Compartment Review Presentation

Gladwin Forest Management Unit

Compartment 73016
Entry Year 2020
Acreage: 3,836
County Clare
Management Area: Upper Muskegon

Revision Date: 2018-04-30

Stand Examiner: Steve Nyhoff

Legal Description:

T19N R06W; Sections 21-23, 28, 29, and 31-33
T18N R06W; Sections 5-8
T18N R05W; Section 7

Identified Planning Goals:

Vegetation management in the Upper Muskegon management area (MA) (Figure 2.27.1) will provide forest products; maintain or enhance wildlife habitat; protect areas of unique threatened, endangered and special concern species; and provide for forest-based recreational uses. Timber management for this 10-year period will focus on harvesting older jack pine and balancing age class distributions of oak, aspen and red pine. Wildlife habitat management objectives include perpetuating early-successional communities for species adapted to young forests for hunting and other wildlife-related recreation. Expected trends within this 10-year planning period are the need to manage exotic species (especially Phragmites and glossy buckthorn), the need to continue to manage cover types for a balanced age-class distribution and an expected increase in recreation pressure.

Soil and topography:

The compartment has around 34% of well to excessively drained soils, mainly Grayling and Rubicon sand. It has about 29% of somewhat poorly drained to moderately well drained soils which are mainly Croswell and McBride. The balance is poorly to very poorly drained soils which are mainly Roscommon and several muck soils.

The topography ranges from hummocky to rolling terrain. The majority of the topography relief is at the north end of the compartment and the slopes that border the Muskegon River and Norway Creek flood plains.

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

The state ownership is spread out over 13 sections and in three townships. It varies from large, contiguous blocks to scattered parcels.

The private land that surrounds the state ownership ranges from small lots in the City of Temple to parcels of 80 acres or more. Therefore, there is an extensive private/public interface. In addition, the NE of the SW is a 40-acre parcel that has some ownership problems. The records in lots say we own a ½ interest, but the Clare County Courthouse shows it is in private ownership. The private land use is used for permanent and seasonal residences as well as recreational properties.

Unique Natural Features:

There are no records in the compartment. However, there are records of blanding's turtle to the north, goshawk to the north west, wood turtle to the west, eagle and loon to the east.

Archeological, Historical, and Cultural Features:

There are no records, and none were located during the inventory process.

Special Management Designations or Considerations:

None

Watershed and Fisheries Considerations:

The Muskegon River and Norway Creek are both located within the compartment. The Muskegon River is a warm water fishery and a major Michigan watershed. These waterways have an associated floodplain of swamp hardwoods and non-forested wetlands. The land along most of the water course should be considered sensitive for harvesting purposes. The uplands outside the boundary of the floodplains should also be considered sensitive and any treatment should avoid erosion into the floodplains. The Muskegon River and Norway Creek Floodplains and associated bottomlands are seasonally flooded.

Wildlife Habitat Considerations:

The compartment contains a variety of habitat types suitable for many wildlife species. It includes the Muskegon River

drainage and adjacent lowland and upland complexes. These lowlands support various waterfowl, reptiles, amphibians, and their predators including raccoon, coyote, bobcat, mink, and great blue heron. Furbearers including beaver, otter and muskrat use the lowlands as corridors as well as year-round habitat. Upland systems in this compartment make it suitable for early forest successional wildlife species. Majority of the stands are aspen and species such as ruffed grouse, white-tailed deer and American woodcock are quite common. Many bird species stand to benefit from the juxtaposition of lowland and upland habitats present in the compartment. These include, golden-winged warbler, pileated woodpecker, red-headed woodpecker, woodcock and ruffed grouse. The compartment is easily accessible to hunters via M-61, Thornapple Trail and M-115.

Mineral Resource and Development Concerns and/or Restrictions

Sand/gravel pits are not located in the area, but there appears to be some good sand & gravel potential within the compartment. A portion of the compartment is within the Freeman gas storage field and part is within the mostly-abandoned Freeman Redding oil field. Much of the state-owned mineral rights in the area are currently leased. There is unlikely to be further expansion of the gas storage field. There is no known metallic mineral potential in this part of the state.

Vehicle Access:

The access to most of the compartment is good via the county road system and state two-tracks that are in place. There are access limitations located within the flood plain areas of the Muskegon River and Norway Creek.

Survey Needs:

There are records for the needed corners. So, no survey is needed at this time.

Recreational Facilities and Opportunities:

The area receives moderate dispersed camping and hunting pressure, most of which is deer hunters. Light fishing, trapping and waterfowl hunting occurs on Halford Creek and tributaries of the Muskegon River with moderate pressure on the main river. Canoe traffic on the Muskegon River can be heavy on weekends during the summer. A private campground and canoe livery is located directly adjacent the Muskegon River on the north side of M-61.

Fire Protection:

Because of the fractured nature of the compartment it has a high private/wildland interface. Therefore, the fire potential is moderate to high.

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**

Report 1 – Total Acres by Cover Type and Age Class

Gladwin Mgt. Unit **Compartment 16** **Year of Entry 2020**

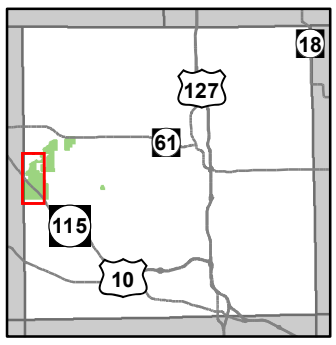
Steve Nyhoff : Examiner

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	181	265	221	269	210	20	0	0	0	28	0	0	0	0	0	0	0	**1194**
Bare/Sparsely Vegetated	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**12**
Bog	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**14**
Cedar	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	**5**
Herbaceous Openland	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**17**
Jack Pine	0	0	0	57	12	8	0	0	0	0	0	0	0	0	0	0	0	0	**77**
Low-Density Trees	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**36**
Lowland Aspen/Balsam Poplar	0	0	7	0	16	4	0	0	0	0	0	0	0	0	0	0	0	0	**27**
Lowland Conifers	0	10	0	37	0	13	45	59	0	72	17	38	5	0	8	0	0	2	**305**
Lowland Deciduous	0	0	0	8	52	0	0	0	0	339	503	3	0	0	0	0	0	12	**917**
Lowland Mixed Forest	0	0	0	0	20	0	13	0	7	0	172	0	0	0	0	0	0	3	**214**
Lowland Shrub	268	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**268**
Marsh	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**31**
Mixed Upland Deciduous	0	33	0	80	0	16	0	4	29	23	7	0	0	0	0	0	0	0	**191**
Natural Mixed Pines	0	0	0	15	0	0	0	0	8	0	0	0	0	0	0	0	0	0	**23**
Northern Hardwood	0	0	0	0	0	0	0	11	6	0	0	0	0	0	0	0	0	0	**17**
Oak	0	0	0	33	0	0	0	12	0	0	0	0	0	0	0	0	0	0	**45**
Paper Birch	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	**10**
Planted Mixed Pines	0	6	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**22**
Red Pine	0	0	47	64	0	0	34	29	57	0	0	0	0	0	0	0	0	0	**231**
Treed Bog	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**15**
Upland Conifers	0	0	0	3	0	0	8	4	0	0	0	0	0	0	0	0	0	0	**15**
Upland Mixed Forest	0	15	0	7	3	15	0	0	0	17	10	0	0	0	0	0	0	0	**67**
Upland Spruce/Fir	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	**9**
Urban	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**39**
Water	39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**39**
Total	**471**	**245**	**319**	**541**	**372**	**276**	**120**	**128**	**107**	**451**	**742**	**41**	**5**	**0**	**8**	**0**	**0**	**17**	**3840**

Cover Type & Treatments Map

Compartment: 16
T19N - R06W Sec. 21-23,28,29,31-33
T18N - R06W Sec. 05-08
County: Clare
Unit: Gladwin
Mgmt Area: Upper Muskegon
YOE: 2020
Acres: 3,836 GIS Calculated
Examiner: Steve Nyhoff
Map Revised: 8/20/2018
Map Phase: Post - Maps



N

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- Remonumented Section Corners
- Field Grade Corners
- Counties
- DNR - Secondary Forest Road
- DNR - Forest Access Route
- Federal / State Highway
- Federal / State / County - Paved Road
- County - Dirt Road (Seasonal)
- Private - Dirt / Gravel Road
- Island in Lake or River
- Lake/Pond
- Perennial River
- Lakes and Rivers All
- Berms
- Gate
- Pipeline
- Compartment Boundary
- Treatments with Site Conditions
- Other Treatment - See Comments
- Clearcut (w/Reserves)
- Prescribed Burn
- Shelter Wood (w/Reserves)
- Opening Maintenance
- Mowing
- 411 - Northern Hardwood
- 412 - Oak Types
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 423 - Other Upland Conifers
- 429 - Mixed Upland Conifers
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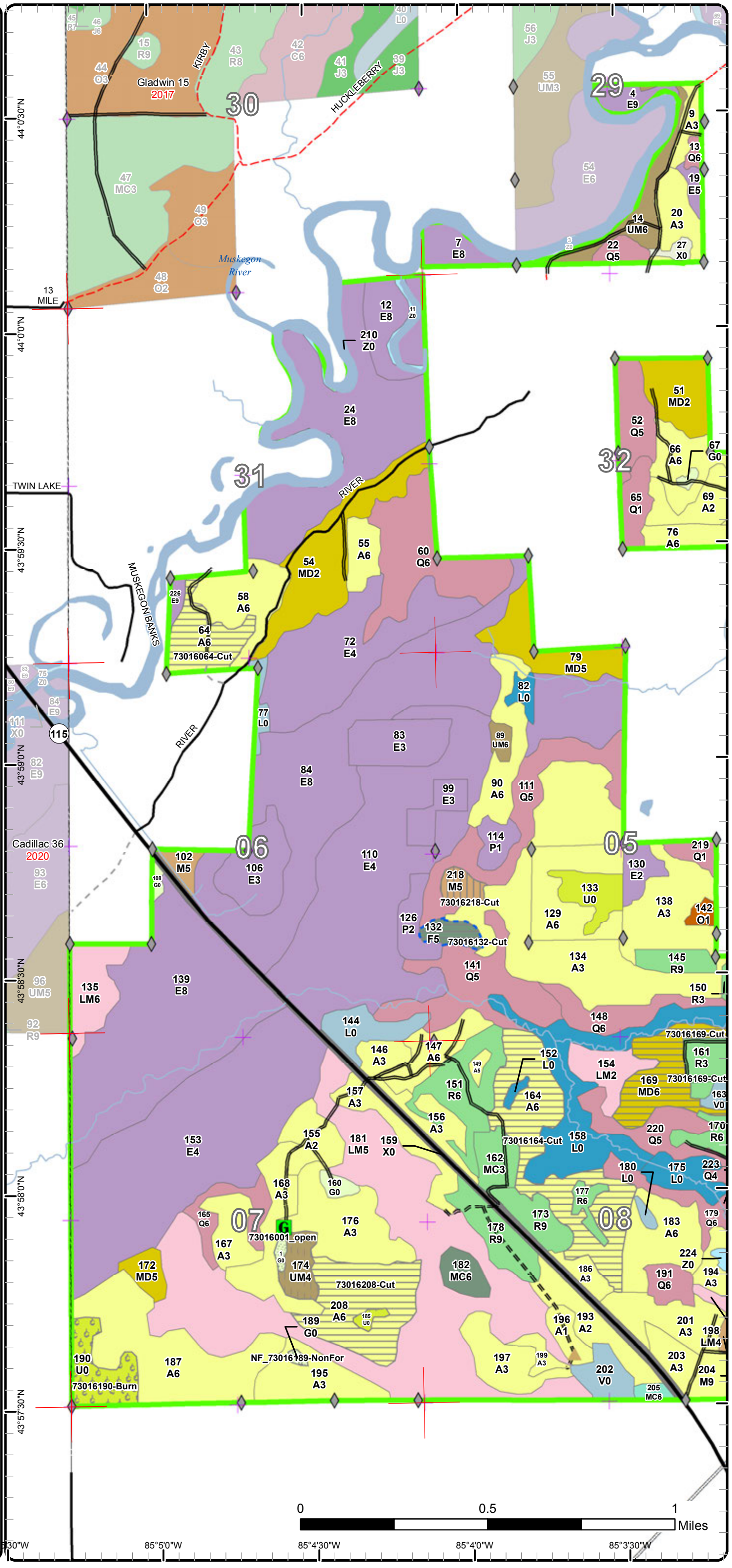
- 122 - Roads/Parking Lot
- 310 - Herbaceous Openland
- 330 - Low Density Trees
- 500 - Water
- 622 - Lowland Shrub
- 629 - Mixed non-forested wetland
- 790 - Other Bare/Sparsely Vegetated
- Lakes



Stand Boundary Map

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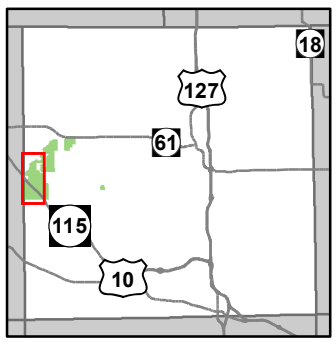

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Special Conservation Areas & Site Conditions Map

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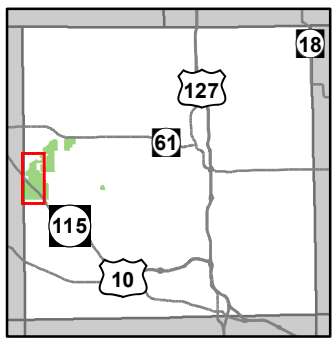

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- Available w/ Constraints
- Unavailable
  - 4A: No Markets Available for these Forest Products
  - 5C: Delay treatment for age/size class diversity or exceptional site quality
  - 1D: Interest Group / Neighbor
  - 2G: Too wet (sensitive soils, does not include access issues)
  - 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
  - 3J: Water quality / BMPs (stream, river, or lake)
  - 5E: Long-Term Retention
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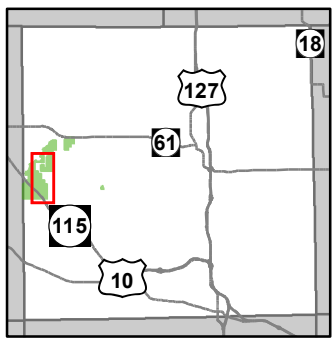

