Compartment Review Presentation

Gladwin Forest Management Unit

Compartment 73004
Entry Year 2017
Acreage: 3,396
County Clare
Management Area: Upper Muskegon

Revision Date: 2015-06-02

Stand Examiner: Steve Nyhoff

Legal Description:

T20N R4W, Sections 4-8, 16-18.
T20N R5W, Sections 1, 12, and 13.

Identified Planning Goals:

The compartment has a variety of covertypes ranging from non-forested wetland and swamp hardwood in the low lying areas to pines, aspen, oak and open herbaceous on the upland areas. There is a fair amount of diversity in the compartment that should be maintained so continue to manage the compartment for the current covertypes.

Soil and topography:

The terrain in the area is generally flat. However there are some moderate topography changes near Haskell Lake, the Muskegon River, and in sections 7, 18, and 13. The major upland soil types are Grayling and Graycalm associations. The lowland soil associations are mainly Lupton, Markey and Tawas mucks in the marshes and lowland shrubs stands and Wheatly and Winterfield-Evart association on the river flood plains.

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

There are some private in-holdings including residencies and/or cabins within this compartment. To the north of this compartment is mainly State forest land in Roscommon County. To the west is mixed private and State ownership including the town of Leota. To the south and east is mixed State and private holdings.

Unique Natural Features:

This area has the potential to provide habitat for a wide variety of sensitive wildlife and vegetation including red-shouldered hawk, loons, eagles, osprey, Kirtland's warbler, goshawk, Blanding's turtle, wood turtle, eastern box turtle, spotted turtle, great blue heron rookery, and round pigtoe (mussel). It also has potential for beak grass and broad-leaved puccoon in stands that are along the Muskegon River.

There are records of a poor quality pine barrens in section 7 and an old record of massagauga in section 13.

Archeological, Historical, and Cultural Features:

There are several old foundations and homestead openings throughout this compartment.

Special Management Designations or Considerations:

The boundaries of compartment 4 have been modified to put the critical KW habitat into compartment 9 and 10.

Watershed and Fisheries Considerations:

The Muskegon River bisects the North West portion of this compartment and Townline Creek bisects the north east portion of this compartment. The north half of Haskell Lake and the Rice Pond are also within this compartment.

Wildlife Habitat Considerations:

There is a mixture of pine, oak, and aspen cover types intermixed with bogs, marshes, ponds, and lowland hardwoods which makes this compartment great for deer, grouse, and waterfowl hunting as well as bird watching. Townline Creek provides adjacent wetlands and lowland hardwood timber types with many good deer yarding areas.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of ice-contact outwash and glacial outwash sand and gravel and postglacial alluvium. The glacial drift thickness varies between 400 and 600 feet. Beneath the glacial drift are the Jurassic Red Beds and the Pennsylvanian Saginaw and Grand River formations. The Saginaw Formation is used for clay/shale in other areas of the state. An active gravel pit is located in Section 7 (possible trespass onto State land), and potential is good on the uplands. Cranberry Lake Field is located to the west of the compartment. It is a gas storage field and also has secondary oil recovery operations. None of the compartment is under lease at this time. There is active leasing immediately to the north in Roscommon County.

Vehicle Access:

Overall, access throughout this compartment is relatively extensive. Several county roads bisect the compartment and there

are two track roads throughout. The roads that are in place seem to be causing minimal environmental impact. Several RDR have been initiated and completed around Haskel Lake to address the problems mentioned in the narrative for the last YOE.

Survey Needs:

Much of the compartment had corner replaced or put in over the last 10 years, currently there are good corner records and survey information throughout the compartment.

Recreational Facilities and Opportunities:

The Leota snowmobile trail and the ORV trail run throughout this compartment and north into Roscommon and Missaukee Counties. The Leota ORV Trailhead and scramble area are in place just to the east of the Jonesville Bridge in section 1 of T20N R5W.

Focus retention pockets or clusters along or near trail. Ensure logging activity does not obliterate the designated trails by limiting the number of crossings. All stumps within 20 feet of the trail shall be Flush-Cut to ensure stumps do not result in unsafe conditions.

Assure 'logging ahead' warning signs are placed on the designated trails and main access roads during logging activity.

Ensure designated trails signs, post and directional markers are protected.

If harvest activities occur during the snowmobile season of December 1 thru March 31 a snow bed must be preserved.

Placement of material on the trail due to icy conditions will need to be approved by the department.

Remove logging activity warning signs when completed

Fire Protection:

This compartment is in the Zone 4 dispatch area. Some suppression concerns include overgrown and narrow roads in areas, potentially explosive pine fuels, and the Muskegon River bisects an area in the NW corner of the compartment with the only usable bridge being in Leota. As mentioned before ORV use is heavy within this compartment, this poses a fire threat as users may start dispersed camping fires and illegal ORV's with no spark arrestors have the potential to start several dispersed fires.

Additional Compartment Information:

There continues to be a problem with stand 43 which on the imagery looks to still be an undesignated ORV scramble. This will need to be addressed. Some possible options suggested last YOE are: officially designating the area as a scramble area and ensuring that vehicles are kept back from the river and BMP and safety hazards are addressed: making this area into a designated camp ground as the area is heavily camped by ORV users; and another option would include closing the area to ORV use and doing a restoration project to limit ORV use to the trail system itself.

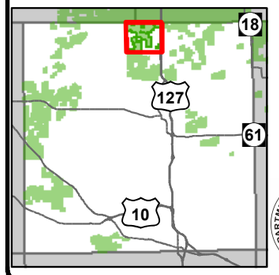
The following reports from the Inventory are attached:

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

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

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

Cover Type & Treatments



N

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T20N R05W 01,12,13
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YOE: 2017
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Examiner: Steve Nyhoff
Map Revised: 6/11/2015
Map Phase: Pre-Review

0 0.5 1 Miles

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- Field Grade GPS Corners
- Miris Corners
- Highway
- County Paved Roads
- Paved Roads
- County Gravel Roads
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- Poor Dirt Roads
- County Poor Dirt Roads
- Parking Lot
- Trailhead
- Rivers
- Lakes
- Powerline

Treatments
- Selection (Group, Single Tree)
- Clearcut (w/Reserves)
- Prescribed Burn
- Regeneration Survey
- Havest, Overstory Removal
- Mowing
- Thinning (Crown, Low, Systematic)
- Seed Tree (w/Reserves)

Forest Covertype
- 411 - Northern Hardwood
- 412 - Oak Types
- 413 - Aspen Types
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- 422 - Natural Pines
- 429 - Mixed Upland Conifers
- 430 - Upland Mixed Fores
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Non-Forest Covertype
- 122 - Roads/Parking Lot
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low Density Trees
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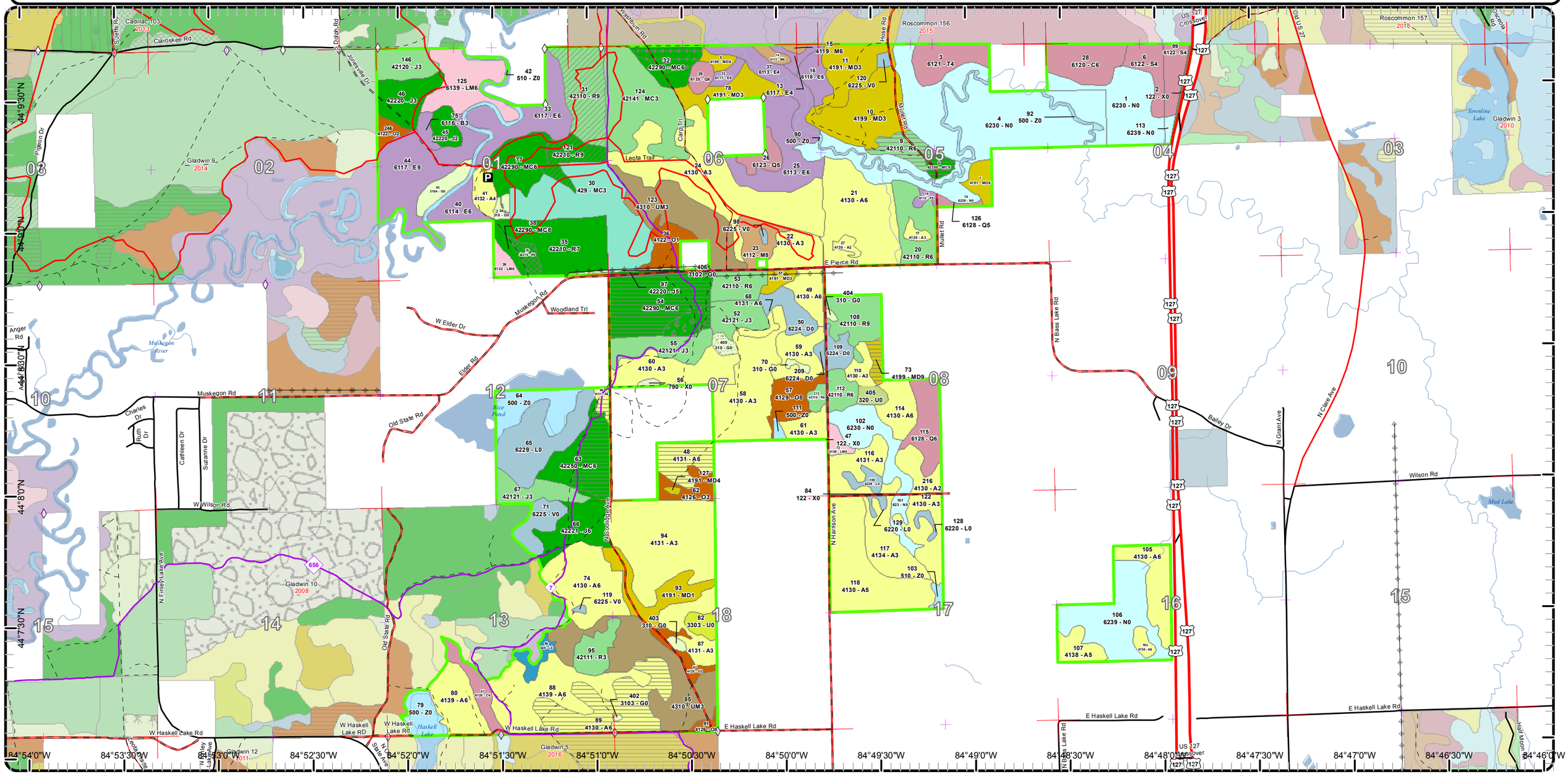

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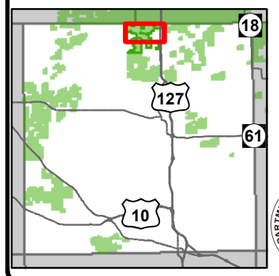

