



# Compartment Review Presentation

## Traverse City Forest Management Unit

Compartment 61040

Entry Year 2021

Acreage: 2,334

County Grand Traverse

Management Area: Williamsburg Moraine

**Revision Date:** 2019-06-11

**Stand Examiner:** Pat Ruppen

### Legal Description:

T27N- R9W, Sections 1, 11, 12, 13, 14, 23, 24.

### Identified Planning Goals:

This Compartment is within the Boardman Plains Management Area. Vegetation management in the Boardman Plains management area (MA) will provide forest products; maintain or enhance wildlife habitat; protect areas of unique character including the Boardman River (a designated natural river) and the Sand Lakes Quiet area (a designated high conservation value area), threatened, endangered and special concern species; and provide for forest-based recreational uses. Timber management objectives for this 10-year planning period include improving the age-class structure of aspen; increasing regeneration of oak; working toward balancing the red pine age-class structure; continuing emphasis on managing the northern hardwood resource for stand quality, age, and species diversity; wildlife values; and continued production of wood products. Wildlife habitat management objectives include perpetuating early-successional communities for species adapted to young forests for hunting and other wildlife-related recreation opportunity. The main focus of management of this compartment is Habitat/Vegetative-intensive timber management. This compartment has some of the most productive sites on the Traverse City Forest Management Unit. Excellent stands of northern hardwoods, oak, aspen and red pine can be found here. Visual considerations are important along Sand Lakes Road which forms the border with the Sand Lakes Quiet Area and along Broomhead Road. This compartment is located on two Land Type Associations (LTA).

The northern 2/3 of the compartment is in sub-section VII 5.1 LTA 1122 which characterizes steep broken end moraine ridges with well drained sands and loamy sands. These were primarily dominated by northern hardwood forests with beech and sugar maple associates in pre-settlement times. Dry Mesic stands of red pine, white pine, oak, beech and red maple were found where fires spread off the outwash plain to the south and limited the development of northern hardwoods. The Kotar classification for much of this part of the compartment is AFO/AFOCa. This type is classified as mesic/rich to very rich nutrient and includes the most productive soils in the region. Current stands reflect the productivity of these sites with goods quality northern hardwood stands. Attention should be given to these hardwood stands to release crop tree from crown competition to maintain growth and vigor. Also present are some productive red pine plantations started on abandoned agricultural fields. These stands should be thinned as need to maintain growth and vigor. A portion of this acreage should be harvested and either replanted or allowed to convert to hardwoods. The southern 1/3 of this compartment is located on sub-section VII.2 LTA 5111. This LTA characterizes Steep ice contact ridges with extensive glacial outwash plains. These soils are typically excessively drained sands and were wildfire was a common occurrence. Forests dominated by white pine and other conifers mixed with oak dominated the less fire prone sections of this type. This part of the compartment is dominated by fire generated stands of oak, pine and aspen. The oak is generally low quality and stagnant with a white pine understory. Due to the lack of wildfire, white pine is attempting to reestablish on these sites. Attention should be give to thinning some of these oak stands to increase vigor and allow the white pine understory to grow through to the canopy. Well formed oak should be retained for mast production and to shelter the white pine. The short-lived jack pine and aspen components of these stands are aging and declining and some should be salvaged and regenerated.

### Soil and topography:

Kalkaska-Mancelona Association in N2/3 of Compartment. Level to steep well drained sands and loamy sands. Rubicon Grayling Association in S1/3. Level to steep droughty sands.

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

State ownership is fairly solid with some blocks of private holdings. State lands surround the compartment except on the northwest and north sides, which are private. Heavy development on the north.

### Unique Natural Features:

The Roots Lake Northern Fen is classified as an Ecological Reference Area (ERA) in the statewide Biodiversity Management System.

### Archeological, Historical, and Cultural Features:

SHPO flagged section 23. Also old homestead noted in section 14 at intersection of Roots Lake Rd. and Broomhead Road. Three known sites within the compartment: 20GT142 (stands 68 and 83), 20GT143 (stands 45 and 49) and 20GT145 (stand 45). I did not see any treatments proposed in these areas, so I have no concerns. However, the sites should be avoided should this change.

### **Special Management Designations or Considerations:**

Roots Lake Northern Fen. See ERA management guidance. Headwaters of Battle Creek in section 11.

### **Watershed and Fisheries Considerations:**

This compartment contains Battle Creek, which is a Designated Trout Stream, and a variety of kettle lakes. Do not harvest any trees in riparian areas that have the potential to provide woody structure or shade to the streams or lakes within this compartment.

### **Wildlife Habitat Considerations:**

Compartment 40 is situated on a series of steep moraine ridges with well drained soils north of the utility corridor that transects this piece of State Land. This type of geology typically supported beech/maple forests. Much of the current cover types consist of northern hardwoods with scattered oaks, several pine plantations, some aspen, and some forest openings. Care should be taken to maintain age and tree species diversity within the northern hardwood stands, and over this landscape. Hardwood treatments should also save mature oaks, or other mast producing species for denning, nesting, and roosting trees. Forest interior species utilize large tracts of hardwoods with relatively few and/or small canopy gaps. When treating such tracts care should be taken in designing the treatment to prevent fragmentation and too much access by edge predators to the forest interior. Many species of wildlife utilize mature northern hardwoods, such as scarlet tanagers, gray fox, four toed salamanders, Eastern gray squirrel, white-tail deer, and wild turkeys.

Wildfires did occasionally make their way from adjacent outwash plains onto these glacially formed ridges, potentially creating pockets of earlier successional communities on the moraine edges. Little bluestem is found in most openings and is a major component of several openings, which are proposed for burning to promote the native grasses. The openings found in this compartment are of multiple origins, including frost pockets, homesteads, timber activity, and fossil fuel production. Some openings, deprived of various natural disturbances, have been proposed for maintenance projects. Many wildlife species take advantage of these natural and man-made openings, including white-tail deer, red fox, cottontails, Eastern garter snakes, and broad-winged hawks.

Wildfire was a common natural disturbance of the sandy outwash plains, found south of the utility corridor in this compartment. Consequently, many of the communities found here are comprised of fire dependant species. Present habitat types include oak, aspen, and pine communities. Some patches of hardwoods exist on the sites less prone to fire. Aspen cuts as well as other treatments should be designed to mimic wildfires of various intensities in order to promote a variety of successional stages and age classes of pine-oak-aspen forest and grass-shrub openings. Harvests should incorporate retention of snags, downed logs, and sturdy mature leave trees to mimic natural disturbances and improve wildlife habitat.

This compartment is within the Williamsburg Moraines Management Area (MA) of the Regional State Forest Management Plan. Featured wildlife species and their habitat niches for this MA include Marten, woodcock, beaver, bear, black-throated blue warbler, eastern massasauga rattlesnake, mallard, pileated woodpecker, turkey, deer, wood thrush, and wood duck.

### **Mineral Resource and Development Concerns and/or Restrictions**

COMPARTMENT 40 Sections 1, 11-14, & 23-24, T27N-R9W, Grand Traverse County

The nearest active sand/gravel production is located three miles to the northeast. There appears to be good sand potential within the compartment. The compartment is located along the north edge of the prolific Guelph (Niagaran) reef trend. Approximately half the compartment is currently leased and held by production. However, there are no actively producing wells within the compartment. Additional reefs could be found beneath the compartment, and there may be potential for Antrim Shale gas development in this area. Oil & gas potential is considered high. There is no known metallic mineral potential in this part of the state.

### **Vehicle Access:**

Access from county roads and two tracks is generally good. Areas of the compartment have poor quality sandy two tracks with topographic challenges.

### **Survey Needs:**

### **Recreational Facilities and Opportunities:**

Sand Lakes Quiet area is located on south border of compartment. A portion of the Boardman Valley Snowmobile Trail traverses compartment.

### **Fire Protection:**

DNR initial attack fire protection is from the Kalkaska Field Office until Traverse City units arrive on scene. Access to this area is acceptable, with the exception of Sand Lakes Quiet Area in sections 23 and 24. This area is gated and locked. Sand Lakes Quiet Area receives heavy dispersed camping, and this can mean problems with campfires. There is also hiking/mountain biking within Sand Lakes. Urban interface is not much of a concern. This compartment is a mixed cover type. The very southern portions of sections 23 and 24 fall within Zone 6 which on a High Fire Danger day or above, means additional DNR fire units from Manton, Platte River, Ewart, and Grayling shift towards the Zone. VFD fire protection is from the Williamsburg Volunteer Fire Department.

**Additional Compartment Information:**

Heterobasidial Root Disease has been detected in Stand 83 and also addition red pine stands in the compartment to the west. Pine treatment within a mile buffer area must use appropriate HRD restrictions and specifications. One natural white pine stand will be harvested and planted with red pine. Other pine stands will be thinned or harvested leaving seed trees for natural regeneration. One low quality oak stand will be harvested and re-planted with red pine. Another oak stand will be harvested and left to regenerate naturally. Aspen stands of various ages are found in this compartment. Some of the stands that are nearing rotation age will be harvested to balance the age class distribution found in this Management Area

**The following reports from the Inventory are attached:**

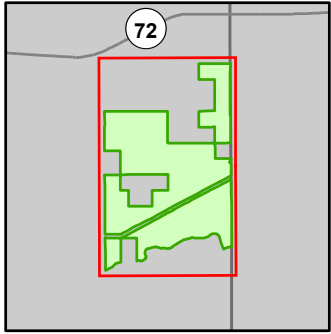
- Total Acres by Cover Type and Age Class**
- Cover Type by Harvest Method**
- Proposed Treatments – No Limiting Factors**
- Proposed Treatments – With Limiting Factors**
- Stand Details (Forested and Nonforested)**
- Dedicated and Proposed Special Conservation Areas**
- Site Condition Details**

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

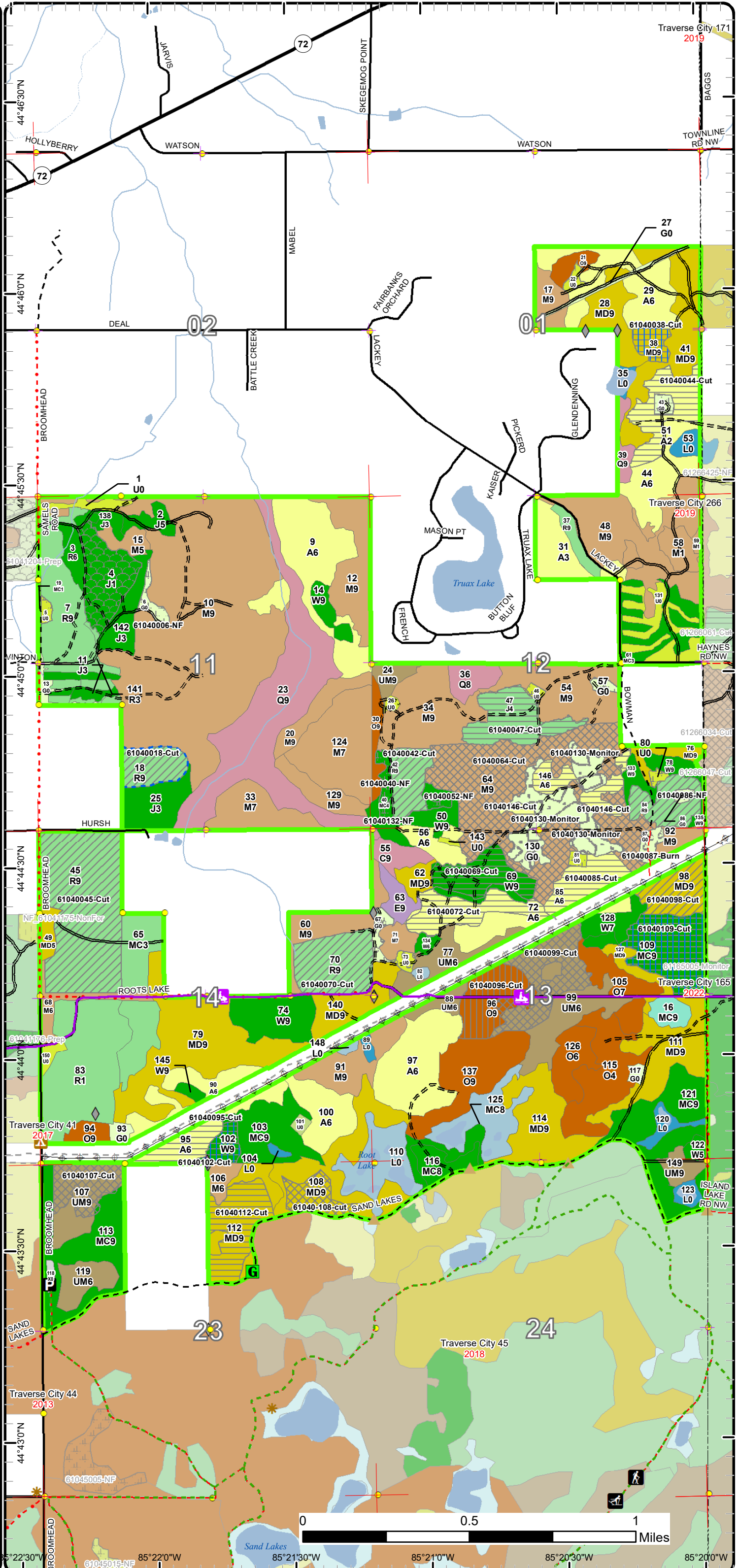
- Base feature information, stand boundaries, cover types, and numbers**
- Proposed treatments**
- Site condition boundaries**
- Details on the road access system**

# Cover Type & Treatments Map

Compartment: 40  
 T27N, R09W, Sec. 1, 11-14, 23, 24  
 County: Grand Traverse  
 Unit: Traverse City  
 Mgmt Area: Williamsburg Moraine  
 YOE: 2021  
 Acres: 2,334 GIS Calculated  
 Examiner: Pat Ruppen  
 Map Revised: 11/4/2019  
 Map Phase: Post Review



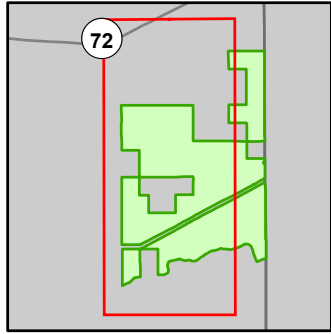
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- Remonumented Section Corners
- Survey Grade Corners
- Field Grade Corners
- Counties
- DNR - Secondary Forest Road
- DNR - Forest Access Route
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- Private - Dirt / Gravel Road
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- Designated Hiking Trails
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- Lake/Pond
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- Lakes and Rivers
- Berms
- Gate
- Campground
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- Powerline
- Compartment Boundary
- Treatments with Site Conditions
- Other Treatment - See Comments
- Selection (Group, Single Tree)
- Clearcut (w/Reserves)
- Prescribed Burn
- Seed Tree (w/Reserves)
- Thinning (Crown, Low, Systematic)
- Regeneration Survey
- Shelter Wood (w/Reserves)
- Opening Maintenance
- Site Prep
- 411 - Northern Hardwood
- 412 - Oak Types
- 413 - Aspen
- 419 - Mixed Upland Deciduous
- 421 - Planted Pines
- 422 - Natural Pines
- 429 - Mixed Upland Conifers
- 430 - Upland Mixed Forest
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- 110 - Low Intensity Urban
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- 629 - Mixed non-forested wetland



