



Compartment Review Presentation

Traverse City Forest Management Unit

Compartment 61002

Entry Year 2021

Acreage: 1,764

County Leelanau

Management Area: Benzie Outwash

Revision Date: 2019-06-13

Stand Examiner: Tim Webb

Legal Description:

T28N R13W Sections 25, 26, 35, 36

T28N R12W Sections 30, 31

T27N R13W Section 1

Identified Planning Goals:

Compartment 2 is part of the Benzie Outwash Management Area (MA) per the Northern Lower Peninsula Regional State Forest Management Plan. Vegetation management in the MA will provide forest products; maintain or enhance wildlife habitat; protect areas of unique character and threatened, endangered and special concern species; and provide for forest-based recreational uses and Native American non-commercial uses of forest products. Timber management for the next 10 years includes improving the age-class distribution of aspen and red pine, including some harvest and replanting of pine plantations. Northern hardwoods management includes continued selective or regeneration harvesting of northern hardwoods to achieve an uneven age-class structure or improve timber quality. With beech bark disease well advanced in this area, several treatments of northern hardwood stands will be focused on harvesting beech before it dies. Wildlife management objectives include increasing the structural complexity of northern hardwood communities for interior forest species and perpetuating early-successional communities for species adapted to young forests.

A 30-acre patch of hardwoods (stand 113) was seed-tree harvested in fall 2017 as part of a Michigan State University hardwood regeneration research project. This area and additional small hardwood blocks will receive additional treatments or monitoring during this 10-year planning period.

Soil and topography:

The bulk of the compartment is on a pitted outwash plain landscape with level to rolling topography, interspersed with steep-sided kettle depressions. The northeast end extends onto a moraine ridge landscape with fairly steep slopes. Soil types include predominantly Kalkaska sand, with some small areas of East Lake loamy sand and some muck soils in scattered, isolated wetlands.

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

This is an isolated state forest compartment completely surrounded by private lands. State land surrounds a commercial landfill on three sides. Small rural residential parcels and subdivisions abut much of the compartment. Residential building sites are currently being developed near Cook Lake. There are some farmlands and larger rural parcels to the west, northeast and north. State ownership includes the former Leelanau County landfill; a pole barn and water well, several groundwater monitoring wells, and stretches of fencing in disrepair remain on the grounds.

Unique Natural Features:

The state has frontage on Cook, Shorter, Shisler, and Hart lakes, with the latter two completely within state ownership. There are several bogs and other wetlands within the compartment, plus a short stretch of frontage on Cedar Run Creek.

Archeological, Historical, and Cultural Features:

There are 2 documented homestead sites from the late 1800s within the compartment. Some old foundations, abandoned orchards and scattered lilac bushes, walnut trees, cottonwoods, etc. also indicate probable locations of old farms and homesteads likely abandoned in the early to mid 1900s. Maturing pine plantations now occupy many former farmlands.

Special Management Designations or Considerations:

Several groundwater monitoring wells are on state land to the east and northeast of Glen's Landfill. MI-DOT maintains a carpool parking lot along M-72 on state land in section 26.

Watershed and Fisheries Considerations:

This compartment is located adjacent to nearby spring/kettle lakes, and is near the headwaters for multiple drainages which feed Lake Leelanau. It is important to have appropriate buffers along Cedar Run Creek, as it is a designated trout stream which current has thermal issues due to agricultural land uses.

Wildlife Habitat Considerations:

The landscape and vegetative diversity of this compartment provide opportunities for managing a diversity of wildlife species. Current vegetative composition of late successional, mixed northern hardwoods interspersed with aspen stands of variable age and stocking, and frequent small openings, bogs, and kettle lakes provide habitat for white-tailed deer, coyote, southern flying squirrel, ruffed grouse, wild turkey, red-shouldered hawk, yellow-bellied sapsucker, eastern bluebird, and red-backed salamander. Snags, cavity trees, and coarse woody debris within stands and adjacent to wetlands should be retained to provide cover for small mammal and herp populations, ruffed grouse drumming logs, denning and nesting structure, and hunting opportunities for insectivores. Steep slopes surrounding pothole lakes and wetlands in sections 36 and 1 provide opportunities to manage a patchwork of mature/old-growth stands in the central portion of this compartment. Management of red pine plantations should incorporate a hardwood component to encourage species diversity. Also, consider incorporating small (2-5 acre) islands that are left relatively un-thinned within mature pine stands to provide winter roosting cover for turkeys. Maintenance of the many small openings in this compartment should focus on limiting encroachment of woody vegetation and invasive exotic species, encouraging establishment of native grasses, pruning remnant apple trees to stimulate fruit production, and cultivation one or more openings where the wildlife benefits are significant and public access assured.

Mineral Resource and Development Concerns and/or Restrictions

Active sand/gravel production is occurring just over one mile to the northwest, and sand & gravel potential within the compartment appears to be good. This area is located outside of the current, main Antrim Shale gas play. The Antrim may have limited potential here, due to its shallower depth and lower thickness. There is a small field of completed Antrim gas wells located less than two miles from the compartment. The wells have been shut in since 2009 awaiting pipeline infrastructure to be established connecting the field, and thus no commercial production has occurred from the field to date. It is unclear if or when pipeline infrastructure may be developed to this field. As long as natural gas prices remain low, it is unlikely to occur. None of the state-owned mineral rights within the compartment are currently leased. There is no known metallic mineral potential in this part of the state.

Vehicle Access:

Access for forest management is generally good. The triangular parcel in the NENE of section 31 and the isolated parcel on Shorter Lake in section 1 are only accessible by foot or via private roads through subdivisions.

Portions of sections 35, 36 and 30 have a history of ORV abuse and subsequent erosion. Despite installation of numerous vehicle barriers, ORV damage continues to be a problem. The compartment needs to be re-examined during the growing season for new placement or repair of barriers and for any rehabilitation needs. Steep slopes adjacent to the lakes are especially susceptible to erosion.

Survey Needs:

Some interior corners in sections 1 and 26 may have to be set prior to timber sale preparation if private survey corners are not already in place.

Recreational Facilities and Opportunities:

There are no recreational developments or official trails within the compartment. Dispersed recreation includes hunting, mushrooming, and some fishing.

Fire Protection:

Fire protection is from the Traverse City Field Office. VFD protection is from the Cedar Fire Department. This area is a mixture of hardwoods with some scattered pine plantations, has no real urban interface issues to contend with, and access is adequate.

Additional Compartment Information:

There is possible unauthorized storage of personal property in the SESW of section 26; the property line needs to be run to determine potential trespass.

The following reports from the Inventory are attached:

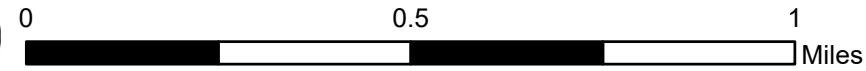
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

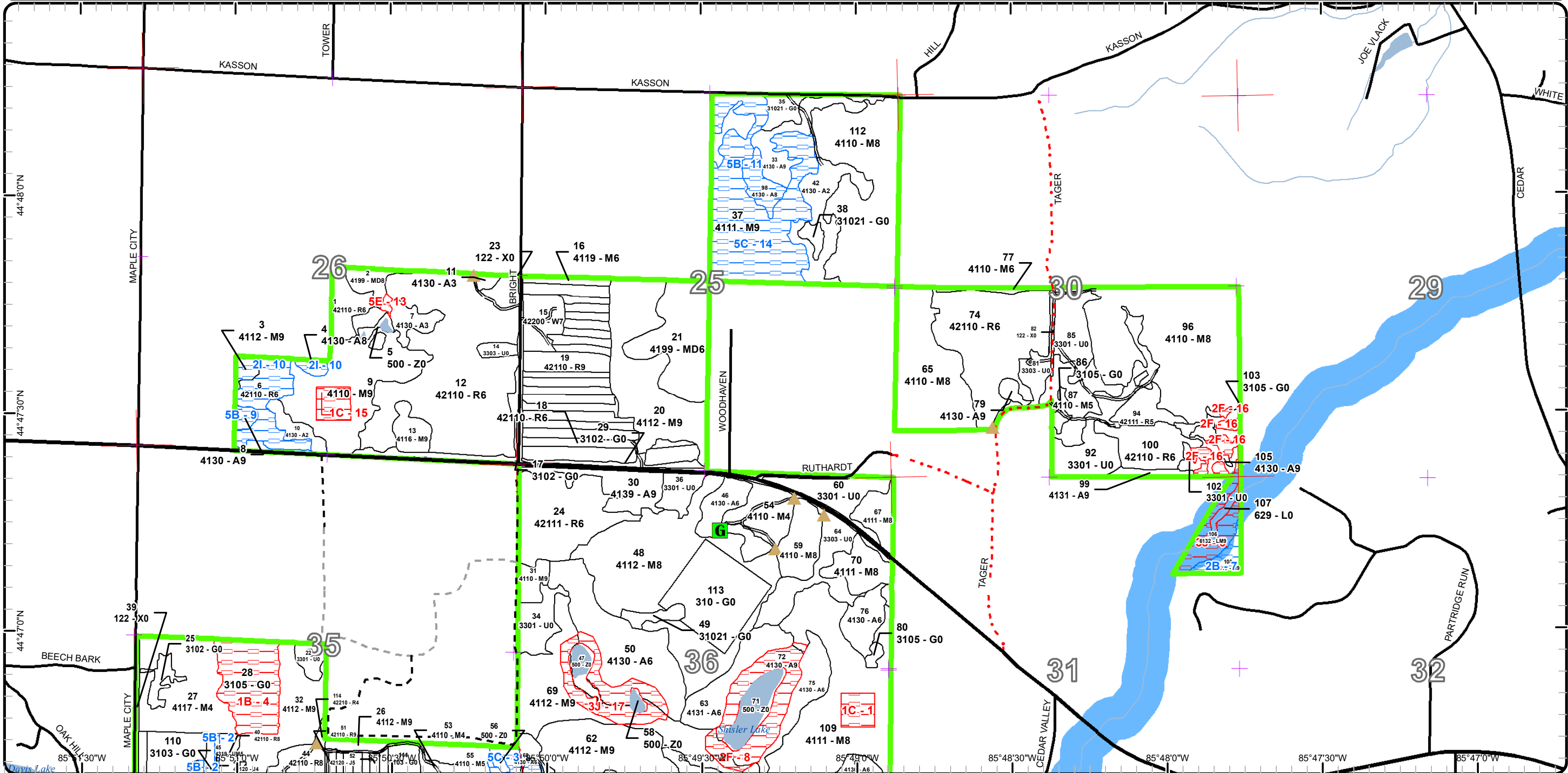
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

Special Conservation Areas & Site Conditions Map

Compartment: 2
 T28N R13W Sec. 25,26,35,36
 County: Leelanau
 Unit: Traverse City
 Mgmt Area: Benzie Outwash
 YOE: 2021
 Acres: 1,764 GIS Calculated
 Examiner: Tim Webb
 Map Revised: 11/6/2019
 Map Phase: Post Review



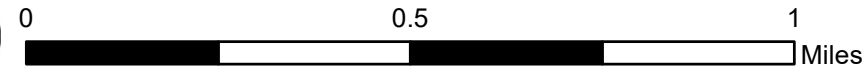
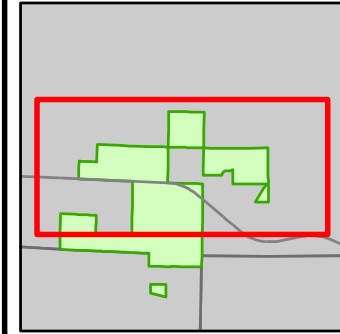
- Miris Corners
- + Remonumented Section Corners
- Counties
- DNR - Secondary Forest Road
- Federal / State Highway
- Federal / State - Dirt / Gravel Road
- County - Gravel Road
- County - Dirt Road (Seasonal)
- Private - Dirt / Gravel Road
- Berms
- G Gate
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- Perennial River
- Lakes and Rivers
- Compartment Boundary
- Available w/ Constraints
- Unavailable
- 2I: Survey needed
- 5B: Maintain for regeneration purposes
- 5C: Delay treatment for age/size class diversity or exceptional site quality
- 1B: Non-DNR agency concerns (e.g. USFS)
- 1C: Other dept or div proc/practices
- 2F: Too steep
- 3J: Water quality / BMPs (stream, river, or lake)
- 5E: Long-Term Retention
- Stand Boundaries
- Cold Water Streams
- Cold Water Lakes
- High Priority Trout Stream Buffer