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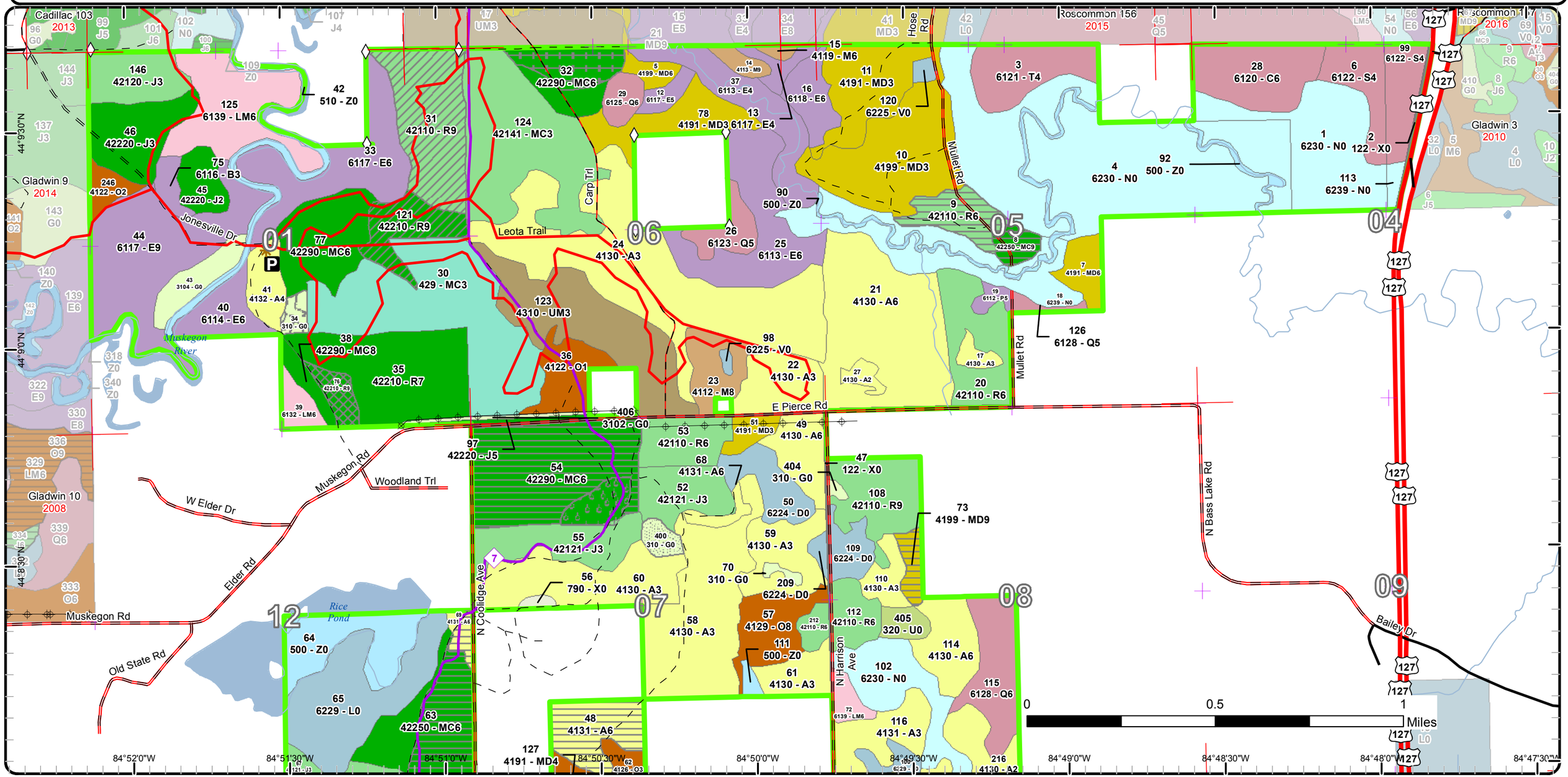

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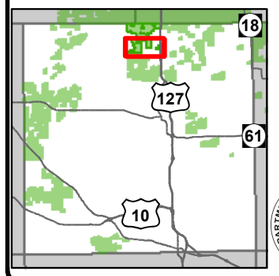

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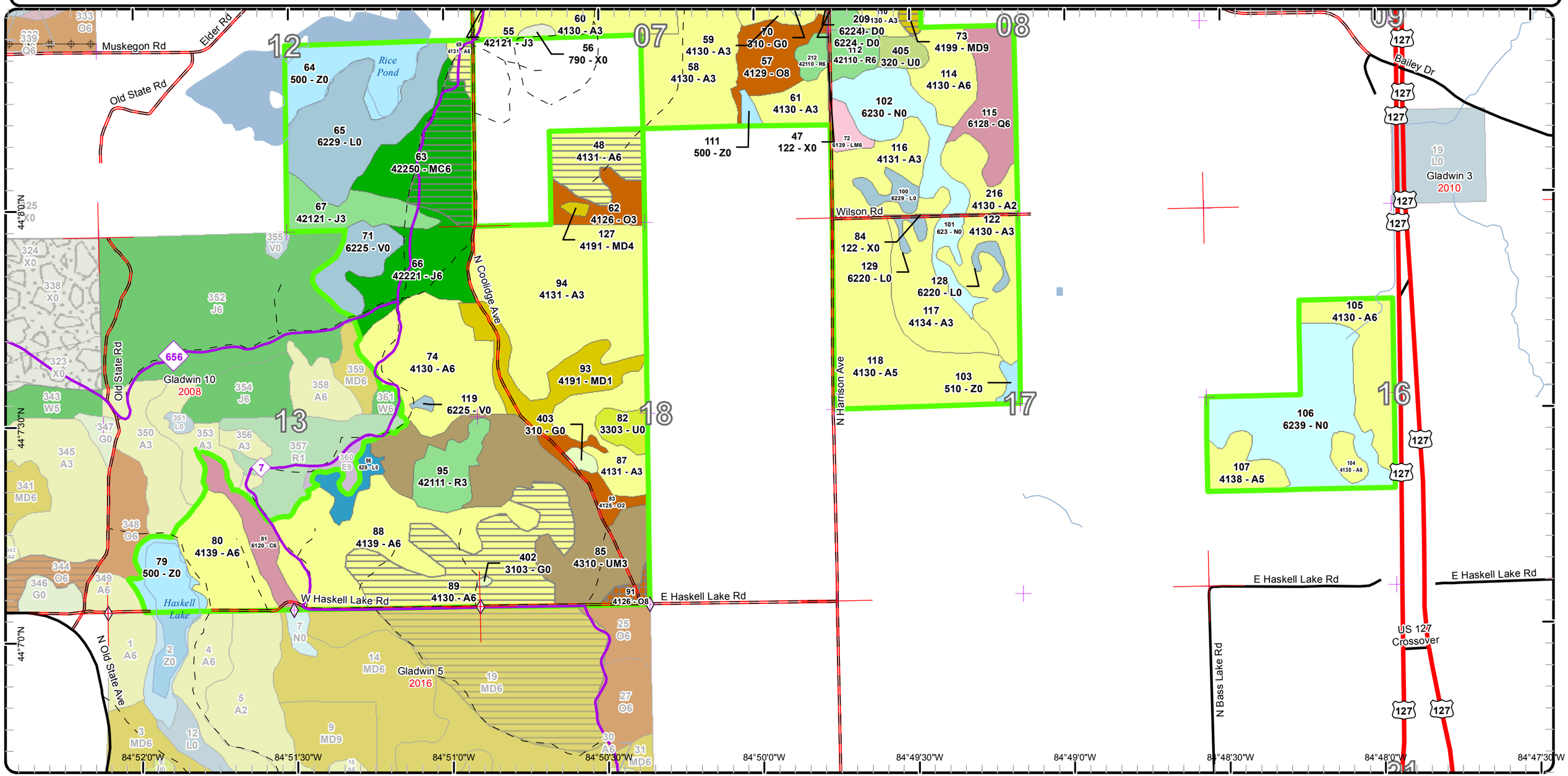
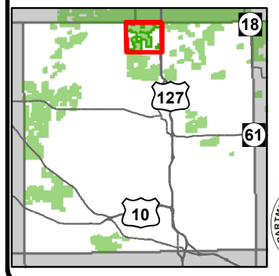


Stand Boundary Map



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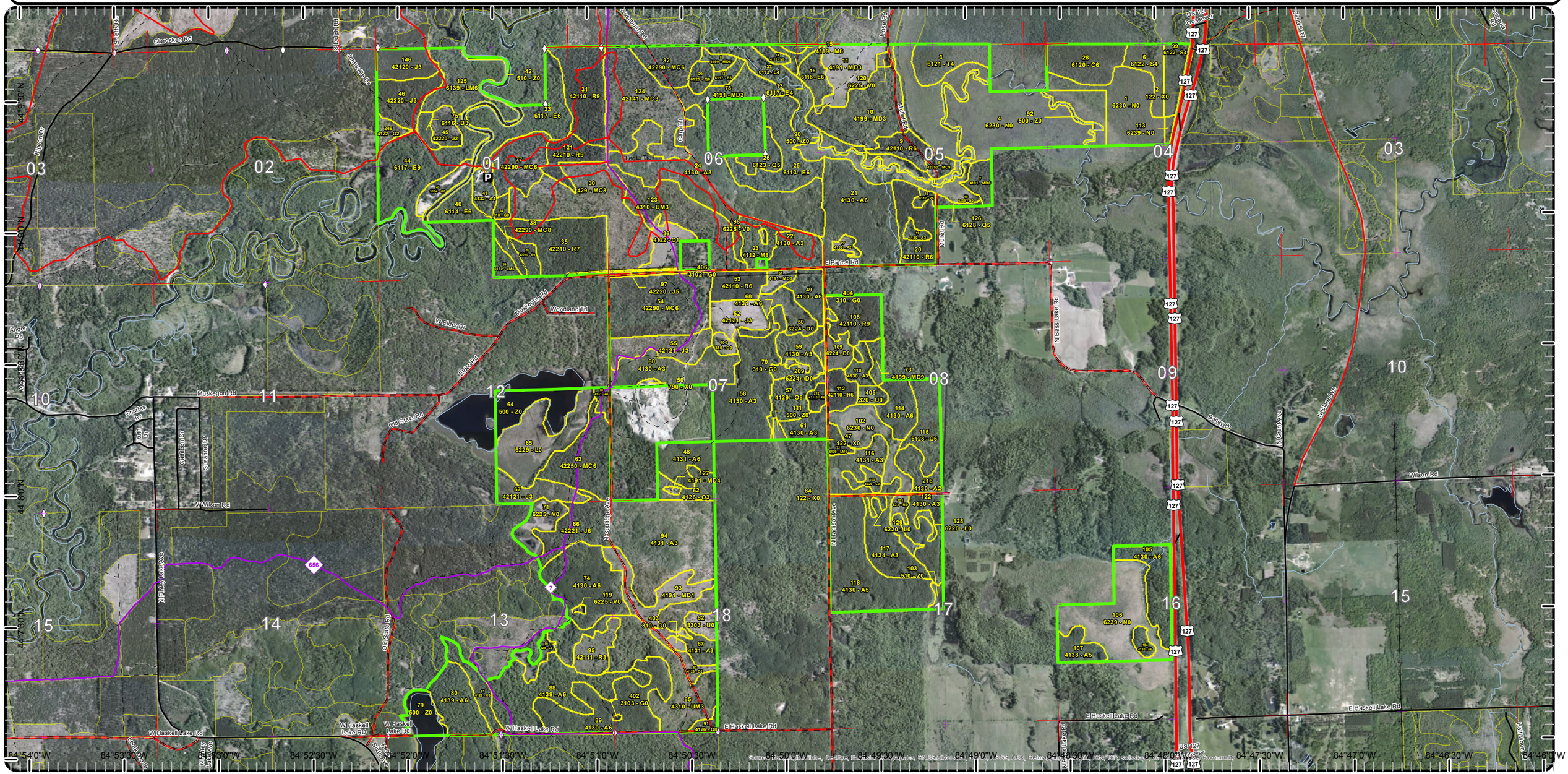

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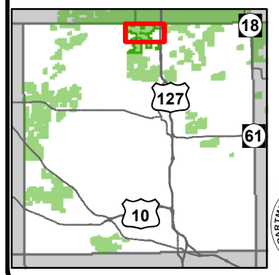

