Compartment Review Presentation

Gladwin Forest Management Unit

Compartment 73009
Entry Year 2024
Acreage: 7,086
County: Clare
Management Area: Kirtland's Warbler

Stand Examiner: Colton Behrmann

Legal Description:

T20N – R5W: Sections: 2-10 & 15-20
T20N – R6W: Sections: 1, 13, 14, & 23–26

Identified Planning Goals:

The entire compartment is in the heart of the “Leota Kirtland Warbler Management Area” (LKWMA) which is dominated by large contiguous blocks of even age jack pine management areas that are designed to produce nesting habitat for the Kirtland Warbler. The entire LKWMA has special resource management direction as a “Dedicated Species Recovery Area” and has been dedicated as a High Conservation Value Area (HCVA). Leota KW management Blocks 113, 114, 115, 116, 117 and 118 are all within the compartment. Management on the portion that is not classified as essential habitat will emphasize balancing the age classes of aspen and red pine and regenerating the aging oak resource. Management activities may be constrained or modified based on management recommendations described in the Conservation Strategy Expected trends within this 10-year planning period are introduced pests and diseases and assuring jack pine regeneration on Kirtland’s warbler sites.

Soil and topography:

The area varies from well drained Grayling sands in the outwash plains to poorly drained mucky Lupton-Markey soils as you enter the Muskegon River Floodplain, the Clam River Floodplain and the Cranberry Creek Corridor. The terrain varies from nearly level to the steep banks that lead down into the floodplain of the Muskegon River, Clam River and Cranberry Creek.

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

The state land in this compartment is spread out over 22 sections and occurs in large contiguous blocks. Private in-holdings are mostly comprised of large (40 plus acres) forested blocks with single absentee ownerships. There is little forest management activities on the private holdings. Rainbow Bend Subdivision is located in the center of the compartment (Section 16) along the Muskegon River. This is a small subdivision made up of both homes for permanent residents and seasonal use cottages that concentrates use on the state land and along the river. The town of Leota is directly adjacent to the east end of the compartment.

There are several U.S. Fish and Wildlife Service parcels within the compartment.

Unique Natural Features:

This area has a variety of rare species that could be or are present including; Secretive Locust, Kirtland Warbler, Red-legged Spittle Bug, Red Shouldered Hawk, Eastern Box Turtle, Goshawk, Bald Eagle, Osprey, Great Blue Heron, Wood Turtle and Blanding’s Turtle. There is also potential for Beak Grass, Broad-leafed Puccoon in stands along the Muskegon River, and dry prairie plants in the grassy openings.

Archeological, Historical, and Cultural Features:

There are six documented sites within the compartment.

Special Management Designations or Considerations:

The entire compartment is within the Leota Kirtland Warbler Management Area and has special resource management direction as a “Dedicated Species Recovery Area”.

Watershed and Fisheries Considerations:

Cranberry Creek and the Clam River flow into the Muskegon River within the compartment. Cranberry Creek and the Clam River are both designated trout streams and should be treated as cold water fisheries. Cranberry Creek and the Clam River are in valleys and have a natural buffer of lowland brush, lowland timber types and marsh directly adjacent to its banks; these river corridors should be considered sensitive wetland. The Muskegon River, a warm water fishery and a major Michigan watershed has a natural corridor (floodplain) of lowland swamp hardwood along most of the water course and should be considered a sensitive area for timber harvest purposes. Upland/High bank areas along the river should also be considered sensitive. The Muskegon River Floodplain and associated bottomlands are seasonally flooded.

Wildlife Habitat Considerations:

Timber harvest and planting prescriptions are heavily influenced by the needs of the endangered species the Kirkland's Warbler. Jack Pine stands in this compartment will be managed to provide suitable habitat for the warblers. A Kirkland's Warbler management plan exists outlining a cutting rotation for this compartment. Some game species that use this compartment include white-tailed deer, black bear, ruffed grouse and wild turkey. Many other wildlife species likely to use this compartment include upland sandpiper, common nighthawk, brown thrasher and eastern hognose snake.

Mineral Resource and Development Concerns and/or Restrictions

The nearest active sand/gravel pit is less than two miles to the southeast. There may be some potential for sand & gravel within the compartment, but development potential may be inhibited by oil & gas infrastructure and wetlands. The Cranberry Lake oil & gas and gas storage field crosses the compartment. The oil wells are mostly undergoing secondary recovery operations/production. This field is unlikely to see many new development wells. State-owned mineral rights and storage rights in the middle of the compartment are mostly under lease. No known metallic mineral potential exists in this part of the state. The State does not own all the mineral rights within the compartment. Because the mineral estate is the dominant estate, reasonable access to the surface must be provided to private owners if they choose to explore or develop their mineral rights.

Surface sediments consist of glacial outwash sand and gravel and postglacial alluvium and ice-contact outwash sand & gravel. The glacial drift thickness varies between 400 and 800 feet. Beneath the glacial drift are the Pennsylvanian Saginaw and Grand River Formations.

Vehicle Access:

Access to most of the compartment is good via the county road system and state two tracks that are in place.

Survey Needs:

Survey requests have been submitted for 20N, 05W Section 4.

Recreational Facilities and Opportunities:

The Leota ORV trail is located within the compartment. The area receives moderate hunting pressure, most of which is deer hunters. Moderate fishing occurs on Cranberry Creek, Clam River and the Muskegon River. Canoe traffic on the Muskegon River can be heavy on weekends during the summer.

Fire Protection:

Large contiguous blocks of explosive jack pine fuels exist, causing this area to be vulnerable to wildfire of catastrophic proportions. This area is prime for potential fire control problems. Oak mortality has added high levels of dead woody material near the ground. If ignited, this dead wood will carry higher levels of heat up into the ladder fuels, thus torching and crown fires are more likely to develop. Some natural fuel breaks exist. The Natural Gas Storage Field and pipelines add additional challenges for fire control forces.

Additional Compartment Information:

Awaiting new guidance on KW Management Blocks within this compartment.

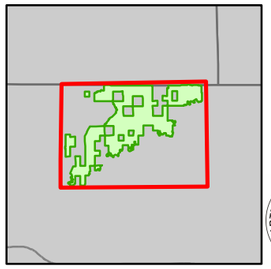
The following reports from the Inventory are attached:

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

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

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

Cover Type & Treatments Map



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T20N–R06W: Sec.1,13,14,23–26
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YOE: 2024
Acres: 7086.4 GIS Calculated
Examiner: Colton Behrmann
Map Revised: 6/2/2022
Map Phase: Web-Post

N

0 0.5 1 2 Miles

- Miris Corners
- Remonumented Section Corners
- Survey Grade Corners
- Counties
- DNR - Secondary Forest Road
- DNR - Forest Access Route
- Federal / State / County - Paved Road
- Federal / State - Dirt / Gravel Road
- County - Gravel Road
- County - Dirt Road (Seasonal)
- ORV Trails
- Snowmobile Trails
- Designated ATV
- Designated Snowmobile Trails
- Berms
- Gate
- Bridges
- Intermittent Stream
- Island in Lake or River
- Lake/Pond
- Perennial River
- Lakes and Rivers
- Pipeline
- Powerline
- Compartment Boundary
- Other Treatment - See Comments
- Planting (tree species)
- Clearcut (w/Reserves)
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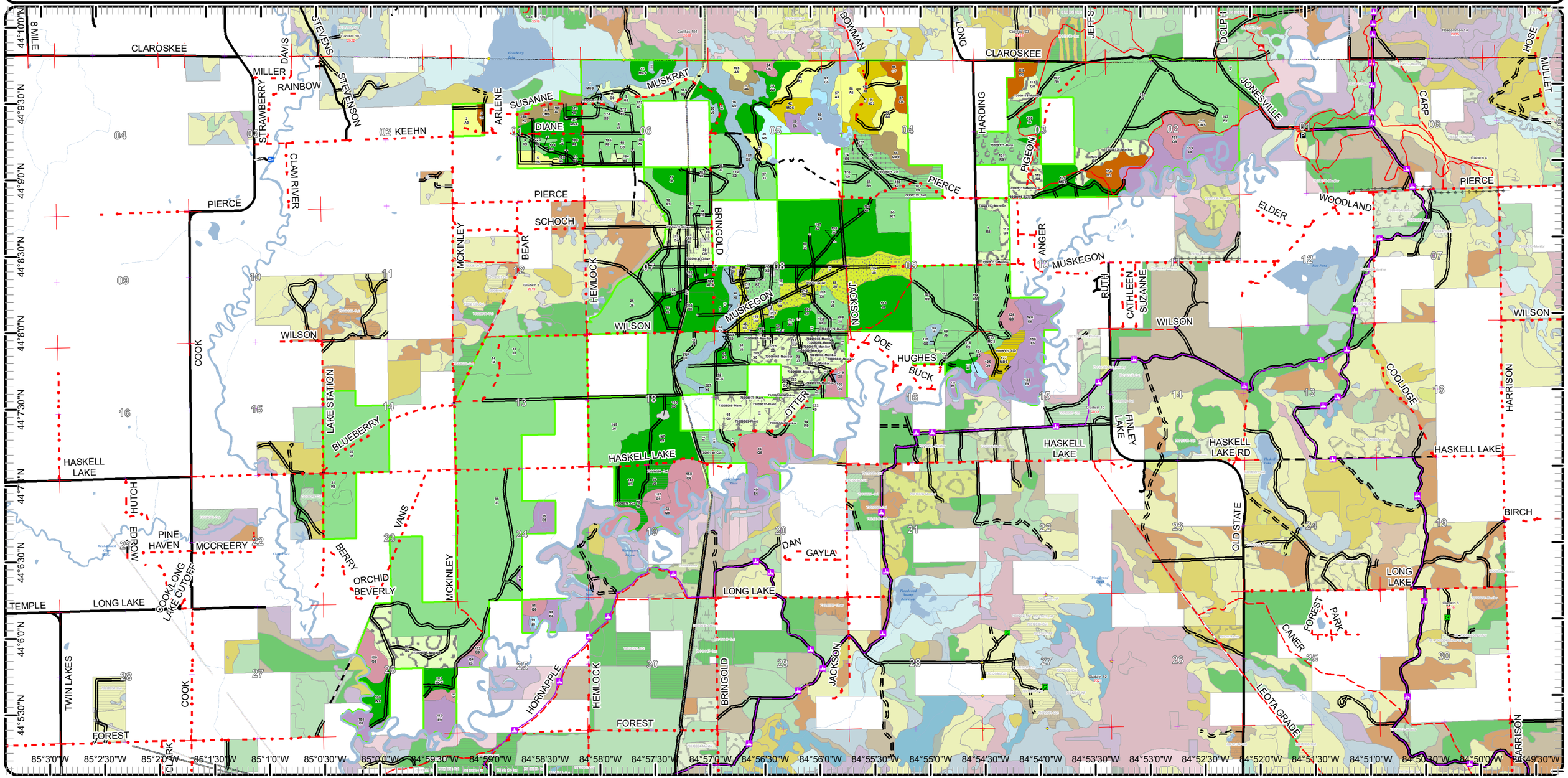

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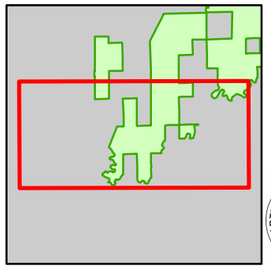

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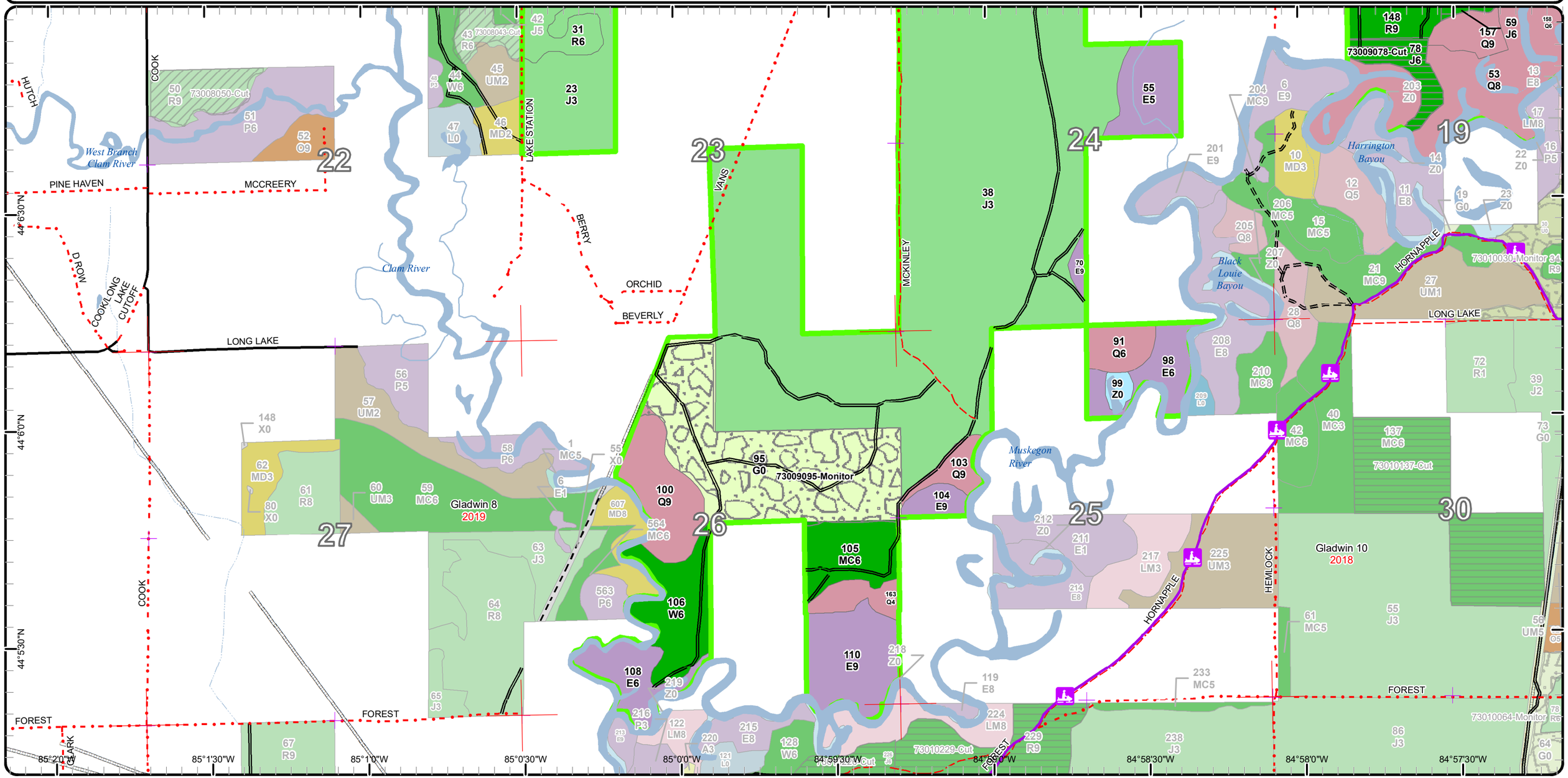
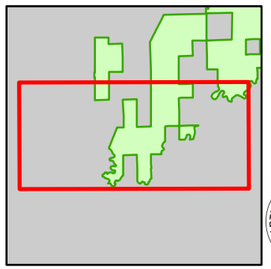


