



Compartment Review Presentation

Gwinn Forest Management Unit

Compartment 32210

Entry Year 2017

Acreage: 926

County Marquette

Management Area: Peshekee Highlands

Revision Date: 2015-07-15

Stand Examiner: Jason Caron

Legal Description:

T48N-R28W, Sections 16,18,20,28

Identified Planning Goals:

Promote sugar maple regeneration within the hardwood cover types via shelterwood and single tree selection management. Clearcut areas of fir, spruce and aspen types to promote regeneration of these species.

Soil and topography:

Glacial drainage ways and moraines form topography that is nearly level to hilly with rock outcroppings. Soils are generally well drained sandy loams to loams.

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

This compartment is predominately surrounded by larger corporate and non-industrial private ownerships. Land use is primarily for timber harvesting and recreation such as hunting, fishing, mushroom & berry picking, and hiking.

Unique Natural Features:

The area contains numerous rock outcrops and steep ridges. The Barnhardt creek flows easterly through this compartment.

Archeological, Historical, and Cultural Features:

None known during this year of entry. Former notes mention old logging camps within this area however.

Special Management Designations or Considerations:

Bark slippage restrictions are put on single tree selection harvests to reduce damage to residual timber. Winter harvesting is mandatory on lowland types to reduce soil disturbance.

Watershed and Fisheries Considerations:

Wildlife Habitat Considerations:

Compartment 210 is found within the Peshekee Highlands Management Area; on a Bedrock Controlled Ground Moraine in east central Baraga and northwestern Marquette County. The dominant Natural Communities are mesic northern forest, poor conifer swamps, and boreal forests. This management area receives significant snowfall and does not offer wintering habitat for deer. As a result, many tree species that do not reliably recruit across the Ecoregion are found in numerous age classes across this management area. Additionally, three of the largest tracts of mature forest in the Great Lakes (e.g. McCormick Tract, Craig's Lake Wilderness State Park, and the Huron Mountain Club) occur within or adjacent to this management area, the best example of a dry mesic northern forest (Rocking Chair Lakes) in the state and two of the top eight examples of Mesic Northern Forest statewide occur here. The current condition and spatial arrangement of these areas provide some of the best opportunities within the WUP, state, and Great Lakes for area sensitive wildlife requiring large tracts of mature forest, mesic conifer or corridors between such areas. Wildlife management issues in this management area are: habitat fragmentation; coarse woody debris; retain or develop large living and dead standing trees (for cavities); mesic conifer; mature forest; within-stand diversity; early successional forest (hardwood browse adjacent to closed canopy lowland conifer swamps); and coarse woody debris.

The following have been identified as featured species for the Peshekee Highlands Management area: American marten, blackburnian warbler, gray jay, moose, northern goshawk, and pileated woodpecker.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of thin to discontinuous glacial outwash sand and gravel and postglacial alluvium and coarse-textured glacial till over bedrock. There is insufficient data to determine the glacial drift thickness. Archean granite/gneiss subcrops below the glacial drift. This could be used as a dimension stone. A large gravel pit is located two miles to the south in Section 4, T47N R28W. There may be some potential in the compartment. Section 3 was previously leased for

metallic mineral exploration. The Michigan gold district is located just to the south and east, and the Marquette Iron District is just to the south. Humboldt Mill is located four miles to the southwest, and abandoned iron mines are two miles south of the compartment. Ropes Gold Mine is four miles to the east. There is no economic oil and gas production in the UP.

Vehicle Access:

Vehicle access to certain portions of the compartment can be difficult. Plum Creek has numerous logging roads that come near this compartment and provide access throughout the year.

Survey Needs:

Surveys will be needed within sections 20 & 28 if these timber sales will be harvested soon due to spruce budworm issues. Section 16 may need a survey within the SW part of the section.

Recreational Facilities and Opportunities:

There are no developed recreational facilities within this compartment. Recreational opportunities consist of hunting, fishing, mushroom & berry picking, and hiking.

Fire Protection:

The potential for a large forest fire within this compartment are low given the timber types. Fire suppression tactics would be limited given the terrain.

Additional Compartment Information:

The following reports from the Inventory are attached:

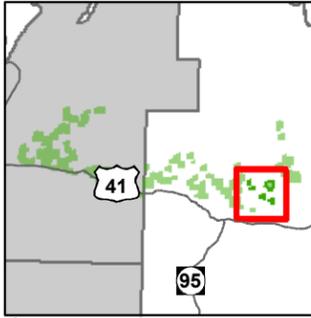
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

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

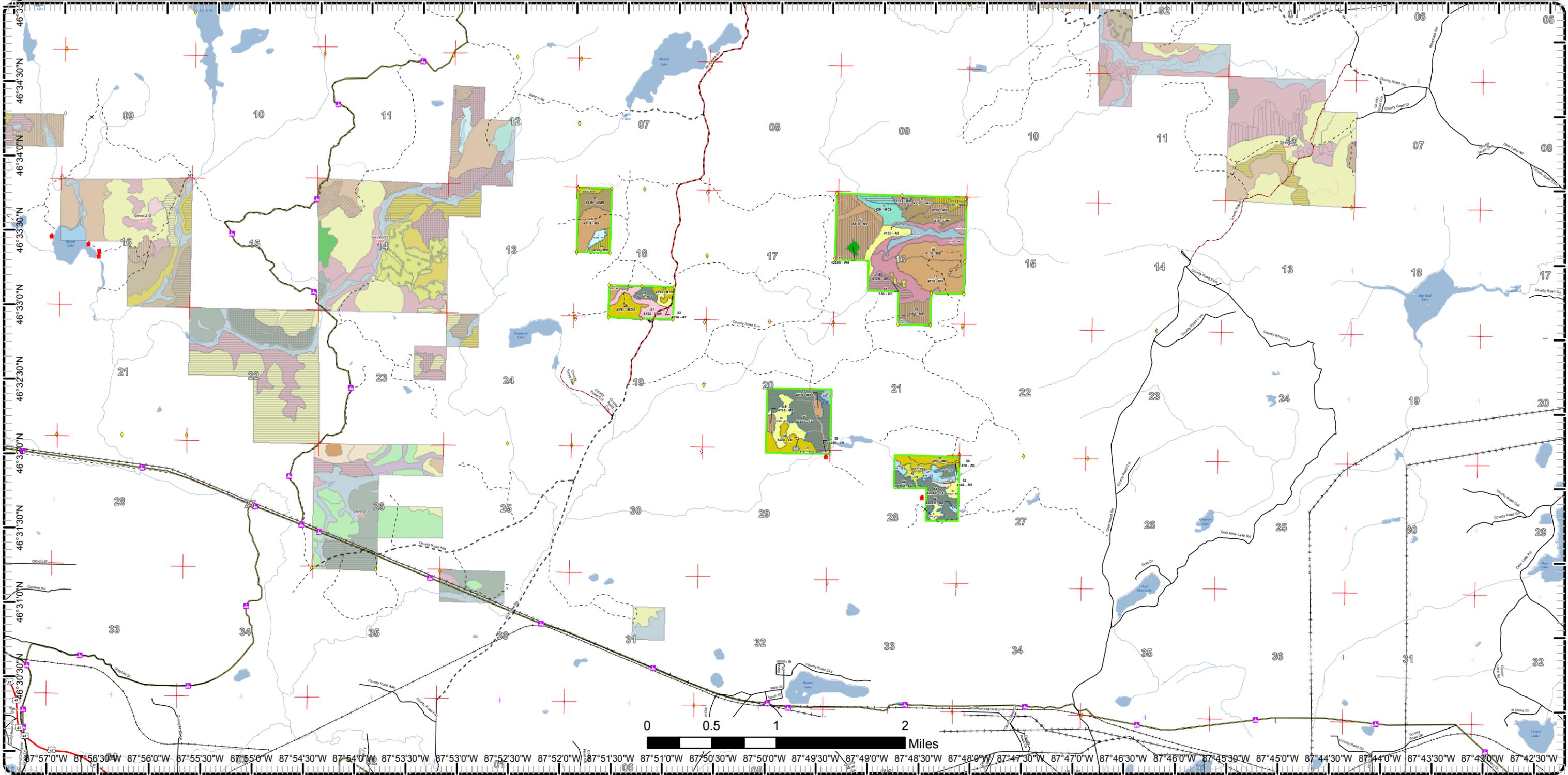
Overview Map

Compartment: 210
 T48N,R28W, Sec. 16, 18, 20, 28
 County: Marquette
 Unit: Gwinn
 Mgmt Area: Peshekee Highlands
 YOE: 2017
 Acres: 926 GIS Calculated
 Examiner: Jason Caron
 Map Revised: 7/1/2015
 Map Phase: Pre-Review



