



Compartment Review Presentation

Traverse City Forest Management Unit

Compartment 61037

Entry Year 2017

Acreage: 2,491

County Manistee

Management Area: Manistee Plains

Revision Date: 2014-12-22

Stand Examiner:

Legal Description:

T24N, R13W, sections 19, 20, 29, 30, 31 -- T23N, R13W, sections 1, 12

Identified Planning Goals:

This compartment is designated as Mixed Use in the Pere Marquette State Forest Resource Management Plan. This designation places equal importance on the production of wood fiber, wildlife habitat, recreation, and scenic and aesthetic values. Maintaining vegetative cover for Second and Third Creeks, which are the headwaters of Bear Creek, will be a priority.

Soil and topography:

Major soil types for this Resource Management Unit are Roscommon-AuGres-Croswell – poorly drained sands; Montcalm-McBride-Kalkaska, Kalkaska-Rubicon – deep, droughty sands; Carlisle-Carbondale-Karston – mucks; Saugatuck – somewhat poorly drained. Terrain is flat and level in the majority of the western block of this compartment and gently rolling in the eastern block of the compartment.

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

This compartment consists of a west and east block. The west block is contiguous ownership surrounded by more state land to the west and private parcels to the east. Benzie Schools own 160 acres adjacent to state land in section 20.

The east block consists of two smaller blocks. The north is surrounded by private on three side with some adjoining state land on the east in Wexford County. There is an 800 MHz radio tower located in the southeast corner of this block that is under lease to Michigan State Police, Michigan Building Authority. The southern block of is private to the north and west, state land in Wexford County adjoins on the east, and Forest Service property adjoins to the south.

Unique Natural Features:

First, Second and Third Creek flow through the compartment. The origin of a tributary to Third Creek is a spring in stand 63. Together these creeks form Bear Creek which is a designated trout stream.

Archeological, Historical, and Cultural Features:

None known.

Special Management Designations or Considerations:

No special designations however, maintaining vegetative cover for Second and Third Creeks is a priority.

Watershed and Fisheries Considerations:

First, Second, and Third Creeks flow through Compartment 37. All three are Designated Trout Streams, with naturally reproducing populations of brown trout, brook trout, steelhead, coho salmon, and Chinook salmon. These creeks are all headwater streams of Bear Creek, a wild trout, salmon, and steelhead stream, and also a Blue-Ribbon Trout Stream. BMPs should be followed when planning timber harvest activities near these fragile trout streams.

Wildlife Habitat Considerations:

Section 1, 12, and the SE portion of the compartment in section 29 consist of a broad moraine ridge (LTA 2211). Large, rolling hills and excessively drained soils typify this land type. Within this compartment, northern hardwoods, aspen, planted pine, and small openings are represented within this LTA. A flat lake plain with sandy loam soils (LTA 6111) rests on the far west portion of Compartment 37. Upland shrub openings, northern hardwoods, and planted pine are represented here. The remainder of the compartment consists of a flat, lake plain with poorly drained peat or muck (LTA 6149). Lowland forests dominate this LTA type within compartment 37.

Wildlife considerations for northern hardwood stands involve maintaining tree species diversity, the protection of den/nesting trees & snags, coarse woody debris (cwd), and maintaining a scattering of mast-producing trees/shrubs. This will insure use by many species of wildlife. Examples of species found include downy woodpecker, porcupine, sharp-shinned hawk,

spotted salamander, wild turkey, and white-tailed deer. Ruffed grouse use different aged aspen throughout their life cycle. Younger stands provide cover while older stands provide catkins (food source) for the winter months. Within each compartment, clearcutting helps facilitate different sized aspen trees by mimicking the necessary disturbance vital for regeneration. The inclusion of CWD trees for drumming logs and maintaining berry-producing shrubs is also desirable. Woodcock prefer areas that are similar to grouse, but with a higher water table. The moist soils allow woodcock to forage. Openings are evaluated for wildlife value and may require hand-felling to maintain this habitat type. Many wildlife species rely on small forest openings. These openings provide grassy nest sites, plentiful seeds and insects, and cover. Examples of species include northern flicker, cottontail rabbit, and garter snake. Upland shrub openings are important to wildlife because they contain many berry-producing trees/shrubs. Lowland forests are important deer wintering grounds. Other wildlife species found here include snowshoe hare, black bear, barred owl, and woodland jumping mouse. Wildlife considerations include mimicking natural disturbances. Small habitat cuts imitate windthrows that occurred historically. These cuts allow sunlight to reach the ground, which increases the growth of sapling trees. These cuts not only rejuvenate the forest, but also provide a food source for wintering white-tailed deer.

Mineral Resource and Development Concerns and/or Restrictions

Surface sediments consist of lacustrine sand and gravel and minor end moraine of coarse-textured till. The glacial drift thickness varies between 400 and 800 feet. Beneath the glacial drift is the Devonian Ellsworth Shale. The Ellsworth is used for cement products. The nearest gravel pit is located to the north and potential should be good on the uplands. This area is located within the Niagaran reef trend and also has Antrim Shale gas production. Most of the State land is currently leased for oil and gas development.

Vehicle Access:

There is no access to the block of state land in T23N, R13W, section 12. This is a 320 acre block that was previously accessed by crossing private property. Opportunities exist to develop a road into this section from the adjoining state land in Wexford County. This option should be further explored in cooperation with the Cadillac FMU field staff.

Survey Needs:

Corners in T23N, R13 W, section 1 need to be established along the private boundaries to the north.

Recreational Facilities and Opportunities:

The Betsie River Snowmobile Trail (Trail #3) crosses the northwest corner of section 19. The North Country Trail runs through section 12 (NEED TO VERIFY NCT-TN). If the snowmobile trail will be impacted by timber treatments, then appropriate measures identified in DNR Policy & Procedures "32.22XX Best Management Practices for Forest and Wildlife Management Adjacent to Recreation Trails" should be taken into consideration. The compartment also supports dispersed recreation, fishing along First, Second, and Third Creeks as well as hunting opportunities throughout the compartment. (T.M.N. 12/9/14).

Fire Protection:

Local protection provided by Copemish-Cleon VFD for the west block of the compartment in Cleon Twp. and by Maple Grove VFD for the east block of the compartment located in Marilla Twp. Department of Natural Resources coverage provided from the Platte River Field Office and the Traverse City Forest Management Unit. There has not been a high occurrence of fire in this area, and urban interface is not too much of a concern. Access is acceptable in most of this compartment.

Additional Compartment Information:

Recommended Land Acquisitions: none.
Recommended Land Disposals: none.

The following reports from the Inventory are attached:

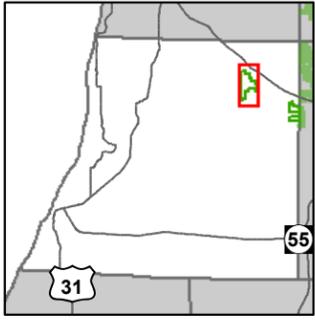
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

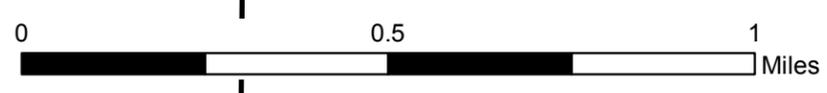
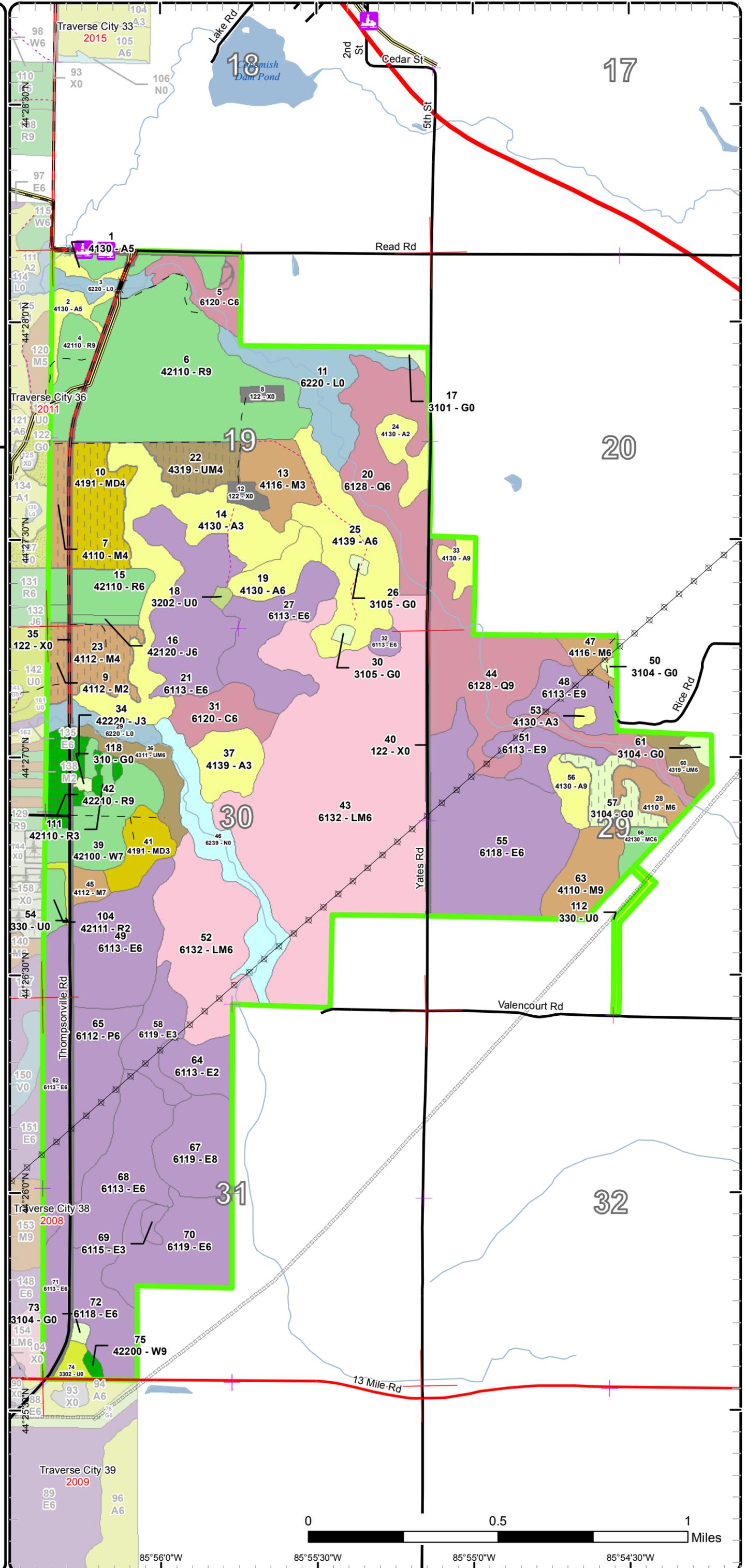
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Cover Type & Treatments

Compartment: 37
 T27N R14W 25-25, 36
 County: Manistee
 Unit: Traverse City
 Mgmt Area: Manistee Plains
 YOY: 2017
 Acres: 2491 GIS Calculated
 Examiner: Patrick Cotant
 Map Revised: 6/18/2015
 Map Phase: Pre-Review



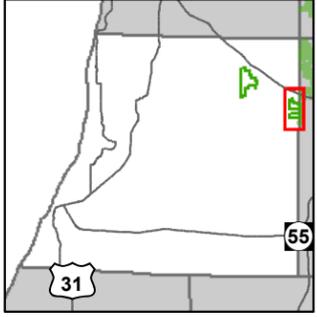
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- Miris Corners
- Highway
- County Paved Roads
- Paved Roads
- County Gravel Roads
- - Poor Dirt Roads
- - - Trail (Non-Recreation)
- ⊗ Bridges
- ⊗ Culverts
- ⊗ Snowmobile Trails
- Rivers
- Lakes
- Pipeline
- ⊗ Powerline
- Treatments
- ▭ Opening Maintenance
- ▭ Regeneration Survey
- Forest Covertypes
- 411 - Northern Hardwood
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 430 - Upland Mixed Fores
- 611 - Lowland Deciduous Forest
- 612 - Lowland Coniferous Forest
- 613 - Lowland Mixed Forest
- Non-Forest Covertypes
- 122 - Roads/Parking Lot
- 310 - Herbaceous Openland
- 320 - Upland Shrub
- 330 - Low Density Trees
- 622 - Lowland Shrub
- 623 - Emergent Wetland