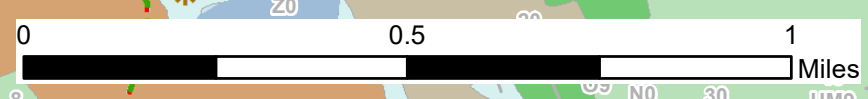
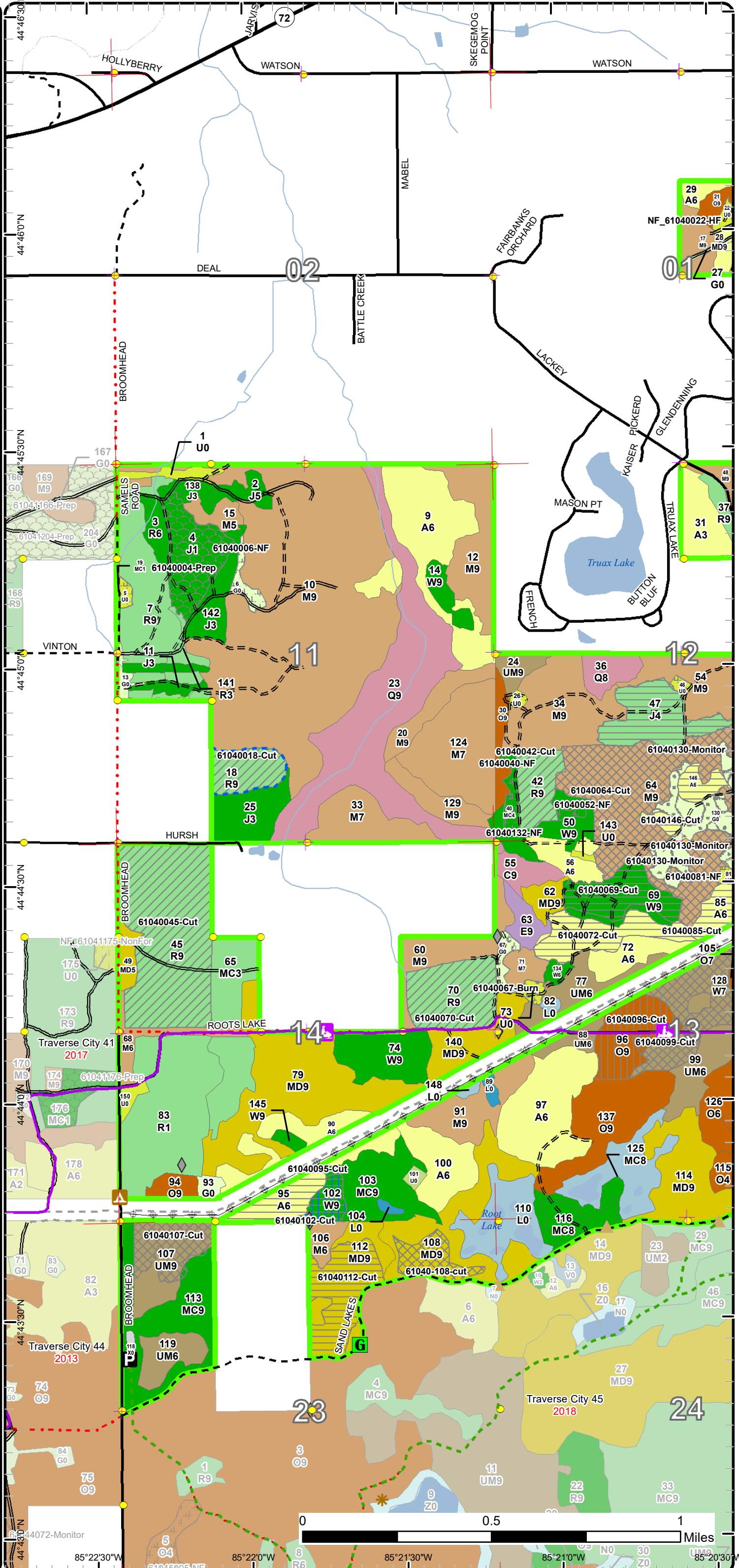


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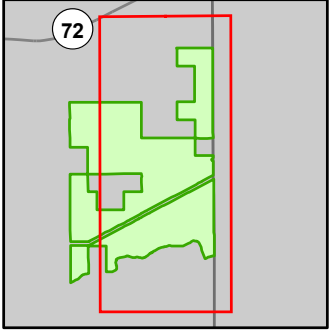


85°22'30"W 85°22'0"W 85°21'30"W 85°21'0"W 85°20'30"W

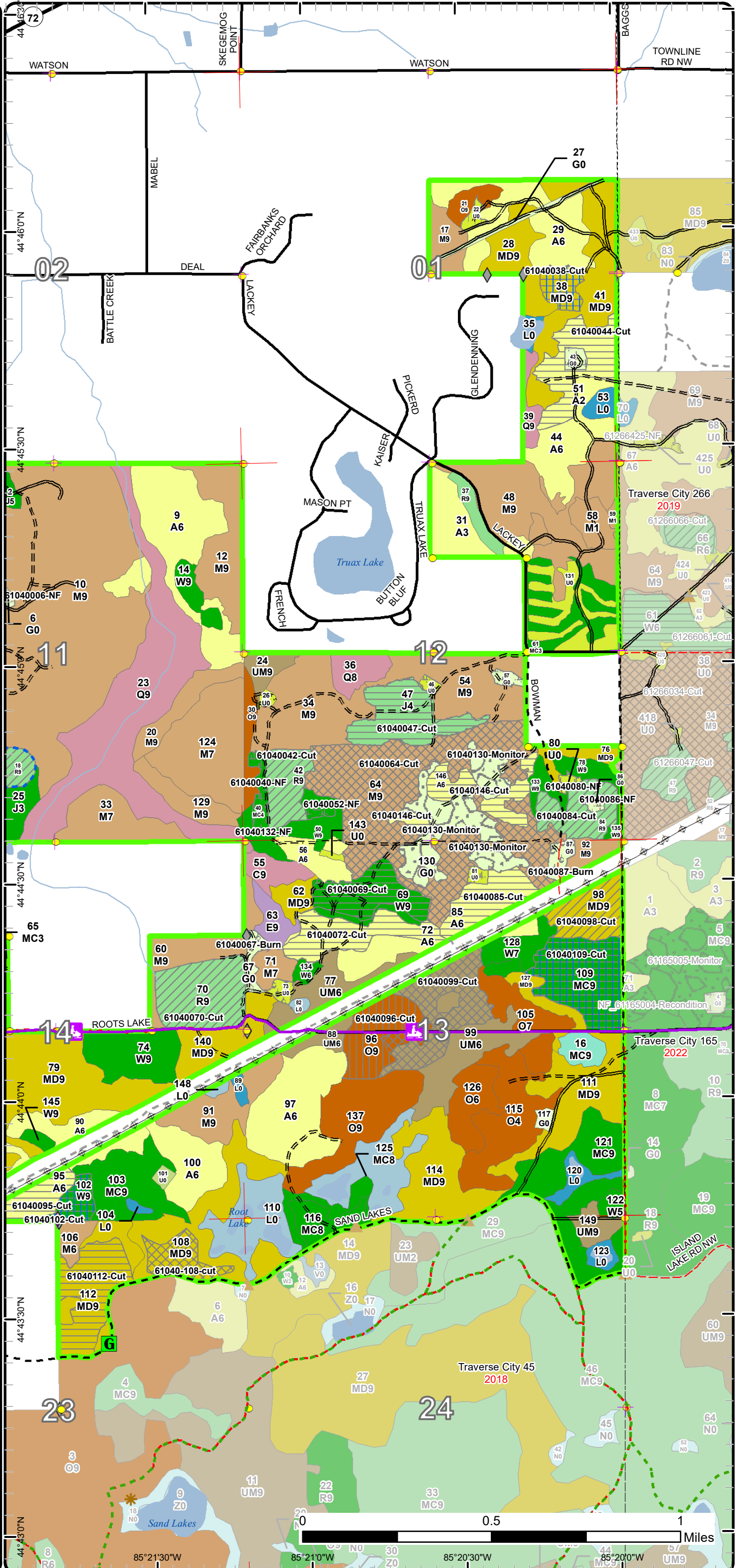


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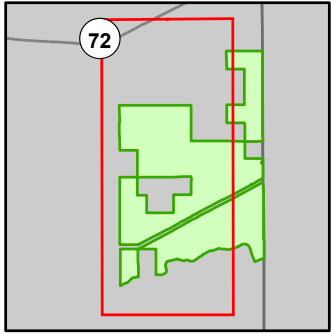
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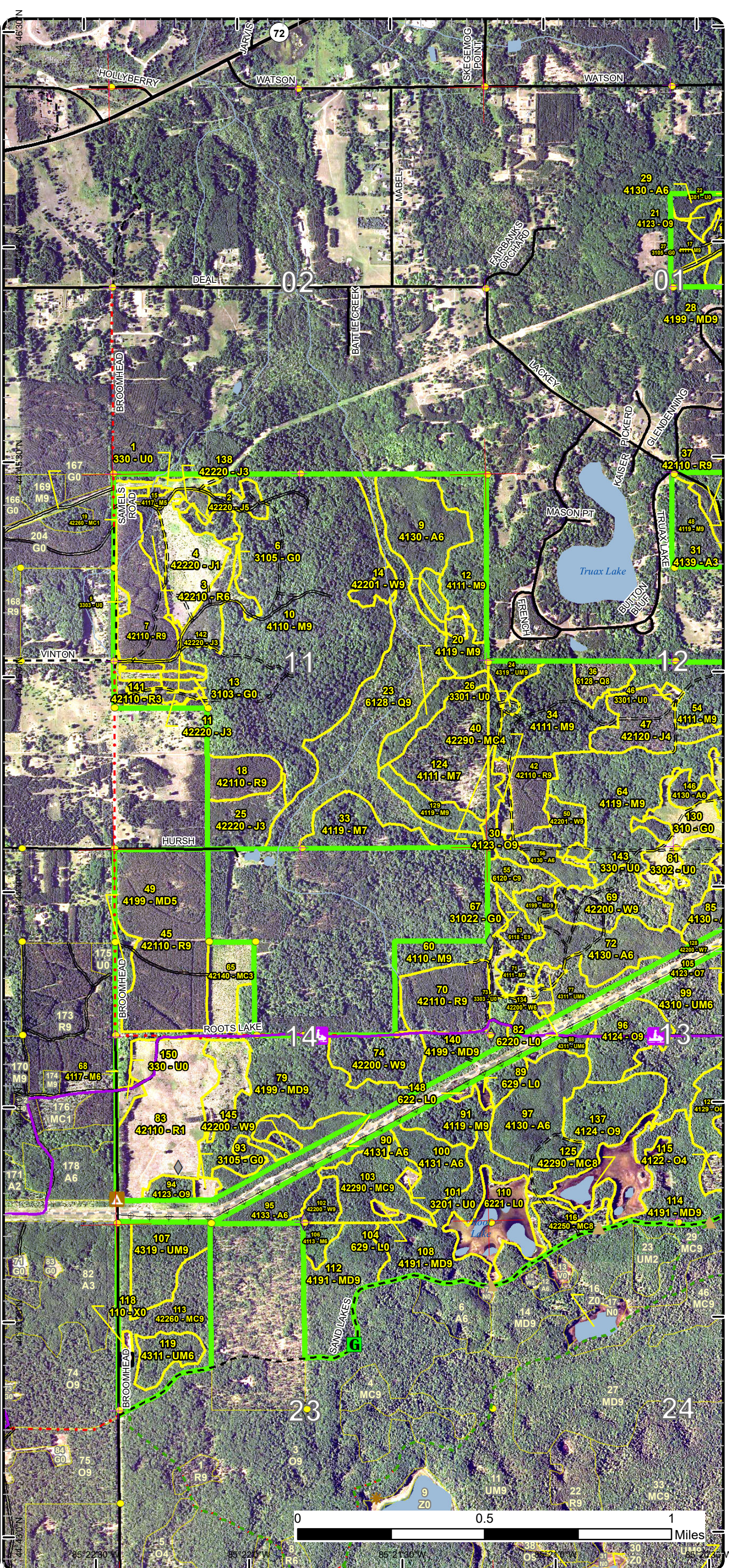


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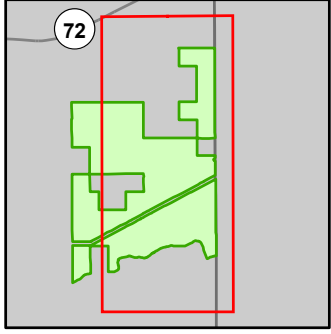
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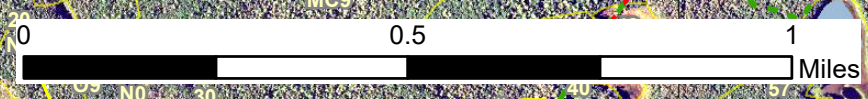
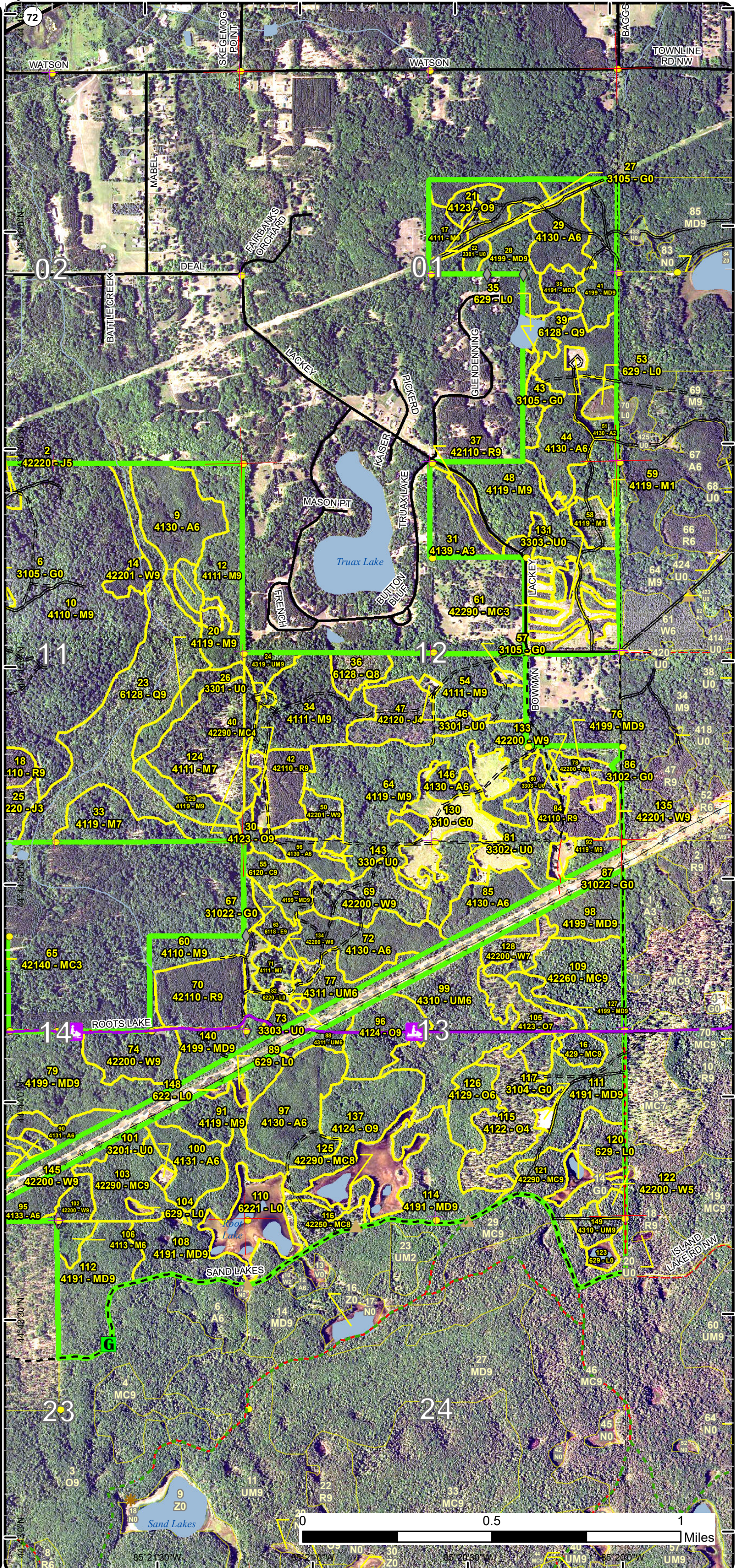