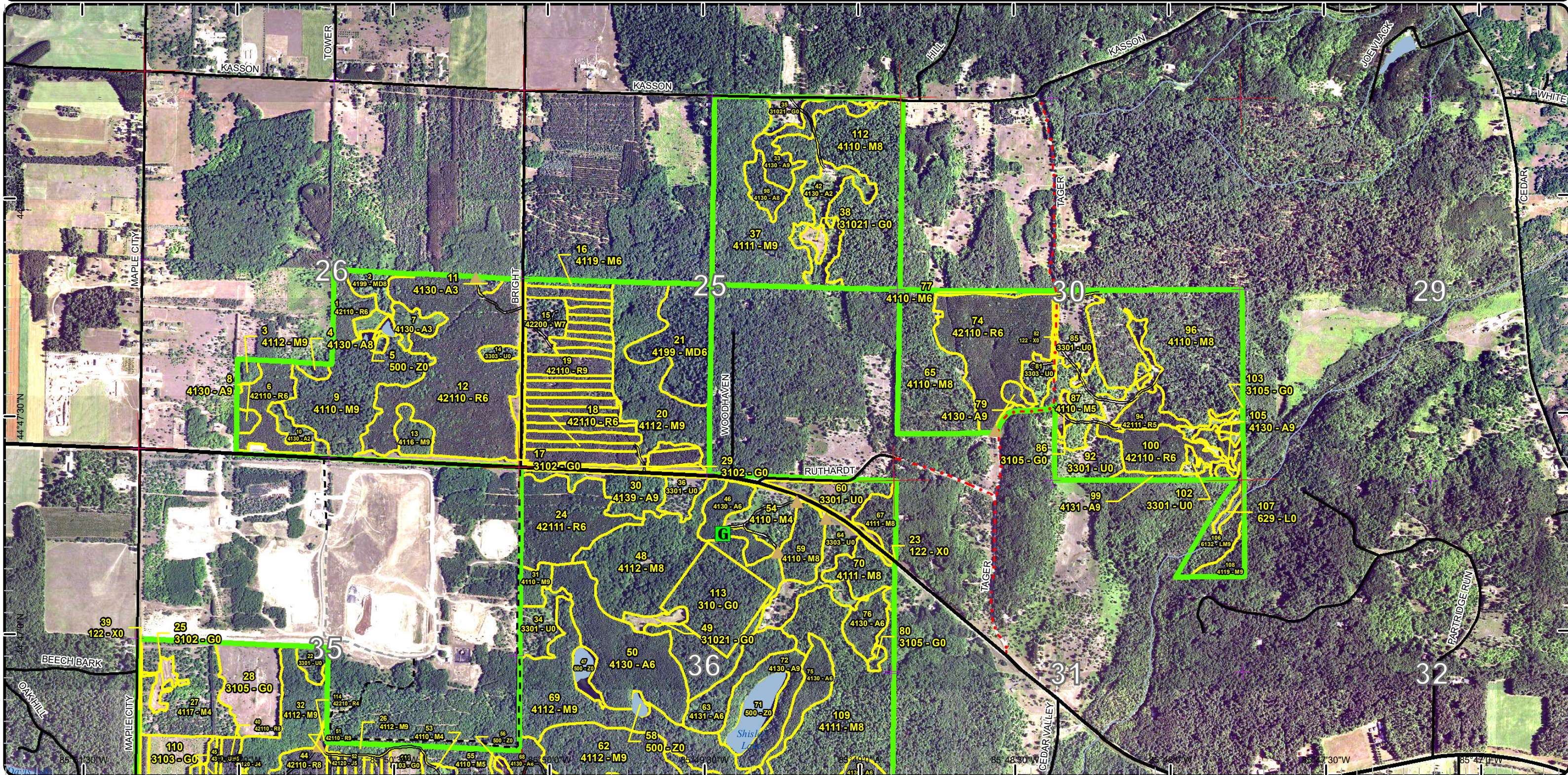
Stand Boundary Map

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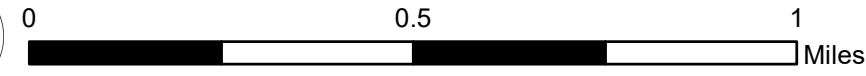
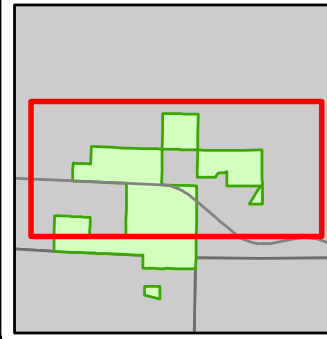


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- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
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- 613 - Lowland Mixed Forest
- 122 - Roads/Parking Lot
- 310 - Herbaceous Openland
- 330 - Low Density Trees
- 500 - Water
- 629 - Mixed non-forested wetland

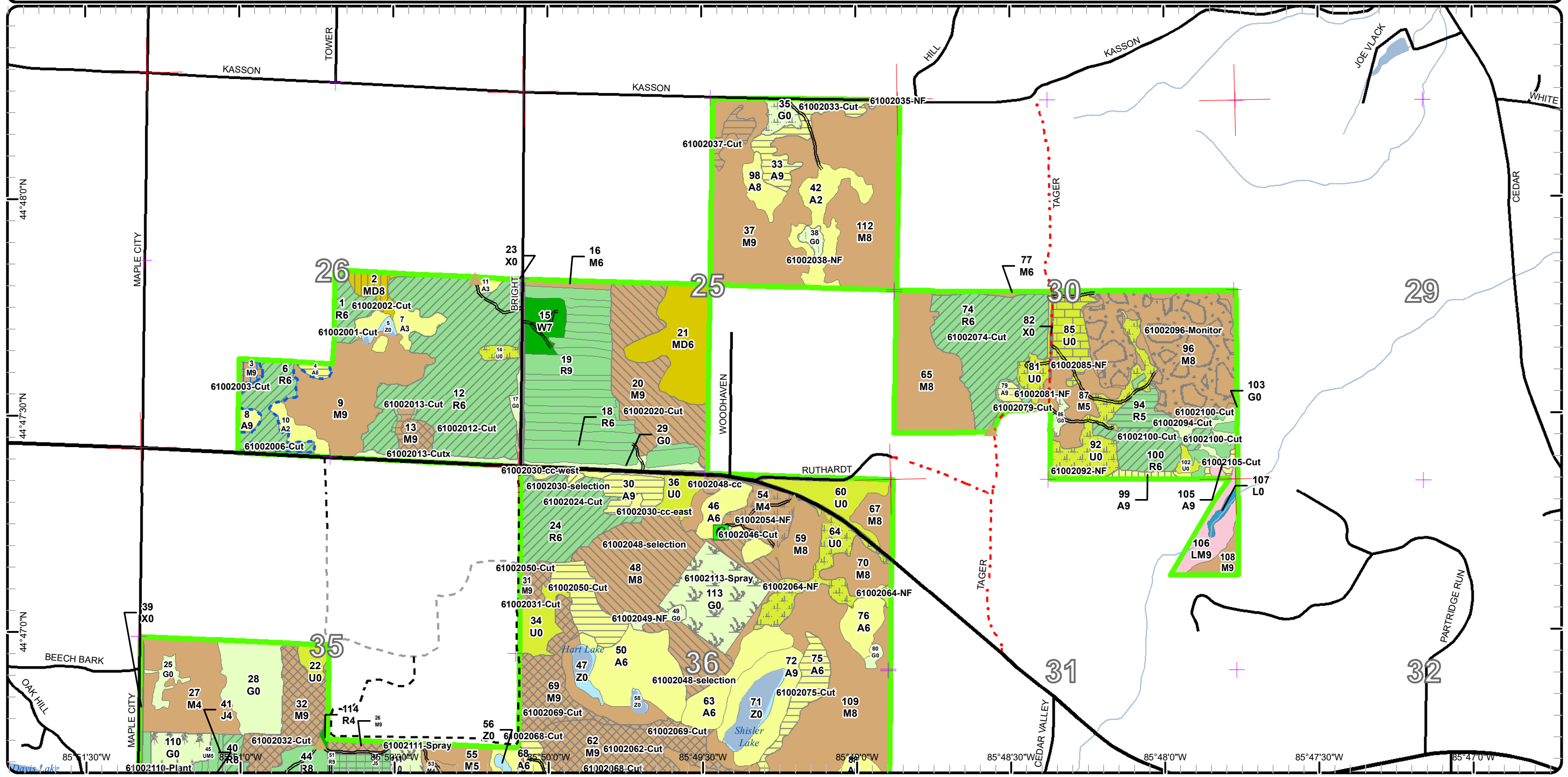


Cover Type & Treatments Map

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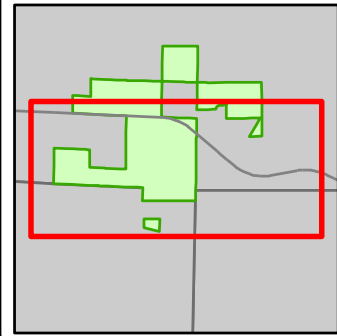
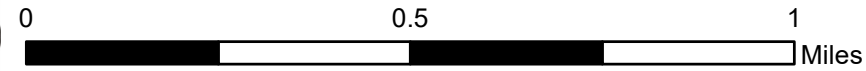


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- Treatments with Site Conditions
- Pesticide
- Other Harvest - See Comments
- Other Treatment - See Comments
- Selection (Group, Single Tree)
- Planting (tree species)
- Clearcut (w/Reserves)
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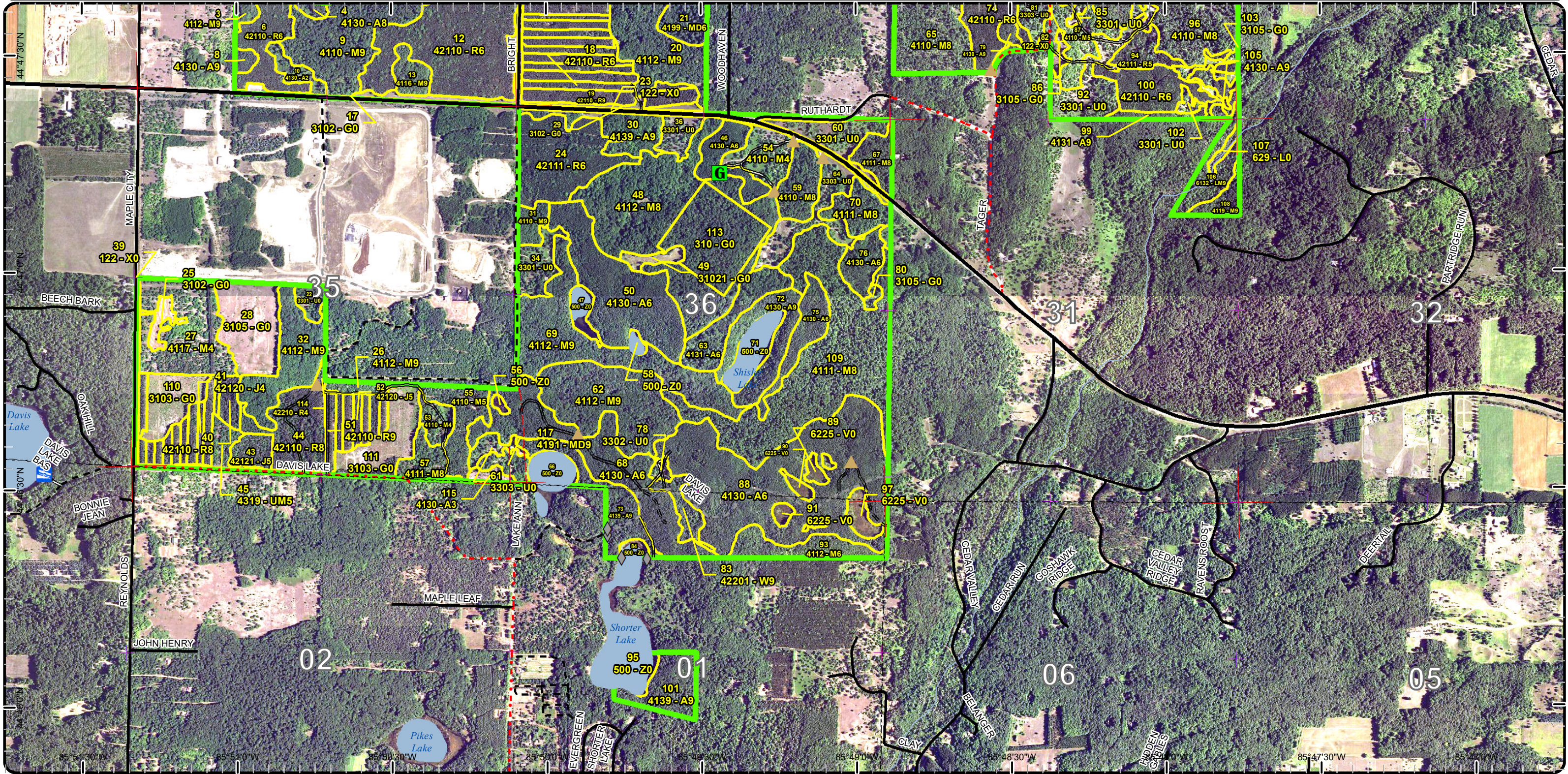


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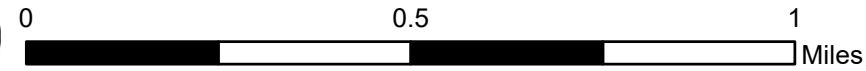