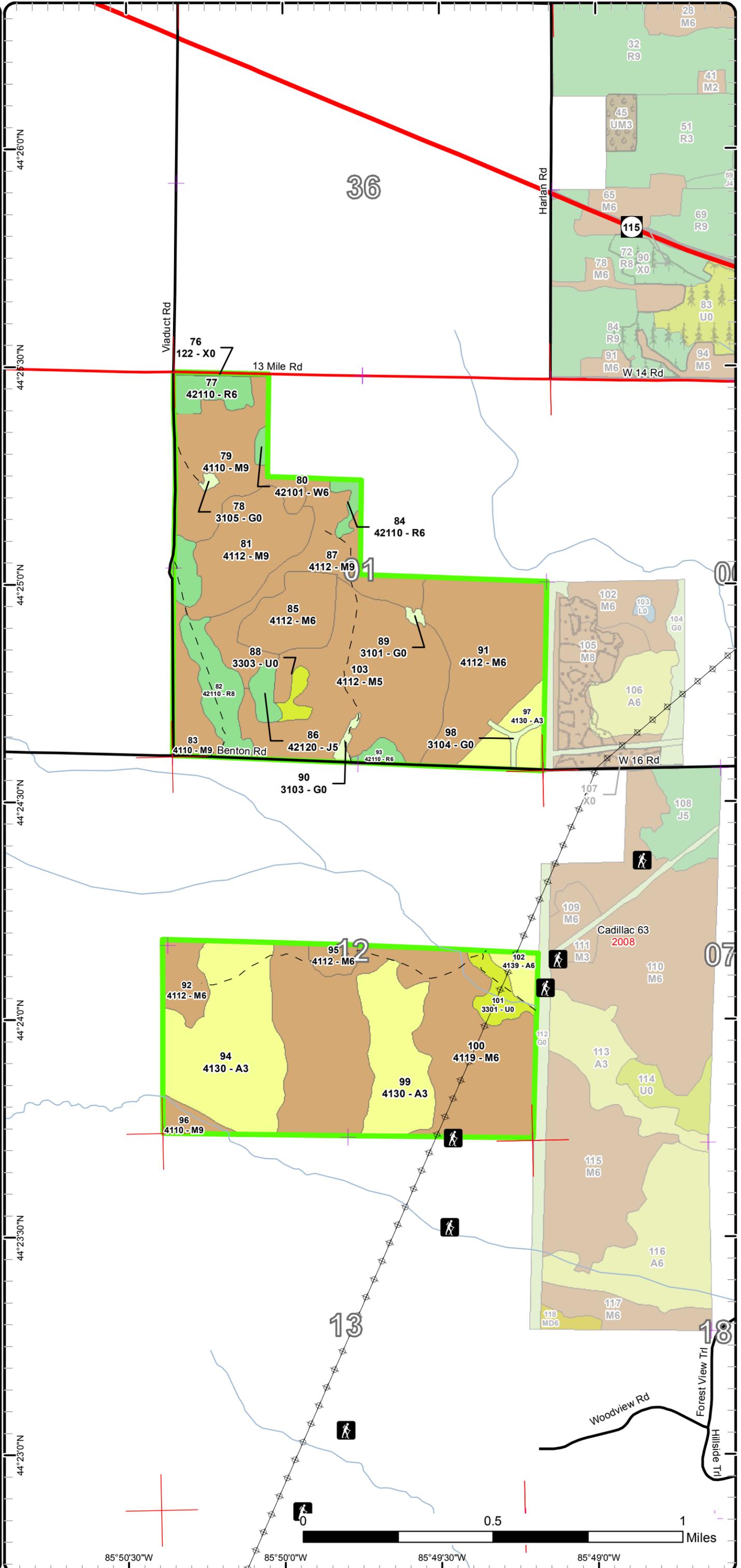
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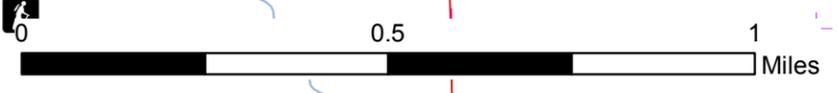
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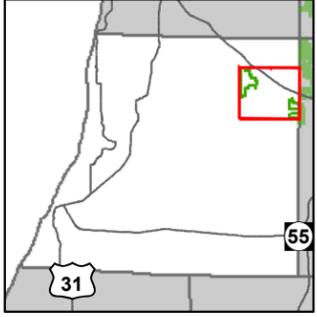


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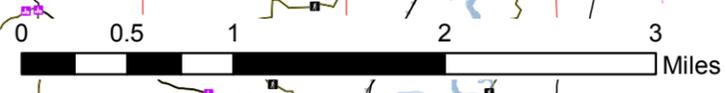
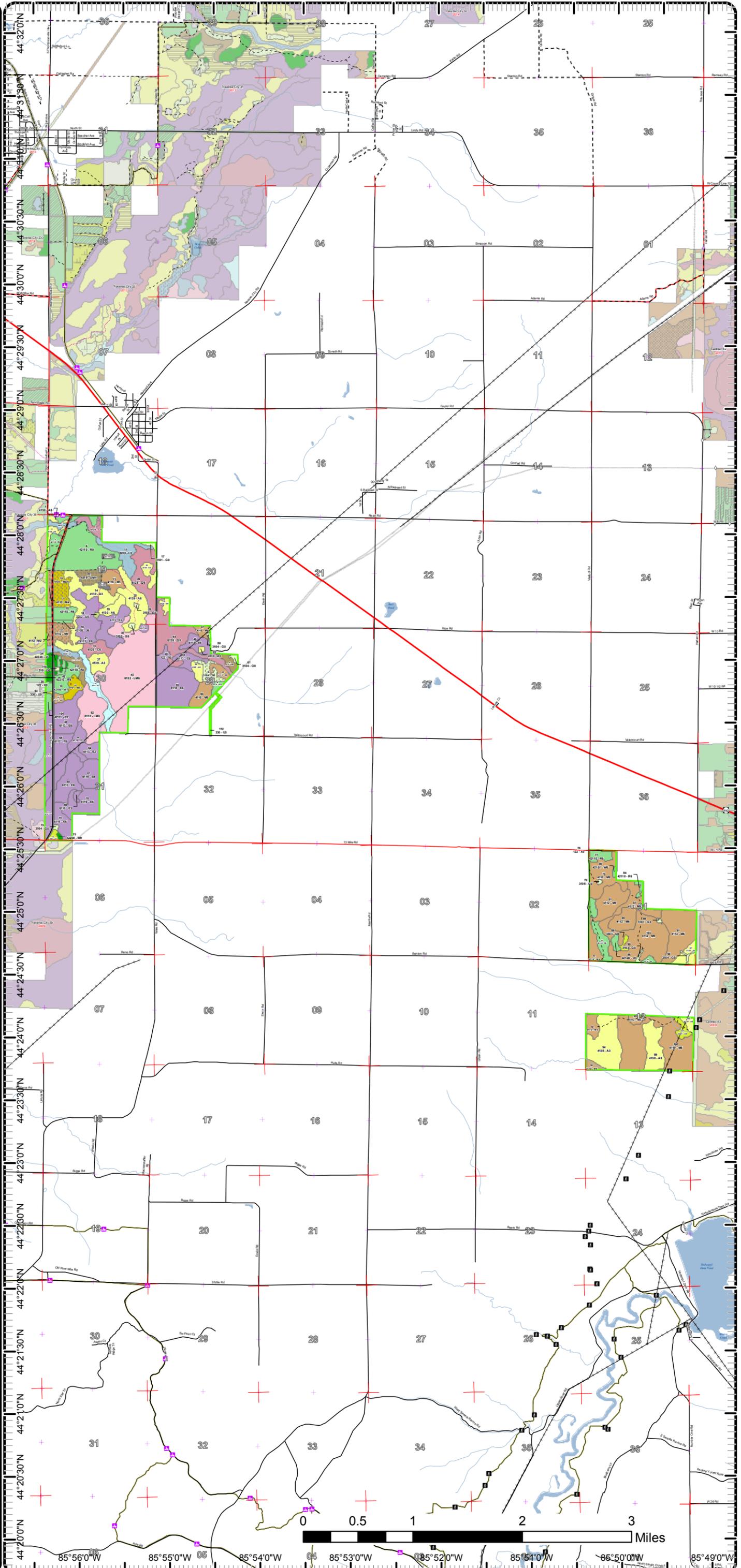


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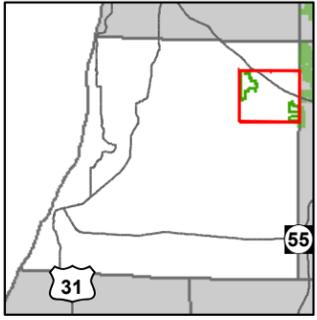
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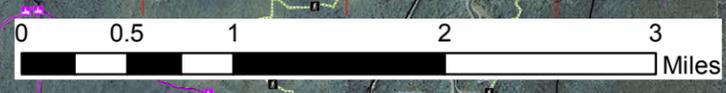
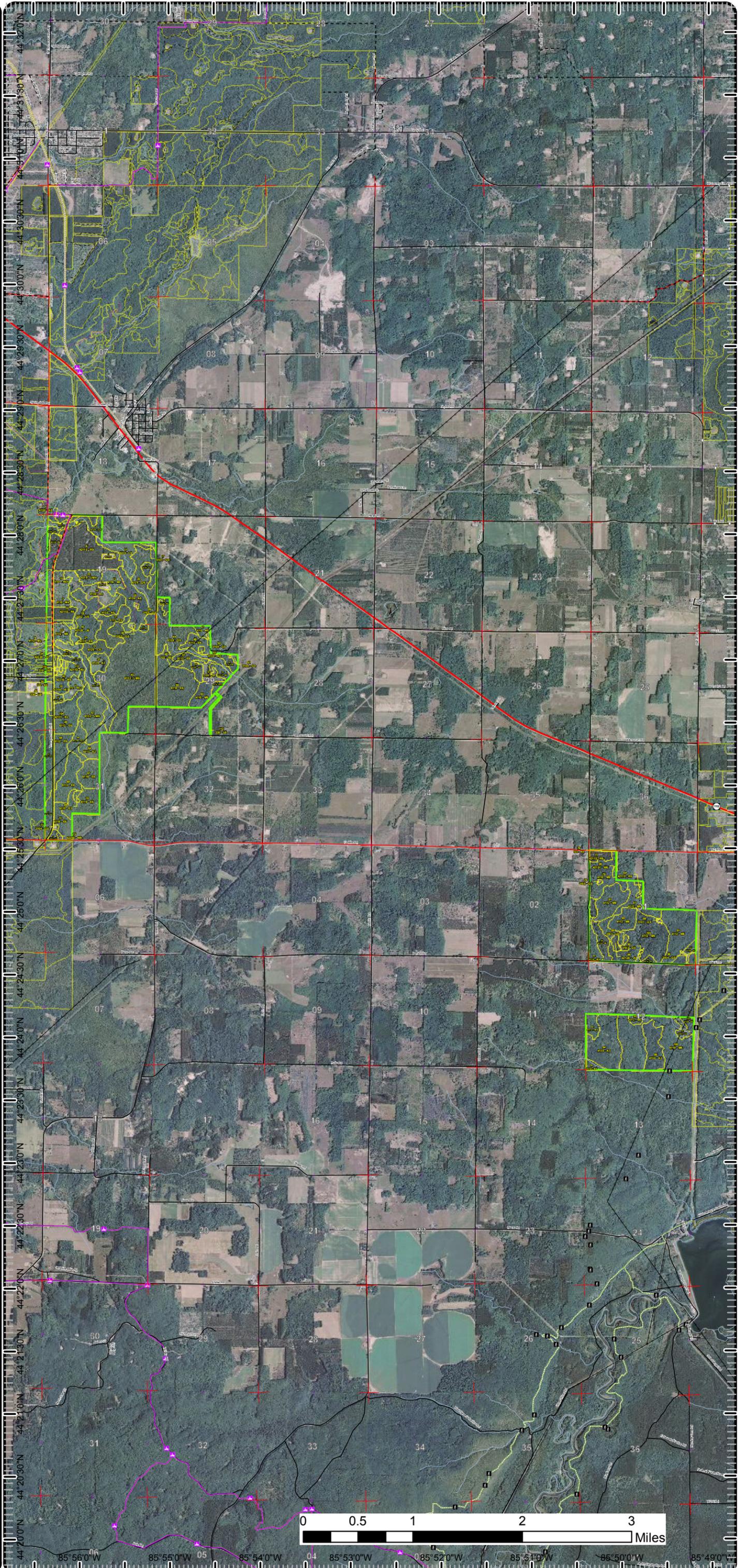
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Stand Boundary Map