Stand Boundary Map



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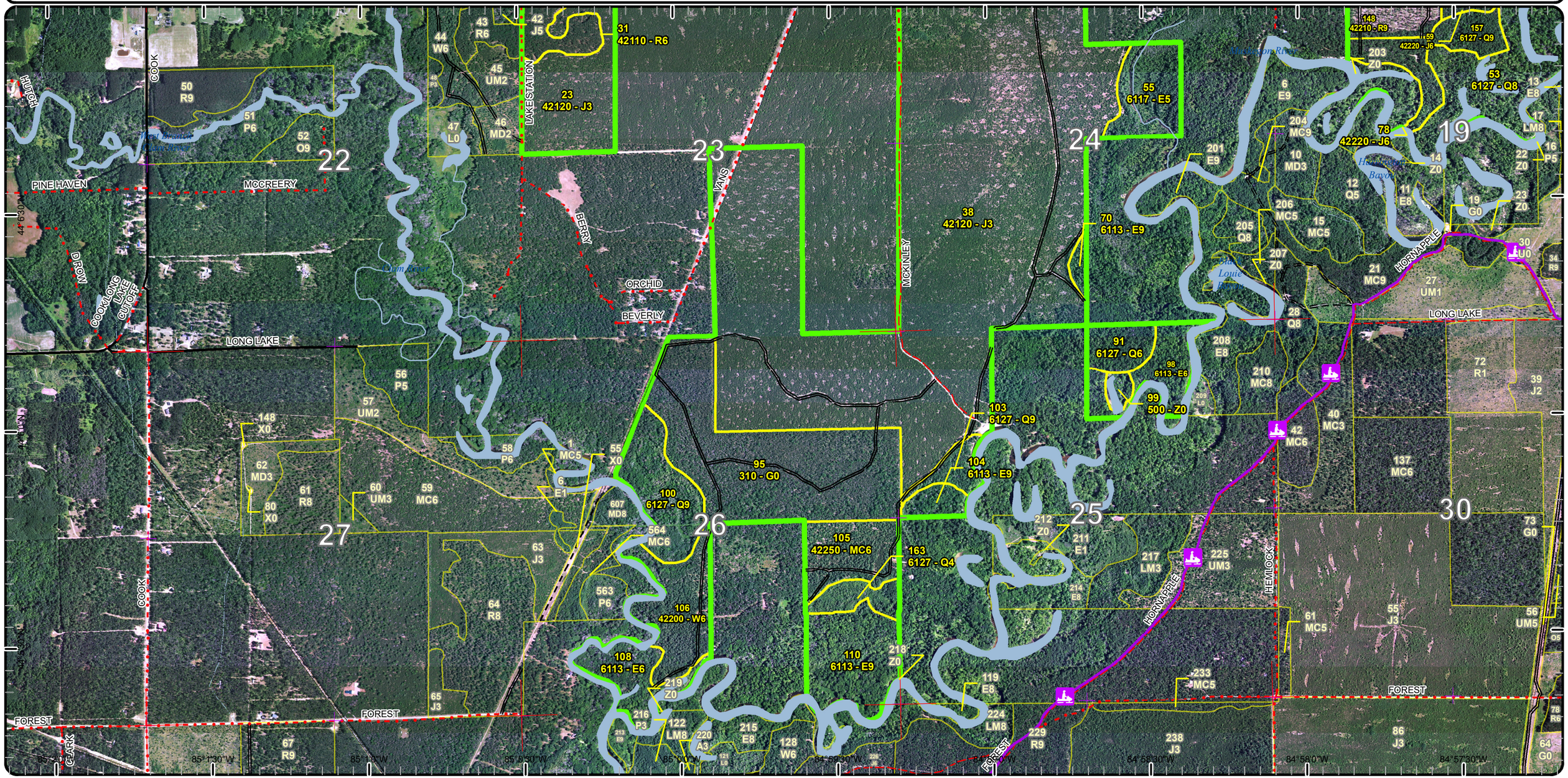
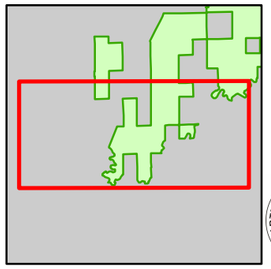


Special Conservation Areas



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- Available w/ Constraints
- 5B: Maintain for regeneration purposes
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- 3J: Water quality / BMPs (stream, river, or lake)
- 5E: Long-Term Retention
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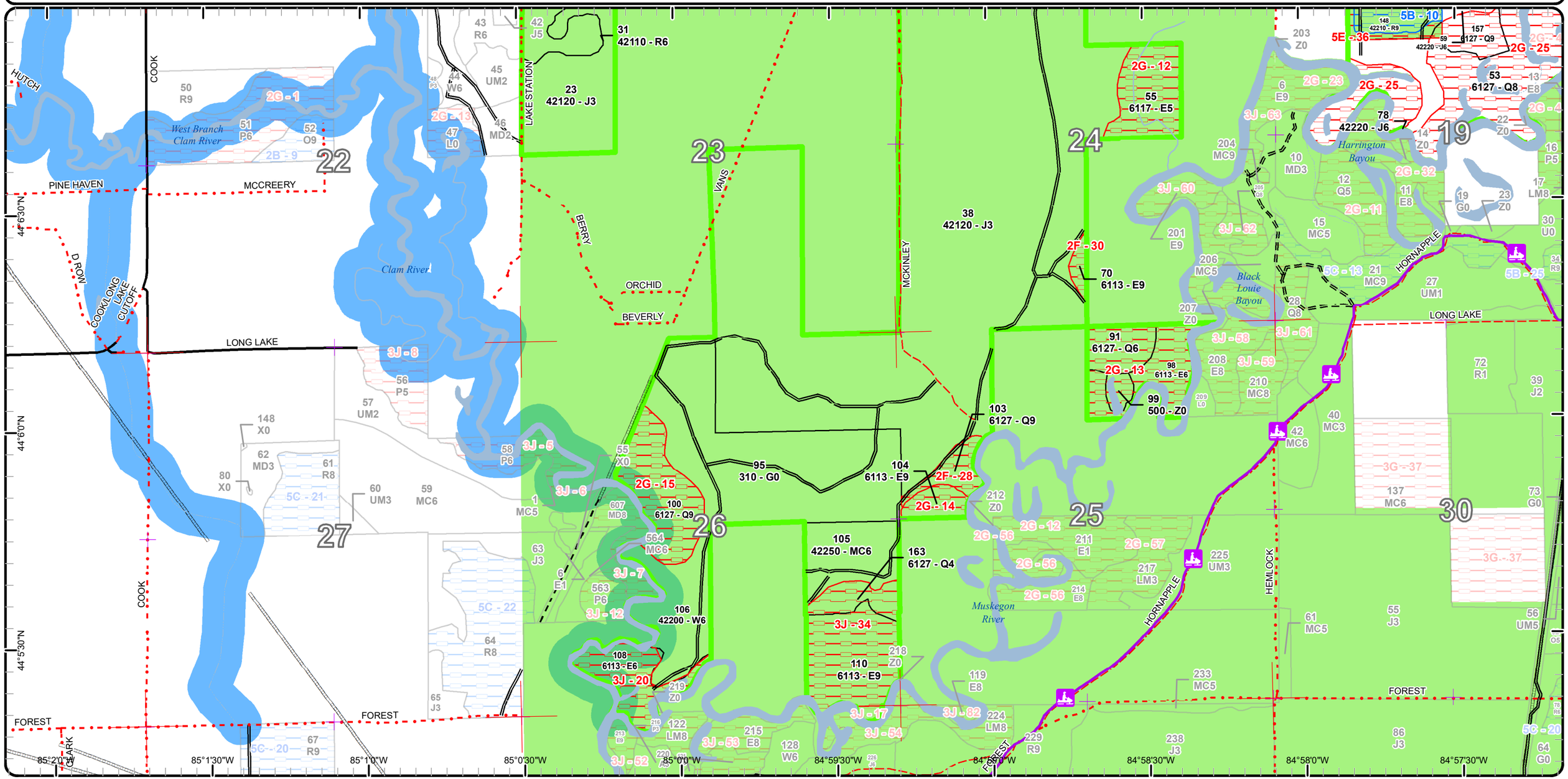
- Cold Water Lakes
- High Priority Trout Stream Buffer



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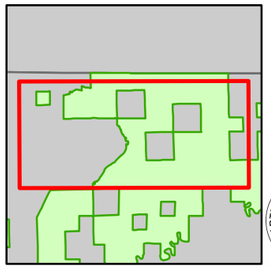

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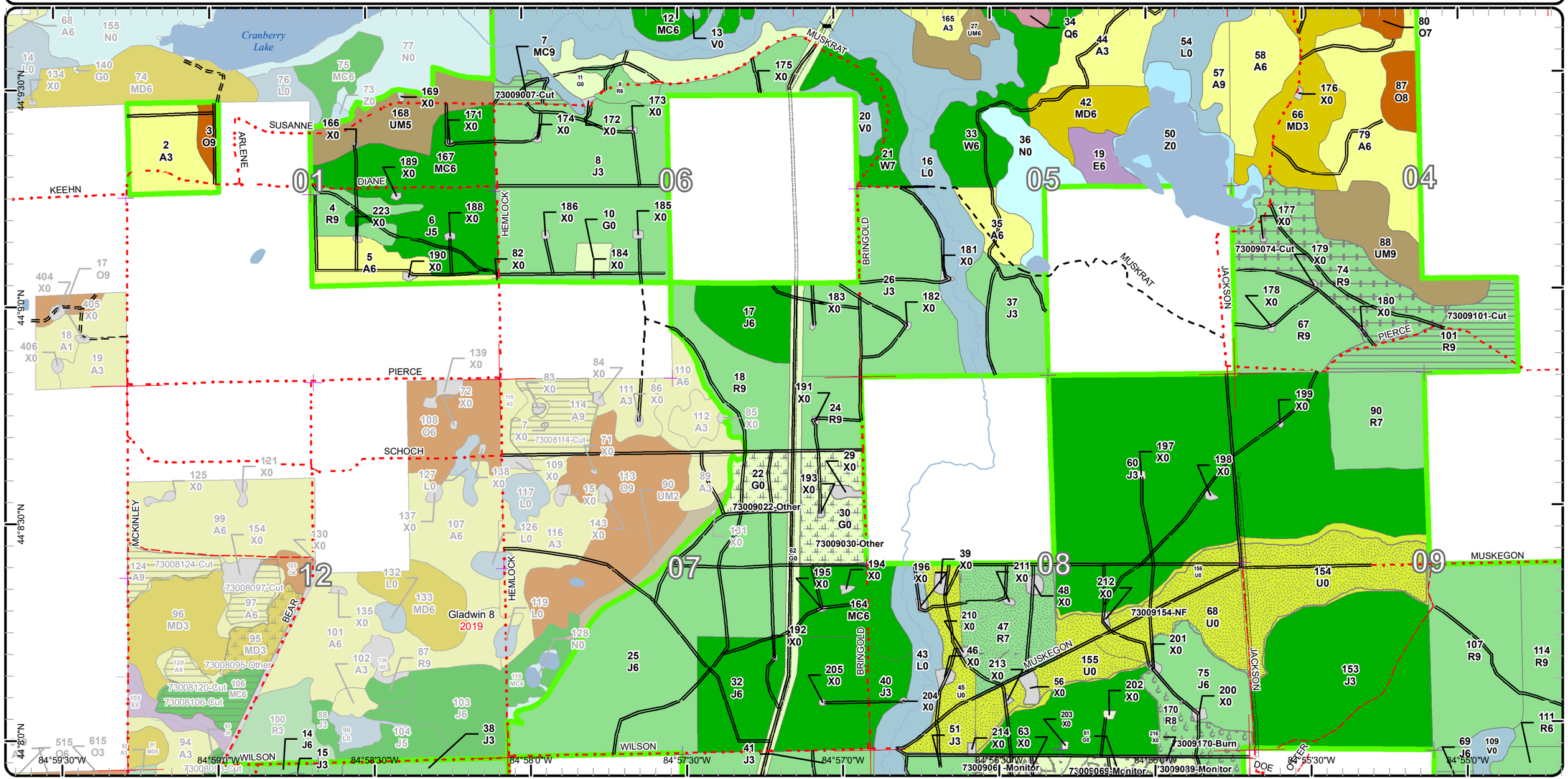