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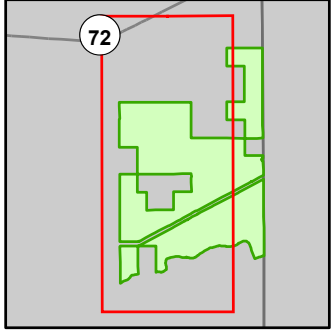
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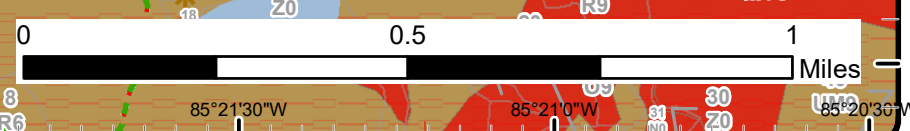
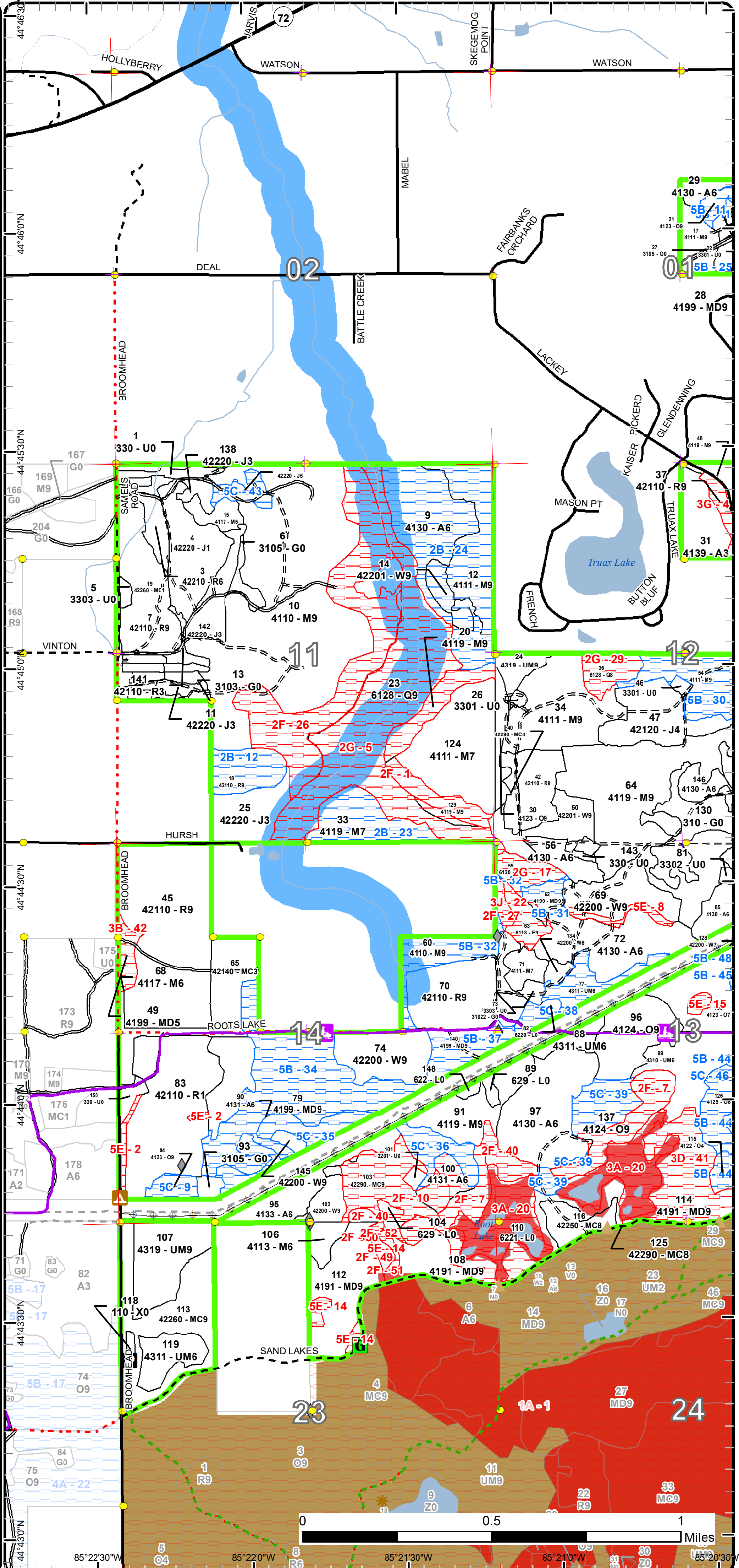


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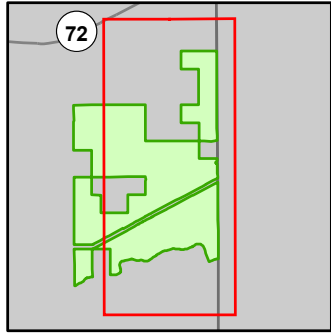
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  - Available w/ Constraints
  - Unavailable
- 5B: Maintain for regeneration purposes  
 5C: Delay treatment for age/size class diversity or exceptional site quality  
 2F: Too steep  
 2G: Too wet (sensitive soils, does not include access issues)  
 3A: Conservation Values incompatible with harvest at this time  
 3D: Recreational / Scenic values  
 3G: Other Influence zones - See comments  
 3J: Water quality / BMPs (stream, river, or lake)  
 5E: Long-Term Retention
- Stand Boundaries
  - Ecological Reference Areas
  - Forest Habitat Core Interior
  - Dedicated Management Areas
  - Cold Water Streams
  - High Priority Trout Stream Buffer



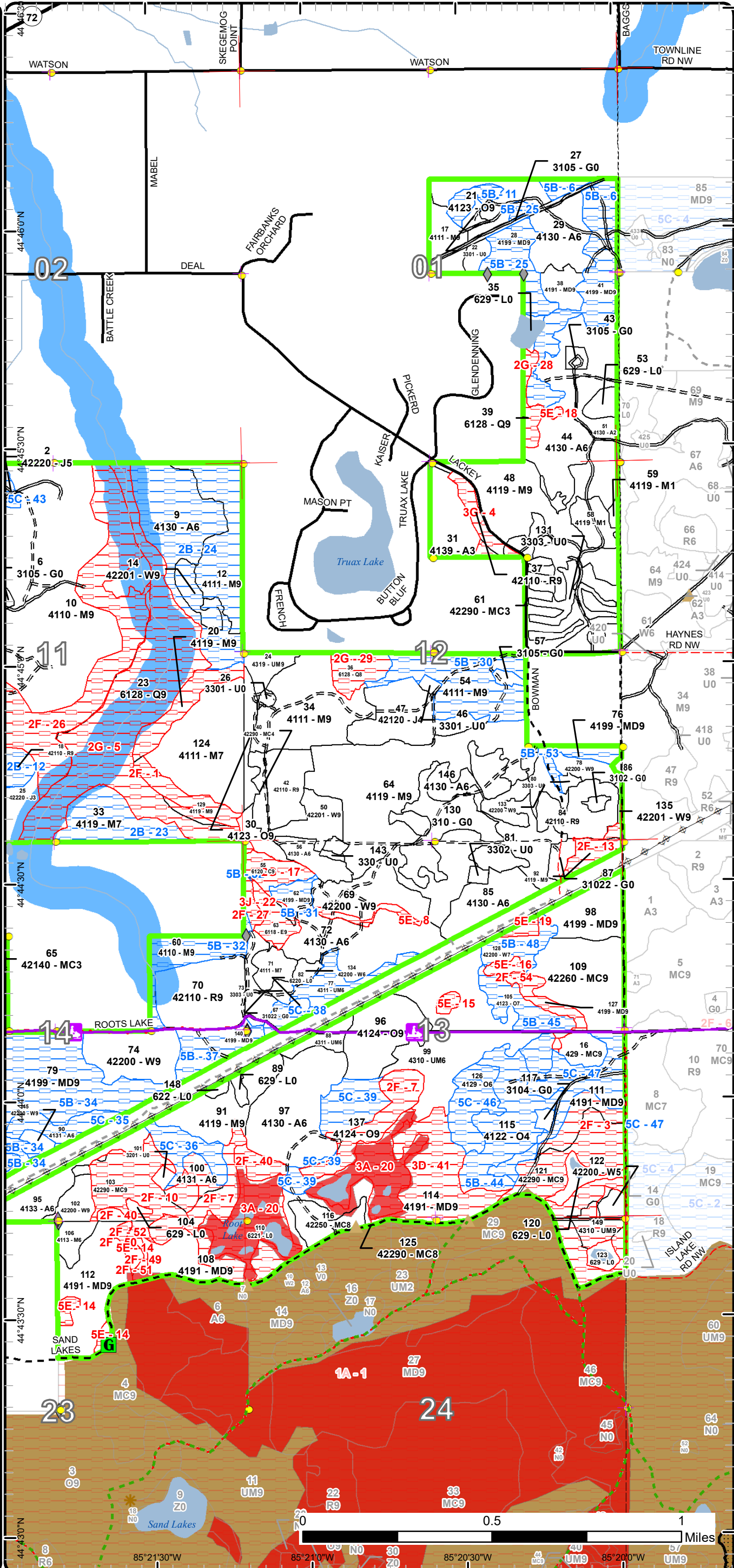


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Report 1 – Total Acres by Cover Type and Age Class



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	7	0	59	65	161	0	0	0	0	0	0	0	0	0	0	0	0	292
Cedar	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	8
Herbaceous Openland	56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56
Jack Pine	0	22	17	20	0	0	0	28	0	0	0	0	0	0	0	0	0	0	87
Low-Density Trees	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35
Lowland Conifers	0	0	0	0	0	0	0	0	0	0	0	9	5	84	0	0	0	0	98
Lowland Deciduous	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	7
Lowland Shrub	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64
Mixed Upland Deciduous	0	0	0	0	0	0	0	42	11	150	78	28	0	0	0	0	0	0	308
Natural Mixed Pines	0	5	18	0	0	0	0	49	0	67	0	0	0	0	0	0	32	0	171
Northern Hardwood	0	0	0	6	0	9	0	6	0	6	341	17	195	0	0	0	0	11	590
Oak	0	0	0	0	0	0	0	0	6	0	100	5	16	0	0	0	0	0	127
Planted Mixed Pines	0	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29
Red Pine	0	54	0	12	0	0	26	152	0	0	0	0	0	0	0	0	0	0	244
Upland Conifers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6
Upland Mixed Forest	0	0	0	11	6	0	0	0	14	54	6	0	0	0	0	0	0	23	114
Upland Shrub	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Urban	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
White Pine	0	0	0	3	0	0	26	46	4	2	0	0	15	0	0	0	0	0	95
<b>Total</b>	<b>157</b>	<b>117</b>	<b>35</b>	<b>111</b>	<b>71</b>	<b>170</b>	<b>52</b>	<b>281</b>	<b>66</b>	<b>140</b>	<b>604</b>	<b>117</b>	<b>259</b>	<b>84</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>34</b>	<b>2333</b>



## Report 2 – Treatment Summary

Traverse City Mgt. Unit  
Year of Entry: 2021

Acres of Harvest

Compartment 40  
Total Compartment Acres: 2,334

Commercial Harvest - 493  
Harvests with Site Condition - 13  
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	80	0	0	0	0	0	0	0	0	80
Jack Pine	22	0	0	0	0	0	0	0	0	22
Mixed Upland Deciduous	24	11	0	7	0	16	0	0	0	58
Natural Mixed Pines	0	0	0	30	0	0	0	0	0	30
Northern Hardwood	0	91	0	0	0	0	0	0	0	91
Oak	0	0	0	0	19	0	0	0	0	19
Red Pine	0	0	0	0	0	138	0	0	0	138
Upland Mixed Forest	0	44	0	0	0	0	0	0	0	44
White Pine	18	0	0	6	0	0	0	0	0	24
<b>Total</b>	<b>145</b>	<b>146</b>	<b>0</b>	<b>43</b>	<b>19</b>	<b>154</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>506</b>

### Proposed and Next Step Treatments by Method

	Harvest	Site Prep	Planting	Seeding	Burning	Pesticide	Monitoring	Other	Non-Forest Mgt.	Total Acres
Current	506	22	0	0	9	0	30	0	21	588
Next Step	0	64	64	0	0	64	438	0	9	639
<b>Total</b>	<b>506</b>	<b>86</b>	<b>64</b>	<b>0</b>	<b>9</b>	<b>64</b>	<b>468</b>	<b>0</b>	<b>30</b>	<b>1227</b>



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:**

4	61040004-Prep	21.8	42220 - Natural Jack Pine	Sapling Poor	6	Immature	SitePrep	Roller Chopping	4211 - Planted Red Pine	Even-Aged	No
<p><u>Prescription</u> Chop existing vegetation then trench/herbicide and plant red pine. Thinly-moderately stocked jack pine along with cherry and red maple has re-established on this site after wildfire. This is not desirable on this site.</p> <p><u>Specs:</u></p> <p><u>Next Step</u> Pesticide, Aerial - Site Prep; SitePrep, Trenching; Planting, Initial Plant; Monitoring, Artificial Regen(1yr); Monitoring, Artificial</p> <p><u>Treatments:</u> Regen(3yr)</p> <p><u>Acceptable</u> planted red 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>											
5	61040005-NF	1.4	3303 - Mixed Low Density Trees	Nonstocked			NonForestMgt	Pruning	320 - Upland Shrub		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.</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>											
6	61040006-NF	3.4	3105 - Mixed Upland Herbaceous	Nonstocked			NonForestMgt	Fruit Tree/Shrub Planting	310 - Herbaceous Openland		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</u></p> <p><u>Regen:</u></p> <p><u>Other</u> Could also augment existing grasses with native grasses and forbs to improve grazing and bugging area for deer, turkeys, and other spp.</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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18	61040018-Cut	13.2	42110 - Planted Red Pine	Sawtimber Well	61	171-200	Harvest	Crown Thinning	4211 - Planted Red Pine	Even-Aged	No
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Prescription Reduce Basal Area to 120 average. Target suppressed and poorly formed trees for removal. HRD restrictions must be used for harvest.  
Specs:

Next Step  
Treatments:

Acceptable  
Regen:

Other  
Comment:

Site Condition Unknown Access

Proposed Start Date: 10/1 /2020

38	61040038-Cut	6.5	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	99	81-110	Harvest	Seed Tree	4319 - Mixed Upland Forest	Two-Aged	No
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Prescription Retain some well formed oak and pine (10-40 ba) and harvest remaining.  
Specs:

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

Acceptable aspen, maple, pine, oak.  
Regen:

Other  
Comment:

Site Condition

Proposed Start Date: 10/1 /2020

40	61040040-NF	3.3	42290 - Natural Mixed Pine	Poetimber Poor	66	1-50	NonForestMgt	Fruit Tree/Shrub Planting	3204 - Mast Producing Shrub		No
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Prescription 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. Plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. May need to fertilize plantings and protect with wire cages or tubex.  
Specs:

Next Step  
Treatments:

Acceptable  
Regen:

Other  
Comment:

Site Condition

Proposed Start Date: 10/1 /2020

42	61040042-Cut	13.3	42110 - Planted Red Pine	Sawtimber Well	66	141-170	Harvest	Crown Thinning	42110 - Planted Red Pine	Even-Aged	No
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Prescription Mark stand to bring BA down to 120. Has been third row thinned 2003. BA is variable but generally high.  
Specs:

Next Step  
Treatments:

Acceptable Red pine  
Regen:

Other Access is poor.  
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
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<b>44</b>	<b>61040044-Cut</b>	20.3	4130 - Aspen	Poletimber Well	48	1-50	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	No
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Prescription Cut to 2" except green marked retention. Mark some scattered well formed oak and pine for retention. Some areas have good well formed red oak poles. Try to retain as possible. Retention will be variable as some areas may be fully stocked with good quality red oak poles and other areas heavy to aspen.

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable aspen, oak, maple pine

Regen:

Other

Comment:

Site Condition

Proposed Start Date: 10/1 /2020

<b>45</b>	<b>61040045-Cut</b>	70.6	42110 - Planted Red Pine	Sawtimber Well	61	141-170	Harvest	Crown Thinning	4211 - Planted Red Pine	Even-Aged	No
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Prescription Reduce basal area to 120 average. Target suppressed and poor formed trees for removal. Avg BA in 2019 YOE 160. HRD restrictions must be used for harvest. Avoid area with old homestead foundations. These are not in the planted areas but in possible landing locations.