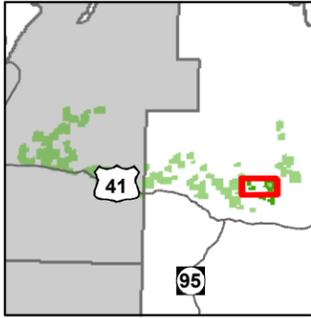
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- ◆ Survey Grade GPS Corners
- ◇ Field Grade GPS Corners
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- County Poor Dirt Roads
- ⋯ Closed Roads
- ✕ Gate
- ▲ Berms
- Culverts
- 🏠 Cabin
- 🚙 ORV Routes
- 🏠 Snowmobile Trails
- Railroads
- Rivers
- Lakes
- ⚡ Powerline
- 📍 Treatments with Site Conditions

- Treatments**
- ▭ Clearcut (w/Reserves)
 - ▭ Shelter Wood (w/Reserves)
- Forest Coverture**
- 411 - Northern Hardwood
 - 413 - Aspen
 - 414 - Other Upland Deciduous
 - 419 - Mixed Upland Deciduous
 - 422 - Natural Pines
 - 423 - Other Upland Conifers
 - 429 - Mixed Upland Conifers
 - 430 - Upland Mixed Fores
- Non-Forest Coverture**
- 611 - Lowland Deciduous Forest
 - 612 - Lowland Coniferous Forest
 - 613 - Lowland Mixed Forest
 - 330 - Low Density Trees
 - 500 - Water
 - 622 - Lowland Shrub
 - 623 - Emergent Wetland

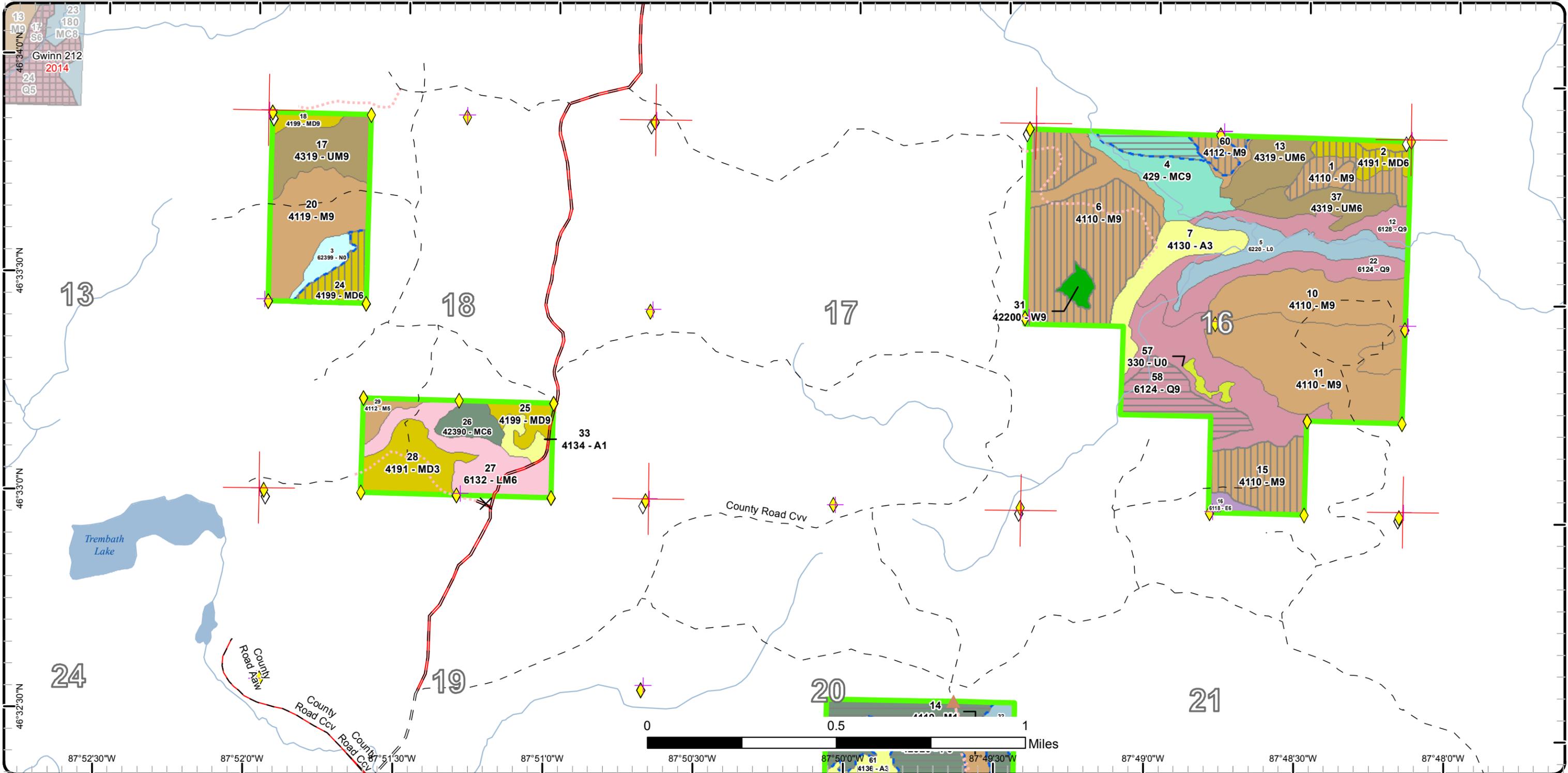


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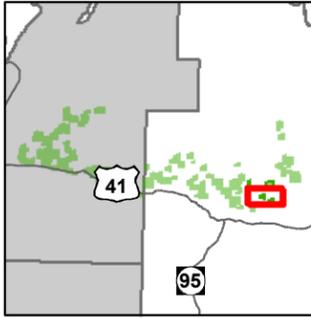