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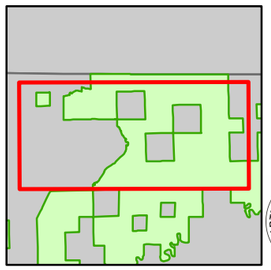

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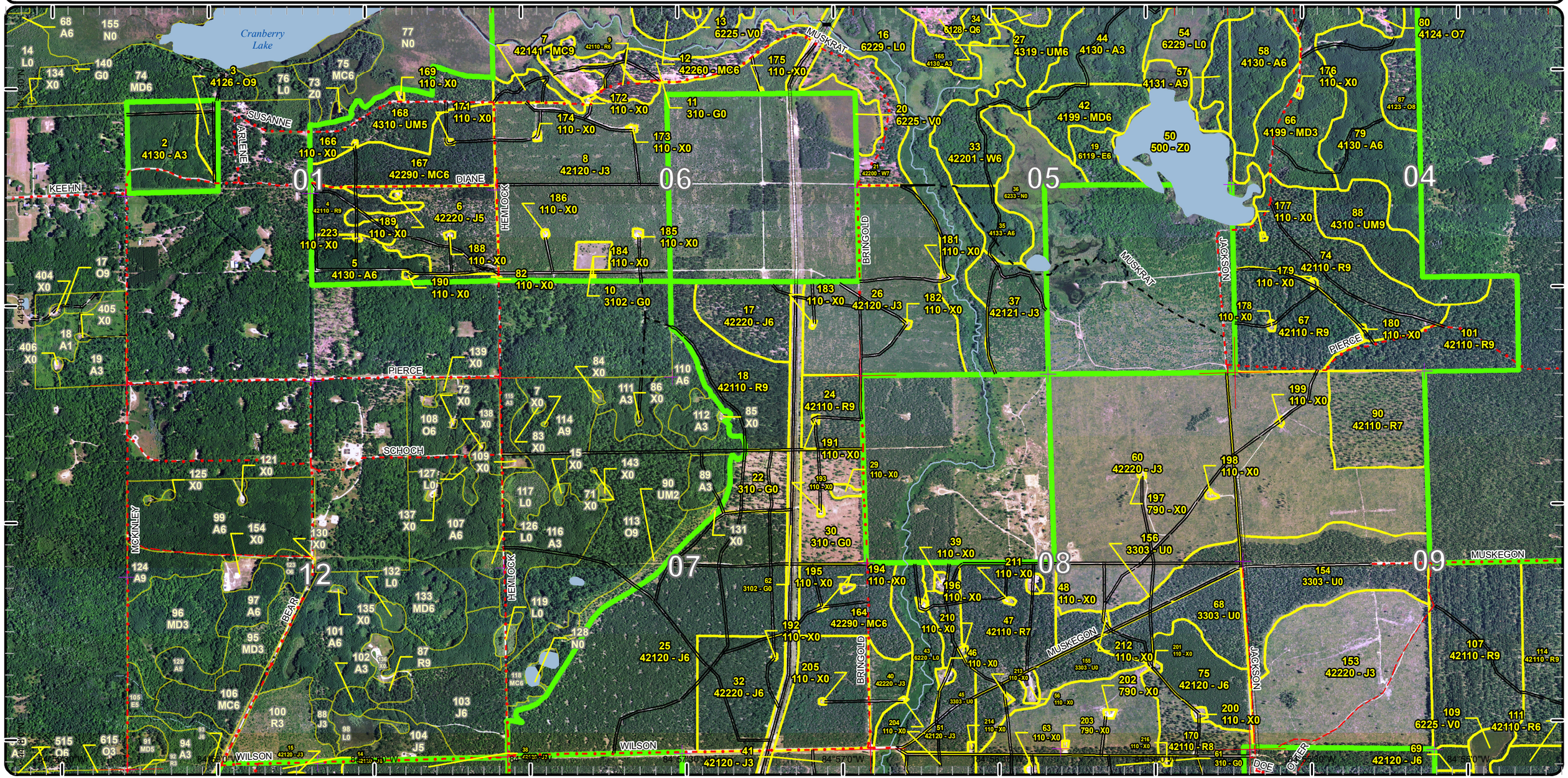
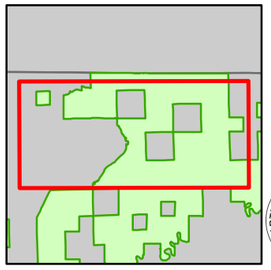


Special Conservation Areas



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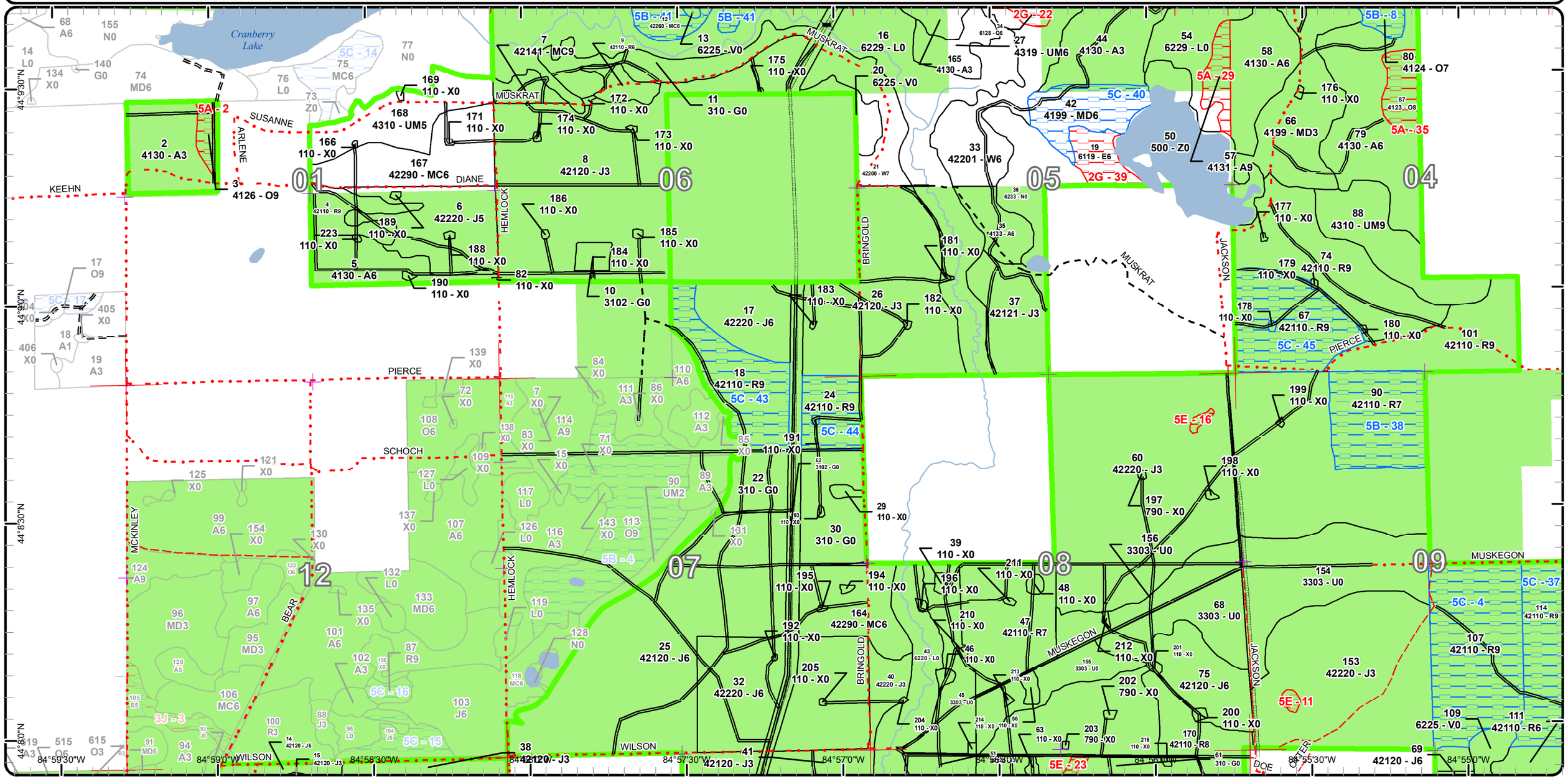

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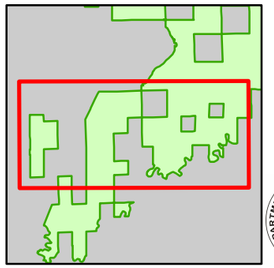

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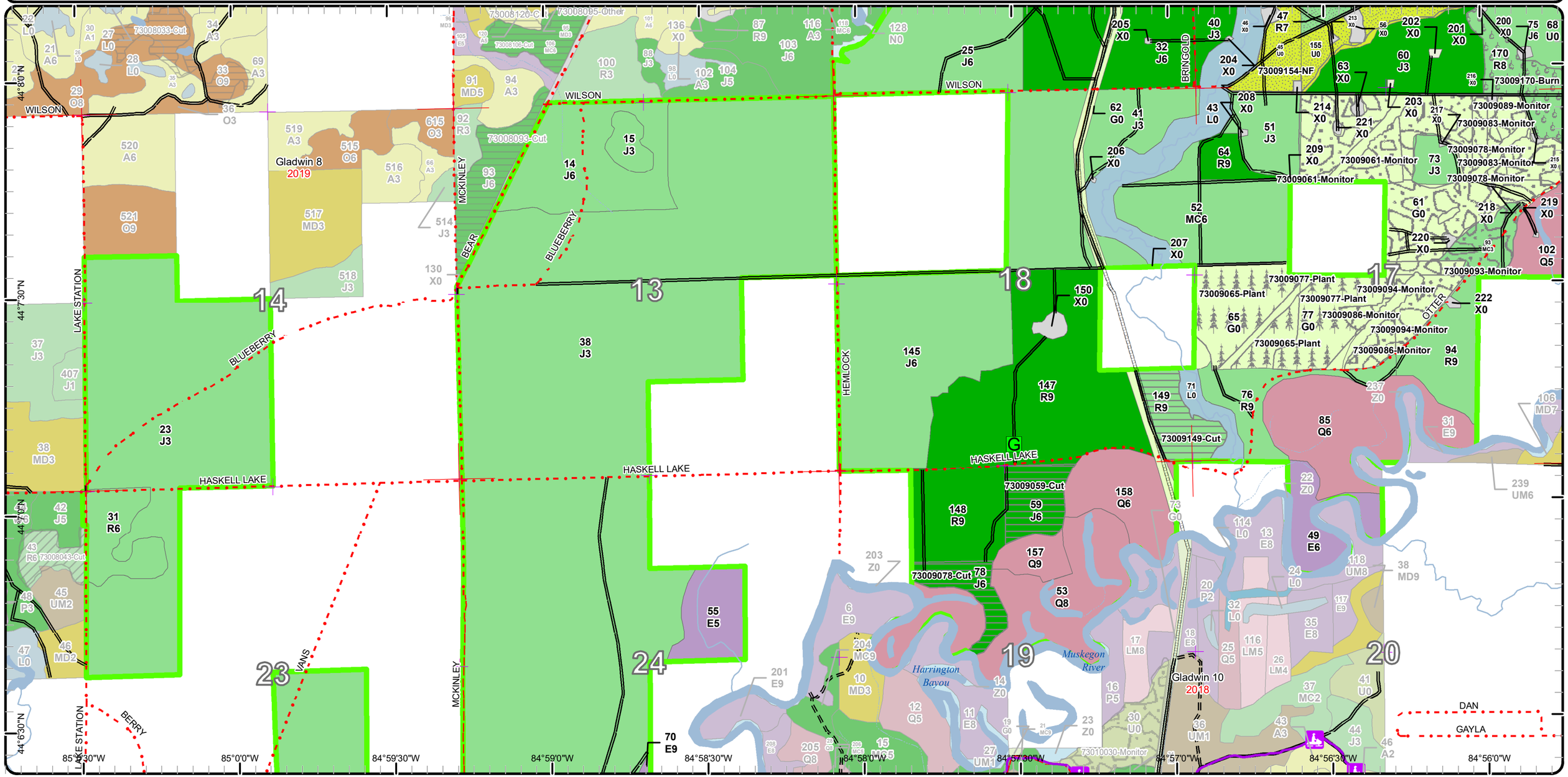

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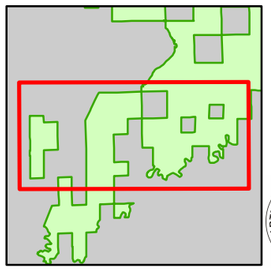