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Site Condition

Proposed Start Date: 10/1 /2020

<b>47</b>	<b>61040047-Cut</b>	22.3	42120 - Planted Jack Pine	Poletimber Poor	69	1-50	Harvest	Clearcut with Retention	411 - Northern Hardwood	Even-Aged	No
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Prescription Harvest stand to salvage jp after winter storm damage. Retain oak, red pine and white pine. Harvest remaining stems.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable northern hardwoods

Regen:

Other

Comment: Advanced beech and ironwood regeneration is a concern. Damage to existing stand is substantial so this should be harvested soon to reduce further loss. Out of YOE harvest. Old next step comments: Stand may come back to a mix of northern hardwoods, jack pine and oak. All would be acceptable. Stand may not regenerate. This would be a concern.

Site Condition

Proposed Start Date: 12/20/2013



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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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<b>50</b>	<b>61040052-NF</b>	1.3	42201 - Natural White Pine, Mixed Deciduous	Sawtimber Well	61	111- 140	NonForestMgt	Fruit Tree/Shrub Planting	3204 - Mast Producing Shrub	No
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Prescription 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. Plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. May need to fertilize plantings and protect with wire cages or tubex.

Specs:

Next Step

Treatments:

Acceptable

Regen:

Other

Comment:

Site Condition

Proposed Start Date: 10/1 /2020

<b>64</b>	<b>61040064-Cut</b>	91.0	4119 - Mixed Northern Hardwoods	Sawtimber Well	110	111- 140	Harvest	Single Tree Selection	411 - Northern Hardwood	Uneven- Aged	No
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Prescription Mark stand for crop tree release. Bring basal area down to 80 where stocking is high. Current stocking is variable. Remove some larger red oak. Cut most aspen.

Specs:

Next Step

Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable

Norther hardwood suite + aspen, pine, birch, hemlock.

Regen:

Other

This stand is even-aged. Desirable natural regeneration has not been achieved in this compartment and cannot be expected at this time. The purpose of this treatment is to maintain the health and vigor of existing trees. Use caution if Forest Tent Caterpillar outbreak is expected, ongoing or recently passed. This stress has caused a lot of mortality in recent thinnings during similar conditions. The red oak has been especially affected.

Comment:

Site Condition

Proposed Start Date: 10/1 /2020

<b>67</b>	<b>61040067- Burn</b>	3.5	31022 - Warm Season Grass	Nonstocked			Burn	Opening	31022 - Warm Season Grass	No
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Prescription Burn this stand at least once per entry period in order to set back woody encroachment, increase species diversity, stimulate native herbaceous vegetation, promote berry production, and recycle nutrients.

Specs:

Next Step

NonForestMgt, Herbaceous/Crop/Grass Planting

Treatments:

Acceptable

Regen:

Other

Use mechanical methods as necessary along with Rx burns to manage for grassland/barrens type ecosystem.

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
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69	61040069-Cut	17.7	42200 - Natural White Pine	Sawtimber Well	69	111-140	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Uneven-Aged	No
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Prescription Cut to 1" and plant red pine after harvest. Slash will need to be addressed by chipping or other means.

Specs:

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

Acceptable Regen: planted red pine

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2020

70	61040070-Cut	25.8	42110 - Planted Red Pine	Sawtimber Well	59	201+	Harvest	Crown Thinning	4211 - Planted Red Pine	Even-Aged	No
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Prescription Reduce Basal Area to 120 average. Target suppressed and poorly formed trees for removal. HRD restrictions must be used for harvest.

Specs:

Next Step Treatments:

Acceptable Regen:

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2020

72	61040072-Cut	18.7	4130 - Aspen	Poetimber Well	37	51-80	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	No
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Prescription Retain some scattered well formed oak and pine and harvest remaining stems to 2" dbh to regenerate stand. Some pockets of good quality red oak poles may be found. Retain as possible.

Specs:

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

Acceptable Regen: aspen, oak, pine, maple.

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2020

73	61040073-Burn	1.9	3303 - Mixed Low Density Trees	Nonstocked			Burn	Opening	320 - Upland Shrub		No
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Prescription Selectively fell woody encroachment to maintain upland brush/grassland community. If possible, burn it at least once per entry period in order to set back woody encroachment, increase species diversity, stimulate native herbaceous vegetation, promote berry production, and recycle nutrients.

Specs:

Next Step Treatments: NonForestMgt, Herbaceous/Crop/Grass Planting

Acceptable Regen:

Other Comment: Use mechanical methods as necessary along with Rx burns to manage for grassland/barrens type ecosystem.

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
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<b>80</b>	<b>61040080-NF</b>	1.2	3303 - Mixed Low Density Trees	Nonstocked			NonForestMgt	Fruit Tree/Shrub Planting	3204 - Mast Producing Shrub	No
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Prescription 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. Plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. May need 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

<b>81</b>	<b>61040081-NF</b>	1.3	3302 - Low Density Conifer Trees	Nonstocked			NonForestMgt	Fruit Tree/Shrub Planting	3204 - Mast Producing Shrub	No
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Prescription 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. Plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. May need 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

<b>84</b>	<b>61040084-Cut</b>	14.7	42110 - Planted Red Pine	Sawtimber Well	63	141-170	Harvest	Crown Thinning	4211 - Planted Red Pine	Even-Aged	No
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Prescription Orange mark stand to bring Basal area down to 120 avg. Stocking is currently variable. Treat with stand 42. Remove suppressed and poorly formed trees.

Next Step  
Treatments:

Acceptable  
Regen:

Other  
Comment:

Site Condition

Proposed Start Date: 10/1 /2020

<b>85</b>	<b>61040085-Cut</b>	15.3	4130 - Aspen	Poletimber Well	44	111-140	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	No
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Prescription Harvest to 2" dbh to regenerate stand. Retain well formed red oak found within stand and some scattered pine. Aspen retention area across powerline.

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

Acceptable aspen, oak, maple, pine  
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
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<b>86</b>	<b>61040086-NF</b>	1.3	3102 - Grass	Nonstocked		NonForestMgt	Fruit Tree/Shrub Planting	3204 - Mast Producing Shrub		No
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Prescription 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. Plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. May need to fertilize plantings and protect with wire cages or tubex.

Specs:  
Next Step  
Treatments:

Acceptable  
Regen:

Other  
Comment:

Site Condition

Proposed Start Date: 10/1 /2020

<b>87</b>	<b>61040087-Burn</b>	3.4	31022 - Warm Season Grass	Nonstocked		Burn	Opening	31022 - Warm Season Grass		No
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Prescription Burn this stand at least once per entry period in order to set back woody encroachment, increase species diversity, stimulate native herbaceous vegetation, promote berry production, and recycle nutrients.

Specs:  
Next Step NonForestMgt, Herbaceous/Crop/Grass Planting  
Treatments:

Acceptable  
Regen:

Other Use mechanical methods as necessary along with Rx burns to manage for grassland/barrens type ecosystem. Seed in additional native grasses and forbs.  
Comment:

Site Condition

Proposed Start Date: 10/1 /2020

<b>95</b>	<b>61040095-Cut</b>	11.9	4133 - Aspen, Mixed Pine	Poletimber Well	49	81-110	Harvest	Clearcut with Retention	413 - Aspen	Even-Aged	No
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Prescription Cut to 2" dbh. Retain scattered well formed pine or oak as found. Possible retention area where pockets of thicker pine understory. One area noted on south end.

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

Acceptable aspen, pine, oak, maple  
Regen:

Other  
Comment:

Site Condition

Proposed Start Date: 10/1 /2020

<b>96</b>	<b>61040096-Cut</b>	19.2	4124 - Red with White Oak	Sawtimber Well	99	51-80	Harvest	Shelterwood	4319 - Mixed Upland Forest	Two-Aged	No
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Prescription Remove most oak, aspen and poorly formed overstory pine and maple to promote advanced regeneration. Keep some well formed trees for mast and seed production. (10-40ba)

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

Acceptable oak, pine, aspen, maple  
Regen:

Other  
Comment:

Site Condition

Proposed Start Date: 10/1 /2020





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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98	61040098-Cut	16.1	4199 - Other Mixed Upland Deciduous	Sawtimber Well	111	111-140	Harvest	Crown Thinning	411 - Northern Hardwood	Even-Aged	No
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Prescription Mark for crop tree release -reduce ba to 80-90. remove most beech. Treat with stand to south.

Specs:

Next Step

Treatments:

Acceptable northern hardwoods

Regen:

Other This stand is even-aged. Desirable natural regeneration has not been achieved in this compartment and cannot be expected at this time.

Comment: The purpose of this treatment is to maintain the health and vigor of existing trees. Use caution if Forest Tent Caterpillar outbreak is expected, ongoing or recently passed. This stress has caused a lot of mortality in recent thinings during similar conditions. The red oak has been especially affected.

Site Condition

Proposed Start Date: 10/1 /2020

99	61040099-Cut	28.3	4310 - Pine, Oak Mix	Poletimber Well	89	111-140	Harvest	Single Tree Selection	4319 - Mixed Upland Forest	Uneven-Aged	No
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Prescription Mark stand for crop tree release. Remove most larger white pine and thin younger clumps as needed. Basal area after harvest will be variable as it is currently pre-harvest. Bring Basal Area down to the 100-120 range in overstocked areas. Expect new age class to form in canopy gaps. Remove most aspen and poor formed oak and red maple. Avoid steep slopes.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable pine, oak, aspen, maple

Regen:

Other

Comment:

Site Condition

Proposed Start Date: 10/1 /2020

102	61040102-Cut	6.4	42200 - Natural White Pine	Sawtimber Well	117	81-110	Harvest	Seed Tree	4319 - Mixed Upland Forest	Even-Aged	No
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Prescription Remove most remaining overstory leaving scattered seed trees (2-3/acre) to try to regenerate stand. Stand did not regenerate well after last harvest. Removing most of the larger wp and leaving seed trees would open the canopy enough to encourage regeneration.

Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Mixed pine with oak, maple, aspen.

Regen:

Other Harvest with stand 95

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
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<b>107 61040107-Cut</b>	15.8	4319 - Mixed Upland Forest	Sawtimber Well	61	111-140	Harvest	Group Selection	4319 - Mixed Upland Forest	Two-Aged	No
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Prescription Remove all aspen and jack pine. Mark remaining trees to remove poorly formed and damaged trees and to release crop trees. Aspen in mixed through and patchy. Areas without aspen should be marked for crop tree release/or shelter-wood depending on stocking.

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

Acceptable Regen: aspen, oak, pine, maple

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2020

<b>108 61040-108-cut</b>	10.8	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	79	111-140	Harvest	Group Selection	4319 - Mixed Upland Forest	Two-Aged	No
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Prescription Remove most aspen and poorly formed oak and pine. Aspen is declining. Consider aesthetics along Sand Lake road and Riparian concerns around the lakes and slopes.

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

Acceptable Regen: aspen, maple, oak, pine, birch.

Other Comment: This harvest is intended to salvage declining aspen and to start a new age class in the stand. Utilize old landing area across sand lakes road and old skid road that enters stand at that point.

Site Condition

Proposed Start Date: 4 /22/2019

<b>109 61040109-Cut</b>	30.0	42260 - Natural Pine, Mixed Deciduous	Sawtimber Well	150	111-140	Harvest	Seed Tree	4319 - Mixed Upland Forest	Even-Aged	No
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Prescription Retain widely scattered well formed trees for mast and seed production. Cut merchantable on remaining.

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

Acceptable Regen: pine, oak, aspen, maple, northern hardwoods

Other Comment: This may be a good area to attempt planting red pine without trenching if the department goes this direction.. Red pine has very good form and growth in this compartment but has not been regenerating well naturally. The topography would make intensive site prep such as trenching difficult.

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
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<b>112 61040112-Cut</b>	24.4	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	90	111-140	Harvest	Clearcut with Retention	4211 - Planted Red Pine	Even-Aged	No
-------------------------	------	--	----------------	----	---------	---------	-------------------------	-------------------------	-----------	----

Prescription Harvest to 1" dbh and chip tops to prep site for planting red pine. Use area retention with long term retention shown in factor limits.  
Specs:

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

Acceptable planted red pine, natural white pine.  
Regen:

Other Plant red pine after harvest.  
Comment:

Site Condition

Proposed Start Date: 10/1 /2020

<b>130 61040130-Monitor</b>	29.9	310 - Herbaceous Openland	Nonstocked		Unspecified	Monitoring	Artificial Regen(1yr)	42111 - Planted Red Pine, Mixed Deciduous	Even-Aged	No
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Prescription Check regen success. Re-planted 2019  
Specs:

Next Step  
Treatments:

Acceptable pine, northern hardwoods  
Regen:

Other  
Comment:

Site Condition

Proposed Start Date: 10/1 /2019

<b>40 61040132-NF</b>	1.3	42290 - Natural Mixed Pine	Poletimber Poor	66	1-50	NonForestMgt	Fruit Tree/Shrub Planting	3204 - Mast Producing Shrub		No
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Prescription Selectively hand fell woody encroachment to maintain upland brush/grassland community. Leave scattered mast producing trees and  
Specs: shrubs and/or conifers for wildlife food and cover. Plant site appropriate native shrubs and/or mast producing trees for wildlife food and cover. May need 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
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<b>146 61040146-Cut</b>	13.9	4130 - Aspen	Poletimber Well	46	81-110	Harvest	Clearcut with Retention	4131 - Aspen, Oak	Two-Aged	No
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Prescription retain most well formed oak and harvest remaining stems to 2" dbh to regenerate stand. Harvest with treatment in surrounding stands.  
Specs:

Next Step Monitoring, Natural Regen (Re-Inventory)

Treatments:

Acceptable Regen: oak, aspen maple,

Other Comment:

Site Condition

Proposed Start Date: 10/1 /2020

<b>22 NF_61040022-HF</b>	1.8	3301 - Low Density Deciduous Trees	Nonstocked			NonForestMgt	Brush Cutting	3105 - Mixed Upland Herbaceous		No
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Prescription Hand fell some trees to maintain opening and create some coarse woody debris. Leave scattered mast producing trees and shrubs and/or conifers for wildlife food and cover. Leave stumps to rot to provide future food source for insectivores, etc. Stumps should be tall enough to be visible above the average snow depth.  
Specs:

Next Step  
Treatments:

Acceptable Regen:

Other Comment:

Site Condition

Proposed Start Date: 12/30/1899

<b>43 NF_61040043-Degraded</b>	2.0	3105 - Mixed Upland Herbaceous	Nonstocked			NonForestMgt	Other - Specify	3105 - Mixed Upland Herbaceous		No
--------------------------------	-----	--------------------------------	------------	--	--	--------------	-----------------	--------------------------------	--	----

Prescription Degraded site. Should revegetate to low maintenance herbaceous vegetation suitable for wildlife forage or cover. Soil will most likely need considerable reconditioning.  
Specs:

Next Step  
Treatments:

Acceptable Regen:

Other Comment:

Site Condition

Proposed Start Date: 12/30/1899



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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
<b>46 NF_61040046-Degraded</b>	1.3	3301 - Low Density Deciduous Trees	Nonstocked			NonForestMgt	Other - Specify	3105 - Mixed Upland Herbaceous		No
<p><u>Prescription Specs:</u> Degraded site. Should revegetate to low maintenance herbaceous vegetation suitable for wildlife forage or cover. Soil will most likely need considerable reconditioning.</p> <p><u>Next Step 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> 12/30/1899</p>										
<b>57 NF_61040057-Degraded</b>	1.7	3105 - Mixed Upland Herbaceous	Nonstocked			NonForestMgt	Other - Specify	3105 - Mixed Upland Herbaceous		No
<p><u>Prescription Specs:</u> Degraded site. Should revegetate to low maintenance herbaceous vegetation suitable for wildlife forage or cover. Soil will most likely need considerable reconditioning.</p> <p><u>Next Step 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> 12/30/1899</p>										

**Total Treatment** 588  
**Acreage Proposed:**



## Report 4 – Site Conditions

Traverse City Mgt. Unit  
Pat Ruppen : Examiner

Compartment: 40  
Year of Entry: 2021

### Availability for Management

Total	Acres	<b>Acres Avail</b>	Acres
Acres	Available	<b>With Condition</b>	Not Available