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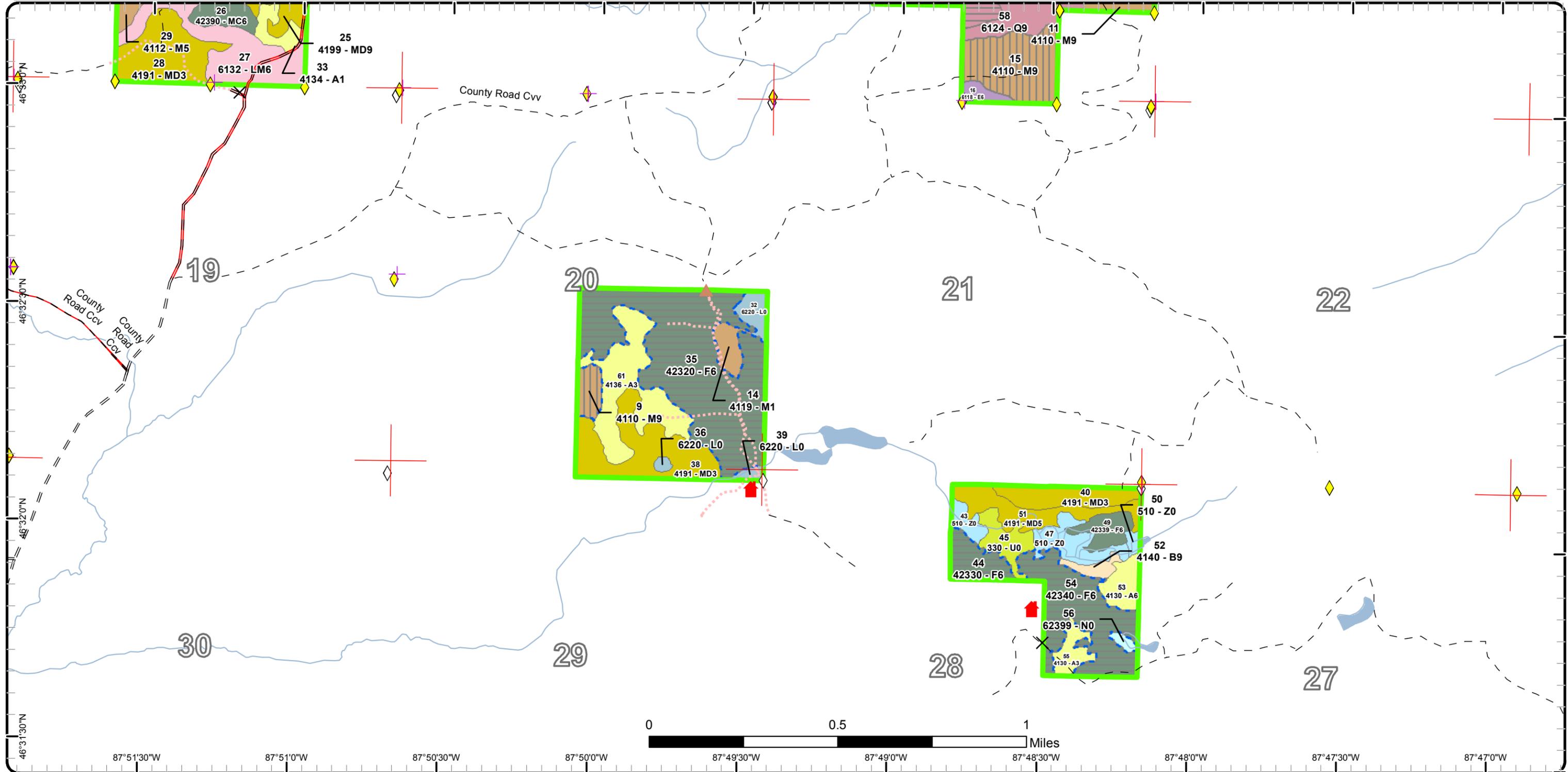


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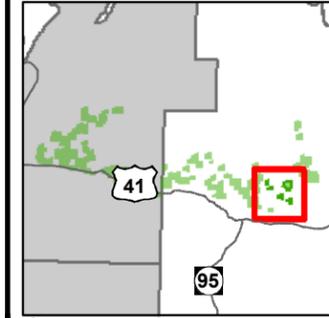


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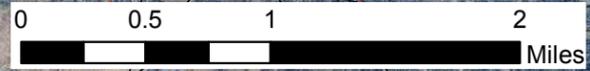
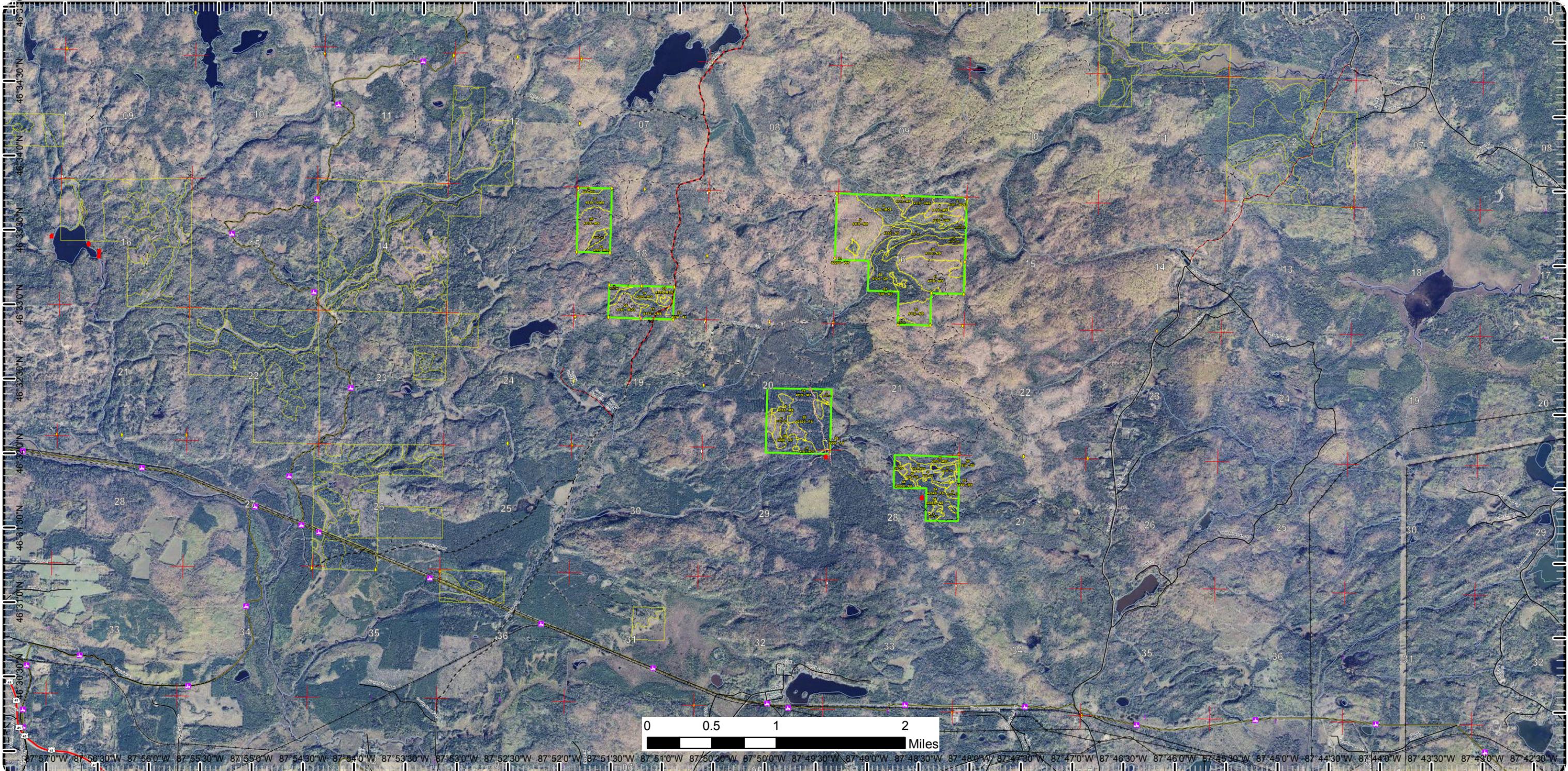