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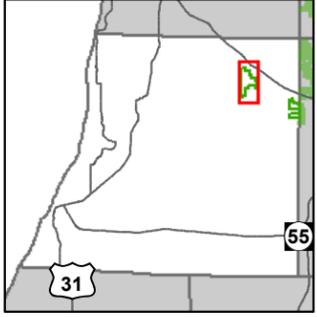


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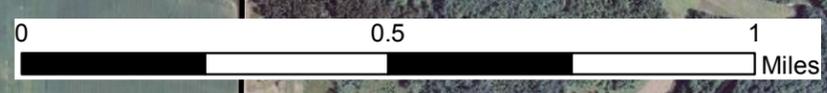
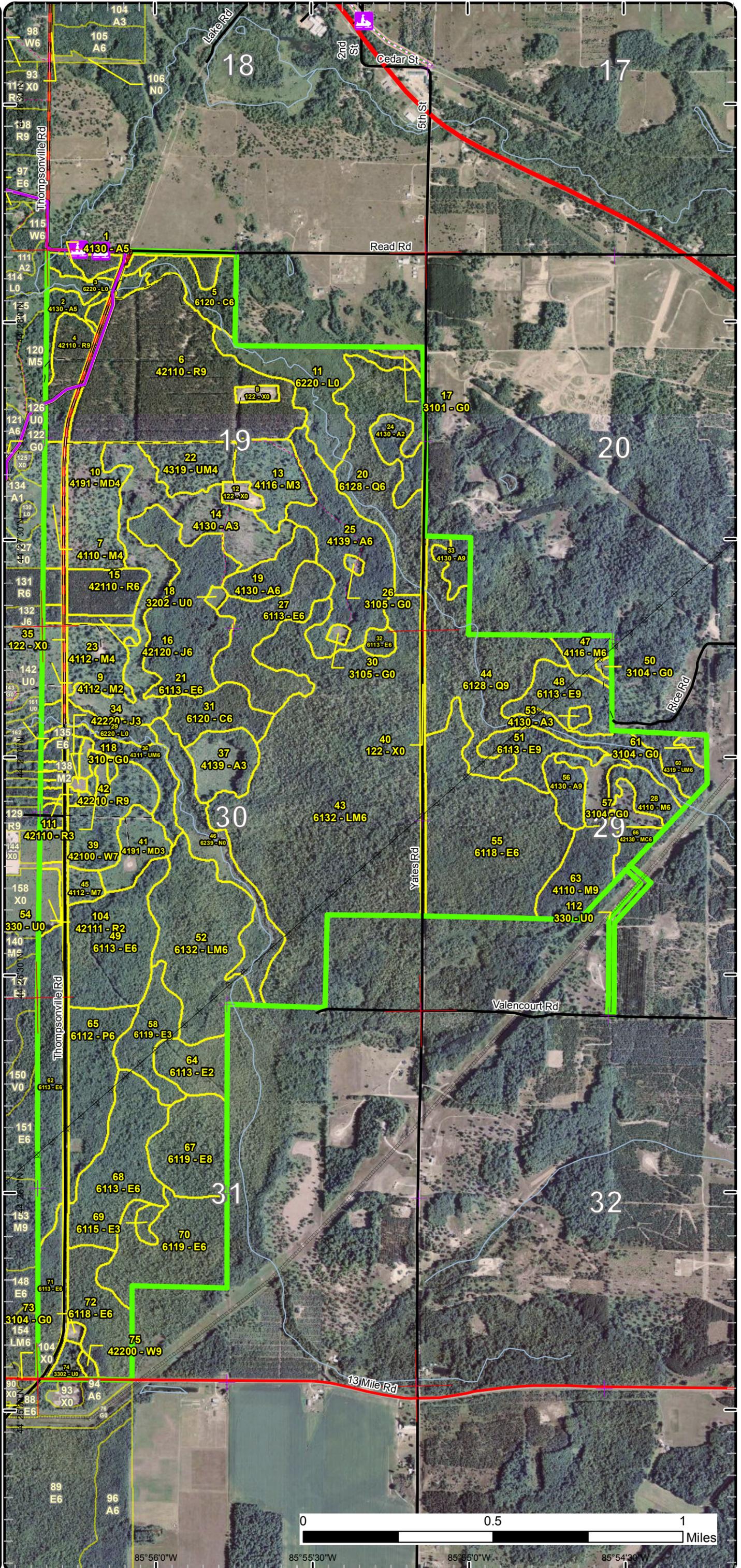
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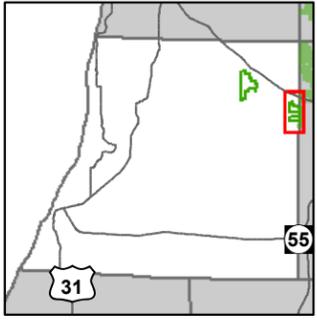
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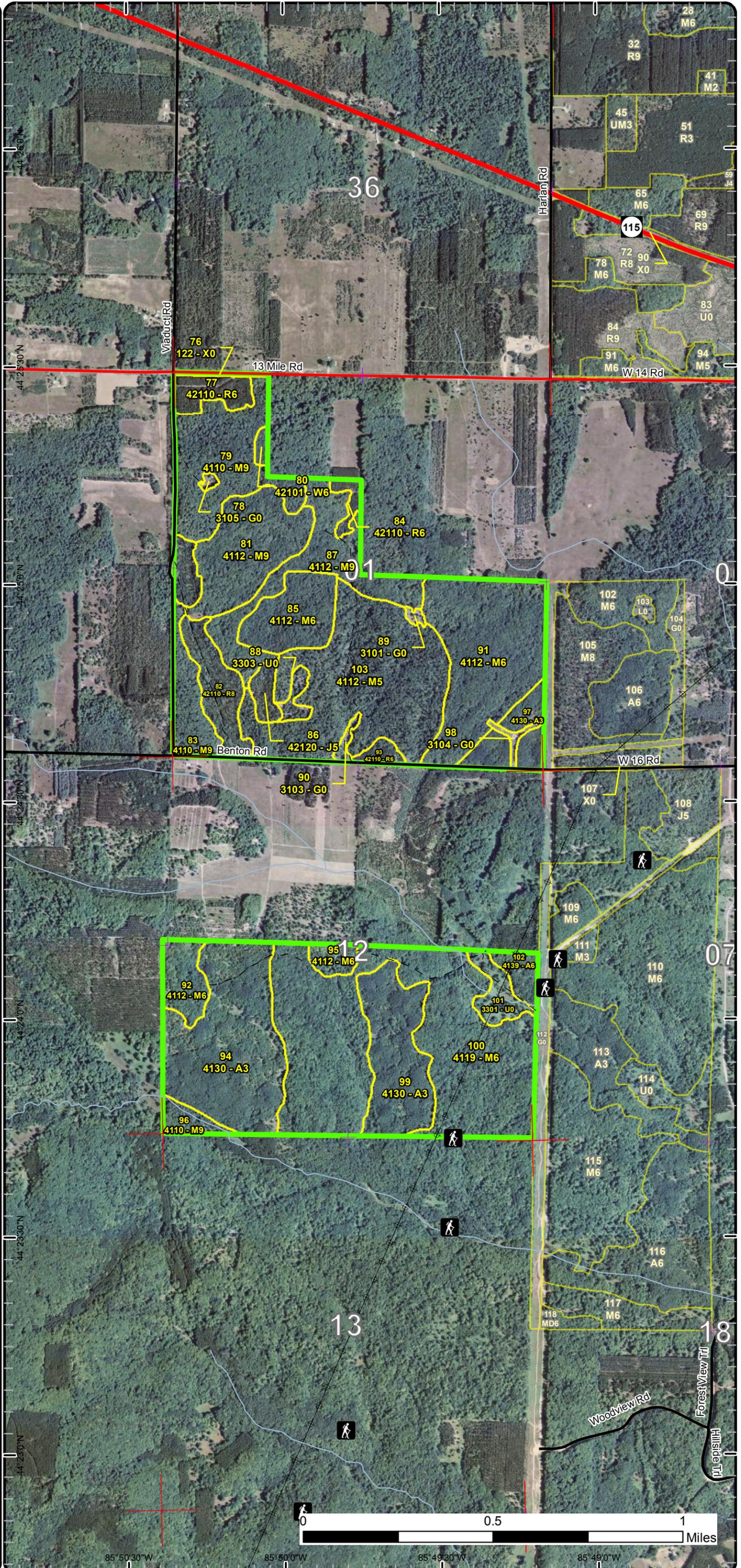
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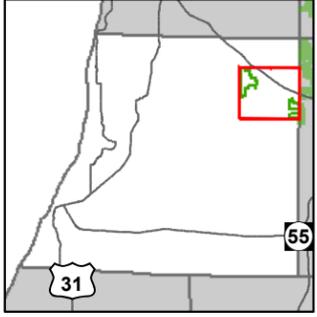


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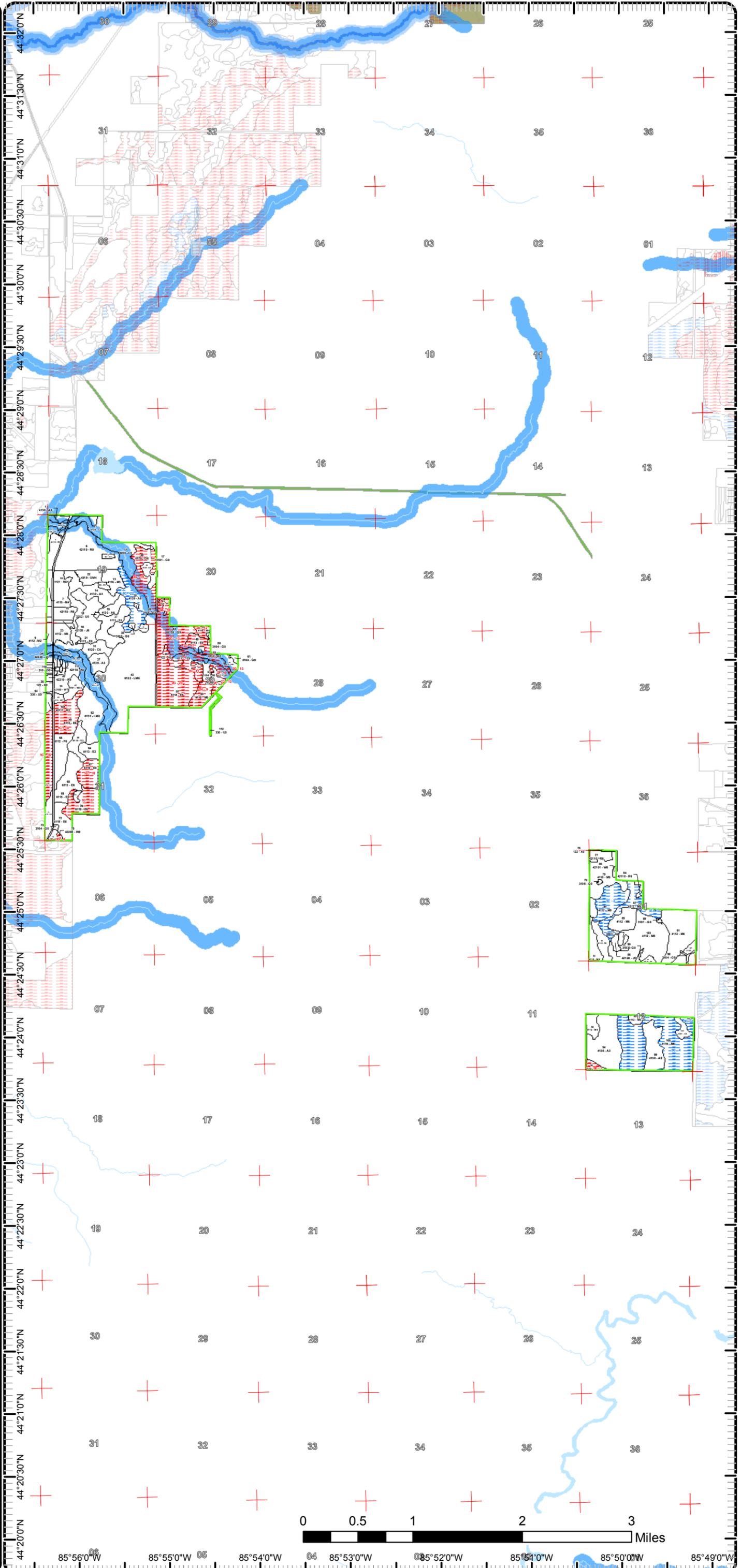