### Dominant Site Conditions

	Total Acres	Acres Available	Acres <b>With Condition</b>	Acres Not Available	Dominant Site Conditions												
					2B	5B	5C	1A	2F	2G	3A	3B	3D	3G	3J	5E	
291	194		<b>70</b>	27	Aspen	<b>44</b>	<b>0</b>	<b>26</b>		8					2	0	17
7	0		<b>0</b>	7	Cedar					0	7					0	
56	56		<b>0</b>	0	Herbaceous Openland					0						0	
87	81		<b>6</b>	0	Jack Pine			<b>6</b>		0	0						
35	35		<b>0</b>	0	Low-Density Trees		<b>0</b>										
98	1		<b>0</b>	97	Lowland Conifers						97						
7	0		<b>0</b>	7	Lowland Deciduous						0					7	
64	19		<b>0</b>	44	Lowland Shrub					0		44					
308	64		<b>156</b>	89	Mixed Upland Deciduous		<b>133</b>	<b>22</b>	0	45		0	5	31		1	7
172	112		<b>0</b>	60	Natural Mixed Pines				0	58		0					2
590	412		<b>90</b>	88	Northern Hardwood	<b>45</b>	<b>45</b>			86	2					0	
128	27		<b>85</b>	15	Oak		<b>51</b>	<b>35</b>		15							
29	29		<b>0</b>	0	Planted Mixed Pines												
244	222		<b>13</b>	8	Red Pine	<b>13</b>				0					5		3
6	6		<b>0</b>	0	Upland Conifers												
114	72		<b>14</b>	28	Upland Mixed Forest			<b>14</b>		6							22
1	1		<b>0</b>	0	Upland Shrub					0							
1	1		<b>0</b>	0	Urban												
96	77		<b>14</b>	4	White Pine	<b>6</b>	<b>8</b>			1							3
2,334	1,410		<b>449</b>	475	Total Forested Acres	<b>109</b>	<b>237</b>	<b>102</b>	0	219	106	44	5	31	7	7	55
	60%		<b>19%</b>	20%	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 Condition	Acres	Other Site Condition	Other Site Condition	Other Site Condition	Other Site Condition
1	Unavailable	2F: Too steep	20	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							

## Report 4 – Site Conditions

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2	<b>Unavailable</b>	<b>5E: Long-Term Retention</b>	3	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
3	<b>Unavailable</b>	<b>2F: Too steep</b>	50	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
4	<b>Unavailable</b>	<b>3G: Other Influence zones - See comments</b>	7	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> This stand is along a hillside above county roadway. This stand has never been thinned due to small area, slopes and shape. Although basal area is high, thinning this stand is impractical and may cause the loss of stand from wind throw.							
5	<b>Unavailable</b>	<b>2G: Too wet (sensitive soils, does not include access issues)</b>	85	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
6	<b>Available</b>	<b>5B: Maintain for regeneration purposes</b>	32	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
7	<b>Unavailable</b>	<b>2F: Too steep</b>	42	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							

## Report 4 – Site Conditions

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8	<b>Unavailable</b>	<b>5E: Long-Term Retention</b>	3	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
9	<b>Available</b>	<b>5C: Delay treatment for age/size class diversity or exceptional site quality</b>	5	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
10	<b>Unavailable</b>	<b>2F: Too steep</b>	28	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
11	<b>Available</b>	<b>5B: Maintain for regeneration purposes</b>	5	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
12	<b>Available</b>	<b>2B: Unknown if access through adjacent landowner(s) is possible</b>	13	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
13	<b>Unavailable</b>	<b>2F: Too steep</b>	7	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Hardwoods on slope. Would do too much damage trying to thin this.							
14	<b>Unavailable</b>	<b>5E: Long-Term Retention</b>	7	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							

## Report 4 – Site Conditions

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15	Unavailable	5E: Long-Term Retention	2	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
16	Unavailable	5E: Long-Term Retention	2	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
17	Unavailable	2G: Too wet (sensitive soils, does not include access issues)	8	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
18	Unavailable	5E: Long-Term Retention	0	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
19	Unavailable	5E: Long-Term Retention	2	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
20	Unavailable	3A: Conservation Values incompatible with harvest at this time	44	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Northern Fen EO ID 9558 Root Lake							
22	Unavailable	3J: Water quality / BMPs (stream, river, or lake)	7	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							

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23	<b>Available</b>	<b>2B: Unknown if access through adjacent landowner(s) is possible</b>	20	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
24	<b>Available</b>	<b>2B: Unknown if access through adjacent landowner(s) is possible</b>	71	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
25	<b>Available</b>	<b>5B: Maintain for regeneration purposes</b>	16	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Allow younger aged red maple poles to develop and put on volume before treating.							
26	<b>Unavailable</b>	<b>2F: Too steep</b>	58	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
27	<b>Unavailable</b>	<b>2F: Too steep</b>	3	3J: Water quality / BMPs (stream, river, or lake)	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
28	<b>Unavailable</b>	<b>2G: Too wet (sensitive soils, does not include access issues)</b>	5	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							

## Report 4 – Site Conditions

Traverse City Mgt. Unit

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29	<b>Unavailable</b>	2G: Too wet (sensitive soils, does not include access issues)	9	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
30	<b>Available</b>	<b>5B: Maintain for regeneration purposes</b>	31	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
31	<b>Available</b>	<b>5B: Maintain for regeneration purposes</b>	5	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
32	<b>Available</b>	<b>5B: Maintain for regeneration purposes</b>	14	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
34	<b>Available</b>	<b>5B: Maintain for regeneration purposes</b>	61	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
35	<b>Available</b>	<b>5C: Delay treatment for age/size class diversity or exceptional site quality</b>	15	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							

## Report 4 – Site Conditions

Traverse City Mgt. Unit

Pat Ruppen : Examiner

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Year of Entry: 2021

36	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	11	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
37	Available	5B: Maintain for regeneration purposes	13	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
38	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	14	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
39	Available	5C: Delay treatment for age/size class diversity or exceptional site quality	16	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
40	Unavailable	2F: Too steep	5	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
41	Unavailable	3D: Recreational / Scenic values	31	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
Delay treatment on this stand along Sand Lakes Road due to other proposed or recent treatments along road and desire to maintain scenic values.							

## Report 4 – Site Conditions

Traverse City Mgt. Unit

Pat Ruppen : Examiner

Compartment: 40

Year of Entry: 2021

42	<b>Unavailable</b>	<b>3B: Threatened, endangered, and special concern species</b>	5	4A: No Markets Available for these Forest Products	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Black Locust. Cutting without herbicide treatment would just spread size.							
43	<b>Available</b>	<b>5C: Delay treatment for age/size class diversity or exceptional site quality</b>	6	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
44	<b>Available</b>	<b>5B: Maintain for regeneration purposes</b>	29	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
45	<b>Available</b>	<b>5B: Maintain for regeneration purposes</b>	16	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
46	<b>Available</b>	<b>5C: Delay treatment for age/size class diversity or exceptional site quality</b>	14	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
47	<b>Available</b>	<b>5C: Delay treatment for age/size class diversity or exceptional site quality</b>	22	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							



## Report 4 – Site Conditions

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Pat Ruppen : Examiner

Compartment: 40

Year of Entry: 2021

48	Available	5B: Maintain for regeneration purposes	9	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Retain overstory to allow new age to develop							
49	Unavailable	2F: Too steep	0	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
50	Unavailable	2F: Too steep	0	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
51	Unavailable	2F: Too steep	0	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
52	Unavailable	2F: Too steep	0	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							
53	Available	5B: Maintain for regeneration purposes	6	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b> Cut large aspen in stand last entry. Let new age develop							
54	Unavailable	2F: Too steep	7	Unspecified	Unspecified	Unspecified	Unspecified
<b>Comments:</b>							

Mgt. Unit

Compartment: #Type!

Year of Entry:



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

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

SCA Name	SCA Category	Detail Type	Recommendation	Acres
----------	--------------	-------------	----------------	-------

Comments



**Report 6 – EXISTING SPECIAL CONSERVATION AREA DETAILS**

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

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

Conservation Area	Type	Description
SCA	Cold Water Stream	A coldwater stream has temperature and dissolved oxygen conditions that allow naturally-reproduced or stocked trout populations and those of other coldwater fish species (e.g., slimy sculpin) to persist from year to year. Coldwater streams in Michigan typically provide these conditions due to substantial contributions of groundwater to their stream flows. Such streams are established by Director's action and designated as trout resources by Fisheries Order 210.
SCA	Riparian Area	A transitional area between aquatic and terrestrial ecosystems in which the terrestrial ecosystem influences the aquatic ecosystem and vice-versa. Because of the unique conditions adjacent to lakes, streams and open water wetlands, riparian areas harbor a high diversity of plants and wildlife. Riparian communities are ecologically and socially significant in their effects on water quality and quantity, as well as aesthetics, habitat, bank stability, timber production, and their contribution to overall biodiversity.
HCVA	Dedicated Management Areas	Such areas are dedicated by the DNR Director for specific management uses through the promulgation of rules, as governed by Part 5, Department of Natural Resources, of the NREPA (MCL 324.502(2) and 324.504). Section 38 of the Administrative Procedures Act (MCL 24.238) provides for public requests for the promulgation of rules. This is an active program, with one proposed site currently under review by the DNR.
ERA	Ecological Reference Areas	Ecological Reference Areas (ERAs) are high quality examples of natural communities that have been identified as Element Occurrences (EOs) by the Michigan Natural Features Inventory (MNFI) within the context of their natural community classification system. Element Occurrences with viability ranks of A (Excellent) or B (Good) and a Global (G) or State (S) element (rarity) ranking of endangered (1), threatened (2), or rare (3) serve as an initial base of ERAs. They may be located upon any ownership in the State. The system is comprised of individual or associations of natural community types that are managed for restoration and maintenance of natural ecological processes and values. The public may submit recommendations for lands as ERAs using the DNR Conservation Area Recommendation Form.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																												
1	330 - Low-Density Trees	Nonstocked	4.5			No																																													
				<table border="1"> <thead> <tr> <th>Sub-Canopy Species</th> <th>Density</th> <th>Avg. Height</th> <th>Size</th> </tr> </thead> <tbody> <tr> <td>Bracken Fern</td> <td>Medium</td> <td></td> <td>Non-Wood</td> </tr> <tr> <td>Autumn Olive</td> <td>Trace</td> <td></td> <td>Tall Shrub</td> </tr> <tr> <td>Red Maple</td> <td>Trace</td> <td></td> <td>Pole</td> </tr> <tr> <td>St. Johns Wort</td> <td>Trace</td> <td></td> <td>Non-Wood</td> </tr> <tr> <td>Blackberry/Raspberry</td> <td>Trace</td> <td></td> <td>Tall Shrub</td> </tr> <tr> <td>Mixed Grasses</td> <td>Low</td> <td></td> <td>Non-Wood</td> </tr> <tr> <td>Black Cherry</td> <td>Trace</td> <td></td> <td>Sapling</td> </tr> <tr> <td>Spotted Knapweed</td> <td>Trace</td> <td></td> <td>Non-Wood</td> </tr> <tr> <td>White Pine</td> <td>Trace</td> <td></td> <td>Pole</td> </tr> <tr> <td>Jack Pine</td> <td>Trace</td> <td></td> <td>Sapling</td> </tr> </tbody> </table>				Sub-Canopy Species	Density	Avg. Height	Size	Bracken Fern	Medium		Non-Wood	Autumn Olive	Trace		Tall Shrub	Red Maple	Trace		Pole	St. Johns Wort	Trace		Non-Wood	Blackberry/Raspberry	Trace		Tall Shrub	Mixed Grasses	Low		Non-Wood	Black Cherry	Trace		Sapling	Spotted Knapweed	Trace		Non-Wood	White Pine	Trace		Pole	Jack Pine	Trace		Sapling
Sub-Canopy Species	Density	Avg. Height	Size																																																
Bracken Fern	Medium		Non-Wood																																																
Autumn Olive	Trace		Tall Shrub																																																
Red Maple	Trace		Pole																																																
St. Johns Wort	Trace		Non-Wood																																																
Blackberry/Raspberry	Trace		Tall Shrub																																																
Mixed Grasses	Low		Non-Wood																																																
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2	42220 - Natural Jack Pine	Poletimber Medium	5.7	61	1-50	N/A	2018: Old opening/low density trees filling in. Likely influenced from 1992 fire 2008: some pockets or regen@ 10 yrs old? jp, oak, bc, iw.																																												
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3	42210 - Natural Red Pine	Poletimber Well	6.5	23	51-80	N/A	2018: Looks like natural red pine that developed after fire and salvage. May have been planted and supplemented with natural pine. Stocking is variable. A little JP on east edge and north. 2008: looks like scattered planted red pine with jp and hardwood growing in. Was part of fire in 1992. Stand was salvaged 1994 and planted 1995.																																												
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4	42220 - Natural Jack Pine	Sapling Poor	22.2	6	Immature	N/A	2018: Burned hot in 2012. JP regen with light hardwoods sprouting Stand re-start. 2008:Natural jp after fire and harvest. Burned 1n 1992.																																												
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5	3303 - Mixed Low Density Trees	Nonstocked	1.4			No	2018: Low density trees. RP seeding in from edges. 2008: Black cherry, autumn olive, oaks.																																												
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6	3105 - Mixed Upland Herbaceous	Nonstocked	3.4			No	Dead caged trees. One basswood.																																								
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7	42110 - Planted Red Pine	Sawtimber Well	35.4	60	111-140	N/A	2018: Let stand grow in. BA is not too high yet. Let stand put on some diameter and height growth. Strips south of road have larger diameter average. Some wind damage in these strips. Could harvest these strips and clean up strips that were JP (Stand 19) and plant all. Red pine seedlings in gaps 2008: Planted 1958. Strips to south planted 1955. third row thinned in 1991. Finger on east side is jp and should be cut when rp thinned. Marked and cut for crop tree release TS# 083-10 TCR 10/11																																								
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9	4130 - Aspen	Poletimber Well	44.5	46	51-80	N/A	2018:2018: Some larger red oak retention. Good height growth on aspen. Let this grow in and consider harvest next entry. Not sure how this stand was accessed in the past, Possible entry in north east corner through private land. Merged stand 16 from previous inventory into this stand. Some storm damage from 2012 event. 2008: 35 year old aspen cc cut in 1973																																								
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10	4110 - Sugar Maple Association	Sawtimber Well	192.7	91	81-110	N/A	2018: Average BA 80-90 which includes ironwood that is in the merchantable range. . No desirable regeneration noted. Ironwood and beech present in understory. Some blow down-most is basswood and red oak. Beech scale. Most ash has died out but a little still living. SM is average, red oak is decent. Let this stand grow in. 2008: NICE QUALITY HARDWOODS. THINNED 2005, 1984, 1973 . OTHER AREAS -FUELWOOD CUTS IN 1970's and 1980'S. NOT MUCH REGENERATION DEVELOPING EXCEPT IRONWOOD.																																								
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11	42220 - Natural Jack Pine	Sapling Well	4.2	21	Immature	N/A	Salvaged after fire in 1994. Was jp strips. Rp planted after salvage and jp seeded in natural. Looks like these strips were planted with red pine when adjacent red pine strips were planted but the jp that seeded in naturally has become dominant. JP has been damage by snow storm. Pockets are down.																																								
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12	4111 - S.Maple, Hard Mast Association	Sawtimber Well	25.4	90	81-110	N/A	2018: Had access through private land in NE Corner and marked sale to be sold to the logger who had a contract on the private land. He did not cut either. The main goal of that treatment was to salvage dying ash and reduce red oak. the ash has since fallen out and the red oak has some wind throw from 2012 storm. The overall stocking is not too bad at this time. May want to still treat if access can be attained but not a high priority. 2008: Should be thinned if access can be attained. Road noted from north but through private?																																							
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13	3103 - Rubus-Fern	Nonstocked	3.2			No	Open areas along county road and private boundary.																																							
14	42201 - Natural White Pine, Mixed Deciduous	Sawtimber Well	5.9	61	81-110	N/A	2008: steep slope going down to battle creek with white pine and aspen clones in spots.																																							
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15	4117 - Mixed N. Hardwood - Pine	Poletimber Medium	5.5	60	51-80	N/A	2018: Low quality and stocking in this stand. Mixed hardwood and pine. May have been burned through in 1992 or 2012.fire.																																							
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16	429 - Mixed Upland Conifers	Sawtimber Well	5.9	150	141-170	N/A	2019: Older pine with oak, aspen, rm poles in bowl like depression. West side is pretty steep. A good place perhaps to leave as old pine. 2008: could reduce ba and manage for large pine. oR JUST LEAVE AND MANAGE AS OLD PINE STAND. Cut in 1991-marked and all aspen and birch. Red oak is a little better but not real good. Most is large old pine with second age class (47)																																							
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17	4111 - S.Maple, Hard Mast Association	Sawtimber Well	9.2	99	81-110	N/A	2018: Stocking not too high. Let stand grow in. Beech scale. 2008: Has been thinned 2001. Thinned in 1988.																																							
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18	42110 - Planted Red Pine	Sawtimber Well	13.2	61	171-200	N/A	2018: Could be thinned again or harvested or left to grow in. Average BA @180 Access must be through private. Not much defect. Concern about HRD in area. May be best to just let this grow in. Most trees have good crown ratio. Clean understory in most of stand. A little beech seedlings. Some mortality pockets. A few scattered hardwoods in stand. Likely armelaria. 2008: HAS BEEN THIRD ROW AND 3RD TREE THINNED. PLANTED 1958 LAST THIN 2003																																							
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																															
19	42260 - Natural Pine, Mixed Deciduous	Sapling Poor	5.1	8	Immature	N/A	2018: Low stocking of mixed pine and hardwood after jp strips were harvested. South strip has heavier stocking. Could harvest with red pine strips south of road (stand 7) and plant entire area. Some pine and hardwood poles would need to be harvested then stand could be chopped.																																															
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20	4119 - Mixed Northern Hardwoods	Sawtimber Well	10.9	91	81-110	N/A	Steep slope down to Battle Creek. Factor Limit																																															
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21	4123 - Red Oak	Sawtimber Well	5.1	99	1-50	N/A	2018. Large oak over story with aspen, rm sprouts under. Oak ba is variable with some areas mostly aspen. 2008: aspen cut out and ro left. Harvested 1990. Aspen growing back in.																																															
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22	3301 - Low Density Deciduous Trees	Nonstocked	1.8			No	WLD-2019 Set back woody encroachment possibly using hand felling, mechanical or looping in with adjoining timber treatments.																																															
23	6128 - Lowland Coniferous, Mixed Deciduous	Sawtimber Well	84.0	121	81-110	N/A	low conifer with deciduous																																															
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24	4319 - Mixed Upland Forest	Sawtimber Well	5.8	90	51-80	N/A	2018: Mixed WP ages. Some areas on north part with poles grown in. Larger pine and red maple in South end this is wetter. North part is upland and dry. Let stand develop. 2008: HAS BEEN CUT IN PAST. SOME OF THE BIG ASPEN WAS TAKEN BUT NOT ALL. SOME ASPEN IS DEAD. sLOPED GROUND. SOME BIG WHITE PINE AND RED PINE LEFT																																															
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25	42220 - Natural Jack Pine	Sapling Well	16.8	14	Immature	N/A	2018: Thick jp regen with some wp ,rp, bc mixed in. Some mature cherry in pockets. Autumn olive in open areas to south with pine growing through. 2008: more jp regen to north after harvest. Thick autumn olive on south with pine growing through. cc in 2003.																																						
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26	3301 - Low Density Deciduous Trees	Nonstocked	1.1			No																																							
27	3105 - Mixed Upland Herbaceous	Nonstocked	3.7			Managed Opening	Utility ROW.																																						
28	4199 - Other Mixed Upland Deciduous	Sawtimber Well	16.0	99	81-110	N/A	Good red oak . Most is free to grow. Much of the basal area is composed of rm poles that have grow in. Has been thinned in 1988. Thinned again in 2001. No need for treatment at this time. Let red maple grow in.																																						
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29	4130 - Aspen	Poletimber Well	31.8	28	Immature	N/A	2018. Good growth Cut merchantable 1990																																						
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30	4123 - Red Oak	Sawtimber Well	6.1	70	51-80	N/A	Strip of red oak with mixed sizes and stocking. Most is small log. Some mortality. Suspected oak wilt in past but may be decline.																																						
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31	4139 - Aspen, Mixed Deciduous	Sapling Well	18.0	27		N/A	2018: Left pine and oak at last harvest. Aspen /maple and oak regen in new age class. A small area of blown down JP and a small area of mature NH in east side of stand but west of road. Too small to map separately. 2008: 16 year old aspen cc. Cut 1n 1992 2" +																																						
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33	4119 - Mixed Northern Hardwoods	Sawtimber Poor	20.0	111	51-80	N/A	Access is cut off by branches of battle creek. Would only be accessible with private easement. Larger size hardwood logs -heavy to ash and associates. Could reduce ba a little but issues with access. Thinned in 1998. Heavy storm damage 2015. Salvaged what was possible to get with access through private land. Much of stand is on steep slope.																																						
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<b>34</b>	4111 - S.Maple, Hard Mast Association	Sawtimber Well	34.1	111	81-110	N/A	2018: Stand stocking level is generally not high but there are pockets with higher BA. The western part is lower BA generally. Most understory is moderate to heavy beech and ironwood. Little desirable regeneration. Ash has fallen out of stand. Hesitant to open canopy at this time without knowing how to produce desirable regeneration in understory. Thinned in 2003 and 1980. . 2008: CONCERNED ABOUT THE LARGE SM . SOME IS GOOD QUALITY. SOME PARTS OF THIS WERE OPENED UP IN 1986 WITH ONLY HEAVY BEECH AND IRONWOOD REGEN. SOME LARGE ASH IN STAND AND SOME MORTALITY IN THE ASH.																																											
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<b>35</b>	629 - Mixed non-forested wetland	Nonstocked	2.4			No																																												
<b>36</b>	6128 - Lowland Coniferous, Mixed Deciduous	Sawtimber Medium	8.6	103	51-80	N/A	2018: Heavy damage to stand from storm. Not much regeneration forming at this time. 2008: LOWLAND AREA WITH A LOT OF BLOWDOWN FORM RECENT STORM.																																											
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<b>37</b>	42110 - Planted Red Pine	Sawtimber Well	5.2	67	201+	N/A	2018: This stand has stood through recent storms without damage. Afraid thinning it would cause problems. Not much volume anyway. Would be desirable to encourage this to move toward hardwoods long term. Planted 1952 rp, wp and jp. 2008: never thinned. It looks alright but could use a third row thin. A bit sloped on ground. Some jp south of rp should go. Too small to stand alone as stand.																																											
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<b>38</b>	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	6.5	99	81-110	N/A	2018: Mix of larger oak and pine with red maple and aspen. Wp seedlings on the ground. Good red oak site. This stand could Final Harvest, Seed Tree, Shelterwood, or left. May be enough decent stems left for marking but shelterwood may make most sense. Some aspen has fallen out of stand. Some blowdown and some standing mortality. The stocking is not too high overall. Thinned in 2001. 2008: two ages of pine- some real old. possible aspen regen cut. green mark some pine and oak. Was road on east side..access may be concern.																																											
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<b>39</b>	6128 - Lowland Coniferous, Mixed Deciduous	Sawtimber Well	5.0	111	51-80	N/A	Lowland mix along creek drainage. Blowdown areas. Some old fence along property line.																																											
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40	42290 - Natural Mixed Pine	Poletimber Poor	4.6	66	1-50	N/A	2018: Opening filling in. Some older pine and oak with saplings of mixed pine filling in. 2008: Dead apples. Two track and small hill climb. Some walnut poles. Split this stand off from NF stand 132																																												
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41	4199 - Other Mixed Upland Deciduous	Sawtimber Well	32.4	99	81-110	N/A	2018: This stand could be marked for crop tree release. Take most beech and any aspen. Mark oak, rm,sm. Get poor quality and some bigger red oak.. Do not expect much desirable regeneration. Ironwood and beech are in understory. There is enough quality red oak to put some growth on.																																												
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42	42110 - Planted Red Pine	Sawtimber Well	13.3	66	141-170	N/A	2018: Should be marked to bring BA down to 120. Variable now with some areas pretty high. Access is not good. Rows cut in last thinning to treat steeper areas. Planted 1952. 2008: WAS ROW THINNED IN 2003. LET GROW IN FOR NOW																																												
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43	3105 - Mixed Upland Herbaceous	Nonstocked	2.0			No																																													
44	4130 - Aspen	Poletimber Well	35.1	48	1-50	N/A	2018: Good growth on aspen. Variable diameters. Some scattered red oak and pine retention from last treatment. Red oak and red maple heavier in areas and some areas heavier to aspen. 2008: has been thinned-aspen and rm cut @1970. . Places with more hardwood left. most is ro. Let this grow in another cycle and look at next time.																																												
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45	42110 - Planted Red Pine	Sawtimber Well	70.6	61	141-170	N/A	Aver BA 160. Need to consider future management options if HRD is present and how to manage. May want to thin this again and start to let hardwoods develop. May not get anything but beech ironwood, cherry and autumn olive which is heavy in that area. Black locust may also expand from stand 49. Stand could be left to put on more volume.																																												
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46	3301 - Low Density Deciduous Trees	Nonstocked	1.3			No																																													



