce	Sapling Medium	10.7	51	1-50	Old inventory was a lowland deciduous, severe mortality in ash and red maple has led to a transition to a spruce/cedar stand. Few scattered black ash and red maple are still present with paper birch intermixed. Very wet. It is within the natural river buffer due to close proximity to the North Branch of the Ausable.
88	4139 - Aspen, Mixed Deciduous	Poletimber Well	3.5	58	51-80	Unique aspen stand with a thick balsam understory. Very similar to stand 86 to the north, containing mature aspen with intermixed red maple. East side of road contains scattered red oaks with a few cedars near the lowland areas. Stand is inside the natural river buffer zone.
91	4119 - Mixed Northern Hardwoods	Poletimber Well	6.9	60	81-110	Records and old inventory notes say stand origin was 1931. Fairly diverse, thick b fir component near edge of L type. Few scattered relic white pines throughout with other larger oaks, basswood, aspen and maple. Majority of stand is pole sized with pockets of larger log sized trees. Beech is present but very sparse.



Stand	Cover Type	Acres	Managed Site	General Comments:
9	6225 - Bog	1.0	No	Small wetland bog/vernal pond. Old notes mention that it was protected during adjacent harvested in 2011.
11	623 - Emergent Wetland	30.7	No	Wetland on east side of turtle creek. It is within the natural river buffer zone. The stand contains the Poor Fen ERA.
13	6224 - Treed Bog	9.2	No	Sphagnum bog with scattered black spruce and paper birch. Heavy wildlife presence. Part of this stand contains the Bog ERA #18767.
14	122 - Road/Parking Lot	2.6	No	Turtle Lake Rd.
17	622 - Lowland Shrub	7.0	No	Lowland brush / Tag Alder. Next to turtle creek which is a designated natural river.
21	6224 - Treed Bog	2.8	No	Small leatherleaf bog with intermixed spruce and tamarack. Signs of high wildlife traffic.
24	320 - Upland Shrub	204.3	Yes	Part of a burn rotation for wildlife. Areas burned have less composition of aspen and cherry. Pockets of blue stem and sweet fern. Edges have some scattered young white pine due to previous seeding (1998). Crabapple planted 7/1/17.
32	622 - Lowland Shrub	14.7	No	Lowland brush with tag alder and scattered Red Maple, P.Birch and cherry on edges. Stand is adjacent to the North Branch of the Ausable River which is a designated Natural River.
34	320 - Upland Shrub	4.6	No	Contains mostly cherry and pockets of white pine. Aspen is encroaching near the edges.
35	310 - Herbaceous Openland	5.9	No	Pipeline corridor.
38	622 - Lowland Shrub	2.3	No	OPIC - FMD: THIS STAND IS A MARSH NEXT TO TURTLE CREEK. VERY SMALL IN SIZE. STAND IS LOCATED IN STAND 4, IN THE SW/SW SEC. 4. 1/26/98 This stand is nominated for a HCVA due to the proximity to Turtle Creek. Small stand located within stand 4. Lowland shrub with intermixed tamarack, black spruce and white pine on the edges. This stand is apart of the poor fen ERA that encompasses all of stand 11. Also it is within the natural river zone.
45	622 - Lowland Shrub	6.6	No	Lowland shrub dominated by tag alder.
50	623 - Emergent Wetland	16.4	No	Marsh on west side of Turtle Creek. Within the natural river buffer zone.
53	622 - Lowland Shrub	7.5	No	Stand adjacent to Turtle Creek which is a designated natural river. Wet, but edges have thick moss mats.



Stand	Cover Type	Acres	Managed Site	General Comments:
55	500 - Water	10.0	No	This stand is Turtle Creek. It is a designated natural river.
57	320 - Upland Shrub	3.3	No	Upland opening with heavy grass and bracken fern with scattered cherry and white pine.
76	123 - Other High Intensity Urban	3.4	No	DTE owned facility. Corner of Old State and Turtle Lake.
83	500 - Water	2.4	No	Stand is the North Branch of the Ausable which is a designated natural river.
85	622 - Lowland Shrub	8.4	No	Stand borders Emerald Lake and also contains public access to lake. Dominated by Tag Alder.
89	622 - Lowland Shrub	6.4	No	Stand is dominated by lowland tag alder but contains a few very small upland patches composed of oak, red maple and balsam fir. It is adjacent to the North Branch of the Ausable. Some areas are very wet while other pockets seem that they are seasonally wet.
90	622 - Lowland Shrub	1.5	No	Lowland brush, adjacent to North Branch Ausable which is a designated natural river. Old notes mention that this stand should be nominated for HVCA.
419	3102 - Grass	2.4	No	Small opening adjacent to private land.
428	3102 - Grass	4.2	No	Gas well head capped off with an adjacent pipeline.
434	3102 - Grass	4.8	No	Open grassy area with gas well labelled as stand 460. This stand contains a thin strip of red pine on eastern edge along private line.
448	310 - Herbaceous Openland	1.9	No	2008' : Previous plans of plantings were unsuccessful due to poor access across private land. 2018': Possibly an old gas well site, and like previous notes state access difficult.
458	3102 - Grass	1.4	No	Stand was an old gas or oil pad. Used as a landing during harvest in Jan 2015. Was going to be planted to red pine, however adjacent stand is fully stocked with natural jack pine regen. Was FTP# 652-401, but dropped treatment to trench. Future management of planting should be considered if needed.
460	3102 - Grass	1.0	No	Gas well site, #43962, Everest Operating.
461	3102 - Grass	1.7	No	Gas Well site. Everest LLC. Permit #46082
462	3102 - Grass	1.4	No	Gas well site. Everest Operating. Permit #43162
463	3102 - Grass	1.3	No	Everest Gas Well. Permit #43482



Stand	Cover Type	Acres	Managed Site	General Comments:
464	3102 - Grass	0.9	No	Gas well site.
465	3102 - Grass	1.3	No	Enverest Gas well site.
466	3102 - Grass	1.1	No	GAS WELL SITE LOCATED IN STAND 24. Enverest Operating Permit #39046
467	3102 - Grass	1.4	No	GAS WELL SITE LOCATED IN STAND 24. Enverest Operating. Permit #43483
468	3102 - Grass	1.2	No	GAS WELL SITE LOCATED IN STAND 43. Enverest Operating Permit #43484
469	3102 - Grass	1.0	No	Gas Well site located in stand 3. Muskegon Development Co.State Chester D4-4P#44091
470	3102 - Grass	1.1	No	Enverest Gas Well.
471	3102 - Grass	1.1	No	Enverest Gas well. Permit #42436
472	3102 - Grass	1.1	No	Enverest Gas well. Permit #42435
473	3102 - Grass	1.0	No	Enverest gas well.
474	3102 - Grass	1.3	No	GAS WELL SITE LOCATED IN STAND 37. Enverest Operating Permit #48136 State Chester - 69
475	3102 - Grass	1.0	No	Enverest well site.
476	3102 - Grass	1.5	No	Enverest Gas well site.
492	3102 - Grass	1.4	No	GAS WELL SITE LOCATED IN STAND 24. Enverest Operating Permit # 39045