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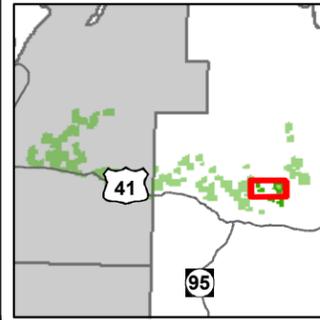


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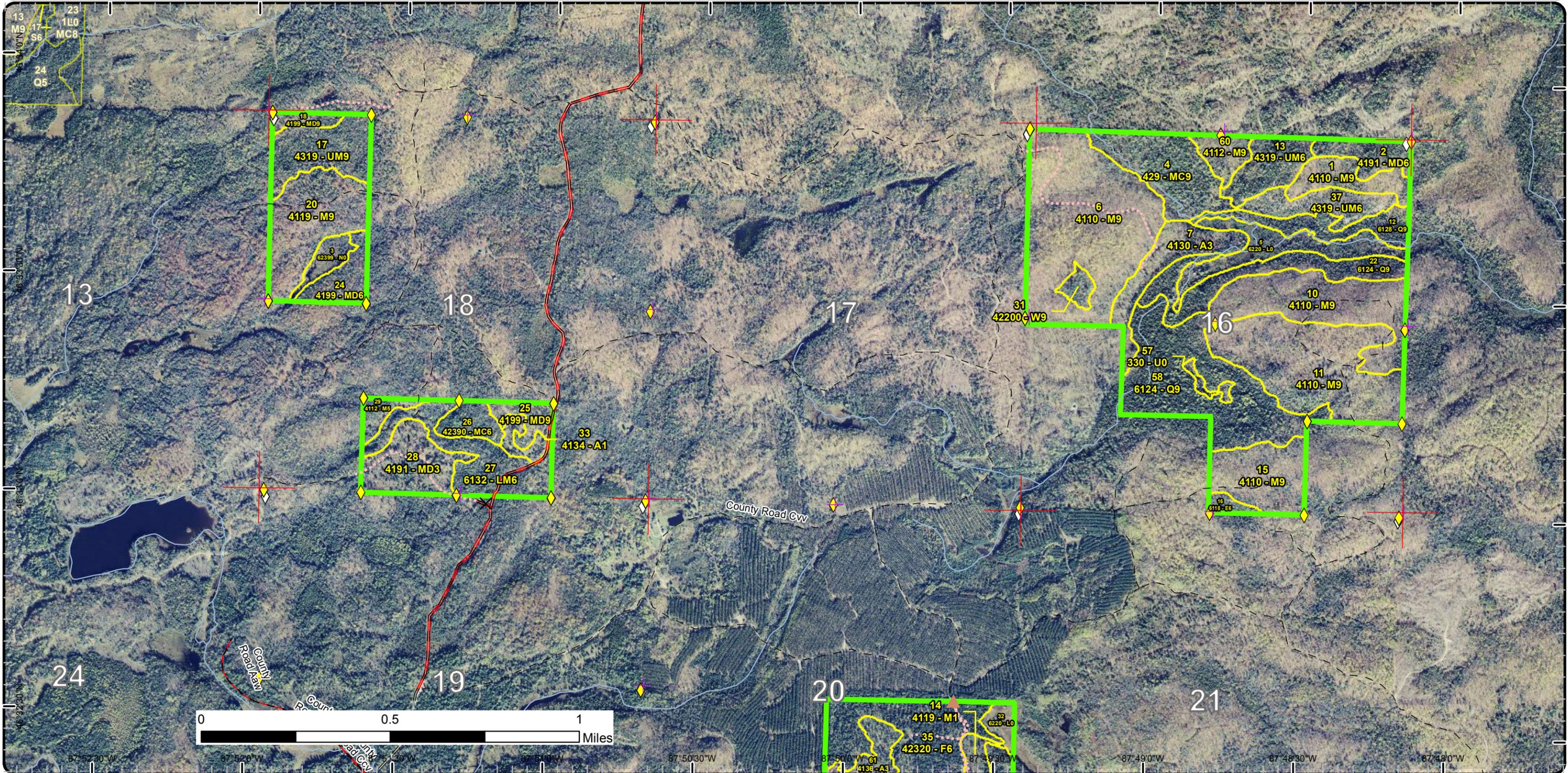
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Stand Boundary Map



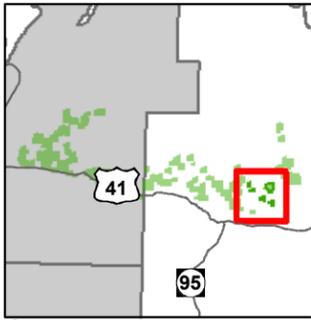
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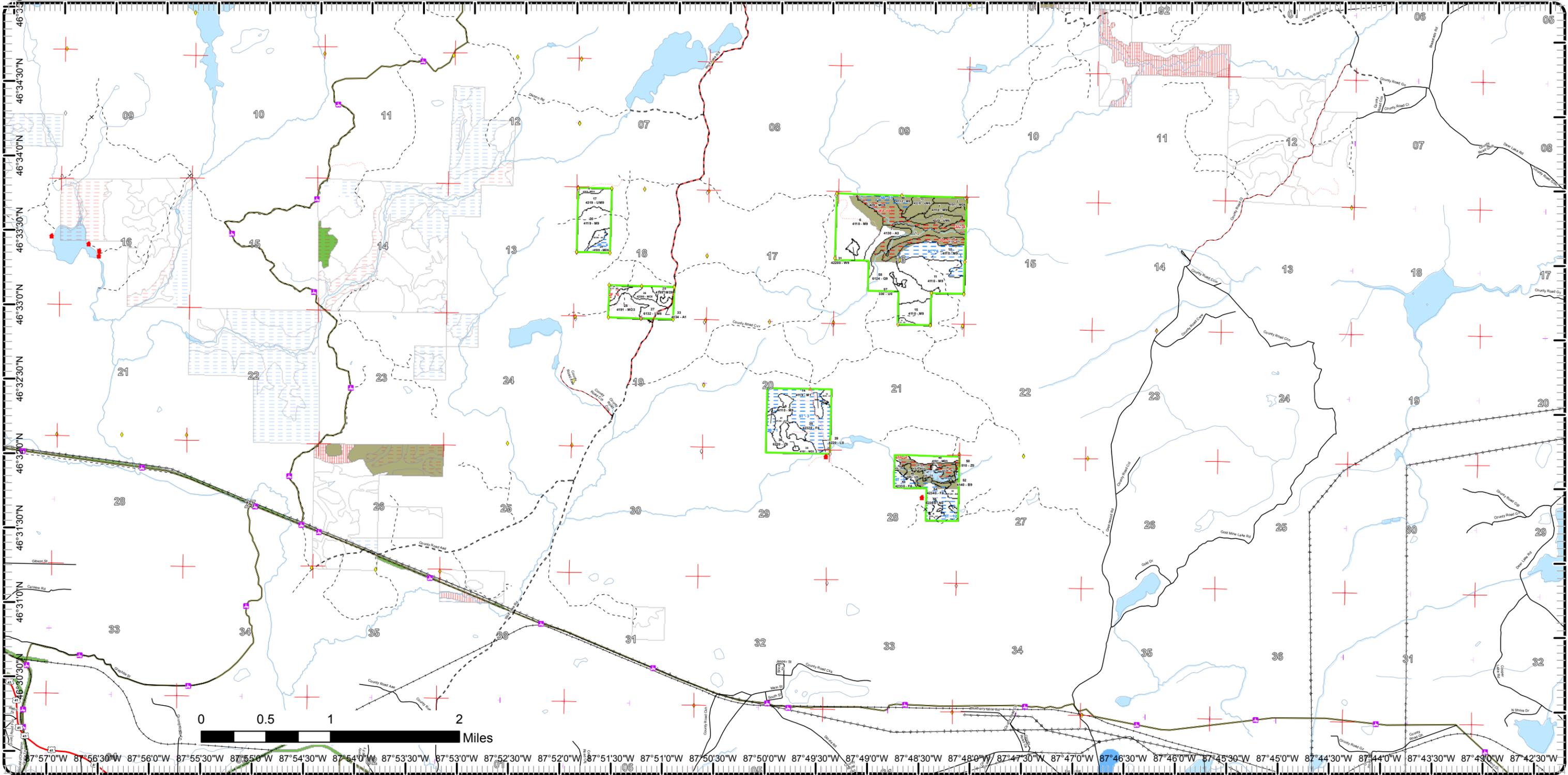
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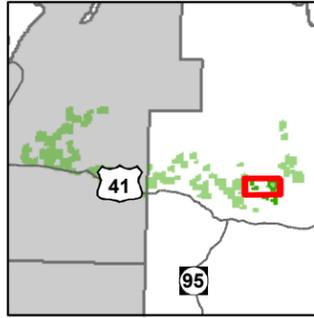
- Unavailable
- Available Factors W/ Constraints
- 2B: Unknown if access through adjacent landowner(s) is possible
- 4A: No Markets Available for these Forest Products
- 5C: Delay treatment for age/size class diversity or exceptional site quality
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- 3J: Water quality / BMPs (stream, river, or lake)
- Special Conservation Areas
- Cold Water Streams
- Cold Water Lakes
- High Priority Trout Stream Buffer
- Verified Type 1 Old Growth
- Rail-Trail Corridor