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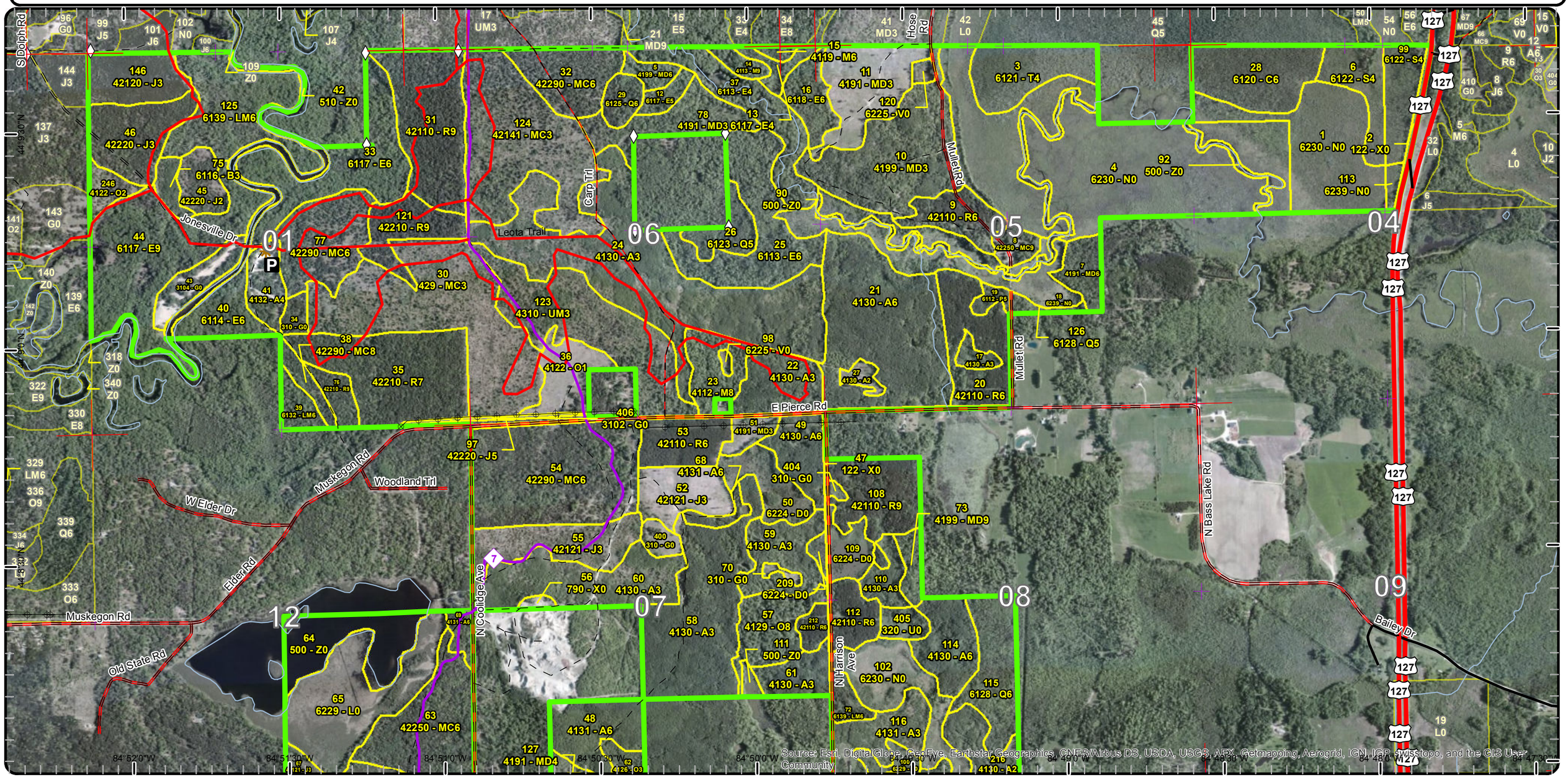

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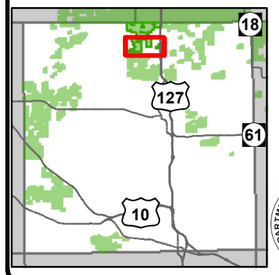

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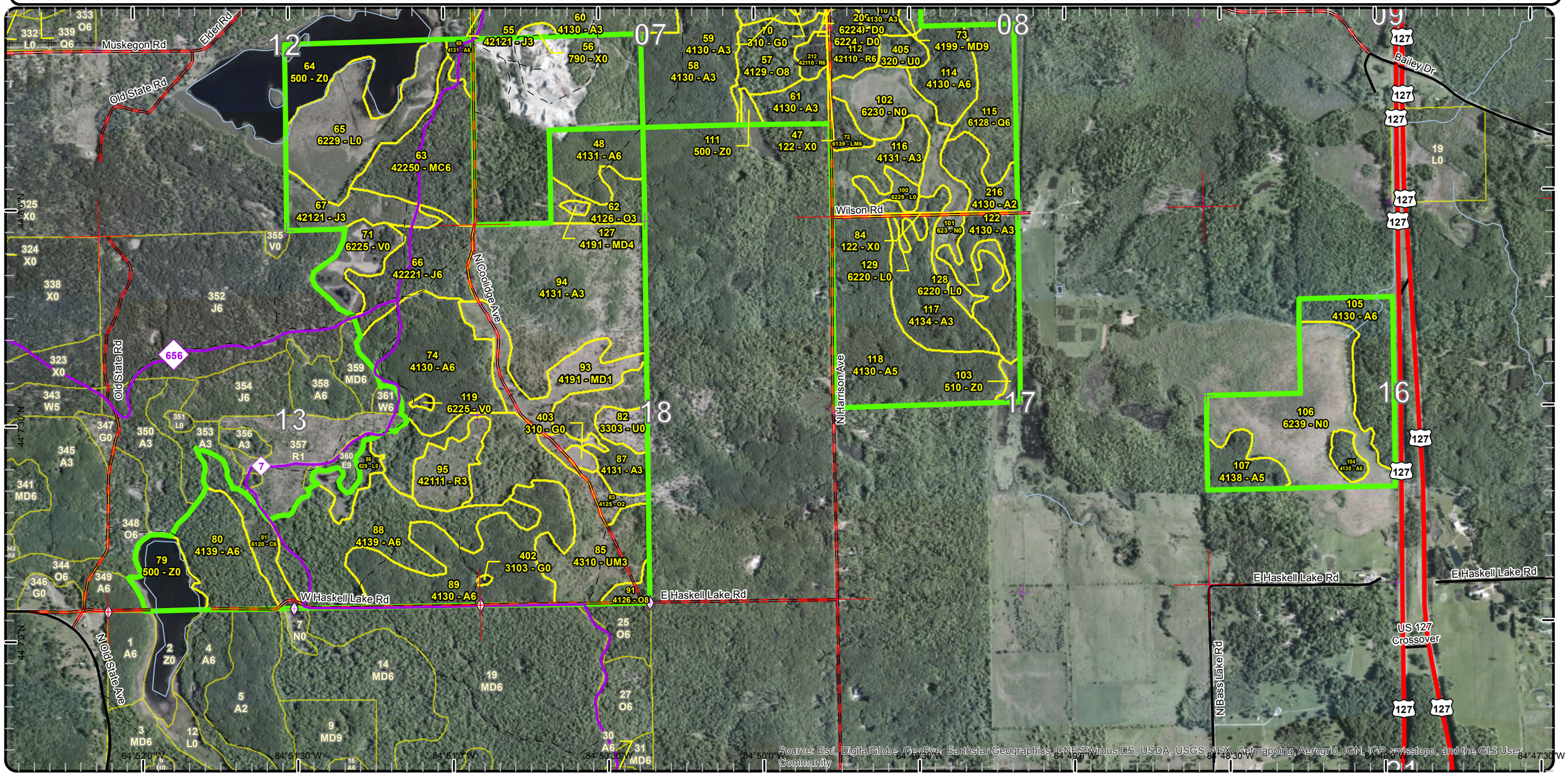
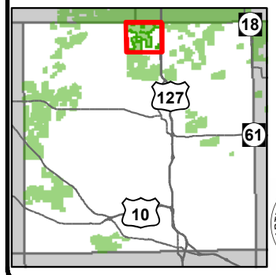


Special Conservation Areas & Site Conditions Map



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2G: Too wet (sensitive soils, does not include access issues)
2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
3D: Recreational / Scenic values
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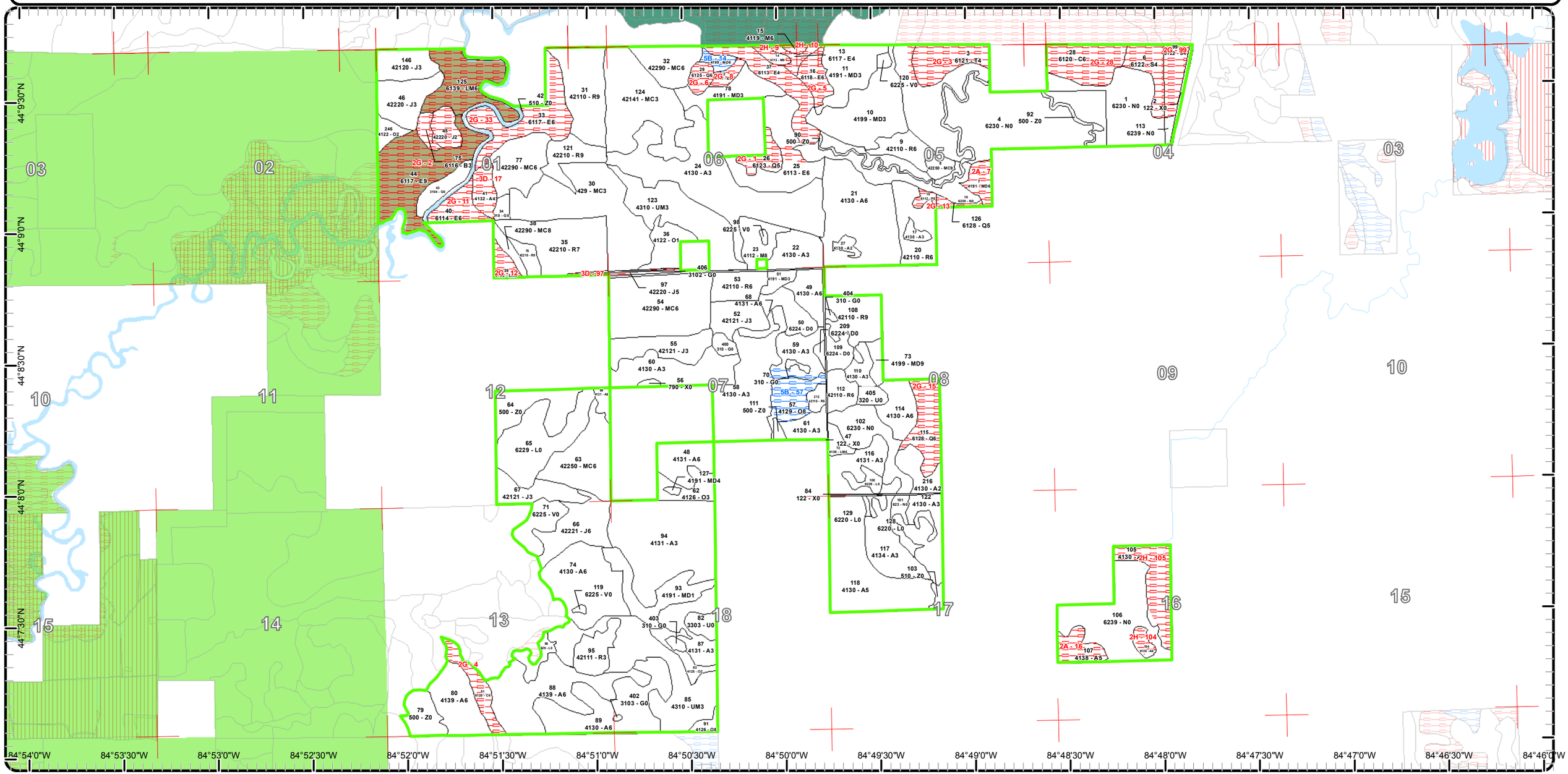
Cold Water Streams
Cold Water Lakes
Habitat Corridor
Potential Old Growth



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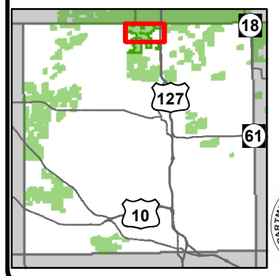