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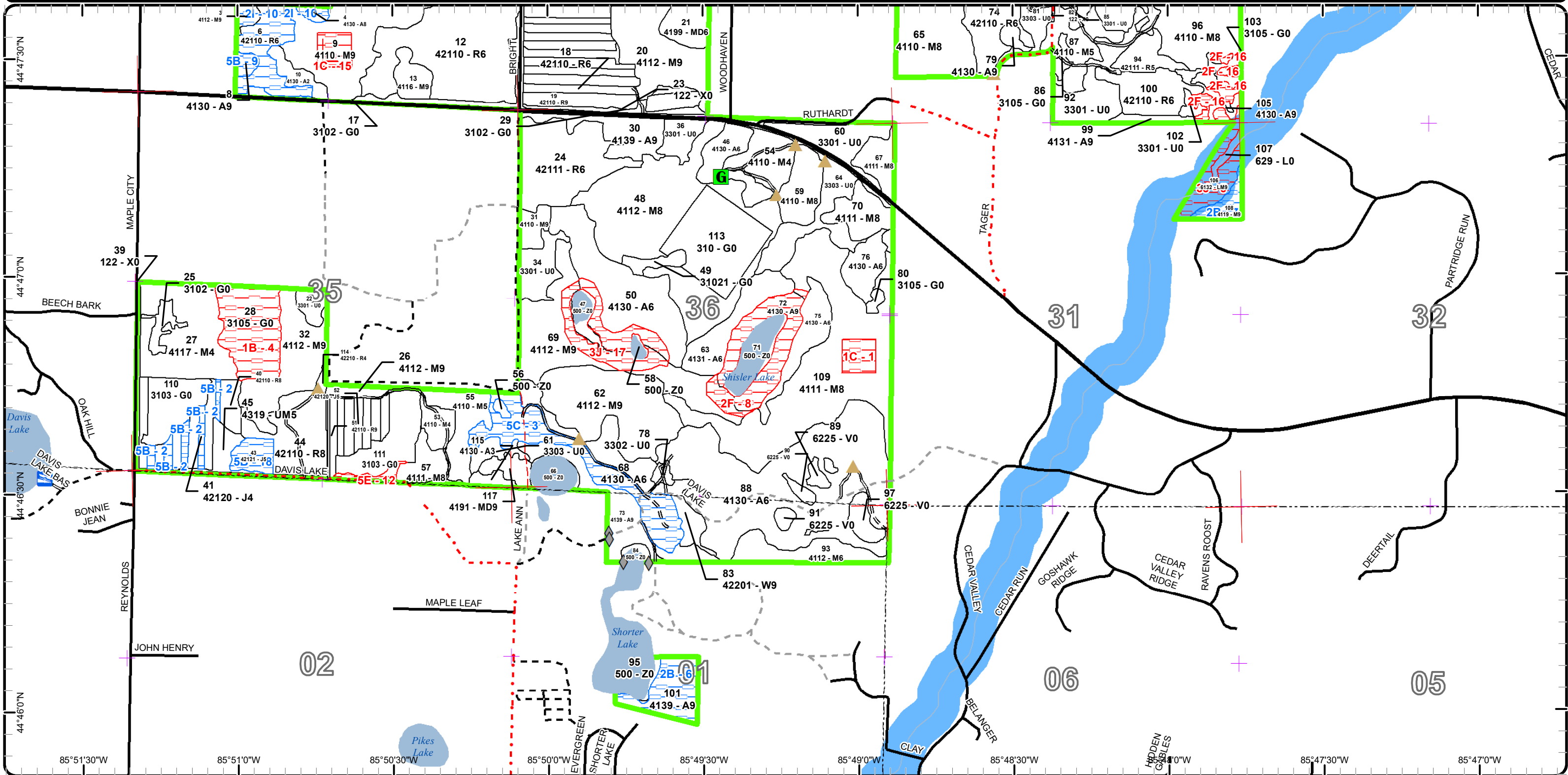


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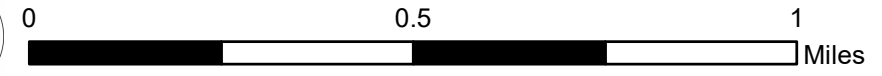
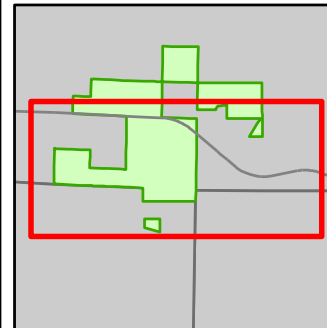


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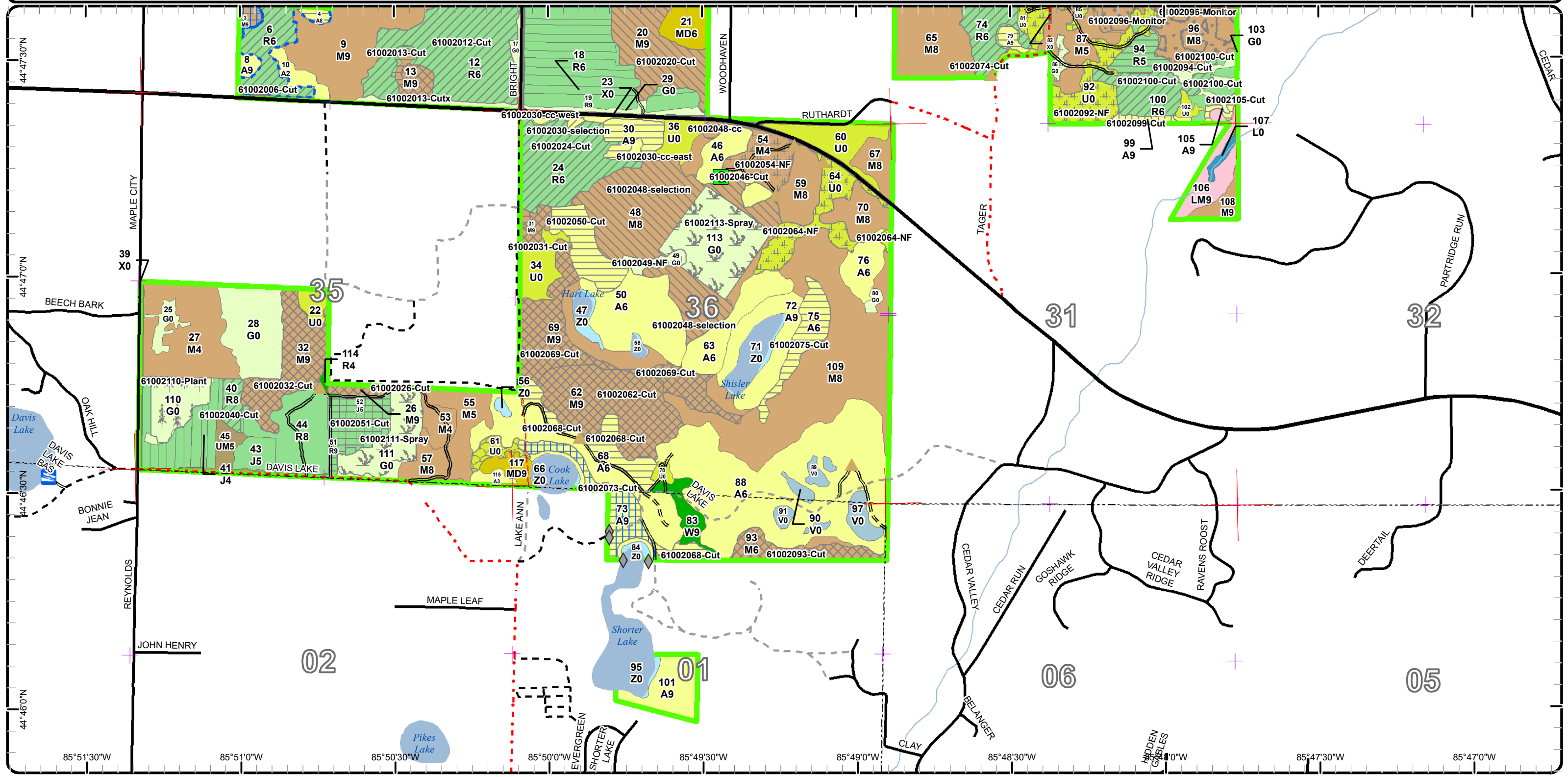


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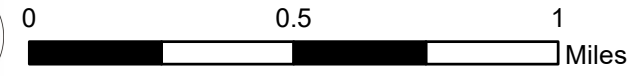
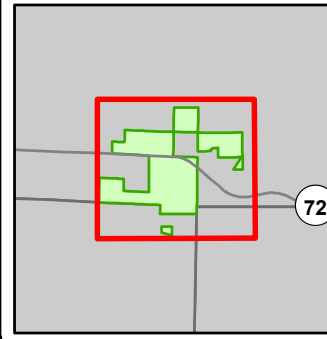


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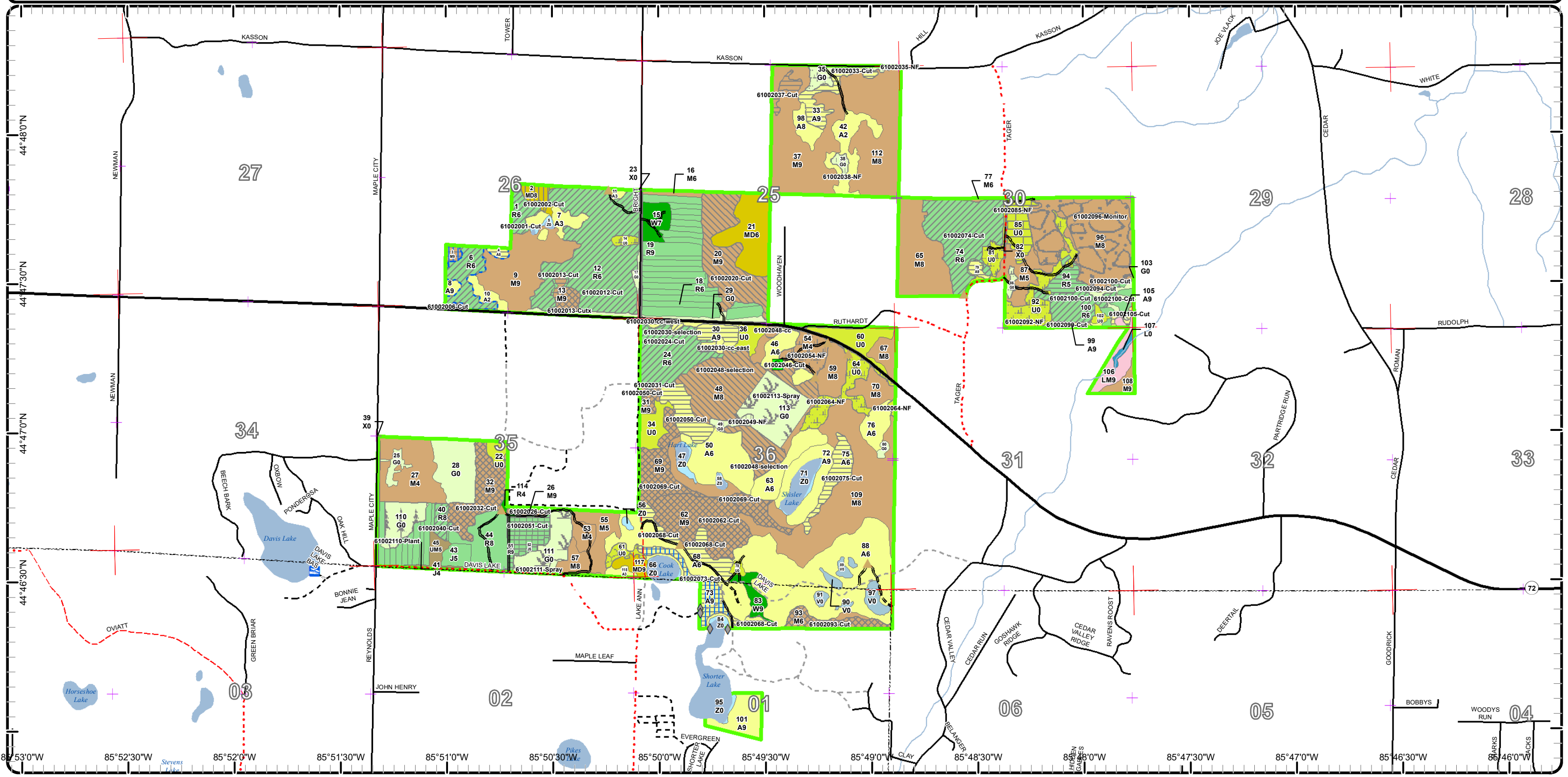


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Report 1 – Total Acres by Cover Type and Age Class



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	34	0	36	91	97	33	21	18	0	18	0	0	0	0	0	0	0	346
Bog	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
Herbaceous Openland	116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	116
Jack Pine	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0	17
Low-Density Trees	97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97
Lowland Mixed Forest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
Lowland Shrub	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Mixed Upland Deciduous	0	0	0	28	0	0	0	0	0	6	0	0	0	0	0	0	0	5	39
Northern Hardwood	0	0	0	0	0	5	0	0	0	0	276	172	125	5	0	0	0	128	710
Red Pine	0	0	0	25	217	0	0	93	0	0	0	0	0	0	0	0	0	1	336
Upland Mixed Forest	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
Urban	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
Water	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33
White Pine	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	15
Total	283	34	0	89	308	102	49	131	18	6	294	172	125	5	0	0	0	151	1763



Report 2 – Treatment Summary

Traverse City Mgt. Unit
Year of Entry: 2021

Acres of Harvest

Compartment 2
Total Compartment Acres: 1,764

Commercial Harvest - 517
Harvests with Site Condition - 20
Next Step Harvest - 0
Habitat Cut - 0

Cover Type by Harvest Method

	Clearcut	Selection	Patch Clearcut	Seed Tree	Shelterwood	Thinning	Overstory Removal	Salvage	Other	Total Acres
Aspen	60	0	0	14	2	1	0	0	0	76
Mixed Upland Deciduous	0	0	0	0	5	0	0	0	0	5
Northern Hardwood	8	119	0	3	0	0	0	0	98	228
Red Pine	22	0	0	0	0	207	0	0	0	229
Total	89	119	0	16	7	208	0	0	98	537

Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	537	4	13	0	0	45	64	0	83	746
Next Step	0	73	42	0	0	74	428	0	0	617
Total	537	77	54	0	0	119	492	0	83	1363