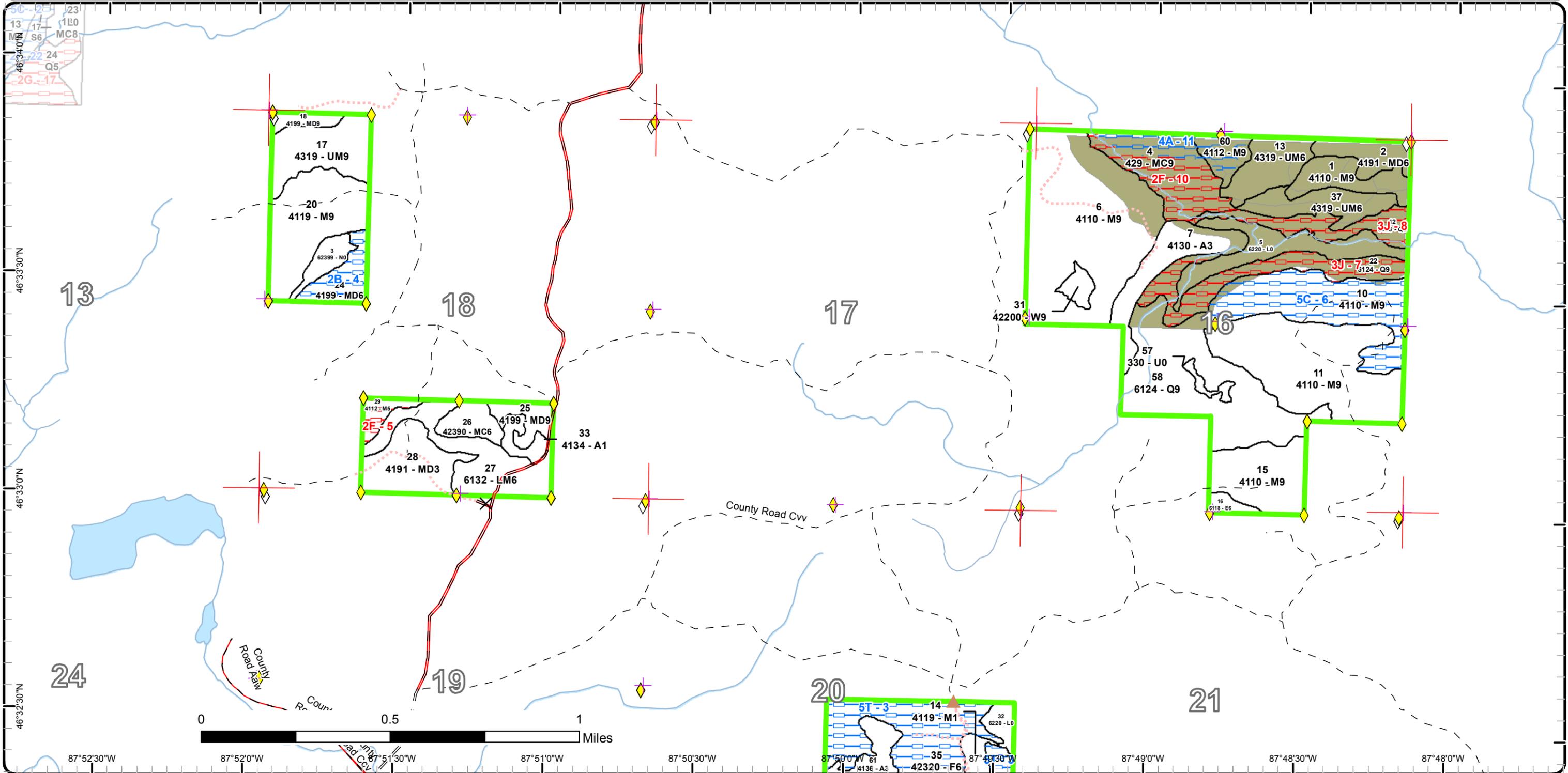
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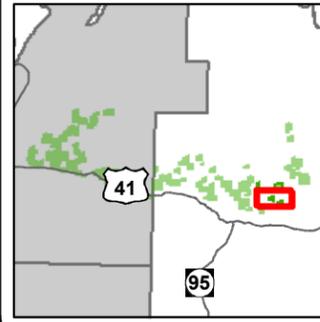