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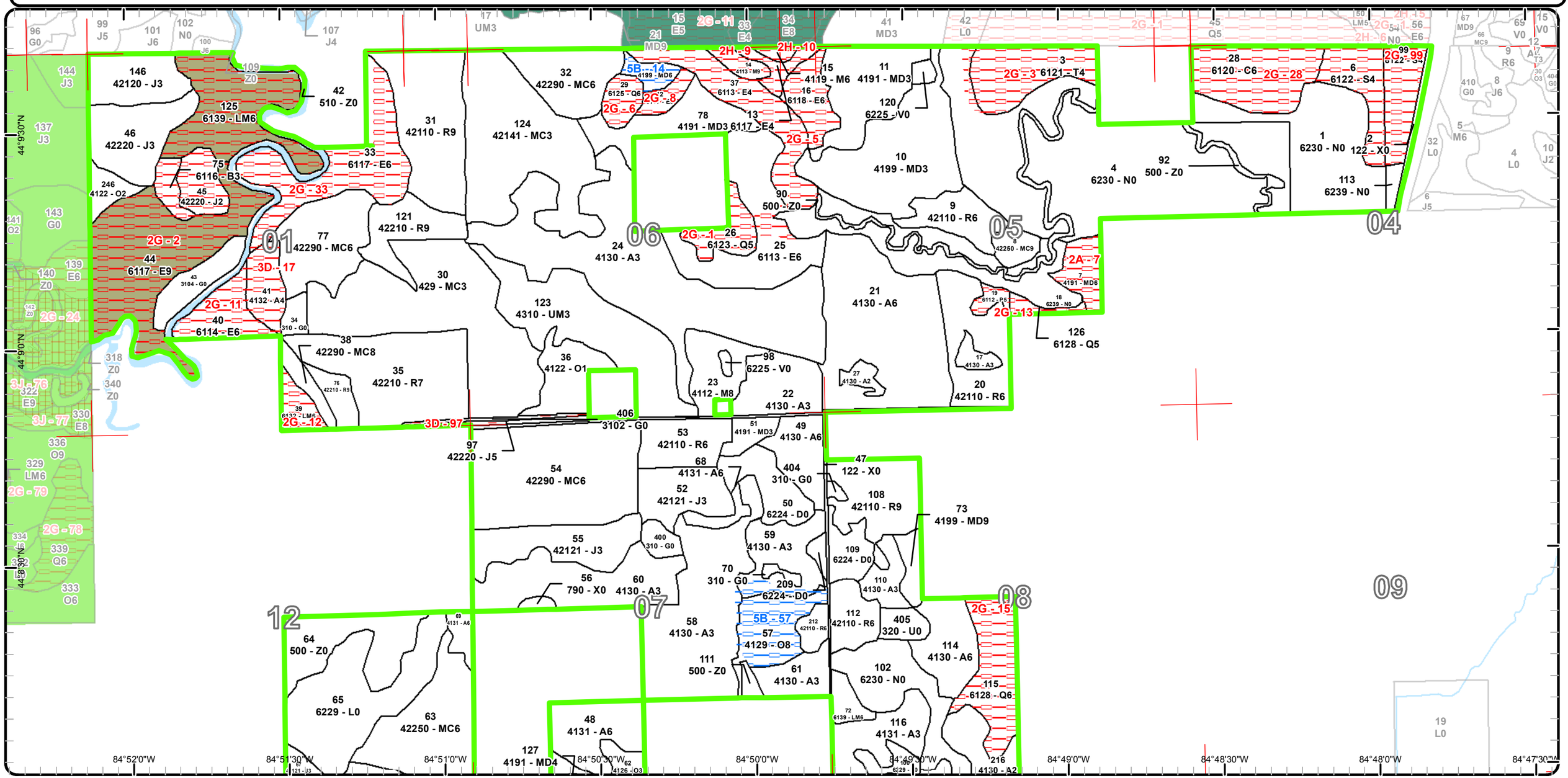

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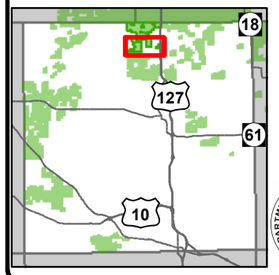

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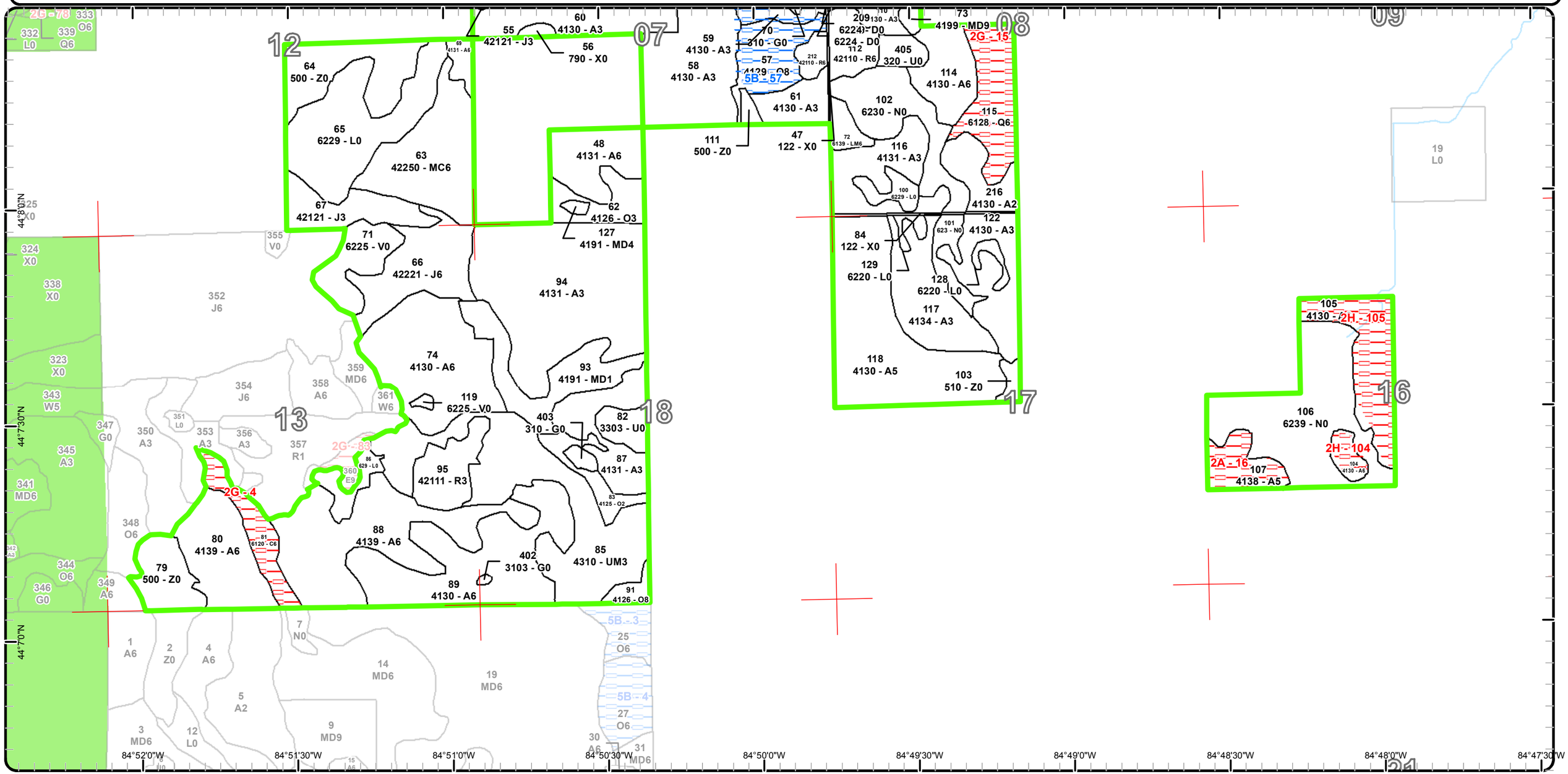

Report 1 – Total Acres by Cover Type and Age Class

Gladwin Mgt. Unit **Compartment 4** **Year of Entry 2017**

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	94	372	192	176	193	5	0	39	0	0	0	0	0	0	0	0	0	**1071**
Bare/Sparsely Vegetated	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
Bog	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**24**
Cedar	0	0	0	0	0	0	0	0	0	33	17	0	0	0	0	0	0	0	**50**
Herbaceous Openland	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**31**
Jack Pine	0	21	50	68	28	0	0	0	3	0	0	0	0	0	0	0	0	0	**170**
Low-Density Trees	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**9**
Lowland Aspen/Balsam Poplar	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	**3**
Lowland Conifers	0	0	0	0	0	0	0	0	4	0	37	0	0	0	0	0	0	12	**53**
Lowland Deciduous	0	0	0	0	0	0	6	0	46	6	0	0	0	0	0	0	0	178	**236**
Lowland Mixed Forest	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	51	**57**
Lowland Shrub	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**74**
Lowland Spruce/Fir	0	0	0	0	0	0	0	0	0	35	0	0	0	0	0	0	0	0	**35**
Marsh	368	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**368**
Mixed Upland Deciduous	0	71	25	58	0	1	0	0	11	5	7	0	0	0	0	0	0	0	**178**
Natural Mixed Pines	0	0	0	0	0	76	32	0	46	40	0	0	0	0	0	0	0	0	**194**
Northern Hardwood	0	0	0	0	0	0	0	0	7	18	0	0	0	0	0	0	0	0	**25**
Oak	0	19	10	0	7	15	0	0	0	5	0	0	22	0	0	0	0	0	**78**
Paper Birch	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**6**
Planted Mixed Pines	0	0	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**75**
Red Pine	0	0	19	0	0	0	114	0	133	0	0	0	0	0	0	0	0	0	**266**
Tamarack	0	0	0	0	0	0	0	0	0	0	27	0	0	0	0	0	0	0	**27**
Treed Bog	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**30**
Upland Conifers	0	0	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**90**
Upland Mixed Forest	0	0	138	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**138**
Upland Shrub	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**6**
Urban	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**16**
Water	87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**87**
Total	**647**	**205**	**779**	**324**	**211**	**294**	**157**	**0**	**289**	**142**	**88**	**0**	**22**	**0**	**0**	**0**	**0**	**241**	**3399**

Report 2 – Treatment Summary

Gladwin Mgt. Unit

Year of Entry: 2017

Acres of Harvest

Compartment 4

Total Compartment Acres: 3,396

Commercial Harvest - 0

Harvests with Site Condition - 0

Next Step Harvest - 0

Habitat Cut - 20

Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Aspen	95	0	0	0	0	0	0	0	0	**95**
Mixed Upland Deciduous	7	0	0	0	0	0	0	0	0	**7**
Natural Mixed Pines	104	0	0	0	0	0	16	0	0	**120**
Oak	0	0	0	5	0	0	0	0	0	**5**
Red Pine	17	8	0	0	0	68	0	0	0	**92**
Total	**223**	**8**	**0**	**5**	**0**	**68**	**16**	**0**	**0**	**319**

Proposed and Next Step Treatments by Harvest Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	319	0	0	0	10	0	4	0	5	**339**
Next Step	0	116	7	0	66	0	316	0	0	**505**
Total	**319**	**116**	**7**	**0**	**76**	**0**	**320**	**0**	**5**	**844**

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
8	73004008-Cut	6.6	42250 - Pine, Oak	Sawtimber Well	50	81-110	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand as a clearcut with retention. The retention should consist of pines and oaks marked in groups not to exceed 5% by BA or area. Then after harvest replant the stand to red pine.

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

Acceptable Regen: The regeneration should be planted red pine mixed with some natural white pines and oaks.

Other Comment: Access will have to come through Roscommon County using Hose Road. Clare County has removed the Townline Creek crossing so there is no access from Pierce Road. Treatment boundary may change due to HAL. Old next step comments:

Proposed Start Date: 10/1 /2016

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
9	73004009-Cut	16.7	42110 - Planted Red Pine	Poletimber Well	56	141-170	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand as a clearcut with retention. The retention should consist of pines marked in groups not to exceed 5% by BA or area. Then after harvest replant the stand to red pine. Harvest all the hardwoods south of the two-track.

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

Acceptable Regen: The regeneration should be planted red pine mixed with some natural white pines and oaks south of the two-track.