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	Habitat Cut
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Approved Treatments:

1	61002001-Cut	8.4	42110 - Planted Red Pine	Poletimber Well	39	171- 200	Harvest	Systematic Thinning	42110 - Planted Red Pine	Even-Aged	No
<p><u>Prescription</u> 3rd-row thin. <u>Specs:</u> <u>Next Step</u> <u>Treatments:</u> <u>Acceptable</u> <u>Regen:</u> <u>Other</u> <u>Comment:</u> <u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2020</p>											

2	61002002-Cut	4.7	4199 - Other Mixed Upland Deciduous	Sawtimber Medium	85	111- 140	Harvest	Shelterwood with Retention	4116 - Mixed N. Hardwood - Aspen	Two-Aged	No
<p><u>Prescription</u> Mark 30-50 BA of mixed hardwoods for retention, more where aspen is absent, less where aspen is present. <u>Specs:</u> <u>Next Step</u> Monitoring, Natural Regen (Re-Inventory) <u>Treatments:</u> <u>Acceptable</u> aspen, mixed hardwoods, and some pine <u>Regen:</u> <u>Other</u> <u>Comment:</u> <u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2020</p>											

3	61002003-Cut	2.5	4112 - Maple, Beech, Cherry Association	Sawtimber Well	105	111- 140	Harvest	Seed Tree with Retention	4139 - Aspen, Mixed Deciduous	Two-Aged	No
<p><u>Prescription</u> Mark about 10-30 BA of good quality maple and some wildlife trees; cut the rest. Avoid damaging advanced maple regeneration as much as possible. <u>Specs:</u> <u>Next Step</u> Monitoring, Natural Regen (Re-Inventory) <u>Treatments:</u> <u>Acceptable</u> Most of the stand should regenerate to aspen, with some possible mixed hardwoods. <u>Regen:</u> <u>Other</u> <u>Comment:</u> <u>Site Condition</u> Survey Needed <u>Proposed Start Date:</u> 10/1 /2020</p>											



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
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4	61002004-Cut	1.9	4130 - Aspen	Sawtimber Medium	52		Harvest	Clearcut with Retention	4130 - Aspen	Even-Aged	No
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Prescription Clearcut; mark a few mixed-species trees to retain (3-5% cover). Create some CWD during harvest (1-2 down trees/acre).

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable aspen; maybe some mixed hardwoods

Regen:

Other

Comment:

Site Condition Survey Needed

Proposed Start Date: 10/1 /2020

6	61002006-Cut	15.8	42110 - Planted Red Pine	Poletimber Well	39	141- 170	Harvest	Systematic Thinning	42110 - Planted Red Pine	Even-Aged	No
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Prescription 3rd-row thin. Leave hardwoods as much as possible.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Site Condition Survey Needed

Proposed Start Date: 10/1 /2020

12	61002012-Cut	86.2	42110 - Planted Red Pine	Poletimber Well	39	141- 170	Harvest	Systematic Thinning	42110 - Planted Red Pine	Even-Aged	No
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Prescription 3rd-row thin. Retain hardwood as much as possible.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Site Condition

Proposed Start Date: 10/1 /2020

13	61002013-Cut	2.4	4116 - Mixed N. Hardwood - Aspen	Sawtimber Well	97	111- 140	Harvest	Clearcut	4130 - Aspen	Even-Aged	No
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Prescription Clearcut to a 2" dbh limit. Create some CWD during harvest.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable predominantly aspen, plus potentially some mixed hardwoods or red pine volunteers

Regen:

Other

Comment: Prescribed cut includes areas of concentrated aspen in a small hardwood stand, plus adjacent strip of a red pine plantation to allow aspen type to expand a little. No retention is prescribed in this small patch cut, but a few hardwoods or red pine could be marked for retention where they would not inhibit aspen regen.

Site Condition

Proposed Start Date: 10/1 /2020



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
13 61002013-Cutx	4.7	4116 - Mixed N. Hardwood - Aspen	Sawtimber Well	97	111-140	Harvest	Single Tree Selection	4112 - Maple, Beech, Cherry Association	Uneven-Aged	No
<p><u>Prescription</u> Thin to 80-90 BA, cutting most of the beech. Create some CWD during harvest.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable</u> mixed hardwoods in regeneration gaps</p> <p><u>Regen:</u></p> <p><u>Other Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										
14 61002014-NF	2.3	3303 - Mixed Low Density Trees	Nonstocked			NonForestMgt	Pruning	320 - Upland Shrub		No
<p><u>Prescription</u> Prune remnant apple trees. Could replace dead trees with apple or other fruiting shrub.</p> <p><u>Specs:</u></p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable</u></p> <p><u>Regen:</u></p> <p><u>Other Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										
20 61002020-Cut	40.6	4112 - Maple, Beech, Cherry Association	Sawtimber Well	113	81-110	Harvest	Other - Specify	4112 - Maple, Beech, Cherry Association	Uneven-Aged	No
<p><u>Prescription</u> Remove all beech except retain 1-3 mature trees per acre for wildlife and partial shade. Mark other trees for harvest if necessary to facilitate harvest of beech or to reduce BA to 80 in areas absent of beech.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Intermediate); Pesticide, Skidder - Site Prep; Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable</u> Cut will likely result in a flush of beech regeneration, although maple/sherry would be preferred.</p> <p><u>Regen:</u></p> <p><u>Other Comment:</u> Consider a post-harvest herbicide treatment to control expected beech regeneration if felt it would improve chances for more diverse regeneration.</p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
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24	61002024-Cut	31.5	42111 - Planted Red Pine, Mixed Deciduous	Poletimber Well	37	171-200	Harvest	Systematic Thinning	42110 - Planted Red Pine	Even-Aged	No
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Prescription 3rd-row thin. Harvest hardwoods within red pine cut rows.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other Use caution around ground water monitoring wells.

Comment:

Site Condition

Proposed Start Date: 10/1 /2020

26	61002026-Cut	3.4	4112 - Maple, Beech, Cherry Association	Sawtimber Well	98	111-140	Harvest	Group Selection	4112 - Maple, Beech, Cherry Association	Uneven-Aged	No
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Prescription Mark for selection cut down to a target of BA 90. Leave some old beech for wildlife, otherwise cut beech heavily. Mark heavy surrounding aspens to create regen pockets. Leave some CWD. Reduce beech/ironwood understory as much as possible during harvest.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable aspen and mixed hardwoods in regeneration gaps

Regen:

Other

Comment:

Site Condition

Proposed Start Date: 10/1 /2020

30	61002030-cc-east	8.6	4139 - Aspen, Mixed Deciduous	Sawtimber Well	59	111-140	Harvest	Clearcut with Retention	4139 - Aspen, Mixed Deciduous	Two-Aged	No
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Prescription Clearcut to 2" dbh, retaining scattered mixed hardwoods, especially for aesthetics along M-72. In patches lacking aspen, retain up to 90 BA of mature hardwoods. Retain areas of advanced maple regeneration as much as possible. Create some CWD during harvest (1-2 down trees/acre).

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable aspen, mixed hardwoods (including retained advanced maple regen)

Regen:

Other

Comment:

Site Condition

Proposed Start Date: 10/1 /2020



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
30 61002030-cc-west	1.0	4139 - Aspen, Mixed Deciduous	Sawtimber Well	59	111-140	Harvest	Clearcut with Retention	4130 - Aspen	Even-Aged	No
<p><u>Prescription</u> clearcut to 2" dbh, expanding into adjacent pine plantation; retain a few pines along highway</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable</u> aspen, some pine</p> <p><u>Regen:</u></p> <p><u>Other</u></p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										
30 61002030-selection	0.8	4139 - Aspen, Mixed Deciduous	Sawtimber Well	59	111-140	Harvest	Crown Thinning	4119 - Mixed Northern Hardwoods	Uneven-Aged	No
<p><u>Prescription</u> Mark for thinning; remove most of the beech.</p> <p><u>Specs:</u></p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable</u></p> <p><u>Regen:</u></p> <p><u>Other</u></p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										
31 61002031-Cut	4.3	4110 - Sugar Maple Association	Sawtimber Well	98	141-170	Harvest	Single Tree Selection	4110 - Sugar Maple Association	Uneven-Aged	No
<p><u>Prescription</u> Mark for selection harvest with a residual BA of 90. Create some CWD during harvest.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable</u> mixed hardwoods and white pine</p> <p><u>Regen:</u></p> <p><u>Other</u> NW corner of stand is a patch clearcut for aspen regeneration, lumped in with proposed harvest in adjacent stand 50.</p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
32 61002032-Cut	24.0	4112 - Maple, Beech, Cherry Association	Sawtimber Well	98	111-140	Harvest	Single Tree Selection	4110 - Sugar Maple Association	Uneven-Aged	No
<p><u>Prescription</u> Mark for selection cut down to a target of BA 90. Cut most of the beech, but leave some scattered older beech for wildlife. Create some CWD during harvest.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u> mixed northern hardwoods, preferable maple, basswood, and cherry</p> <p><u>Other</u> Check for nesting woodland raptors.</p> <p><u>Comment:</u> Keep equipment off adjacent capped landfill.</p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										
33 61002033-Cut	11.6	4130 - Aspen	Sawtimber Well	58	Unspecified	Harvest	Clearcut with Retention	4130 - Aspen	Even-Aged	No
<p><u>Prescription</u> Clearcut to a 2" dbh limit. Mark individual mixed-species trees (3-5% cover) for retention, especially near road. Create some CWD during harvest (1-2 down trees/acre).</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u> aspen, mixed hardwoods</p> <p><u>Other</u></p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										
35 61002035-NF	6.5	31021 - Cool Season Grass	Nonstocked			NonForestMgt	Fruit Tree/Shrub Planting	3105 - Mixed Upland Herbaceous		No
<p><u>Prescription</u> Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Fertilize plantings and protect with wire cages or tubex.</p> <p><u>Specs:</u></p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u></p> <p><u>Other</u></p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
37 61002037-Cut	4.4	4111 - S.Maple, Hard Mast Association	Sawtimber Well	96	111-140	Harvest	Clearcut with Retention	4139 - Aspen, Mixed Deciduous	Even-Aged	No
<p><u>Prescription</u> Clearcut to 2" dbh, retaining scattered individual trees/clumps of mixed species. Create some CWD during harvest (1-2 down trees/acre). <u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory) <u>Treatments:</u></p> <p><u>Acceptable</u> aspen and mixed hardwoods <u>Regen:</u></p> <p><u>Other</u> <u>Comment:</u></p> <p><u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2020</p>										
38 61002038-NF	2.3	31021 - Cool Season Grass	Nonstocked			NonForestMgt	Brush Cutting	3105 - Mixed Upland Herbaceous		No
<p><u>Prescription</u> Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover. <u>Specs:</u></p> <p><u>Next Step</u> <u>Treatments:</u></p> <p><u>Acceptable</u> <u>Regen:</u></p> <p><u>Other</u> Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Fertilize plantings and protect with wire cages or tubex. <u>Comment:</u></p> <p><u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2020</p>										
40 61002040-Cut	4.2	42110 - Planted Red Pine	Sawtimber Medium	68	111-140	Harvest	Crown Thinning	4211 - Planted Red Pine	Even-Aged	No
<p><u>Prescription</u> Mark for thinning; residual BA about 120. <u>Specs:</u></p> <p><u>Next Step</u> <u>Treatments:</u></p> <p><u>Acceptable</u> <u>Regen:</u></p> <p><u>Other</u> <u>Comment:</u></p> <p><u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2020</p>										
46 61002046-Cut	1.1	4130 - Aspen	Poletimber Well	28	Immature	Harvest	Clearcut	4130 - Aspen	Even-Aged	No
<p><u>Prescription</u> Clearcut to a 2" dbh limit. Small patch, so no retention needed, but could mark a few hardwoods or oak to leave if present. <u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory) <u>Treatments:</u></p> <p><u>Acceptable</u> aspen <u>Regen:</u></p> <p><u>Other</u> Post-harvest, merge this patch cut with stand 30 cut patches to form one multi-part stand. <u>Comment:</u></p> <p><u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2020</p>										



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
48 61002048-cc	1.3	4112 - Maple, Beech, Cherry Association	Sawtimber Medium	100	81-110	Harvest	Clearcut with Retention	4139 - Aspen, Mixed Deciduous	Two-Aged	No
<p><u>Prescription</u> Clearcut to 2" dbh, retaining scattered mixed hardwoods, especially for aesthetics along M-72. In patches lacking aspen, retain up to 90 BA of mature hardwoods. Retain areas of advanced maple regeneration as much as possible. Create some CWD during harvest (1-2 down trees/acre).</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable</u> aspen, mixed hardwoods (including retained advanced maple regen)</p> <p><u>Regen:</u></p> <p><u>Other</u> Post-harvest, merge this patch cut with stand 30 cut patches to form one multi-part stand.</p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										
48 61002048-selection	57.8	4112 - Maple, Beech, Cherry Association	Sawtimber Medium	100	81-110	Harvest	Other - Specify	4112 - Maple, Beech, Cherry Association	Uneven-Aged	No
<p><u>Prescription</u> Harvest all beech >2' and <18" dbh. Use appropriate specs/seasonal restrictions to prevent oak wilt infection in residual oak.</p> <p><u>Specs:</u></p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable</u></p> <p><u>Regen:</u></p> <p><u>Other</u> Removal of beech because of likely loss to beech bark disease.</p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										
49 61002049-NF	3.5	31021 - Cool Season Grass	Nonstocked		Unspec ified	NonForestMgt	Herbaceous/Crop /Grass Planting	310 - Herbaceous Openland		No
<p><u>Prescription</u> This opening is a traditional wildlife planting. Plant to annual rye for several years and then convert to a pasture mix (i.e. clover/alfalfa) if soil will support it. Periodic maintenance such as mowing, fertilization, reseeding, and/or removal of woody encroachment.</p> <p><u>Specs:</u></p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable</u></p> <p><u>Regen:</u></p> <p><u>Other</u> Could plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. Fertilize plantings and protect with wire cages or tubex.</p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
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50	61002050-Cut	14.5	4130 - Aspen	Poletimber Well	44	Unspec ified	Harvest	Clearcut with Retention	4130 - Aspen	Even-Aged	No
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Prescription Clearcut to a 2" dbh limit. Create some CWD during harvest (1-2 down trees/acre). Retain any oaks or conifers, plus a couple of small (1/4 to 1/2 acre) retention islands. Use appropriate specs/seasonal restrictions to prevent oak wilt infection in residual oak.