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments			
<b>47</b>	42120 - Planted Jack Pine	Poletimber Poor	22.4	69	1-50	N/A	2018: Heavy storm damage 2012. Attempted to sell as salvage sale but not sold. Heavy damage and wind-throw. Some pockets of decent stocking left but most of the stand is a mess and difficult to traverse. Will continue to attempt to sell as salvage. Heavy beech and ironwood understory. Little desirable regeneration at this time. 2008: No hardwoods coming in. Could cut and plant or cut and let hardwoods grow in of could keep for area of cover in middle of hardwoods. Look at again.			
<b>Canopy Species</b>		<b>% Cover</b>	<b>Size Class</b>	<b>DBH</b>	<b>Age</b>	<b>Sub-Canopy Species</b>		<b>Density</b>	<b>Avg. Height</b>	<b>Size</b>
Jack Pine		95	Pole/Log	9	69	Beech		Medium	5 - 10 feet	Sapling
						Ironwood		Low	Variable	Sapling
						Autumn Olive		Low	5 - 10 feet	Tall Shrub
						Red Maple	Low	5 - 10 feet	Sapling	
<b>48</b>	4119 - Mixed Northern Hardwoods	Sawtimber Well	47.9	111	81-110	N/A	2018: Could get some red oak out and mark the stand for drop tree release. Stocking is not too high in most areas but there are some thicker spots that could use some release. Hesitant to open canopy because only ironwood and beech developed in the canopy gaps after last harvest. Some wind throw in NE section of stand. 2008: Was thinned in 1991. A bit thick in spots. Large ro with smaller maple and ash. BW a bit bigger. Let grow in and look at next cycle.			
<b>Canopy Species</b>		<b>% Cover</b>	<b>Size Class</b>	<b>DBH</b>	<b>Age</b>	<b>Sub-Canopy Species</b>		<b>Density</b>	<b>Avg. Height</b>	<b>Size</b>
Sugar Maple		34	Log/Pole	12		Sugar Maple		Low	5 - 10 feet	Sapling
Red Maple		10	Log/Pole	13		Beech		High	10 - 20 feet	Sapling
Basswood		13	Log	14	111	Ironwood		High	10 - 20 feet	Sapling
Red Oak		40	XLog/Log	18	111					
<b>49</b>	4199 - Other Mixed Upland Deciduous	Poletimber Medium	5.4	89	1-50	N/A	2018: Consider trying to eliminate this locust if adjacent stand is final harvested. 2008: old homestead with lots of locust and large sm along roads and around old foundations.			
<b>Canopy Species</b>		<b>% Cover</b>	<b>Size Class</b>	<b>DBH</b>	<b>Age</b>	<b>Sub-Canopy Species</b>		<b>Density</b>	<b>Avg. Height</b>	<b>Size</b>
Sugar Maple		7	Log/XLog	16	131	Sugar Maple		Medium	< 5 feet	Seeding
Black Locust		90	Log	13	89	White Pine		Low	5 - 10 feet	Sapling
						Black Cherry		Low	5 - 10 feet	Sapling
<b>50</b>	42201 - Natural White Pine, Mixed Deciduous	Sawtimber Well	14.8	61	111-140	N/A	2018: Some older WP and oak scattered around. Variable stocking. Larger pine is weeviled badly. WP seedlings filling gaps. 2008: This could be green marked and opened up. It looks like it used to be open. Mixed pine ages -main ages 100 and 50? There is some aspen that would fill in. Patchy.			
<b>Canopy Species</b>		<b>% Cover</b>	<b>Size Class</b>	<b>DBH</b>	<b>Age</b>	<b>Sub-Canopy Species</b>		<b>Density</b>	<b>Avg. Height</b>	<b>Size</b>
Red Oak		25	Pole/Log	9	61	Red Maple		Low	5 - 10 feet	Sapling
White Pine		65	Log/Pole	13	61	White Pine		Low	10 - 20 feet	Sapling
<b>51</b>	4130 - Aspen	Sapling Medium	6.8	7	Immature	N/A	2018: Good regeneration and growth			
<b>Canopy Species</b>		<b>% Cover</b>	<b>Size Class</b>	<b>DBH</b>	<b>Age</b>	<b>Sub-Canopy Species</b>		<b>Density</b>	<b>Avg. Height</b>	<b>Size</b>
Red Maple		10	Sapling	1	7	Ironwood		Low	5 - 10 feet	Sapling
Bigtooth Aspen		80	Sapling	1	7	Autumn Olive		Low	5 - 10 feet	Tall Shrub
						Hazelnut (Beaked)		Low	5 - 10 feet	Tall Shrub
<b>53</b>	629 - Mixed non-forested wetland	Nonstocked	3.8			No				
<b>54</b>	4111 - S.Maple, Hard Mast Association	Sawtimber Well	30.6	96	111-140	N/A	2018: Mix of pole and log sized sm/northern hardwood mix. Ash has fallen out of stand. Not much desirable regeneration in understory. Could not expect a thinning to result in anything different. Could use crop tree release but not high priority. May be better to wait until we determine best method to regenerate northern hardwoods. Some larger sm sawlogs but most is 10-13" dbh. 2008: could thin this stand but it's looking pretty good at his time.			
<b>Canopy Species</b>		<b>% Cover</b>	<b>Size Class</b>	<b>DBH</b>	<b>Age</b>	<b>Sub-Canopy Species</b>		<b>Density</b>	<b>Avg. Height</b>	<b>Size</b>
Sugar Maple		55	Log/Pole	12	96	Sugar Maple		Low	10 - 20 feet	Sapling
Red Maple		15	Log/Pole	12	96	Red Maple		Low	10 - 20 feet	Sapling
Basswood		15	Log	14		Beech		Medium	10 - 20 feet	Sapling
Red Oak		10	Log	16	96	Ironwood		Medium	10 - 20 feet	Sapling



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<b>55</b>	6120 - Lowland Cedar	Sawtimber Well	7.5	109	111-140	N/A	2018: Nice Cedar Pocket. Some storm damage-windthrow. 2008: Rich lowland cedar/hemlock with aspen.																												
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<b>56</b>	4130 - Aspen	Poletimber Well	9.0	27	51-80	N/A																													
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<b>57</b>	3105 - Mixed Upland Herbaceous	Nonstocked	1.7			No																													
<b>58</b>	4119 - Mixed Northern Hardwoods	Sapling Poor	11.0	8	Immature	N/A	Harvested 2011. Stand is converting to hardwoods. Remainder of pine except for some visual management along the roads harvested in TS# 093-10. Left existing hardwood that was in understory of pine so mixed ages exist in stand. Some residual poles of oak, pine, maple. Monitor regeneration success. Orange marked in 2000. RP planted 1952																												
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<b>59</b>	4119 - Mixed Northern Hardwoods	Sapling Poor	1.2	27	Immature	N/A	2018: Most remaining regeneration is ironwood and beech. 2008:small clear cut from 1992 filling in with n hardwoods.																												
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<b>60</b>	4110 - Sugar Maple Association	Sawtimber Well	16.9	100	111-140	N/A	2018: Average BA 110. Decent SM on this site. Could be marked for CTR. Would not be too much volume. May be able to hook to nearby hardwood treatment. 2008:ba is a bit high in places but where there is more ro the stocking is good. Has been thinned 2001. Good rich site. Good quality ro																												
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<b>61</b>	42290 - Natural Mixed Pine	Sapling Well	18.4	18	Immature	N/A	2018:nice natural regeneration after harvest. Harvested 2000. Pine and HWD Mix. Red pine is lagging behind JP but hanging in. 2008: OPENING AFTER JP STRIPS WERE CUT OUT OF PLANTATION																												
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<b>62</b>	4199 - Other Mixed Upland Deciduous	Sawtimber Well	5.5	111	111-140	N/A	2018: Red oak with maple stump sprouts that are log sized. Some decent single stem red maple. Pocket of blowdown on north edge. Not enough quality to thin and still have good crop trees. Would likely fill in with another round of red maple sprouts if not browsed out. May just fill with beech and ironwood. Some areas could benefit from thinning. 2008: Could cut aspen and lower quality stems to release better ro and rm.																																									
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<b>63</b>	6118 - Lowland Deciduous with Cedar	Sawtimber Well	6.7	91	81-110	N/A	lowland pocket-mixed hardwood with cedar																																									
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<b>64</b>	4119 - Mixed Northern Hardwoods	Sawtimber Well	92.5	110	111-140	N/A	2018: Remaining oak looks alright. Variable stocking. Some areas heavier to red oak while other maple. Red maple is decent quality. Some good SM but most is average. Good red oak. Could thin stand for crop tree release and get some of the larger red oak out. No desired regeneration in understory at this time. Some blowdown in areas. 2015: Oak decline throughout stand after last thinning. Harvested area with heaviest mortality in 2013. This is current stand 130 which was planted to rp after failed regeneration of hardwoods due to browsing. Thinned in 2003. Also thinned in early 1970,s and early 1980's and 1992. Parts of this stand were likely treated with small harvest permits.																																									
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<b>65</b>	42140 - Planted Mixed Pine	Sapling Well	29.1	6	Immature	N/A	2018: Mix of planted red pine and natural JP with some rm,beech,bc,wp. Thick stocking. Good growth on red pine and good survival but jp is getting ahead in some areas. TS# 082-10. Final harvest jack pine and associated. Harvest 2012 Re-plant to red pine. trenched 2012. Planted 2013																																									
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67	31022 - Warm Season Grass	Nonstocked	3.5			No	Milkweed, wild bergamont, trace amounts of vetch. Lots of little bluestem.