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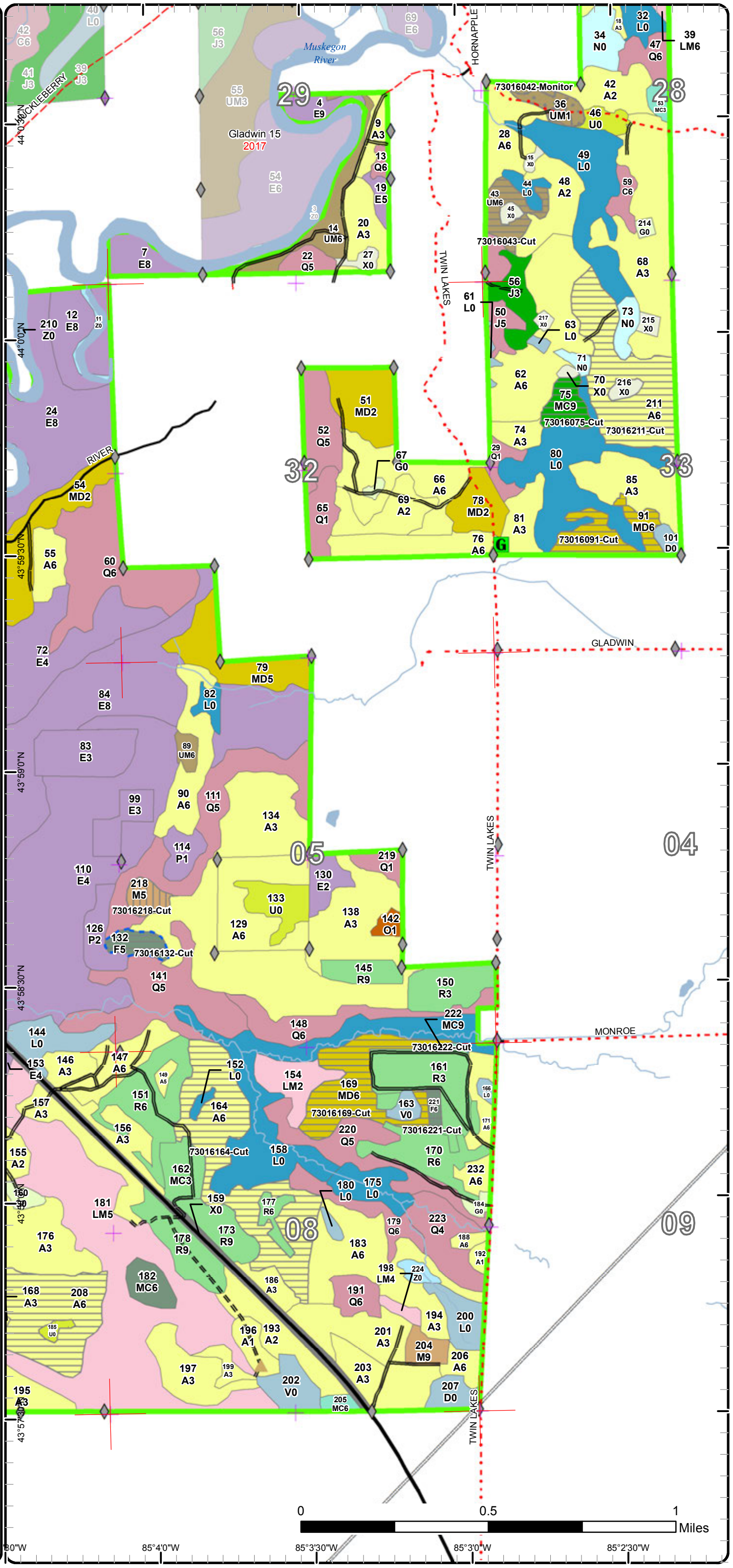

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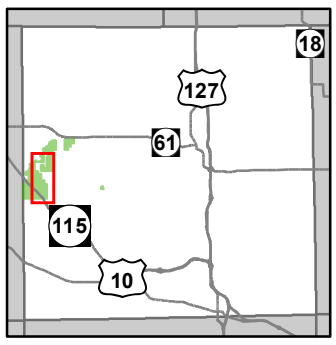

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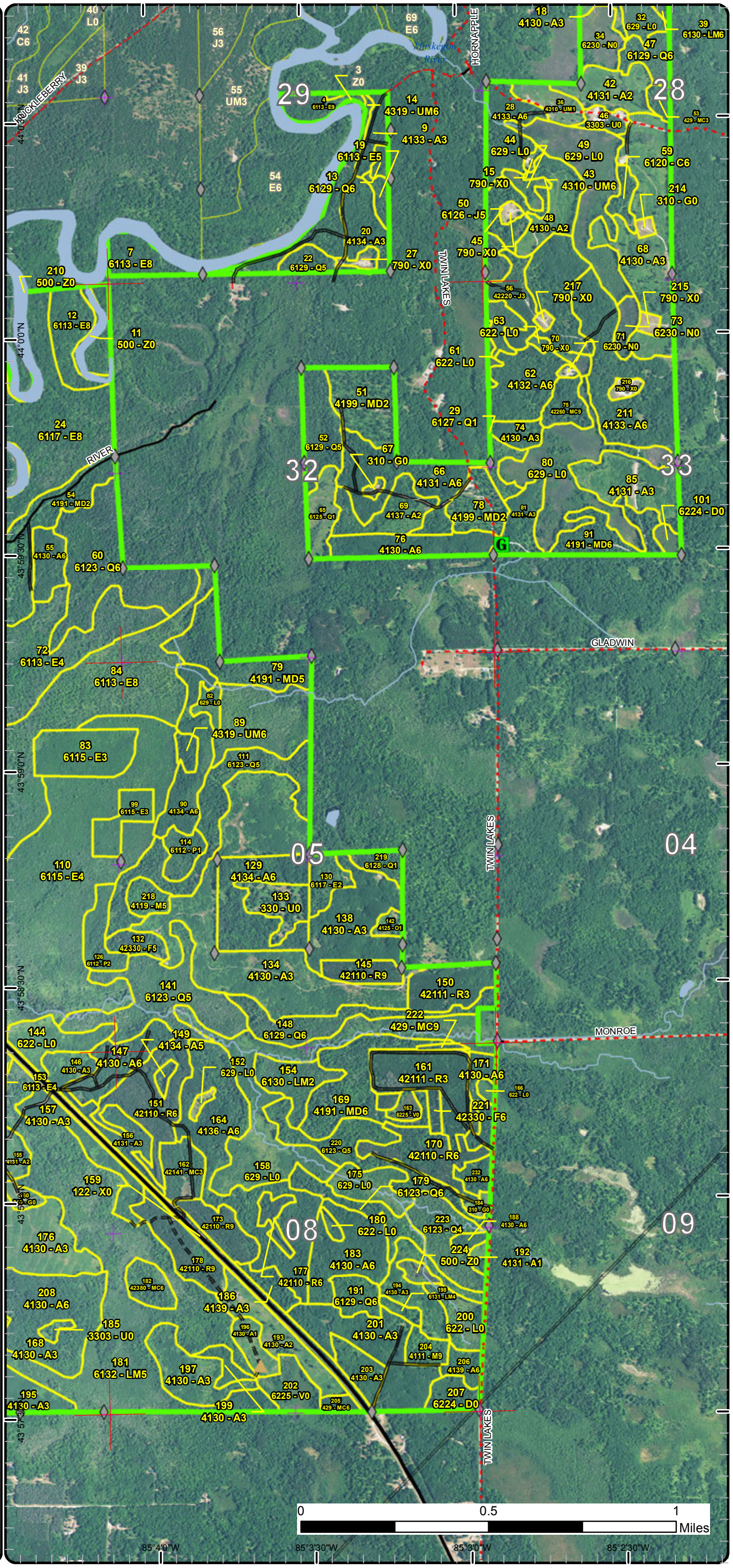

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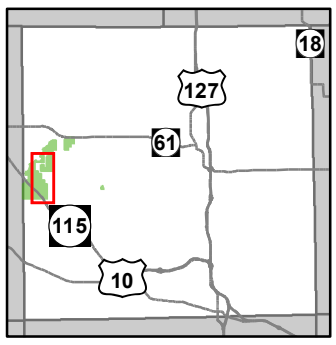

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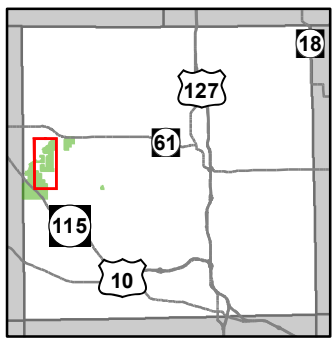

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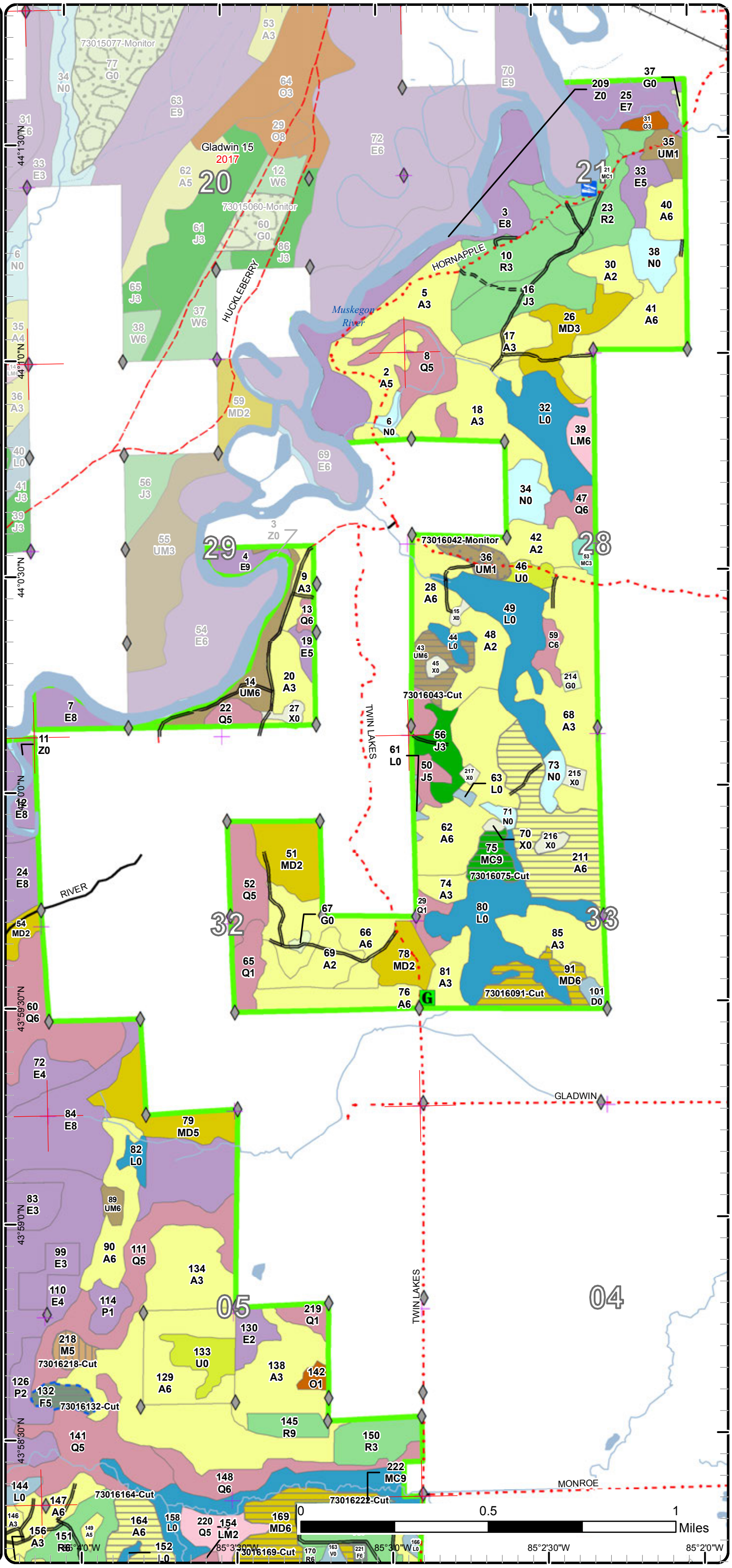

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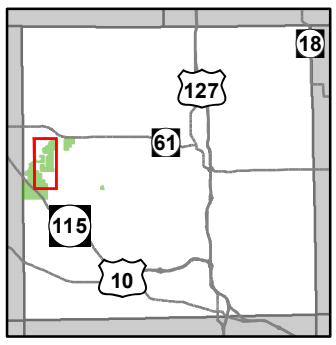

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  - 429 - Mixed Upland Conifers
  - 430 - Upland Mixed Forest
  - 611 - Lowland Deciduous Forest
  - 612 - Lowland Coniferous Forest
  - 613 - Lowland Mixed Forest
  - 310 - Herbaceous Openland
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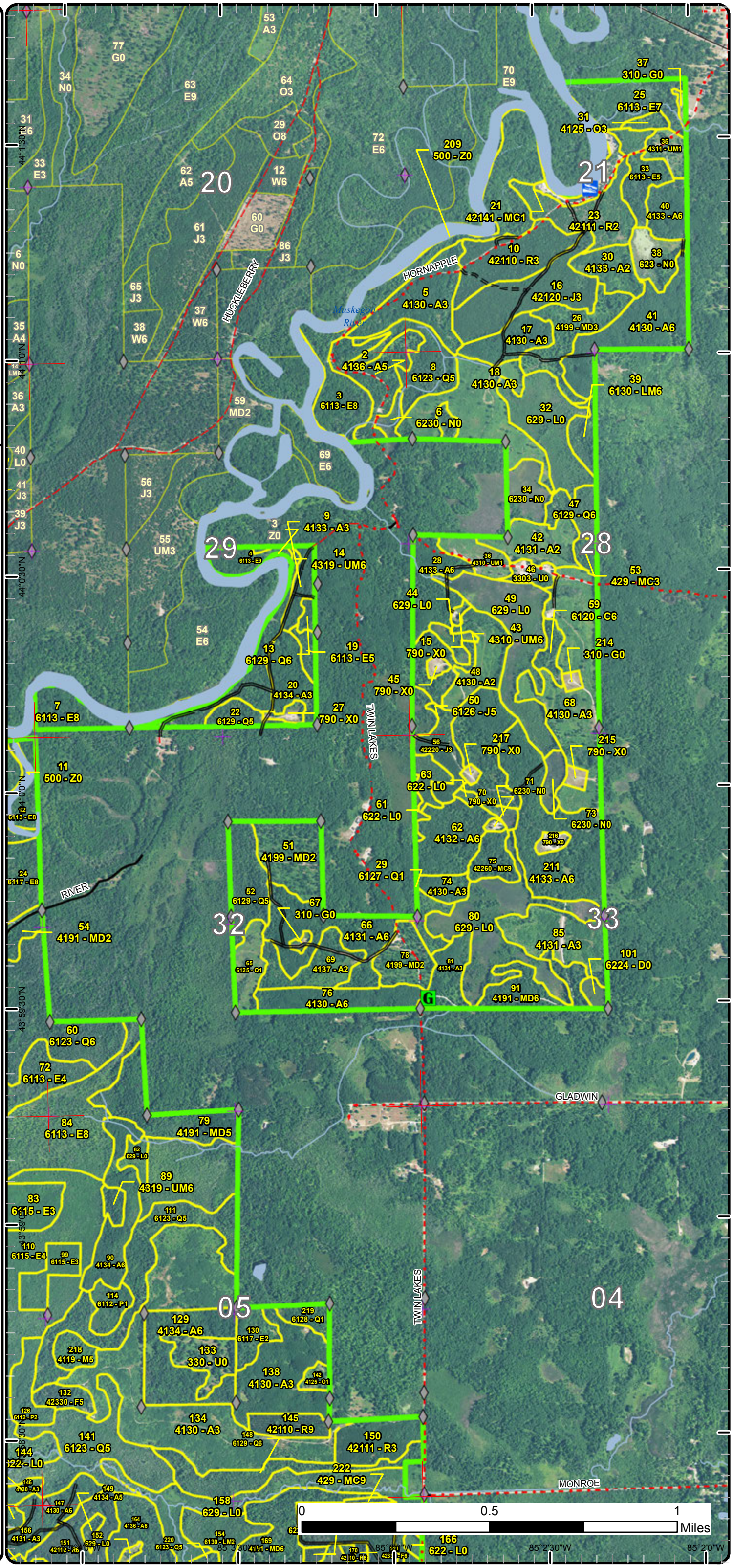
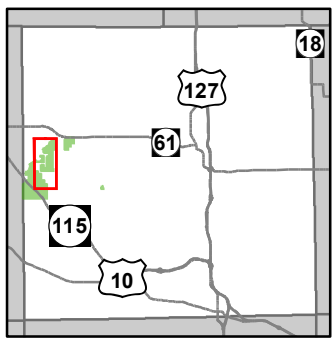
  - 500 - Water
  - 622 - Lowland Shrub
  - 623 - Emergent Wetland
  - 629 - Mixed non-forested wetland
  - 790 - Other Bare/Sparsely Vegetated