Other Comment: Access will have to come through Roscommon County using Hose Road. Clare County has removed the Townline Creek crossing so there is no access from Pierce Road. Treatment boundary may change due to HAL. Old next step comments:

Proposed Start Date: 10/1 /2016

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
31	73004031-Cut	47.6	42110 - Planted Red Pine	Sawtimber Well	75	141-170	Harvest	Crown Thinning	4211 - Planted Red Pine	Even-Aged	Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Thin the stand by marking it down to 90 sq. ft. The ORV trail will need to be watched and protected in the cutting specs.

Next Step Treatments:

Acceptable Regen: This is a thinning so no regeneration comments needed.

Other Comment: Old next step comments:

Proposed Start Date: 10/1 /2016

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
32	73004032-Cut	16.3	42290 - Natural Mixed Pine	Poletimber Well	50	51-80	Harvest	Overstory Removal	42260 - Natural Pine, Mixed Deciduous	Two-Aged	Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the overmature jack pine especially along the north boundary. Mark the rest of the stand for operability with logging equipment and to minimize damage to the residual stand.

Next Step Treatments:

Acceptable Regen: pines mixed with oak and aspen

Other Comment: Old next step comments:

Proposed Start Date: 10/1 /2016

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
34	73004034-Monitor	4.4	310 - Herbaceous Openland	Nonstocked	0	Unspecified	Monitoring	Artificial Regen(3yr)	42121 - Planted Jack Pine, Mixed Deciduous	Even-Aged	Proposal

Habitat Cut: Yes **Site Condition:**

Prescription Specs: The stand was planted in 2013 and needs to have the artificial regeneration checked in 2016

Next Step Treatments:

Acceptable Regen: The acceptable regeneration is planted jack pine mixed with natural oak.

Other Comment: Old next step comments:

Proposed Start Date: 10/1 /2016

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
48	73004048-Cut	24.1	4131 - Aspen, Oak	Poletimber Well	40	1-50	Harvest	Clearcut with Retention	4121 - Oak, Aspen	Even-Aged	Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: The stand could be harvested as a clearcut with retention. The retention should be in pockets and not exceed 5% of the area. There is a knob that is heavy to oak which could be left untreated because of its small diameter and size. If this is done the treatment acres will be significantly less than the inventory acres.

Next Step Treatments:

Acceptable Regen: The stand is expected to regenerate as a mixture of oak and aspen.

Other Comment: Old next step comments:

Proposed Start Date: 10/1 /2016

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
54	73004054-Burn	10.1	42290 - Natural Mixed Pine	Poletimber Well	46	51-80	Burn	Understory	42221 - Natural Jack Pine, Mixed Deciduous	Even-Aged	Proposal

Habitat Cut: Yes **Site Condition:**

Prescription Specs: The stand is to be burned with the overstory intact. The fire is to stimulate the remnant of a prairie species that were identified by MNFI. After it is burned the stand is not to be salvaged.

Next Step Treatments:

Acceptable Regen: It is expected to regenerate to a medium stocking of oak and jack pine

Other Comment: Old next step comments:

Proposed Start Date: 10/1 /2016

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
54	73004054-Cut	65.9	42290 - Natural Mixed Pine	Poletimber Well	46	51-80	Harvest	Clearcut with Retention	42221 - Natural Jack Pine, Mixed Deciduous	Even-Aged	Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand as a clear cut with reserves. The retention should be in pockets. The retention should be in pockets and mark some of the healthier oak and some red pine scattered in the stand.

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

Acceptable Regen: It is expected to regenerate to a medium stocking of oak and jack pine

Other Comment: Old next step comments:

Proposed Start Date: 10/1 /2016

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
63	73004063-Cut	31.0	42250 - Pine, Oak	Poletimber Well	70	51-80	Harvest	Clearcut with Retention	4212 - Planted Jack Pine	Even-Aged	Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: harvest the stand as a clearcut with the retention being that portion of the stand west of the snowmobile trail. this area is to be for retention and habitat.

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

Acceptable Regen: mixture of planted and natural jack pine mixed with some oak, maple and aspen.

Other Comment: Old next step comments:

Proposed Start Date: 10/1 /2016

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
69	73004069-Cut	3.8	4131 - Aspen, Oak	Poletimber Well	50	81-110	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Clearcut the stand leaving the area west of the snowmobile trail for habitat and retention

Next Step Treatments:

Acceptable Regen: Aspen missed with some maple, oak, and coinfers

Other Comment: Old next step comments:

Proposed Start Date: 10/1 /2016

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
73	73004073-Cut	6.9	4199 - Other Mixed Upland Deciduous	Sawtimber Well	98	51-80	Harvest	Clearcut with Retention	4319 - Mixed Upland Forest	Even-Aged	Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand as a clear-cut with retention. The retention should consist of some marked oaks for mass and some of the other species for diversity. The retention could be marked as individual trees or pocket and should not exceed 5% by area or BA.

Next Step Treatments:

Acceptable Regen: The acceptable regeneration is a mixture of aspen, maple and oak.

Other Comment: Old next step comments:

Proposed Start Date: 10/1 /2016

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
76	73004076-Cut	7.8	42210 - Natural Red Pine	Sawtimber Well	76	1-50	Harvest	Group Selection	4221 - Natural Red Pine	Two-Aged	Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand by removing the oak, jack pine, aspen and maple. Then mark the areas that have higher density of pine down to 90 BA. The residual is to be place to address visual concerns.

Next Step Treatments:

Acceptable Regen: The acceptable regeneration is oak and aspen mixed with pine.

Other Comment: Old next step comments:

Proposed Start Date: 10/1 /2016

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
89	**73004089-Cut**	67.5	4130 - Aspen	Poletimber Well	48	111-140	Harvest	Clearcut with Retention	4130 - Aspen	Even-Aged	Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Harvest the stand with a clearcut with retention. Mark some of the oak and aspen in patches for retention. The retention should not exceed 5% of the area.

Next Step Treatments:

Acceptable Regen: The acceptable regeneration is aspen mixed with some maple and oak.

Other Comment: Old next step comments:

Proposed Start Date: 10/1 /2015

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
91	**73004091-Cut**	4.6	4126 - White, Black, N. Pin Oak	Sawtimber Medium	85	51-80	Harvest	Seed Tree	412 - Oak Types	Two-Aged	Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: The stand could be seed tree harvested down to 20 BA to release the understory. Retain all conifers in the stand. Conifers make up a very small percentage of the species mix.

Next Step Treatments:

Acceptable Regen: The stand is expected to regenerate as a mix of oak, aspen, and maple.

Other Comment: Old next step comments:

Proposed Start Date: 10/1 /2015

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
121	**73004121-Cut**	20.1	42210 - Natural Red Pine	Sawtimber Well	75	141-170	Harvest	Crown Thinning	4211 - Planted Red Pine	Even-Aged	Proposal

Habitat Cut: No **Site Condition:**

Prescription Specs: Thin the stands taking the BA down to 90 sq. ft. Make sure the cutting spec protect the ORV and Snowmobile Trails.

Next Step Treatments:

Acceptable Regen: This is a thinning so no regeneration comments needed.

Other Comment: Old next step comments:

Proposed Start Date: 10/1 /2016

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
400	**73004400-NF**	5.1	310 - Herbaceous Openland	Nonstocked		Unspecified	NonForestMgt	Mowing	3102 - Grass		Proposal

Habitat Cut: Yes **Site Condition:**

Prescription Specs: mowing to maintain grassy opening.

Next Step Treatments:

Acceptable Regen:

Other Comment: Old next step comments:

Proposed Start Date: 10/1 /2016

Total Treatment Acreage Proposed: 338.7

Report 5 – Site Conditions

Gladwin Mgt. Unit

Steve Nyhoff : Examiner

Compartment: 4

Year of Entry: 2017

Dominant Site Conditions

	2G	2H	3D	5B
Aspen		36	13	6
Bare/Sparsely Vegetated				
Bog				
Cedar	50			
Herbaceous Openland			2	0
Jack Pine	12		2	
Low-Density Trees				
Lowland Aspen/Balsam Poplar	3			
Lowland Conifers	53			
Lowland Deciduous	188			
Lowland Mixed Forest	51			
Lowland Shrub	0			
Lowland Spruce/Fir	35			
Marsh	3	0		
Mixed Upland Deciduous	0			5
Natural Mixed Pines				
Northern Hardwood	0	7		
Oak				21
Paper Birch	6			
Planted Mixed Pines				
Red Pine				
Tamarack	27			
Treed Bog				
Upland Conifers				
Upland Mixed Forest				
Upland Shrub				
Urban				
Water	0			
Total Forested Acres	428	43	16	32
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.*

Report 5 – Site Conditions

Gladwin Mgt. Unit

Steve Nyhoff : Examiner

Compartment: 4

Year of Entry: 2017

Site No.	Dominant Site Cond	Dominant Site Condition Availability	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	12	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
2	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	131	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
	Comments:						
3	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	29	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
4	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	17	3H: Deer Wintering Areas	Unspecified	Unspecified	Unspecified
	Comments:						
5	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	54	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						

6	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	8	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
7	**Unavailable**	**2A: Adjacent landowner denied access**	12	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
8	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	6	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
9	**Unavailable**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	5	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
10	**Unavailable**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	2	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
11	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	17	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						

12	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	8	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
13	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	7	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
14	**Available**	**5B: Maintain for regeneration purposes**	6	4A: No Markets Available for these Forest Products	Unspecified	Unspecified	Unspecified
	Comments:						
15	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	30	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
16	**Unavailable**	**2A: Adjacent landowner denied access**	15	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
17	**Unavailable**	**3D: Recreational / Scenic values**	13	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: Scramble area for ORVs						

28	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	51	3E: Easement / lease, non-military (e.g.- Consumers Power red pine, etc)	Unspecified	Unspecified	Unspecified
	Comments:						
33	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	43	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
57	**Available**	**5B: Maintain for regeneration purposes**	26	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
97	**Unavailable**	**3D: Recreational / Scenic values**	4	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
99	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	17	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
104	**Unavailable**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	5	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						

Report 5 – Site Conditions

Gladwin Mgt. Unit

Steve Nyhoff : Examiner

Compartment: 4

Year of Entry: 2017

105	**Unavailable**	**2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)**	32	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