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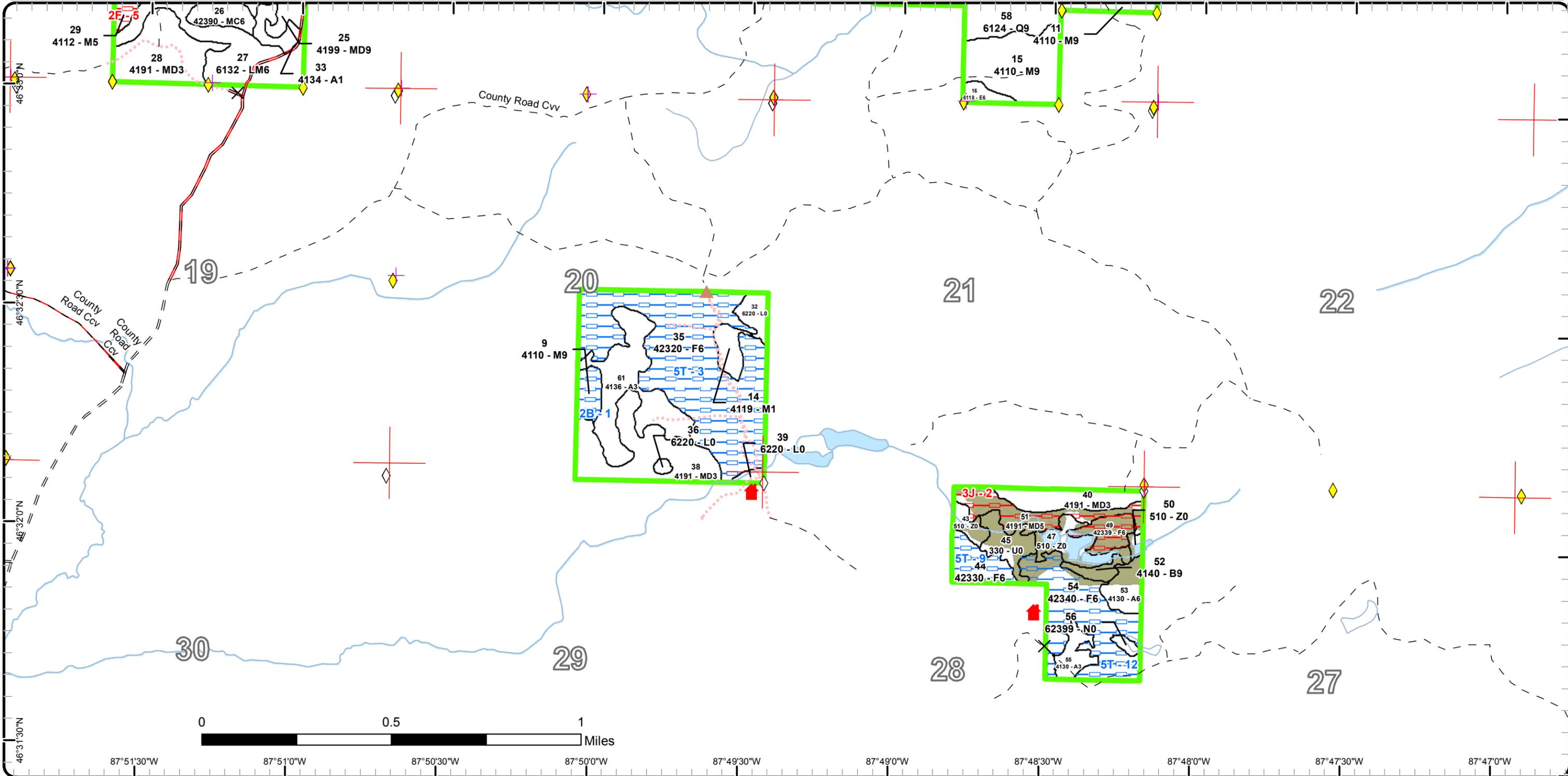


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Report 1 – Total Acres by Cover Type and Age Class



Age Class

	Non-Forest	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-119	120-129	130-139	140-149	150+	Uneven-Aged	Total
Aspen	0	0	21	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35
Lowland Deciduous	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3
Lowland Mixed Forest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	30
Lowland Shrub	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30
Marsh	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Mixed Upland Deciduous	0	23	40	0	0	0	0	0	0	0	12	0	0	0	0	0	0	12	87
Northern Hardwood	0	0	0	0	0	0	0	0	0	0	64	0	15	0	0	0	0	150	229
Paper Birch	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3
Upland Conifers	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	31	0	40
Upland Mixed Forest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	0	24
Upland Spruce/Fir	0	0	0	45	0	83	0	0	7	0	0	0	0	0	0	0	0	0	135
Water	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15
Total	47	23	61	59	0	83	0	0	10	3	76	9	15	0	0	0	55	192	633



Report 2 – Treatment Summary

Gwinn Mgt. Unit

Year of Entry: 2017

Acres of Harvest

Compartment 210

Total Compartment Acres: 926

Commercial Harvest - 143
 Harvests with Site Condition - 152
 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
Lowland Conifers	21	0	0	0	0	0	0	0	0	21
Mixed Upland Deciduous	0	0	0	0	12	0	0	0	0	12
Northern Hardwood	0	0	0	0	133	0	0	0	0	133
Upland Conifers	9	0	0	0	0	0	0	0	0	9
Upland Spruce/Fir	121	0	0	0	0	0	0	0	0	121
Total	150	0	0	0	145	0	0	0	0	295

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	295	0	0	0	0	0	0	0	0	295
Next Step	0	0	0	0	0	0	295	0	0	295
Total	295	0	0	0	0	0	295	0	0	591



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
1	32210001-Cut	21.9	4110 - Sugar Maple Association	Sawtimber Well	110	111- 140	Harvest	Shelterwood	411 - Northern Hardwood	Even-Aged	Proposal

Habitat Cut: No**Site Condition:**

Prescription Shelterwood harvest. Reduce basal area down to 40 to 50 square feet. Do not cut oak. Favor yellow birch when marking the stand.

Specs:Next Step

Treatments:

Acceptable Maple, birch, oak, pine

Regen:

Other Small flowage may exist within the SW part of stand. Treatment boundary adjusted. Acres may vary significantly due to wet areas and rock
Comment: outcrops. Old next step comments:

Proposed Start Date: 10/1 /2015

4	32210004-Cut	8.8	429 - Mixed Upland Conifers	Sawtimber Well	150	111- 140	Harvest	Clearcut with Retention	4134 - Aspen, Spruce/Fir	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Clearcut with reserves. Do not cut white pine greater than 24" dbh. Do not cut under-represented trees such as oak and yellow birch, if they exist.

Specs: Do not allow chipping within the stand.

Next Step

Treatments:

Acceptable Maple, spruce, aspen, fir, birch, pine, oak.

Regen:

Other Only a small portion of this stand is to be cut due to steep terrain that heads down to the Barnhardt creek. Treatment boundary may vary
Comment: depending on terrain. Old next step comments:

Proposed Start Date: 10/1 /2016

6	32210006-9- New	12.9	4110 - Sugar Maple Association	Sawtimber Well	130	81-110	Harvest	Shelterwood	411 - Northern Hardwood	Two-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Reduce basal area to 50-60 square feet to promote maple regeneration. Do not cut oak, basswood, yellow birch or conifer within the stand. Open

Specs: up around red oak (at least 1 chain around the edge of oak crown) to try and promote oak regeneration.

Next Step

Treatments:

Acceptable maple, oak, pine, basswood, birch.

Regen:

Other Red line out drainages or steep areas within the stand and consider these areas retention. I adjusted the treatment boundary to make an attempt
Comment: to exclude these acres. Old next step comments:

Proposed Start Date: 10/1 /2016

6	32210006-Cut	61.2	4110 - Sugar Maple Association	Sawtimber Well	130	81-110	Harvest	Shelterwood	411 - Northern Hardwood	Two-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Reduce basal area to 50-60 square feet to promote maple regeneration. Do not cut oak, basswood, yellow birch or conifer within the stand. Open

Specs: up around red oak (at least 1 chain around the edge of oak crown) to try and promote oak regeneration.

Next Step

Treatments:

Acceptable maple, oak, pine, basswood, birch.

Regen:

Other Red line out drainages or steep areas within the stand and consider these areas retention. I adjusted the treatment boundary to make an attempt
Comment: to exclude these acres. Old next step comments:

Proposed Start Date: 10/1 /2016



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
15	32210015-Cut	26.3	4110 - Sugar Maple Association	Sawtimber Well	110	111- 140	Harvest	Shelterwood	411 - Northern Hardwood	Uneven- Aged	Proposal

Habitat Cut: No**Site Condition:**

Prescription Perform a shelter wood harvest within the stand to reduce the basal area and promote sugar maple regeneration within the understory. Reduce basal area to 50-60 square feet. Try to avoid marking cherry, and oak within the stand. Do not mark any yellow birch.