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

Acceptable predominantly aspen with some oak, pine and mixed hardwoods acceptable in the mix
Regen:

Other Use caution around ground water monitoring wells.
Comment:

Site Condition

Proposed Start Date: 10/1 /2020

51	61002051-Cut	14.4	42110 - Planted Red Pine	Sawtimber Well	68	141-170	Harvest	Clearcut with Retention	42110 - Planted Red Pine	Even-Aged	No
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Prescription Clearcut, specify chipping. Herbicide to control JP volunteers, then trench and plant RP. Retain 3 patches of about 1/4 each at the south end of the red pine strips.

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

Acceptable red pine (small amount of hardwoods, jack pine OK)
Regen:

Other
Comment:

Site Condition

Proposed Start Date: 10/1 /2020

54	61002054-NF	12.3	4110 - Sugar Maple Association	Poletimber Poor	60	1-50	NonForestMgt	Fruit Tree/Shrub Planting	3301 - Low Density Deciduous Trees		No
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Prescription Plant site appropriate native shrubs and/or mast producing trees (white oak) for wildlife food and cover. May want to fertilize plantings and protect with wire cages or tubex.

Next Step
Treatments:

Acceptable
Regen:

Other
Comment:

Site Condition

Proposed Start Date: 10/1 /2020



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
61 61002061-Prep	3.8	3303 - Mixed Low Density Trees	Nonstocked		Immature	SitePrep	Trenching	42141 - Planted Mixed Pine, Mixed Deciduous	Uneven-Aged	No
<p><u>Prescription</u> Use dozer/fire-plow to trench open areas of the stand and simultaneously block illegal ORV traffic. Plant red pine in trenches (may need to be done with local staff or volunteers).</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr)</p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u> Planted red pine in open areas, supplementing natural mixed-age white pine and sugar maple saplings already present.</p> <p><u>Other Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										
62 61002062-Cut	39.1	4112 - Maple, Beech, Cherry Association	Sawtimber Well	98	111-140	Harvest	Single Tree Selection	4110 - Sugar Maple Association	Uneven-Aged	No
<p><u>Prescription</u> Mark for selection harvest, taking out most of the beech. Residual BA 90. Create some CWD during harvest. Use appropriate specs/seasonal restrictions to prevent oak wilt infection in residual oak.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u> mixed hardwoods in regeneration gaps, preferably maple, basswood and cherry</p> <p><u>Other Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										
64 61002064-NF	17.2	3303 - Mixed Low Density Trees	Nonstocked		Unspecified	NonForestMgt	Fruit Tree/Shrub Planting	3205 - Mixed Upland Shrub		No
<p><u>Prescription</u> Plant site appropriate native shrubs and/or mast producing trees (white oak) for wildlife food and cover. May want to fertilize plantings and protect with wire cages or tubex.</p> <p><u>Specs:</u></p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable Regen:</u></p> <p><u>Other Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
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68	61002068-Cut	16.7	4130 - Aspen	Poletimber Well	49	Unspecified	Harvest	Clearcut with Retention	4139 - Aspen, Mixed Deciduous	Even-Aged	No
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Prescription Clearcut to 2" dbh. Retain about 5% cover of mixed tree species, including some older oak and pine. Create drumming logs during harvest
Specs: (1-2 per acre). Use appropriate specs/seasonal restrictions to prevent oak wilt infection in residual oak.

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

Acceptable Regen: predominantly aspen with some oak, white pine, and mixed hardwoods

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2020

69	61002069-Cut	31.6	4112 - Maple, Beech, Cherry Association	Sawtimber Well	98	141-170	Harvest	Group Selection	4119 - Mixed Northern Hardwoods	Uneven-Aged	No
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Prescription Group selection harvest, focusing regen patches on aspen clones and some of the mature oak; cut most of the beech; thin the rest to 90-
Specs: 100 BA. Use appropriate specs/seasonal restrictions to prevent oak wilt infection in residual oak.

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

Acceptable Regen: aspen, oak, mixed hardwoods

Other Comment: Use caution around ground water monitoring wells.

Site Condition

Proposed Start Date: 10/1 /2020

73	61002073-Cut	13.7	4139 - Aspen, Mixed Deciduous	Sawtimber Well	74		Harvest	Seed Tree with Retention	4139 - Aspen, Mixed Deciduous	Even-Aged	No
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Prescription Cut most of the aspen, leave pine and oak >10", cut all the rest to 2" dbh, except green mark some leave trees, with a higher BA retained
Specs: where aspen is absent. Result will be a patchy clearcut. Leave buffers along lake shores. Create some CWD during harvest (1-2 down trees/acre). Use appropriate specs/seasonal restrictions to prevent oak wilt infection in residual oak.

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

Acceptable Regen: predominantly aspen with mixed hardwoods and white pine

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2020



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Treatment ID	Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
74	61002074-Cut	45.1	42110 - Planted Red Pine	Poletimber Well	37	141-170	Harvest	Systematic Thinning	42110 - Planted Red Pine	Even-Aged	No
<p><u>Prescription</u> 3rd-row thin; retain hardwoods as much as possible. <u>Specs:</u> <u>Next Step</u> <u>Treatments:</u> <u>Acceptable</u> <u>Regen:</u> <u>Other</u> <u>Comment:</u> <u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2020</p>											
75	61002075-Cut	11.6	4130 - Aspen	Poletimber Well	44		Harvest	Clearcut with Retention	4130 - Aspen	Even-Aged	No
<p><u>Prescription</u> Clearcut to 2" dbh, retaining all oak and sugar maple >5" dbh, plus mark some mixed species clumps to retain (about 5% cover). Create some CWD during harvest (1-2 down trees/acre). Use appropriate specs/seasonal restrictions to prevent oak wilt infection in residual oak. <u>Specs:</u> <u>Next Step</u> Monitoring, Natural Regen (Re-Inventory) <u>Treatments:</u> <u>Acceptable</u> predominantly aspen, with maybe some oak and mixed hardwoods <u>Regen:</u> <u>Other</u> <u>Comment:</u> <u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2020</p>											
79	61002079-Cut	2.5	4130 - Aspen	Sawtimber Well	64		Harvest	Clearcut with Retention	4130 - Aspen	Even-Aged	No
<p><u>Prescription</u> Clearcut; expand a little into the adjacent RP plantation. Retain the single clump of red maple. Create some CWD during harvest (1-2 down trees/acre). <u>Specs:</u> <u>Next Step</u> Monitoring, Natural Regen (Re-Inventory) <u>Treatments:</u> <u>Acceptable</u> aspen <u>Regen:</u> <u>Other</u> <u>Comment:</u> <u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2020</p>											
81	61002081-NF	4.8	3303 - Mixed Low Density Trees	Nonstocked			NonForestMgt	Pruning	3105 - Mixed Upland Herbaceous		No
<p><u>Prescription</u> Prune remnant apple trees. Replace some of the dead apple trees with apple, crabapple, or other native fruiting shrub spp. Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover. <u>Specs:</u> <u>Next Step</u> <u>Treatments:</u> <u>Acceptable</u> <u>Regen:</u> <u>Other</u> <u>Comment:</u> <u>Site Condition</u> <u>Proposed Start Date:</u> 10/1 /2020</p>											



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
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85	61002085-NF	11.9	3301 - Low Density Deciduous Trees	Nonstocked			NonForestMgt Brushpile/Woody Debris Creation	3205 - Mixed Upland Shrub		No
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Prescription Prune remnant apple trees. Replace some of the dead apple trees with apple, crabapple, or other native fruiting shrub spp. Selectively
Specs: hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover.

Next Step
Treatments:

Acceptable
Regen:

Other
Comment:

Site Condition

Proposed Start Date: 10/1 /2020

86	61002086-NF	2.0	3105 - Mixed Upland Herbaceous	Nonstocked		Unspec ified	NonForestMgt Pruning	3105 - Mixed Upland Herbaceous		No
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Prescription Prune remnant apple trees. Replace some of the dead apple trees with apple, crabapple, or other native fruiting shrub spp. Selectively
Specs: hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover.

Next Step
Treatments:

Acceptable
Regen:

Other
Comment:

Site Condition

Proposed Start Date: 10/1 /2020

92	61002092-NF	20.0	3301 - Low Density Deciduous Trees	Nonstocked			NonForestMgt Fruit Tree/Shrub Planting	3205 - Mixed Upland Shrub		No
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Prescription Prune remnant apple trees. Replace some of the dead apple trees with apple, crabapple, or other native fruiting shrub spp. Selectively
Specs: hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover.

Next Step
Treatments:

Acceptable
Regen:

Other At north end may want to plant herbaceous species for wildlife forage needs. Consider an appropriate native species, but don't rule out
Comment: pasture mix (i.e. alfalfa/clover). Maintain as needed with mowing, seeding of native grasses and forbs, fertilizing, burning, or removal of woody encroachment.

Site Condition

Proposed Start Date: 10/1 /2020



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
93 61002093-Cut	11.5	4112 - Maple, Beech, Cherry Association	Poletimber Well	111	141-170	Harvest	Single Tree Selection	4119 - Mixed Northern Hardwoods	Uneven-Aged	No
<p><u>Prescription</u> Thin to 80 BA, removing most of the beech. Retain patches along the north edge where slope is steepest. Create some CWD during harvest.</p> <p><u>Specs:</u> Use appropriate specs/seasonal restrictions to prevent oak wilt infection in residual oak.</p> <p><u>Next Step</u> Monitoring, Natural Regen (Intermediate); Pesticide, Skidder - Release</p> <p><u>Treatments:</u></p> <p><u>Acceptable</u> Mixed northern hardwoods in regeneration gaps, although beech may dominate and need to be set back.</p> <p><u>Regen:</u></p> <p><u>Other</u> Beech regeneration will be thick after harvest; consider possible herbicide control.</p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										
94 61002094-Cut	7.4	42111 - Planted Red Pine, Mixed Deciduous	Poletimber Medium	37	111-140	Harvest	Clearcut with Retention	42110 - Planted Red Pine	Even-Aged	No
<p><u>Prescription</u> Clearcut. Retain a small (~1/2 acre) mixed-species island. Specify chipping or another technique to concentrate or reduce slash for subsequent replanting of site. Roller chop and/or site-prep herbicide if needed, then trench and plant red pine.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> SitePrep, Roller Chopping; Pesticide, Skidder - Site Prep; SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr);</p> <p><u>Treatments:</u> Monitoring, Artificial Regen(3yr)</p> <p><u>Acceptable</u> red pine</p> <p><u>Regen:</u></p> <p><u>Other</u> Retain the small, disjunct patch of planted red pine to the north.</p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										
96 61002096-Monitor	64.0	4110 - Sugar Maple Association	Sawtimber Medium	111	81-110	Monitoring	Natural Regen (Re-Inventory)	4110 - Sugar Maple Association	Uneven-Aged	No
<p><u>Prescription</u></p> <p><u>Specs:</u></p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable</u> Sugar maple, basswood, and black cherry are preferred in regeneration gaps. Ironwood and beech are less desirable, but likely components of regeneration.</p> <p><u>Regen:</u></p> <p><u>Other</u> Percent to Treat = 100%</p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2018</p>										



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
99 61002099-Cut	2.4	4131 - Aspen, Oak	Sawtimber Well	61		Harvest	Shelterwood with Retention	4139 - Aspen, Mixed Deciduous	Two-Aged	No
<p><u>Prescription</u> Cut all aspen and some oak, leaving 20-40 BA of oak and most of the maple, regenerating to aspen, oak, and maple. Create some CWD during harvest (1-2 down trees/acre). Use appropriate specs/seasonal restrictions to prevent oak wilt infection in residual oak.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable</u> aspen, oak, mixed hardwoods</p> <p><u>Regen:</u></p> <p><u>Other</u> Retain the steeper east end of the stand, which is mostly maple.</p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										
100 61002100-Cut	15.7	42110 - Planted Red Pine	Poetimber Well	37	171-200	Harvest	Systematic Thinning	42110 - Planted Red Pine	Even-Aged	No
<p><u>Prescription</u> 3rd-row thin, but exclude steepest parts of stand. Place slash as possible to thwart illegal ORV hill climbing.</p> <p><u>Specs:</u></p> <p><u>Next Step</u></p> <p><u>Treatments:</u></p> <p><u>Acceptable</u></p> <p><u>Regen:</u></p> <p><u>Other</u> Treated acreage may be reduced significantly when too-steep areas are excluded..</p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										
105 61002105-Cut	1.6	4130 - Aspen	Sawtimber Well	71		Harvest	Clearcut with Retention	4130 - Aspen	Even-Aged	No
<p><u>Prescription</u> Mark a few scattered mixed-species trees to retain; other wise clearcut to a 2" dbh limit. Create some CWD during harvest.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Natural Regen (Re-Inventory)</p> <p><u>Treatments:</u></p> <p><u>Acceptable</u> aspen</p> <p><u>Regen:</u></p> <p><u>Other</u></p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 10/1 /2020</p>										
110 61002110-Plant	12.6	3103 - Rubus-Fern	Nonstocked			Planting	Interplant	42110 - Planted Red Pine	Even-Aged	No
<p><u>Prescription</u> fill-in plant with red pine spring 2020</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr)</p> <p><u>Treatments:</u></p> <p><u>Acceptable</u> planted red pine</p> <p><u>Regen:</u></p> <p><u>Other</u> Percent to Treat = 100%</p> <p><u>Comment:</u></p> <p><u>Site Condition</u></p> <p><u>Proposed Start Date:</u> 1 /1 /2021</p>										



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Treatment Name	Acres	Stand CoverType	Size Density	Stand Age	BA Range	Treatment Type	Treatment Method	Cover Type Objective	Age Structure	Habitat Cut
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111	61002111-Spray	16.1	3103 - Rubus-Fern	Nonstocked			Pesticide	ERROR	42110 - Planted Red Pine	Even-Aged	No
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Prescription Use skidder to spray to control JP volunteers and raspberry/blackberry.