Special Conservation Areas & Site Conditions Map

Compartment: 16
T19N - R06W Sec. 21-23,28,29,31-33
T18N - R06W Sec. 05-08
County: Clare
Unit: Gladwin
Mgmt Area: Upper Muskegon
YOE: 2020
Acres: 3,836 GIS Calculated
Examiner: Steve Nyhoff
Map Revised: 8/20/2018
Map Phase: Post - Maps



N

- Miris Corners
- Remonumented Section Corners
- Field Grade Corners
- Counties
- DNR - Secondary Forest Road
- DNR - Forest Access Route
- Federal / State / County - Paved Road
- County - Gravel Road
- County - Dirt Road (Seasonal)
- Private - Dirt / Gravel Road
- Active Railroads
- Intermittent Stream
- Island in Lake or River
- Lake/Pond
- Perennial River
- Lakes and Rivers All
- G Gate
- Boating Access Site
- Compartment Boundary
- Available w/ Constraints
- Unavailable
  - 4A: No Markets Available for these Forest Products
  - 1D: Interest Group / Neighbor
  - 2G: Too wet (sensitive soils, does not include access issues)
  - 3J: Water quality / BMPs (stream, river, or lake)
  - 5E: Long-Term Retention
- Stand Boundaries
- Ecological Reference Areas
- Cold Water Streams
- Cold Water Lakes
- High Priority Trout Stream Buffer

Cover Type & Treatments Map

Compartment: 16
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T18N - R06W Sec. 05-08
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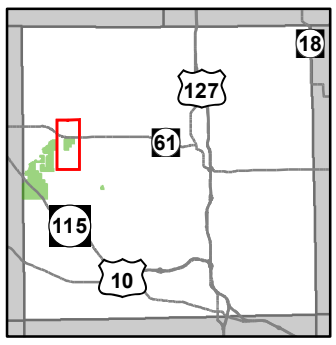

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- 413 - Aspen
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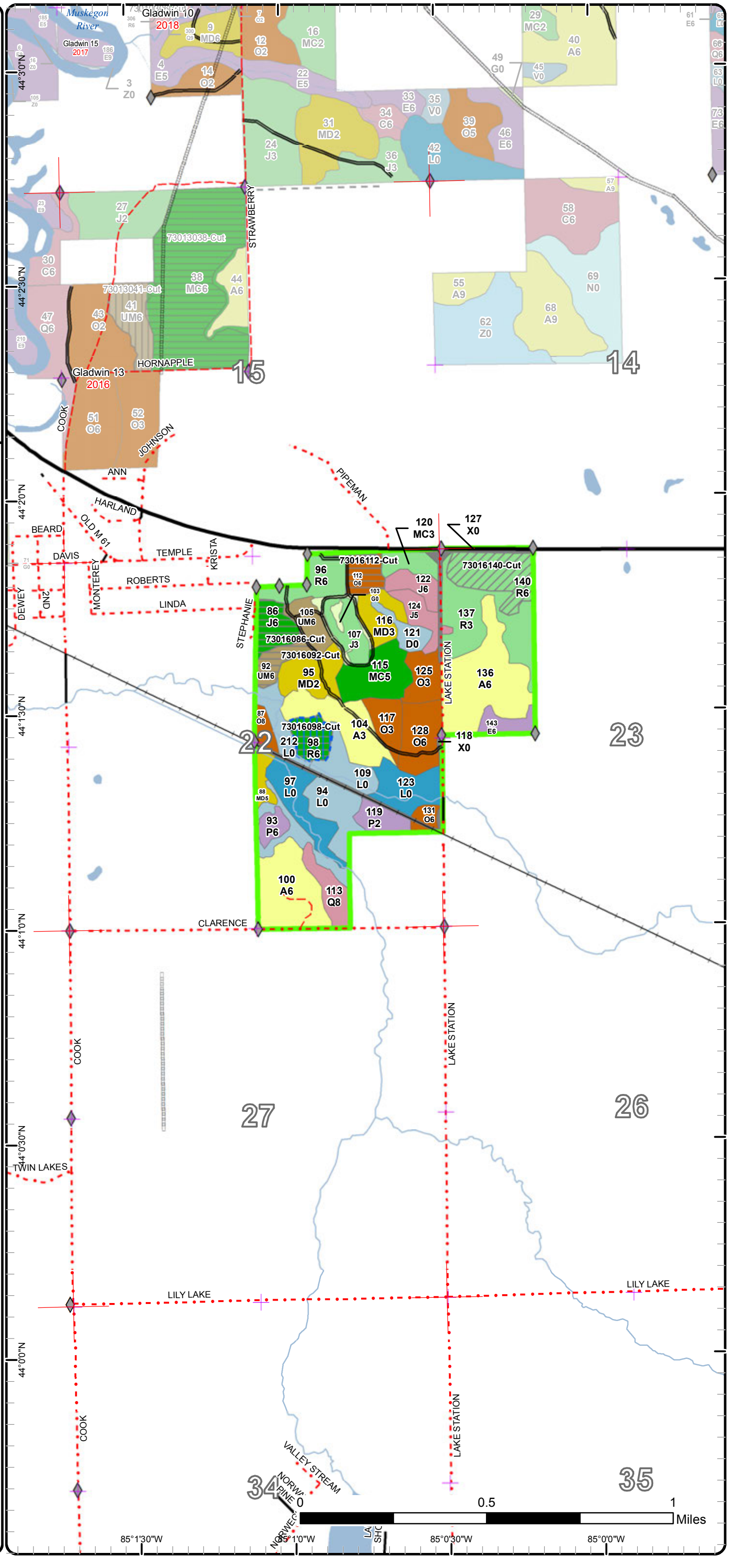
- Lakes



Stand Boundary Map

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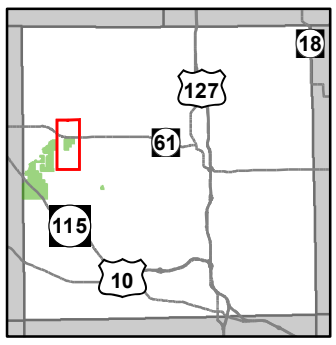

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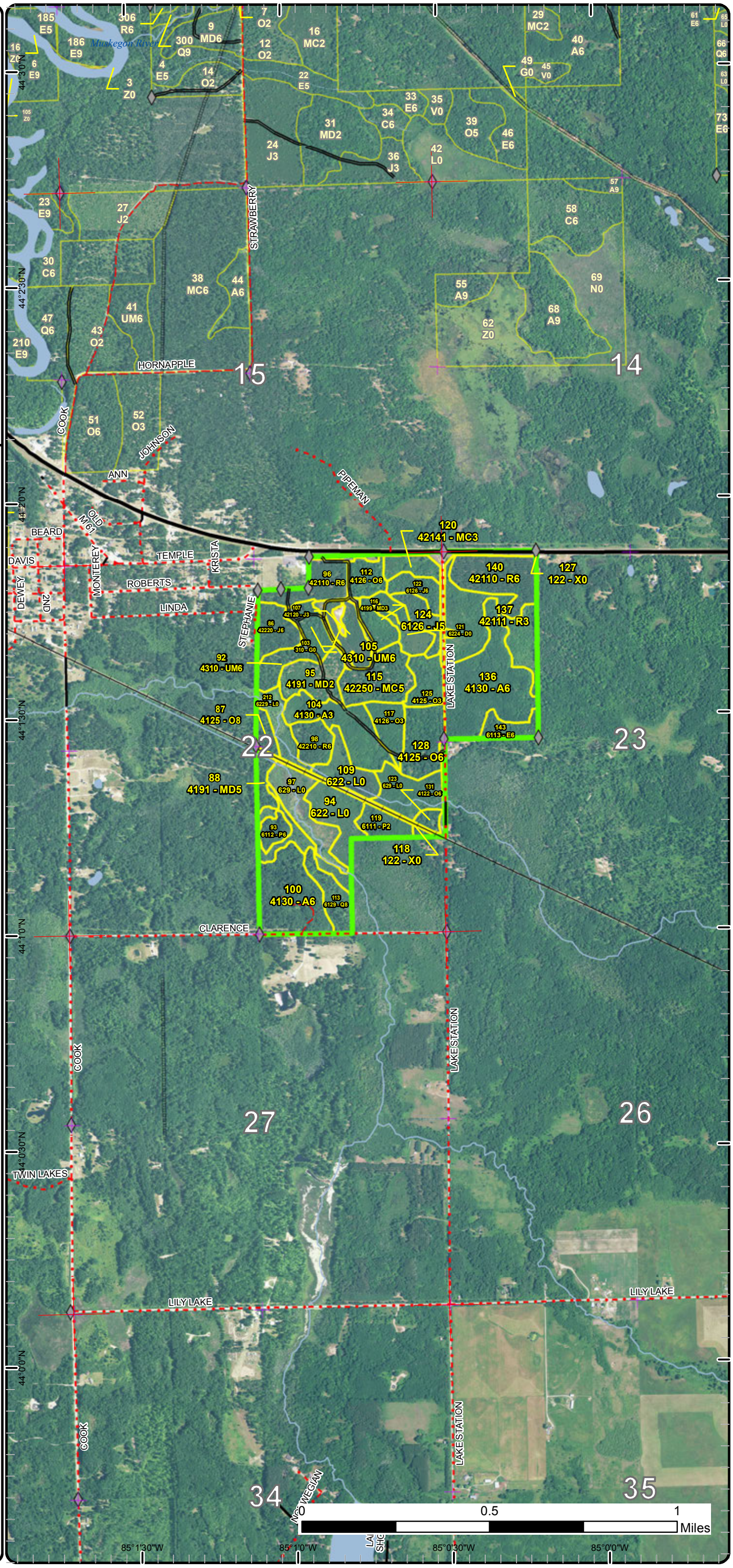

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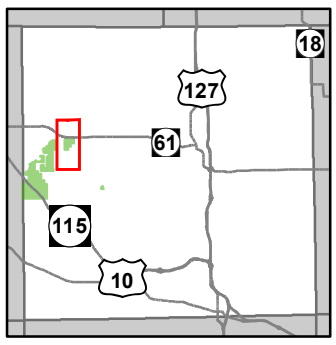

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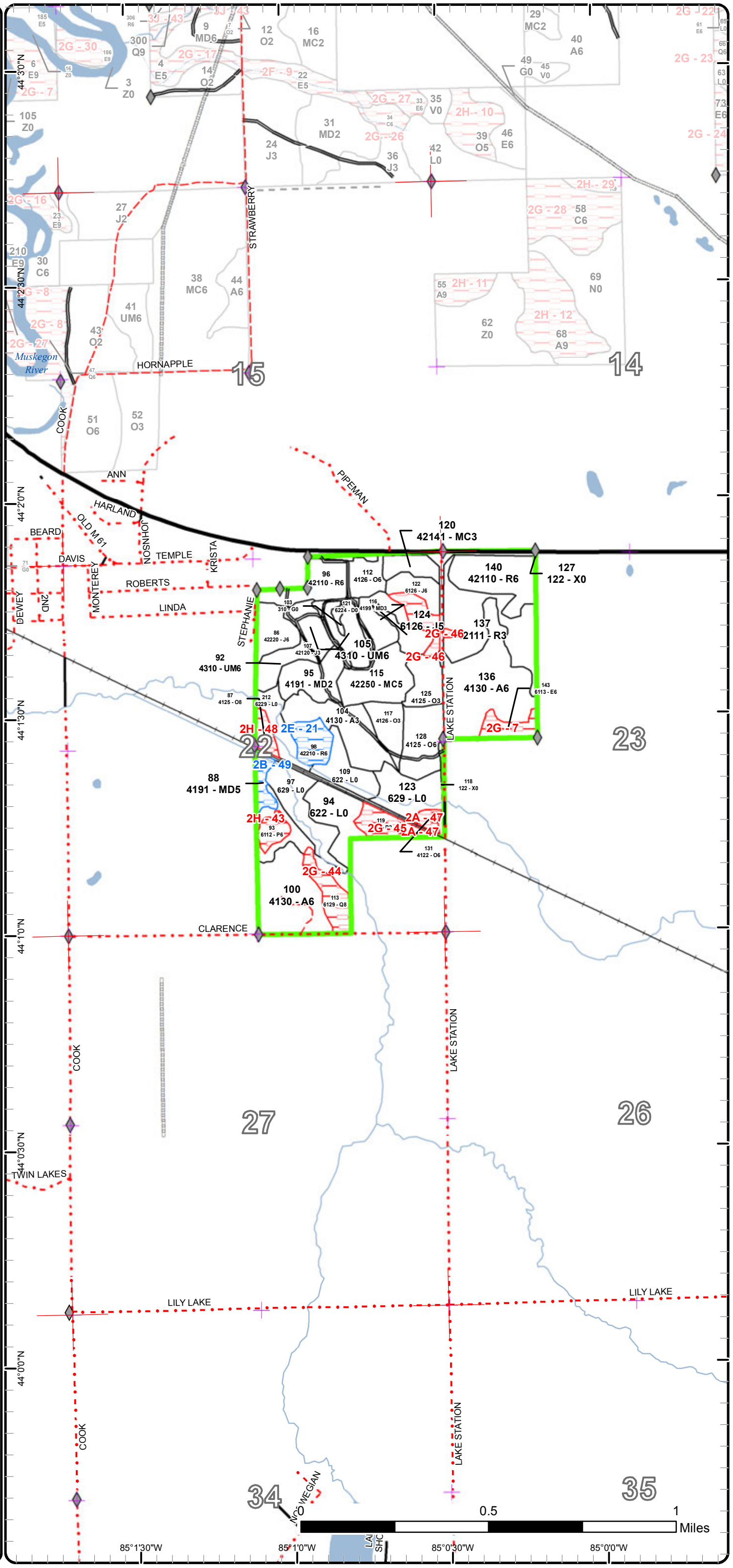
- Perennial River
- Lakes and Rivers All
- Pipeline
- Compartment Boundary
- Available w/ Constraints
- Unavailable
  - 2E: Road needed
  - 2A: Adjacent landowner denied access
  - 2G: Too wet (sensitive soils, does not include access issues)
  - 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
- Stand Boundaries
- Cold Water Lakes