Report 6 – 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 7 – 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.
HCVA	Designated Critical Habitat	Critical habitat areas are established via a consultative and cooperative process between the DNR and the U.S. Fish and Wildlife service for the recovery of threatened and endangered species, as governed by Part 365, Endangered Species Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, and the Federal Endangered Species Act of 1973. This is an active program, with proposed species plans in various stages of review. As of now only two exist, Kirtland Warbler Habitat and Piping Plover Habitat.
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:
3	6121 - Tamarack	Poletimber Poor	26.8	95	1-50	About 50% of the tamarack in the stand has dead tops. The overall mortality is hard to tell because the stand was inventoried in the winter. There is a lot of down woody material. The terrain is very hummocky and wet. The cedar in the stand has a mortality of around 50%. The soil under the stand is Lupton Muck.
5	4199 - Other Mixed Upland Deciduous	Poletimber Well	5.5	89	81-110	The stand was set up to be harvested in 1997 as a clear cut. However it was not treated. The old redline is still visible. The large overstory oak, maple, and ash are coming down. The gaps are filling in with maple, oak and fir. The soil types are Markley Muck and Graycalm.
6	6122 - Black Spruce	Poletimber Poor	18.4	89	1-50	The stand has a heavy lowland shrub layer. The terrain is hummocky. The cedar in the stand is no taller than 2 sticks, with the black spruce being a little taller. The state has a 1/3 ownership in the property. The soil under the stand is Winterfield-Evart.
7	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	11.5	78	81-110	The stand is an upland knob that slopes down to the Townline Creek flood plain. The pine is heaviest along the flood plain and it is heavier to aspen and oak away from it. There is an illegal trail and two ground blinds along the east side of the property. The soil under the stand is Graycalm.
8	42250 - Pine, Oak	Sawtimber Well	6.6	50	81-110	The stand is filling in well. Last YOE mention a grassy opening now the opening is less than 0.3 acres in size. The soil type is Graycalm.
9	42110 - Planted Red Pine	Poletimber Well	16.7	56	141-170	The stand was row thinned last YOE. The southern edge is a natural stand of scattered red and white pine mixed with hardwoods. The soil type is Graycalm.
10	4199 - Other Mixed Upland Deciduous	Sapling Well	57.6	26	51-80	The stand is a nice mix of oak, aspen, and white pine regeneration that is just moving into poles. In the south western portion of the stand has more mature white pine. The aspen is concentrated in the north western portion. The soil type is Graycalm.
11	4191 - Mixed Upland Deciduous with Conifer	Sapling Well	32.9	5	Immature	The stand was clear cut in 2009 and inter planted with jack pine with the FTP C73-831 in 2010. The oak is mainly stump sprouts with some seed source. There were several mast oak left most are still on site but a few have die off. Aspen regeneration is heaviest to the west of the 2-track. The stand may need to be dissected next YOE when there is new imagery and the stand has had some time to grow. The soil type is Graycalm.
12	6117 - Lowland Deciduous, Mixed Coniferous	Poletimber Medium	5.6	89	51-80	The stand was set up to be harvested in 1997as a clear cut. However it wasn't treated because of wet ground. It has a drainage that goes from stand 29 to the Townline Creek. The overstory has a high occurrence of windthrow and the understory is filling in the gaps well. No treatment is recommended at this time due to the small size, wet drainage and good regeneration. The soil types are Markley Muck and Graycalm.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
13	6117 - Lowland Deciduous, Mixed Coniferous	Poletimber Poor	6.1	59	1-50	The stand is heavy to tag alder with scattered swamp hardwood pockets. There is a drainage that runs through the stand. The north tip of the northwest leg has a new beaver flooding currently it is less than 0.2 acres in size. The trees that are presence in the flooding are still alive (having buds). The ash in the stand has heavy EAB. The main soil type is Winterfield/Evart.
14	4113 - R.Maple, Conifer	Sawtimber Well	4.8	74	51-80	The fir is thicker along the north edge. Most of the stand is a ridge between stand 13 and stand 37. The south west edge is very wet. There is also a large amount of down woody material. The main soil type is Markley Muck.
15	4119 - Mixed Northern Hardwoods	Poletimber Well	2.0	74	51-80	The stand has the Townline Creek running through it. The density is variable going from well stocked to non-stocked. The ash in the stand has high mortality due to EAB. There is also evidence of current and past beaver activity. The soil association under the stand is Winterfield/Evart.
16	6118 - Lowland Deciduous with Cedar	Poletimber Well	13.9	74	81-110	The stand slopes down toward Townline Creek. The upland in the stand is on a couple of small islands and along the east side. The ash in the stand has heavy EAB and it is declining. The cedar is heaviest along the west side. Fir is common as in understory tree throughout the stand. However it does make it into the overstory in the northern portion of the stand. There is a lot of down woody material. The terrain is hummocky. The main soil type is Markley Muck.
17	4130 - Aspen	Sapling Well	4.2	18	Immature	The stand was cut in 1997 and has regenerated well. There is a small open area but it is less than 0.2 acres in size. The soil type is Graycalm.
19	6112 - Lowland Aspen	Poletimber Medium	3.4	40	1-50	Wildlife cut the stand in 1975. It is in a slight draw and looks fairly wet. The ash in the stand has heavy EAB and it is declining. The black cherry has poor form. The terrain is hummocky. The eastern edge is a lowland shrub type. The stand looks like it would be too wet to harvest commercially. The soils under the stand are a mixture of Graycalm and Winterfield-Evart.
20	42110 - Planted Red Pine	Poletimber Well	30.0	56	81-110	The stand was thinned in the summer of 2011 in Clare Red Pine Assist sale number 73-009-07-01. The stand has a lower density south of stand 17. Thin the stand in the next YOE. The soil is mainly Graycalm.
21	4130 - Aspen	Poletimber Well	80.8	39	81-110	The terrain is slightly undulating. The stand slopes down at the north end going on to the Townline Creek flood plain. There is a lot of down woody material. The fir in the stand is heavier at the north end and at the south edge. Scattered in the stand are areas where some of the aspen is moving into saw logs. The soil types are a mixture of Menominee, Roscommon, and Graycalm
22	4130 - Aspen	Sapling Well	21.7	4	Immature	The stand was clearcut in 2010. It has regenerated well and it is mainly bigtooth and trembling aspen with some red maple and oak. Some of the pines and oak were left along Pierce Road to break up the visual. The soil under the stand is mainly Graycalm.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
23	4112 - Maple, Beech, Cherry Association	Sawtimber Medium	17.5	86	51-80	The terrain is hummocky. The stand had the aspen and birch cut retaining the maple and ash. The stand has started to regenerate with aspen being denser north and maple in the central and south. The soil under the stand is McBride
24	4130 - Aspen	Sapling Well	120.8	16	1-50	The stand was clear cut in 1998. It has regenerated well, being a well-stocked aspen stand. In the eastern portion of the stand there are some low pockets of swamp hardwoods that were left when it was harvested. These pockets are < 1 acre in size. There is a portion of the stand along stand 123 that was interplanted to red pine. The soils under the stand are 60% Graycalm and 40% McBride
25	6113 - Lowland Maple	Poletimber Well	46.7	98	81-110	The stand is mainly lowland much could be treated but there are areas that are too wet to harvest. Much of the larger overstory, ash and aspen have come down leaving a lot of down wood. What ash is left has heavy EAB and the aspen a signs of significant rot. The fir and cedar is heavier long the flood plain and in the wetter ground. The understory in the process of taking the place of the overstory. The stand was difficult to navigate. The terrain is hummocky.
26	6123 - Lowland Fir	Poletimber Medium	11.6	78	1-50	The stand is very wet. There are pockets of cattail in the stand. When looking at the timber the trees look like they have been stunted being pole size and only 2 to 3 stick tall..
27	4130 - Aspen	Sapling Medium	4.0	6	Immature	The stand was clearcut in 2009 with some overstory red pine left for seed and structural diversity. The regeneration is patchy with a crown closure ranging from 10% to 100%. The main soil type is Graycalm
28	6120 - Lowland Cedar	Poletimber Well	33.0	89	51-80	The cedar in the stand is short and has significant sweep. There is also a significant amount of mortality. The crown closure ranges from 100% down to 25%, but it averages around 75%. The tamarack is concentrated along the southern edge. The state has a 1/3 ownership interest in the property. The soil under the stand is Lupton Muck.
29	6125 - Lowland Black Spruce, Jack Pine	Poletimber Well	7.8	94	51-80	The stand has a dry ridge in the western 1/2. The ridge is heavy to jack pine, maple, and fir. The lowland area is mainly spruce and tamarack. The soil types are Markley Muck and Graycalm.
30	429 - Mixed Upland Conifers	Sapling Well	90.1	12	Immature	The stand was harvested in 1998 as a 4" spec harvest leaving all pines. It was then interplanted with red pine in 2002. The area is very diverse with a couple of aspen clones in the western 1/2. There are also areas of mature pine and pockets of oak of both stump sprout and seedling. There are also areas of thick planted red pine. The soils are mainly Graycalm with pocket of Grayling.
31	42110 - Planted Red Pine	Sawtimber Well	47.6	75	141-170	The residual Red Pine was planted in 1940 and 1959. The stand was harvested in 1990 having the hardwoods and jack pines greater than 4" DBH harvested. The residual pines have variable density going from very high to low density. The ORV trail bisects the stand. Soil under the stand is Graycalm.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
32	42290 - Natural Mixed Pine	Poletimber Well	25.1	50	51-80	All the aspen and oak were cut in 1997 and all conifers were left. Currently there is some mortality in the jack and white pines. Soil under the stand is Graycalm.
33	6117 - Lowland Deciduous, Mixed Coniferous	Poletimber Well	45.5	78	81-110	The overstory hardwoods are declining and the balsam fir and white pines are coming up underneath. The cedar and ash is mainly along the river. The aspen in the stand is on the second tier of the flood plain. The ash trees have heavy EAB. The soil under the stand is Winterfield-Evart.
35	42210 - Natural Red Pine	Sawtimber Poor	56.5	76	1-50	The stand was harvested in 2011 retaining 34 BA to act as a shelter wood for the understory oak. Most of the current regeneration is stump sprout oak and cherry. There are some scattered pines and firs. There is also a fair amount of oak from seeds but currently the seedlings are < 4' so they are not established. The stand is to have a prescribed burn, FTP C73-838, to promote the oak and pine regeneration. However, it has not been done as of the winter 2015. The soils under the stand are 50% Grayling in the western portion and 50% Graycalm in the eastern portion of the stand.
36	4122 - Oak, Pine	Sapling Poor	18.7	5	Immature	The stand was clearcut in 2009. There was a FTP C73-832 for this area that was canceled. It has regenerated fairly well with the oak being mainly stump sprouts. There are a lot of seedlings oak that are < 4' in height. The jack pine is seeding in especially in the southern 1/3 of the stand. The soil type is mainly Graycalm with an area of Grayling in the center of the stand.
37	6113 - Lowland Maple	Poletimber Poor	31.5	76	51-80	The stand has the Townline Creek running through it. The density is variable going from well stocked to non-stocked. The ash in the stand has high mortality due to EAB. There is also evidence of current and past beaver activity. The soil association under the stand is Winterfield/Evart.
38	42290 - Natural Mixed Pine	Sawtimber Medium	6.3	87	51-80	The stand was cut in 1997 leaving red and white pines. The north end is heavier to white pine with an understory of aspen, maple and oak. The south end is heavy to red pine with balsam fir in the understory. Soil under the stand is Grayling sand.
39	6132 - Mixed Lowland Forest with Cedar	Poletimber Well	7.8	38	81-110	The stand drops sharply to the river flood plain. It has a lot of down woody material as the ash, aspen, and oak is declining. The understory is now taking over the stand, which is heavy to balsam fir. The cedars are closer to the river. Soil under the stand is Winterfield-Evart.
40	6114 - Lowland Oak	Poletimber Well	16.8	98	81-110	There is a small pocket of aspen on the east side that could be cut but it is just coming into poles. The remainder of the stand drops off to the river flood plain. The aspen, ash and birch outside the aspen pocket are declining. Balsam fir understory is really thick near the river. The Cedar in the stand is also along the river. Soil under the stand is Winterfield-Evart.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
41	4132 - Aspen, Jack Pine	Poletimber Poor	12.5	27	1-50	The stand is the ORV/snowmobile parking lot at the north end and special use area at the south end. The soils are heavily disturbed with about 40% being exposed sand. There appears to be numerous areas where spoils have been placed. There are some large mature trees but a good portion of the trees are just becoming poles. The soil under the stand is Croswell though the southern half is disturbed being an old borrow area.
44	6117 - Lowland Deciduous, Mixed Coniferous	Sawtimber Well	69.1	89	81-110	The stand is highly variable and it is on the Muskegon River Flood Plain. The terrain is undulating and there are areas of good upland but the majority is low and wet. There are numerous springs along the base of the slopes that border the flood plain. The ash in the stand has heavy EAB and much of it is declining and coming down along with some of the older trees in the overstory. There are several oxbows in the stand some are more marsh like while others are ash swales. The soil under the stand is mainly Winterfield-Evart with some islands of Croswell.
45	42220 - Natural Jack Pine	Sapling Medium	12.0	27	1-50	The stand was habitat cut in 1988. It is variable going from sparse to dense. Much of the crown closure is made up of open grown jack and white pines. The white pines have a high amount of weevil damage. The overall crown closure is around 65%. Soil under the stand is Croswell.
46	42220 - Natural Jack Pine	Sapling Well	28.1	35	Unspecified	The stand was burned in 1979 and had a salvage cut done in 1980. Some residual larger red and jack pines remain but they are scattered throughout the stand. The red pine is in higher concentration in the eastern portion of the stand and jack pine in the western portion. Soils under the stand are Grayling.
48	4131 - Aspen, Oak	Poletimber Well	24.1	40	1-50	The stand is self-thinning so there is a lot of down woody material. The terrain is rolling. The maple in the stand is on the lower ground and the oak is on the higher ground. The soil type is Graycalm.
49	4130 - Aspen	Poletimber Well	16.8	40	111-140	The stand gets wetter going north. There is an inclusion of lowland shrubs at the north end. Quaking aspen is more common in the northern portion of the stand and in the lower ground. The soils are a mixture of Grayling, Graycalm, McBride, and Brevort.
51	4191 - Mixed Upland Deciduous with Conifer	Sapling Well	6.4	5	Immature	The stand was clear-cut in 2009. It was planted to jack pine in May of 2010, FTP C73-831. Even though the stand was planted to jack pine, currently the oak regeneration makes up the majority of the crown closure. This mix may change over the years. The main soil type is Graycalm.
52	42121 - Planted Jack Pine, Mixed Deciduous	Sapling Well	20.8	5	Immature	The stand was clear-cut in 2009. It was planted to jack pine in May of 2010, FTP C73-831. There is some seeding in of red pine. The oak regeneration in the stand is mainly stump sprouts and what seed source oak that is there is not established. The oak is heaviest in the north and west sides. The main soil type is Grayling.
53	42110 - Planted Red Pine	Poletimber Well	18.7	59	141-170	The stand was 1/3 row thin in 2011. The sale was Clare Red Pine Assist sale number 73-009-07-01. The rows are straight and workable. There is a power line going through the stand. The soils under the stand are 66% Grayling and 37% Graycalm.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
54	42290 - Natural Mixed Pine	Poletimber Well	75.8	46	51-80	The overstory oak is large and much of it is declining and coming down. There is oak regeneration and it is patchy. It is thickest were the overstory oak is dead or down. The south half of the compartment is heavier to hardwoods and the north half is heavier to jack pine. The soils under the stand are about 50% Graycalm and 50% Grayling.
55	42121 - Planted Jack Pine, Mixed Deciduous	Sapling Well	28.4	16	1-50	The stand was trenched and interplanted in 1999. Overall the crown closure is around 90% but there are some areas that are sparser. The main soil type is Graycalm but there is an area of Grayling.
57	4129 - Mixed Oak	Sawtimber Medium	22.0	115	1-50	The stand was shelterwood harvested in 1996 retaining all oak and pine. Some very nice white and red oak were left. The regeneration is patchy and heavier in the east 1/2 of the stand. The soil is a mixture of Menominee, Melita, and McBride.
58	4130 - Aspen	Sapling Well	67.9	3	Immature	The stand was clear cut in May of 2012 with the Peirce Road Aspen sale. The sale number was 73-020-10-01. There is a significant amount of oak regeneration. However most of it is < 4' tall, so it is not established. The south 1/2 looks to be about 1 growing season younger than the north. The main soil type is Graycalm with areas of AuGres and Grayling.
59	4130 - Aspen	Sapling Well	22.6	16	Immature	The terrain in the stand is hummocky. The oak is more common at the south end. The stand includes several small ponds which still have mature aspen around them. These are more common at the north end. The soil is a 50/50 mix of Grayling and Menominee.
60	4130 - Aspen	Sapling Well	43.3	18	1-50	The stand was clearcut in 1997. This is the area of the cut that has regenerated well. The terrain is undulating. In the northern portion of the stand has significant oak in the understory with some jack pine. The soil type is Graycalm.
61	4130 - Aspen	Sapling Well	13.1	26	51-80	The stand is progressing into poles. There are some low wet pockets along the road. There is also a sign trespass along the south side of the stand. The soil is mainly McBride.
62	4126 - White, Black, N. Pin Oak	Sapling Well	14.9	40	1-50	The far west end burned in the spring 2005. The terrain is rolling. The soil type is Graycalm.
63	42250 - Pine, Oak	Poletimber Well	46.1	70	51-80	The stand is variable in density and species composition. It goes from oak to jack pine to aspen. The jack pine is declining. Currently there is a lot of down woody material especially along stand 65. The soil is a mixture of Graycalm and Croswell.
66	42221 - Natural Jack Pine, Mixed Deciduous	Poletimber Well	34.8	26	81-110	The stand has some areas of jack pine over leather leaf along the west edge. The oak in the stand is heaviest along the east side and fades out going west. The soil type is Graycalm.
67	42121 - Planted Jack Pine, Mixed Deciduous	Sapling Well	21.4	12	Immature	The stand was cut in 2000 and planted in 2002. The terrain is rolling. The soil type is a mixture of Grayling, Graycalm, Croswell, and AuGres.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
68	4131 - Aspen, Oak	Poletimber Well	4.4	47	51-80	The stand was left as a buffer between two timber sales. The east 1/3 is oak, maple, and pine the rest is aspen with a heavy oak understory. The soil type is Grayling.
69	4131 - Aspen, Oak	Poletimber Well	5.0	50	81-110	The stand is a small oak/aspen stand that needs to be cut. The main soil type is Graycalm.
72	6139 - Mixed Lowland Forest	Poletimber Well	6.2	45	81-110	There are some wet pockets in the stand. The jack pine is starting to decline. The main soil type is an association of Iosco/Kawkawlin
73	4199 - Other Mixed Upland Deciduous	Sawtimber Well	6.9	98	51-80	The stand is a mature stand that is mostly upland. There looks to be areas that are a little low but it was hard to tell because of the snow depth. The terrain is hummocky. There is a lot of down trees. The soil type is mainly Menominee.
74	4130 - Aspen	Poletimber Well	58.8	41	111-140	The stand is self-thinning and there is a lot of down woody material. The soil type is a mixture of Graycalm and Montcalm
75	6116 - Lowland Birch	Sapling Well	6.0	27	1-50	The stand was habitat cut in 1988. It is very wet with cattails in the southern portion of the stand. The crown closure is around 80%. There are pockets of marsh and lowland shrubs. The high water table gives the stand a low site index. Soil under the stand is Winterfield-Evart.
76	42210 - Natural Red Pine	Sawtimber Well	7.8	76	1-50	The stand is a mixture of red, white, and jack pines and oaks. The jack pine and the oak at the southern end of the stand are declining. Currently there is a lot of down woody material especially at the south end. It was not harvested with stand 35. The soil under the stand is Grayling sand.
77	42290 - Natural Mixed Pine	Poletimber Well	33.7	88	51-80	The stand was harvested to 4" DBH retaining all pines in 1998. This portion of the sale had a higher percentage of mature pines then the rest. Therefore it was separated from the parent stand 30. There were portions of the stand that were interplanted with red pine in 2002. However, the current residual pines make up the majority of the crown closure. The overstory is heavy to white pines in the north western 1/3 and red pines in the south eastern 1/3. The soil is mainly Grayling
78	4191 - Mixed Upland Deciduous with Conifer	Sapling Well	24.7	15	1-50	This stand was harvested as a 4"spec clearcut in 1997. Currently there is quite a bit of 6-8" red pine left on the west end of the stand. It has regenerated well and was not interplanted with red pine. The red maple is heavier along the north edge, birch along the east edge, and the rest of the stand is mainly aspen, oak and jack pine. The soils get lower and wetter long the north and east. The main soil types are Graycalm and Croswell.
80	4139 - Aspen, Mixed Deciduous	Poletimber Well	34.3	26	81-110	The stand is two-aged with a maple, oak, pine pole/logs overtop of aspen and maple regeneration. Some of the overstory has come down and there is a fair amount of down woody material in the stand. The terrain is rolling. The white pine is concentrated along the shore of Haskel Lake and a pocket along the north edge. The soil type is mainly Montcalm.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
81	6120 - Lowland Cedar	Poletimber Well	16.5	99	111-140	The stand has a lot of downed trees in the central portion. The fir and maple in the stand are mainly along the edges. The ash is in pockets and has heavy EAB. There are inclusions of emergent marsh. The main soil type is Menominee.
83	4125 - Black, N. Pin Oak	Sapling Medium	10.4	16	Immature	The stand was harvested in 1998 and it was not interplanted. The terrain is fairly flat. The regeneration is somewhat variable.
85	4310 - Pine, Oak Mix	Sapling Well	80.4	12	Immature	The stand was harvested in 1998 than interplanted with red pine in 2002 and a portion had to be redone in 2004. The red pine is doing well in the swales and the hardwood is doing better on the slopes and hills. There are a few areas where a lot of 4" DBH trees were left when it was harvested. These areas are now poles. Soil type is Grayling.
87	4131 - Aspen, Oak	Sapling Well	25.7	16	Immature	The stand was harvested in 1998 and regenerated well naturally. Along the north edge there are pockets of pure oak as well as heavy oak understory beneath the aspen. The southern portion of the stand is heavy to aspen with not much in the understory. However there are pockets of oak. The stand is on a ridge. Soil is a mixture of Grayling and Montcalm.
88	4139 - Aspen, Mixed Deciduous	Poletimber Well	68.5	28	81-110	The stand is a 75 year old red maple/oak stand over 28 year old aspen/oak/maple trees. There are a few scattered large red and white pines that may be older than 75. The terrain is rolling and some of the swales are fairly wet. The oak regeneration is heavier north and the maple in the swales. The soil type is a mixture of Montcalm and Menominee
89	4130 - Aspen	Poletimber Well	67.5	48	111-140	The terrain is undulating. The stand is self-thinning and some of the residual oak has come down leaving a lot of down woody material. The soil type is mainly Montcalm.
91	4126 - White, Black, N. Pin Oak	Sawtimber Medium	4.6	85	51-80	The stand was thinned in 1990. It has a thick understory of oak much of it is > 4' tall. Soil type is Grayling.
93	4191 - Mixed Upland Deciduous with Conifer	Sapling Poor	31.5	5	Immature	The stand was final harvested in March of 2009, Hawthorn Mix, sale number 73-008-08-01. It was planted to jack pine in 2011, FTP C73-836. The planted jack pine seems to have a good survival rate. It is doing the best in the swales because of a lower competition with the oak. The oak is having a hard time getting established in the swales as a result of frost, much of it is < 4' tall. On the hills and ridges the oak is >4' tall and it is not competing the jack pine. The stand will eventually be a jack pine oak type. Soil type is a mixture of Grayling and Graycalm.
94	4131 - Aspen, Oak	Sapling Well	102.4	16	Immature	The stand was clear cut in 1999. Then a portion of it burned in a wildfire in the spring of 2005. The terrain is rolling. The species density and composition is variable. There are numerous aspen clones with an oak understory. There are also areas of oak and choke cherry. There are also some cold air drainages where the stand density is lower. The soil type is Graycalm.
95	42111 - Planted Red Pine, Mixed Deciduous	Sapling Well	18.9	12	Immature	The stand was harvested in 1998 than interplanted in 2002. The main soil type is Menominee.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
97	42220 - Natural Jack Pine	Poletimber Medium	3.2	75	51-80	The stand is a strip of trees left between the power line and Pierce Road. It is a mix of oaks and pines.
99	6122 - Black Spruce	Poletimber Poor	16.7	89	1-50	Observed the stand from the express way. This area is a large wetlands with scattered black spruce. The soil under the stand is Lupton Muck.
104	4130 - Aspen	Poletimber Well	5.7	79	81-110	The stand is of poor quality now much of the aspen looks to have fungi conks, The stand is an island in surrounded by marsh. Currently maple and balsam fir is coming up in the understory and will eventually replace the aspen. Some of the fir is already getting into the crown closure especially along the east edge that I could tell from the imagery and looking across the marsh of I-75.
105	4130 - Aspen	Poletimber Well	33.3	79	81-110	The stand is of poor quality now much of the aspen looks to have fungi conks, The terrain is hummocky to undulating and there is a drainage that goes through a portion of the north 1/3. Currently maple and balsam fir is coming up in the understory and will eventually replace the aspen. Some of the fir is already getting into the crown closure especially along the east edge that I could tell from the imagery and looking across the marsh of I-75.
107	4138 - Aspen (OI)	Poletimber Medium	15.0	38	81-110	The stand was harvested in 1977 as a clearcut. The majority of the stand appears to be aspen with some crowns looking like they are maple and some oak. Aspen crowns look to make up about 85% the crown, red maple 10% and oak 5%. There is some conifer understory but it look like it is only at a medium density. There appears to be a depression in the east side that look to have lowland shrubs.
108	42110 - Planted Red Pine	Sawtimber Well	29.9	59	141-170	The stand was thinned in the summer of 2011, Clare Red Pine Assist, sale number 73-009-07-01. There is an inclusion of L-Type and a vein of hardwoods and white pines in the central portion of the stand. The soil type is an association of Iosco/Kawkawlin
110	4130 - Aspen	Sapling Well	9.4	18	Immature	The stand was clearcut in 1997. The area has some wet ground scattered in it but it is concentrated along stand 109. There is excellent aspen regeneration overall. The soil type is mainly Menominee.
112	42110 - Planted Red Pine	Poletimber Well	13.3	59	81-110	The stand was thinned in the summer 2011. Clare Red Pine Assist 73-009-07-01.
114	4130 - Aspen	Poletimber Well	21.6	40	1-50	The stand has a thick understory of 2-3' balsam fir. The area has a lot of down wood from natural thinning. Some of the aspen has significant rot having numerous fungal conks. The soil type is a mixture of Iosco/Kawkawlin, Menominee, and Bevort.
115	6128 - Lowland Coniferous, Mixed Deciduous	Poletimber Well	29.6	99	51-80	There is a lot of down trees in the stand. The ash has heavy EAB. The overall crown closure is around 75% with a thick understory of balsam fir and ash. In areas where the cedar over story has come down the fir is so thick it is hard to navigate. The main soil type is Lupton Muck.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
116	4131 - Aspen, Oak	Sapling Well	27.9	17	Immature	The stand was clearcut in 1998. There is a small (1-2 acre) section of mixed aspen, white pine, and balsam fir that was painted out because of wet ground. The terrain is hummocky. The stand is variable in density and species mix. The crown closure goes from 40% to 100%. The central portion of the stand is heavier to oak.
117	4134 - Aspen, Spruce/Fir	Sapling Well	33.4	27	1-50	This stand is a well stock aspen type that is changing over to poles. It was harvested in 1988 as a 4" clearcut. There are now some pockets of pole size balsam fir. The terrain is undulating and there are a number of low wet pockets most are less than 1 acre in size. The balsam is thickest in the southern 2/3 of the stand. The area between stand 129 and 101 is heavy to birch. The main soil type is an association of Iosco/Kawkawlin.
118	4130 - Aspen	Poletimber Medium	79.9	36	81-110	The terrain is undulating and there are small lowland shrub inclusions. The soil type is a mixture of Iosco/Kawkawlin and Menominee.
121	42210 - Natural Red Pine	Sawtimber Well	20.1	75	141-170	The residual Red Pine was planted in 1940 and 1959. The stand had the hardwood and jack pine cut to 2" DBH in 1998. There are areas of very high density and some areas of low density. There The ORV tail in the stand. Soil under the stand is Graycalm,
122	4130 - Aspen	Sapling Well	29.8	27	1-50	The stand is a fully stocked aspen type that is now moving into poles. There is a small 1-2 acre areas of uncut, over mature aspen that is mixed with maple which was left by the home at the north east end. The private land to the east looks to be in trespass with their signs and trails. However, no survey corners were located. This area will need to be looked at to see if the private line can be established or a survey will be needed. The soil type is a mixture of Menominee, Brevort, and Iosco/Kawkawlin.
123	4310 - Pine, Oak Mix	Sapling Well	58.0	12	Immature	The stand was harvested as a 4" clearcut leaving pine in 1998. It was then interplanted with red pine in 2002. The stand is variable with some large areas of aspen and oak as well as near pure areas of planted red pine. The soils are mainly Graycalm with pocket of Grayling.
124	42141 - Planted Mixed Pine, Mixed Deciduous	Sapling Well	74.9	12	Immature	The stand was clearcut to 4” in 1997 retaining pines. The residual jack pine poles are higher at the north end, white pine logs are throughout and red pine sawlogs are scattered. The stand was interplanted with red pine in 2002. Soils are Graycalm.
125	6139 - Mixed Lowland Forest	Poletimber Well	43.6	92	51-80	The stand is highly variable and it is on the Muskegon River Flood Plain. The terrain is undulating and there are areas of good upland but the majority is low and wet. There are numerous springs along the base of the slopes that border the flood plain. The ash in the stand has heavy EAB and much is starting to decline and coming down along with the very old trees in the overstory. There are several oxbows in the stand some are more marsh like while others are ash swales. The soil under the stand is mainly Winterfield-Evart with some islands of Croswell.

Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
126	6128 - Lowland Coniferous, Mixed Deciduous	Poletimber Medium	3.7	78	51-80	The stand is low and wet with a lot of blow down along the north side. It transitions from pine and hardwood to tag alder, marsh grass and cattails. The soil under the stand is Markley Muck.
127	4191 - Mixed Upland Deciduous with Conifer	Poletimber Poor	1.3	40	1-50	This stand is a frost pocket that goes into a cold air drain. The trees are open grown and the oak has little or no regeneration. The soil type is Graycalm.
146	42120 - Planted Jack Pine	Sapling Well	21.3	20	Immature	The stand was planted in 1995. The jack pine has a low occurrence of galls. Also there are some killed leaders and dead trees but they are widely scattered. Soils under the stand are Grayling.
212	42110 - Planted Red Pine	Poletimber Well	5.2	59	81-110	The stand was thinned in the summer of 2011 in Clare Red Pine Assist, sale number 73-009-07-01. The main soil type is an association of Iosco/Kawkawlin
216	4130 - Aspen	Sapling Medium	15.7	17	Immature	The terrain is undulating. There is an open area along the road. The soil type is a mixture of Ubly, and Brevort.
246	4122 - Oak, Pine	Sapling Medium	7.2	35	1-50	The stand has a crown closure of around 60%. Most of the oak is stump sprout origin but some are seed source. The density in the stand is variable going from dense to sparse. The red pine has pole size DBH but it is short being mainly 2 stick trees. The ORV trail runs through the stand. Soils under the stand are Grayling.