Special Conservation Areas & Site Conditions Map

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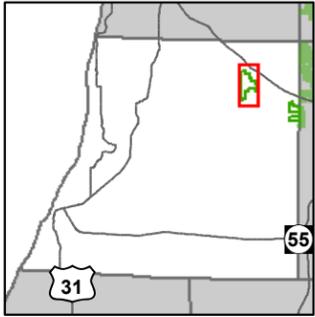
- Miris Corners
- Stand Boundaries
- Site Condition
- Available w/ Constraints
- Unavailable
- Available Factors W/ Constraints
 - 5C: Delay treatment for age/size class diversity or exceptional site quality
 - 5T: Contingency Treatment for Forest Health Concerns
- Unavailable Factors
 - 1C: Other dept or div proc/practices
 - 2A: Adjacent landowner denied access
 - 2F: Too steep
 - 2G: Too wet (sensitive soils, does not include access issues)
 - 2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)
 - 3A: Potential old growth / biodiversity
 - 3D: Recreational / Scenic values
- 5E: Long-Term Retention
- Special Conservation Areas
 - Natural Rivers Vegetative Buffer
 - Natural Rivers Zoning District
 - Cold Water Streams
 - Cold Water Lakes
 - High Priority Trout Stream Buffer
 - Rail-Trail Corridor



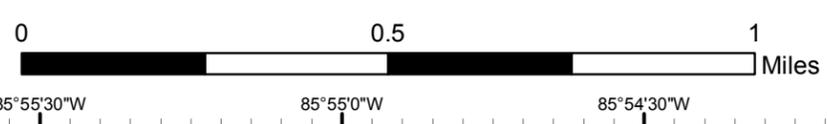
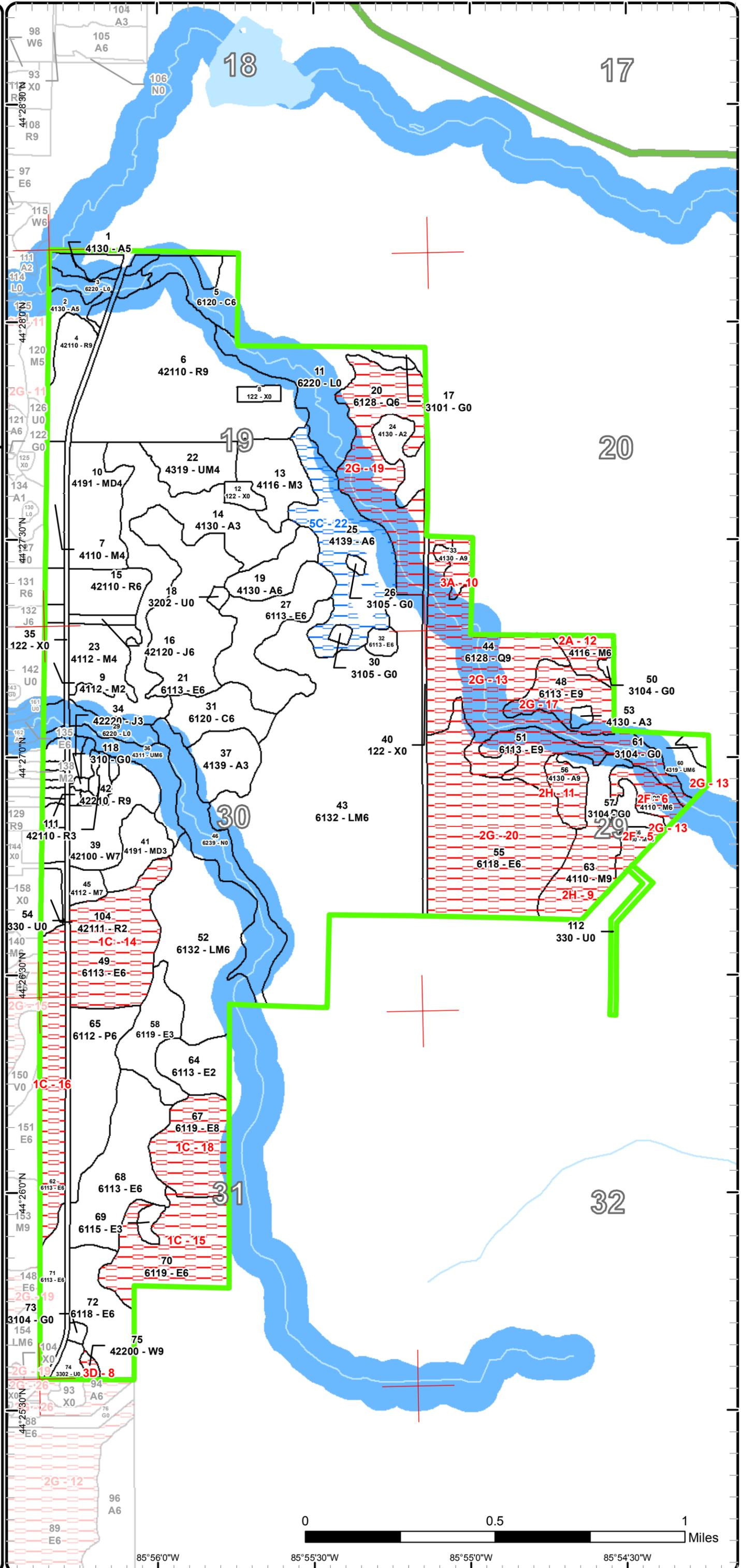
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- Special Conservation Areas
- Cold Water Streams
- Cold Water Lakes
- High Priority Trout Stream Buffer
- Rail-Trail Corridor



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	83	11	151	14	49	0	24	0	0	0	0	0	0	0	0	0	0	332
Cedar	0	0	0	0	0	0	0	0	18	15	0	0	0	0	0	0	0	0	33
Herbaceous Openland	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33
Jack Pine	0	0	9	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	19
Low-Density Trees	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
Lowland Aspen/Balsam Poplar	0	0	0	0	0	34	0	0	0	0	0	0	0	0	0	0	0	0	34
Lowland Conifers	0	0	0	0	0	0	0	0	0	77	53	0	0	0	0	0	0	0	130
Lowland Deciduous	0	0	0	0	16	198	43	0	0	65	169	0	0	0	0	0	0	0	491
Lowland Mixed Forest	0	0	0	0	0	0	0	0	0	0	295	0	0	0	0	0	0	0	295
Lowland Shrub	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53
Marsh	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32
Mixed Upland Deciduous	0	14	0	0	0	0	29	0	0	0	0	0	0	0	0	0	0	0	43
Northern Hardwood	0	27	0	0	26	0	28	174	5	291	71	7	0	0	0	0	0	0	629
Planted Mixed Pines	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	6
Red Pine	0	14	0	0	0	0	71	133	0	0	0	0	0	0	0	0	0	0	218
Upland Mixed Forest	0	0	0	0	17	0	14	0	9	0	0	0	0	0	0	0	0	0	40
Upland Shrub	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Urban	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45
White Pine	0	0	0	0	0	0	2	24	0	0	0	0	0	0	1	0	0	0	27
Total	188	138	20	151	73	291	193	355	32	371	612	60	0	0	1	0	0	0	2485



Report 2 – Treatment Summary

Traverse City Mgt. Unit
Year of Entry: 2017

Acres of Harvest

Compartment 37
Total Compartment Acres: 2,491

Commercial Harvest - 256
Harvests with Site Condition - 0
Next Step Harvest - 0
Habitat Cut - 1

Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Aspen	12	0	0	0	0	0	0	0	0	12
Northern Hardwood	0	57	0	0	0	64	0	0	0	121
Red Pine	111	0	0	0	0	10	0	0	0	121
White Pine	0	0	0	0	0	2	0	0	0	2
Total	123	57	0	0	0	76	0	0	0	256

Proposed and Next Step Treatments by Harvest Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	256	0	0	0	0	0	1	0	0	257
Next Step	0	111	111	0	0	0	290	0	0	512
Total	256	111	111	0	0	0	292	0	0	769



Stand Name	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
4	61037004-Cut	5.4	42110 - Planted Red Pine	Sawtimber Well	62	111-140	Harvest	Crown Thinning	4221 - Natural Red Pine	Even-Aged	Draft Proposal

Habitat Cut: **Site Condition:** None

Prescription Conduct heavy thinning on these two separate portions of stand 4. Reduce BA to 50-80 sq ft/ac. This will account for retention on stand 4 while also addressing aesthetic concerns along Thompsonville rd and nearby snowmobile trail.

Next Step
Treatments:

Acceptable
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

4	61037004-Cutx	10.7	42110 - Planted Red Pine	Sawtimber Well	62	111-140	Harvest	Clearcut	4211 - Planted Red Pine	Even-Aged	Draft Proposal
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Habitat Cut: **Site Condition:** None

Prescription Final harvest stand, replant to red pine. Protect advanced red pine regen where possible. Mark to leave some scattered red pine along Thompsonville rd and northern edge of stand to account for visual concerns.

Next Step 1 - SitePrep, Trenching; 2 - Planting, Initial Plant; 3 - Monitoring, Artificial Regen(1yr); 4 - Monitoring, Artificial Regen(3yr)
Treatments:

Acceptable red pine - plantation spacing.
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

5	61037005-Monitor	1.3	6120 - Lowland Cedar	Poletimber Well	89	Unspecified	Monitoring	Natural Regen (Re-Inventory)	6130 - Fir, Aspen, Maple	Even-Aged	Completed - Pending Edits
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Habitat Cut: **Site Condition:** None

Prescription Monitor habitat cut for success of regen.
Specs:

Next Step
Treatments:

Acceptable Aspen, balsam fir, spruce species, wp and red maple.
Regen:

Other Percent to Treat = 100% Old next step comments:
Comment:

Proposed Start Date: 10/1 /2014

6	61037006-Cut	100.0	42110 - Planted Red Pine	Sawtimber Well	62	81-110	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	Draft Proposal
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Habitat Cut: **Site Condition:** None

Prescription Final harvest red pine, protect existing red pine regen pockets when possible. Mark to leave some red pine along snowmobile trail and along NE edge of stand for retention and aesthetic purposes. Replant stand to red pine - see next step treatment.

Next Step 1 - SitePrep, Trenching; 2 - Monitoring, Artificial Regen(1yr); 3 - Monitoring, Artificial Regen(3yr); 4 - Planting, Initial Plant
Treatments:

Acceptable red pine - plantation spacing.
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
6 61037006-Cutx	4.7	42110 - Planted Red Pine	Sawtimber Well	62	81-110	Harvest	Crown Thinning	4211 - Planted Red Pine	Even-Aged	Draft Proposal

Habitat Cut: **Site Condition: None**

Prescription Conduct heavy thinning on stand, reducing BA to 40-70 sq ft/ac. This treatment is aimed at steering stand towards a more natural looking, large tree management area. Remainder of stand south of creek is to be final harvested and replanted to red pine so this treatment will provide size class diversity in red pine, account for aesthetics along Read/Thompsonville roads and also provide within stand retention for stand 6.