Specs:

Next Step Planting, Interplant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial Regen(3yr)

Treatments:

Acceptable planted red pine

Regen:

Other Percent to Treat = 100%

Comment:

Site Condition

Proposed Start Date: 10/1 /2018

113	61002113-Spray	29.1	310 - Herbaceous Openland	Nonstocked	0		Pesticide	ERROR	411 - Northern Hardwood	Two-Aged	No
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Prescription Herbicide to control unwanted regeneration (e.g. beech, ironwood).

Specs:

Next Step Monitoring, Natural Regen (Intermediate); SitePrep, Scarification

Treatments:

Acceptable A mix of northern hardwoods.

Regen:

Other Percent to Treat = 83%

Comment:

Site Condition

Proposed Start Date: 10/1 /2019

Total Treatment Acreage Proposed: 757.4

Report 4 – Site Conditions

Traverse City Mgt. Unit

Tim Webb : Examiner

Compartment: 2

Year of Entry: 2021

Availability for Management

Total Acres	Acres Available	Acres Avail		Dominant Site Conditions	Dominant Site Conditions									
		With Condition	Not Available		2B	2I	5B	5C	1B	1C	2F	3J	5E	
347	271	51	26	Aspen	14	2	8	27			18	8	0	
11	11	0	0	Bog										
116	91	0	26	Herbaceous Openland			0	0	23		0		2	
17	6	12	0	Jack Pine			12							
96	96	0	0	Low-Density Trees				0						
12	0	0	12	Lowland Mixed Forest	0							12		
2	2	0	0	Lowland Shrub										
39	38	0	1	Mixed Upland Deciduous									1	
710	624	64	22	Northern Hardwood	5	2	0	57	0	10	3	9		
335	315	16	5	Red Pine		16	0				5		0	
5	5	0	0	Upland Mixed Forest			0							
24	24	0	0	Urban		0	0							
33	33	0	0	Water	0			0			0	0	0	
16	16	0	0	White Pine				0						
1,764	1,531	142	91	Total Forested Acres	19	20	20	83	23	10	26	28	3	
	87%	8%	5%	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	Dominant Site Availability	Dominant Site Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	Unavailable		1C: Other dept or div proc/practices	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Walters Research Project: Long-term beech regeneration monitoring, up to 20 years (through 2039)								
2	Available		5B: Maintain for regeneration purposes	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments: Allow JP to die off and let stand succeed to hardwoods.								

Report 4 – Site Conditions

Traverse City Mgt. Unit

Tim Webb : Examiner

Compartment: 2

Year of Entry: 2021

3	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	27	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
4	Unavailable	1B: Non-DNR agency concerns (e.g. USFS)	23	Unspecified	Unspecified	Unspecified	Unspecified
Comments: capped former township landfill - no earthwork permitted per DEQ							
5	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	12	2G: Too wet (sensitive soils, does not include access issues)	Unspecified	Unspecified	Unspecified
Comments:							
6	Available	2B: Unknown if access through adjacent landowner(s) is possible	14	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
7	Available	2B: Unknown if access through adjacent landowner(s) is possible	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
8	Unavailable	2F: Too steep	21	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
Comments: bluffs surrounding Shisler Lake							

Report 4 – Site Conditions

Traverse City Mgt. Unit

Tim Webb : Examiner

Compartment: 2

Year of Entry: 2021

9	Available	5B: Maintain for regeneration purposes	2	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
10	Available	2I: Survey needed	20	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
11	Available	5B: Maintain for regeneration purposes	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
12	Unavailable	5E: Long-Term Retention	2	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
13	Unavailable	5E: Long-Term Retention	1	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
14	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	57	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
15	Unavailable	1C: Other dept or div proc/practices	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
Walters Research Project: Long-term beech regeneration monitoring, up to 20 years (through 2039)							

Report 4 – Site Conditions

Traverse City Mgt. Unit

Tim Webb : Examiner

Compartment: 2

Year of Entry: 2021

16	Unavailable	2F: Too steep	5	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							
17	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	17	2F: Too steep	Unspecified	Unspecified	Unspecified
Comments: surrounds Hart Lake and a nearby wetland							
18	Available	5B: Maintain for regeneration purposes	6	Unspecified	Unspecified	Unspecified	Unspecified
Comments:							



Report 5 – PROPOSED SPECIAL CONSERVATION AREA* (SCA) DETAILS

* This is a partial list of SCAs for this compartment. Not included are those areas identified under other Department initiatives (Natural Rivers, Deer Wintering Areas, etc.). Those will be identified in separate, future map and report products.

SCA Name	SCA Category	Detail Type	Recommendation	Acres
	Spring Wetlands Riparian Area	Riparian Area	Error	10
Comments				
nathan				



Report 6 – EXISTING SPECIAL CONSERVATION AREA DETAILS

* This is a list of SCA's for this compartment along with a 1/4 mile buffer surrounding the compartment. Refer to the Special Conservation Area Map for locations of the below listed Conservation Areas.

ERA = Ecological Reference Area
 HCVA = High Conservation Value Area
 SCA = Special Conservation Area

Conservation Area	Type	Description
SCA	Cold Water 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	Managed Site	General Comments		
1	42110 - Planted Red Pine	Poletimber Well	8.4	39	171-200	N/A	Stand has a few scattered Norway spruce.		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Pine		84	Pole/Log	8	39	Witch Hazel	Low	10 - 20 feet	Tall Shrub
Black Cherry		10	Log/Pole	10		Honeysuckle (spp.)	Low	< 5 feet	Tall Shrub
2	4199 - Other Mixed Upland Deciduous	Sawtimber Medium	5.8	85	111-140	N/A	Semi-open stand. Hardwoods are generally poor quality, multi-stemmed. Aspen is old, concentrated in the NW part of stand.		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple		35	Log/Pole	12	85	Ironwood	Medium	Variable	Sapling
Bigtooth Aspen		30	Log/XLog	16		Beech	Low	Variable	Sapling
White Pine		6	Log/XLog	14		Honeysuckle (spp.)	Trace	< 5 feet	Tall Shrub
Black Cherry		22	Log/Pole/XLog	14	85				
3	4112 - Maple, Beech, Cherry Association	Sawtimber Well	2.5	105	111-140	N/A			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple		50	Log/Pole/XLog	14	105	Sugar Maple	Low	Variable	Sapling
Beech		20	Log	14		Beech	Medium	Variable	Sapling
Bigtooth Aspen		20	Log	12	66				
Black Cherry		10	Log	14					
4	4130 - Aspen	Sawtimber Medium	1.9	52		N/A	A couple of clones of aspen on the edge of an opening.		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Bigtooth Aspen		92	Log/Pole	13	52	Sugar Maple	High	Variable	Sapling
						Ironwood	Medium	Variable	Sapling
5	500 - Water	Nonstocked	1.7			No	Stand was mostly dry last inventory cycle, now full of water.		
Sub-Canopy Species		Density	Avg. Height	Size					
Black Cherry		Trace	Variable	Sapling					
Deciduous Shrubs		Low	5 - 10 feet	Tall Shrub					
Sedges		Low	Unspecified	Non-Wood					
6	42110 - Planted Red Pine	Poletimber Well	15.8	39	141-170	N/A	2019 BAs: 150, 170, 150, 170, 190; mean 166.		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Pine		85	Pole/Log	8	39	Deciduous Saplings	Low	Variable	Sapling
Black Cherry		12	Pole/Log	8		Deciduous Saplings	Medium	< 5 feet	Seeding
7	4130 - Aspen	Sapling Well	8.6	6	1-50	N/A	Clearcut in spring 2013. Was mostly QA in lobe N of pond, rest mostly BTA. Scattered WP, cherry and maple retained, plus a few pole-size hemlock in the south patch.		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple		10	Sapling	1	6	Honeysuckle (spp.)	Low	< 5 feet	Tall Shrub
Black Cherry		6	Sapling	1	6	Deciduous Saplings	Medium	< 5 feet	Seeding
Bigtooth Aspen		60	Sapling	2	6	Black Cherry	High	5 - 10 feet	Sapling
Quaking Aspen		20	Sapling	1	6				



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments		
8	4130 - Aspen	Sawtimber Well	2.1	66		N/A			
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Bigtooth Aspen		100	Log/Pole	11	66	Sugar Maple	Full	Variable	Sapling
9	4110 - Sugar Maple Association	Sawtimber Well	40.2	109	81-110	N/A	Some decent cherry. Hemlock, yellow birch is concentrated at the north end of the stand. Marked thinning was completed spring 2013. 2019 comments: post-harvest regen is mostly beech and ironwood, but there is a good layer of sugar maple seedlings, some over 1 foot, plus some ash. BAs: 80, 60, 70, 90, 130; mean 86. There are patches of blowdown in the stand.		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple		60	Log/Pole	10	109	Sugar Maple	Medium	>20 feet	Sapling
Red Maple		10	Log	12		Hemlock	Low	Variable	Sapling
Black Cherry		20	Log/Pole	12		Ironwood	High	Variable	Sapling
						Beech	High	Variable	Sapling
10	4130 - Aspen	Sapling Medium	4.8	6	1-50	N/A	Belt of aspen between pine plantation and hardwoods was clearcut in spring 2013; mostly BTA, QA clone at north end. Scattered marked hardwoods retained: SM, AB, BC, plus some patches of SM saplings.		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple		20	Pole/Sap/Log	6		Beech	Medium	Variable	Sapling
Black Cherry		10	Sapling	1	6	Ironwood	High	Variable	Sapling
Ironwood		10	Sapling	1		Blackberry/Raspberry	High	< 5 feet	Tall Shrub
Bigtooth Aspen		57	Sapling	1	6				
11	4130 - Aspen	Sapling Well	1.5	6	1-50	N/A	Clearcut spring 2013; scattered mature hardwoods retained: SM, BC, WA, about 35 BA.		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple		20	Log	12		Deciduous Saplings	Medium	< 5 feet	Seeding
Bigtooth Aspen		80	Sapling	1	6				
12	42110 - Planted Red Pine	Poletimber Well	87.1	39	141-170	N/A	Scattered juneberry. 2019 BAs: 160, 180, 160, 150, 160, 180, 130; mean 160.		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Pine		83	Pole/Log	8	39	Deciduous Saplings	Low	>20 feet	Sapling
Black Cherry		12	Pole/Log	9		Deciduous Saplings	Medium	< 5 feet	Seeding
13	4116 - Mixed N. Hardwood - Aspen	Sawtimber Well	6.2	97	111-140	N/A	North lobe is a clone of 40 year old aspen. 2019 BAs: 130, 90,180, mean 133.		
Canopy Species		% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple		50	Log/Pole	11	97	Ironwood	Medium	Variable	Sapling
Beech		10	Log/Pole/XLog	14		Beech	Medium	Variable	Sapling
Bigtooth Aspen		30	Log/Pole	12	40				