Stand	Cover Type	Acres	Managed Site	General Comments:
1	6230 - Cattail	53.5	No	This is an emergent wetlands along Townline Creek. The stand has a 1/3 ownership in the property. The soil is Lupton Muck.
2	122 - Road/Parking Lot	4.3	No	This stand is the US-127 road right of way.
4	6230 - Cattail	160.5	No	The stand is the wetlands along Townline Creek. It is a mixture of lowland shrubs, marsh grass, leather leaf, and some scattered trees. The soil under the stand is Lupton Muck.
18	6239 - Mixed Emergent Wetland	43.1	No	This stand is the wetlands on either side of Townline Creek. The south east end is heavier to cattails and marsh grass with some large snags along the edges. The stand has a soil association of Winterfield-Evart.
34	310 - Herbaceous Openland	4.4		The stand was clearcut in 2011 and planted in 2013. The stand has some seedling oaks. However, most of the trees are less than 4' tall so they are not established. The soil under the stand is Grayling sand
42	510- Water (OI)	14.7	No	The Muskegon River.
43	3104 - Degraded	13.2	No	This area is a scramble area. New fence was put up in 2004 and it is still in good shape. This area has been a historical problem spot for ORV damage along the river. It was agreed at the 2007 compartment review that this area should be kept for ORVs and disperse camping. The soil under the stand is Croswell
47	122 - Road/Parking Lot	9.7	No	PIERCE Rd. and HARRISON AVE.
50	6224 - Treed Bog	16.9	No	The stand is mainly leather leaf with some other lowland shrubs along the perimeter. The terrain is very hummocky. The trees are fairly uniformly distributed but patchy by species.
56	790 - Other Bare/Sparsely Vegetate	2.0	No	This area is a gravel trespass that has now become an herbaceous open land with a lot of spotted knapweed.
64	500 - Water	30.2	No	Rice Pond
65	6229 - Mixed lowland shrub	53.8	No	This stand grades from lowland shrubs to leather leaf as it goes out to the Rice Pond. The soil under the stand is a Histosol
70	310 - Herbaceous Openland	1.8	No	The stand looks like it could have been a manage opening at one time. It is in a slight depression and a buffer was left along the edges of it in stand 59. However, there is no access trail to the opening at the current time. The soil is Menominee
71	6225 - Bog	19.1	No	This is a leather leaf bog with some jack pine along the perimeter. The soil type is a mixture of Histosol and AuGres.

Stand	Cover Type	Acres	Managed Site	General Comments:
79	500 - Water	18.0	No	North half of Haskel Lake
82	3303 - Mixed Low Density Trees	8.5	No	This area has some oak that is > 4' tall but not much. The jack pine is short, squat, and open grown. The density increases going to the east but the overall crown closure is 20%. Soil type is Grayling.
84	122 - Road/Parking Lot	1.7	No	This is Wilson Road
86	629 - Mixed non-forested wetland	8.7	No	The stand is in a depression and it goes from marsh and water to thick willow and tag alder. It's hard to tell how much water is presence because of the snow. The soil type is mainly a Histosol.
90	500 - Water	13.5	No	This stand is Townline Creek
92	500 - Water	4.3	No	This stand is Townline Creek
98	6225 - Bog	1.1	No	The stand is in a depression on a pocket of Loxley Muck soil.
100	6229 - Mixed lowland shrub	6.5	No	This stand is a depression that is heavy to tag alder. However, willow and other lowland shrubs are also in the stand.
101	623 - Emergent Wetland	8.8	No	The stand is now more of a cattail marsh then a beaver pond. The dam is still presence but it has been breached. The main soil type is an association of Iosco/Kawkawlin
102	6230 - Cattail	32.0	No	The stand was a beaver flooding but currently it looks more like a cattail marsh. The main soil type is Brevort
103	510- Water (OI)	3.5	No	This stand still looks to have some water in it but it is moving more toward emergent marsh. How much water of the stand is water is hard to tell with the snow cover.
106	6239 - Mixed Emergent Wetland	67.2	No	The stand is a marsh complex that has some lowland shrubs.
109	6224 - Treed Bog	10.5	No	The crown closure is closer to 15%. The soil type is Lupton Muck.
111	500 - Water	2.4	No	The stand looks to be an old beaver flooding that is starting to fill in with lowland shrubs. There could still be some open water but it's hard to tell at the current time because of snow. The soil is mainly Markley Muck.
113	6239 - Mixed Emergent Wetland	2.8	No	The stand is the wetlands along Townline Creek. It is a mixture of lowland shrubs, marsh grass, leather leaf, and some scattered trees. The soil under the stand is Lupton Muck.

Stand	Cover Type	Acres	Managed Site	General Comments:
119	6225 - Bog	1.1	No	The stand is a leather leaf depression with some conifer on the west end.
120	6225 - Bog	2.3	No	This stand is a leather leaf depression. The perimeter slope significantly and is treed. The soil type is Lupton Muck.
128	6220 - Alder/willow	3.0	No	This stand is in a depression and is mainly tag alder. There are pockets of aspen and birch but there is not much. The main soil type is an association of Iosco/Kawkawlin
129	6220 - Alder/willow	2.5	No	This stand is a depression that has some scattered aspen, maple and fir. The main soil type is Menominee.
209	6224 - Treed Bog	2.4	No	The crown closure is closer to 20%. The soil type is Lupton Muck.
400	310 - Herbaceous Openland	5.1	No	
402	3103 - Rubus-Fern	0.5	No	The stand is heavy to blackberry. It is not a maintained opening so it would make a good landing for stand 89.
403	310 - Herbaceous Openland	2.5	No	The stand looks to have been used as a gravel pit at one time and it looks to be mainly grass and other herbaceous. How much ORV damage there is to the area is hard to determine because of the snow depth. However, the snowmobilers are driving all over it.
404	310 - Herbaceous Openland	1.2	No	The stand appears to be the landing used to harvest stand 108. There are now some shrubs filling in along the edges. The soil type is an association of Iosco/Kawkawlin
405	320 - Upland Shrub	6.5	No	The stand is mainly shrubs 3-5' with some areas where it is 5-10'. There are also a couple of open areas of herbaceous ground cover. The soil type is an association of Iosco/Kawkawlin
406	3102 - Grass	2.7	No	utility line ROW