Cover Type & Treatments Map

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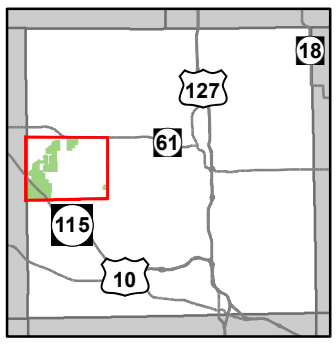

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- Berms
- Gate
- Boating Access Site
- Pipeline
- Compartment Boundary
- Treatments with Site Conditions
- Other Treatment - See Comments
- Clearcut (w/Reserves)
- Prescribed Burn
- Seed Tree (w/Reserves)
- Thinning (Crown, Low, Systematic)
- Regeneration Survey
- Shelter Wood (w/Reserves)
- Opening Maintenance
- Mowing
- 411 - Northern Hardwood
- 412 - Oak Types
- 413 - Aspen
- 414 - Other Upland Deciduous
- 419 - Mixed Upland Deciduous
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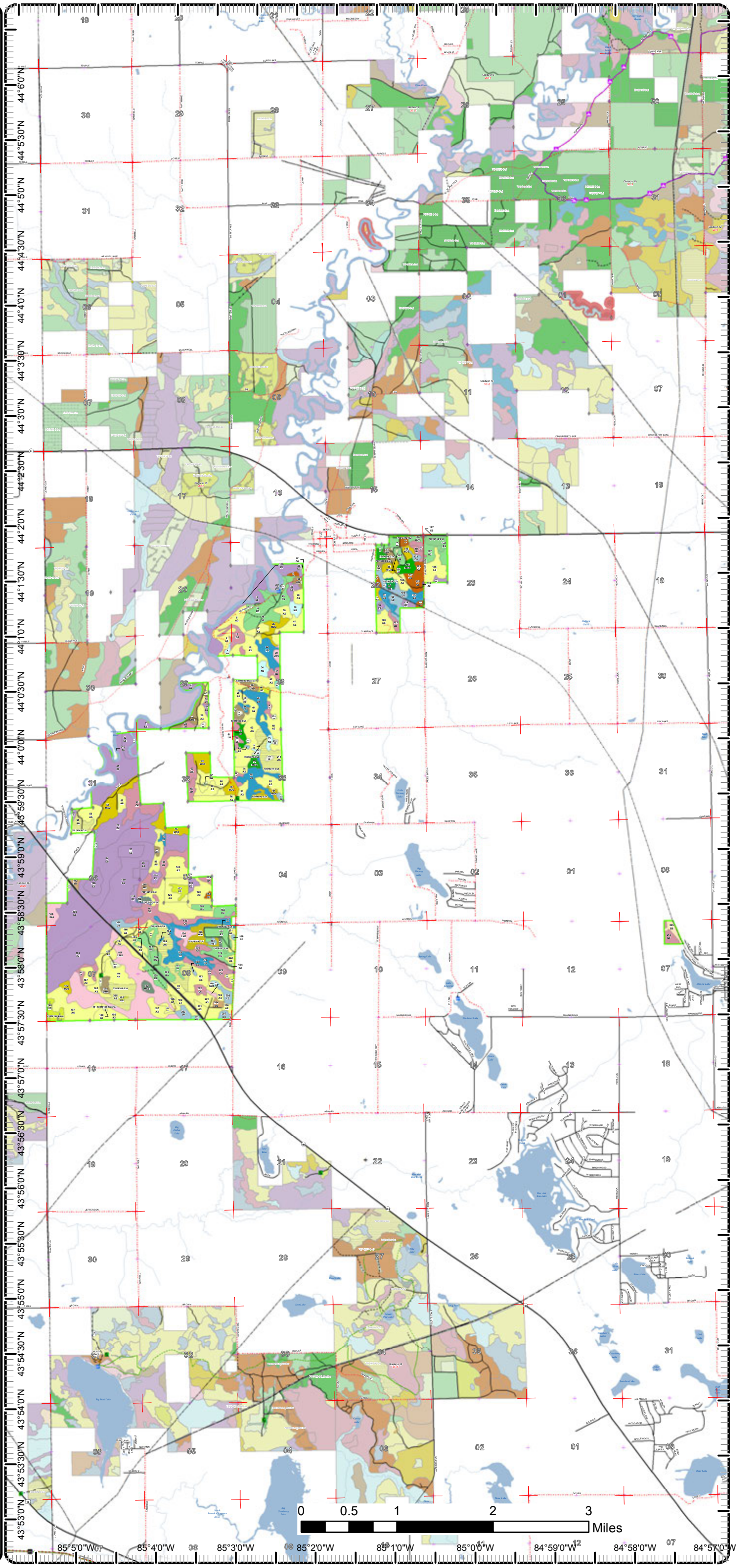

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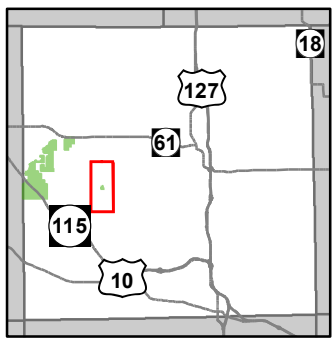

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Stand Boundary Map

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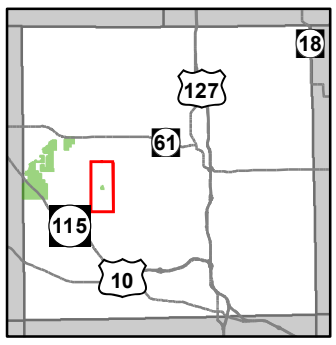

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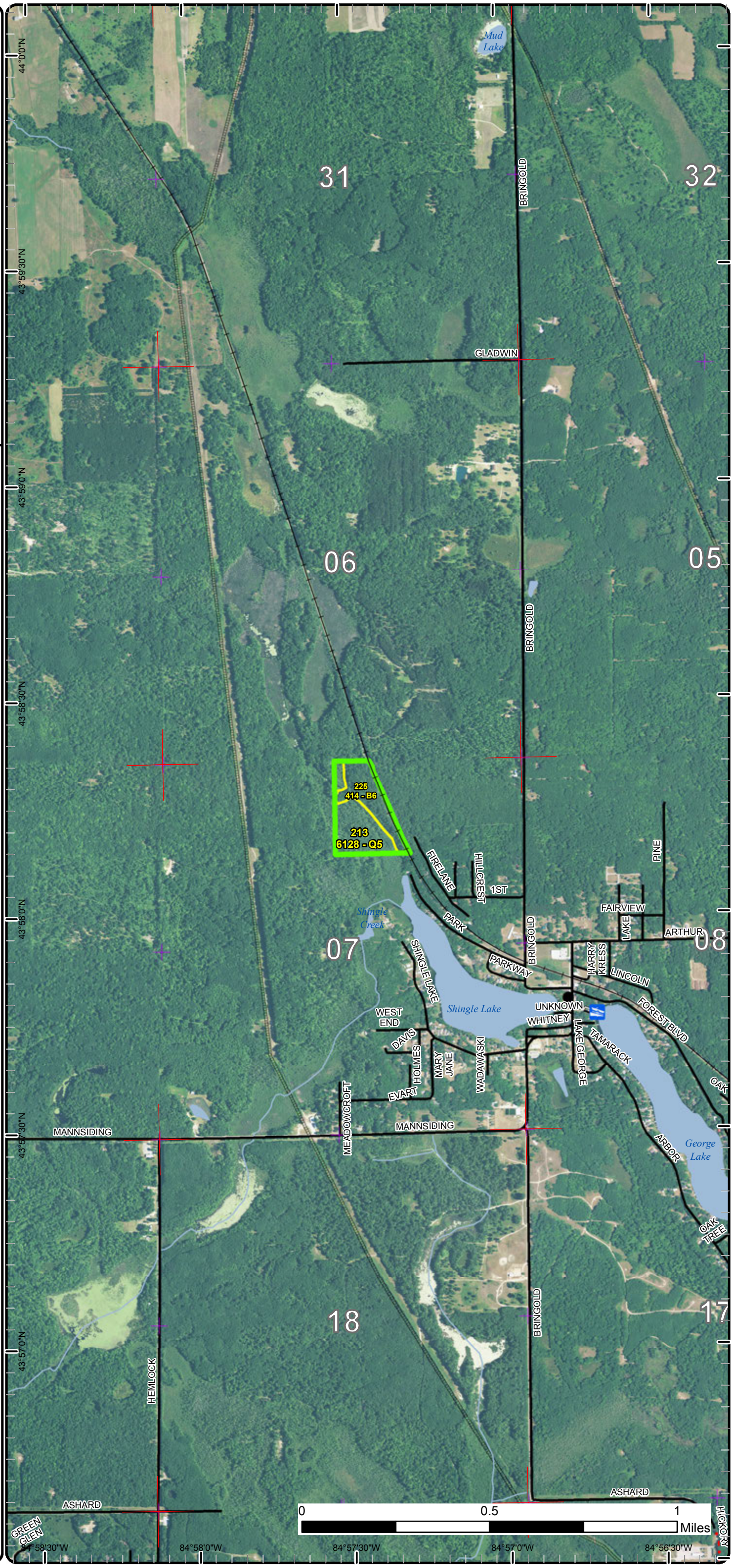

Special Conservation Areas & Site Conditions Map

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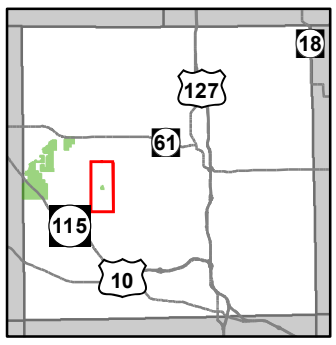

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- Perennial River
- Lakes and Rivers All
- Boating Access Site
- City
- Pipeline
- Compartment Boundary
- Unavailable
  - 2A: Adjacent landowner denied access
  - 2G: Too wet (sensitive soils, does not include access issues)
- Stand Boundaries

Report 2 – Treatment Summary

Gladwin Mgt. Unit

Year of Entry: 2020

Acres of Harvest

Compartment 16

Total Compartment Acres: 3,836

Commercial Harvest - 266

Harvests with Site Condition - 13

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	157	0	0	0	0	0	0	0	0	**157**
Jack Pine	8	0	0	0	0	0	0	0	0	**8**
Mixed Upland Deciduous	45	0	0	0	0	0	0	0	0	**45**
Natural Mixed Pines	8	0	0	0	0	0	0	0	0	**8**
Northern Hardwood	0	0	0	0	6	0	0	0	0	**6**
Oak	6	0	0	0	0	0	0	0	0	**6**
Red Pine	0	0	0	7	0	16	0	0	0	**23**
Upland Conifers	1	0	0	0	0	0	0	0	0	**1**
Upland Mixed Forest	17	0	0	0	0	0	0	0	0	**17**
Upland Spruce/Fir	9	0	0	0	0	0	0	0	0	**9**
Total	**250**	**0**	**0**	**7**	**6**	**16**	**0**	**0**	**0**	**279**

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	279	0	0	0	18	0	8	0	14	**319**
Next Step	0	21	23	0	6	8	295	0	10	**363**
Total	**279**	**21**	**23**	**0**	**24**	**8**	**303**	**0**	**24**	**682**

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
1	73016001_open	1.5	3102 - Grass	Nonstocked	0	Unspecified	NonForestMgt	Mowing	3102 - Grass		Approved Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Wildlife treatment for opening maintenance which may include cultivating, planting of annual cover types, applications of lime, applications of herbicide and mowing.

Next Step Treatments:

Acceptable Regen:

Other Comment:

Proposed Start Date: 6 /5 /2018

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
36	73016042-Monitor	8.0	4310 - Pine, Oak Mix	Sapling Poor	3	Immature	Monitoring	Artificial Regen(3yr)	42110 - Planted Red Pine	Even-Aged	Draft Field Boundary

Habitat Cut: No **Site Condition:**

Prescription Specs: Check the stand for survival of planted red pine in 2019.

Next Step Treatments:

Acceptable Regen: Planted red pine with a mix of natural hardwood regeneration.

Other Comment: Percent to Treat = 100%

Proposed Start Date: 10/1 /2018

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
43	73016043-Cut	10.2	4310 - Pine, Oak Mix	Poletimber Well	97	51-80	Harvest	Clearcut with Retention	4199 - Other Mixed Upland Deciduous	Even-Aged	Approved Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand as a clear cut with retention. The retention should be mark oaks and pines not to exceed 5% of the BA.

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

Acceptable Regen: Moderate or better stocking of aspen mixed with maple, oak, and conifers.

Other Comment:

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
64	73016064-Cut	19.9	4136 - Aspen, Mixed Conifer	Poletimber Well	51	111-140	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Approved Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand as a clear cut with retention. The retentions should be in pockets. The pocket should be placed to protect the low wet ground. In addition, mark some of the XL pines and oaks to be retained. When harvesting include the Ruffed Grouse cutting spec.

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

Acceptable Regen: Moderate or better regeneration of aspen mixed with other decidous and conifers.

Other Comment:

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
75	73016075-Cut	8.1	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	71	111-140	Harvest	Clearcut with Retention	4319 - Mixed Upland Forest	Even-Aged	Approved Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand as a clear cut with retention. The retention should be in pockets or groups of trees not to exceed 5% by BA or area. The marking should favor retention of large diameter red and white pines.

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

Acceptable Regen: Moderate or better stocking of hardwood and conifers.

Other Comment:

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
86	73016086-Cut	8.1	42220 - Natural Jack Pine	Poletimber Well	46	81-110	Harvest	Clearcut	429 - Mixed Upland Conifers	Even-Aged	Approved Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand as a clear cut with retention. Retain red pine at the north end and pockets of trees along stand 92. The stand should be planted to red pine. The soil is Grayling sand.

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

Acceptable Regen: Moderate to well stocking of planted red pine mixed with some oak, aspen, and jack pine.