Sub-Canopy Species	Density	Avg. Height	Size
St. Johns Wort	Trace		Non-Wood
Bracken Fern	Low		Non-Wood
Black Cherry	Trace		Pole
Red Pine	Trace		Sapling
Mixed Grasses	Low		Non-Wood
White Pine	Trace		Pole
Red Pine	Trace		Sapling
Little Bluestem	High		Non-Wood
Black Cherry	Trace		Pole
Autumn Olive	Trace		Tall Shrub
Black Cherry	Trace		Pole
Little Bluestem	High		Non-Wood
White Pine	Trace		Pole
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St. Johns Wort	Trace		Non-Wood
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White Pine	Trace		Pole
Little Bluestem	High		Non-Wood



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<b>68</b>	4117 - Mixed N. Hardwood - Pine	Poletimber Well	9.2	41	51-80	N/A	2018: Neat mix of maple and pine in new age. Maybe came in after some disturbance in the past. 2008: old farmstead with a few walnuts and locust and big sm. Filled in with good looking sm pole sized regen. Good stems and ground. Filled in more with pine mix in north part.																																					
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<b>69</b>	42200 - Natural White Pine	Sawtimber Well	20.9	69	111-140	N/A	2018: Parts of this stand could be thinned by removing the poor quality trees but a lot of it all badly weevilled. Maybe if pockets were opened up it would fill in with white pine but it may also fill in with beech, ironwood and cherry brush. Could harvest and plant red pine. Ground is rolling but could be planted. 2008: Variable aged white pine. Open grown poor quality. Some ro and bc mixed in. Good thermal break.																																					
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<b>70</b>	42110 - Planted Red Pine	Sawtimber Well	25.8	59	201+	N/A	2018: Average BA 206 Hard to follow rows in places. Lots of wp understory in places. Wolfy weevilled wp in places. Heavier in SW part of stand. This part could be CC and re-planted if treating adjacent stand. Good height growth. potential to grow poles here on this site. planted 1960 3rd row thin 2000																																					
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<b>71</b>	4111 - S.Maple, Hard Mast Association	Sawtimber Poor	5.8	99	1-50	N/A	2018: No achieving the goal of regenerating stand to desirable species. The deer are keeping this stand browsed down. Some cherry, ironwood, beech and ironwood have advanced. Blackberry patch. White pine on west edge added to this stand.																																					
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<b>72</b>	4130 - Aspen	Poletimber Well	29.1	37	51-80	N/A	2018: Cut 1982-85 Cut all merchantable. Same as stand 77 but less white pine retention in this stand. Could be harvested or could let grow in another cycle. Seems like a lot of merchantable volume would be lost by harvesting at this time.																																					
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74	42200 - Natural White Pine	Sawtimber Well	20.2	51	141-170	N/A	2018: Mixed stocking and sizes of WP. Some is badly weevilled. Do not see any oak understory which would have been good next step for this stand. Some cherry brush in understory. 2008: Some bigger red oak, ash, white pine. red maple and sugar maple with white pine Seeded in. Looks like old pasture that seeded in.. Big white pine is badly damaged from weevil.																																															
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76	4199 - Other Mixed Upland Deciduous	Sawtimber Well	5.8	83	51-80	N/A	2018: Mixed hardwoods. Large aspen harvested along with ash. Not much regen in cut patch. A little aspen. Heavy maple seedlings in east part are heavily browsed. Some wp/beechn/ironwood in west part. Mature hardwoods around perimeter and SE part of stand is fully stocked hardwoods at top of slope. 2012: TS# 095-10. Completed 11/2012. Cut all aspen and ash. Ash in rest of stand has fallen out reducing Basal Area. May be able to harvest west part on slope with Kalkaska sale.																																															
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77	4311 - Pine, Aspen Mix	Poletimber Well	14.3	71	1-50	N/A	2018: Aspen growth is a bit slower in this stand due to amount of residual pine. Still growing pretty well. 2008: looks like aspen and rm were cut out of this stand that was mixed with variable ages of wp left in variable stocking levels. Cut all merchantable 1982-85																																															
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78	42200 - Natural White Pine	Sawtimber Well	5.5	59	51-80	N/A	2018: Scattered larger wolfy WP with WP poles on slope. Not desirable to harvest. . Variable stocking. 2008: Was G type. Older scattered wp has filled in with younger age. Still some grassy spots. Some WP planted in 1929 in this 40. Maybe older aged WP in stand. Some WP, JP planted 1959-most common age. .																																															
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<b>79</b>	4199 - Other Mixed Upland Deciduous	Sawtimber Well	60.9	100	81-110	N/A	2018: Stocking is a little high in general but may not be enough to affect growth or justify another entry at this time. Average BA @ 100-110. Opening canopy would likely just cause ironwood and beech to develop in understory. Little desirable regeneration was noted at this time. Average quality maple in stand. Red oak is a bit better than average. Some blowdown but not too much. Thinning or doing crop tree release would likely cause a lot of the red maple to get removed. Some oak could come out. 2008: Good ro crop trees. Has been thinned before but could mark to release crop trees. Reduce rm. timber sale 1993-94. Cut orange marked + all aspen and birch. Also some timber treatments in late 60's -early 70's.																																	
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<b>80</b>	3303 - Mixed Low Density Trees	Nonstocked	1.2			No	Old foundation. Cladonia, bracken.																																	
<b>81</b>	3302 - Low Density Conifer Trees	Nonstocked	1.3			No																																		
<b>82</b>	6220 - Alder/willow	Nonstocked	1.1			No																																		
<b>83</b>	42110 - Planted Red Pine	Sapling Poor	53.6	6	Immature	N/A	2018: Plantation was looking good but pockets of HRD detected in 2018. Armellaria also causing some mortality but 5-10 pockets of HRD also found. Monitor stand. Infection likely came from stand to the west where infection was also found.																																	
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<b>84</b>	42110 - Planted Red Pine	Sawtimber Well	14.7	63	141-170	N/A	2018: Not much growth response from last thinning. About 1" diameter growth/decade. Could harvest and plant this, thin again or just let grow in. No desirable regen forming in sub-canopy. May have kept the stocking higher at last thinning to prevent heavy beech and ironwood intrusion. Ba average 180. Variable stocking. 2012: third row thinned 1991 Marked for crop tree release TS# 084-10. Harvested 2011. Difficulty with row spacing and residual damage.																																		
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<b>85</b>	4130 - Aspen	Poletimber Well	17.3	44	111-140	N/A	Good aspen stocking with good height growth. Maple saplings from stump sprouts under.																																		
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<b>86</b>	3102 - Grass	Nonstocked	1.3			No	Mullin, cladonia.																																		
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<b>87</b>	31022 - Warm Season Grass	Nonstocked	3.4			No	Nice stand of little bluestem.																																		
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<b>88</b>	4311 - Pine, Aspen Mix	Poletimber Well	5.5	37	1-50	N/A	2018: Mixed distribution of wp and aspen. Mixed sizes of wp left from last harvest. White pine that grew in with aspen is about understory at this point. Some aspen is falling out but most may grow through. 2008: Part of aspen cc to south and north but more wp retained and heavy wp regen. Cut 1982-1985																																		
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90	4131 - Aspen, Oak	Poletimber Well	15.2	49	111-140	N/A	2018: Cut in 1970. Some of the stand is on moderately steep ground. 2008: 38 yr old class from last cut. Some older red oak and white pine scattered in stand.																																					
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91	4119 - Mixed Northern Hardwoods	Sawtimber Well	18.8	91	81-110	N/A	2018: Difficult access and much of this stand is on steeper ground that would be hard to manage. Some blowdown. 2008: hardwood mix on slopes with nice ro. Steep slopes with low/wet spot in bottom. Cut orange marked and aspen 1991-92. Thinned around 1970 also																																					
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92	4119 - Mixed Northern Hardwoods	Sawtimber Well	5.8	81	111-140	N/A	2018: This stand is too steep to manage effectively. Thinning would likely do more damage than good. Factor limit for steepness. 2008: could be thinned but there is a lot of beech. It would probably fill in thick and the access is not good and ground is sloped. May be best to wait and let this develop. Could be thinned with stand 106 to south if it is scheduled.																																					
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93	3105 - Mixed Upland Herbaceous	Nonstocked	2.2			No	White and red pine saplings, cladonia.																																					
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94	4123 - Red Oak	Sawtimber Well	5.2	101	51-80	N/A	2018: Stand is going nicely to white pine with good growth on understory pine growing through. Some bigger wp scattered around. 2008: open grown ro with wp, rm, aspen growing in. All counted in canopy.																																					
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95	4133 - Aspen, Mixed Pine	Poletimber Well	16.6	49	81-110	N/A	2018: Stand could be harvested this entry. Could leave scattered wp and oak and some pocket retention where thick wp understory is found. Saw one place in the west side. Looks like various sized wp was left from last harvest. Should regenerate well. May want to open stand 102 up further at same time. 2008: looks like the young pine was left when aspen was last harvested because pine is a little older. Cut in 1970																																					
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<b>96</b>	4124 - Red with White Oak	Sawtimber Well	21.3	99	51-80	N/A	2018: Split this stand off from stand 137 to south. This stand appears to have been thinned in past. Basal Area is lower than surrounding oak stands and diameter is larger. White pine understory is advanced in some places and well stoked but not throughout stand. Oak is mature and could be harvested. Could try to move this stand toward pine by removing more overstory.																																								
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<b>97</b>	4130 - Aspen	Poletimber Well	35.5	37	81-110	N/A	2018: Good growth on aspen and good stocking. Stocking in burned area reduced a bit but most survived. Se part of stand burned June 2017 wildfire. SE of two track Harvested merchantable 1982. Part of this stand may have been harvested 1986.																																								
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<b>98</b>	4199 - Other Mixed Upland Deciduous	Sawtimber Well	16.1	111	111-140	N/A	2018: Decent quality and stocking in most areas. More sm along east edge. Pockets heavier to beech. 2008: STOCKING LEVEL CONCERN. NICER RO. OPEN UP TO GET OAK REGEN STARTED? WOULD PROBABLY GET BEECH AND SM. SM TRYING TO COME IN. SM NOT SO GOOD LOOKING BUT RM LOOKS PRETTY GOOD. BEECH IS WEEDY. COULD CAUSE A LOT OF BEECH BRUSH TO FORM.																																								
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<b>99</b>	4310 - Pine, Oak Mix	Poletimber Well	48.1	89	111-140	N/A	2018: Part South of snowmobile trail is more mixed while north part is heavier to mixed sizes of white pine. Aspen in stand is declining. North part could be marked for crop tree with the goal also of getting some of the larger wp out. This should create gaps that could fill in with new age. South part could be opened up to more of a seed tree harvest leaving pine stocking heavier where quality and stocking is good. Most of the oak is lower quality. Some areas may need to be avoided due to slopes. Planted some wp 1929. May have had some timber activity @ 1970. 2008: Steep in spots. All is rolling. May be difficult to sell a sale on this ground. Would be good to reduce the basal area and get aspen out. Mixed age of wp would be hard to work through.																																								
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<b>100</b>	4131 - Aspen, Oak	Poletimber Well	18.0	48	81-110	N/A	2018: Some older pine scattered around. Fairly steep ground. Let stand grow in. 2008: Sloped ground. Look at nest cycle for harvest. Harvested @1970 with stands to west. This stand has a heavier red oak component.																																								
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<b>101</b>	3201 - Sweet Fern	Nonstocked	1.4			No	Mini food plot in east corner. approx 10' x 20'. Poverty grass, LBS, cladonia, red pine saplings, and bracken.																																								
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<b>102</b>	42200 - Natural White Pine	Sawtimber Well	6.4	117	81-110	N/A	2018: Still not much growing in understory. Some white pine saplings that were likely left from 1990 harvest. Snow damaged and whippy and thin stocking. Maybe should cut most of the wp and all the red maple(which is barely merchantable at this time) Some log sized rm mixed in. Maybe should let the wp hold on and let red maple put some volume on but likely will not change in the regen area. 2008: Thinned in 1990. Cut back to large and medium sized wp. Not much starting in under story. Could make similar prescription in PI stand 121.																																										
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<b>103</b>	42290 - Natural Mixed Pine	Sawtimber Well	23.0	88	111-140	N/A	2018: Two aged stand. RP& WP planted 1930 200 tpa. Harvested aspen + @1970. Let grow in. 2008: nice pine mix on slopes. Could use a thinning but would be difficult to do on slopes without damage to residual and most is wp. Some older pine.																																										
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<b>104</b>	629 - Mixed non-forested wetland	Nonstocked	1.0			No																																											
<b>105</b>	4123 - Red Oak	Sawtimber Poor	16.2	110	51-80	N/A	2019: TS# 61-01 Cut all aspen and jack pine and orange marked. Kept higher BA where quality red oak was found. Expect aspen, oak, white pine and red maple to form second age growing through remaining canopy. Heavy browsing on aspen and rm regeneration causing poor success. Some sprouts have passed browse height but most are badly deformed and still in browse level. Residual basal area is variable. Do not see new wp understory developing. The current wp understory was there before treatment. Stands 105 and 128 were both in this treatment. 128 has more pine overstory and 105 more red oak. Split stands 2019 inventory. 2008: NICE RO WITH LARGE CLONAL ASPENIN SPOTS. SM AND WP GROWING THROUGH FROM GROUND. COULD REDUCE BASAL AREA AND GET ASPEN OUT. MARK SOME OAK AND RM. RM LOGS IN SPOTS. KEEP BA HIGH WHERE RO IS GOOD. SOME LARGER RO COULD GO.																																										
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<b>106</b>	4113 - R.Maple, Conifer	Poletimber Well	5.3	28	51-80	N/A	2018: Good growth. WP has good form. Variable species mix between wp and rm. Good stocking. Thick wp regen in places. Little understory. 2008: cc with rm sprouts and wp filling in. Cut to 2" 1990 except green marked.																																										
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<b>107</b>	4319 - Mixed Upland Forest	Sawtimber Well	23.2	61	111-140	N/A	2008: Pretty complicated stand with younger wp, aspen and rm poles mixed with older ages of pine, oak, aspen, maple. Looks like most rm and some aspen was cut 20-30 years ago. Wood permit issued @ 1980 for maple, aspen, oak. No pine. May be best to let this stand grow in. May lose some of the older aspen but would be hard to get this out at this time without excessive damage to younger age classes. Stands 113 and 119 may have been cut at the same time as this. Similar mixed ages found. 2008: Some older pine and oak but most of canopy is new age-50-60. Some harvesting 1967-68. This would regenerate well if cc but could stay longer and grow. Lots of wp in places.																																										
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Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments
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**108** 4191 - Mixed Upland Deciduous with Conifer Sawtimber Well 41.8 79 111-140 N/A 2018: Planted wp 1929 150 tpa. 2008: riparian area around roots lakes/fen.