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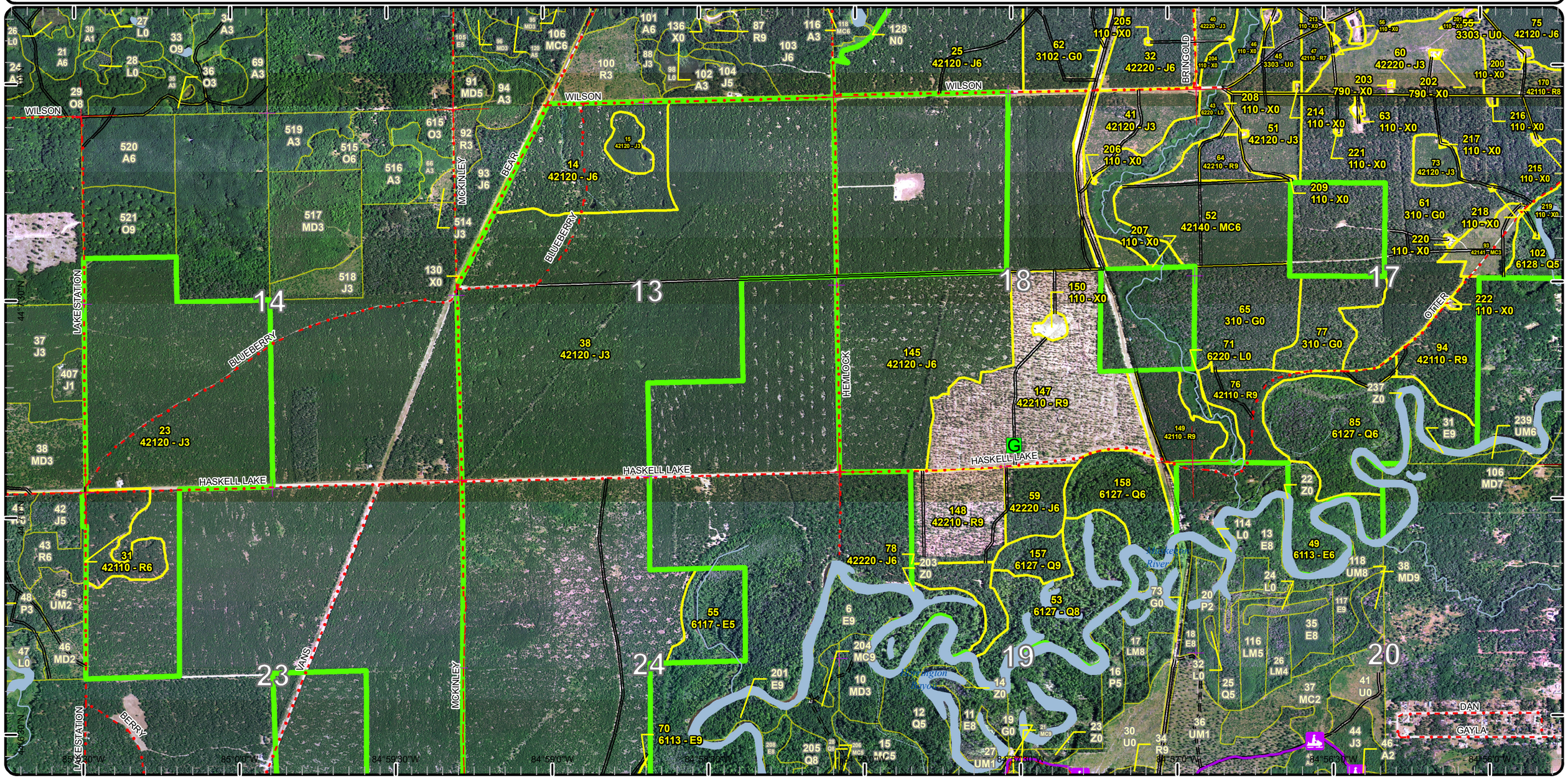

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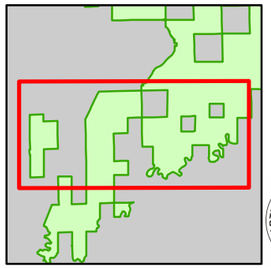

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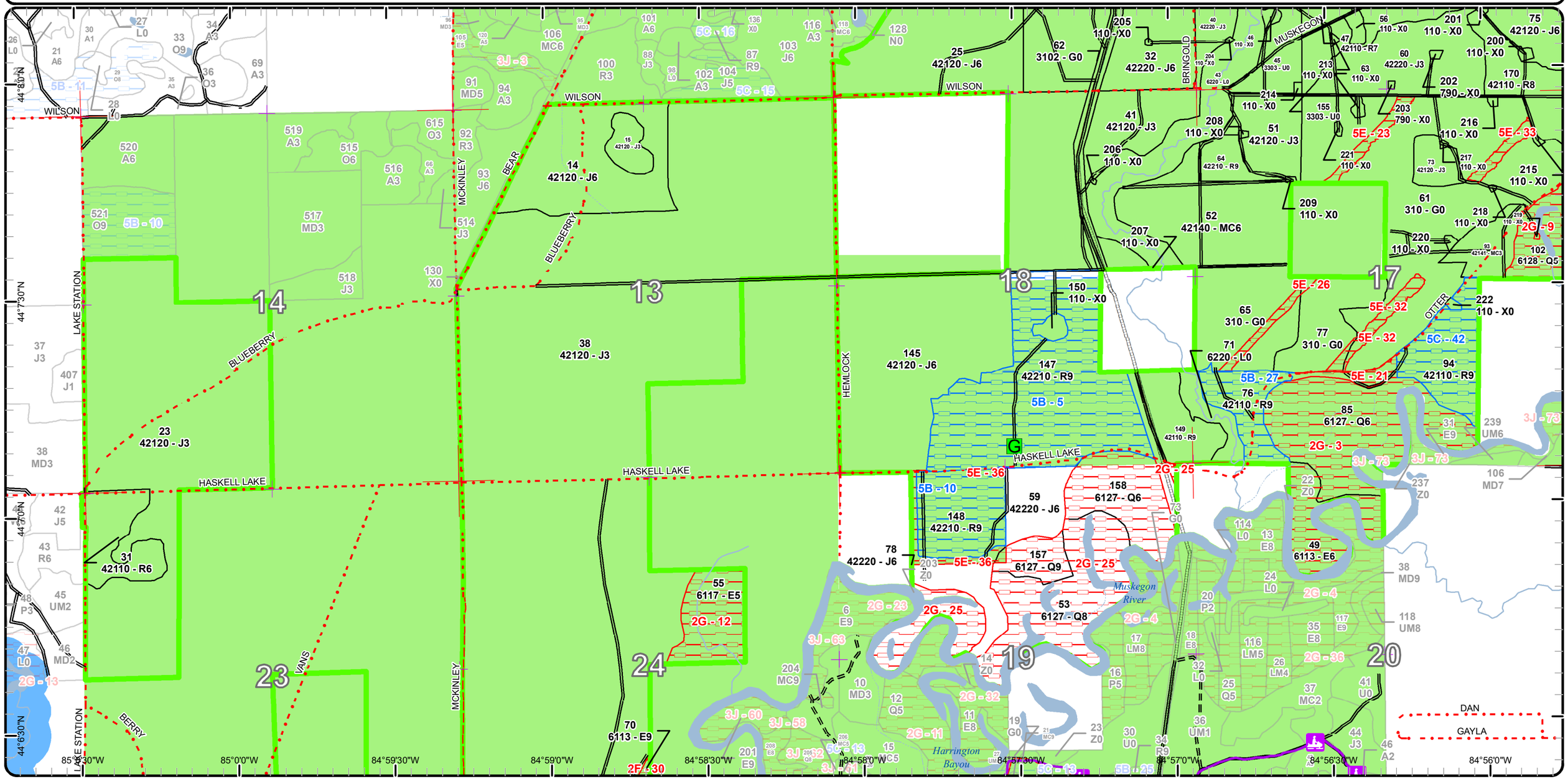
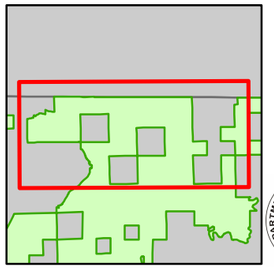
- High Priority Trout Stream Buffer



Cover Type & Treatments Map



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YOE: 2024
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Examiner: Colton Behrmann
Map Revised: 6/2/2022
Map Phase: Web-Post

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- 623 - Emergent Wetland
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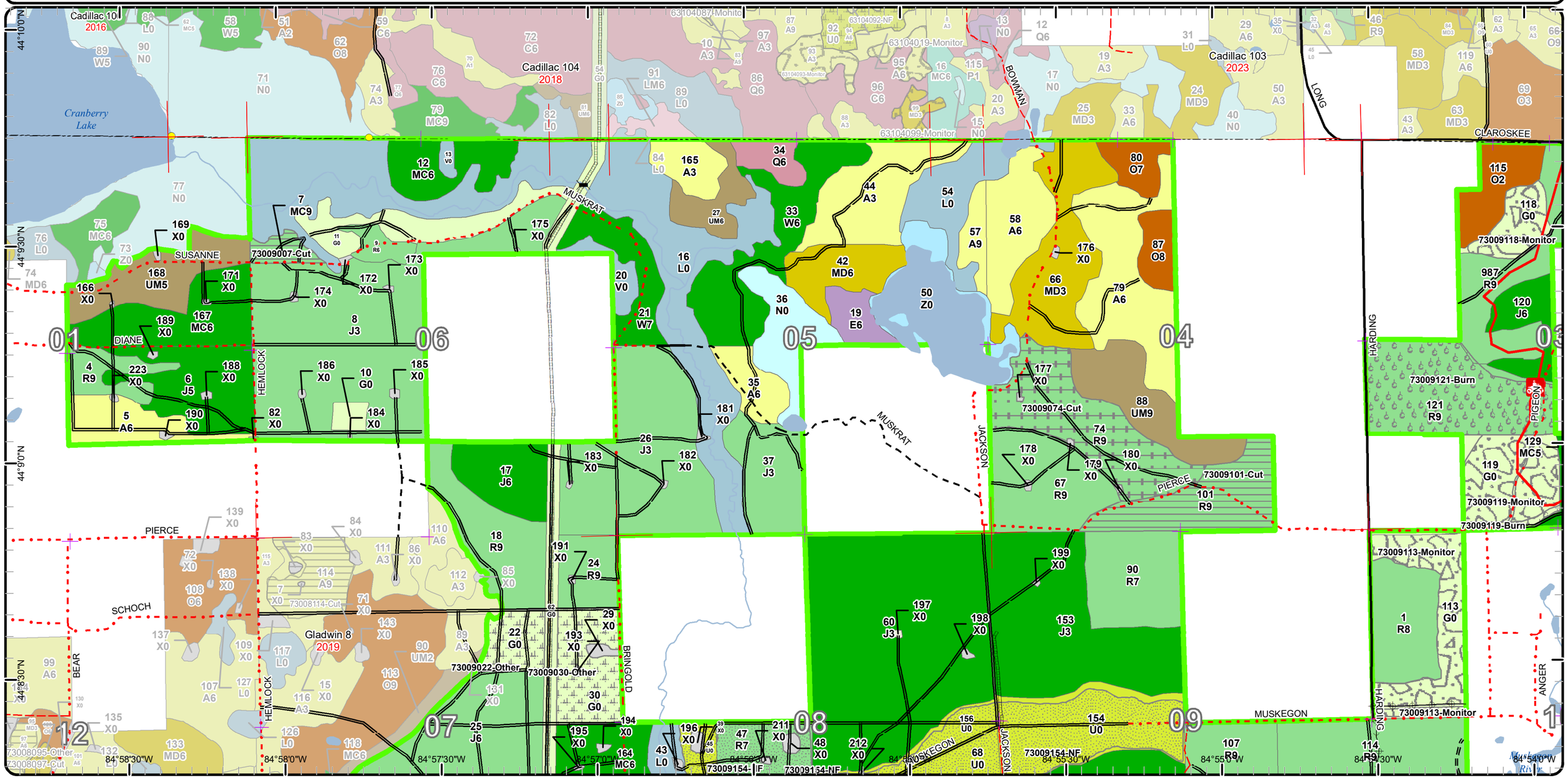
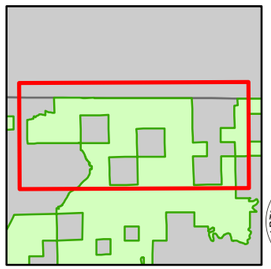