Other Comment:

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
91	73016091-Cut	16.0	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	45	81-110	Harvest	Clearcut with Retention	4199 - Other Mixed Upland Deciduous	Even-Aged	Approved Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand as a clearcut with retention. The retention should be in groups. Mark some of the XL red and white pine to be retained. When harvesting include the Ruffed Grouse cutting spec.

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

Acceptable Regen: Moderate or better stocking of aspen, maple, and oak mixed with some conifers.

Other Comment:

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
92	73016092-Cut	6.3	4310 - Pine, Oak Mix	Poletimber Well	48	81-110	Harvest	Clearcut with Retention	4319 - Mixed Upland Forest	Even-Aged	Approved Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand as a clear cut with retention. The retention should be in pockets along the drainage. After harvesting the stand interplant with red pine

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

Acceptable Regen: a mixture natural pine, planted red pine, aspen and oak.

Other Comment:

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
98	73016098-Cut	6.7	42210 - Natural Red Pine	Poletimber Well	58	51-80	Harvest	Seed Tree	4319 - Mixed Upland Forest	Two-Aged	Approved Proposal

Habitat Cut: No **Site Condition: Road Needed**

Prescription Specs: The stand could be harvested as a seed tree leaving 10-20 BA. The harvest should be done leaving the branch wood for seed. The access to the stand maybe a problem because the stand is surrounded by wet ground. The best place to access the stand is from the north.

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

Acceptable Regen: moderate to well stocking of mix pine, aspen, maple and oak.

Other Comment:

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
112	73016112-Cut	6.2	4126 - White, Black, N. Pin Oak	Poletimber Well	63	51-80	Harvest	Clearcut with Retention	4199 - Other Mixed Upland Deciduous	Even-Aged	Approved Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand as a clear cut with retention. The retention should be in pockets placed toward the edges of the stand. The stand may need to be burned or herbicides used to control the offsite red maple.

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

Acceptable Regen: moderate stocking of aspen, maple,and oak with some pine.

Other Comment:

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
132	73016132-Cut	6.0	42330 - Upland Fir	Poletimber Medium	69	51-80	Harvest	Clearcut with Retention	429 - Mixed Upland Conifers	Even-Aged	Approved Proposal

Habitat Cut: No **Site Condition: No Markets**

Prescription Specs: Harvest the stand as a clear cut with retention. The retention should be a pocket at the west end.

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

Acceptable Regen: Moderate of better stocking of fir, pine, aspen, maple and oak.

Other Comment:

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
140	73016140-Cut	16.4	42110 - Planted Red Pine	Poletimber Well	59	171-200	Harvest	Low Thinning	42110 - Planted Red Pine	Even-Aged	Approved Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand as a systematic thinning taking the BA down to 110. Harvest the outer 2 rows of the stand along M-61.

Next Step Treatments:

Acceptable Regen:

Other Comment:

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
164	73016164-Cut	55.1	4136 - Aspen, Mixed Conifer	Poletimber Well	43		Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Approved Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand as a clear-cut with retention. The retention should be in pocket and not exceed 5% by area. It should be located to protect sensitive ground. When harvesting include the Ruffed Grouse cutting spec.

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

Acceptable Regen: moderate or better stocking of aspen mixed with some other hardwood and conifers.

Other Comment:

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
169	73016169-Cut	28.5	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	78	111-140	Harvest	Clearcut with Retention	4199 - Other Mixed Upland Deciduous	Even-Aged	Approved Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand as a clear cut with retention. Mark some of the XL white pine, red pine and oak for retention not to exceed 5% of the BA.

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

Acceptable Regen: Moderate or better stocking of asoen, maple, oak, pine, and fir.

Other Comment:

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
185	73016185-NF	1.9	3303 - Mixed Low Density Trees	Nonstocked			NonForestMgt	Brush Cutting	330 - Low-Density Trees		Approved Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Wildlife treatment to control autumn olive by cutting and chemical treatment.

Next Step Treatments:

Acceptable Regen:

Other Comment:

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
190	73016190-Burn	17.8	330 - Low-Density Trees	Nonstocked		Unspecified	Burn	Opening	31022 - Warm Season Grass		Approved Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Burned the stand to maintain the barren feel of the stand. The burn will also stimulate the warm season grasses and control the seeding in of white pine.

Next Step Treatments: Monitoring, Other - Specify

Acceptable Regen: The burn should kill off the seedling white pine and stimulate the warm season grasses.

Other Comment: Too access the burn crane mat may be needed to cross thelow wet ground on the access road.

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
208	73016208-Cut	38.7	4130 - Aspen	Poletimber Well	43	1-50	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Approved Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand as a clear cut with retention. The retention should be in pockets and be placed to protect sensitive soils. When harvesting include the Ruffed Grouse cutting spec.

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

Acceptable Regen: moderate to well stocked aspen with some maple, oak and conifers.

Other Comment:

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
211	73016211-Cut	43.4	4133 - Aspen, Mixed Pine	Poletimber Well	44		Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Approved Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand as a clearcut with retention. The retention should be in pockets and placed to protect the vernal pond. In addition, mark some wolfy oak to be retained. When harvesting include the Ruffed Grouse cutting spec.

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

Acceptable Regen: Moderate to well stocked aspen mixed with some oak, maple and conifers.

Other Comment:

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
218	73016218-Cut	5.8	4119 - Mixed Northern Hardwoods	Poletimber Medium	69	51-80	Harvest	Shelterwood	4199 - Other Mixed Upland Deciduous	Uneven-Aged	Approved Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand as a shelterwood retaining around 40 sq. ft.

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

Acceptable Regen: Regeneration of maple and oak mixed with some conifers.

Other Comment:

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
221	73016221-Cut	2.6	42330 - Upland Fir	Poletimber Well	66	111-140	Harvest	Clearcut	4319 - Mixed Upland Forest	Even-Aged	Approved Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand as a clear cut without retention because of its small size. The branches and tops can be left for seed and habitat.

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

Acceptable Regen: moderate or better stocking of fir, maple, oak, and pines.

Other Comment:

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
222	73016222-Cut	1.2	429 - Mixed Upland Conifers	Sawtimber Well	66	141-170	Harvest	Clearcut	4319 - Mixed Upland Forest	Even-Aged	Approved Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand without retention. The stand is made up of Norway Spruce and Scotch Pine.

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

Acceptable Regen: mix of conifers and hardwoods

Other Comment:

Proposed Start Date: 10/1 /2019

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
174	NF_73016174-NonFor	9.3	4319 - Mixed Upland Forest	Poletimber Poor	43	1-50	NonForestMgt	Brush Cutting	3102 - Grass		Draft Field Boundary

Habitat Cut: No **Site Condition:**

Prescription Specs: Wildlife treatment to control autumn olive by cutting and chemical treatment.

Next Step Treatments: NonForestMgt, Other - Specify

Acceptable Regen:

Other Comment:

Proposed Start Date: 4 /1 /2011

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
189	NF_73016189-NonFor	1.0	310 - Herbaceous Openland	Nonstocked			NonForestMgt	Other - Specify	3102 - Grass		Draft Field Boundary

Habitat Cut: No **Site Condition:**

Prescription Specs: Wildlife treatment for opening maintenance which may include cultivating, planting of annual cover types, applications of lime, applications of herbicide and mowing.

Next Step Treatments: NonForestMgt, Other - Specify

Acceptable Regen:

Other Comment:

Proposed Start Date: 4 /1 /2011

Total Treatment Acreage Proposed: 318.7

Report 4 – Site Conditions

Gladwin Mgt. Unit

Steve Nyhoff : Examiner

Compartment: 16

Year of Entry: 2020

Availability for Management

Total Acres	Acres Available	*Acres Avail With Condition*	Acres Not Available		Dominant Site Conditions									
					2B	***2E***	***4A***	***5C***	1D	2A	2G	2H	3J	5E
1194	1063	***0***	131	**Aspen**					28		87		0	16
12	12	***0***	0	**Bare/Sparsely Vegetated**										
14	14	***0***	0	**Bog**										
5	0	***0***	5	**Cedar**							5			
17	17	***0***	0	**Herbaceous Openland**										
77	63	***0***	15	**Jack Pine**							15			
36	25	***0***	12	**Low-Density Trees**					12					
27	0	***0***	27	**Lowland Aspen/Balsam Poplar**							23	4		
306	19	***0***	287	**Lowland Conifers**							284		0	2
922	13	***0***	908	**Lowland Deciduous**							858		50	
216	24	***0***	192	**Lowland Mixed Forest**							192			
268	268	***0***	0	**Lowland Shrub**							0			
31	31	***0***	0	**Marsh**										
193	159	***11***	23	**Mixed Upland Deciduous**	***4***			***7***			23			
23	23	***0***	0	**Natural Mixed Pines**										
17	17	***0***	0	**Northern Hardwood**							0			
45	39	***0***	6	**Oak**						3		3		
10	0	***0***	10	**Paper Birch**						10				
22	22	***0***	0	**Planted Mixed Pines**										
230	223	***7***	0	**Red Pine**		***7***								
14	14	***0***	0	**Treed Bog**										
15	7	***0***	8	**Upland Conifers**								8		
68	51	***0***	16	**Upland Mixed Forest**							0		16	
9	3	***6***	0	**Upland Spruce/Fir**			***6***							
39	12	***0***	27	**Urban**							27			
39	39	***0***	0	**Water**										
3,846	2,157	***23***	1,666	Total Forested Acres	***4***	***7***	***6***	***7***	39	13	1,515	15	66	18
	56%	***1%***	43%	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**	9	Unspecified	Unspecified	Unspecified	Unspecified

		access issues)					
	Comments:						
2	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	104	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
3	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	39	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
4	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	8	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
5	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	166	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
6	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	20	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						

7	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	5	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
8	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	45	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
9	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	11	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
10	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	20	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
11	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	12	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						

12	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	65	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
13	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	133	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
14	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	4	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
15	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	23	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	2B: Unknown if access through adjacent landowner(s) is possible	Unspecified	Unspecified
	Comments:						
16	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	126	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
17	**Available**	**4A: No Markets Available for these Forest Products**	6	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						

18	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	7	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
19	**Unavailable**	**3J: Water quality / BMPs (stream, river, or lake)**	49	2G: Too wet (sensitive soils, does not include access issues)	2F: Too steep	Unspecified	Unspecified
	Comments:						
20	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	172	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
21	**Available**	**2E: Road needed**	7	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
22	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	145	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
23	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	12	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						

24	**Unavailable**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	8	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
25	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	8	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
26	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	24	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
27	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	13	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
28	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	18	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						

29	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	19	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
30	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	35	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
31	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	10	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
32	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	10	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
33	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	22	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
34	**Unavailable**	**3J: Water quality / BMPs (stream, river, or lake)**	16	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

35	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
36	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	2	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
37	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	17	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
38	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	8	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
39	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	8	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							

40	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	5	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
41	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	7	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
42	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	22	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
43	**Unavailable**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	4	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
44	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	8	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						

45	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	6	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
46	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	6	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
47	**Unavailable**	**2A: Adjacent landowner denied access**	3	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	Unspecified	Unspecified	Unspecified
	Comments:						
48	**Unavailable**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	3	2J: Blocked by Railroad	Unspecified	Unspecified	Unspecified
	Comments:						
49	**Available**	**2B: Unknown if access through adjacent landowner(s) is possible**	4	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
50	**Unavailable**	**5E: Long-Term Retention**	3	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						

51	**Unavailable**	**1D: Interest Group / Neighbor**	39	Unspecified	Unspecified	Unspecified	Unspecified

Comments:
The parcel has an undivided 1/2 interest with a private owner.

52	**Unavailable**	**5E: Long-Term Retention**	2	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

53	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	7	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

54	**Available**	**5C: Delay treatment for age/size class diversity or exceptional site quality**	7	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

55	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	13	2J: Blocked by Railroad	2B: Unknown if access through adjacent landowner(s) is possible	Unspecified	Unspecified

Comments:

56	**Unavailable**	**2A: Adjacent landowner denied access**	10	2J: Blocked by Railroad	Unspecified	Unspecified	Unspecified

Comments:

57	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	3	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