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	10	Pole/Sapling	8		White Pine	Low	5 - 10 feet	Sapling
Red Oak	10	Log/Pole	12		Red Maple	Low	10 - 20 feet	Sapling
White Oak	10	Log/Pole	12	90				
Bigtooth Aspen	35	Log/Pole	13	79				
White Pine	25	Log/Pole	12	90				
Red Pine	10	Log/Pole	13	90				

**109** 42260 - Natural Pine, Mixed Deciduous Sawtimber Well 32.2 150 111-140 N/A

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	15	Log/Pole	12		Red Maple	Medium	>20 feet	Sapling
Red Oak	10	Log	15		White Pine	Medium	5 - 10 feet	Sapling
White Pine	55	Log/XLog	16	150				
Red Pine	15	Log/XLog	16	150				

2018: Older wp with some rp, ro,rm, aspen. Could harvest some of the larger pine and thin overstocked areas as necessary. Some areas have heavy wp under while it is moderate in other parts of stand. Central part of stand had heavy regen. The heavily stocked understory seems to be in areas with more canopy opening, A seed tree harvest may be more successful at regenerating wp. No red pine regeneration noted. 2008:could reduce ba and manage for large pine. oR JUST LEAVE AND MANAGE AS OLD PINE STAND. Cut in 1991-marked and all aspen and birch. Red oak is a little better but not real good. Some sm on north end. Most is large old pine with second age class (47) ASPEN ON SOUTH AND WEST SIDES.

**110** 6221 - Fen Nonstocked 44.4 No Listed as open water at the time of the last inventory.

**111** 4191 - Mixed Upland Deciduous with Conifer Sawtimber Well 30.1 90 111-140 N/A

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Oak	25	Log/Pole	11	90	Red Maple	Medium	>20 feet	Sapling
Bigtooth Aspen	10	Log	13	80	White Pine	Medium	10 - 20 feet	Sapling
White Pine	30	Log	12	90				

2018: Low quality stunted oak on old pine ground. White pine understory. Aspen declining. Some larger older wp scattered around. Some wp planted 1929. Some parts too steep to manage. possibly some timber treatment 1990.

**112** 4191 - Mixed Upland Deciduous with Conifer Sawtimber Well 33.5 90 111-140 N/A

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Oak	35	Log/Pole	12	90	Red Maple	Low	10 - 20 feet	Sapling
White Oak	20	Log/Pole	12	90	White Pine	Medium	5 - 10 feet	Sapling

2018: WP planted 1929. 150 tpa. Oak is poor quality. Would be hard to find much that would be desirable for retention. Some white oak has decent form. 2008: LOWER QUALITY OAK GOING TO WP. COULD CUT OUT MOST OAK AND ASPEN AND LET IT CONVERT TO OAK PINE ASPEN MAPLE MIX.

**113** 42260 - Natural Pine, Mixed Deciduous Sawtimber Well 35.3 61 81-110 N/A

Canopy Species	% Cover	Size Class	DBH	Age	Sub-Canopy Species	Density	Avg. Height	Size
Red Maple	15	Pole/Log	8	51	Red Maple	Medium	10 - 20 feet	Sapling
Bigtooth Aspen	15	Log/Pole	10	51	White Pine	Low	5 - 10 feet	Sapling
White Pine	55	Log	12	61	Hazelnut (Beaked)	Low	5 - 10 feet	Tall Shrub

2018:Mixed sizes and stocking of wo and aspen with maple, rp,oak. Wp needs more growth. Aspen should hold another cycle. Good bit of wp understory in places. North end has more large pine. Mixed ages of wp. Some wood may have been cut out of stands 119 and 107 at the same time as the last harvest in this stand. Harvested 1967-68. 2008: low density big pine with some older oak and aspen and then a 40-60 yr class grown in. 50 yr class is wp, rm oak and a little rp. Larger pine is too large to be merchantable and younger pine is too small at this time.



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																				
114	4191 - Mixed Upland Deciduous with Conifer	Sawtimber Well	30.7	90	111-140	N/A	2018: Mixed species stand. Oak lower quality. Mixed pine, oak, aspen, rm. Aspen is dropping out of stand, Aspen is distributed around stand. May not be able to get much regeneration from it. Some RP and WP likely planted 1929. Good bit of white pine understory. May be able to seed tree harvest and try to keep existing wp regen. Hope for aspen, oak, rm sprouts to fill along with wp seeding. 2008: some older pine/oak - some old@130? with 50-60 yr class grown in.																																				
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115	4122 - Oak, Pine	Poletimber Poor	29.2	90	1-50	N/A	2018: Poor regeneration on aspen and oak which have been browsed badly. Some areas had good aspen sprouting but most is being browsed out. Good bit of red maple stump sprouts and some white pine filling in gaps. Clumps of white pine saplings were kept through last harvest and some additional wp seems to be filling in open ground but not a great amount at this time. Some WP and RP likely planted in 1929 2008:old pine ground going back to pine.																																				
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116	42250 - Pine, Oak	Sawtimber Medium	9.0	66	1-50	N/A	2018: TS# 085-10. TCR 2013. Poor regen after harvest due to browsing. Expected robust aspen and red maple sprouting. Some pockets of aspen were successful but most was browsed out. 2008: some older pine/oak - some old@130? with 50-60 yr class grown in.																																				
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117	3104 - Degraded	Nonstocked	1.6			No																																					
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118	110 - Low Intensity Urban	Nonstocked	1.4			Managed Opening																																					
119	4311 - Pine, Aspen Mix	Poletimber Well	11.2	29	51-80	N/A	2018: Mixed species and sizes. May have left all pine and some oak, maple and aspen in last harvest. This stand may have been treated with stands 107 and 113. Looks like most rm and some aspen was cut 20-30 years ago. Wood permit issued @ 1980 for maple, aspen, oak. No pine. Let stand develop. Some harvest 1967-68? 2008: some older pine and oak but it is pole sized. Filled in with rm sprouts, aspen regen and thick wp regen.																																				
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120	629 - Mixed non-forested wetland	Nonstocked	5.0			No																																					



Stand	Level 4 Cover Type	Size Density	Acres	Stand Age	BA Range	Managed Site	General Comments																																											
<b>121</b>	42290 - Natural Mixed Pine	Sawtimber Well	36.9	83	111-140	N/A	2018: Some WP, JP and RP planted 1929. 800 tpa. Some of the JP still in stand. Most of the conifer component is red pine of various diameters but similar age. Most of the ground is too steep to manage. Oak is low quality. Aspen and jp falling out of stand. Stand may be best left to put on volume. Maybe at some time it could be cut back to seed trees and left to regenerate or to replant red pine after we get used to hand planting without trenching. Would be difficult to thin due to slopes. Some areas have Possible timber treatment 1970 and 1990. 2008: OLD PINE SCATTERED AROUND STAND@ 140-160 YR?																																											
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<b>122</b>	42200 - Natural White Pine	Poletimber Medium	3.0	25	51-80	N/A	2018: Not sure what happened here. May have been put in for oil and gas but on hillside. ? Filled in with wp and a little jp/rp. Pretty bad form on most of the WP. Heavy weevil damage and stunted looking but good diameter growth. 2008: Stand was cut in 1991. FMD Contract 17-90-1.																																											
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<b>123</b>	629 - Mixed non-forested wetland	Nonstocked	3.2			No																																												
<b>124</b>	4111 - S.Maple, Hard Mast Association	Sawtimber Poor	37.2	91	1-50	N/A	2018: Heavy storm damage after last harvest was completed. Sold damaged timber on scale in 2014-15. Cut all tipped leaning and broken. This damage was variable throughout stand so the current stocking is variable. The NW portion seems to have the best remaining stocking. Heavy beech understory along with a little cherry. Not much else growing in new age. 2012: TS# 106-11-01. Orange marked -crop tree release and then remove all ash and most beech in supplement. Most ash dead EAB and Beech Scale throughout stand. Kept some large -cavity beech and some dead dead ash snags. Sale harvested winter 2013. Canopy was opened up more than planned due to extra trees removed in supplement especially beech.																																											
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<b>125</b>	42290 - Natural Mixed Pine	Sawtimber Medium	7.2	89	81-110	N/A	2018: retention or riparian strip left along fen during last harvest. 2008: some older pine/oak - some old@130? with 50-60 yr class grown in. Some wp possibly planted 1929.																																											
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<b>126</b>	4129 - Mixed Oak	Poletimber Well	13.8	90	111-140	N/A	2018: Lower quality oak on old pine ground. White pine understory. Cove in N part has less stocking and larger diameters and less wp understory. Some wp may have been planted 1929. 2008:old pine ground going back to pine. Some parts of stand are to steep to manage.																																											
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<b>127</b>	4199 - Other Mixed Upland Deciduous	Sawtimber Well	6.5	111	141-170	N/A	2018: Strip along hillside left out of last harvest. Most is a bit steep for management. Nice Red oak with maple poles and pine.																																									
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<b>128</b>	42200 - Natural White Pine	Sawtimber Poor	8.5	110	51-80	N/A	2019: Heavy browsing on aspen and rm regeneration causing poor success. Some sprouts have passed browse height but most are badly deformed and still in browse level. Residual basal area is variable. Do not see new wp understory developing. The current wp understory was there before treatment. Stands 105 and 128 were both in this treatment. 128 has more pine overstory and 105 more red oak. Split stands 2019 inventory. TS# 61-10 . Harvested Fall/winter 2013. Cut all aspen and jack pine and orange marked. Kept higher BA where quality red oak was found. Expect aspen, oak, white pine and red maple to form second age growing through remaining canopy.2008: NICE RO WITH LARGE CLONAL ASPENIN SPOTS. SM AND WP GROWING THROUGH FROM GROUND. COULD REDUCE BASAL AREA AND GET ASPEN OUT. MARK SOME OAK AND RM. RM LOGS IN SPOTS. KEEP BA HIGH WHERE RO IS GOOD. SOME LARGER RO COUD GO.																																									
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<b>129</b>	4119 - Mixed Northern Hardwoods	Sawtimber Well	10.4	91	141-170	N/A																																										
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<b>130</b>	310 - Herbaceous Openland	Nonstocked	29.9		Unspecified	4211 - Planted Red Pine	2019: Re-planted spring 2019. 10/2019 regen survey showed 85% survival and 98% FTG. Heavy competition from Rubus and a little from hazel. Most all the hardwood has been and continues to be heavily browsed by the deer. Stand should be set to grow. Re-check 2021. 2018 Regen survey 10/18 showed 40% mortality. Replanted spring 2019> 2018: Planted red pine. Failed regeneration after harvest due to heavy browsing. Trenched site as possible in 2017. Will plant red pine 2018. HAS BEN THINNED IN 2003. BASAL AREA IS HIGH IN PLACES BUT OKAY FOR NOW. MONITOR FOR OAK WILT PROBLEMS AS THIS STAND HAS HIGH PERCENTAGE OF RO STEMS WITH GOOD QUALITY. This part of stand 64 was clear cut in 2013 due to the amount of decline and mortality in the red oak. Decline was caused by stress from previous thinning, gypsy moth, forest tent caterpillar, drought. Heavy two-lined chestnut borer after stress and mortality. No oak wilt verified.																																									



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131	3303 - Mixed Low Density Trees	Nonstocked	16.6			4211 - Planted Red Pine	. 2018: Pretty good survival on planted red pine in most areas. Possible HRD or other rood disease in West side middle planted strip. Regen survey. Majority of pine is healthy and FTG. Return stand to general inventory. Monitor regeneration success. Not all portions of this stand were planted. Some areas had scattered natural regeneration and were not trenched. 2016: Stand chopped and trenched in 2014 and red pine planted 2015. 1 year regen survey completed in 2016.																																										
133	42200 - Natural White Pine	Sawtimber Well	4.5	66	1-50	N/A	2018: gnarly older WP with some wp poles, hardwood, jp,rp. Let stand develop. 2008: Was G type. Older scattered wp has filled in with younger age. Still some grassy spots. Some wp planted 1929. Maybe older age in stand.																																										
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134	42200 - Natural White Pine	Poletimber Well	2.2	71	1-50	N/A	2018: Big weevilled wp with cherry, ro and aspen around edges. Could CC and plant or seed tree for wp/ro/aspen. Some wp filling in gaps. Some mortality in wp seedlings. 2008:looks like aspen and rm were cut out of this stand that was mixed with variable ages of wp left in variable stocking levels. Cut all merchantable 1982-85																																										
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135	42201 - Natural White Pine, Mixed Deciduous	Sawtimber Well	1.9	80	81-110	N/A	Mixed sizes of WP XL-pole Wolfy older trees with wp poles and some hardwoods grown in.																																										
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137	4124 - Red with White Oak	Sawtimber Well	30.9	90	111-140	N/A	2018: Not enough crop trees to thin this stand for quality. Could let it put on more volume and take most out at later entry. Could reduce Basal area to 40 and try to get wp understory formation. Most of the wp under is scraggly an snow damaged at this time. Some wp planted 1929. 2008: Some older pine and oak but most is small log/pole Not vey good quality. riparian area around roots lakes/fen. Southwest part of stand burned in wildfire June 2017. Took out wp under but not much damage to mature trees. .																																										
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138	42220 - Natural Jack Pine	Sapling Well	4.2	24	Immature	N/A	2018: Natural jp after fire and harvest. Burned 1n 1992. 2018: Snow damage Pockets knocked down.																																										
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140	4199 - Other Mixed Upland Deciduous	Sawtimber Well	17.1	100	81-110	N/A	2018: Split this stand off due to amount of WP and WO that is not found in adjacent hardwood stand. Looks like the rm was cut out @ 1970. A good bit of RM poles. Average BA @ 100-110. Stocking is variable. Opening canopy would likely just cause ironwood and beech to develop in understory. Little desirable regeneration was noted at this time. Average quality maple in stand. Red oak is a bit better than average. Some blowdown but not too much. Thinning or doing crop tree release would likely cause a lot of the red maple to get removed. Some oak could come out. 2008: Good ro croptrees. Has been thinned before but could mark to release croptrees. Reduce rm. timber sale 1993-94. Cut orange marked + all aspen and birch.																																									
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141	42110 - Planted Red Pine	Sapling Well	5.4	21	Immature	N/A	Salvaged after fire in 1994. Was rp strip. Rp planted after salvage and jp seeded in natural. Still in strips with jp adjacent																																									
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143	330 - Low-Density Trees	Nonstocked	0.7	0		No																																										
145	42200 - Natural White Pine	Sawtimber Well	2.0	79	81-110	N/A	2018: Depression with pine that was cut around when aspen was cut in 1970.																																									
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146	4130 - Aspen	Poletimber Well	14.2	46	81-110	N/A	2018: Some wind throw in west part. Could harvest but with the adjacent recent treatment would be better to hold this stand due to green up concerns Mix of aspen and hardwood sprouts after last harvest 2008: DECENT RED OAK MIXED IN WITH ASPEN REGEN FROM LAST HARVEST. THIS STAND COULD BE CUT IF WE NEED TO BALANCE AGE CLASS BUT IT WOULD BE BETTER TO CARRY TO NEXT AGE.																																									
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148	622 - Lowland Shrub	Nonstocked	1.1	0		No	low depression.																																									



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<b>149</b>	4310 - Pine, Oak Mix	Sawtimber Well	6.0	83	81-110	N/A	2018: Most of this area is hard to access and would be difficult to manage due to slopes. Pine has slowed on diameter growth. Some wp and JP and RP planted 1929. 800 tpa. Possible timber treatment 1970 and 1990. Split this stand off from stand 121 as this area had lower basal area, more oak/rm and less pine and this area has more pine under story wp with some rp. 2008: OLD PINE SCATTERED AROUND STAND@ 140-160 YR?																																							
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<b>150</b>	330 - Low-Density Trees	Nonstocked	3.1	0		No	old farmstead with a few walnuts and locust and big sm.																																							