Stand Boundary Map



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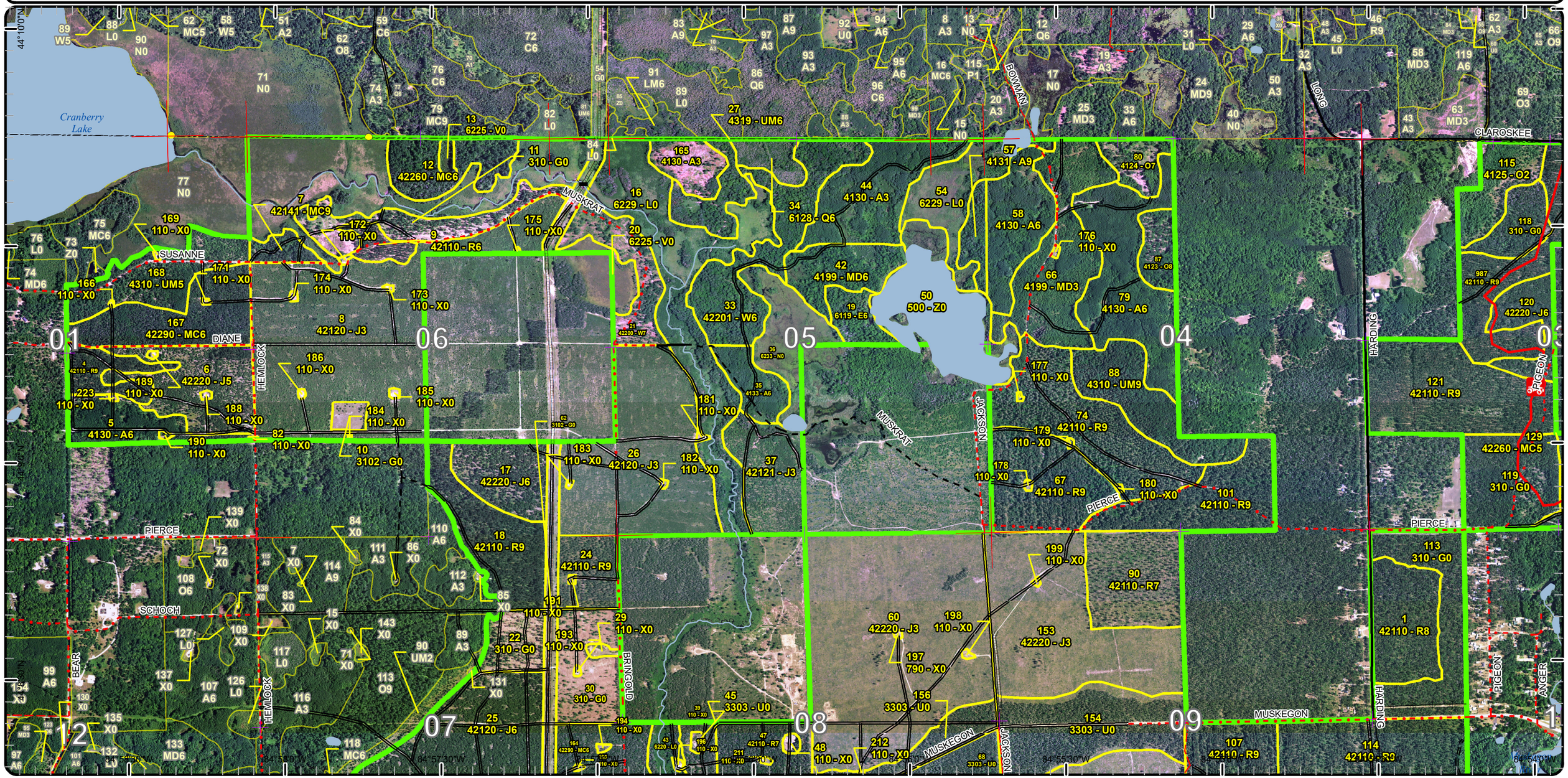

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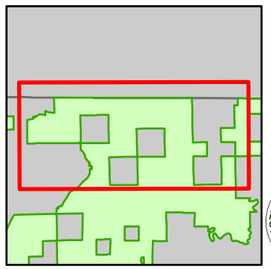

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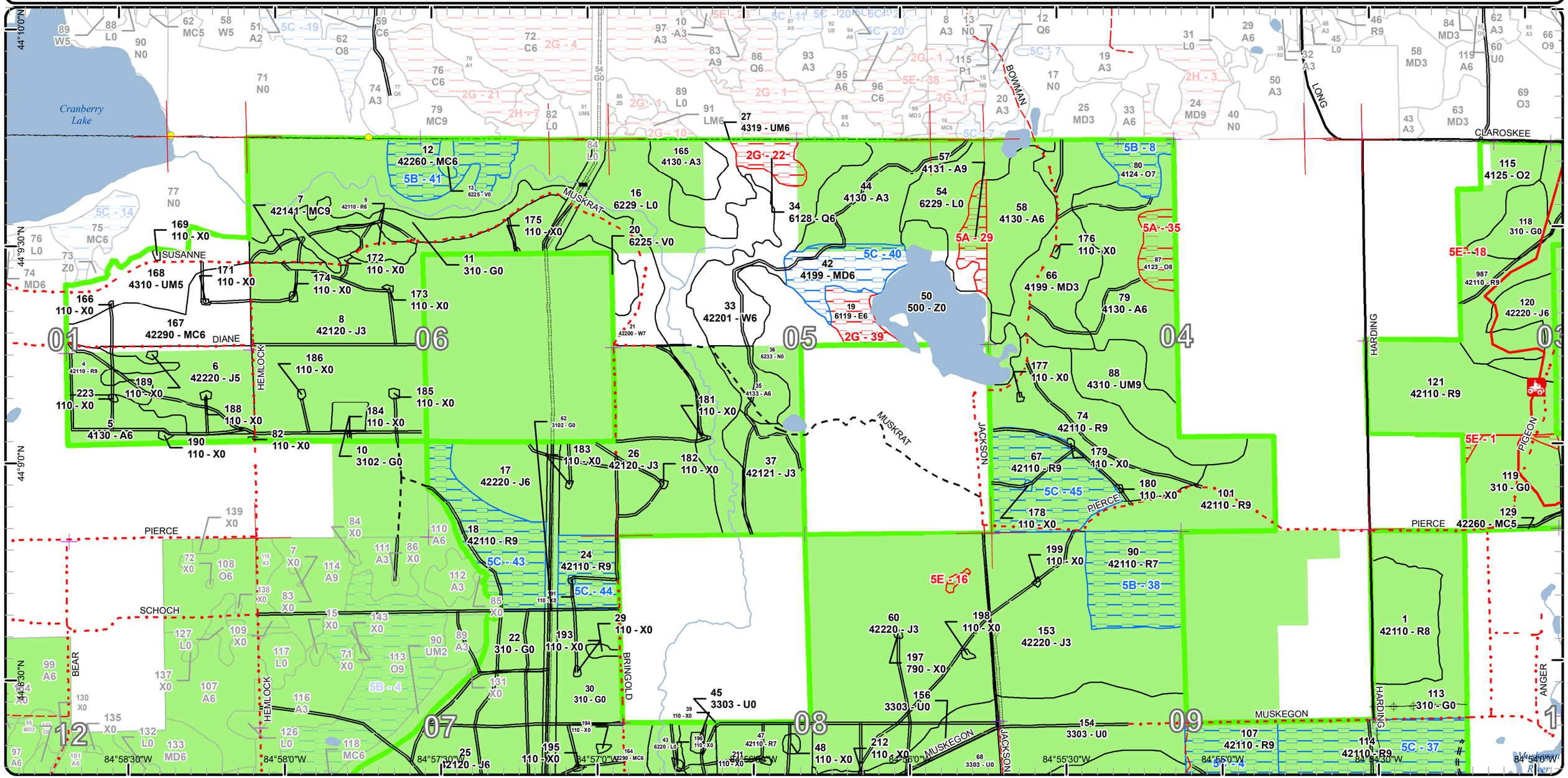

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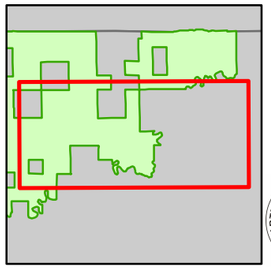

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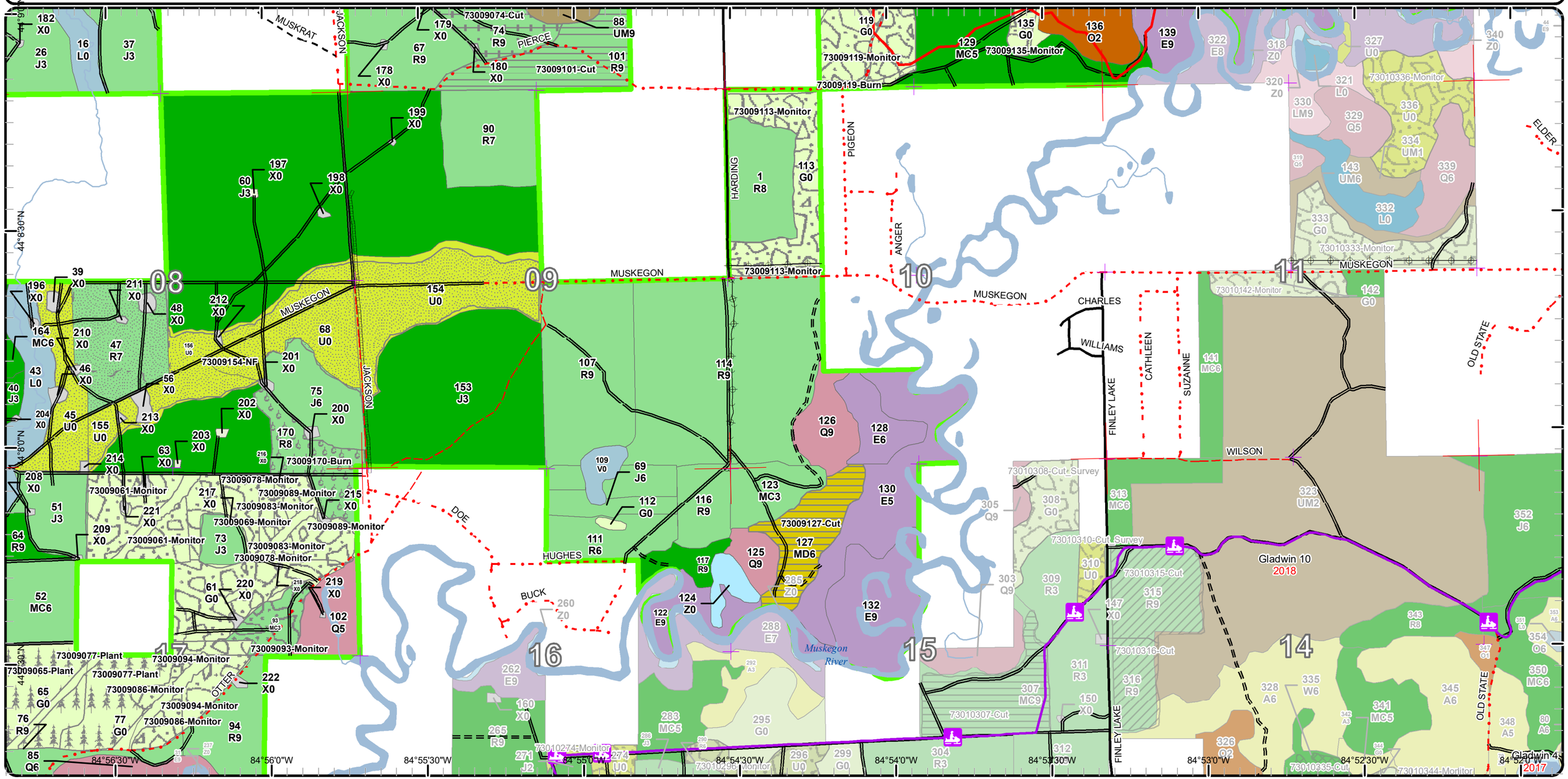

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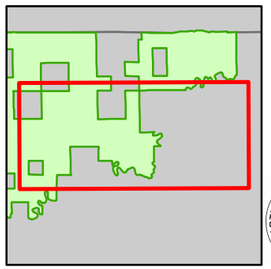

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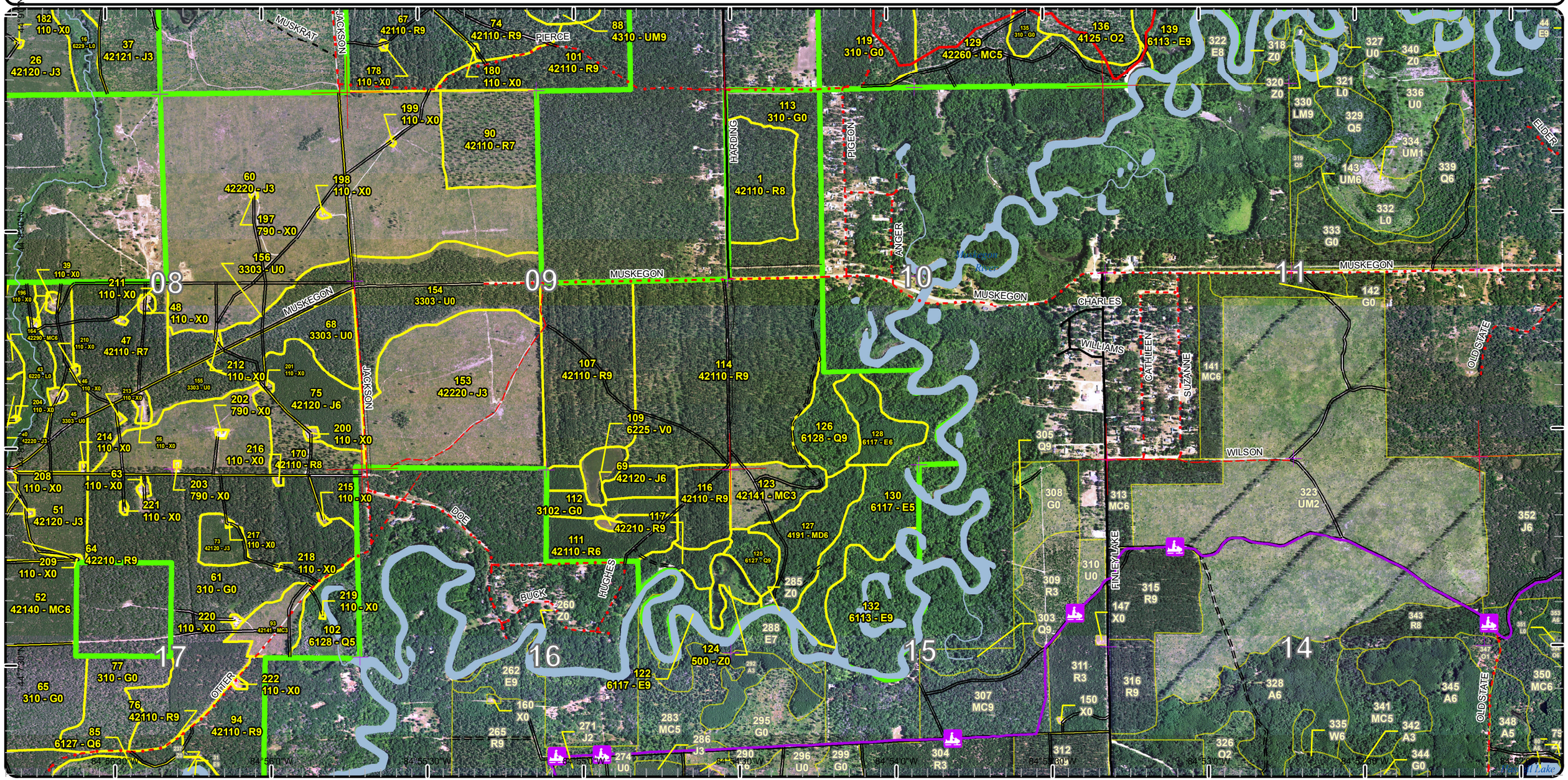