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.
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:
2	4136 - Aspen, Mixed Conifer	Poletimber Medium	19.6	25		The stand was clear cut in 1993. The harvest retained pine < 4" DBH. The stand is transitioning into poles.
3	6113 - Lowland Maple	Sawtimber Medium	49.4	83	81-110	This stand is on the Muskegon River Floodplain, which is bordered by steep slopes. The soils are very wet. The ash in the stand is dead and coming down. The crown closure has dropped to around 60%.
4	6113 - Lowland Maple	Sawtimber Well	7.5	98	51-80	The stand is on the Muskegon River Floodplain. The ash is declining. Most of the ash is dead but there are still some live trees hanging on for now. The mortality has lowered the crown closure to 50-75. There is a lot of down trees.
5	4130 - Aspen	Sapling Well	23.2	25		The stand was clear cut in 1993. It is doing well, and it is currently transitioning into poles.
7	6113 - Lowland Maple	Sawtimber Medium	12.0	101	81-110	The stand is on the Muskegon River Floodplain. The terrain is made up of ridges and swales. The swales are old oxbows. The ash is mostly dead, but there are a few scattered live trees. There is also a trace of beech and hemlock.
8	6123 - Lowland Fir	Poletimber Medium	20.4	89	51-80	The stand is too wet to harvest. It is in a depression with a drainage. The edges are more upland, and the center is lowland shrubs.
9	4133 - Aspen, Mixed Pine	Sapling Well	6.8	24	Immature	The stand was clear cut in 1994. It is mainly uplands, but it does slope down to the river.
10	42110 - Planted Red Pine	Sapling Well	23.3	25	Immature	The stand was clear cut in 1993. It was planted to red pine in 1995. Currently the stand is transitioning into poles.
12	6113 - Lowland Maple	Sawtimber Medium	22.4	94	81-110	The terrain is hummocky and on the Muskegon River Floodplain. The ash in the stand is dead lowering the crown closure to below 75%. There are numerous vernal ponds. Parts of the stand are treatable but overall it is too wet, and it is also blocked by physical obstacles. So, no commercial harvest is possible.
13	6129 - Mixed Coniferous Lowland Forest	Poletimber Well	2.1	30	111-140	The stand is mainly a cedar swamp that is too wet to harvest. There are drains running through the stand. The edge along the private land is dryer. The understory is heavy to balsam fir that is growing up into the canopy. The ash in the stand is dead and coming down. There is also some cedar in the low wet ground that has blown down.
14	4319 - Mixed Upland Forest	Poletimber Well	17.2	89	111-140	The stand is generally uplands but there are numerous drains crossing it. In the drains is where the hemlocks and cedars are located. The edge along the river has a steep slope that goes down to the flood plain of the Muskegon River.
16	42120 - Planted Jack Pine	Sapling Well	28.8	25	Immature	The stand was clear cut in 1993. It was planted to jack pine in 1995. The jack pine has a moderate level of galling.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
17	4130 - Aspen	Sapling Well	12.3	35	81-110	The stand was clear cut in 1987. It is doing well and could be treated. However, hold the stand for at least 10 years. The stand has a good site index.
18	4130 - Aspen	Sapling Well	33.7	6	Immature	The stand is mostly uplands with scattered low wet pockets. It was clear cut 6/2013. The natural regeneration has a variable density. There are open areas with a crown closure of less than 25%. In most of these areas there is a significant number of oak sprouts that are less than 4' tall. Therefore, they are not established but will probably become established in the next 10 years. There are also areas that have a 100% crown closure of mostly aspen. Overall, the crown closure is closer to 75%.
19	6113 - Lowland Maple	Poletimber Medium	3.5	90	51-80	The stand is a drainage and it is too wet to harvest. At one time it was part of a larger stand to the west. When it was harvested the stand was left uncut. It is converting to lowland hardwoods mixed with fir and pine.
20	4134 - Aspen, Spruce/Fir	Sapling Well	13.8	24	Immature	The stand was clear cut in 1994. The balsam fir looks like it was retained. There is a drainage that bisects the stand.
21	42141 - Planted Mixed Pine, Mixed Deciduous	Sapling Poor	6.3	9	Immature	The stand is still heavily disturbed by 4x4 trucks and ORVs. It is a mix of planted and natural regeneration. There is a lot of bare sand.
22	6129 - Mixed Coniferous Lowland Forest	Poletimber Medium	5.4	117	111-140	This is a cedar swamp in the western 2/3 of the stand. It is too wet to harvest. There is also a lot of cedar that has blown down. Balsam fir is filling in. The eastern edge is dryer, but the ground has a high-water table. This area is heavy to white and red pine.
23	42111 - Planted Red Pine, Mixed Deciduous	Sapling Medium	23.5	15	Immature	The stand was clear cut in 2003. It was then planted to red pine in 2003. This was where the "Old "Temple State Forest Campground" was located. The planted red pine is over topped by oak and aspen in about 20% of the stand. In these areas the pine is noticeably suppressed. Where the red pine is equal in height to the oak or jack pine it is doing well.
24	6117 - Lowland Deciduous, Mixed Coniferous	Sawtimber Medium	89.2	97	51-80	The ash in the stand is dead lowering the crown closure to below 75%. Balsam fir is replacing it in most of the stand. The area has a high-water table and there are numerous springs in the stand. In addition, it is on the Muskegon River Floodplain. The uplands are islands that are surrounded by wet ground and the river.
25	6113 - Lowland Maple	Sawtimber Poor	20.1	99	81-110	The stand is on the Muskegon River Floodplain. The Halford Creek bi-sects the stand. The stand is too wet to harvest. The ash in the stand is dead and starting to come down. This has moved parts of the stand to being non-forested, especially along the creek. The crown closure is variable. It goes from less than 25% along the creek to 80% at the north east corner where the fir is located. The stand averages around 50%.
26	4199 - Other Mixed Upland Deciduous	Sapling Well	18.9	25	Immature	The stand was clear cut in 1993. The crown closure of the taller trees is only around 60%. However, smaller oaks have filled in the open areas making the crown closure over 75%. The stand is on a ridge. The north end is sparser and wetter.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
28	4133 - Aspen, Mixed Pine	Poletimber Well	17.4	33		The stand was clear cut in 1985. The terrain is rolling. There is a depression of saw log white pine along the west side. The aspen is common on the ridges and along the east side. Some of the lower ground around the white pine pocket is heavy to oaks.
29	6127 - Lowland Pine	Sapling Poor	5.1	24	Immature	The stand is hummocky. It is about 65% lowlands. The aspen regeneration is scattered.
30	4133 - Aspen, Mixed Pine	Sapling Medium	10.7	15	Immature	The stand was clear cut in 2003. Then it was planted to red pine. However, the red pine is over topped by oak and aspen in about 75% of the stand. The pine is still holding on, but it is suppressed. There are also a couple of wet depressions in the stand.
31	4125 - Black, N. Pin Oak	Sapling Well	2.7	25	Immature	The stand was clear cut in 1993. The regeneration is heavy to oak but there are pockets of aspen and pine. The crown closure is closer to 75%.
33	6113 - Lowland Maple	Poletimber Medium	9.1	83	51-80	The stand is too wet to treat. It is in a swale with several drains running through it. The ash in the stand is dead and coming down. However, balsam fir is filling in. The overall crown closure is closer to 50%.
35	4311 - Pine, Aspen Mix	Sapling Poor	6.5	6	Immature	The stand was shelterwood harvested in 1993. It was than clear cut in 6/2013. The harvest was a 4" spec harvest to release the understory. In addition, some trees in small groups were mark for retention. The stand has a thick layer of oak < 4 foot tall. So, it is not considered established. There is also some scattered regeneration of jack pine, fir and white pine. The overall crown closure of establish regeneration is over 25%. This is expected to increase to > 75% in 10 years as the oak seedlings become established.
36	4310 - Pine, Oak Mix	Sapling Poor	8.1	3	Immature	The stand was clearcut in 6/2013. It was planted to red pine on 4/29/2015, FTP #C73-936. There is good survival of the planted red pine in the upland areas. The survival is lower in the lowlands. The hardwood regeneration is in pockets. Most of the red pine is free to grow.
39	6130 - Fir, Aspen, Maple	Poletimber Well	6.6	76	81-110	The stand is too wet to harvest, for the most part. There is a small area of dry ground along the private line. The stand is heavy to hardwoods along the private land and becomes fir and cedar along stand 32.
40	4133 - Aspen, Mixed Pine	Poletimber Well	10.0	31	1-50	The stand was clear cut in 1987. Overall, the stand is doing well and transitioning to poles. There are conifer pockets at the north and south ends of the stand. These are a mixture of fir and white pine.
41	4130 - Aspen	Poletimber Well	29.9	31	111-140	The stand was clear cut in 1987. The terrain is undulating. There are inclusions of drains and lowland depressions. The stand is currently going through a natural thinning. Therefore, there is a lot of downed wood in the stand.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
42	4131 - Aspen, Oak	Sapling Medium	14.7	6	Immature	The stand was clearcut in June of 2013. The east 1/2 is heavy to aspen and maple. It has a crown closure closer to 100%. The west 1/2 is heavy to oak and pine and has a crown closure closer to 25%. Much of the oak seedlings are less than 4' tall so they are not established. The crown closure should be greater than 50% in 10 years. Overall, the average crown closure is around 50%. There is a small bog in the southeast corner.
43	4310 - Pine, Oak Mix	Poletimber Well	10.2	97	51-80	The Terrain is undulating. The crown closure is variable going from 30 to 100%.
47	6129 - Mixed Coniferous Lowland Forest	Poletimber Well	8.3	28		The stand is too wet to harvest. Much of it is still small poles and saplings. There are some pockets of dryer ground in the western portion of the stand.
48	4130 - Aspen	Sapling Medium	15.6	6		The stand was clear cut in 6/2013. The terrain is generally flat. There are some significant openings. The stand currently has a crown closure around 70%. However, 50%of the oak seedlings are <4'tall so they are not established. Therefore, the crown closure is expected to exceed 75% at the next inventory cycle.
50	6126 - Lowland Jack Pine	Poletimber Medium	10.0	22		The stand is too wet to harvest. In the south 1/2 the over story is dead and jack pine is filling in. crown closure is closer to 50%.
51	4199 - Other Mixed Upland Deciduous	Sapling Medium	20.0	5	1-50	The terrain is undulating. The stand had all the dead oak removed in 1993 Then it was harvested as a shelterwood harvest in 6/2013. The residual BA was taken down to 30 sq. ft. and no one species was eliminated. Much of the oak regeneration is not established being less than 4' tall. The crown closure is closer to 40% but it is expected to increase in the next 10 years. The aspen regeneration is heaviest in the southwest portion of the stand.
52	6129 - Mixed Coniferous Lowland Forest	Poletimber Medium	16.7	90	51-80	The edge along stand 51 has a crown closure near 100%. The western side has a crown closure around 50%. The average crown closure is around 70%. There is a lot of down dead ash. In addition, the portion of the stand along stand 51 is dryer, but it appears to have a high-water table. The terrain is hummocky. Much of the stand is too wet to harvest. Tamarack density is higher in the northern end.
53	429 - Mixed Upland Conifers	Sapling Well	3.1	24	Immature	Clear cut 1994.
54	4191 - Mixed Upland Deciduous with Conifer	Sapling Medium	42.0	25	Immature	The stand was clear cut to 4" DBH in 1993. The south end has wet pockets. The lowlands make up about 15% of the stand.
55	4130 - Aspen	Poletimber Well	9.5	34	51-80	The stand was clear cut in 1984. The lowlands make up about 30% of the stand and consist of drainages. The ash in the stand has died off lowering the crown closure to around 80%.
56	42220 - Natural Jack Pine	Sapling Well	10.9	24	81-110	The stand was clear cut in 1994. The regeneration is fair to good. The crown closure is variable going from 50 to 100%, but in general it is around 80%. The northern portion of the stand is dryer. The jack pine has a moderate to high level of pine-pine gall.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
58	4130 - Aspen	Poletimber Well	24.1	33		The stand was clear cut in 1985. The terrain is undulating with wet depressions. The lowlands make up around 15% of the stand. There are drainages at the north end and along the east side.
59	6120 - Lowland Cedar	Poletimber Well	4.9	94	111-140	The stand is heavy to cedar along the west side. The east side has some upland areas that were not harvested with stand 68. That area has an abandon well site.
60	6123 - Lowland Fir	Poletimber Well	45.1	55	81-110	The ash component of the stand is dead lowering the crown closure to around 75%. The aspen is declining and falling as well. Balsam fir is coming in to replace the ash and aspen. The soil is very wet and mucky. So, a commercial treatment is not viable. In addition, there are drainages that go through the stand.
62	4132 - Aspen, Jack Pine	Poletimber Well	42.3	34		The stand was clear cut in 1984. It is variable in species makeup. The central portion of the stand has a higher concentration of oak and pine. The north and south west end are almost pure aspen. There are lowlands, drains and depressions in the stand making up 15 to 20% of the stand.
64	4136 - Aspen, Mixed Conifer	Poletimber Well	19.9	51	111-140	The stand was clear cut in 1967. There is a lot of down wood. The canopy gaps are filling in with fir. The stand was not cut to the private land along the south side. It has a drainage along the east side and one at the north end.
65	6125 - Lowland Black Spruce, Jack Pine	Sapling Poor	10.1	6	Immature	The stand was clear cut in 6/2013. The terrain is hummocky with areas of standing water in the low spots. The regeneration is variable, it is a little on the low side at the north end being heavy to oak and jack pine. The south end is fully stocked and it is heavy to jack pine and spruce. Overall, the regeneration is moderate and acceptable. There are areas of retention, one is a strip through the center, another is a pocket at the north end, and there is a 4-chain strip along the southern private boundary.
66	4131 - Aspen, Oak	Poletimber Well	29.4	24		The stand was clear cut in 1994. The terrain is undulating. The uplands have good oak regeneration. The aspen regeneration is on the side slopes and in the basins.
68	4130 - Aspen	Sapling Well	47.5	6	Immature	The stand was clear cut in June of 2013. It contains several small inclusions of small grass stands and vernal ponds. Much of the stand is high and dry. However, there are some well-defined drainages that are low and wet. The crown closure is closer to 75%. The stand is sparse along east PVT line and in the south 1/2. The oak is heavier at south end. There is a significant number of oak seedlings that are less than 4' tall so they are not established.
69	4137 - Aspen, Birch	Sapling Medium	15.1	24		The stand was clear cut in 1994. When it was harvested there are areas that were heavily rutted. The west and north sides have a crown closure greater than 75%. The south east end has a crown closure around 20%. The average is around 50%. The terrain is hummocky. The stand is about 40% lowlands.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
72	6113 - Lowland Maple	Poletimber Poor	63.2	96	1-50	The stand has several drainages that braid their way across the stand. Much of the stand is very wet with mucky soils. The ash is dead and coming down opening the canopy. The ground cover is hummock sedge. So, the stand is too wet for a commercial treatment.
74	4130 - Aspen	Sapling Well	5.6	25		The stand was clear cut in 1993. The regeneration is fair.
75	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	8.1	71	111-140	The terrain is hummocky. The lowland makes up about 15% of the stand. The aspen is declining.
76	4130 - Aspen	Poletimber Well	17.0	29		The stand was clear cut in 1989. There is a lot of down wood because of natural thinning. The central portion, near the private line, is wet. Overall, the stand is uplands and it has a crown closure around 80%.
78	4199 - Other Mixed Upland Deciduous	Sapling Medium	12.6	5	1-50	The stand had all the dead oak removed in 1993, then it had a seed tree harvest in 6/2013. The harvest retained around 20 sq. ft. of saw log oak and the oak less than 4" DBH was retained. The maple in the stand has signs of heavy deer browse. The stand has regenerated well and is now fully stocked. Some of the oak seedlings are less than 4' tall so they are not established.
79	4191 - Mixed Upland Deciduous with Conifer	Poletimber Medium	23.0	88	51-80	There are portions of the stand that are too wet to harvest but there are also upland areas. The uplands make up about 60% of the stand. At the east end there is an overmature aspen knob and a significant number of them are on the ground. There is also a lot of fir down throughout the stand which appears to be from wind damage. The terrain is undulating at the east end and undulating to hummocky at the west end. The crown closure is variable. The stand could be habitat cut or it could be cut commercially if access can be gained through the private land.
81	4131 - Aspen, Oak	Sapling Well	11.3	24		The stand was clear cut in 1994. The regeneration is a mix of aspen, red maple and oak. The stem density decreases going south. The maple under story is thick at the north end and it becomes heavy to oak at the south end..
83	6115 - Lowland Ash	Sapling Well	20.4	32	Immature	The stand was habitat cut in 1986 under FTP W73-266. There is significant live ash regeneration along with fir. The amount of regeneration decreases at the west end of the stand.
84	6113 - Lowland Maple	Sawtimber Medium	135.5	89	51-80	The stand is very wet with mucky soil. It cannot be commercially treated. The ash is gone and now only scattered maple sawlogs remain. There is some regeneration of fir and ash, especially along the edges.
85	4131 - Aspen, Oak	Sapling Well	22.1	11	Immature	The stand was clear cut in 2007. It has regenerated well. Along the road the oak density is high. The aspen is well represented throughout the stand. The crown closure is closer to 75% overall. However, it goes below 75% near stand 80.
86	42220 - Natural Jack Pine	Poletimber Well	8.1	46	81-110	The stand is generally flat.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
87	4125 - Black, N. Pin Oak	Sawtimber Medium	3.3	67	51-80	The stand has access issues. There is private land to the west, railroad tracks to the south, and lowland shrub type to the east. The stand is factor limited do to access and small acreage. It is located on a ridge, for the most part. The edges are wet and steeply sloping along the north and east sides. The oak in the stand is declining but there is conifer seeding into the understory.
88	4191 - Mixed Upland Deciduous with Conifer	Poletimber Medium	3.8	67	51-80	The stand has access issues. There is private land to the west, railroad tracks to the north, and lowland shrub type to the east. The stand is factor limited do to access and small acreage. The stand is mainly a ridge with the edges being wetter.
89	4319 - Mixed Upland Forest	Poletimber Well	3.2	34	81-110	The stand was clearcut in 1984.
90	4134 - Aspen, Spruce/Fir	Poletimber Well	20.1	30	81-110	The stand was clear cut in 1988. At the current time it is naturally thinning. There are some inclusions of low wet ground, especially along the east side. There is a drainage that flows through the north end of the stand.
91	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	16.0	45	81-110	The stand is a mix of mature pine with oak and aspen. The oak and aspen are now small poles.
92	4310 - Pine, Oak Mix	Poletimber Well	6.3	48	81-110	The stand is a mix of jack pine and oak.
93	6112 - Lowland Aspen	Poletimber Well	3.6	43		Very low wet stand. Overstory has died out resulting in regeneration. Areas of tag alder. The stand is a knob. The edges are wet.
95	4191 - Mixed Upland Deciduous with Conifer	Sapling Medium	11.0	25	1-50	The stand was clear cut in 1993. The soils change, going from northeast to southwest. The north east ½ of the stand is on droughty Grayling and Rubicon sand. The southwest is a little bit more mesic being on Croswell sand. The crown closure on the Grayling and Rubicon is around 25% and on the Croswell it is around 75%.
96	42110 - Planted Red Pine	Poletimber Well	10.6	59	141-170	The stand was third row thinned in 2003. The rows are narrow being only 10 to 10.5 feet wide. The crowns have closed in. There are some open pockets which are moderately stocked with oak and pine. However, much of the stand has little or no understory. The stand has an average BA of 162 sq. ft. The stand could be thinned down to 110 sq. ft. or seed tree harvested retaining 10-20 sq. ft. or clear cut without retention then replanted to red pine.
98	42210 - Natural Red Pine	Poletimber Well	6.7	58	51-80	The stand is mainly an upland knob. The red pine is concentrated in the west ½ of the stand.
99	6115 - Lowland Ash	Sapling Well	9.7	32	Immature	The stand was habitat cut in 1986 under FTP W73-237. It is very wet.
100	4130 - Aspen	Poletimber Well	22.4	43	81-110	The stand is mostly uplands with a few scattered wet pockets. It has a fair amount of oak in the understory. There are also scattered large diameter oak trees (wolf trees). The terrain is undulating.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
102	4116 - Mixed N. Hardwood - Aspen	Poletimber Medium	5.0	66	1-50	The stand is semi open with areas of trees. The ash that was in the stand is dead. This has lowered the canopy closure to around 50%.
104	4130 - Aspen	Sapling Well	16.9	15	Immature	The stand was clear cut in 2003. The oak and jack pine are more common along the trail. The maple is more common along the drainage and southern edge. The stand has a wet zone along stand 98.
105	4310 - Pine, Oak Mix	Poletimber Well	6.6	23	Immature	The stand is dense with oak regeneration which is mixed with aspen and maple. The terrain is flat.
106	6113 - Lowland Maple	Sapling Well	22.2	32	81-110	The stand was habitat cut in 1986 with FTP #W73-261. The area is lowland overall but there are some uplands. The uplands are small islands that do not exceed 10% of the stand. The ash in the overstory is dead. However, there is a significant amount of live ash in the understory. The crown closure is closer to 75%.
107	42120 - Planted Jack Pine	Sapling Well	7.7	23	Immature	The jack pine was planted in 1995 in an old barrow pit. The jack pine has a moderate level of galls. The pine also has poor form.
110	6115 - Lowland Ash	Poletimber Poor	165.7	91	1-50	The soils are low, wet, and mucky. So, it is not viable for a commercial harvest. The trees in the stand do not get bigger than 5" to 6" DBH before they die off. It has good natural regeneration. The larger ash is dead but there is ash regeneration.
111	6123 - Lowland Fir	Poletimber Medium	35.4	69	111-140	Overall the soils are very wet and mucky. So, a commercial harvest is not viable. There are pockets of uplands along the stand line between stand 111 and 134. The death of the ash has brought the crown closure to below 75%. Balsam fir is filling in where the stand is open.
112	4126 - White, Black, N. Pin Oak	Poletimber Well	6.2	63	51-80	The dead oak was removed in 1993. Currently the stand has a heavy sapling maple under story.
113	6129 - Mixed Coniferous Lowland Forest	Sawtimber Medium	7.8	133	81-110	The south west end of the stand is mainly pole/log. The east edge has a lot of down wood and more young fir. The tamarack in the stand is declining. The ash is dead and coming down. Overall, the stand is too wet to harvest.
114	6112 - Lowland Aspen	Sapling Poor	7.2	18	Immature	The west edge is more of a lowland shrub type. The rest of the stand is low density lowland aspen.
115	42250 - Pine, Oak	Poletimber Medium	14.6	25	1-50	The stand was seed tree harvested in 1993. Currently, the understory is transitioning to poles. The overstory seed trees are not worth removing. They are low quality oaks that are scattered in the stand. The removal of them would cause an unacceptable amount of damage to the understory.
116	4199 - Other Mixed Upland Deciduous	Sapling Well	7.9	25	Immature	The stand was clear cut in 1993. It is a ridge that wraps around a low wet depression. On the upper slopes the stand is heavy to oak and on the lower slopes it is heavy to maple.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
117	4126 - White, Black, N. Pin Oak	Sapling Well	7.2	25	Immature	The stand was clear cut without retention in 1993. It has regenerated well.
119	6111 - Lowland Balsam Poplar	Sapling Medium	5.9	33		The stand is very wet. There are scattered quaking aspen with a tag alder understory.
120	42141 - Planted Mixed Pine, Mixed Deciduous	Sapling Well	5.2	25	Immature	The stand was clear cut in 1993. It was planted with red pine in 1994. The red pine is over topped in about 1/3 of the stand. There are many areas where jack and red pine are co-dominate and doing well together. In the areas where the red pine is over topped the main species is maple and aspen which are taller. The stand has some very wet areas of Loxley/Greenwood mucky peat.
122	6126 - Lowland Jack Pine	Poletimber Well	5.5	35	81-110	The stand is a mix of uplands and lowlands. The lowlands are around 55% of the stand and it is on Loxley/Greenwood mucky peat. The terrain is slightly hummocky.
124	6126 - Lowland Jack Pine	Poletimber Medium	6.2	35	51-80	The stand is made up of poor quality jack pine over tag alder, leather leaf, blueberry, and labrador tea. The stand is too wet to harvest.
125	4125 - Black, N. Pin Oak	Sapling Well	7.6	25	Immature	The stand was clear cut in 1993. There are drainages at the north and south ends. The terrain is undulating to rolling.
126	6112 - Lowland Aspen	Sapling Medium	9.8	31	51-80	The stand was clear cut in 1987. The edge along stand 111 and 132 is upland. However, the lowlands make up about 65% of the stand. The wettest areas are along stand 110. These areas are sparse.
128	4125 - Black, N. Pin Oak	Poletimber Well	12.5	25	1-50	The stand was seed tree harvested in 1993/1994. The harvest retained the white pine and some of the log size oaks. There is good oak regeneration as a result of the seed tree harvest. The volume of the retained overstory is not enough to re-enter the stand. In addition, harvesting the seed trees will result in an unacceptable amount of damage to the understory.
129	4134 - Aspen, Spruce/Fir	Poletimber Well	27.7	93		Ownership issue with this stand. The stand would regenerate well to a mix of aspen, red maple and jack pine and fir if clear cut. The aspen is declining, and it is being replaced by balsam fir. There are some low wet pockets, but they are less than 10% of the stand.
130	6117 - Lowland Deciduous, Mixed Coniferous	Sapling Medium	7.9	25		The stand was clear cut in 1993. There are pockets of wetter ground with sparse regeneration. The terrain is undulating with the swales being very wet.
131	4122 - Oak, Pine	Poletimber Well	2.7	65	111-140	The stand is mostly low quality scrubby oak mixed with balsam fir. Access to the stand is an issue. The south part of the stand is cut off by the rail road tracks and private land. The northern part has a ravine to deal with. So, because of the small acres, poor quality, and access issues the stand is factor limited.
132	42330 - Upland Fir	Poletimber Medium	6.0	69	51-80	The stand is pure balsam fir. It has lots of blow down lowering the crown closure to below 75%. In the open areas fir is regenerating well.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
134	4130 - Aspen	Sapling Well	87.4	11	Immature	The stand was clear cut in 2007. There are some wetter depressions in the stand, but they do not exceed 10%. The terrain is undulating. The density is lower along the conifer stand.
135	6130 - Fir, Aspen, Maple	Poletimber Well	19.6	35	111-140	The stand was habitat cut in 1983. It is a mix of lowlands and uplands. The lowlands make up about 70% of the stand. The ash in the stand is dead and the balsam fir is replacing it in the canopy.
136	4130 - Aspen	Poletimber Well	32.3	44		The stand was clear cut in 1974. It is a mixture of uplands and lowlands. The lowlands make up about 25-30% of the stand from the aerial imagery. There is also a component of conifers mainly in the lowlands. The wet ground appears to be the result of water being perched. The soils probably dry out mid to late summer. The wetness is caused in part by springs along the north edge of the stand.
137	42111 - Planted Red Pine, Mixed Deciduous	Sapling Well	22.8	15	Immature	The stand was clear cut in 2003. It was planted to red pine in 2004. The red pine is over topped in about 25% of the stand. The heaviest competition is in the western ½ of the stand. The lower ground is concentrated in the western ½ of the stand.
138	4130 - Aspen	Sapling Well	30.8	25	Immature	The terrain is undulating. There are pockets of pines, grassy openings, and wet depressions.
139	6113 - Lowland Maple	Sawtimber Medium	126.1	93	51-80	The soils in the stand are low, wet, and mucky. The ash that was in the stand is gone. This has lowered the crown closure to below 75%. The stand is now mostly maple. Norway Creek bi-sects the stand. Because of the wet soils no commercial harvest is viable.
140	42110 - Planted Red Pine	Poletimber Well	16.4	59	171-200	The stand was thinned in 2003. When it was harvested the logger cut two rows and left three. The crowns in double cut rows are not closed up yet. Double cut rows are very wide making the stand very loggable. Continue to manage as a plantation. The regeneration is high in open areas. The current BA is around 210.
141	6123 - Lowland Fir	Poletimber Medium	39.1	84	81-110	The soils are low, wet, and mucky. The ash in the stand is dead. Norway Creek flows through the stand.
142	4125 - Black, N. Pin Oak	Sapling Poor	3.0	25	1-50	The stand is sparse, but the crown closure is now greater than 25%.
143	6113 - Lowland Maple	Poletimber Well	5.1	92	81-110	There are numerous drains and vernal ponds in the stand. Overall, it is too wet to harvest.
145	42110 - Planted Red Pine	Sawtimber Well	8.0	66	141-170	The stand was thinned in 2007. The current BA averages 146 sq. ft. The stand could be thinned again but it would be better to hold 10 years.
146	4130 - Aspen	Sapling Well	6.8	14		The stand was clear cut in 2004. The regeneration is good overall but there are some significant openings. The crown closure is closer to 75%.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
147	4130 - Aspen	Poletimber Well	15.9	43		The stand was clear cut in 1975. It has a trace of white pine, red pine, hemlock and cedar. The hemlock and cedar are located along stand 141.
148	6129 - Mixed Coniferous Lowland Forest	Poletimber Well	19.2	108	111-140	The stand is mainly a cedar/fir swamp with low wet mucky soils. There are some areas of uplands which are mainly a slope along stand 134. The stand becomes fir pole/saplings along stand 158. Overall, it is too wet to harvest.
149	4134 - Aspen, Spruce/Fir	Poletimber Medium	1.9	43		The stand was a habitat cut in 1975.
150	42111 - Planted Red Pine, Mixed Deciduous	Sapling Well	15.6	23	Immature	The stand was clear cut and replanted to red pine in 1995. There is a small inclusion of A3 in the northeast end of the stand.
151	42110 - Planted Red Pine	Poletimber Well	25.2	72	81-110	The stand was thinned in 2005. The current BA is just over 100 sq. ft. There are some scattered balsam fir and maple in the over story at the north end. The understory is filling in with red maple, oak, and pine regeneration.
153	6113 - Lowland Maple	Poletimber Poor	144.7	87		The stand is mostly on the Norway Creek floodplain. The ash in the stand has died out. Maple and fir are more common in the central portion of the stand. The cedar, maple, fir and hemlock are more common along the edges. The soils are low, wet, and mucky. So, overall it is too wet to harvest.
154	6130 - Fir, Aspen, Maple	Sapling Medium	13.1	51	51-80	The stand was habitat cut in 1987. It is slow to regenerate, and it has a low SI. The ash is about 60% dead. The canopy closure is around 50%. The central portion of the stand has a crown closure < 50% and the areas along the edges have a crown closure > 75%. The soils are low, wet, and mucky. No commercial harvest will be viable.
155	4131 - Aspen, Oak	Sapling Medium	13.7	5	Immature	Stand is regenerating well. Scattered open areas. Scattered large white pines.
156	4131 - Aspen, Oak	Sapling Well	11.1	14		Clear cut 2004. Nice mixed stand.
157	4130 - Aspen	Sapling Well	14.7	13	Immature	Clear cut 2005. Excellent Aspen stand.
161	42111 - Planted Red Pine, Mixed Deciduous	Sapling Well	25.0	23	Immature	The stand was clear cut and replanted to red pine in 1995. Overall, the stand is doing well. There is a pocket of scotch pine in the south west corner next to stand 170.
162	42141 - Planted Mixed Pine, Mixed Deciduous	Sapling Well	10.6	23	Immature	The stand was clear cut and replanted to mix conifer in 1995. The scotch pine is galled like jack pine usually is. It is fading out of the stand. The norway spruce is variable in its crown position goes from understory to overstory.
164	4136 - Aspen, Mixed Conifer	Poletimber Well	55.1	43		The stand was habitat cut in 1975. It has about 20% lowlands.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
165	6128 - Lowland Coniferous, Mixed Deciduous	Poletimber Well	11.8	81	81-110	The stand is a low wet Q Type. The ash has died off opening the canopy. Currently the crown closure is a little more than 75%.
167	4134 - Aspen, Spruce/Fir	Sapling Well	12.9	29		The stand was clear cut in 1989. Overall, the regeneration is coming along well. There are some open areas.
168	4130 - Aspen	Sapling Well	22.8	13	Immature	Clear cut 2005. Excellent Regeneration.
169	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	28.5	78	111-140	The stand is an upland ridge that grades down to low wet ground.
170	42110 - Planted Red Pine	Poletimber Well	20.7	66	111-140	The stand was thinned in 2006. Currently the BA is around 125 sq. ft. The terrain is undulating. The central portion of the stand is a depression which is heavy to white pine, maple, and aspen.
171	4130 - Aspen	Poletimber Well	8.3	35	1-50	The stand was clear cut in 1983. The south end is wetter, and it is heavier to quaking aspen. Also, the south end has pockets of very wet ground
172	4191 - Mixed Upland Deciduous with Conifer	Poletimber Medium	6.9	90	81-110	The stand is mainly uplands that grade down to lowlands along stand 153 and 181.
173	42110 - Planted Red Pine	Sawtimber Well	11.4	72	81-110	The stand was thinned in 2005. The residual BA is around 110 sq. ft. It has a pocket of pine beetle in the stand. The pocket contains around 20 trees.
174	4319 - Mixed Upland Forest	Poletimber Poor	9.4	43	1-50	The stand was planted with autumn olive. The fir and aspen are slowly filling in. The olive is surviving in pockets in the openings.
176	4130 - Aspen	Sapling Well	32.0	5	Immature	The stand was clear cut in 7/2013. The sale was Break Up Mix, sale #73-005-12-01. The stand has excellent aspen regeneration. The overall crown closure is a little higher than 75%.
177	42110 - Planted Red Pine	Poletimber Well	4.6	72	81-110	The stand was thinned in 2005. The residual BA is around 110 sq. ft. The stand has a thick understory of maple and oak.
178	42110 - Planted Red Pine	Sawtimber Well	16.1	72	111-140	Thinned 2005. Cruised residual from 2005 was 115 sq. ft.
179	6123 - Lowland Fir	Poletimber Well	11.2	101		The east 1/2 has low wet mucky soils and is not suitable for harvest. The west 1/2 is a transition between uplands and lowlands. So, overall the stand has about 30% uplands. The east end is also where 2 creeks merge. The crown closure goes from 25-100%.
181	6132 - Mixed Lowland Forest with Cedar	Poletimber Medium	172.2	90		The stand has low wet mucky soil. So overall, the stand is too wet to harvest. The ash overstory has died off making significant canopy gaps. There are pockets of cedar, fir, and maple poles along the edges. The open areas go from tag alder to cattails to thick ash and maple regeneration. Fir is also seeding in much of the stand. Two creeks bisect the stand.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
182	42380 - Non Pine Upland Conifer, Mixed Deciduous	Poletimber Well	8.0	58	111-140	This stand is an upland island with wet edges. The lowlands around the stand are very wet.
183	4130 - Aspen	Poletimber Well	24.5	35		The stand was clear cut in 1983. The terrain is hummocky. There is a trace of hemlock in the stand next to stand 191.
186	4139 - Aspen, Mixed Deciduous	Sapling Well	5.6	14		The stand was clear cut in 2004. When it was harvested all the white pine were left and some of the oak were marked to be retained.
187	4130 - Aspen	Poletimber Well	58.0	34		The stand was clear cut in 1984. The lowlands make up about 15% of the stand. The terrain is generally flat with pockets of hummocky ground in the wetter areas.
188	4130 - Aspen	Poletimber Well	2.2	34	51-80	The stand was clear cut in 1984. It gets wetter going west.
191	6129 - Mixed Coniferous Lowland Forest	Poletimber Well	7.7	101		The stand is very low and wet. The terrain is hummocky. The stand is heavy to hemlock.
192	4131 - Aspen, Oak	Sapling Poor	2.2	13	Immature	The stand was clear cut in 2005. The regeneration is poor.
193	4130 - Aspen	Sapling Medium	16.8	4	Immature	The stand was clear cut in 8/2013 with the Break Up Mix sale, #73-005-12-01. The stand has decent regeneration overall but there are some open areas and some of the large oaks were left.
194	4130 - Aspen	Sapling Well	15.5	13		The stand was clear cut in 2005. It has some significant beaver activity.
195	4130 - Aspen	Sapling Well	22.5	13		The stand was clear cut in 2005. When it was harvested a small pocket of red pines were left at west end of stand.
196	4130 - Aspen	Sapling Poor	7.0	4	Immature	Good Regeneration with some open areas. Some large White Pines left.
197	4130 - Aspen	Sapling Well	18.1	13	Immature	Clear cut 2005. Good regeneration. Some large Red Pine.
198	6131 - Hemlock, White Pine, Maple, Birch	Poletimber Poor	2.5	73	1-50	The stand's age taken from stand 204. The stand is a lowland shrub type with scattered trees in it. There is also a buffer of mature trees around the perimeter.
199	4130 - Aspen	Sapling Well	4.2	24	Immature	The stand was clear cut in 1994. It is a nice small aspen stand.
201	4130 - Aspen	Sapling Well	31.4	25		The stand was clear cut in 1993. Some white pines and the hemlock were left.
203	4130 - Aspen	Sapling Well	8.7	14		The stand was clear cut in 2004. It is mostly uplands with some low pockets along M-115. In addition, the white pines were retained.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
204	4111 - S.Maple, Hard Mast Association	Sawtimber Well	5.8	73	81-110	The stand was harvested by selection in 1994. There is a lot of nice sugar maple poles in the understory that are 4" or 5" DBH. The stand needs to be held another 10 years before thinning again.
205	429 - Mixed Upland Conifers	Poletimber Well	2.6	66	111-140	The white pine in the stand looks like it was hand planted.
206	4139 - Aspen, Mixed Deciduous	Poletimber Well	5.4	34	Immature	The stand was clear cut in 1984. It has an area of white pine in the center.
208	4130 - Aspen	Poletimber Well	38.7	43	1-50	The stand was clear cut in 1975.
211	4133 - Aspen, Mixed Pine	Poletimber Well	43.8	44		The stand was clear cut in 1973. It contains several small inclusions of small grass stands and vernal ponds. Much of the stand is high and dry. However, there are some well-defined drainages that are low and wet.
213	6128 - Lowland Coniferous, Mixed Deciduous	Poletimber Medium	12.6	42	Unspecified	Stand was not originally on the state inventory. LOTS had it listed as state ownership, so it was added. Remote call was used. This portion of the parcel is very wet and heavy to swamp conifer.
218	4119 - Mixed Northern Hardwoods	Poletimber Medium	5.8	69	51-80	This is a dryer area of stand 111. It is dry enough to be treated. It has a thick understory of fir.
219	6128 - Lowland Coniferous, Mixed Deciduous	Sapling Poor	5.3	25		The stand is a wet depression. There are portions of the stand that are lowland shrubs. Overall it is too wet to harvest.
220	6123 - Lowland Fir	Poletimber Medium	23.8	68	51-80	The stand is mainly a swale. The terrain is hummocky and too wet to harvest.
221	42330 - Upland Fir	Poletimber Well	2.6	66	111-140	The stand looks like it was planted balsam fir. The crown closure is around 75%. There is significant wind damage to the stand creating canopy gaps. These gaps are seeding in with fir. The ground cover is moss. The stand is higher than stand 163.
222	429 - Mixed Upland Conifers	Sawtimber Well	1.2	66	141-170	The stand is mainly made up of exotic trees.
223	6123 - Lowland Fir	Poletimber Poor	18.1	22	1-50	The ash in the stand is gone. There are only a few scattered live ash trees. Balsam fir is seeding in. The soils are too wet to harvest..
225	414 - Other Upland Deciduous	Poletimber Well	10.3	42	Unspecified	Stand was not originally on the state inventory. LOTS had it listed as state ownership, so it was added. Remote call was used. This portion of the stand is upland. The imagery show the overstory is heavy to deciduous tree with understory of conifers.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
226	6113 - Lowland Maple	Sawtimber Well	2.9	101	81-110	The stand is on the Muskegon River Floodplain. There are numerous springs along the transition zone between stands 57 and 64. The ash in the stand is dead lowering the crown closure to around 75%.
232	4130 - Aspen	Poletimber Well	4.8	35	1-50	The stand was clear cut in 1983. The south end is wetter, and it is heavier to quaking aspen. Also, the south end has pockets of very wet ground