Specs:
Next Step
Treatments:

Acceptable
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

25 61037025-Cut	11.9	4139 - Aspen, Mixed Deciduous	Poletimber Well	49	Unspecified	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	Draft Proposal
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Habitat Cut: **Site Condition: None**

Prescription Final harvest all aspen and red maple within treatment area. Leave all conifers - balsam fir, white pine, cedar, etc to provide for retention while also maintaining pockets of thermal cover and a degree of size diversity. Avoid wet areas within stand. Treatment area may change when timber sale preparation takes place depending on lowland pockets found during sale set up - expand harvest area wherever possible.

Specs:
Next Step
Treatments:

Acceptable Aspen, red maple & balsam fir.
Regen:

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

79 61037079-Cut	48.2	4110 - Sugar Maple Association	Sawtimber Well	95	111-140	Harvest	Single Tree Selection	4112 - Maple, Beech, Cherry Association	Even-Aged	Draft Proposal
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Habitat Cut: **Site Condition: None**

Prescription Conduct selection harvest to remove remaining defect along with all beech and ash aside from larger beech that are deemed valuable from a wildlife standpoint as cavity trees, standing snags and CWD. In addition, higher quality individual trees will need to be removed to attain desired stocking levels. Stocking is slightly variable but overall shoot for a target residual BA of 80 sq ft/ac. Place a few canopy gaps throughout stand where advanced/desirable regen is present, expect residual BA to obviously be lower in these locations. Quality is relatively consistent throughout aside from NE finger and the small lobe that extends and connects to stand 87 - In these areas beech and IW regen is more concentrated and quality of overstory is slightly less - may want to consider excluding the latter lobe from sale area in order to protect existing regen. Do not cut any conifers - white pine/hemlock.

Specs:
Next Step
Treatments:

Acceptable Cherry, beech, ironwood, sugar maple, white pine, hemlock and white ash are to be expected and should be considered acceptable.
Regen:

Other Survey will be needed for this treatment, survey request has been submitted and added to the priority list as of March, 2015. Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Approval Status
80 61037080-Cut	2.1	42101 - Planted White Pine, Mixed Deciduous	Poletimber Well	53	141-170	Harvest	Low Thinning	4210 - Planted White Pine	Even-Aged	Draft Proposal

Habitat Cut: **Site Condition: None**

Prescription Thin white pine with adjacent hardwood stand, remove approximately 1/3 of the volume, more in places, most notably around deciduous trees present.
Specs:

Next Step
Treatments:

Acceptable
Regen:

Other Survey will be needed for this treatment, survey request has been submitted and added to the priority list as of March, 2015. Old next step
Comment: comments:

Proposed Start Date: 10/1 /2016

91 61037091-Cut	63.7	4112 - Maple, Beech, Cherry Association	Poletimber Well	65	141-170	Harvest	Low Thinning	4112 - Maple, Beech, Cherry Association	Even-Aged	Draft Proposal
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Habitat Cut: **Site Condition: None**

Prescription Thin stand by removing suppressed or poorly formed individuals. Remove all beech and ash, aside from a couple large beech which should be marked to leave for mast production. Sugar maple and black cherry should be favored along with good quality red maple for trees to retain. Create some canopy gaps in areas where black cherry regen is present in an attempt to promote the growth and enhancement of this regen. Expect residual BA following harvest to be in the 70-90 sq ft/ac range with some pockets lower where advanced regen is present.
Specs:

Next Step
Treatments:

Acceptable
Regen:

Other Survey will be needed for this treatment, survey request has been submitted and added to the priority list as of March, 2015. Old next step
Comment: comments:

Proposed Start Date: 10/1 /2016

91 61037091-Cutx	8.9	4112 - Maple, Beech, Cherry Association	Poletimber Well	65	141-170	Harvest	Group Selection	4139 - Aspen, Mixed Deciduous	Two-Aged	Draft Proposal
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Habitat Cut: **Site Condition: None**

Prescription Harvest all aspen (range from poles to large, decadent log size trees), beech and ash aside from a couple large, wolfy beech trees for mast production. Leave all sugar maple and green mark to leave some good quality red maple and black cherry. Expand this treatment unit north to capture as much aspen as possible while also following topographic contours that would make harvesting/skidding most efficient.
Specs:

Next Step
Treatments:

Acceptable Expect aspen to regenerate where canopy is opened up a bit more. Beech, red maple, black cherry and sugar maple regen can also be
Regen: expected.

Other Old next step comments:
Comment:

Proposed Start Date: 10/1 /2016

Total Treatment
Acreage Proposed: 256.9

Report 5 – Site Conditions

Traverse City Mgt. Unit

Patrick Cotant : Examiner

Compartment: 37

Year of Entry: 2017

Availability for Management

Total Acres Available Acres Not Available

Dominant Site Conditions

	Acres Available	Acres Not Available		2A	2F	2G	2H	3A	3D	5C	5E	5T
	0	0	Red Pine									
	0	0	Aspen									
			Red Pine									
		100%	Red Pine									
			Red Pine									
			Northern Hardwood									
			Northern Hardwood									
			White Pine									
			Northern Hardwood									
			Red Pine									
			Red Pine									
			Red Pine									
			Red Pine									
			Aspen									
			Northern Hardwood									
			Northern Hardwood									
			Cedar									
			Red Pine									
			Red Pine									
			Red Pine									
			Red Pine									
			Total Forested Acres									
			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	7	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
Comments:							

Report 5 – Site Conditions

Traverse City Mgt. Unit

Patrick Cotant : Examiner

Compartment: 37

Year of Entry: 2017

2	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	8	2B: Unknown if access through adjacent landowner(s) is possible	Unspecified	Unspecified	Unspecified
Comments: Small acreage, hold until next YOE and attempt to find alternative access fro this stand as well as stand 100.							
3	Available	5T: Contingency Treatment for Forest Health Concerns	42	Unspecified	Unspecified	Unspecified	Unspecified
Comments: BBD disease research plot within stand - follow up with Deb McCullough next YOE and consider treatment at that time.							
4	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	151	2B: Unknown if access through adjacent landowner(s) is possible	Unspecified	Unspecified	Unspecified
Comments: Large acreage, variable stocking/quality throughout. Wait until next YOE to conduct harvest on portion of this stand. Spoke with landowner to the north who has a trail leading to this area and he was somewhat reluctant to discuss the possibility of access through his property. Walked the trail that would be used and I'm not sure it would be a viable option for this amount of volume. Possibility of going to the east through Wexford County - would require road building.							
5	Unavailable	2F: Too steep	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments: exotic species removal (scotch pine)							
6	Unavailable	2F: Too steep	10	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
7	Available	5T: Contingency Treatment for Forest Health Concerns	42	5C: Delay treatment for age/size class diversity or exceptional site quality	Unspecified	Unspecified	Unspecified
Comments: Portion of beech bark disease research plot that lies within stand 81 carries over into very western edge of this stand. Variable quality/density - consider treating next YOE after BBD research concludes with a seed tree type harvest - breaking up block of hardwood in this area of state land.							

Report 5 – Site Conditions

Traverse City Mgt. Unit
Patrick Cotant : Examiner

Compartment: 37
Year of Entry: 2017

8	Unavailable	3D: Recreational / Scenic values	2	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
9	Unavailable	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	23	2F: Too steep	3A: Potential old growth / biodiversity	Unspecified	Unspecified
Comments: Despite the walk-in access that was gained by the state, this area continues to be inaccessible for commercial purposes. In addition this particular stand is quite steep in places and does provide a nice pocket of biodiversity and potential old growth conditions.							
10	Unavailable	3A: Potential old growth / biodiversity	7	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
11	Unavailable	2H: Blocked by physical obstacle (e.g. upland stand in a lowland area)	10	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Despite walk-in access that was gained by the state, this stand is not operable on a commercial basis. It was set up as a timber sale last YOE and was not sold due to access issues.							
12	Unavailable	2A: Adjacent landowner denied access	8	2F: Too steep	Unspecified	Unspecified	Unspecified
Comments: Access not granted last YOE, have not been able to contact landowner this inventory cycle. Aside from access issues, there are some BMP issues along the western edge along with areas of stand that are too steep.							
13	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	77	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
Comments: Stand is wet throughout with second creek flowing through it along with many feeder creeks and seeps.							

Report 5 – Site Conditions

Traverse City Mgt. Unit
Patrick Cotant : Examiner

Compartment: 37
Year of Entry: 2017

14	Unavailable	1C: Other dept or div proc/practices	45	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
15	Unavailable	1C: Other dept or div proc/practices	44	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
16	Unavailable	1C: Other dept or div proc/practices	34	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
17	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	20	Unspecified	Unspecified	Unspecified	Unspecified
Comments: wet stand, seeps present along with significant sheet flow, standing water and lowland soils/muck.							
18	Unavailable	1C: Other dept or div proc/practices	30	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
19	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	53	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
Comments: Lowland, very wet stand for the most part. Also has second creek flowing through majority of southern half of stand and contains some feeder creeks and seeps throughout.							

Report 5 – Site Conditions

Traverse City Mgt. Unit

Patrick Cotant : Examiner

Compartment: 37

Year of Entry: 2017

20	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	106	Unspecified	Unspecified	Unspecified	Unspecified
<p>Comments: Very wet stand, numerous seeps and feeder creeks flowing both north and south to second and third creeks, respectively.</p>							
22	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	38	Unspecified	Unspecified	Unspecified	Unspecified
<p>Comments: Did not want to assign a 'hard' site condition to the remainder of this stand that does not have a treatment applied as these treatment island will be expanded where possible - however much of this area is wet and may be inoperable regardless of the time of year.</p>							