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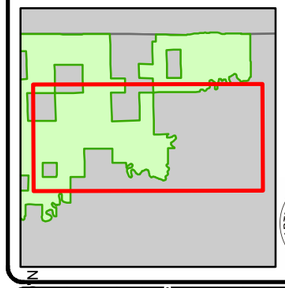

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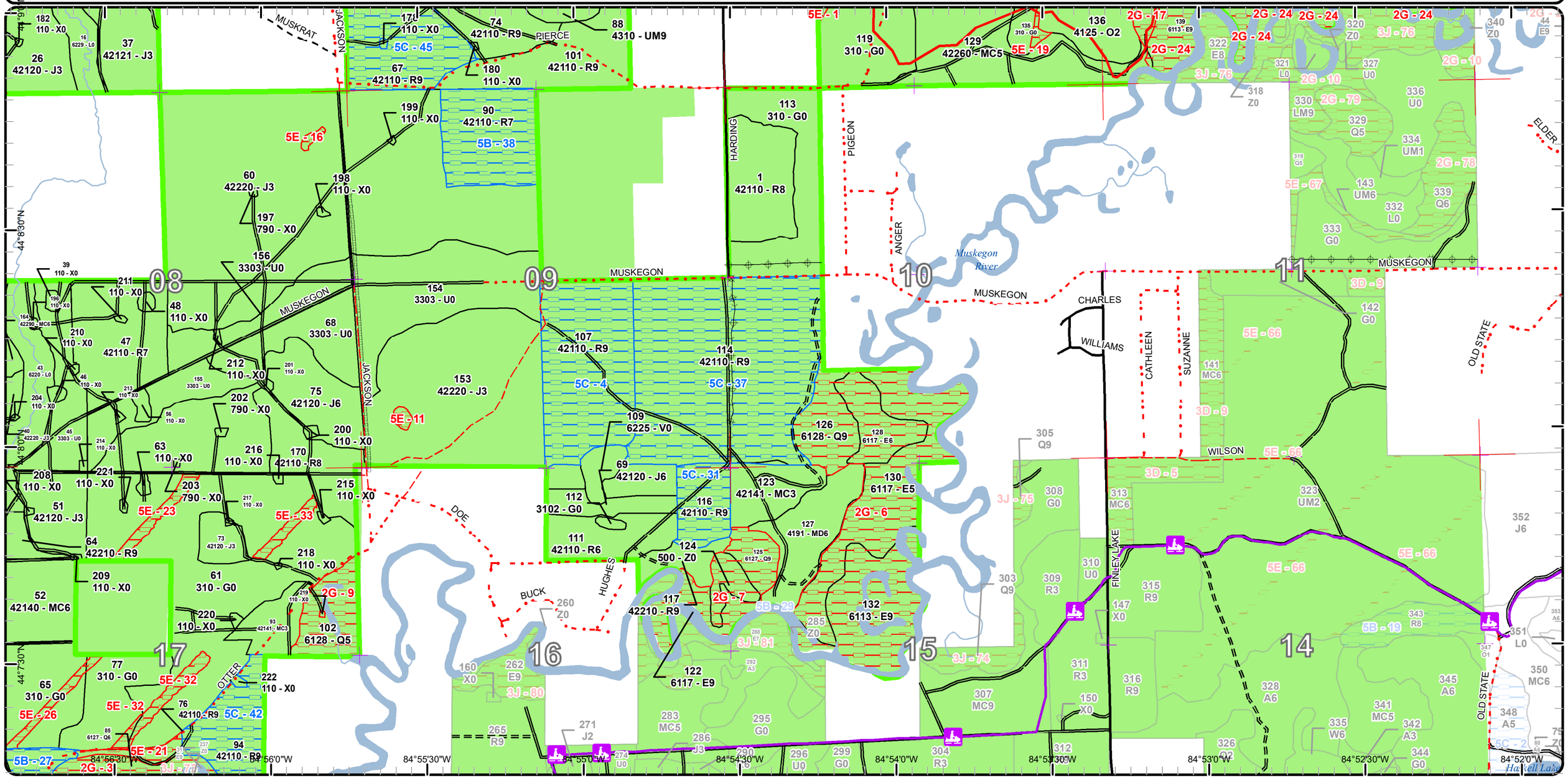

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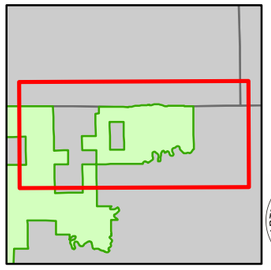

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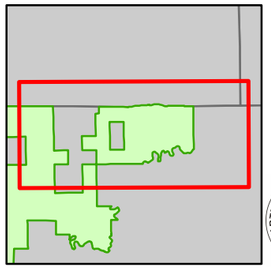

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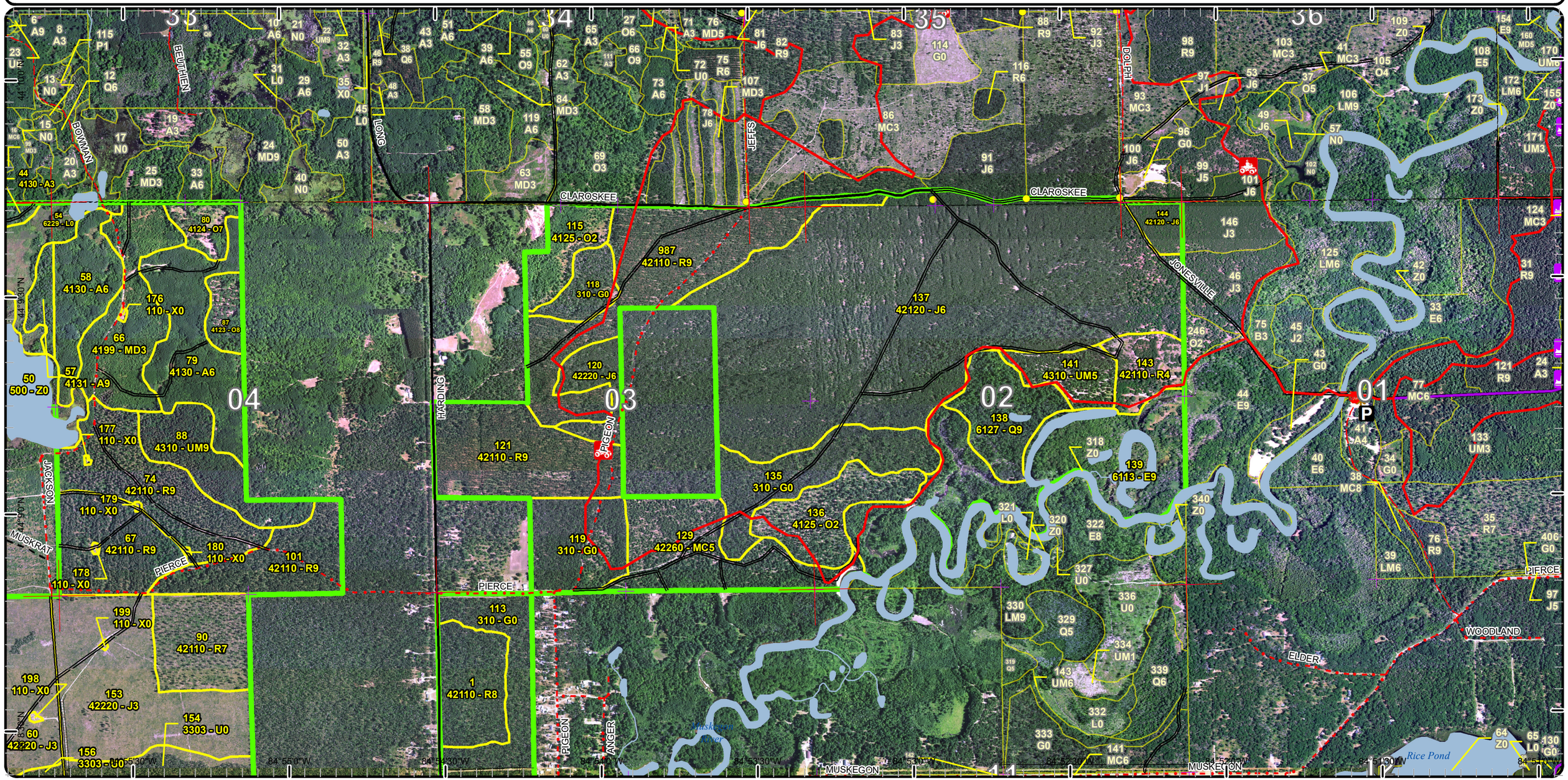

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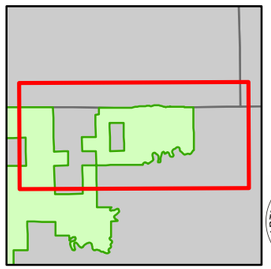

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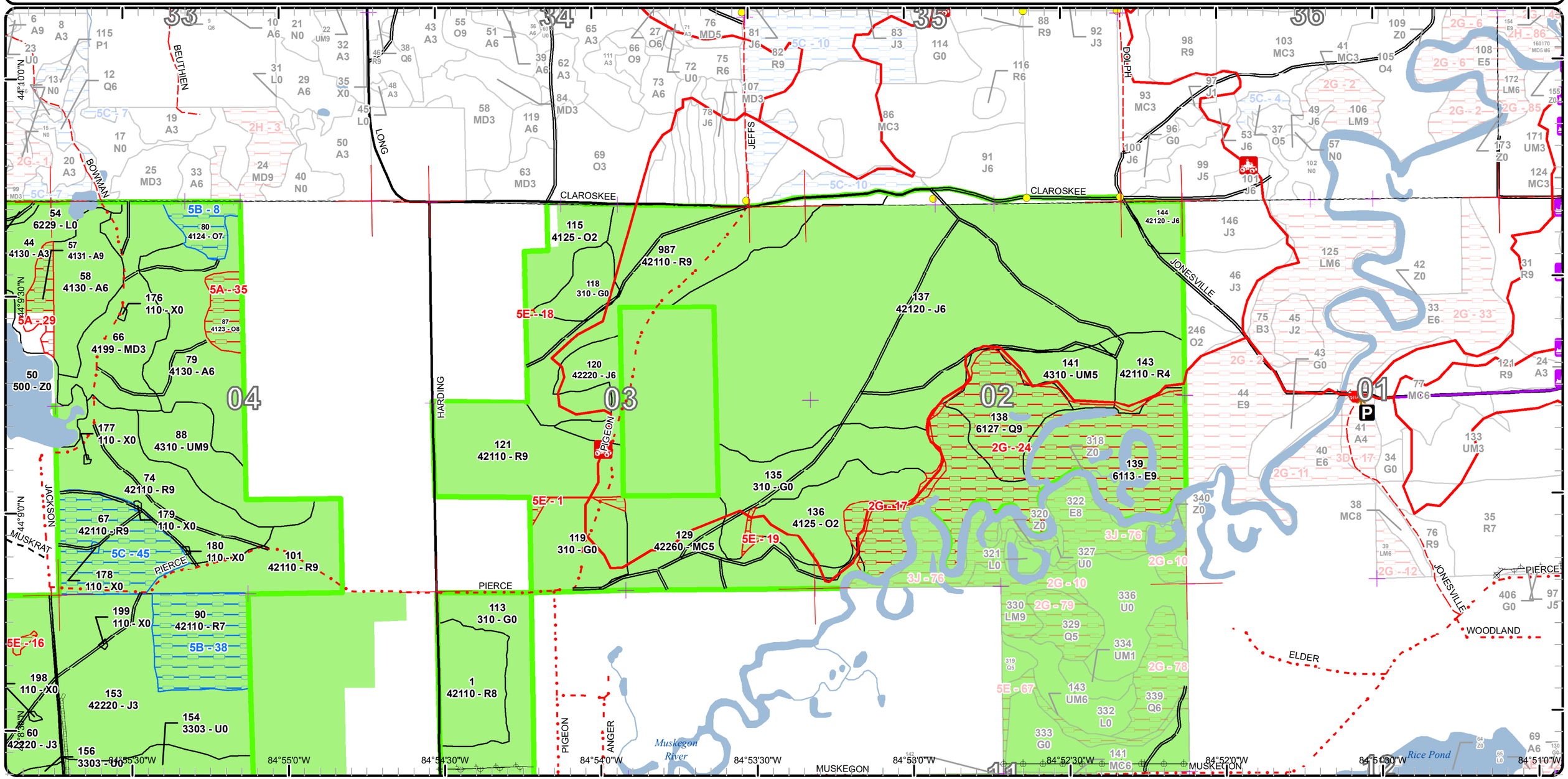