Stand	Cover Type	Acres	Managed Site	General Comments:
1	3102 - Grass	1.5	No	This is a maintained wildlife opening.
6	6230 - Cattail	3.1	No	This stand is a cattail drain.
11	500 - Water	3.9	No	The stand is one of the Oxbows of the Muskegon River
15	790 - Other Bare/Sparsely Vegetate	1.2	No	This stand is a tank battery. It has only one tank.
27	790 - Other Bare/Sparsely Vegetate	2.5	No	The stand is a site for an oil well.
32	629 - Mixed non-forested wetland	25.1	No	The stand is a mixture of cattails, lowland shrubs, and marsh grass. There are scattered balsam firs along the perimeter.
34	6230 - Cattail	10.5	No	The stand is a uniform cattail marsh.
37	310 - Herbaceous Openland	1.2	No	
38	623 - Emergent Wetland	10.3	No	The stand is a beaver pond. The eastern edge is more of a lowland shrub type.
44	629 - Mixed non-forested wetland	3.8	No	The stand is in a depression. It is heavy to lowland shrubs. There are some trees around the perimeter.
45	790 - Other Bare/Sparsely Vegetate	1.7	No	The stand is an oil well pump site.
46	3303 - Mixed Low Density Trees	4.6	No	This stand has a well pump in the east end and a tank battery in the west end. There is some corrosion on one of the tanks. The edges of the stand are forested.
49	629 - Mixed non-forested wetland	33.4	No	The stand is a mixture of cattails with scattered tree pockets and lowland shrubs.
61	622 - Lowland Shrub	1.5	No	
63	622 - Lowland Shrub	1.1	No	The stand is a lowland shrubs swale.
67	310 - Herbaceous Openland	1.2	No	This area is open herbaceous.
70	790 - Other Bare/Sparsely Vegetate	1.0	No	The stand is an abandoned pump site.
71	6230 - Cattail	2.3	No	The stand is mainly cattails with some trees along the perimeter.