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 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.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
1	4130 - Aspen	Poletimber Medium	3.4	27	Immature	Somewhat lightly stocked aspen stand, in the 75% canopy closure range. Portion of stand was harvested in 1988 with aspen stand south of second creek - lumped area left out of harvest because of proximity to creek, road, etc in stand boundary so some larger BTA and other species are present within stand area and may have an older age. (old comment) Close proximity to some very old beaver activity, small area west of stand 4 was cut along with pine thinning in stand 4 and is aspen sapling regeneration (too small to map separately), basal area approximately 70, steelhead spawning in Second Creek
2	4130 - Aspen	Poletimber Medium	7.5	27	Immature	Mixed stand with aspen dominant, majority of stand area was treated in 1988 with aspen stand north of second creek. Areas of lowland, high water table and pockets of stand that were not included in last treatment because of wet soils, proximity to creek, etc - these areas are included in this stand. Small finger that extends east to Thompsonville road through red pine stand looks to have a seasonal seep/drainage running through it. (old comment) area north of red pine (dominant feature) is aspen sap, sliver along west is black cherry/red maple with witch hazel clumps, manage with adjacent cmp 38
4	42110 - Planted Red Pine	Sawtimber Well	22.0	62	111-140	This stand is very similar to stand 6, essentially the same plantation, however this stand seems to have a bit more hardwood regeneration. This stand too, contains a seasonally wet stream bed that separates the larger portion of the stand into 2 pieces. Also a separate portion north of creek. Small lowland area <1ac in extreme southern portion of stand. Snowmobile trail passes through stand. (old comment) some light natural red pine regen present salvage cut of some blow down trees was done in this stand 61-057-11-02
5	6120 - Lowland Cedar	Poletimber Well	15.5	89	Unspecified	Cedar stand along Second creek with hemlock, fir and WP throughout - some very large WP present. Black ash present in pole/sapling size class - lots of mortality in the pole size class, some live pockets. Saw steelhead in creek in early winter.
6	42110 - Planted Red Pine	Sawtimber Well	111.3	62	81-110	Good quality red pine, treated last YOE and also small portions of blow down treated in 2011. Open understory for the most part aside from scattered clumps of natural red pine regen along with red pine regen in old skid trails and fire breaks/QQ lines. There is a seasonally wet/high water table area that traverses through the south-central portion of the stand, almost has appearance of a stream bed. This area was planted through originally and also treated in past harvests. Snowmobile trail runs along west edge of stand. (old comment) salvage cut of some blow down trees was done in this stand 61-057-11-02
7	4110 - Sugar Maple Association	Poletimber Poor	10.1	56	1-50	M4/U4, black cherry most dominant with some red maple present along with white pine and scattered red pine sap/poles in trace amounts. (old comment) Appears to be all black cherry of various sizes, with bracken fern underneath.
9	4112 - Maple, Beech, Cherry Association	Sapling Medium	7.1	7	Immature	Maple clumps with some aspen regen, most notably along southern edge of stand. Red and white pine scattered throughout stand, some conifer clumps present. Stocking currently 50-75%, mostly in lower end of that range at this time. Consistent aspen regen in southern portion of stand resulting from past treatment.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
10	4191 - Mixed Upland Deciduous with Conifer	Poletimber Poor	29.0	56	1-50	Non forested last YOE, changed to forested - 25-50% - this YOE. Black cherry and red pine dominate this lowly stocked stand with black cherry being slightly more dominant, some variability of species composition throughout. Black cherry is multiple stemmed in most cases, mediocre quality. Red pine are found both singular and more commonly in clumps. Old well site in northern part of stand is naturally regenerating with red pine, red maple and black cherry. With hazel is common throughout in low numbers, come more prevalent clumps. See old comments from previous inventory for ground cover species. (old comment) Black cherry, witch-hazel, component of red pine saplings. Ground cover is mixture of spotted knapweed, cladonia, poverty grass, st. john's wort. Patches of bracken fern. Bluebird house.
13	4116 - Mixed N. Hardwood - Aspen	Sapling Well	20.3	7	Immature	Stand regenerating fairly well, some open spots most notably in the central portions of the stand. Scattered overstory hdwd trees left as retention from previous harvest. Some wet pockets with hummocky ground along southern edge of stand. Trace amounts of conifers present within stand as well.
14	4130 - Aspen	Sapling Well	65.4	2	Unspecified	A3 stand treated last YOE - not all of stand that was prescribed was treated due to wet conditions in what has now been merged into stand 21. Aspen growing well, some browse activity. Red maple also a significant component throughout stand. (old comment) stand marginally upland, hummocky with small pockets of standing water, only traces of lowland indicators (tag alder), stand has some scattered inclusions of red maple visible on imagery
15	42110 - Planted Red Pine	Poletimber Well	18.4	54	111-140	Stand treated in 2012, BA ranges from 120-150 at this time with an average of 140 sq ft/ac. Descent quality red pine, still some defect present but not much. (old comment) stand has been third row thinned, prescribe for "out of YOE" thinning to be done with compartment 38
16	42120 - Planted Jack Pine	Poletimber Well	4.3	49	Unspecified	Small DBH jack pine stand, some mortality throughout - not sure why this stand was not harvested in 1012 when adjacent red pine stand was thinned out of YOE. Recommend treating this stand next YOE with adjacent red pine stand via final harvest of all jack pine, replant to red pine. (old comment) small diameter, but off-site and mortality beginning to show, may want to harvest with adjacent compartment and stand, possibly prescribe for "out of YOE" treatment
19	4130 - Aspen	Poletimber Well	14.4	31	1-50	Hummocky stand with higher water table, most notably along edges of stand and in the more eastern reaches of stand. Balsam fir is numerous in some pockets, trace cedar along southern edge. Stand is in the process of transitioning from sapling to pole dominant - Aspen composition is dominated by poles with some saplings still present. Determined overall size to be pole but it is important to note that many areas have significant sapling density. (old comment) stand is marginally upland, gets wetter as you move east, evidence of old logging activity, rutting, still holding water, white pine sub-canopy occurs mostly in east half of stand
20	6128 - Lowland Coniferous, Mixed Deciduous	Poletimber Well	52.6	100	Unspecified	Lowland stand, variability of stocking and species composition throughout. Cedar dominant on most areas of stand however some pockets of aspen and red maple are dominant along with areas of declining black ash, these areas typically have a more dense undertoryof red maple and some balsam fir.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
21	6113 - Lowland Maple	Poletimber Well	51.6	45	51-80	Lowland stand, high water table, some seeps and areas where sheet flow seems to occur year round. Red maple seems to be most dominant with aspen clones present throughout stand. Cedar scattered throughout with scattered balsam fir as well. Ash is declining rapidly, some live pockets remaining. (old comment) many multiple stem red maple, standing water
22	4319 - Mixed Upland Forest	Poletimber Poor	17.3	37	1-50	Black Cherry dominant with red pine most common in certain areas of stand, most notably along northern edge. Looks like both black cherry and red pine have 2 age classes, the lower of each is more common but some larger poles and small logs exist in stand for both species. trace aspen along south edge, along with small lowland pocket draining in a southerly direction into adjacent stand. Clumps of JP/WP present.
23	4112 - Maple, Beech, Cherry Association	Poletimber Poor	18.3	56	1-50	Black cherry most common overstory species, pole/sapling class with some smaller log diameter individuals present - multiple stemmed. Stand stocking in lower end of 25-50% range. Scattered pine, more concentrated in SE of stand along old two-track. Aspen clones present. Well site located in center of stand. (old comment) Black cherry of various size. Larger stuff to SE includes white pine. Well head, pink flagging present, and mowing down in a small portion of this stand.
24	4130 - Aspen	Sapling Medium	11.2	17	Unspecified	Young aspen stand, growing fairly well. Conifer component of bf throughout, most notably adjacent to lowland stand. (old comment) low shrub ground cover is raspberry
25	4139 - Aspen, Mixed Deciduous	Poletimber Well	49.4	49	Unspecified	Mixed stand of red maple and aspen species, white pine scattered throughout with cedar present as well. Trace hemlock along edges, more in the transition areas to adjacent stands. Stand varies from up to slightly lowland/areas of high water table. (old comment) red-shouldered hawk(s) flying and calling in area, possible nest nearby
27	6113 - Lowland Maple	Poletimber Well	34.9	45	51-80	Switched RM and black ash %'s due to black ash mortality overall. Some viable pockets but lots of standing black ash snags. Variability in terms of size and stocking throughout with pockets of ash mortality being occupied with more balsam fir saps. Sand is very wet in places, most notably in southern portion of stand. (old comment) saps are predominant in canopy, no evidence of cutting seen in stand, no multiple stem red maple, traces of paper and yellow birch, and elm
28	4110 - Sugar Maple Association	Poletimber Well	10.0	89	111-140	Hardwood stand on NE facing slope - stand terminates at bottom of ridge where second creek is located. Descent quality, slope and BMP's preclude management, as does lack of sufficient access.
31	6120 - Lowland Cedar	Poletimber Well	18.3	70	81-110	Dense cedar in northern portion of stand, more deciduous in southern portion as you move closer to creek.
32	6113 - Lowland Maple	Poletimber Well	3.4	41	Unspecified	viewed stand from edge, small stand, possibly resulting from some blowdown in the past. Red maple poles along with aspen poles are present in places, most notably near stand edges where it fazes into adjacent pole sized stands. Cedar and fir present - placed fir in understory solely based on diameter and slightly lesser height than overstory.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
33	4130 - Aspen	Sawtimber Well	6.5	64	81-110	Mixed aspen stand with red maple being a significant component as well. Topo is quite significant throughout as you come up out of lowland type. white pine common around edges with small diameter individuals throughout interior. Balsam fir common along stand edges as well. (old comment) rapid changes in topography, slope increases as you move from west to east, quaking dominates in west half along lowland type, while bigtooth is more prevalent in east half on slopes and ridge,
34	42220 - Natural Jack Pine	Sapling Well	9.0	15	Immature	Jack pine with red maple and BC regen throughout. Jack pine is very dense in places and pockety in terms of species composition. More hwd species present in strips west of Thompsonville rd - hwd species are variable in terms of size with sapling, poles and logs all present throughout, poles and logs are result of retention from last harvest. Treatment to plant was on stand until this YOE, no planting was done, nor was there any attempt to site prep this stand after harvest was completed 15 years ago. (old comment) jack pine, red maple, black cherry regeneration in former jack pine strips, also some larger remnant maples that were left
36	4311 - Pine, Aspen Mix	Poletimber Well	14.0	56	51-80	Pine component more prevalent north of pipeline, near pipeline stand slopes toward lowland and seems to have higher water table, red maple also become more common. Red pine concentrated in northern portion of stand, white pine trails off a bit in the south but is otherwise most numerous species. Some large WP present. Aspen is present/scattered throughout with clones present resulting in more dense areas of aspen. Trace beech regen in understory. (old comment) possible stand of interest for habitat, could be harvested with adjacent pine stands or grow to 50 years old, seek WLD input
37	4139 - Aspen, Mixed Deciduous	Sapling Well	17.4	5	81-110	Stand was final harvested by a habitat cut through WLD and RGS. All trees were felled and left whole. Sign explaining cut/funding/purpose is located on west side of creek, nearest access and is in good shape. (old comment) good potential for red-shouldered hawk nesting, saw an inactive nest, sub-canopy seedlings are heavily browsed, generally low quality timber, aspen is old and dying, red maple is 50% multiple stem, black cherry poor-medium quality, moss ground cover is lycopodium
39	42100 - Planted White Pine	Sawtimber Poor	23.6	63	51-80	10-40 BA of overstory WP, resulting from seed tree treatment last YOE. Second age/intermediate overstory/regen from harvest is dense and consists of red maple along with lesser amounts of black cherry and aspen species. Trace amounts of ironwood and sugar maple are present in pockets, mainly in interior of stand where denser shade is present.
41	4191 - Mixed Upland Deciduous with Conifer	Sapling Well	14.4	6	Immature	Stand was final harvested in 2008-2009. Regenerating well, some higher concentrations of aspen and jack pine in places, red maple is relatively uniform throughout stand. Scattered white pine saplings along perimeter of stand. SE edge of stand slopes toward lowland stand and is hummocky, possibly seasonally wet.
42	42210 - Natural Red Pine	Sawtimber Well	6.4	59	81-110	Red pine stand made up of strip plantations, majority of which continues west into compartment 38. Overall descent quality, red maple regen somewhat dense in places along with some black cherry along edges. Treat when stands in adjacent comp 38 are treated. manage with adjacent stand, observed two Blanding's turtles sunning in vernal pool along Thompsonville Road, trace of paper birch in canopy



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
43	6132 - Mixed Lowland Forest with Cedar	Poletimber Well	233.5	94	51-80	Large lowland stand, a number of creeks flow through stand in an east to west direction towards 3rd creek - majority of stand is quite wet with seeps throughout as well. Cattails and other lowland indicators present. Cedar and red maple poles dominant with aspen and fir present in descent numbers as well. Significant sapling cohort throughout due to windthrow areas and dieback of older aged cedar. Scattered large white pine throughout, most notably along creeks. Patches of pure hemlock scattered throughout as well. Some large aspen present along western edge of stand. (old comment) some large areas of windthrow, canopy gaps, most aspen is log size and low quality/dying, stand is large and variable, a combination of older trees and regeneration gaps, stand is multiple/uneven aged, heavy balsam fir sub-canopy regen in spots, stand may be of interest from a bio-diversity/natural process standpoint, traces of paper birch, hemlock, spruce, and large white pine, one white pine aged at 105
44	6128 - Lowland Coniferous, Mixed Deciduous	Sawtimber Well	76.5	91	171-200	Majority lowland stand with numerous seeps and a few creeks trickling into second creek which runs through stand. Pockets of blow down, now occupied by thick balsam fir in most places, other areas of stand that have full overstory stocking in tact have little if any understory regen. Lots of deer activity throughout, saw a set of bear tracks w/in stand at time of inventory. (old comment) areas of windthrow, also areas of accumulations of dead suppressed pole size cedar, hemlock, balsam fir, sub-canopy balsam fir regenerating heavily in open areas, also heavy browsing in some areas
45	4112 - Maple, Beech, Cherry Association	Sawtimber Poor	4.9	76	1-50	Scattered hdwd overstory resulting from seed tree treatment on stand last YOE. Dense hdwd understory with scattered/clumps of white pine. Witch hazel, some junberry and hawthorn also present in understory, mostly localized around edges and near pipeline ROW.
47	4116 - Mixed N. Hardwood - Aspen	Poletimber Well	8.1	81	111-140	Mixture of aspen and northern hardwood association - dependent on aspect. Some descent sugar maple stems present, variable stocking with BA hovering in the 110-120 sq ft/ac range. (old comment) steep ridge bisects stand, west facing slope is aspen, east slope is pole size sugar maple association, dark crowns on imagery are basswood, traces of beech, black cherry, and white ash present in stand
48	6113 - Lowland Maple	Sawtimber Well	20.0	86	81-110	As previous comments mention, stand is quite a bit wetter along west edge with somewhat dryer pockets along east edge, although still considered lowland. Red maple is generally clumpy with some fair quality single stemmed individuals present. conifers throughout in trace amounts, most notably along southern edge where stand fazes to adjacent Q-type and cedar/balsam become more common. (old comment) stand becomes increasingly lower/wetter from east to west, some small upland inclusions in the east end of stand, balsam fir becomes prominent in subcanopy and diameters decrease as you move west through stand (toward wetter portion of stand), traces of black cherry, white pine, and hemlock