Report 1 – Total Acres by Cover Type and Age Class

Gladwin Mgt. Unit **Compartment 9** **Year of Entry 2024**

Colton Behrmann : 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	15	31	43	131	0	0	0	0	9	0	0	0	0	0	0	0	0	**229**
Bare/Sparsely Vegetated	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Bog	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**18**
Herbaceous Openland	625	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**625**
Jack Pine	0	432	247	1451	381	379	82	0	35	0	0	0	0	0	0	0	0	0	**3007**
Low-Density Trees	170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**170**
Lowland Conifers	0	0	0	11	0	0	0	20	0	0	34	0	103	0	0	0	0	197	**365**
Lowland Deciduous	0	0	0	0	18	0	0	0	0	124	88	120	50	0	0	0	0	26	**426**
Lowland Shrub	278	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**278**
Marsh	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**29**
Mixed Upland Deciduous	0	0	0	55	0	0	0	0	0	24	0	31	0	0	0	0	0	0	**110**
Natural Mixed Pines	0	0	0	62	0	0	62	0	67	0	0	0	0	0	0	0	0	0	**191**
Oak	0	0	38	23	0	0	0	0	0	0	31	0	0	0	0	0	0	0	**92**
Planted Mixed Pines	0	36	0	0	61	0	0	0	0	7	0	0	0	0	0	0	0	0	**104**
Red Pine	0	0	0	0	37	21	0	79	281	716	0	0	0	0	0	0	0	0	**1133**
Upland Mixed Forest	0	0	0	35	21	0	0	0	36	0	17	0	0	0	0	0	0	0	**109**
Urban	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**27**
Water	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**60**
White Pine	0	0	0	0	26	0	0	36	51	0	0	0	0	0	0	0	0	0	**113**
Total	**1208**	**483**	**316**	**1680**	**675**	**400**	**144**	**135**	**470**	**880**	**170**	**151**	**153**	**0**	**0**	**0**	**0**	**223**	**7087**

Report 2 – Treatment Summary

Gladwin Mgt. Unit

Year of Entry: 2024

Acres of Harvest

Compartment 9

Total Compartment Acres: 7,086

Commercial Harvest - 198

Harvests with Site Condition - 0

Next Step Harvest - 0

Habitat Cut - 0

Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Jack Pine	35	0	0	0	0	0	0	0	0	**35**
Mixed Upland Deciduous	31	0	0	0	0	0	0	0	0	**31**
Planted Mixed Pines	7	0	0	0	0	0	0	0	0	**7**
Red Pine	64	0	0	0	0	0	61	0	0	**125**
Total	**137**	**0**	**0**	**0**	**0**	**0**	**61**	**0**	**0**	**198**

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	198	0	68	0	97	0	400	48	202	**1012**
Next Step	0	319	319	0	0	127	549	7	0	**1321**
Total	**198**	**319**	**387**	**0**	**97**	**127**	**949**	**55**	**202**	**2333**

Proposed Treatments:

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
7	73009007-Cut	7.2	42141 - Planted Mixed Pine, Mixed Deciduous	Sawtimber Well	88	81-110	Harvest	Clearcut	4211 - Planted Red Pine	Even-Aged	No

Prescription Specs: Cut all trees 2 inches and greater in diameter. No retention due to small stand size. Remove all dead standing trees within 100' of the county road.

Next Step Treatments: SitePrep, Trenching; SitePrep, Roller Chopping; Planting, Initial Plant; Planting, Replant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr); Other, Pre-Commercial Thinning - Hand

Acceptable Regen: A fully stocked red pine plantation meeting minimum stocking standards.

Other Comment:

Site Condition:

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
59	73009059-Cut	19.5	42220 - Natural Jack Pine	Poletimber Well	76	81-110	Harvest	Clearcut with Retention	4310 - Pine, Oak Mix	Even-Aged	No

Prescription Specs: Cut all trees 2 inches and greater in diameter. Follow standard island retention. Add oak wilt spec. Cut all dead & hazard trees within 100 feet of county road.

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

Acceptable Regen: A naturally regenerated stand of pine with mixed oak & red maple meeting minimum stocking standards.

Other Comment:

Site Condition:

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
74	73009074-Cut	61.1	42110 - Planted Red Pine	Sawtimber Well	85	1-50	Harvest	Overstory Removal	4122 - Oak, Pine	Even-Aged	No

Prescription Specs: Cut all red pine meeting minimum piece specifications. Focus island retention around dense oak regeneration. Add oak wilt spec.

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

Acceptable Regen: A naturally regenerated stand of oak with a minor component of pine meeting minimum stocking standards.

Other Comment:

Site Condition:

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
78	73009078-Cut	15.2	42220 - Natural Jack Pine	Poletimber Well	76	81-110	Harvest	Clearcut with Retention	4310 - Pine, Oak Mix	Even-Aged	No

Prescription Specs: Cut all trees 2 inches and greater in diameter. Follow standard island retention. Retention may exceed 10% area due to topography. Focus retention in the south end near the Muskegon river. Add oak wilt spec.

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

Acceptable Regen: A naturally regenerated stand of jack pine with mixed oak and red maple meeting minimum stocking standards.

Other Comment:

Site Condition:

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
101	73009101-Cut	42.7	42110 - Planted Red Pine	Sawtimber Well	84	81-110	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	No

Prescription Specs: Cut all trees 2 inches and greater in diameter. Follow standard island retention. Focus retention along the boundaries to assist in cultivation work. Remove all dead standing trees within 100' of the county road.

Next Step Treatments: SitePrep, Trenching; SitePrep, Roller Chopping; Planting, Initial Plant; Planting, Replant; Pesticide, Skidder - Site Prep; Pesticide, Skidder - Release; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr)

Acceptable Regen: A fully stocked red pine plantation meeting minimum stocking standards.

Other Comment:

Site Condition:

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
119	73009119-Burn	3.1	310 - Herbaceous Openland	Nonstocked	0	Unspecified	Burn	Fuel Break	790 - Other Bare/Sparsely Vegetated		No

Prescription Specs: Maintain as a fuel break by burning, roller chopping or spraying.

Next Step Treatments: Monitoring, Prescribed Burn

Acceptable Regen:

Other Comment:

Site Condition:

Proposed Start Date: 10/1 /2024

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
127	73009127-Cut	31.3	4191 - Mixed Upland Deciduous with Conifer	Poletimber Well	100	81-110	Harvest	Clearcut with Retention	4199 - Other Mixed Upland Deciduous	Even-Aged	No

Prescription Specs: Cut all trees 2 inches and greater in diameter. Follow standard island retention. Focus retention near the Muskegon River. Add oak wilt spec.

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

Acceptable Regen: A naturally regenerated stand of oak, aspen, red maple and mixed pine meeting minimum stocking standards.

Other Comment:

Site Condition:

Proposed Start Date: 10/1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
149	73009149-Cut	20.9	42110 - Planted Red Pine	Sawtimber Well	85	51-80	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	No

Prescription Specs: Cut all trees 2 inches and greater in diameter. Follow standard retention guidelines. Focus retention pockets along boundary to assist in cultivation next steps.

Next Step Treatments: SitePrep, Trenching; Pesticide, Skidder - Site Prep; Pesticide, Skidder - Release; SitePrep, Roller Chopping; Planting, Initial Plant; Planting, Replant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr)

Acceptable Regen: A fully stocked red pine plantation meeting minimum stocking standards.

Other Comment:

Site Condition:

Proposed Start Date: 10/1 /2023

Approved Treatments:

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
22	73009022-Other	16.4	310 - Herbaceous Openland	Nonstocked	0	Unspecified	Other	Other	4211 - Planted Red Pine	Even-Aged	No

Prescription Specs: Pre-Commercial thinning to remove jack pine and hardwood competition.

Next Step Treatments: Monitoring, Artificial Regen(3yr)

Acceptable Regen: Fully stocked red pine plantation

Other Comment: Treatment has gone through the variance process.

Site Condition:

Proposed Start Date: 1 /1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
30	73009030-Other	31.5	310 - Herbaceous Openland	Nonstocked	0	Unspecified	Other	Other	4211 - Planted Red Pine	Even-Aged	No

Prescription Specs: Pre-Commercial thinning to remove jack pine and hardwood competition.

Next Step Treatments: Monitoring, Artificial Regen(3yr)

Acceptable Regen: Fully stocked planted red pine plantation.

Other Comment: Treatment has gone through the variance process.

Site Condition:

Proposed Start Date: 1 /1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
61	73009061-Monitor	33.4	310 - Herbaceous Openland	Nonstocked	0	Unspecified	Monitoring	Artificial Regen(3yr)	42120 - Planted Jack Pine	Even-Aged	No

Prescription Specs:

Next Step Treatments: SitePrep, Trenching; Planting, Initial Plant

Acceptable Regen:

Other Comment: Percent to Treat = 100%

Site Condition:

Proposed Start Date: 1 /1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
65	73009065-Plant	40.9	310 - Herbaceous Openland	Nonstocked	0	Unspecified	Planting	ERROR	42120 - Planted Jack Pine	Even-Aged	No

Prescription Specs: Following harvest create and maintain as KW habitat. Trench (Opposing Weave) and plant jack pine 75% and red pine 25%. All stands are within sale: 73-003-18-01, Red Racer. Contact Consumers Energy and Century Oil prior to any activity. Pipelines all over treatment area including above ground lines. Leota KW Block 117, target plant year 2021. FTP C73-1018.

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

Acceptable Regen: Fully stocked jack pine plantation meeting KW minimum stocking standards.

Other Comment: Percent to Treat = 100%

Site Condition:

Proposed Start Date: 1 /1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
61	73009069-Monitor	18.0	310 - Herbaceous Openland	Nonstocked	0	Unspecified	Monitoring	Artificial Regen(3yr)	42120 - Planted Jack Pine	Even-Aged	No

Prescription Specs:

Next Step Treatments: SitePrep, Trenching; Planting, Initial Plant

Acceptable Regen:

Other Comment: Percent to Treat = 100%

Site Condition:

Proposed Start Date: 1 /1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
77	73009077-Plant	26.8	310 - Herbaceous Openland	Nonstocked	0	Unspecified	Planting	ERROR	42120 - Planted Jack Pine	Even-Aged	No

Prescription Specs: Following harvest create and maintain as KW habitat. Trench (Opposing Weave) and plant jack pine 75% and red pine 25%. All stands are within sale: 73-003-18-01, Red Racer. Contact Consumers Energy and Century Oil prior to any activity. Pipelines all over treatment area including above ground lines. Leota KW Block 117, target plant year 2021. FTP C73-1018.

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

Acceptable Regen: Fully stocked jack pine plantation meeting KW minimum stocking standards.

Other Comment: Percent to Treat = 100%

Site Condition:

Proposed Start Date: 1 /1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
61	73009078-Monitor	4.9	310 - Herbaceous Openland	Nonstocked	0	Unspecified	Monitoring	Artificial Regen(3yr)	42120 - Planted Jack Pine	Even-Aged	No

Prescription Specs:

Next Step Treatments: SitePrep, Trenching; Planting, Initial Plant

Acceptable Regen:

Other Comment: Percent to Treat = 100%

Site Condition:

Proposed Start Date: 1 /1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
61	73009081-Monitor	35.1	310 - Herbaceous Openland	Nonstocked	0	Unspecified	Monitoring	Artificial Regen(3yr)	42120 - Planted Jack Pine	Even-Aged	No

Prescription Specs:

Next Step Treatments: SitePrep, Trenching; Planting, Initial Plant

Acceptable Regen:

Other Comment: Percent to Treat = 100%

Site Condition:

Proposed Start Date: 1 /1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
61	73009083-Monitor	3.7	310 - Herbaceous Openland	Nonstocked	0	Unspecified	Monitoring	Artificial Regen(3yr)	42120 - Planted Jack Pine	Even-Aged	No

Prescription Specs:

Next Step Treatments: SitePrep, Trenching; Planting, Initial Plant

Acceptable Regen:

Other Comment: Percent to Treat = 100%

Site Condition:

Proposed Start Date: 1 /1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
61	73009086-Monitor	15.5	310 - Herbaceous Openland	Nonstocked	0	Unspecified	Monitoring	Artificial Regen(3yr)	42120 - Planted Jack Pine	Even-Aged	No

Prescription Specs:

Next Step Treatments: SitePrep, Trenching; Planting, Initial Plant

Acceptable Regen:

Other Comment: Percent to Treat = 100%

Site Condition:

Proposed Start Date: 1 /1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
61	73009089-Monitor	15.4	310 - Herbaceous Openland	Nonstocked	0	Unspecified	Monitoring	Artificial Regen(3yr)	42120 - Planted Jack Pine	Even-Aged	No

Prescription Specs:

Next Step Treatments: SitePrep, Trenching; Planting, Initial Plant

Acceptable Regen:

Other Comment: Percent to Treat = 100%

Site Condition:

Proposed Start Date: 1 /1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
93	73009093-Monitor	15.2	42141 - Planted Mixed Pine, Mixed Deciduous	Sapling Well	7	Immature	Monitoring	Artificial Regen(3yr)	42111 - Planted Red Pine, Mixed Deciduous	Even-Aged	No

Prescription Specs: monitor artificial regen after 3rd growing season

Next Step Treatments:

Acceptable Regen: red pine mixed with oak.