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																												
14	3303 - Mixed Low Density Trees	Nonstocked	2.3			No	old orchard																																												
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15	42200 - Natural White Pine	Sawtimber Poor	9.4	54	51-80	N/A	Old orchard being reclaimed by limby, open-grown white pine and mixed hardwoods. Small patches of planted jack pine, black walnut at south end of stand, plus a cellar hole. Scattered beech, oak, black locust.																																												
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16	4119 - Mixed Northern Hardwoods	Poletimber Well	2.8	45	51-80	N/A																																													
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18	42110 - Planted Red Pine	Poletimber Well	24.6	29	81-110	N/A	Dense planted red pine and jack pine volunteers. 2019 BA about 100.																																												
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19	42110 - Planted Red Pine	Sawtimber Well	45.5	68	141-170	N/A	Scattered white pine and maple seedlings and saplings among the more abundant beech regen. 2019 BAs: 160, 180, 110, 130, 130, 160; mean 145. Ground water monitoring wells in the south part of the stand.																																					
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20	4112 - Maple, Beech, Cherry Association	Sawtimber Well	40.6	113	81-110	N/A	Heavy beech scale. Lots of ash snags and down logs. 2019 BAs: 120, 60, 100, 130, 90, 140; mean 107. Scattered mature basswood.																																					
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21	4199 - Other Mixed Upland Deciduous	Poletimber Well	28.3	28	51-80	N/A	2009 comments: 2-storied: remnant sugar maple and ash sawtimber over hardwood seedlings and saplings. Previous inventory indicated a failure in regeneration, but since then hardwoods have filled in fairly well. Listed canopy coverages for ash and maple show combined understory saplings and overstory seed trees. Hardwood regeneration in general order of abundance: beech, cherry, aspen (in patches), maple, ironwood, and ash. Some of the regeneration is sprouts, some from seed. 2019 comments: ironwood and beech dominate the regeneration, but a large portion of the stand is fully stocked with bigtooth aspen and cherry poles. Also, there is a significant patch of sugar maple poles and saplings in the southwest corner, which mostly predates the harvest 28 years ago. Sugar maple saplings are coming up alongside the ironwood and beech in many places, reaching 20-30' and 1-3 " dbh. Standing dead and fallen ash throughout.																																					
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22	3301 - Low Density Deciduous Trees	Nonstocked	4.0		Immature	No	TW 4/3/09- Adjacent to landfill. MK 5/18/09- Bowl-type depression. Stick nest in adjacent M-9 stand near NW corner (100-150 yards from N) TW 12/18: Maple regen halos around open-grown cherry. Let succeed to hardwoods.																																					
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23	122 - Road/Parking Lot	Nonstocked	17.4			No	M-72, MDOT parking lot, Bright Rd, and Ruthardt Rd.																																					
24	42111 - Planted Red Pine, Mixed Deciduous	Poletimber Well	31.8	37	171-200	N/A	Ground water monitoring wells within stand. 2018 BAs: 190, 170, 190, 200, 190; mean 188.																																					
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MK 5/18/09- This stand is a depression possibly caused by removing soil to cap nearby dump site. Scattered walnut near road.																																
Trenched summer 2013; planted spring 2014; regen check June 2016. 2018: RP well stocked, free to grow.																																
26	4112 - Maple, Beech, Cherry Association	Sawtimber Well	3.4	98	111-140	N/A	2018 BAs: 90, 170, 110: mean 123.																									
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27	4117 - Mixed N. Hardwood - Pine	Poletimber Poor	31.8	52	51-80	N/A	Part of former landfill property. Some old infrastructure remaining (fencing, pole barn, powerline, water well). Scattered old apple trees, white pine, basswood. Black walnut grove along west side of stand. Denser trees, more conifers at south end of stand.																									
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28	3105 - Mixed Upland Herbaceous	Nonstocked	23.3		Immature	No	TW 4/1/09- Old landfill site. Appears to be poor grass/weeds in snow-free patches.																									
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MK 5/18/09- Few scat RP and JP with scat A. Olive. Small aspen clone along west edge. Recommend one monitoring well.																																
29	3102 - Grass	Nonstocked	3.7			No																										
30	4139 - Aspen, Mixed Deciduous	Sawtimber Well	13.0	59	111-140	N/A	Stand is mixed aspen clones and patches of variously sized hardwoods, plus a +/- 1 acre patch of well stocked hardwood saplings in the south end of the stand. 2019 BAs: 190,																									
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																								
31	4110 - Sugar Maple Association	Sawtimber Well	4.9	98	141-170	N/A	Numerous multi-stemmed trees. 2018 BAs: 130, 190, 130, 190; mean 160.																																								
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32	4112 - Maple, Beech, Cherry Association	Sawtimber Well	24.0	98	111-140	N/A	2018 BAs: 70, 130, 150, 130, 110; mean 118.																																								
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33	4130 - Aspen	Sawtimber Well	11.6	58	Unspecified	N/A																																									
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34	3301 - Low Density Deciduous Trees	Nonstocked	9.3			No	TW 4/3/09- There are numerous ground water monitoring wells within the stand. MK 5/18/09- Heavy equipment tracks. Monitoring wells and equipment. Center of stand is drainage. 2 tracks rim the northern edge. Aspen regen.																																								
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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35	31021 - Cool Season Grass	Nonstocked	6.5			No	ORV damage				
								Sub-Canopy Species	Density	Avg. Height	Size
								Quaking Aspen	Low	>20 feet	Pole
								Deciduous Saplings	Low	Variable	Sapling
								Black Cherry	Trace	>20 feet	Pole
								Honeysuckle (spp.)	Trace	< 5 feet	Tall Shrub
								Scotch Pine	Trace	5 - 10 feet	Sapling
								White Pine	Trace	5 - 10 feet	Sapling
								White Pine	Trace	>20 feet	Pole
								Sugar Maple	Trace	>20 feet	Pole

36	3301 - Low Density Deciduous Trees	Nonstocked	6.0		Unspecified	No	TW 4/3/09- Hardwoods reclaiming an old field. MK 5/14/09- Buck rubs in aspen. Grass spp along highway, much more forested than 54. Scat aspen clones 2-3				
								Sub-Canopy Species	Density	Avg. Height	Size
								Sugar Maple	Low	>20 feet	Pole
								Black Cherry	Low	Variable	Sapling
								White Pine	Trace	>20 feet	Log
								Pines (spp.)	Low	Variable	Sapling
								Serviceberry (Juneberry)	Trace	5 - 10 feet	Tall Shrub
								Sugar Maple	Low	Variable	Sapling
								Black Cherry	Low	>20 feet	Pole
								Common Or Ground Juniper	Trace	< 5 feet	Tall Shrub
Quaking Aspen	Trace	>20 feet	Pole								

37	4111 - S.Maple, Hard Mast Association	Sawtimber Well	61.1	96	111-140	N/A	Aspen is in scattered patches. 2009 BA measurements: 140, 190, 140, 130, 80, 170, 120, 110, 90, 70; mean 124 (these BAs were for formerly combined stands 37 & 112). 2019 BAs: 100, 130, 130, 120, 110, 110, 90; mean 113. Small amounts of red maple, cherry.					
								Canopy Species	% Cover	Size Class	DBH	Age
								Sugar Maple	50	Log/Pole	10	96
								Basswood	20	Log/Pole	12	
								Beech	10	Log/Pole	12	
Bigtooth Aspen	20	Log	13									
Sub-Canopy Species	Density	Avg. Height	Size									
Sugar Maple	Medium	>20 feet	Sapling									
Beech	Medium	Variable	Sapling									
Ironwood	High	Variable	Sapling									

38	31021 - Cool Season Grass	Nonstocked	2.3			No				
							Sub-Canopy Species	Density	Avg. Height	Size
							Black Cherry	Trace	>20 feet	Pole
							Aspen (spp.)	Low	5 - 10 feet	Sapling
							Deciduous Saplings	Trace	Variable	Sapling
Honeysuckle (spp.)	Trace	< 5 feet	Tall Shrub							

39	122 - Road/Parking Lot	Nonstocked	5.4			No	Maple City and Davis Lake Rds.
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																									
40	42110 - Planted Red Pine	Sawtimber Medium	16.4	68	111-140	N/A	Post-harvest BA = 115. 2009 heights: 61' on 11" dbh tree; 66' on 10" dbh tree. Thinned fall 2013. 2018: not ready for another thinning yet, except maybe the east-most strip. BAs: 180, 180, 120, 120, 100, 120, 90, 120; mean 129; higher BAs in east-most strip.																																									
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41	42120 - Planted Jack Pine	Poletimber Poor	6.0	68		N/A	Significant storm damage. 2009 heights: 60' on 8" dbh tree; 57' on 8" tree. 2018: mostly dead, dying, or down. Although beech is probably in the majority in the understory, there is enough sugar maple regeneration to just let this stand succeed to hardwoods.																																									
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42	4130 - Aspen	Sapling Medium	16.3	5	1-50	N/A	Clearcut in fall 2013; scattered residual mature hardwoods and pockets of sugar maple saplings.																																									
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43	42121 - Planted Jack Pine, Mixed Deciduous	Poletimber Medium	5.8	68	81-110	N/A	Very poor quality JP.																																									
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44	42110 - Planted Red Pine	Sawtimber Medium	21.1	68	81-110	N/A	Stand includes brushy patches of mixed hardwood and pine saplings/poles of younger age. West part of stand (about 3 acres) is planted WP, thinned in 2013. Strong push toward hardwood in understory. 2009 RP heights: 64' on 11" dbh tree; 64' on 11" dbh tree. 2009 height of WP: 54' on 9" dbh 45 year old tree. 2018 BAs: 150, 120, 80, 50, 150, 140 (in WP); mean 115.																																									
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45	4319 - Mixed Upland Forest	Poletimber Medium	5.2	60	51-80	N/A	Hardwoods and pine volunteers reclaiming an old field.																																									
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46	4130 - Aspen	Poletimber Well	11.6	28	Immature	N/A	Scattered mature red oak. The middle patch (~ 1.2 acres, just east of gate) is an inclusion of mature aspen - this is where the log-sized aspen is in the stand; could be harvested.																																			
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47	500 - Water	Nonstocked	4.3			No	Hart Lake. 2018: Was mostly emergent wetland last inventory period; now full of water.																																			
48	4112 - Maple, Beech, Cherry Association	Sawtimber Medium	64.1	100	81-110	N/A	Several semi-open patches/draws within stand, and north finger, have pole aspen with mixed hardwood seedlings and saplings. A 29-acre block was seed-tree harvested out of this stand in fall 2017. 2018 BAs: 140, 60, 110, 100, 110; mean 104. Narrow finger of the stand east of stand 113 is mostly mature oak.																																			
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49	31021 - Cool Season Grass	Nonstocked	3.5		Unspecified	Managed Opening	Wildlife rye field.																																			
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50	4130 - Aspen	Poletimber Well	41.9	44	Unspecified	N/A	Scattered hemlock.																																			
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51	42110 - Planted Red Pine	Sawtimber Well	9.8	68	141-170	N/A	2009 heights: 60' on 11" tree, 59' on 12" tree. Marked thinning completed fall 2013. 2018 BAs: 150, 120, 150, 160; mean 145.																																			
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52	42120 - Planted Jack Pine	Poletimber Medium	5.6	68		N/A	2009 heights: 47' on 8" tree, 43' on 8" tree. JP limby, substantial storm damage. 2018: lots of mortality, blowdown.																																			
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53	4110 - Sugar Maple Association	Poletimber Poor	5.6	53	1-50	N/A	Trees of various ages overtaking an old field. Scattered black walnut poles. Mixed pine saplings = white, jack, and red pine.																																								
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54	4110 - Sugar Maple Association	Poletimber Poor	12.3	60	1-50	N/A	TW 4/13/09- Hardwoods reclaiming an old field. MK 5/14/09- This stand should be u-type. Scat Juniper, more cherry and juneberry than anything.																																								
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55	4110 - Sugar Maple Association	Poletimber Medium	13.4	98	81-110	N/A	Thinned fall 2015. Some blowdown occurred between sale prep and harvest. Blowdown was salvaged during harvest, including some on adjacent landfill property (stumpage paid to Glen's Landfill for their portion by the logger).																																								
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56	500 - Water	Nonstocked	0.9			No	MK 5/14/09- Frost Pocket, stand is small frost pocket. 2018: stand is now filled in with water. Box duck blind on edge.																																								
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57	4111 - S.Maple, Hard Mast Association	Sawtimber Medium	7.6	98	81-110	N/A	The denser NE part of the stand was thinned in fall 2015. Scattered hemlock. SW corner is younger stock with a patch of walnut.																																								
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58	500 - Water	Nonstocked	1.2			No	2018: was emergent wetland in previous inventory, now full of water.																																								
59	4110 - Sugar Maple Association	Sawtimber Medium	11.6	107	51-80	N/A	All ash, most beech, and some maple removed in summer 2013 salvage cut for EAB/BBD. Scattered cherry, aspen.																																								
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60 3301 - Low Density Deciduous Trees Nonstocked 11.8 Unspecified No MK 5/14/09- Near M-72

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Low	Variable	Sapling
Sugar Maple	Low	>20 feet	Pole
Common Or Ground Juniper	Trace	< 5 feet	Tall Shrub
Red Pine	Trace	Variable	Sapling
Serviceberry (Juneberry)	Trace	5 - 10 feet	Tall Shrub
White Pine	Trace	Variable	Sapling
Black Cherry	Low	>20 feet	Pole
Staghorn Sumac	Trace	5 - 10 feet	Tall Shrub
Honeysuckle (spp.)	Trace	< 5 feet	Tall Shrub
Autumn Olive	Trace	5 - 10 feet	Tall Shrub
Bigtooth Aspen	Low	>20 feet	Pole

61 3303 - Mixed Low Density Trees Nonstocked 3.8 Immature No MK 5/18/09- 2-3 Scattered walnut. 2 tracks and hill climbs zig-zag this stand. May want to block access.

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Low	Variable	Sapling
White Pine	Low	Variable	Sapling
Black Cherry	Low	>20 feet	Pole
White Pine	Trace	>20 feet	Log
Sugar Maple	Low	>20 feet	Log
White Pine	Medium	>20 feet	Pole

2018 comments: succeeding to WP/SM.

62 4112 - Maple, Beech, Cherry Association Sawtimber Well 39.1 98 111-140 N/A

Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	45	Log/Pole	10	98
Red Maple	15	Log	12	
Basswood	7	Log	14	
Beech	20	Log/Pole/XLog	14	

Sub-Canopy Species	Density	Avg. Height	Size
Beech	High	Variable	Sapling
Ironwood	High	Variable	Sapling

Fairly heavy beech and ironwood seedling/sapling layer resulting from previous thinning. Good quality hardwoods. 2018 BAs: 110, 110, 70, 110, 160, 140, 140; mean 120. Standing dead ash.