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
49	6113 - Lowland Maple	Poletimber Well	44.7	86	81-110	Lowland red maple stand, significant standing water, hummocky ground throughout. Tried walking pipeline through stand at time of inventory and fell through ice into water 8-12" deep. Areas of cattails along pipeline and along Thompsonville rd. Red maple form is clumpy with some descent quality stems. Mortality in black ash as expected. Some hemlock scattered throughout stand. (old comment) good quality lowland maple stand, spots of water in spring, but possibly operable during dry periods, hold until demand increases or high flotation technology becomes available, saw one inactive stick nest in the north part of stand, previous inventory basal area was 130
51	6113 - Lowland Maple	Sawtimber Well	15.5	91	81-110	Lowland stand with larger red maple and aspen present. Scattered large yellow birch throughout as well. Some large balsam fir present, along with some cedar and hemlock as well, most notably along eastern edge of stand. WP present along eastern stand boundary adjacent to stand 56. Small creek flowing in northerly direction. (old comment) traces of cedar and balsam fir in canopy
52	6132 - Mixed Lowland Forest with Cedar	Poletimber Well	62.0	95	51-80	Similar to stand 43, some larger White pine and aspen closer to creek. white cedar is pole sized with occasional larger trees present - some sapling sized areas as well along with occasional pockets of die off in the cedar component. Red maple is variable in terms of size throughout with poles being dominant but also some saplings and log sized trees present. Black ash mortality is creating some open areas where red maple seedling/saplings are taking over. small trib to third creeks runs through stand. (old comment) stand is very similar to Pre-inventory stand #43, but without the log size tree component
53	4130 - Aspen	Sapling Well	1.8	25	1-50	small pocket of regen resulting from old well site that is regenerating and is now in the 75-100% canopy closure range - overall approximately 75-80% closure. Paper birch is clumpy in places, WP understory is present and 2 ages of white pine were observed. (old comment) stand changed from non-forested to forested, old well site that has naturally reforested
55	6118 - Lowland Deciduous with Cedar	Poletimber Well	90.1	91	81-110	Mixed lowland stand, ash declining rapidly. Reduced % quite a bit from last YOE, expect ash to be gone by next YOE unfortunately. Cedar is more dominant in places, scattered Tam and WP along with some small clones of aspen throughout. creeks form w/in stand that flow in a southerly direction onto PVT and into a trib to third creek. Cut line along southern edge of stand with sprouts, assuming from previous survey work. (old comment) light deer sign (would have expected more) coyote tracks, porkie feeding, red-shouldered hawk landed in tree just overhead, cedar and balsam fir sub-canopy are prominent conifer component (visible in DOQ) traces of quaking aspen, balsam fir, white pine, and tamarack in
56	4130 - Aspen	Sawtimber Well	9.5	69	111-140	Aspen stand, log sized. Red maple individuals are typically small log/pole sized with multiple stems typical. WP most common along northern edge of stand. Western edge of stand lies at the base of slop and looks to be wet - high water table. This may present issues if harvest is able to take place. above average coarse woody debris/snags/cavity trees



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
58	6119 - Mixed Lowland Deciduous Forest	Sapling Well	20.3	46	Unspecified	Lots of variability in size throughout stand - resulting in age of 46 and a sapling size class. Significant mortality in ash as well - some not as significant as some other stands in this swamp complex. (old comment) appears to be uneven aged, diameter ranges from 1 to 6 inches, age recorded is from larger diameter (5 inch trees), traces of yellow birch and cedar in canopy
60	4319 - Mixed Upland Forest	Poletimber Well	9.5	71	81-110	Aspen more prevalent adjacent to PVT - WP dominant throughout rest of stand with aspen/rm present as well. Some cedar/bf along southern stand edge where stand fazes into adjacent lowland type. (old comment) rm/qa appears to be multiple aged, several aspen clones in northwest part of stand, stand is mixed, but white pine dominates south east two thirds of stand
62	6113 - Lowland Maple	Poletimber Well	33.9	91		Lowland stand with areas of standing water/frozen at time of inventory. Looks to be drainage through stand with pooling occurring near Thompsonville Rd at culvert location. Overall quite wet, cedar scattered throughout, red maple dominant. White pine pockets near Rd seem to be slightly dryer but still high water table. (old comment) manage with adjacent stand, observed two Blanding's turtles sunning in vernal pool along Thompsonville Road, trace of paper birch in canopy
63	4110 - Sugar Maple Association	Sawtimber Well	23.2	96	141-170	Very high quality stand, sugar maple dominant with ash, beech, basswood and cherry represented in good numbers. Trace yellow birch throughout, red maple more common along west edge. Hemlock in understory most notably in northern portion of stand - small spring forming tributary to 3rd creek also contains significant hemlock, trace in overstory in this specific location. Topo is significant in parts, slopes to the west where stand fazes into adjacent lowland. Fair amount of browse on hwdv regen that is present. BBD and EAB are present and quite advanced on most individuals. BA range 140-200 based on measurements, averages approximately 170-180. (old comment) stuck increment borer in previous stand, age estimated based on no evidence of treatment, and ages of surrounding lowland hardwood types, possible candidate for old growth/bio-diversity in combination with other lowland types East of Yates Road could create a nice "block" of og/bd, very nice hardwood stand with extremely difficult access
64	6113 - Lowland Maple	Sapling Medium	16.1	31	Immature	Lots of ash mortality seen from location where stand was viewed - was not able to traverse entire stand. Due to ash mortality, canopy closure is actually on the lower end of the identified range. Very wet stand with year-round drainage running in a NEerly direction eventually forming a trib to creek to the NE of stand. (old comment) similar to stand 47-sap, but lower percent canopy closure, no pole size trees in this stand, heavy lowland shrub component in sub-canopy
65	6112 - Lowland Aspen	Poletimber Well	34.0	46		Mixed stand of aspen and red maple in the 4-6" range with some variability throughout. Larger diameter WP scattered throughout stand, most notably in north/eastern portions of stand. Stand is quite wet with some higher ground pockets along Thompsonville Rd. Occasional dense pockets of bf, trace pb as well.



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
66	42130 - Planted Scotch Pine	Poletimber Well	6.0	52	81-110	Scotch pine plantation with rows of red and jack pine planted in the southern portion of the stand. Scotch pine is showing signs of mortality, decline in jack pine as well. Red pine is of fair quality. Sugar maple regen in understory is dense and descent quality. (old comment) red maple, white ash, beech present in sub-canopy in trace amounts, suspect this is a fairly good hardwood site, white ash poles visible on imagery in scotch pine plantation, there is a shrub (suspect exotic type of honeysuckle) that is light throughout stand, sugar maple seedlings/saplings are heavily browsed
67	6119 - Mixed Lowland Deciduous Forest	Sawtimber Medium	30.3	95	Unspecified	observed an old stick nest, good potential for RSH nesting sites, many old stumps and older CWD as well as recent CWD (enough to record slash as yes)
68	6113 - Lowland Maple	Poletimber Well	43.4	48	Unspecified	Some larger trees present as noted in old comment. Stand is very wet with notable drainage flowing in a northeasterly direction forming trib which feed creek to the NE of stand. White pine present within stand along with scattered balsam fir, some concentrations in areas of lighter canopy coverage. (old comment) stand has an area containing a few log size trees running sw-ne through center of stand, stand may contain some silver maple
69	6115 - Lowland Ash	Sapling Well	3.1	48	Unspecified	See past comments. Made it close to stand but was falling through ice at edge of stand 68 and decided to turn back. Past age seems a bit high. (old comment) age derived from actual age of stand that appears to be the same in the imagery, small stand that was accidentally missed during first time through this area, Time and expense do not make it practical to go back and collect stage 1 field data at this time
70	6119 - Mixed Lowland Deciduous Forest	Poletimber Well	43.5	56	Unspecified	age estimated based on adjacent stands, stand also contains some smaller sapling/pole size trees that appear to be in the 35-40 years old range
71	6113 - Lowland Maple	Poletimber Well	14.8	41		Pole sized throughout with scattered log white pine. Cedar and bf are in pockets with paper birch more common along Rd. Phragmites pocket along Rd, quite thick and looks to be expanding into stand interior slightly. (old comment) dominant size class is pole, a few remnant log trees in stand, manage with adjacent compartment 38, traces of paper birch, balsam fir, hemlock, and white pine in the canopy
72	6118 - Lowland Deciduous with Cedar	Poletimber Well	26.2	45		Significant variability in size throughout stand. Overall quite wet with some areas a bit drier, stand might possibly dry out in late summer. Occasional large white pine. Trace paper birch sap/poles throughout. Some areas of bf are quite thick, descent amount of ash mortality. (old comment) stand has a heavy sapling component
75	42200 - Natural White Pine	Sawtimber Well	1.5	130	111-140	Small stand, upland pocket tapering north to large lowland complex. Large white pine dominant with red maple present in fair numbers. (old comment) small stand of large diameter natural white pine one tree in excess of 36" dbh, age estimated because no access to an increment borer large enough to core this size tree



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
77	42110 - Planted Red Pine	Poletimber Well	11.2	55	111-140	Row thinned last YOE, stand is growing well and seems to be responding well to thinning. BA averages approximately 130-140 sq ft/ac with some variability throughout stand. Red pine is well formed, minimal defect remains in stand. (old comment) stand was row thinned last entry period
79	4110 - Sugar Maple Association	Sawtimber Well	48.2	95	111-140	Nice quality hardwood, sugar maple dominant. Viable ash and beech present throughout in relatively low numbers. Black cherry present consistently throughout stand, very good quality overall. In regard to old comment, black cherry regen has continued to persist, however beech and ironwood have definitely begun to represent a component of the understory species. BA is hovering in the 120-130 range with some variability in areas where canopy was opened up further during last treatment. Some defect in pole and log sized trees remains, most notably in high risk forks and some top die back. Slightly less quality along southern edge. Black Walnut individuals present along western edge of stand near Viaduct Rd, seeded most likely from large walnut on PVT to the west. Trace large white pine present in northern portion of stand. (old comment) stand was thinned last entry period, canopy still has not closed, good quality sawlog stand, grow for another ten years, there are some pockets of good heavy black cherry regeneration, little to no sugar maple regeneration, hemlock sub-canopy more common in northern half of stand, abandoned stick nest near southeast private corner, pair of red-tailed hawks circling and calling in the area, four sawlog sized trees recently stolen for firewood around the old oil well pad
80	42101 - Planted White Pine, Mixed Deciduous	Poletimber Well	2.1	53	141-170	OK quality white pine stand. Small in size, manage with adjacent hardwood stand. sugar maple and black cherry are present throughout, fair quality.
81	4112 - Maple, Beech, Cherry Association	Sawtimber Well	42.4	88	111-140	Low quality hardwood stand, beech and red maple most common with sugar maple throughout as well. White pine patches that look like they may be extensions of the small WP plantation to the north are present within this stand, most notably in the northern portions. (old comment) log/stage 2 reason = treatment decision? stand was under planted with white pine, good quality in the few areas where it was not suppressed, lots of lower quality red maple, possible selection to encourage sugar maple and black cherry, excellent black cherry regeneration is occurring in the stand to the north as a result of selection cut 6-8 years ago, full stage 2
82	42110 - Planted Red Pine	Sawtimber Medium	27.2	55	51-80	Stand treated last YOE via shelterwood. BA in lower end of 50-80 range. Significant beech/IW regen throughout stand with some BC regen in places. (old comment) heavy ironwood regeneration in north end of stand, hardwood site, slash in spots, heavy near old landing area between the two polygons, stand is in a valley, little risk of windthrow, possible heavy thin or shelterwood to promote hardwood regeneration (this was done in 2007).
83	4110 - Sugar Maple Association	Sawtimber Well	17.4	85	81-110	Stand treated last YOE, descent quality, dominated mostly by sugar maple. Some mortality along eastern edge of stand, not nearly as significant as in stand 103. good site, good quality sugar maple,