Other Comment:

Site Condition:

Proposed Start Date: 10/1 /2017

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
61	73009094-Monitor	11.4	310 - Herbaceous Openland	Nonstocked	0	Unspecified	Monitoring	Artificial Regen(3yr)	42120 - Planted Jack Pine	Even-Aged	No

Prescription Specs:

Next Step Treatments: SitePrep, Trenching; Planting, Initial Plant

Acceptable Regen:

Other Comment: Percent to Treat = 100%

Site Condition:

Proposed Start Date: 1 /1 /2022

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
95	73009095-Monitor	109.0	310 - Herbaceous Openland	Nonstocked	0	Unspecified	Monitoring	Natural Regen (Intermediate)	42221 - Natural Jack Pine, Mixed Deciduous	Even-Aged	No

Prescription Specs: Intermediate regeneration check.

Next Step Treatments:

Acceptable Regen: A mix of natural pine and oak.

Other Comment: Percent to Treat = 100%

Site Condition:

Proposed Start Date: 10/1 /2024

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
113	73009113-Monitor	40.0	310 - Herbaceous Openland	Nonstocked	0		Monitoring	Artificial Regen(3yr)	4211 - Planted Red Pine	Even-Aged	No

Prescription Specs: Monitor red pine plantation.

Next Step Treatments: SitePrep, Trenching; Planting, Initial Plant

Acceptable Regen: Planted Red Pine with some Jack Pine and Oak.

Other Comment: Percent to Treat = 100%

Site Condition:

Proposed Start Date: 1 /1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
118	73009118-Monitor	16.4	310 - Herbaceous Openland	Nonstocked	0	Immature	Monitoring	Natural Regen (Intermediate)	4122 - Oak, Pine	Even-Aged	No

Prescription Specs: Monitor natural regeneration until adequate regeneration is achieved. A mix of jack pine, mixed oak and white pine regeneration is acceptable. Interplant red pine to maintain full stocking if needed.

Next Step Treatments:

Acceptable Regen: A mix of jack pine, mixed oak and white pine regeneration is acceptable.

Other Comment: Regen survey completed in February 2022 during inventory. Oak regen has not yet reached 6' in height. Continue to monitor stand.

Site Condition:

Proposed Start Date: 10/1 /2024

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
119	73009119-Monitor	33.3	310 - Herbaceous Openland	Nonstocked	0	Unspecified	Monitoring	Artificial Regen(3yr)	4211 - Planted Red Pine	Even-Aged	No

Prescription Specs: Monitor red pine plantation

Next Step Treatments:

Acceptable Regen: Planted Red Pine with a mix of Jack Pine and Oak.

Other Comment: Percent to Treat = 100%

Site Condition:

Proposed Start Date: 1 /1 /2023

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
121	73009121-Burn	66.2	42110 - Planted Red Pine	Sawtimber Well	70	51-80	Burn	Fuel Break	42110 - Planted Red Pine	Even-Aged	No

Prescription Specs: Following harvest create and maintain as fuel break stand.

Next Step Treatments: Monitoring, Prescribed Burn

Acceptable Regen:

Other Comment: Percent to Treat = 100%

Site Condition:

Proposed Start Date: 10/1 /2024

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
135	73009135-Monitor	49.1	310 - Herbaceous Openland	Nonstocked		Immature	Monitoring	Natural Regen (Intermediate)	42250 - Pine, Oak	Even-Aged	No

Prescription Specs: Monitor natural regeneration until adequate regeneration is achieved. A mix of jack pine, mixed oak and white pine regeneration is acceptable. Interplant red pine to maintain full stocking if needed.

Next Step Treatments:

Acceptable Regen: Natural jack pine with scattered mixed oak and white pine.

Other Comment: Stand surveyed during Inventory in February 2022. Continue to monitor stand until oak reaches 6' average height.

Site Condition:

Proposed Start Date: 10/1 /2024

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
154	73009154-NF	201.9	3303 - Mixed Low Density Trees	Nonstocked	0	Unspecified	NonForestMgt	Mowing	3302 - Low Density Conifer Trees		No

Prescription Specs: Fuel break maintenance.

Next Step Treatments:

Acceptable Regen: none. Will be maintained as fuel break.

Other Comment: Percent to Treat = 100%. Treatment will need to be maintained as a fuel break.

Site Condition:

Proposed Start Date: 10/1 /2024

Stand	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
170	73009170-Burn	27.2	42110 - Planted Red Pine	Sawtimber Medium	83	51-80	Burn	Fuel Break	4211 - Planted Red Pine	Even-Aged	No

Prescription Specs:

Next Step Treatments: ; Monitoring, Natural Regen (Intermediate)

Acceptable Regen:

Other Comment: Percent to Treat = 100%

Site Condition:

Proposed Start Date: 10/1 /2018

Total Treatment Acreage Proposed: 1012.3

Report 4 – Site Conditions

Gladwin Mgt. Unit

Colton Behrmann : Examiner

Compartment: 9

Year of Entry: 2024

Availability for Management

Total Acres	Acres Available	*Acres Avail With Condition*	Acres Not Available		Dominant Site Conditions *5B*	*5C*	2F	2G	3J	5A	5E
229	220	***0***	9	**Aspen**						9	
1	1	***0***	0	**Bare/Sparsely Vegetated**							
18	18	***0***	0	**Bog**							
625	601	***0***	24	**Herbaceous Openland**	***0***		0	0			24
3004	3001	***0***	3	**Jack Pine**		***0***	0	0			2
170	170	***0***	0	**Low-Density Trees**							
365	1	***0***	364	**Lowland Conifers**			10	343	11		1
427	1	***0***	425	**Lowland Deciduous**			4	358	64		
278	278	***0***	0	**Lowland Shrub**							
29	29	***0***	0	**Marsh**							
111	86	***24***	0	**Mixed Upland Deciduous**	***0***	***24***		0			
190	164	***26***	0	**Natural Mixed Pines**	***26***			0			
92	62	***13***	17	**Oak**	***13***					17	
104	104	***0***	0	**Planted Mixed Pines**		***0***		0			
1136	530	***595***	11	**Red Pine**	***216***	***379***		0			11
109	108	***0***	1	**Upland Mixed Forest**				1			
27	27	***0***	0	**Urban**							
60	48	***0***	12	**Water**				12			
113	113	***0***	0	**White Pine**				0	0		
7,088	5,563	***658***	867	Total Forested Acres	***255***	***404***	13	715	75	26	37
	78%	***9%***	12%	Relative Percent							

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

Site No.	Dominant Site Cond	Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1		**Unavailable**	**5E: Long-Term Retention**	3	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

2	**Unavailable**	**5A: Not able to obtain desirable regeneration**	5	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

Stand is only 5 acres. Any oak regeneration from harvest will be browsed heavily.

3	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	94	2F: Too steep	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified

Comments:

4	**Available**	**5C: Delay treatment for age/size class diversity or exceptional site quality**	72	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

Green up concerns with adjacent stand to the west

5	**Available**	**5B: Maintain for regeneration purposes**	121	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

Seed tree harvest to promote and manage for oak / mixed pine regeneration.

6	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	147	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified

Comments:

Muskegon River flood plain, down over a bank, wet mucky soils.

7	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	36	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified

Comments:

Muskegon River flood plain, down over a bank, wet mucky soils.

8	**Available**	**5B: Maintain for regeneration purposes**	13	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
9	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	22	3J: Water quality / BMPs (stream, river, or lake)	2F: Too steep	Unspecified	Unspecified
	Comments:						
10	**Available**	**5B: Maintain for regeneration purposes**	34	Unspecified	Unspecified	Unspecified	Unspecified
	Comments: Seed tree harvest to promote and manage for oak / mixed pine regeneration.						
11	**Unavailable**	**5E: Long-Term Retention**	1	Unspecified	Unspecified	Unspecified	Unspecified
	Comments:						
12	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	26	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
	Comments: Muskegon River flood plain stand, down over a bank. Seasonally flooded. Wet mucky soils.						
13	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	40	3J: Water quality / BMPs (stream, river, or lake)	2B: Unknown if access through adjacent landowner(s) is possible	Unspecified	Unspecified
	Comments: Muskegon River flood plain stand, down over a bank. Seasonally flooded. Wet mucky soils. Access issue, only access is across private.						

14	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	8	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified

Comments:

Muskegon River flood plain stand, down over a bank. Seasonally flooded. Wet mucky soils.

15	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	34	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified

Comments:

Stand is down over a bank in the Clam River floodplain.

16	**Unavailable**	**5E: Long-Term Retention**	1	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

17	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	9	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

Muskegon River flood plain stand, down over a bank. Seasonally flooded. Wet mucky soils.

18	**Unavailable**	**5E: Long-Term Retention**	0	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

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

Comments:

20	**Unavailable**	**3J: Water quality / BMPs (stream, river, or lake)**	24	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified	Unspecified

Comments:

21	**Unavailable**	**5E: Long-Term Retention**	5	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

22	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	11	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

23	**Unavailable**	**5E: Long-Term Retention**	5	Unspecified	Unspecified	Unspecified	Unspecified

Comments:
KW skip

24	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	149	Unspecified	Unspecified	Unspecified	Unspecified

Comments:
Muskegon River flood plain stand, down over a bank. Seasonally flooded. Wet mucky soils.

25	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	129	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

26	**Unavailable**	**5E: Long-Term Retention**	4	Unspecified	Unspecified	Unspecified	Unspecified

Comments:
KW Skips

27	**Available**	**5B: Maintain for regeneration purposes**	21	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

28	**Unavailable**	**2F: Too steep**	10	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified

Comments:
This is a extremely steep bluff over the flood plain of the Muskegon River.

29	**Unavailable**	**5A: Not able to obtain desirable regeneration**	9	Unspecified	Unspecified	Unspecified	Unspecified

Comments:
Hold stand until adjacent aspen stand is merchantable. Unable to achieve desired regeneration due to narrow stand size and deer browse.

30	**Unavailable**	**2F: Too steep**	4	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified

Comments:
Very steep slope that goes down to the flood plain of the Muskegon River.

31	**Available**	**5C: Delay treatment for age/size class diversity or exceptional site quality**	19	Unspecified	Unspecified	Unspecified	Unspecified

Comments:
Delayed treatment to manage with stands 107 & 114 to the north.

32	**Unavailable**	**5E: Long-Term Retention**	6	Unspecified	Unspecified	Unspecified	Unspecified

Comments:
KW Skips

33	**Unavailable**	**5E: Long-Term Retention**	4	Unspecified	Unspecified	Unspecified	Unspecified

Comments:
KW Skips

34	**Unavailable**	**3J: Water quality / BMPs (stream, river, or lake)**	49	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified	Unspecified

Comments:

35	**Unavailable**	**5A: Not able to obtain desirable regeneration**	12	5C: Delay treatment for age/size class diversity or exceptional site quality	5B: Maintain for regeneration purposes	Unspecified	Unspecified

Comments:
Hold stand. Unable to achieve desired oak regeneration if cut due to deer browse. Red oak logs are in good health.

36	**Unavailable**	**5E: Long-Term Retention**	6	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

37	**Available**	**5C: Delay treatment for age/size class diversity or exceptional site quality**	151	Unspecified	Unspecified	Unspecified	Unspecified

Comments:
Green up concerns with adjacent stands to the north.

38	**Available**	**5B: Maintain for regeneration purposes**	41	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

39	**Unavailable**	**2G: Too wet (sensitive soils, does not include access issues)**	12	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

40	**Available**	**5C: Delay treatment for age/size class diversity or exceptional site quality**	24	5B: Maintain for regeneration purposes	Unspecified	Unspecified	Unspecified

Comments:

White oak and red maple logs will hold. Hold stand until aspen and red maple poles are merchantable.

41	**Available**	**5B: Maintain for regeneration purposes**	26	5C: Delay treatment for age/size class diversity or exceptional site quality	Unspecified	Unspecified	Unspecified

Comments:

Stand is self recruiting white pine poles into the subcanopy. Diverse stand with narrow ridges.

42	**Available**	**5C: Delay treatment for age/size class diversity or exceptional site quality**	31	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

Hold stand until next inventory cycle to address green up concerns with adjacent KW planting.

43	**Available**	**5C: Delay treatment for age/size class diversity or exceptional site quality**	41	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

Green up concerns with adjacent stands

44	**Available**	**5C: Delay treatment for age/size class diversity or exceptional site quality**	20	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

Green up concerns with adjacent stand

45	**Available**	**5C: Delay treatment for age/size class diversity or exceptional site quality**	46	Unspecified	Unspecified	Unspecified	Unspecified

Comments:

Green up concerns with adjacent stand to the south

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.
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.