63 4131 - Aspen, Oak Poletimber Well 15.3 28 Immature N/A 2- storied: remnant oak over mixed deciduous poles & saplings.

Canopy Species	% Cover	Size Class	DBH	Age
Beech	20	Sapling	3	
Red Oak	20	XLog/Log	20	91
Bigtooth Aspen	50	Pole/Sapling	5	28

Sub-Canopy Species	Density	Avg. Height	Size
Ironwood	High	Variable	Sapling
Beech	High	10 - 20 feet	Sapling
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																												
64	3303 - Mixed Low Density Trees	Nonstocked	17.2		Unspecified	No	Small seasonal wetland in SW lobe.																																												
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65	4110 - Sugar Maple Association	Sawtimber Medium	37.2	104	51-80	N/A	Numerous cavity trees. Contains old beech monitoring plots. Selection harvest completed Dec. 2014; most of beech was removed during harvest. Stand suffered substantial windthrow from August 2015 windstorm.																																												
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66	500 - Water	Nonstocked	6.3			No	Cook Lake																																												
67	4111 - S.Maple, Hard Mast Association	Sawtimber Medium	7.4	96	81-110	N/A	Scattered cherry, ash, ironwood and hemlock. Thinned in late winter 2012. 2019 BA about 100.																																												
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68	4130 - Aspen	Poletimber Well	43.3	49	Unspecified	N/A	Scattered beech, birch, and cherry.																																												
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69	4112 - Maple, Beech, Cherry Association	Sawtimber Well	43.8	98	141-170	N/A	Patches of mature aspen. Ground water monitoring wells in west part of stand. 2018 BAs: 130, 200, 120, 130, 120, 190; mean 148. Scattered yellow birch. A significant part of the stand is on steep slopes adjacent to a wetland and Hart Lake; some hemlock on the slopes.																																												
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70	4111 - S.Maple, Hard Mast Association	Sawtimber Medium	10.2	96	51-80	N/A	Most of the stand was thinned in late winter 2012. Canopy gaps are choked with beech regeneration. 2018 BAs: 40, 110, 80; mean 77.																																									
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71	500 - Water	Nonstocked	9.5			No	Shisler Lake																																									
72	4130 - Aspen	Sawtimber Well	17.8	94		N/A	Stand is on steep slopes surrounding Shisler Lake. Birch is dying out. Scattered white pine.																																									
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73	4139 - Aspen, Mixed Deciduous	Sawtimber Well	16.2	74		N/A	West end of stand was clearcut in fall 2015; that part is now stand 115.																																									
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74	42110 - Planted Red Pine	Poletimber Well	45.6	37	141-170	N/A	2019 BAs: 160, 190, 180, 180, 230; mean 188.																																									
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75	4130 - Aspen	Poletimber Well	11.6	44		N/A	Scattered red oak, sugar maple, and paper birch.																																									
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																								
77	4110 - Sugar Maple Association	Poletimber Well	2.6	46	1-50	N/A	Narrow strip of hardwoods between RP plantation and private property.																																								
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78	3302 - Low Density Conifer Trees	Nonstocked	1.7		Immature	No	MK 5/18/09- Nice grass component. Aspen has grown in fairly well. Could possibly use as habitat winter cut.																																								
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79	4130 - Aspen	Sawtimber Well	2.0	64		N/A																																									
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80	3105 - Mixed Upland Herbaceous	Nonstocked	1.3			No	Box blind on east edge.																																								
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81	3303 - Mixed Low Density Trees	Nonstocked	6.6			Managed Opening	Old orchard. Old cellar hole at north end.																																								
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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82	122 - Road/Parking Lot	Nonstocked	0.9			No	Tager Road
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83	42201 - Natural White Pine, Mixed Deciduous	Sawtimber Well	6.5	58	81-110	N/A	Probably was cut at the same time as the stand to the east, but with a much larger residual white pine component. WP looks multi-aged, with some large veteran trees toward the south end of the stand. 2018 BAs: 110, 70, 150; mean 110. WP is limby.
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Canopy Species	% Cover	Size Class	DBH	Age
Red Maple	7	Pole/Sap/Log	8	35
Red Oak	10	Log/Pole	10	
Bigtooth Aspen	8	Pole	7	35

Sub-Canopy Species	Density	Avg. Height	Size
Ironwood	Low	Variable	Sapling
Sugar Maple	High	Variable	Sapling

84	500 - Water	Nonstocked	2.1			No	north bay of Shorter Lake
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85	3301 - Low Density Deciduous Trees	Nonstocked	11.9			Managed Opening	
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Sub-Canopy Species	Density	Avg. Height	Size
Basswood	Trace		Log
Apple (spp.)	Trace		Tall Shrub
White Pine	Trace		Log
Sugar Maple	Low		Pole
White Pine	Trace		Sapling
Black Cherry	Low		Pole
Sugar Maple	Low		Sapling
Balsam Poplar	Low		Pole
Staghorn Sumac	Trace	< 5 feet	Tall Shrub
Common Or Ground Juniper	Trace	< 5 feet	Tall Shrub

86	3105 - Mixed Upland Herbaceous	Nonstocked	2.0		Unspecified	Managed Opening	Old homestead site; foundations present. ORV damage.
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Sub-Canopy Species	Density	Avg. Height	Size
Apple (spp.)	Trace	10 - 20 feet	Tall Shrub
Common Lilac	Trace	5 - 10 feet	Tall Shrub
Deciduous Saplings	Low	Variable	Sapling
Staghorn Sumac	Low	< 5 feet	Tall Shrub

87	4110 - Sugar Maple Association	Poletimber Medium	14.3	51	51-80	N/A	Uneven-aged maples reclaiming an old orchard/field; belt of old cottonwoods along the road. 2018 BAs: 70, 70, 50, 60; mean 62.
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Canopy Species	% Cover	Size Class	DBH	Age
Sugar Maple	90	Pole/Sap/Log	6	51
Cottonwood	6	XLog/Log	20	

Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	Medium	Variable	Sapling
Apple (spp.)	Trace	10 - 20 feet	Tall Shrub
White Pine	Trace	Variable	Sapling
Common Or Ground Juniper	Trace	< 5 feet	Tall Shrub



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88	4130 - Aspen	Poletimber Well	91.3	35	Unspecified	N/A	Scattered pin cherry poles.																																												
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89	6225 - Bog	Nonstocked	2.4		Immature	No																																													
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91	6225 - Bog	Nonstocked	1.6			No	Multi-part stand. Smaller unit (SE) has no leatherleaf, just graminoids.																																												
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Leatherleaf	Full	< 5 feet	Tall Shrub																																																
92	3301 - Low Density Deciduous Trees	Nonstocked	20.1			No	Most of this stand is an abandoned orchard, quite hilly.																																												
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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93 4112 - Maple, Beech, Cherry Association Poletimber Well 12.9 111 141-170 N/A 2018 BAs: 130, 150, 110,180; mean 142.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	40	Pole/Log	9	111	Sugar Maple	Low	Variable	Sapling
Red Maple	10	Log/Pole	12		Beech	Low	>20 feet	Pole
Basswood	8	Log	12		Beech	High	Variable	Sapling
Beech	34	Pole/Log	9		Hemlock	Low	>20 feet	Pole
					Hemlock	Low	10 - 20 feet	Sapling

94 42111 - Planted Red Pine, Mixed Deciduous Poletimber Medium 7.8 37 111-140 N/A Old, poor looking apple trees remain from a former orchard. 2018 BAs: 70, 130, 210; mean 137. Numerous ash still alive in 12/18, but EAB is present. Numerous multi-stemmed RP, somewhat limby.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	15	Pole/Log	9		Apple (spp.)	Trace	10 - 20 feet	Tall Shrub

95 500 - Water Nonstocked 6.8 No Shorter Lake

96 4110 - Sugar Maple Association Sawtimber Medium 70.7 111 81-110 N/A Stand was select cut over an extended period between Oct. 2013 and Dec. 2015, involving 4 different logging crews. Some blowdown occurred in the interim between logging crews; partly cleaned up by the final crew. Some blowdown remains, plus a fair amount of unprocessed cut material lost in snow by one of the crews. Thus there is plenty of woody debris. Any unharvested ash is now dead. Quite hilly.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	80	Log/Pole	10	111	Sugar Maple	Low	>20 feet	Pole
Basswood	15	Log	14		Beech	Medium	5 - 10 feet	Sapling
					Ironwood	Low	Variable	Sapling

97 6225 - Bog Nonstocked 5.3 No

Sub-Canopy Species	Density	Avg. Height	Size
Leatherleaf	Full	< 5 feet	Tall Shrub

98 4130 - Aspen Sawtimber Medium 6.2 58 Unspecified N/A Aspen declining; well-stocked hardwood understory. Stand is in a valley.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Quaking Aspen	63	Log/Pole	11	58	Sugar Maple	High	Variable	Sapling
Black Cherry	25	Pole/Log	8		Red Maple	Medium	Variable	Sapling
					Ironwood	High	Variable	Sapling
					Beech	Low	Variable	Sapling

99 4131 - Aspen, Oak Sawtimber Well 2.9 61 N/A

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Sugar Maple	10	Pole/Sap/Log	7		Sugar Maple	High	Variable	Sapling
Red Oak	35	Log/Pole	10					
Bigtooth Aspen	55	Log/Pole	13	61				



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																																			
100	42110 - Planted Red Pine	Poletimber Well	20.5	37	171-200	N/A	2009 comments: Parts of the stand are on steep hills with illegal ORV damage. 2018: BAs 190, 170, 170, 180, 160, 200; mean 178.																																																			
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101	4139 - Aspen, Mixed Deciduous	Sawtimber Well	14.2	68	141-170	N/A	Stand not visited in 2018. Inventory data are from previous inventory, not updated.																																																			
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102	3301 - Low Density Deciduous Trees	Nonstocked	1.7		Immature	No	steep hillside																																																			
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103	3105 - Mixed Upland Herbaceous	Nonstocked	4.1			No	MK 5/14/09- Illegal hill climb area. Stand is mostly a drainage with steep sloping sides. Maple is filling in.																																																			
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105	4130 - Aspen	Sawtimber Well	1.6	71		N/A																																																				
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106	6132 - Mixed Lowland Forest with Cedar	Sawtimber Well	11.7	116	141-170	N/A	Sidehill-swamp and floodplain with numerous seeps. The east boundary is an old rail grade. There is a foot bridge across the creek near the south end of the stand.																																																			
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																													
107	629 - Mixed non-forested wetland	Nonstocked	1.8			No	Dead trees, sparse live trees, and brush along Cedar Run Creek.																																													
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108	4119 - Mixed Northern Hardwoods	Sawtimber Well	4.9	120	111-140	N/A	Scattered basswood and cherry. 2018 BAs: 110, 170, 110; mean 130.																																													
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109	4111 - S.Maple, Hard Mast Association	Sawtimber Medium	79.9	101	81-110	N/A	Beech scale is heavy. Thinned in late winter 2012, sustained fairly heavy skidding damage due to unseasonably warm weather and unexpected sap rise in trees. 2018 BAs: 60, 110, 100, 130, 100, 50, 80; mean 90. Scattered small patches of aspen regeneration.																																													
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110	3103 - Rubus-Fern	Nonstocked	13.3			42110 - Planted Red Pine	Old homestead in opening, SW corner of stand. 2009 heights: 61' on 11" dbh tree; 66' on 10" dbh tree. Formerly JP/RP strip plantation; clearcut in fall 2013, roller chopped to eliminate JP volunteers 6/2017, trenched 6/2017, planted 6/2018. 1st year regen check 10/18: 40-50% mortality on RP. JP returning despite roller chopping to eliminate it, especially in former JP plantation strips. Surviving RP generally free to grow, but threatened by returning JP.																																													
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111	3103 - Rubus-Fern	Nonstocked	18.2			42110 - Planted Red Pine	Heights: 60' on 11" tree, 59' on 12" tree. Formerly JP/RP strip plantation; clearcut in fall 2013; roller chopped 6/2017, trenched 6/2017, planted spring 2018. Mixed RP/JP/mixed hardwoods retained in a band along the south edge. Oct. 2018 regen check: About 50% mortality on RP; JP returning despite attempted elimination via roller chopping. Surviving RP about 70% free to grow, but this will get worse as JP volunteers continue to emerge and grow.																																													
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																				
112	4110 - Sugar Maple Association	Sawtimber Medium	55.0	96	81-110	N/A	Selection harvested in 2013-14; most of the ash was cut. 2019 BAs: 120, 100, 50, 100, 110, 90, 130; mean 100. Dead/down ash.																																				
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113	310 - Herbaceous Openland	Nonstocked	29.1	0		411 - Northern Hardwood	Seed tree harvested in fall 2017 with whole-tree chipping, to be followed by herbicide application and mechanical scarification. Part of an MSU research project. 6 to 8 trees per acre left as seed trees: sugar maple, some oak, other misc. species.																																				
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114	42210 - Natural Red Pine	Poletimber Poor	1.1	22	1-50	N/A	Red pine volunteers filling in a field.																																				
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115	4130 - Aspen	Sapling Well	2.4	4	1-50	N/A	Clearcut fall 2015, scattered mature oak and white pine retained.																																				
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117	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	4.7	83	81-110	N/A	West lobe is mostly mature white pine; east side mixed oak and hardwoods. 2018 BAs: 120, 100, 80, 70, 50; mean 84.																																				
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