Next Step
Treatments:

Acceptable Maple, birch, cherry and oak.
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

24	32210024-Cut	11.9	4199 - Other Mixed Upland Deciduous	Poletimber Well	90	111- 140	Harvest	Shelterwood	411 - Northern Hardwood	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Shelterwood harvest the hardwood stand. Small portion of the stand, NE corner, may be clearcut with reserves. Retain some yellow birch and white birch within the stand.

Next Step
Treatments:

Acceptable Maple, oak, birch, pine, fir, spruce.
Regen:

Other Put an adequate buffer around stand 3 and any low areas or drainages that exist. Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

35	32210035-Cut	81.3	42320 - Upland Spruce	Poletimber Well	40	111- 140	Harvest	Clearcut with Retention	4134 - Aspen, Spruce/Fir	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Clearcut with reserves. Retain patches of mature timber to meet the retention guidelines. Do not cut white pine within the stand. If available, include some mature aspen within the retention patches.

Next Step
Treatments:

Acceptable Spruce, fir, pine, aspen, maple, birch, cedar and hemlock
Regen:

Other Stand consists of a fair amount of sub-merchantable spruce. Budworm damage is an issue and will most likely get worse in the coming years.
Comment: Old next step comments:

Proposed Start Date: 10/1 /2016

44	32210044-Cut	7.9	42330 - Upland Fir	Poletimber Well	28	Immatur re	Harvest	Clearcut with Retention	4134 - Aspen, Spruce/Fir	Even-Aged	Proposal
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Habitat Cut: No**Site Condition:**

Prescription Clearcut with reserves. Reserve patches of mature timber to meet retention guidelines. No cut on cherry, and oak. If available, retain some larger aspen within the retention patches.

Next Step
Treatments:

Acceptable Fir, aspen, spruce, pine, birch.
Regen:

Other Stand is young. Only harvest if budworm damage get's severe. Stand may have to be chipped due to sub-merchantable timber. Old next step
Comment: comments:

Proposed Start Date: 10/1 /2016



S t a n d	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
54	32210054-Cut	31.4	42340 - Upland Spruce/Fir	Poletimber Well	27	Immature	Harvest	Clearcut with Retention	4134 - Aspen, Spruce/Fir	Even-Aged	Proposal

Habitat Cut: No**Site Condition:**

Prescription Clearcut with reserves. Keep patches of mature timber to meet retention guidelines. Large aspen should be part of the retention patch, if possible.
Specs:

Next Step
Treatments:

Acceptable Maple, spruce, pine, aspen, birch, cherry.
Regen:

Other Stand is young. Do not harvest unless budworm damage is severe. Consider chipping the sale due to sub-merchantable timber. Treatment
Comment: boundary has been adjusted to account for some of the retention areas. Old next step comments:

Proposed Start Date: 10/1 /2016

**Total Treatment
 Acreage Proposed: 263.6**

Report 5 – Site Conditions

Gwinn Mgt. Unit
Jason Caron : Examiner

Compartment: 210
Year of Entry: 2017

Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	Dominant Site Conditions						
		With Condition	Not Available		2B	4A	5C	5T	2F	3J	
69	69	0	0	Aspen							
11	11	0	0	Low-Density Trees							
107	63	0	44	Lowland Conifers							44
3	3	0	0	Lowland Deciduous							
30	30	0	0	Lowland Mixed Forest							
31	31	0	0	Lowland Shrub							
8	8	0	0	Marsh							
113	87	12	15	Mixed Upland Deciduous	12						15
299	237	56	5	Northern Hardwood		5	45	5	5		
3	3	0	0	Paper Birch							
39	9	9	22	Upland Conifers		9			22		
56	56	0	0	Upland Mixed Forest							
135	0	128	7	Upland Spruce/Fir				128			7
15	15	0	0	Water							
4	4	0	0	White Pine							
926	628	205	93	Total Forested Acres	12	14	45	134	27		66
	68%	22%	10%	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	Available	5T: Contingency Treatment for Forest Health Concerns	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments: If we decide to harvest stand 35, harvest this stand as well.							
2	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	22	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Stream buffer.							

Report 5 – Site Conditions

Gwinn Mgt. Unit
Jason Caron : Examiner

Compartment: 210
Year of Entry: 2017

3	Available	5T: Contingency Treatment for Forest Health Concerns	83	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Monitor this stand. If budworm outbreak gets worse, harvest this stand.							
4	Available	2B: Unknown if access through adjacent landowner(s) is possible	12	2E: Road needed	Unspecified	Unspecified	Unspecified
Comments: Road needed through Plum Creek. In the event they cut their property we could cut this stand.							
5	Unavailable	2F: Too steep	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments: A portion of the stand was cut recently. What remains is too steep/rocky to harvest.							
6	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	45	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Hold for another 10 years due to small diameter hardwood. Combine this stand with stand 11 in the future for harvest.							
7	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	27	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified	Unspecified
Comments: Buffer along stream. Wet ground with seeps throughout.							
8	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	17	2F: Too steep	Unspecified	Unspecified	Unspecified
Comments: Buffer along stream. Terrain is very steep.							

Report 5 – Site Conditions

Gwinn Mgt. Unit
Jason Caron : Examiner

Compartment: 210
Year of Entry: 2017

9	Available	5T: Contingency Treatment for Forest Health Concerns	10	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Young stand but dominated by fir. Only cut if budworm outbreak is severe.							
10	Unavailable	2F: Too steep	22	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Steep ridge down to the Barnhardt Creek.							
11	Available	4A: No Markets Available for these Forest Products	14	Unspecified	Unspecified	Unspecified	Unspecified
Comments: 14 acres with very tough access. Treatments like this have been going no-bid lately.							
12	Available	5T: Contingency Treatment for Forest Health Concerns	35	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Young stand of fir and spruce. Only cut if budworm damage is severe.							

Mgt. Unit

Compartment: #Type!

Year of Entry:



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
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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.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4110 - Sugar Maple Association	Sawtimber Well	14.8	110	111-140	Stand of over mature sugar maple with yellow birch scattered throughout. Numerous areas within the stand would be inoperable due to rock cliffs and drainages. Hard to discern the drainages due snow depths during inventory.
4	429 - Mixed Upland Conifers	Sawtimber Well	30.7	150	111-140	The West and SW part of this stand is very steep and inoperable and has a heavy component of large white pine. The remainder of the stand has a mix of conifer and deciduous with large white pine scattered throughout.
6	4110 - Sugar Maple Association	Sawtimber Well	87.5	130	81-110	OI notes from previous Inventory (Heikkila): Stand was comm. cut during 1996 - 1997 by Superior Mich. Hardwoods, Inc. from Niagara, Wis. (c/o Shawn Staples), "Barnhardt Creek Sale" permit #3-92. Also a small timber bridge was built by the contractor within the sale to cross a small creek. It was left in place. Note - this was the second cut made since the State has owned this. Some winters, the snow depth was too great to operate here. 2015 Inventory Notes: Stand consists of a fair amount of over mature hardwood. Good sugar maple regeneration within areas of advanced 3-4" dbh sugar maple.
7	4130 - Aspen	Sapling Well	21.2	19	Immature	Stand was cut in '96-'97 under permit # 3-92. Stand of sapling sized timber. Sugar maple looks healthy. The aspen regeneration is poorer quality. Large white pine scattered throughout the stand. Former inventory notes mention severe moose browse, I did not see any signs of it in this YOE.
11	4110 - Sugar Maple Association	Sawtimber Well	63.9	90	81-110	Stand was harvested in 2012:: TS# 305-08-01. Areas of the stand still have a higher basal area but not enough for a harvest this YOE. Stand has a little sugar maple in the understory but it's hard to tell how much given the snow. I would consider another selection harvest in 10 years and then combining it with the stand to the North.
15	4110 - Sugar Maple Association	Sawtimber Well	26.3	110	111-140	Stand was selectively cut in 2000-2002: TS#17-97-01. A high basal area remains within the stand. I could not see stumps due to high snow amounts but I am assuming the stand was marked too light. A fair amount of large sugar maple. Decent sugar maple regeneration within the understory.
16	6118 - Lowland Deciduous with Cedar	Poletimber Well	3.3	81	Unspecified	Lowland stand with ash, cedar and a few yellow birch and black spruce scattered throughout. Stand looks to be very wet and may have a flow in the spring. Many different ages of ash and red maple within this stand.
17	4319 - Mixed Upland Forest	Sawtimber Well	23.8	210	111-140	Stand is a mix of deciduous and conifer with upland and lowland throughout. Rock knobs contain big hemlock, cedar with pockets of red maple. Lowland contain black ash, yellow birch and red maple. A lot of moose activity within the stand. Young hard maple, red maple and balsam fir are browsed.
18	4199 - Other Mixed Upland Deciduous	Sawtimber Well	4.3	90	81-110	Stand selectively managed in 2011. TS#103-07-01. Small stand of hardwood. Red oak is good quality. Sugar maple and red maple are poorer quality. The remaining paper birch is in tough shape with most of the stems dead. Heavy moose browse exists on the new red maple stump sprouts.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
20	4119 - Mixed Northern Hardwoods	Sawtimber Well	36.5	90	81-110	Selectively cut in 2011. TS #103-07-01. Stand consists of decent quality oak but poorer quality maple. Very little if any oak was cut which makes the basal area high in some areas. Stand has rocky hills throughout with a swale/drainage that runs NE/SW. I noticed some top dieback on a few stems of maple within the stand. The red maple stump sprouts are being browsed heavy by moose.
24	4199 - Other Mixed Upland Deciduous	Poletimber Well	11.9	90	111-140	Stand of red oak that transitions into a mix of red maple and oak. Along the NW edge of the stand a thick balsam fir understory exists. Red oak is short and poorer quality. A lot of rock within the stand, timber is growing on shallow soils. Paper birch is dying out. NE corner of the stand is low and wet with some cedar and yellow birch.
25	4199 - Other Mixed Upland Deciduous	Sawtimber Well	7.7	90	51-80	Stand was selectively cut in 2011. TS#104-07-01. Maple is poorer quality. I noticed some top dieback of the maple along the Wolf Lake Road within this stand. The red oak is nice quality and large in diameter. Some areas were marked light while other areas were marked heavier. A low area within the stand exists in about the center of stand. This area was red lined out and not cut during the harvest.
26	42390 - Mixed Non-Pine Upland Conifers	Poletimber Well	8.6	108	111-140	Stand of cedar that is mixed with fir and maple. The ground is rugged with rock outcrops throughout the stand. Stand slopes down to the South and into low ground. A small patch of white pine exists in the SW corner of the stand. Most of the stand is on high ground.
27	6132 - Mixed Lowland Forest with Cedar	Poletimber Well	30.1	70	111-140	Lowland stand with a mix of deciduous and conifer. Some areas are sparse with heavy tag alder while other areas are fully stocked with poorer quality black ash, cedar, fir and spruce. Do not manage due to very wet soils. OI notes state: "area didn't sell in 1976. Parks cut some cedar in the winter of 1977".
28	4191 - Mixed Upland Deciduous with Conifer	Sapling Well	23.3	4	Immature	Stand was harvested in 2011: TS#104-07-01. Stand is regenerating back to mostly red maple, aspen and cherry at the moment. It's hard to discern if there is shorter regeneration under the snow. Better aspen regeneration on the West side of the stand and more cherry and red maple regen. (stump sprouts) on the East side of stand. Fairly heavy moose browse on the aspen regeneration within the stand. Three retention patches within the stand will be delineated out for reference.
35	42320 - Upland Spruce	Poletimber Well	83.3	40	111-140	Thinned in 1999, TS#13-97-01. Younger stand of white spruce mixed with balsam fir and a few black spruce. Stand was thinned in the past, more or less row thinned by creating strips through the stand to remove the aspen. A lot of sub merchantable trees exist within the stand. Couldn't get an age on the trees due to frozen trees. Basal area within the stand averaged 120. I merged a couple of stands along the East edge of this stand and NE as well. They were not thinned in '99 but were the same in composition as this stand. I decided they should all be treated the same when a decision to harvest occurs.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
38	4191 - Mixed Upland Deciduous with Conifer	Sapling Well	28.3	16	1-50	Seed tree cut in 1999: TS#13-97-01. Large white pine scattered throughout the stand. The regeneration underneath looks good. A mix of deciduous and conifer exist. Nice paper birch regeneration exists in certain areas. A large rock knob exists in the southern part of stand, it makes for a nice view!
40	4191 - Mixed Upland Deciduous with Conifer	Sapling Well	11.9	15	Immature	OI Comments- Seed tree cut in 1999, TS#13-97-01. White birch regeneration successful in some areas. B3 inclusions in the west part of this stand. Patches on rocky terrain left uncut. A small inclusion (2 acres) of tag alder exists in the central portion of this stand.
44	42330 - Upland Fir	Poletimber Well	9.8	28	Immature	Cut within '87-'89. PERMIT #13-87 The OI notes state that Oak and Cherry were left within the cut. I did not observe enough oak to make it a species within the stand. Stand consists of thick balsam in the pole sized range. Areas of tag alder exist within the stand. Balsam fir looks healthy and does not show signs of budworm damage.
49	42339 - Upland Spruce/Fir (OI)	Poletimber Well	7.0	78	Unspecified	Stand acts as a buffer along riparian edge. No former OI notes to see what species composition is.
52	4140 - Other Upland Deciduous	Sawtimber Well	3.3	78	141-170	Stand was left as a buffer along the stream. Paper birch is old and falling apart. Balsam fir, red maple and white spruce will eventually take over the stand as the paper birch continues to decline. Most of the paper birch contain dead tops. I was able to core a white spruce @ 102 years of age.
53	4130 - Aspen	Poletimber Well	7.6	28	Immature	Stand cut in '87-'89. PERMIT #13-87. OI notes say Oak and Cherry were left within the cut. I did not see enough of either species to add it to the stand. Stand consists of good quality aspen. A heavy component of sugar maple exists within the understory.
54	42340 - Upland Spruce/Fir	Poletimber Well	35.1	27	Immature	Stand cut in '88. Stand consists of a mixed conifer and deciduous. Stand was picked through when it was cut. Some merchantable pockets of timber exist. At the present time there is not enough merchantable timber to warrant a harvest. Allow the younger regeneration to mature and possibly cut it early. This stand could become an issue if there was a budworm outbreak within this compartment. Re-assess in 10 years to see if the stand is worth cutting.
55	4130 - Aspen	Sapling Well	6.1	26	Unspecified	Cut between '87-'89 under permit #13-87. Red oak and cherry were left within the cut. A decent stand of aspen poles within the stand. A few scattered cherry and red oak exist from the former cut. Balsam fir and hazelnut brush are filling in within the understory.



Stand	Cover Type	Acres	Managed Site	General Comments:
5	6220 - Alder/willow	23.6	No	Stream corridor. Tag alder throughout.
32	6220 - Alder/willow	5.0	No	Tag alder and willow.
39	6220 - Alder/willow	1.7	No	OPIC - FMD: Creek bottom.
43	510- Water (OI)	3.8	No	Beaver pond.
47	510- Water (OI)	10.2	No	Beaver pond.
50	510- Water (OI)	1.4	No	Beaver pond.
56	62399 - Marsh (OI)	1.5	No	OI Notes state that this stand contains some open water.