Stand	Cover Type	Acres	Managed Site	General Comments:
73	6230 - Cattail	5.0	No	The stand is a uniform cattail marsh.
77	622 - Lowland Shrub	4.2	No	
80	629 - Mixed non-forested wetland	39.6	No	The stand is a mix of cattail, lowland shrubs, and islands of trees.
82	629 - Mixed non-forested wetland	3.8	No	The stand is a mix of lowland shrubs along the perimeter and grass in the center. There are also scattered trees along the perimeter.
94	622 - Lowland Shrub	19.7	No	The stand is heavy to tag alder and dogwood.
97	629 - Mixed non-forested wetland	12.8	No	The stand is very wet with lowland shrubs around the perimeter and the central area is mainly marsh grass.
101	6224 - Treed Bog	2.8	No	This bog has a crown closure approaching 25%. The trees are mainly seedling white pine with some red pine scattered.
103	310 - Herbaceous Openland	3.7	No	The stand is part of a barrow pit and the open ground around it. It is disturbed by ORV and trucks. The portion of the stand surrounded by stand 107 is also use as a firing range.
108	3102 - Grass	1.7	No	The stand is mainly grass with scattered oak trees.
109	622 - Lowland Shrub	8.8	No	The stand has a drainage running through it.
118	122 - Road/Parking Lot	5.1	No	Active Rail Road grade.
121	6224 - Treed Bog	4.7	No	The stand is mainly leather leaf with a trace of Labrador tea. The trees are heavy to white and jack pines. However, there is a trace of birch and red pine. Most of the trees are sapling but there are some poles.
123	629 - Mixed non-forested wetland	11.8	No	The stand has a thick lowland shrub layer. There are some scattered balsam fir and maple in the stand, However, all the ash is dead. Most of the live trees are concentrated in the east ½ of the stand.
127	122 - Road/Parking Lot	6.6	No	This stand is the Right-of-way for M-61 and Lake Station Ave.
133	330 - Low-Density Trees	11.8	No	Ownership issue with this stand. The stand has scattered oak and some pockets of denser jack pine and oak regeneration. However, the crown closure is not greater than 25%.
144	622 - Lowland Shrub	13.1	No	The stand is mainly lowland shrubs. However, the perimeter and the north end is closer to lowland aspen. The main tree species are fir, birch, and quaking aspen.

Stand	Cover Type	Acres	Managed Site	General Comments:
152	629 - Mixed non-forested wetland	1.5	No	The stand is mainly reed grass with scattered white pine, balsam fir, and tamarack.
158	629 - Mixed non-forested wetland	55.6	No	This stand is mainly a river corridor. It is a mixture of marsh grass, water, and lowland shrubs.
159	122 - Road/Parking Lot	27.1	No	M-115 and ROW
160	310 - Herbaceous Openland	3.2	No	This is an herbaceous opening that was used as a landing for stand 176.
163	6225 - Bog	3.2	No	The stand is a leather leaf bog
166	622 - Lowland Shrub	1.6	No	The stand is a lowland shrub depression.
175	629 - Mixed non-forested wetland	11.6	No	The stand was a beaver flooding in the past. Currently the old dam is not holding back much water and it has converted to mixed non-forested wetlands.
180	622 - Lowland Shrub	1.6	No	The stand is mainly lowland shrubs with some scattered trees.
184	310 - Herbaceous Openland	2.2	No	The stand is open herbaceous with an old foundation in it.
185	3303 - Mixed Low Density Trees	1.9	No	The stand is a small opening that was planted with autumn olive. The olive is not doing too well.
189	310 - Herbaceous Openland	1.0	No	This is a maintained wildlife opening
190	330 - Low-Density Trees	17.9	No	This stand has native grasses in it, mainly little blue stem. The stand has the feel of a barrens. The white pine is heavily weevilled. There is hawthorn in the stand. The crown closure is getting close to 25%.
200	622 - Lowland Shrub	10.0	No	This stand is mainly lowland shrubs but there are some trees around the perimeter.
202	6225 - Bog	10.4	No	This stand is mainly leather leaf with some trees in the north west portion.
207	6224 - Treed Bog	6.9	No	The stand has scattered white pine, balsam fir, and tamarack over lowland shrubs and leather leaf.
209	500 - Water	21.0	No	This is the Muskegon River.
210	500 - Water	11.4	No	This is the Muskegon River

Stand	Cover Type	Acres	Managed Site	General Comments:
212	6229 - Mixed lowland shrub	7.1	No	The stand was clear cut in 1993. Then beaver came into the stand and flooded it out after the harvest. The beaver dam is currently breeched, and it is not holding much water. However, the water was held long enough to convert the stand to mixed non-forested wetlands. The perimeter is heavy lowland shrubs while the central portion is heavy to cattails and marsh grasses.
214	310 - Herbaceous Openland	1.4	No	The stand is an oil well platform
215	790 - Other Bare/Sparsely Vegetate	1.9	No	The stand is an oil well platform. There is PVC pipe and a plastic cover to the south of the road as it enters the stand.
216	790 - Other Bare/Sparsely Vegetate	2.4	No	This area is a tank battery
217	790 - Other Bare/Sparsely Vegetate	1.2	No	The stand is an oil well platform
224	500 - Water	2.9	No	This is a beaver flooding.