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
84	42110 - Planted Red Pine	Poletimber Well	4.0	55	111-140	Treated last YOE, responding well - minimal defect remains. South portion of stand was thinned heavier, lots of beech regen in understory in this area. North portion was row thinned. Could not locate survey corners needed for north PVT boundary on this stand. (old comment) north half was thinned take two rows leave four, south half was third row thinned
85	4112 - Maple, Beech, Cherry Association	Poletimber Well	26.0	39	1-50	M5 stand, could be M6 in places with some variability in merchantable stocking throughout. Stand consists of hdwd species in the small pole size class. Trace WP throughout. (old comment) experimental aspen planting from 1974, very few aspen survived, I saw 3 or 4 trees, diameters were approx. 8 inches
86	42120 - Planted Jack Pine	Poletimber Medium	5.7	49	Unspecified	See old comment - recommend leaving small stand to naturally deteriorate, is functioning well as shelterwood for hardwood species regen. (old comment) low quality/off-site jack pine, variable diameter and height, appears to be serving a habitat role as cover for wildlife, numerous deer runways through stand, small acreage and low volume are not commercially desirable, recommend leaving to serve as habitat and allow to naturally convert to hardwood over time
87	4112 - Maple, Beech, Cherry Association	Sawtimber Well	42.4	89	111-140	Originally part of current stand 103. Quality is mediocre throughout, many multiple stemmed, clumpy individual trees. Significant amount of beech in some areas of stand, most notably near border with stand 81. Some pockets of trace white pine in understory, IW and beech regen is thick in spots as well. (old comment) good quality single stem red maple in south part of stand, quality appears to decrease in north part of stand, traces of white ash and bigtooth aspen in canopy
91	4112 - Maple, Beech, Cherry Association	Poletimber Well	72.6	65	141-170	Variable quality hardwood stand, red maple dominant in places, clumpy form in most individuals. Some quality stems. Sugar maple is present throughout with some areas containing greater concentrations, poles are descent quality, some fair quality log sized trees. While not consistent, black cherry and beech are represented well throughout stand with some very nice quality individuals present, most notably black cherry. Scattered pockets of sm and bc regen, overall denser beech regn and lower overall quality in southern peninsula of stand - more beech present, very clumpy/multi stemmed form. (old comment) east part of stand has a lot of black cherry with some good quality/potential, some cherry regeneration present, could probably regenerate cherry on this site
92	4112 - Maple, Beech, Cherry Association	Poletimber Well	13.9	87	81-110	Small stand, slightly higher quality than hardwood stands to the east. Difficult access, possibly served as a sort of retention when adjacent aspen stands were final harvested, similar to stand 96 to the south. (old comment) very similar to stand 92, because of access issues treat at same time as 92....so if 92 advances as an AOI this should also
93	42110 - Planted Red Pine	Poletimber Well	4.1	52	111-140	Treated last YOE, small stand, provides small area of diversity in larger area of hdwd. Some turkey activity w/in stand at time of inventory. Beech regen popping up after most recent treatment. (old comment) treat with stand 75



	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
94	4130 - Aspen	Sapling Well	77.5	25	1-50	Fully stocked stand, some small open patches with lower stocking. Small clones of sapling/pole sized aspen, occasional aspen clumps in the 4-6" range. Larch trees present, most around edges and more concentrated in northern portion of stand. (old comment) stand thinned and planted with 20,000 European Larch in 1991, poor survival, impressive growth on the few that did survive approx. 20' tall
95	4112 - Maple, Beech, Cherry Association	Poletimber Well	6.0	89	51-80	Treated 2 YOE's ago by thinning, lots of regen throughout, mostly red maple with some cvherry and ironwood. Scattered SM regen along stand edges. Trenches visible from past oak planting. (old comment) experimental oak planting, October 1990 planted with red oak acorns (FTP # C61-231), June 1991 half replanted with red oak seedlings, and canopy closure was opened up by hand felling to 70% many/most of oak did not make it past the browse line, the few that did are 10-20' tall and 2"diameter, planting was generally a failure at least from a stocking stand point...
96	4110 - Sugar Maple Association	Sawtimber Well	7.0	100	81-110	Small creek/seasonal seep runs through stand, probably reason this area was retained when adjacent aspen stand was harvested. Sugar maple dominant w/in stand, fair quality. Ash and cherry present in good numbers as well. Would recommend identifying stand as long term retention due to access and creek being within stand. (old comment) small creek flowing through stand
97	4130 - Aspen	Sapling Well	17.2	24	Unspecified	Mixed aspen species throughout stand, some black cherry and scattered red maple as well. Scattered beech saplings in understory along with some shade tolerant hdwd species. (old comment) 800 mhz tower site leased to MSP, scotch pine saps seeding in along southern edge from private across road to the south
99	4130 - Aspen	Sapling Well	43.2	25	Unspecified	Fully stocked A3 stand with black cherry and red maple present throughout. Overstory Oak retention in northern part of stand, little regen aside from some oak saplings in this small area of stand. (old comment) clump of six large red oaks in the north center part of stand
100	4119 - Mixed Northern Hardwoods	Poletimber Well	151.0	85	81-110	Mediocre quality mixed hardwood stand with red maple dominant - variability in size, overall determined stand to be pole sized. Sugar maple stocking is inconsistent with areas of more dense SM present. Beech is present in clumps/patches. Aspen clones throughout, some larger diameter individuals present - some decline occurring in larger clones. Red oak is present throughout western lobe of stand, somewhat uniformly in relatively low numbers. Decent quality with some poles present as well. Overall stand quality is low with inconsistent stocking and significant variability in terms of species composition. (old comment) some scattered red oak along east edge of the west part of stand, generally low quality red maple, many multiple stems, site may have potential to grow some good quality red oak or black cherry, kotar type would be helpful to know, if time allows do a full stage 2 to collect specific stand data to help in determining possible treatment, North Country Trail runs through east part of stand



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	General Comments:
102	4139 - Aspen, Mixed Deciduous	Poletimber Well	7.5	62	51-80	Majority of stand is dominated by BTA which is declining in places. Hardwoods make up remainder of species composition with red maple being the most common overall. Pockets of clumpy black cherry are present along with sugar maple. (old comment) sw third of stand is aspen that has grown along edge of older maple stand, a couple of 22" bigtooth aspen in stand at top of hill, stand appears to be multiple aged, lots of pole size maple and quaking aspen (estimate their age to be around 55)
103	4112 - Maple, Beech, Cherry Association	Poletimber Medium	101.3	65	51-80	Relatively low quality hdwd stand - BA ranges from 50-90, typically near the middle of this range with some exception. Significant mortality throughout, most notably on SM. Documented (USFS Cadillac, Lint, MDNR) ETC defoliation along with drought years at time of harvest may have been the perfect storm of stressors, enough to cause mortality. east part of stand has a lot of black cherry with some good quality/potential, some cherry regeneration present, could probably regenerate cherry on this site
104	42111 - Planted Red Pine, Mixed Deciduous	Sapling Medium	9.4	2	Immature	Fair stocking in red pine seedlings, some mortality/lack of establishment due to competition with thick grass/sedge layer, most notably closer to Thompsonville rd. Red maple, black cherry and jack pine make up remainder of stocking along with occasional WP volunteers.
111	42110 - Planted Red Pine	Sapling Well	5.4	6	Immature	Stand is planted red pine, growing well. Some small pockets of mortality - no saplings - but overall good plantation spacing and stocking.



Stand	Cover Type	Acres	Managed Site	General Comments:
3	6220 - Alder/willow	7.4	No	Hatches (Second) Creek. Looks like mostly tag alder from edge, with some willow. An occasional maple, a trace of cedar, an occasional fruiting shrub. A little bit of joe pye weed.
8	122 - Road/Parking Lot	3.0	No	
11	6220 - Alder/willow	35.7	No	From edge, appears to be all tag alder with some maples mixed in. From imagery, there appears to be small areas of grasses/sedges or maybe cattails along the river.
12	122 - Road/Parking Lot	3.8	No	
17	3101 - Poverty Grass, Cladonia	2.9	No	Really dry site. Single clump of low shrub, possibly sand cherry. Poverty grass/cladonia with some spotted knapweed. Sapling/pole black cherry. Part of a bigger opening that is private.
18	3202 - Autumn Olive/Honeysuckle	1.4	No	Two track leading to this stand is grown in with autumn olive and raspberry. An old well pad that was planted to autumn olive.
26	3105 - Mixed Upland Herbaceous	1.2	No	Old well pad. Growing in with white pine and balsam poplar. Center has poverty grass, spotted knapweed, and rubus sp. Perimeter is bracken fern. Let succeed.
29	6220 - Alder/willow	10.1	No	Stand is a riparian area along Bear Creek with minimal trees throughout, mainly alder with scattered hummocks of slightly higher ground where a mixture of white pine, occasional red maple and trace cedar and balsam fir have become established. (old comment) From road, it appears to be all tag alder. A few pine mixed in. Various fruiting shrubs and mixed grasses.
30	3105 - Mixed Upland Herbaceous	1.5	No	There's a pipe with cap here. Old well pad. Possibly a spot to plant something or leave as-is.
35	122 - Road/Parking Lot	28.0	No	Phragmites along roadway, concentrated to areas <1 mile north of 13 mile rd where high water table exists.
40	122 - Road/Parking Lot	9.5	No	
46	6239 - Mixed Emergent Wetland	31.9	No	Lots of sedges. Some dead standing timber. Fern and mixed forbs.
50	3104 - Degraded	1.2	No	
54	330 - Low-Density Trees	1.4	No	opening, near road, was not planted. E/W portion of stand looks to be some sort of easement to compression facility located to the west.
57	3104 - Degraded	15.0	No	East and west fields separated by hill and two treed lobes. West part has allot of spotted knapweed, and old apple tree and a hole (old foundation?). East field has about 60% cool summer grasses, 40% spotted knapweed.



Stand	Cover Type	Acres	Managed Site	General Comments:
61	3104 - Degraded	2.8	No	A cabin is on edge. Uncertain of private land line. Better let succeed, even though it would be nice to cut down encroaching pine. Borderline degraded. Part of a larger opening with spotted knapweed to east.
73	3104 - Degraded	1.4	No	Schmude Oil Inc. Cleon No. 1-31 Oil well head. Not "Degraded", but "Low Intensity Urban".
74	3302 - Low Density Conifer Trees	3.9	No	Log-sized white pine with smaller ones. A few sapling/pole aspen mixed in. All bracken fern. Center is openland.
76	122 - Road/Parking Lot	0.8	No	
78	3105 - Mixed Upland Herbaceous	1.0	No	60ft by 60ft area of red maple seedling/sapling encroachment on NE side. Center is degraded with spotted knapweed/milkweed/sheep's sorrow.
88	3303 - Mixed Low Density Trees	4.1	No	Ground cover is almost all cladonia. Jack pine and red maple mixed in. Traces of poverty grass, st. johns wort, sheep's sorrow, and beech seedlings.
89	3101 - Poverty Grass, Cladonia	1.1	No	Nice opening.
90	3103 - Rubus-Fern	2.1	No	Frost pocket. Black cherry with an occasional juneberry. All bracken fern.
98	3104 - Degraded	2.2	No	Not "Degraded" but "Low Intensity Urban". FCC Antenna Structure Registration Number 1056911. Bracken fern, grasses, st. johns wort along perimeter.
101	3301 - Low Density Deciduous Tree	10.0	No	Did not visit stand. Access? From imagery, appears to be low density deciduous trees with northern hardwood species, possibly cherry.
112	330 - Low-Density Trees	4.7	No	This stand consists of an easement that the state of Michigan obtained in 2005-2007. The easement was surveyed in January, 2007 by DNR surveyors.
118	310 - Herbaceous Openland	0.9	No	Old well site, was not planted through when adjacent stands/strips were treated/planted.